रेलटेल कार्पोरेशन ऑफ इंडिया लिमिटेड (आर सी आई एल)
RailTel Corporation of India Limited (RCIL)

"भारतीय रेलों के लिए रेलटेल के उत्तरी क्षेत्रों के अंतर्गत आने वाले रेलवे स्टेशनों पर निर्भया/ रेलवे फंड से आईपी आधारित वीडियो निगरानी प्रणाली (वीएसएस) की आपूर्ति, स्थापना, परीक्षण, कमीशनिंग और मौजूदा वीएसएस इन्फ्रा के साथ इंटीग्रेशन"

"Supply, Installation, Testing, Commissioning, Integration with Existing VSS Infra, Operation and Maintenance of IP based Video Surveillance System (VSS) at Railway Stations under Northern Region of RailTel for and on be-half of Indian Railways from Nirbhaya/Railway Fund"

इलेक्ट्रॉनिक निरीक्षण प्रलेख
Electronic Tender Document

खुली निविदा (दो पैकेट - रिवर्स नीलामी)
Open Tender (Single Stage Two packet-Reverse Auction)

ई- निविदा सं. रेलटेल / टेंडर / ओटी / एनआर/एनटीपी/2023-24/वीएसएस/04
E-Tender No. RailTel/Tender/OT/NR/NTP/2023-24/VSS/04

OPEN E-TENDER NOTICE

RailTel Corporation of India Ltd. (RailTel) invites E-Tenders in Single Stage Two Packet (Part I –Credential/ Techno commercial Bid and Part II - Price Bid) Reverse Auction System for "**Supply, Installation, Testing, Commissioning, Integration with Existing VSS Infra, Operation and Maintenance of IP based Video Surveillance System (VSS) at Railway Stations under Northern Region of RailTel for and on behalf of Indian Railways from Nirbhaya/Railway Fund**".

The details are as under: -

a)	Closing date for Submission of E-Bids	Up to 15:00 hrs of 14.07.2023 (Online)
b)	Date of opening of E-Bids	Up to 15:30 hrs. of 14.07.2023 (Online)
c)	Earnest Money Deposit (EMD) #	**Rs 55,58,900***
d)	Cost of Tender Document #	Rs.11,800/- (Incl. GST)
e)	Place of Opening of Tender	**RailTel Corporation of India Limited 6th Floor, IIIrd Block, Delhi Technology Park, Shastri Park, New Delhi-110053**
*Please refer clause 4.A.22, Chapter-4 (Section-I) for details.		

#all inclusive

Note: Tender Notice and link for Tender Document are available on RailTel's website, CPP portal and e-Tendering portal https://ireps.gov.in for download. Tender notice will also be published in newspaper. For online bid submission the bidder will have to necessarily download an official online copy of the tender documents from IREPS-portal. All future Information viz. corrigendum/addendum/ amendments etc. for this Tender shall be posted on the RailTel's website, CPP portal and e-Tendering Portal only. Printed copy of Tender document will not be sold from RailTel office. Bid will be submitted online on IREPS portal only.

The bidder shall bear all costs associated with the preparation, submission/participation in the bid. RailTel in no way will be responsible or liable for these costs regardless of the conduct or outcome of the bidding process.

This tender is covered under Integrity Pact Program of RailTel and bidders are required to sign the Integrity Pact and submit the same to RailTel along with the bids. Tender received without signed copy of the Integrity Pact document shall be liable to be **REJECTED**.

(Vijaylaxmi Kaushik)
Executive Director/Northern Region
For and on behalf of
RailTel Corporation of India Ltd.

खुली ई-निविदा सूचना

ई-निविदासं. रेलटेल/ **टेंडर / ओटी / एनआर/एनटीपी/2023-24/वीएसएस/04** दिनांक:23.**06.2023**

रेलटेल कॉर्पोरेशन ऑफ इंडिया लि.(रेलटेल) ने "**भारतीय रेलों के लिए रेलटेल के उत्तरी क्षेत्रों केअंतर्गतआने वालें रेलवे स्टेशनों पर निर्भया/ रेलवे फंड से आईपीआधारित वीडियो निगरानी प्रणाली (वीएसएस) की आपूर्ति, स्थापना, परीक्षण, कमीशनिंगऔर मौजूदा वीएसएस इन्फ्रा के साथ इंटीग्रेशन**" के लिए सिंगल स्टेज टू पैकेट (पार्ट-I –क्रिडेंशियल /टैक्नो कॉमर्शियल बिड और पार्ट-।।प्राइस बिड) रिवर्स ऑक्शन सहित सिस्टम के लिए ई-निविदाएं आमंत्रित करती है।

विवरण इस प्रकार हैं: -

क)	ई-बोलियां जमा करने की अंतिम तिथि	दि. 14.07.2023 को15:00बजे तक (ऑनलाइन)
ख)	ई-बोलियां खोलने की तिथि	दि. 14.07.2023 को15:30बजे तक (ऑनलाइन)
ग)	बयाना धन जमा (ईएमडी) #	Rs 55,58,900*
घ)	निविदा प्रलेख की लागत#	Rs. 11,800/- (कर सहित)
ड़)	निविदा खोलने का स्थान	रेलटेल कॉर्पोरेशन ऑफ इंडिया लिमिटेड छठी मंजिल, तीसरा ब्लॉक, दिल्ली टेक्नोलॉजी पार्क, शास्त्री पार्क, नई दिल्ली-110053
* कृपया विवरण के लिए खंड 4.क.22, अध्याय-4 देखें।		

#सभी समावेशी

नोट: निविदा प्रलेख के निमित्त निविदा सूचना और लिंक डाउनलोड के लिए रेलटेल की वेबसाइट, सीपीपी पोर्टल और ई-टेंडरिंग पोर्टल https://ireps.gov.in पर उपलब्ध हैं। निविदा सूचना समाचार-पत्र में भी प्रकाशित की जाएगी। ऑनलाइन बोली जमाकर ने के लिए बोली लगाने वाले को अनिवार्य रूप से IREPS पोर्टल से निविदा प्रलेखकी आधिकारिक ऑनलाइन कॉपी डाउनलोड करनी होगी। सभी भविष्य की जानकारी अर्थात् इस निविदा में शुद्धि-पत्र / जोड़ने / संशोधन आदि केवल रेलटेल की वेबसाइट, सीपीपी पोर्टल और ई-टेंडरिंग पोर्टल पर पोस्ट की जाएगी। रेलटेल कार्यालय से निविदा प्रलेख की मुद्रित प्रति नहीं बेची जाएगी। बोली केवल IREPS पर ऑनलाइन प्रस्तुत की जाएगी।

बोलीदाता बोली में भाग लेने / भागीदारी की तैयारी, से जुड़ी सभी लागतों को वहन करेगा। बोली प्रक्रिया के संचालन या परिणाम की परवाह किए बिना किसी भी तरह से रेलटेल इन लागतों के लिए जिम्मेदार या उत्तर दायी नहीं होगा।

यह निविदा रेलटेल की इंटीग्रिटी पैक्ट प्रोग्राम के तहत कवर की गई है और बोली दाताओं को इंटीग्रिटी पैक्ट पर हस्ताक्षर करने और बोलियों के साथ ही रेलटेल को प्रस्तुत करना अपेक्षित है। इंटीग्रिटी पैक्ट प्रलेख की हस्ताक्षरित प्रति के बिना प्राप्त होने वाली निविदा को **अस्वीकार** कर दिया जाएगा।

(विजयलक्ष्मी कौशिक)
कार्यकारी निदेशक/उत्तरी क्षेत्र
रेलटेल कॉर्पोरेशन ऑफ इंडिया लि.
के लिए और की ओर से

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SECTION-I
CHAPTER-1

OFFER LETTER

RailTel Corporation of India Limited
6th Floor, IIIrd Block,
Delhi Technology Park, Shastri Park,
New Delhi-110053

1. I/We _____ have read the various conditions detailed in tender documents attached here to and hereby agree to ABIDE BY THE SAID CONDITIONS. I/We also agree to keep this offer open for acceptance for a period of 120 days from the date of submission and in default thereof, I/We will be liable for forfeiture of my/our Earnest Money. I/We offer to do the work at the rates quoted in the attached schedules and hereby bind myself/ourselves to complete the work of subject tender within timeline mentioned in Clause no. 4.A.4 of Chapter-4. I/We also hereby agree to abide by the Various Conditions of Tender/Contract and to carry out the supplies/services according to the Specifications for items/materials and works laid down by the RailTel.

2. A sum of **Rs. 53,45,600/- submitted online on IREPS portal** is herewith forwarded as "Earnest Money". The full value of Earnest Money shall stand forfeited without prejudice to any other rights or remedies if,

I/We withdraw or modify the offer within validity period or do not deposit the PBG (Performance Bank Guarantee) as mentioned in Clause 4.A.6 after issue of LOA,

or

I/We do not execute the contract agreement within 15 days after receipt of notice issued by the RailTel that such documents are ready,

or

I/We do not commence the work within 15 days after receipt of orders to that effect.

Until a formal agreement is prepared and executed the acceptance of this tender document shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the "Letter of Acceptance" of my/our offer for this work.

SIGNATURE OF CONTRACTOR (S)

Date

SIGNATURE OF WITNESS CONTRACTOR (S) ADDRESS

1.

2

SECTION-I
CHAPTER- 2

SCHEDULE OF REQUIREMENT (SOR)

SN	SCHEDULE –'A' (SUPPLY)	Unit	Qty.	Unit Rate (excl. GST)	Unit Rate (incl. GST)	Total Cost (excl. GST)	Make & Model
A	**IP cameras at stations**						
1	Supply of **Full HD Fixed dome type IP colour camera** along with all accessories required including bracket/fixture/Angle for fixing of camera for installation purposes as defined in chapter 8.	No.	73				
2	Supply of **Full HD Bullet type IP colour camera** along with all accessories required including bracket/fixture/Angle for fixing of camera for installation purposes as defined in chapter 8.	No	1515				
3	Supply of **Full HD P/T/Z type IP colour camera** along with all accessories required including bracket/fixture/Angle for fixing of camera for installation purposes as defined in chapter 8.	No	364				
4	Supply of **4K UHD Bullet type IP colour camera** along with all accessories required including bracket/fixture/Angle for fixing of camera for installation purposes as defined in chapter 8.	No.	343				
B	**IT infrastructure, applications and associated items at RPF/GRP Thana/Post**						
5.a	Supply of Server/Workstation/NVR for Video Management, Video Recording with redundancy along with all accessories required for installation purposes as defined in chapter 8.	Set	151				
5.b	Supply of Server/Workstation for Video Analytics with redundancy along with all accessories required for installation purposes as defined in chapter 8.	Set	151				
6	Supply of Server/Workstation for Facial Recognition System with redundancy along with all accessories required for installation purposes as defined in chapter 8.	Set	151				

7	Supply of Storage System at RPF Thana/Post sites for recording of cameras from cluster of stations along with all accessories required for installation purposes as defined in chapter 8. **Note: Bidder are required to quote price for complete storage as per Clause no. 8.1.3.3 of Chapter-8 (Section-I) as a Lot for all type of Cameras mentioned in Annexure-VIII of Chapter-7 (Section-I).**	Lot	1				
8	Supply of Software (per camera basis) for Video Management and Video recording (including Software for Remote Viewing on Web and Mobile app) as defined in chapter 8.	No.	18624				
9	Supply of Software (per camera basis) for Video Analytic as defined in chapter 8.	No.	3995				
10	Supply of Software (per camera basis) for Facial Recognition System as defined in chapter 8.	No.	695				
11	Supply of PC Workstation for viewing, monitoring and system management including 4K UHD 24" LED Monitor, all required licensed software, spike buster 500VA UPS with backup for 30 minutes power failure without interruption, and all other required accessories as defined in chapter 8	Set	51				
12	Supply of Graphical User Interface based Client Software (per workstation basis) for workstation as defined in chapter 8.	No.	51				
13	Supply of Digital Key-Board (Joystick) compatible with P/T/Z cameras along with all accessories required for installation purposes as defined in clause 8.5 of chapter 8.	No.	164				
14	Supply of Large Format Display Monitor (55" or Higher) along with all accessories required for installation purposes as defined in chapter 8.	No.	96				
15	Supply of Type-III switches with (SFP+ 40 Km) and all accessories required for installation purposes as defined in chapter 8	No.	230				

16	Supply of 2x10KVA UPS connected in parallel redundant mode in separate chassis along with all accessories required for installation purposes as defined in chapter 8	No.	65				
17	Supply of 19" 42U racks along with all accessories like electrical fitting (power strip, MCB etc.), Fantray, Patch Panel etc. required for installation of the equipment as per specification defined in chapter 8.	No.	52				
C	**IT infrastructure, applications and associated items at RailTel datacenter(s)**						
18	Supply of VSS Server/workstation Hardware for Video Management (including streaming server) as defined in chapter 8 and all accessories required for installation purposes.	Set	2				
19	Supply of VSS Server/Workstation Hardware Facial Recognition database system as defined in chapter 8.	Set	2				
20	Supply of Storage System of 240 TB capacity for recording of alerts, alarms of cameras of analytics and other applications requirement as defined in chapter 8.	Lot	2				
21	Supply of Type-III switches (With SFP+ 10 Km) as Top of the Rack Switch in (1+1) along with all accessories required for installation purposes as defined in chapter 8	No.	4				
22	Supply of **EMS System** (Hardware and Software) in RailTel Datacenters (Gurugram and Secunderabad) as per specification defined in chapter 8	Lot	1				
D	**IT infrastructure and associated items at Railway Stations**						
23	Supply of **Type-I Switches** along with optics (SFP-BX) and other installation accessories as defined in chapter-8	No.	533				
24	Supply of **Type-II switches** along with optics (SFP-BX (10KM) Single Fiber, SFP+ (10KM/40KM)) and other installation accessories as defined in chapter-8	No.	217				

25	Supply of **24 Fibre FMS (SC-APC Type)** along with all installation accessories like patch chord, pigtails etc. as defined in chapter 8	No.	463				
26	Supply of **12 Fibre FMS (SC-APC Type)** along with all installation accessories like patch chord, pigtails etc. as defined in chapter 8	No.	904				
27	Supply of **19" 9U racks** along with all accessories like power strip, MCB, Fantray, Patch Panel etc.as defined in chapter 8	No.	1477				
28	Supply of Online UPS system, single phase of rating 1KVA UPS along with Battery suitable for 1hr back-up and other installation accessories as defined in chapter 8	No.	260				
29	Supply of Online UPS system, single phase of rating 2KVA UPS along with Battery suitable for 1hr back-up and other installation accessories as defined in chapter 8	No.	220				
30	Supply of MFCE Earth with multiple pits complete with all accessories (less than 1 Ohm) as defined in Section-II, Chapter-5	No.	104				
31	Supply of ACDB for AC distribution Box with Lock and key arrangements and ISI mark MCBs of various ratings as per site requirements for installation at sites	No.	151				
32	Supply of Panic Switch (IK10 and IP66 rated) with Mushroom Cap Push- Button in Red Color, DPDT contacts 2Amps 24 VDC, Stainless Steel Face Plate with GI Junction Box of suitable size and flasher cum strobe of min. 100dB including all accessories required for installation on platforms at stations	No.	778				
E	**Supply/Blowing/Pulling/Laying/Fixing/Clamping of various Cables/PVC pipe/GI pipe/HDPE at Stations as per specification as defined in chapter 8)**						
33	Supply of STP CAT-6 Cable as defined in Chapter-8	Mtrs	58503				
34	Supply of 12 Core Aerial Drop Optic Fiber Cable as per TEC specification mentioned in Chapter-8.	Mtrs	192996				
35	Supply of PVC insulated 3 core 4 Sq. mm (1.1 KV grade) outdoor strengthened Copper Cable for UPS supply distribution (as per BIS/ISI standards) along with all accessories.	Mtrs	164507				

36	Supply of 32mm PVC flexible pipe	Mtrs	32322				
37	Supply of 32mm PVC conduit pipe (ISI mark)	Mtrs	518849				
38	Supply of 40mm dia. HDPE pipe as defined in Chapter-8	Mtrs	7270				
39	Supply of GI pipe (50 mm Dia – 3.65 mm thick) as per IS-1239, Pt-1, medium grade	Mtrs	1370				
40	Supply of Media Convertor Pair as defined in chapter 8.	Pair	44				
41	Spares @ 8% of supply against item 1, 2,3,4,15,21,23 and 24 as defined in clause 3.D.9 in chapter 3.	Lot	1				
42	For Northern Region Only-Supply of Hardware and Software for Command Control Centre as defined in chapter 8.						
42.A	Supply of Server/Workstation for Command Control Centre with (N:1) redundancy at Data Centre (DC-DR) along with all accessories required for installation pur-poses defined in chapter8.	Lot	1				
42.B	Supply of Software for Command and Control Centre at Data Centre (DC-DR) along with required license and integration with VMS, VA & FRS applications of Northern Region, Eastern Region, Western Region and Southern Region as defined in chapter 8.	Lot	1				
42.C	Supply of IT Infrastructure at Command Control Centre as defined in Clause 8.3.7.1 of chapter 8.	Lot	1				
	Sub Total of Schedule A (Supply) – In Figures						
	Sub Total of Schedule A (Supply) – In Words						
	SCHEDULE –'B' (SERVICES)						

A	**IP cameras at stations**						
1	Installation, Testing and commissioning of **Full HD Fixed dome type IP colour camera**	No.	73				
2	Installation, Testing and commissioning **Full HD Bullet type IP colour camera**	No	1515				
3	Installation, Testing and commissioning of **Full HD P/T/Z type IP colour camera**	No	364				
4	Installation, Testing and commissioning of **4K UHD Bullettype IP colour camera**	No.	343				
B	**IT infrastructure, applications and associated items at RPF/GRP Thana/Post**						
5.a	Installation, testing and commissioning of Server/Workstation/NVR for Video Management and Video Recording.	Set	151				
5.b	Installation, testing and commissioning of Server/Workstation for Video Analytics	Set	151				
6	Installation, testing and commissioning of Server/Workstation for Facial Recognition System	Set	151				
7	Installation, Testing and commissioning of Storage System at RPF/GRP Thana/Post sites for recording of cameras from cluster of stations.	Lot	1				
8	Installation, Testing and commissioning of Software (per camera basis) for Video Management and Video recording.	No.	18624				
9	Installation, Testing and commissioning of Software (per camera basis) for Video Analytic.	No.	3995				
10	Installation, Testing and commissioning of Software (per camera basis) for Facial Recognition System.	No.	695				
11	Installation, Testing and commissioning of PC Workstation for viewing, monitoring and system management including 24" Monitor, all required licensed software, spike buster 500VA UPS with backup for 30 minutes power failure without interruption.	Set	51				
12	Installation, Testing and commissioning of Graphical User Inter- face based Client Software (per workstation basis) for workstation.	No.	51				
13	Installation, Testing and commissioning of Digital Key-Board (Joystick) compatible with P/T/Z cameras along with all accessories required for installation purposes as defined in chapter 8.	No.	164				
14	Installation, Testing and commissioning of Large Format Display Monitor (55" or Higher)	No.	96				

15	Installation, Testing and commissioning of Type-III switches	No.	230				
16	Installation, Testing and commissioning of 2x10KVA UPS connected in parallel redundant mode in separate chassis	No.	65				
17	Installation, Testing and commissioning of 19" 42U racks along with all accessories like electrical fitting (power strip, MCB etc.), Fantray, Patch Panel etc. required for installation of the equipment	No.	52				
C	**IT infrastructure, applications and associated items at RailTel datacenter(s)**						
18	Installation, Testing and commissioning of VSS Server/workstation Hardware (including streaming server) for Video Management.	Set	2				
19	Installation, Testing and commissioning of VSS Server/workstation Hardware Facial Recognition database system.	Set	2				
20	Installation, Testing and commissioning of Storage System of 240 TB capacity for recording of alerts, alarms of cameras of analytics and other applications requirement	Lot	2				
21	Installation, Testing and commissioning of Type-III switches as Top of the Rack Switch in (1+1)	No.	4				
22	Installation, Testing and commissioning of EMS System (Hardware and Software) in RailTel Datacenters (Gurugram and Secunderabad)	Lot	1				
D	**IT infrastructure and associated items at Railway Stations**						
23	Installation, Testing and commissioning of **Type-I Switches** with optics (SFP-BX)	No.	533				
24	Installation, Testing and commissioning of **Type-II switches** with optics (SFP-BX (10KM) Single Fiber, SFP+ (10KM) and SFP+ (40 KM)	No.	217				
25	Installation, Testing and commissioning of **24 Fibre FMS (SC-APC Type)**	No.	463				
26	Installation, Testing and commissioning of **12 Fibre FMS (SC-APC Type)**	No.	904				
27	Installation, Testing and commissioning of **19" 9U racks**	No.	1477				
28	Installation, Testing and commissioning of Online UPS system, single phase of rating 1KVA UPS along with Battery suitable for 1hr back-up	No.	260				
29	Installation, Testing and commissioning of Online UPS system, single phase of rating 2KVA UPS along with Battery suitable for 1hr back-up	No.	220				
30	Installation, Testing and commissioning of MFCE Earth with multiple pits complete with all accessories. (less than 1 Ohm)	No.	104				

31	Installation, Testing and commissioning of ACDB for AC distribution Box with Lock and key arrangements and ISI mark MCBs of various ratings	No.	151				
32	Installation, Testing and commissioning of Panic Switch	No.	778				
E	**Blowing/Pulling/Laying/Fixining/Clamping of various Cables/PVC pipe/GI pipe/HDPE at Stations as per specification as defined in chapter 8)**						
33	STP CAT-6	Mtrs	58503				
34	12 Core Aerial Drop Optic Fiber Cable as per TEC specification mentioned in Chapter-8.	Mtrs	192996				
35	PVC insulated 3 core 4 Sq. mm (1.1 KV grade) outdoor strengthened Copper Cable for UPS supply distribution (as per BIS/ISI standards	Mtrs	164507				
36	32mm PVC flexible pipe	Mtrs	32322				
37	32mm PVC conduit pipe (ISI mark)	Mtrs	518849				
38	40mm dia. HDPE pipe	Mtrs	7270				
39	GI pipe	Mtrs	1370				
40	Media Convertor Pair as defined in chapter 8.	Pair	44				
41	Training of personnel over and above the on-site training, during the installation, maintenance and supervision period as detailed in the tender document.	Man-weeks	424				
42	For Northern Region Only-Supply of Hardware and Software for Command Control Centre as defined in chapter 8.						
42.A	Installation, testing and commissioning of Server/Workstation for Command Control Centre with redundancy at Data Centre (DC-DR) along with all accessories required for installation purposes defined in chapter8.	Lot	1				
42.B	Installation, testing and commissioning of Software for Command and Control Centre at Data Centre (DC-DR) along with required license and integration with VMS, VA & FRS applications of Northern Region, Eastern Region, Western Region and Southern Region as defined in chapter 8.	Lot	1				
42.C	Installation, testing and commissioning of IT Infrastructure at Command Control Centre as defined in Clause 8.3.7.1 of chapter 8.	Lot	1				

	Sub Total of Schedule B (Services) – In Figures						
	Sub Total of Schedule B (Services) – In Words						
	Total (A+B)						
	SCHEDULE –'C' (AMC)						
1	Annual Maintenance Charges (AMC) after warranty period of overall cost (excluding Taxes & Duties) of supply portion of Schedule 'A' as detailed in clause 4.A.3 of Chapter-4A of Tender Document.	Years	**5**				
	Sub Total of Schedule C (AMC) – In Figures						
	Sub Total of Schedule C (AMC) – In Words						
	Total (A+B+C) in Figures						
	Total (A+B+C) in Words						

SCHEDULE –'D' NS items (Fixed rate)					
Sl No	**Description**	**Unit**	**Unit Rate (excld GST)**	**GST Rate (%)**	**Unit Rate (incld GST)**
1	Supply and fixing of PVC trough of 50X50 mm with cover of 2mm thick and length 2m each as per the specifications in Section-II, Chapter-7 of Tender document.	Nos.	264	18	311.52
2	Breaking of pucca road/CC, PF Cutting, Laying of OFC in Trenches and through all types of protections viz HDPE/GI/RCC Pipes etc. as the case may be including surface restoration as per the specifications in Section-II, Chapter-7 of Tender document.	Meter	322	18	379.96
3	Trenching and Laying of HDPE Duct in normal soil and blowing of OFC Cable as per the specifications in Section-II, Chapter-7 of Tender document.	Meter	128	18	151.04
4	Track/road crossing through HDD mecthod as per the specifications in Section-II, Chapter-7 of Tender document	Meter	765	18	902.70
5	Supply and installation of RCC route markers including painting as per the specifications in Section-II, Chapter-7 of Tender document.	Nos.	369	18	435.42

6	Splicing / Termination of 24 F OFC in FDMS (Splicing /termination of two nos of 12F splicing will be consider as 1 nos of 24F Splicing)	Nos.	4349.51	18	5132.42
7	Supply & erection of G.I pipe post (100 mm dia 4.5mm thickness) lSl 239 part I grade) with base arrangement to a height of 4.3 metres including the foundation as per the specifications in Section-II, Chapter-7 of Tender document.	Nos.	4185	18	4938.30

Note:1

1. Bidders need not to be quote for Schedule-D, as the rate is fixed by RailTel.

2. If needed, separate Work Order will be issued by RailTel for execution of some of the items against 'Schedule-D' as per rates indicated by RailTel. Bidder should Confirm your acceptance of the same by signing on Schedule-'D'. For execution of items against Schedule-D, no minimum work can be indicated, however, the maximum amount against Schedule-D shall normally be kept at 10% of tendered value.

3. For Schedule-D rates have been indicated by RailTel. RailTel shall not accept any liability for the same after award and acceptance of contract.

4. In the event of failure of Contractor to complete the work within 90 days from the date of issue of work order against Schedule-D, Penalty will be imposed as per rule and the work will be entrusted to outside agency, implication if any, arising due to execution of the work by outside agency will have to be borne by the CONTRACTOR i.e.no claim for compensation will be entertained.

5. Terms of Payment: For POs issued against Schedule-D is at par with Cl.4.A.5.2 of service payments.

Note	
I(a)	Before quoting please see relevant para of Chapter 8 of Technical Specifications.
I(b)	Unit rate quoted against SOR above should be CIP destination inclusive of basic rate, including GST, freight, insurance, Inspection/Audit charges (if applicable i.e. for RDSO, CERT-IN empanelled Government agency etc.) and any other charges or cost quoted by the tenderer. The materials as per SOR are required to be delivered within the delivery period as indicated in Bid Data Sheet (BDS, Chapter 5, Section-I) to the sites as mentioned in tender or decided by the Regional GM/ED or authorized Nominated Executive.
II	**SOR Item no. 1 under Schedule –'C':** Bidder shall be paid @ 3.5% (minimum) of overall cost (excluding Taxes and Duties) of supply portion of Schedule (A) per annum towards Long Term Maintenance Support after completion of warranty period, to undertake maintenance, repairs and replacements of all type of equipment/module/card/assembly/subassembly and update/upgrade of software released during this period and /or which may fail in the system after the warranty. For more details please refer to Clause no. 4.A.3 Chapter-4 (Section-I) of this document. **Evaluation will be done on Total cost (Schedule 'A', Schedule 'B' and Schedule 'C') of SOR above.**

III	Since, RailTel has provided LAN infra at railway stations, therefore, the existing available infrastructure may be utilized by the bidder for implementation of VSS system and such items used may not be considered as a part of Supply orders. Decision regarding utilization of LAN infra taken by RailTel will be final and binding.
IV	**In case of cameras, different OEM are permitted only for different sensor size.** Bidder has to offer only single make and model against each SOR Item other than Cameras. **Offers without particulars of Make & Model or multiple OEMs of same item are liable to REJECTED.** **Note:** Digital Keyboard shall be of same make as PTZ Camera (as per Clause no. 8.4 of RDSO specifications, version-6).
V	Bidder must validate all the quantities quoted in their technical solution proposed supported by calculations, datasheets and design documents as same would be required for the technical evaluation of the offer. Bidder would be responsible for ensuring the complete system is operational and meeting the requirements as mentioned in the tender document. However, if at any stage during contract validity period {as mentioned in clause 3.D.11 of Chapter-3 (Section-I)}, it is found that the system performance is not compliant with the functional requirements and specifications given in the tender document, the bidder shall be liable/obliged to supply additional hardware/systems required to meet the functional requirements and specifications mentioned in the tender document at no additional cost to the purchaser. RailTel decision in this context will be final.
VI	The Bill of Material (BOM) will be prepared for each item of Schedule of Requirement as per draft Format (I & II) given below. This Bill of Material will be called "Bill of Material for Schedule of Requirement" and will be prepared according to Note given under SOR. **<u>Technical Bid</u> -The Un-priced copy (with make & model) of the SOR along with the Breakup of individual itemized BOM (as per Format given below) should be submitted with the Technical Bid for evaluation. The above document should not include any prices, if found so, the bid may liable to be REJECTED.** **<u>Financial Bid</u> - Bidder(s) shall upload the complete SOR along with the price Breakup of individual itemized BOM for EACH ITEM (as per Format given below) along with per TB rate for storage along with the Financial bid. The Financial Bid submitted without itemized priced BOM may liable to be REJECTED.** **Note:** i. Detailed Un-Priced/Priced BOM is required to be submitted by the Bidders for all the Items which can be divided into logical units and which may be required by RailTel after installation phase. Some of the parts of the SOR items may be required by RailTel for Augmentation of VSS network. For SOR Items, which can't be divided into logical separate units for preparing detailed priced/un-priced BOM, only SOR price may be mentioned. ii. Bidder should provide unit rate for each Server/Workstation/NVR for VMS, VA, FRS, CCC & EMS in detailed BOM. iii. For VMS, VA, FRS, CCC & EMS applications, the bidder should provide unit license rate in detailed BOM. Bidder should also provide rates for bulk licenses. iv. The Bidder should provide unit Rate for additional server/workstation (along with additional necessary hardware & software if any) for face image data base of FRS software (for database of size 1 Lakh, 5 Lakh and 10 Lakh) at RPF Thana/Post & Datacenters along with necessary licenses in detailed BOM. v. For CCC application, the bidder should provide Unit Rate for integration of various

	VA, VMS& FRS applications in detailed BOM. API/SDK of these application will be provided by RailTel/Railway as per RDSO specification version-6 or latest.
VII	The bidder is required to supply the EMS tool including all hardware and software in a centralized set-up in the RailTel Datacenters (Gurugram and Secunderabad) in DC and DR configuration. The EMS monitoring services for VSS infra (including existing VSS infra) at all stations/RPF Chowki/Thana under the region will be provided from the centralized set-up through the clients installed at all the Stations/RPF Chowki/Thana.
VIII	Along with the server/workstation, bidder is required to propose necessary hardware/software required for remote management of servers/workstations like IPMI Port with KVM over LAN or equivalent. Remote management functionalities includes remote OS/Software updation/installation, reboot, shutdown etc.
IX	RailTel will provide Rack space at Gurugram and Secunderabad Datacenters for hosting VSS infrastructure as defined in the tender. Bidders are requested to optimize the number of racks requirement in the datacenters.
X	The supply of items shall be done in phased manner strictly in line with the progress of the work at their controlling RPF Thana/Post. Successful bidder is required to provide project progress and planning of supply of related material in consultation with the RailTel. Bidder shall submit the Supply and Inspection plan along with destination(s) for delivery to RailTel and after approval of RGM/ED. The bidder will arrange for supply and inspection of material as per approved plan and payment of items in Schedule-A shall be released as per supply plan.
XI	VMS Application should be based on the open software platform and industry standards, a system that can connect and integrate with other VMS Applications using Software Development Kit (SDK) which offers easy to use Application Programming Interface (API) and support most commonly used programming languages. VMS application should have open standard architecture (no proprietary database) and interoperability with other VMS applications to meet the desired functional requirement of the project (Form-8, Point-C of Chapter-6).
XII	Bidder must ensure network security of the VSS system at stations under the scope of work (including standard policies, processes & practices adopted by Industry to prevent, detect & monitor unauthorized access, misuse and modification of VSS infrastructure). Bidder to ensure that proposed system is protected from malicious attacks, malware etc. during complete project duration and suitable measures have been taken in the system. Declaration should be given as per performa given in Form-8, Point-D of Chapter-6 (Section-I).
XIII (a)	The Bidders are required to meet all eligibility criteria mentioned in this tender document and financial bid of eligible bidders will be opened. eRA will be conducted among the eligible bidders and LOA will be issued to the lowest bid after eRA.
XIII (b)	**Proof of Concept (POC)** – All Bidders offering VSS solutions different from STACK-1 to 6 (as mentioned in Clause 4.A.47.1) are required to conduct POC immediately after bid opening time (as mentioned in BDS) as per Clause 4.A.47 of Chapter-4A (Section-I). Please note that in case of any deviation in terms of Make/Model from the STACK, bidder is required to conduct complete POC. Bidder are also required to submit details of Hardware/Software offered for POC as per Table-2 (Chapter-7, Annexure-VII, Point-3) with-in 7 working days (except Saturday, Sunday and any Gazetted Holidays). Bidder is also required to share date of readiness for POC testing. After receiving details, contact details of RailTel or its authorized representative will be shared

	for conducting the POC through email. Proof of Concept (POC) for checking the Functional requirement of bidder's offered VSS solution will be conducted as per Clause 4.A.47 of Chapter-4A (Section-I) at the location approved by RailTel. Details of Functional requirement are mentioned in Annexure-VII of Chapter-7 (Section-I). POC should be completed within 30 Days from the date of opening of bid. In case, bidder fails to demonstrate all the parameters of POC successfully in first attempt, bidder shall demonstrate remaining parameters of POC within 7 days of first attempt. Please note that maximum 2 attempts will be given to demonstrate all the functional parameters during POC stage as mentioned in Annexure-VII of Chapter-7. In case bidder fails either to arrange POC or to meet any functional requirement given in Annexure-VII of Chapter-7 within given timeline, RailTel reserves the right to REJECT their technical bid. **EXEMPTION FOR POC:** Bidders who are offering their VSS solution (i.e. same make and model of Hardware and Software) as per one of the complete **STACK** (from Stack-1 to Stack-6) detailed in Clause 4.A.47.1 are **EXEMPTED** for conducting the POC.
XIII (c)	The selected bidder after issue of LOA will start roll-out of the VSS project as per the scope of Work. After completing installation at initial stations, the bidder shall ensure Security Audit of Bidder's VSS solution at one of the selected station (as selected by RailTel) from STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-IN empanelled Information Security Auditing Organization for arranging security audit as per RDSO specification version-6 or latest. PAC for first cluster station of RPF Thana/Chowki shall be issued after successful compliance of all critical points (related to network security) raised by the testing agency. Critical points related to network security and non-critical points will be as per the advice of the testing agency. All non-critical points raised by testing agency shall be complied by the bidder before issuance of Provisional Acceptance Certificate (PAC) for IT setup at RailTel Datacenters at Gurugram/Secunderabad. Before issuance of FAC, sample test at a station randomly selected by STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-In empanelled Information Security Auditing Organization to be performed. Any deficiency pointed out by the auditing agency shall be attended by the selected bidder without any additional cost to RailTel. For any deficiency pointed by auditing agency in the existing VSS infra, corrective action will be taken by RailTel. However, any deficiency pointed out by the auditing agency due to integration with existing VSS infra shall be attended by the selected bidder without any additional cost to RailTel. Note: i. Interoperability certificate (as per clause 3.2 of RDSO specification) and Security Verification Certification (Form no. 8, Point-C of Chapter-6) required as per RDSO specification no. RDSO/SPN/TC/65/2021 version 6, for various Hardwares/Softwares are required to be submitted at the time of supply while offered for Inspection. ii. In case of failure in arranging Interoperatibility Certificate or Security Verification certificate for offered Hardware/Software at the time of supply, the bidder shall arrange

<table>
<tr><td></td><td>alternate Hardware/Software as per RDSO specification no. RDSO/SPN/TC/65/2021 version 6 without any additional cost to RailTel.</td></tr>
<tr><td>XIV</td><td>Inspection of Item no. 1 to 4, 5(a), 5(b), 6 to 15, 18 to 21, 23, 24, 41, 42(A) & 42(B) will be done by RDSO as per RDSO specification. All remaining items will be inspected by RailTel authorized representative(s).</td></tr>
<tr><td>XV</td><td>Non-conformities between Figures and Words
Sometimes, non-conformities/errors are also observed in responsive tenders between the quoted prices in figures and in words. This situation normally does not arise in case of e-Procurement. This should be taken care of in the manner indicated below:
i) If, in the price structure quoted for the required goods, there is discrepancy between the unit price and total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly;
ii) If there is an error in a total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail and the total shall be corrected; and
iii) If there is a discrepancy between words and figures, the amount in words shall prevail;</td></tr>
<tr><td>XVI</td><td>All required documents on stamp paper need to be submitted by the successful bidder before issuance of LOA</td></tr>
<tr><td>XVII</td><td>Bidders are required to provide Storage Calculation Sheet for SOR item no. A7 for Cameras as mentioned in Annexure-VI of Chapter-7 (Section-I). Storage Calculation should include storage requirement for each 4K UHD cameras and Full HD Cameras.</td></tr>
<tr><td>XVIII</td><td>RailTel reserves the right to use/shift licenses for VMS, VA & FRS software procured under this Tender to existing/additional Cameras at same location or at different location as per Field requirement without any additional cost to RailTel during entire project duration (i.e. upto AMC).</td></tr>
<tr><td>XIX</td><td>All forms pertaining to OEMs as mentioned in Chapter-6 are to be submitted by OEMs of Hardware and Software mentioned in Eligibility Clause 4.A.14.2.</td></tr>
<tr><td>XX</td><td>Bidder is required to submit the Server calculation sheet for VMS Software, FRS Software & VA Software, for required number of cameras, duly vetted by their respective OEMs as per Annexure-V of Chapter-7.</td></tr>
<tr><td>XXI</td><td>Spare item against SOR No. 41 of Schedule A “ Supply” shall be as under:
<table>
<tr><th>SN</th><th>SN of Tender SOR</th><th>Item Description</th><th>Unit</th><th>Spare "1 Lot" ties</th></tr>
<tr><td>1</td><td>1</td><td>Supply of Full HD Fixed dome type IP colour camera along with all accessories required including bracket/fixture/Angle for fixing of camera for installation purposes as defined in chapter 8.</td><td>No.</td><td>6</td></tr>
<tr><td>2</td><td>2</td><td>Supply of Full HD Bullet type IP colour camera along with all accessories required including bracket/fixture/Angle for fixing of camera for installation purposes as defined in chapter 8.</td><td>No.</td><td>122</td></tr>
<tr><td>3</td><td>3</td><td>Supply of Full HD P/T/Z type IP colour camera along with all accessories required including bracket/fixture/Angle for fixing of camera for installation purposes as defined in chapter 8.</td><td>No.</td><td>30</td></tr>
<tr><td>4</td><td>4</td><td>Supply of 4K UHD Bullet type IP colour camera along with all accessories required including bracket/fixture/Angle for fixing of camera for installation purposes as defined in chapter 8.</td><td>No.</td><td>28</td></tr>
</table></td></tr>
</table>

5	15	Supply of Type-III switches along with all accessories required for installation purposes as defined in chapter 8	No.	19	
6	21	Supply of Type-III switches as Top of the Rack Switch in (1+1) along with all accessories required for installation purposes as defined in chapter 8	No.	1	
7	23	Supply of **Type-I Switches** along with optics (SFP-BX) and other installation accessories as defined in chapter-8	No.	43	
8	24	Supply of **Type-II switches** along with optics (SFP-BX (10KM) Single Fiber, SFP+ (10KM/40KM)) and other installation accessories as defined in chapter-8	No.	18	
			To-tal	**267**	

Detailed Bill of Material (BOM) against each Unit SOR Supply Items (Section-A) (Format-I)

SOR Item No. XX (PC Workstation) – Qty. - 1 Number														
S N	**Items Descrip-tion**	**Make & Model No.**	**Total Qty**	**HSN Code**	**EX-Factory Price (Basic Unit Price exclusive of all levies and charges)**	**Pkg.& For-ward-ing Charg-es**		**Other Charges and Lev-ies**		**Freight & In-surance Charges**		**IGST/CGST/SGST/GST**		**Unit Rate (all inclusive) as quoted by the tenderer (6+8+10+12+14)**
						%	**Amt**	**%**	**Amt**	**%**	**Amt**	**%**	**Amt**	
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**14**
1	CPU	Dell & XXXX	1											
2	Display	LG &XX XX	1											
3	UPS	Lumi-nous& XXX	1											

Note – The item description in above format for BOM is indicative in Nature only and Bidder is required to submit the detailed BOM covering all important components of the supplied items.

Price Schedule for Service Items (Section-B) and AMC (Section-C) (Format-II)

SN	**Description**	**Total Qty**	**HSN Code**	**Basic Unit Price**	**Other Charg-es and Levies**		**IGST/CGST/SGST/GST**		**Price Per Unit (all inclusive)**
					%	**Amt**	**%**	**Amt**	**(5+7+9)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	SOR Item-1								

2	SOR Item-2								

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RailTel

SECTION-I
CHAPTER-3

A. SCOPE OF WORK AND TECHNICAL REQUIREMENTS

3.A.1 Introduction

3.A.1.1 About RailTel

RailTel Corporation of India Limited (RailTel), an ISO-9001:2000 organization is a Government of India undertaking under the Ministry of Railways. The Corporation was formed in Sept 2000 with the objectives to create nationwide Broadband Telecom and Multimedia Network in all parts of the country, to modernize Train Control Operation and Safety System of Indian Railways and to contribute to realization of goals and objective of national telecom policy 1999.

RailTel with strong nationwide presence is committed to bring cutting edge technology and offer innovative services to the Indian Telecom market. RailTel is in the forefront in providing nationwide Broadband Telecom & Multimedia Network in all parts of the country. With its Pan India high capacity network, RailTel is working towards creating a knowledge society at various fronts.

In addition, RailTel with its rich experience in the domain of Telecom and ICT field have been selected for implementation of various mission-mode Govt. projects in the telecom field including National Optical Fibre Network (NOFN), National Knowledge Network (NKN) and NE-I & NE-II under USOF/DoT etc.

In line with its commitment to bring next generation telecommunication technologies and services to people across the length and breadth of the country, RailTel is already providing high speed Wi-Fi network at train stations across the country.

3.A.1.2 Deleted

3.A.1.3 Project Background

3.A.1.3.1 Indian Railways (IR) is a governmental entity under the Ministry of Railways which operates India's National Railway System. It is run by the government as a public transport and manages the third-largest railway network in the world by size. Indian Railways is the lifeline of India and has an estimated daily ridership of approximately 2 crores.

In order to enhance security for passengers especially women & children at Railway stations which are major hubs of transportation, Indian Railways intended to install Internet Protocol (IP) based Video Surveillance System (VSS) at stations, that is, waiting halls, reservation counters, parking areas, main entrance/ exit, platforms, foot over bridges, booking offices etc. Indian Railways has also intended to provide CCTV at Coaches.

3.A.1.3.2 RailTel, a Miniratna PSU under Ministry of Railways, has been entrusted with the work of providing IP based VSS with video analytics and facial recognition sys-

tem at Railway Stations of A1, A, B, C, D & E Category. To have a better coverage and clearer image, four types of Full HD Cameras – Dome type (for indoor areas), Bullet type (for platforms), Pan Tilt Zoom type (for parking areas) and Ultra HD-4k cameras (for crucial locations) are being/to be provided. CCTV camera live feeds are displayed on multiple screens at the Railway Protection Force (RPF) control room for monitoring. Centralised monitoring through Command Control Centre (CCC) will also be provisioned for Pan India VSS Work.

3.A.1.3.3 RailTel has provided (or in process of implementation) VSS system at railway stations. Details of existing VSS Stations/RPF Thanas having existing VSS Infra is mentioned in BDS (Chapter-5, Section-I).This VSS infrastructure (existing) is required to be integrated with the proposed VSS infrastructure covered under the scope of present tender. List of stations covered under the scope of present tender is mentioned in BDS (Chapter-5, Section-I). It is pointed out that bidders are required to provide additional VSS infrastructure at railway stations (as per the scope of the Tender), where RailTel has already provided VSS infra. Indicative list of cameras required to be provided at each category of stations is mentioned in BDS (Chapter-5, Section-I). It includes the number of cameras already provided by RailTel under existing VSS infra. List of Divisional and Headquarter Control Offices covered under present Tender is mentioned in BDS (Chapter-5, Section-I).

RailTel has already provided the large format display, workstation and GUI (VMS) at some of the Divisional and Headquarter Offices, list of which is mentioned in Annexure-II of Chapter-7 (Section-I).

It is pointed out that the bidder is required to integrate these locations also with the proposed VSS infra under the scope of this tender.

3.A.1.3.4 D & E Category Stations and Coaches are also to be covered for VSS Work by RailTel on behalf of Indian Railways. The recording of the video feeds from CCTV cameras of these D & E category stations will be stored at their controlling RPF Thana/Posts which are presently covered in this tender. However, Hardware and Software required for D & E category stations at RPF Thana/Post and Datacentres have been included in the scope of this tender.

3.A.1.4 Scope of Work

3.A.1.4.1 IP based Video Surveillance System (VSS) at Railway Stations

The scope of work includes Supply, Installation, Testing, Commissioning, Integration (with existing VSS Infra), operation and maintenance of IP based Video Surveillance System at Railway Stations of Indian Railways. Number of stations covered under scope of this tender are mentioned in Bid Data Sheet (BDS) (Chapter-5, Section-I).

List of stations covered under the scope of present tender (including list of stations having existing VSS Infra) along with their controlling RPF Thanas/Chowki is mentioned in BDS (Chapter-5, Section-I).

Railway stations covered under the scope of work have been further clubbed together as a cluster according to location of their controlling RPF thana and in this

RFP such clusters have been referred as "RPF Thana/Chowki-wise cluster stations (including station where RPF/Thana/Chowki is located and stations being recorded at that particular RPF Thana/Chowki)".Details of controlling RPF Thana/Chowki is given in the above mentioned list.

The requirement mentioned in this Tender/RFP, BEING A TURN KEY BASIS PROJECT, calls for a complete working system and not components thereof. Therefore, the Bids must be complete with all equipment and required accessories along with necessary power systems including standard Un-Interrupted Power Supply for the entire equipment, all type of connectors, patch leads, mounting, reinforcement (cable/wire) and fitting hardware, plugs, sockets and any hardware/software, etc. as required for complete installation& commissioning of the System under this contract.

The complete project consists of following phases:

1. **Proof of Concept (POC)** – All Bidders shall conduct POC as mentioned in Clause 4.A.47 of Chapter-4A (Section-I).

2. **Supply, Installation, Commissioning and Integration** with Existing VSS Infrastructure.

3. **Maintenance & Warranty**- Maintenance supervision period as mentioned in clause 4.A.2.5 and warranty as mentioned in BDS (Chapter-5, Section-I).

4. AMC (5 years after completion of Warranty Period).

The detailed scope of work includes following:

i) Planning, Design, Supply, Installation, Testing, Commissioning, Integration with Existing VSS Infra, Operation and Maintenance of the IP based video surveillance system at various Railway Stations of A1, A, B and C category of Indian Railways. Details of Stations are given in BDS (Chapter-5, Section-I).Hardware and Software required for D & E category stations at RPF Thana/Post and Datacentres have also been included in the scope of this tender. Hardware requirement for D & E category stations at RPF Thana/Post have been included in the Annexure-V of Chapter-7 and Software requirement for D & E category stations have been included in their respective SOR items. However, RailTel reserves the right to include other category of stations under the scope of work as per the requirement of Indian Railways.

The system shall comply with RDSO Specification RDSO/SPN/TC/ 65/2021Version 6.0 or latest. However, in case of any conflict on the solution design parameters, system functional requirements and technical specification of a system/item between RDSO specification version-6 or latest and the tender conditions, the RDSO specifications will prevail.

ii) The bidder should prepare a site plan showing exact location of different type of cameras, switches etc. at various locations like parking areas, entrance/exit points, platforms, yards, waiting halls, ticket counters, offices, foot over bridges, circulat-

ing areas etc. as per site requirement in consultation with RailTel& Railways after the proper site survey. The proposed site plan should have an optimum number of cameras so as to cover Railway Station from security point of view. Installation of the VSS systems at Railway Stations shall be carried out **only as per Railway's approved drawings & plans**.

iii) Supply, laying and fixing of electrical wiring and network cabling including OFC.

iv) Supply of complete hardware components for the proposed solution (cameras, Servers/Workstations/NVR, storage systems, PC workstations, LFD, manageable switches etc.) including AMC and Warranty.

v) Supply of any other equipment/infrastructure or services required for the proper installation, testing, commissioning, operation, and maintenance of video surveillance solution as per the approved design.

vi) Supply of all software/licenses for the solution including peripheral applications, middleware, environmental software or any other related software/licenses as required in the proposed solution (Including AMC and Warranty).

vii) Seamless integration of the Server(s)/Workstations/NVR, cameras, network devices, storage hardware and software including existing VSS infra.

viii) Remote operation and monitoring of a cluster of stations from RPF Thana/Post, Divisional HQ and Zonal HQ through the RailTel/Railways TCP/IP/MPLS network. Bidder is required to plan sufficient number of VMS, VA, FRS EMS & CCC licenses and other IT equipment to facilitate the same. Bidder may also be required to extend fiber/network connectivity from the nearest station to the RPF Thana/Post. List of Divisional HQ, Zonal HQ is mentioned in Annexure-I (Chapter-7). Details of existing VSS Stations/RPF Thanas having existing VSS Infra is mentioned in Annexure-II (Chapter-7)& Clause 8.2 of Chapter-8 (Section-I). List of stations covered under the scope of present tender is mentioned in Annexure-III (Chapter-7).

ix) Integration of CCC application with VMS (including existing VMS), VA and FRS (to be supplied under this tender) at API/SDK and application level. The bidder should provide API/SDK of VMS, VA & FRS softwares to the OEM of CCC application. During project duration (i.e. upto AMC), if required by RailTel, the bidder shall provide the API/SDK of supplied softwares (under the scope of this tender) to RailTel without any additional cost.

x) RailTel will facilitate connectivity from its POP to integrate the VSS network. Bidder is required to lay any additional OFC cable for ring protection, if required.

xi) To identify, develop and deliver the training to the Railways/RailTel staff for the VSS System to be installed and commissioned.

xii) To demonstrate the functioning of all the modules of software and features of hardware component as and when required by Railways.

xiii) Deleted.

xiv) Integration of the proposed VSS system with existing VSS system at Stations and existing LAN infra (at RPF Thana/Post location, where VMS is already available. The selected bidder shall integrate the proposed VSS infra with the existing VMS infra (including software, server/workstation, storage etc.) without any additional cost to RailTel including installation, configuration & commissioning with existing VMS, of any additional video recording server/workstation supplied under the scope of the work. **The selected bidder is free to use both existing and new VMS at any particular RPF Thana/Post or to use either of them.** However, the selected bidder shall ensure that integration of existing VSS infra and the proposed VSS infra is seamlessly working at that RPF Thana/Post as per the terms and condition of the tender documents. In case bidder decides to use only one of the VMS system, then it is the responsibility of the selected bidder to shift existing VMS licenses at the required RPF Thana/Post (as per his plan) without any additional cost to RailTel. The selected bidder is also at his liberty to replace the existing VMS system completely at all RPF Thanas/Posts with his own VMS system without any additional cost to RailTel.

At RPF Thana/Post locations, where new VMS is required to be installed as per the scope of work, the selected bidder shall configure the existing VSS infra (including cameras, servers/workstations, storage etc.) with supplied VMS by him without any additional cost to RailTel.

xv) Integration of new and existing VMS with offered Video Analytics and Facial Recognition system.

xvi) Preparation of Digital Network topology of VSS at station (including RPF Thana/Post) showing make, model, IP address, connectivity etc (including existing VSS infra).The recording of the video feeds from CCTV cameras of Stations will be stored in the nearest RPF Thana/Post for 30 days for playback, post event analysis and for investigation purposes. Important videos to be stored for longer duration at Data Centre (by using 240TB storage) & RPF Thana/Post by using additional 10% storage(as per RailTel/Railway's requirement).

xvii) Remote operation and monitoring of a cluster of stations from RPF Thana/Post, Divisional HQ and Zonal HQ etc. shall be done through the RailTel/Railways MPLS network or OFC Network (to be decided by RailTel).

xviii) Replacement of **all consumable items including batteries** of UPS supplied by the contractor (at no additional cost to RailTel) during Maintenance supervision, warranty and AMC period.

xix) Provision of necessary man-power for maintaining VSS as per SLA requirement during Maintenance supervision period of 12 months, warranty period of 24 months and AMC period of 5 years without any additional cost to RailTel.

xx) After the completion of contract duration, the successful bidder shall hand over all the components of the video surveillance system in working condition to Railways/RailTel.

xxi) Successful bidder of other Region will be required to share API/SDK of their quoted VMS, VA & FRS and ensure their integration with Central Command and Control center

xxii) Maintaining earth resistance less than 1 Ω for maintenance free earthings during complete project duration including AMC.

xxiii) Bidder will be responsible to integrate VMS, VA & FRS applications of all the Four Regions (viz. Northern Region, Eastern Region, Western Region and Southern Region) with Command Control Centre (CCC) application. For integration of Zonal Railway's VMS/VA/FRS applications with CCC application, if required, API/SDK of VMS, VA & FRS will be provided by the respective Zonal Railways.

xxiv) In Future (during project duration of this Tender including AMC period) for implementation of VSS in Coaches, the bidder shall assist in integration of onboard software applications in Coaches with software applications installed under this tender without any additional cost to RailTel.

xxv) Bidder shall follow best practices(in addition to RDSO specifications) during installation, commissioning, maintenance, warranty and AMC period for VSS project.

xxvi) Bidder is required to submit the Server calculation sheet for VMS Software, FRS Software & VA Software, for required number of cameras, duly vetted by their respective OEMs as per Annexure-V of Chapter-7.

xxvii) Bidder is required to submit the Storage calculation sheet duly vetted by OEM (VMS Software) for required number of cameras as per Note-XVII of SOR, Chapter-2 (Section-I) and Annexure-VI of Chapter-7.

3.A.1.4.2 IP based CCTV surveillance system in Coaches of Indian Railways

IP based Closed Circuit Television (CCTV) surveillance system in Coaches are **not included** in the scope of tender. However, the network proposed in the tender shall be capable of acquiring data from train coaches through WiFi/GSM and process for onward submission to Data center/RPF Thana.

3.A.1.5 Quality Assurance Programme and Implementation Methodology

The bidder with quality assurance should prepare Implementation Methodology covering:

a) Schedule of Type Test/Acceptance Test/Inspection, supply, installation, SAT (Site Acceptance Test), trial runs, commissioning, integration etc.
b) Allocation of manpower for different activities.
c) Submission of PERT chart indicating completion of various activities within targeted time frame.

3.A.1.6 Manufacturing, Supply and Storage of Equipment

The bidder will be fully responsible for Manufacturing, Inspection and Supply of Equipment/cards/interfaces/software and all related items for installation and commissioning of the network including the following:

a) Spares required for Commissioning, maintenance supervision, warranty period and AMC Period shall be maintained by the Contractor at his own cost.
b) All necessary cables and connectors required.
c) The bidder shall be responsible for transportation and storage of Equipment and all other items required for Installation and Commissioning of the network to RailTel's stores/sites as advised.

3.A.1.7 Support from Indian Railways/RailTel

3.A.1.7.1 For Video Surveillance System (VSS)at Railway Stations, the Executive Director/Regional General Manager of Region of RailTel shall be the executing Officer Head of the project. The RGM/ED shall nominate an officer as an authorized representative(s) for this project. The successful bidder shall take all instructions/approvals etc. for the project from ED/RGM or his nominated authorized representative.

3.A.1.7.2 Drawing & Plans for installation of VSS stations shall be submitted by the contractor to RailTel for approved of Railway. A schedule for supply of station-wise drawings /plans by the Contractor & their clearance by the RailTel/Railway shall be drawn so as to avoid bunching of documents and to ensure that the time taken for approval is minimized. The Railway, after receiving drawings & plans from RailTel, will arrange to scrutinize the drawings/plans and offer their remark if required, within 7 working days of submission of the same by RAILTEL. Contractor shall ensure compliance within the next 5 working days, after receiving it from RailTel. Thereafter, Railway will communicate the approval within next 07 working days. Installation of VSS at stations shall be carried out as per Railway's approved drawings & plans only.

At stations under the scope of work, number of cameras shall be as per site requirement based on duly approved drawings after site survey. Before commencement of the work at a station, bidder has to take approval for camera location. Camera location drawing will be signed by the nominated representatives of Railway & RailTel.

3.A.1.7.3 The Railway will provide free access to Railway premises in connection with carrying out the project related activities. However, prior permission/valid temporary ID card may be issued to the concerned persons by the Project Coordinator of RAILTEL and duly counter signed by concerned Railway officer.

For execution of projects, Railway will permit the bidder to use the available Railway Land temporarily on the same terms & conditions as applicable to Railway's contractors.

3.A.1.7.4 Adequate power supply will be arranged by Indian Railways for Installation and Commissioning of the VSS system as per applicable charges. For Operation of VSS Infrastructure, Railway will provide power supply free of cost.

3.A.1.7.5 Indian Railways will permit to install video Surveillance related infrastructure at stations subject to non-interference with the existing devices and to the rail users.

3.A.1.7.6 If required by special order, the successful bidder would be allowed to carry out the work even in night. RailTel's decision in this regard in consultation with Indian Railways shall be binding on the successful bidder.

3.A.1.7.7 RailTel shall facilitate the availability of point of presence to the successful bidder to connect with the RailTel's Network at each Railway Station.

3.A.1.7.8 Temporary depot for tools and equipment of any kind can only be opened within the Railway's premises during installation phase only after getting prior permission from the authorized Railway personnel as per Railway's terms and conditions. Any land required by the bidder may be made available by Railways, if available, at the lease cost as per the latest norms of Railways

3.A.1.8 Bidder's Responsibility

The bidder will be responsible for all the activities mentioned in Scope of Work. Bidder will also responsible for the following activities:

3.A.1.8.1 Planning, designing and drawing of VSS system at stations, Divisional & Zonal HQ. Preparation of Drawings & Plans clearly showing Active VSS infra (Cameras, Switches, UPS, Rack etc) and passive VSS infra (OFC, power cable, CAT etc) for railway's approval and their modifications as per railway requirements. (Note: In addition to the proposed VSS infra under this project, existing LAN infra and existing VSS infra shall be clearly visible in the drawings with different colors & plans prepared by the selected contractor for RailTel/Railways approval, showing the extent of their utilization in the proposed VSS system at stations).

3.A.1.8.2 It shall be the responsibility of Supplier to transport the equipment to site for the Installation & Commissioning.

3.A.1.8.3 Maintenance of VSS system during implementation, maintenance supervision period, warranty period & AMC period as per terms & conditions of RFP and its corrigendum.

3.A.1.9 Installation, Integration, Testing, Trial Run and Commissioning of Network/System

The bidder shall be fully responsible for Quality Assurance of equipment & other network elements and supervision of following:-

a) Installation and Integration of the above said equipment/ items as per System design
b) Integration with existing network/system
c) Testing of the Network/System as specified in the document
d) Trial run of the network/system
e) Commissioning of Network/system

3.A.1.10 Training of Purchaser's Personnel and Change Management

For successful implementation and monitoring of the video surveillance solution, the successful bidder will need to identify training needs for Indian Railways/ RailTel. To provide professional training and development services at each stage of the project viz. installation, testing, operation and maintenance including AMC period.

The successful bidder shall provide hands on training and online training with detailed course material on the installed equipment and software covering at least the following as per the schedule given by RailTel during complete project duration:

- Configuration and their operation of Networking Equipment, Cameras and other equipment etc. supplied under the project.
- Installation &Monitoring of Software Applications including alerts.
- Introduction to computers, Servers/Workstations/NVR, and their configuration and operations
- Trouble shooting and preventive maintenance
- Training on operation of CCTV system.

These personnel shall work with the Bidder technical team staff to gain confidence and to get expertise right from the execution stage of the project till completion of AMC period. The training content to be designed and delivered by successful bidder at successful bidder's own cost. All equipment used for training shall be identical to those quoted and supplied for site installation in hardware and software versions.

Timelines for Training and Development are as follows:

SN	Deliverable	Timeline in Months (M) (D= Date of award of LoA)
1	Preparation of training material, course etc. for IT awareness, role/function based training of CCTV monitoring room operators, system technicians and supervisors etc.	D + 2M
2	Completion of IT awareness training	D + 3M
3	Continuous training and retraining during installation, warranty & AMC phase	As and when required by RailTel/Railways

Sets of training manual in two hard copies & two soft copies containing details of technical specification, installation & commissioning, troubleshooting & maintenance schedule etc. shall be supplied by the bidder.

The bidder shall update the course material of manuals in case there are any changes owing to revision/modifications in equipment/system specifications.

3.A.1.11 Final Commissioning

The VSS shall be considered to be commissioned only after successful completion of the SAT, Trial Run and successful completion of 12 months of Maintenance Supervision after issue of PAC and after issue of Final Acceptance Certificate (FAC).

Any item of bidder's goods/services not specifically mentioned, but considered essential for completion/commissioning of the work in all respects shall be deemed to be included in the scope of work. Any additional item, if required for completion of work, shall be required to be supplied by the bidder free of cost.

3.A.1.12 General System Guidelines

a) Bidder shall be responsible for the successful completion of the project.

b) If during the course of execution of the work any discrepancy or inconsistency, error or omission in any of the provisions of the contract is discovered, the same shall be referred to the Purchaser/Engineer who shall give his decision in the matter and issue instructions directing the manner in which the work is to be carried out. The decision of the Purchaser/Engineer shall be final and conclusive and the bidder shall carry out the work in accordance thereof.

3.A.1.13 Technical Response

The technical response shall be fully comprehensive and detailed and will include detailed guaranteed specifications of the equipment and systems to be supplied. Marginal performance shall not be accepted.

3.A.1.14 Features and Capabilities of Equipment

The specifications defined under Chapter-8 contain the necessary requirements of RailTel with regard to the features and capabilities of the equipment to be offered by the bidders. These will be carefully studied and commented upon by the bidder.

3.A.1.15 Compliance to Technical Requirements

3.A.1.15.1 In the offer, the bidder shall include NIL deviation certificate (Form No. 6 of Chapter-6) statement for compliance of terms and conditions mentioned in the tender document and RDSO specification version-6 or latest.

In case of any deviation from terms and conditions mentioned in the tender document and RDSO specification version-6 or latest, the bidder may include item-wise statement for partially complied/non complied clauses as Annexure with NIL Deviation statement as per details given below:

a) "PARTIALLY COMPLIANT," if systems and functions offered meet the tender requirement partially. The bidder shall state the reason why the offer is partially compliant. However, if the bidder is able to fulfill the specified requirement later, the time schedule for this shall be stated. In such cases, the bidder shall clearly mention the extent to which other requirements or specifications are affected.

b) "NON COMPLIANT," if systems and functions cannot meet the requirements. The bidder shall also state the reasons for it.

c) In addition to the above mentioned compliance statements, wherever statement is given for some numerical parameter specified in tender, then bidder shall state the actual numerical value of specification as met by the offered systems/equipment.

d) In case of partially compliant or non compliant bid, RailTel reserves the rights to **REJECT** the bid without assigning any reason.

3.A.1.15.2 Unclear Statements

In case of unclear statements for compliance of any specified requirement, RailTel will interpret that particular requirement as being "NON COMPLIANT."

3.A.1.15.3 **Detailed Technical Information**

The bidder shall include in his proposal the detailed Technical information, drawings and functional descriptions of the offered equipment to support the Compliance to VSS Technical Specifications as in Chapter-8 of this tender document.

3.A.1.16 Supply of Software

1. All OEMs of Servers/Workstations/NVR, Storage, Cameras, Network equipment, Workstations, NVR etc. should give an undertaking that all licenses supplied by them would be registered in favor of M/s RCIL or its nominated organization.

2. OEMs of Software Application system should give an undertaking that all licenses supplied by them would be issued in favor of M/s RCIL or its nominated organization.

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SECTION-I
CHAPTER-3

B. PROPOSED ARCHITECTURE FOR VIDEO SURVEILLANCE SYSTEM

3.B.1 Architecture Overview

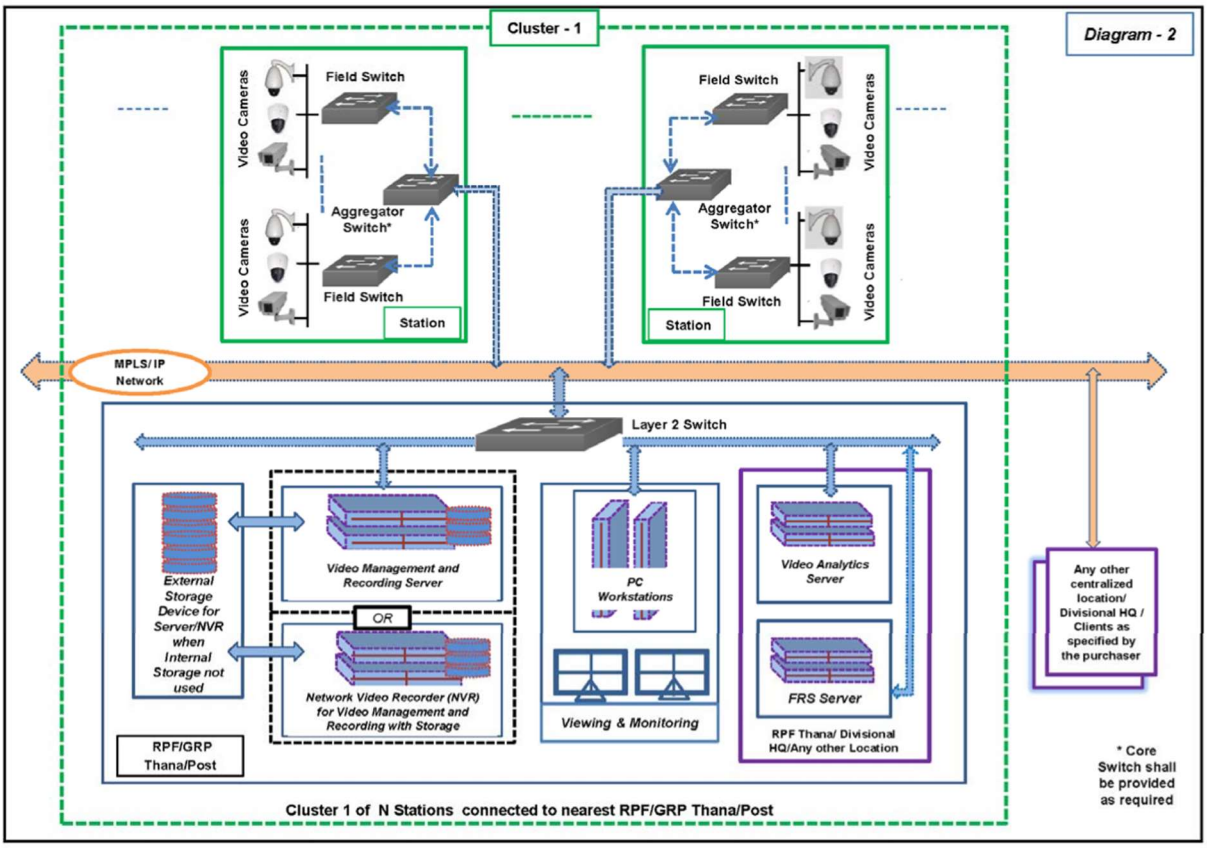
To implement Video Surveillance Solution (VSS), each station should have robust, secure and scalable network architecture implemented which will cover all platforms and other areas such as waiting halls, ticket counters, entry, exit, refreshment area, and foot over bridge, parking area etc. of a railway station. Actual locations of switches in the proposed VSS solution will depend on the location of cameras decided by Railways.

In addition to robust, secure and scalable network architecture on railway stations, fully secure network architecture will be required at RPF Thana/Post and Datacenter(s). Existing LAN Infra and existing VSS infra at stations is also required to be integrated with the proposed VSS infra at stations and Thana/posts, without any additional cost to RailTel. This network will work as a platform for implementation of Video Management, Video Recording, Video Analytics and Facial Recognition System etc., which are part of infrastructure for IP Video Surveillance Service. Same network architecture can be used for deployment of Information Display System and other services as per the requirements of RailTel/Railways.

As this is a highly visible project for Indian Government, Ministry of Railways and RailTel, therefore, the proposed architecture must be secure end to end so as to ensure by the selected contractor to eliminate any unauthorized misuse of recorded video or video clips of VSS System.

3.B.2 Architecture of VSS/CCTV System for stations

Tentative architecture of VSS/CCTV system at stations will be as per schematic diagram-2. Tentative schematic diagram of Video Surveillance System for Cluster of Stations as mentioned in RDSO specification no. RDSO/SPN/TC/65/2021Version.6.0 or latest with all amendments.



3.B.3 Power and Fiber Distribution Design for Railway Stations

A 4 sq.mm 3 core power cable shall be terminated to UPS System at each platform from AC Distribution Box (ACDB). 4 sq.mm 3 core power cables shall also be drawn from these UPS systems to each Type-1 Switch location.

Two number of 12 core fiber cable will start from 24 ports FMS towards each platform and will terminate to 24ports FMS on each platform. Suitable number of spares should be kept at each platform and additional 12 core OFC cable may be laid, if required. Each platform will have one 12 core OFC cable connecting to all Type-1 switches on the platform by using 12 port FMS in a ring configuration as per Diagram for category A1, A, B & C stations in clause 3.B.4.4. Complete ring between Type-1 switches will be formed by using a single 12 core OFC cable.

Further, IP Cameras will connect on CAT-6 STP cables to these access switches to provide video service.

3.B.4 Network Design for Different Type of Stations

3.B.4.1 Indian Railway has A1, A, B, C, D & E Category Stations. Each type of stations has typically physical platforms as per following:

SN	Category of Stations	Nos. of Physical Platform
1	A1 Type	8 nos.

2	A Type	5 nos.
3	B Type	3 nos.
4	C Type	2 nos.
5	D Type	2 nos.
6	E Type	2 nos.

3.B.4.2 Each platform will be having approx. 3 to 4 nos. of 8 port PoE Access Switches (Type-I Switch)to cover entire length of platform.2 cores out of 12 core OFC cable will start from 1st Aggregation switch- Type-II switch(at a central location) connecting all Field switches of 1st platform and will terminate to the 2nd Aggregation switch (at a Central location).

Another 2 core out of 12 core OFC cable will start from 1st Aggregation switch (at a central location) connecting all Field switches of 2nd platform and will terminate to the 2nd Aggregation switch (at a central location) and so on. By this way, all Type-I Switches (Access Switches) of a given platform will form a ring topology with two number of Type-II Switch (Aggregation Switch)at central location in Ring architecture with 12 core single mode fiber.

All type-1 switches (Field switches) on a platform will connect each other through 12 core OFC cable. Any additional 12 core OFC cable to be laid as per requirement, if required at a given location.

The Aggregation switches Type-II switch (1+1 configuration) at each station will connect to Type-IV (MPLS Switch/Router at RPF Thana/Post Stations through existing Railway's OFC cable or RailTel's IP-MPLS network or to Type-III switch at RPF Thana/Post Stations.

Further IP Surveillance Cameras connected on Cat6 STP cables to these Type-I Switches (Access Switches). In future, Access Points and Information Display Units may also be connected to provide other services.

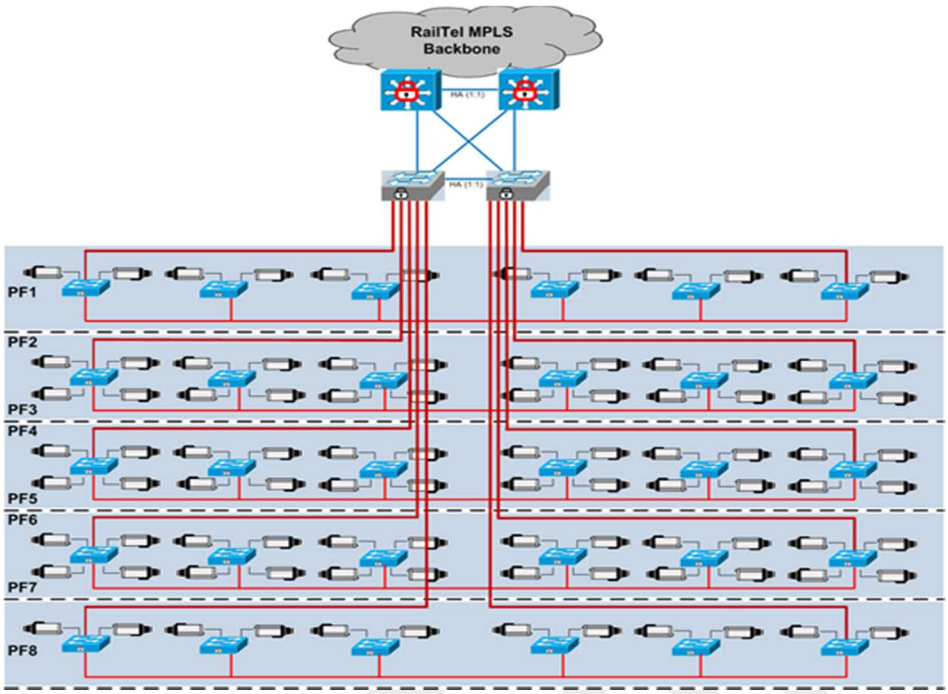
If there is requirement to connect Type-I Switches (Access Switches) for platform extension, any other locations or any other services aggregation switches will have sufficient ports available.

3.B.4.3 **Use of Existing LAN Set-up at Stations:**

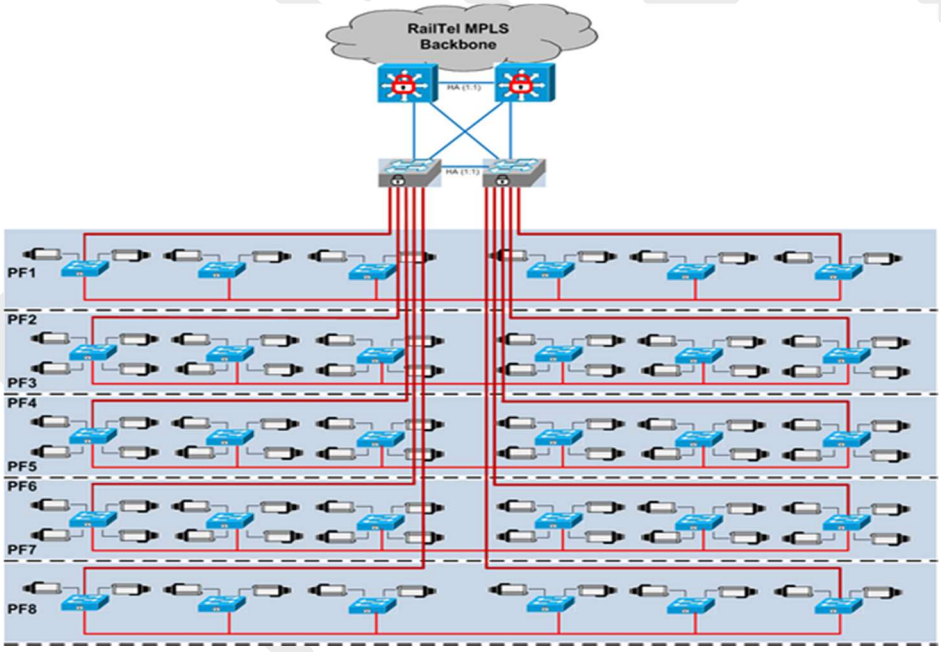
RailTel is already providing LAN Service at various Railway Stations and therefore have built robust LAN Set-up at few stations. Therefore to avoid duplicacy at stations, existing LAN Infra will be used by bidder. Decision regarding utilization of LAN infra taken by RailTel will be final and binding.

3.B.4.4 Typical Network Architecture for different Stations are given as**(Note: Network Architecture at station should support Ring Topology and Type-III switches kept in RPF Thana/Post (Not shown in the diagrams below) are required to be connected either with Type-IV switch or Type-II switch as per Field requirement):**

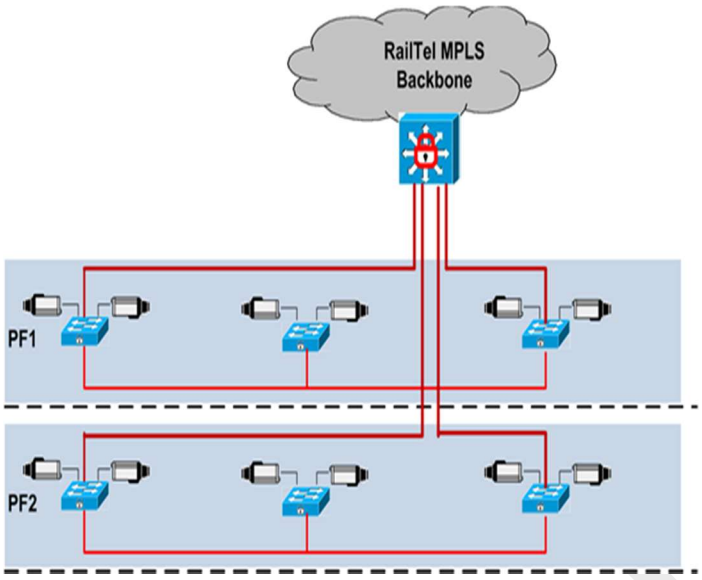
3.B.4.4.1 Tentative Network Diagram for A1 type station is given as:



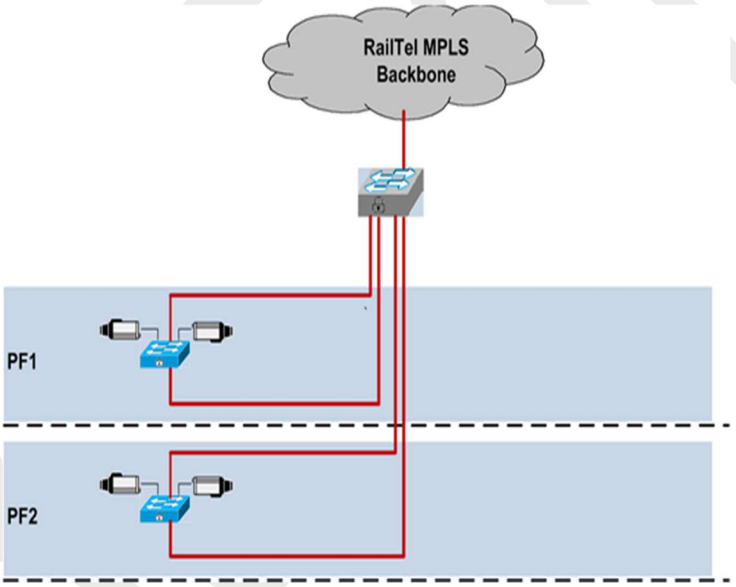
3.B.4.4.2 Tentative network diagram for A type station is given as:



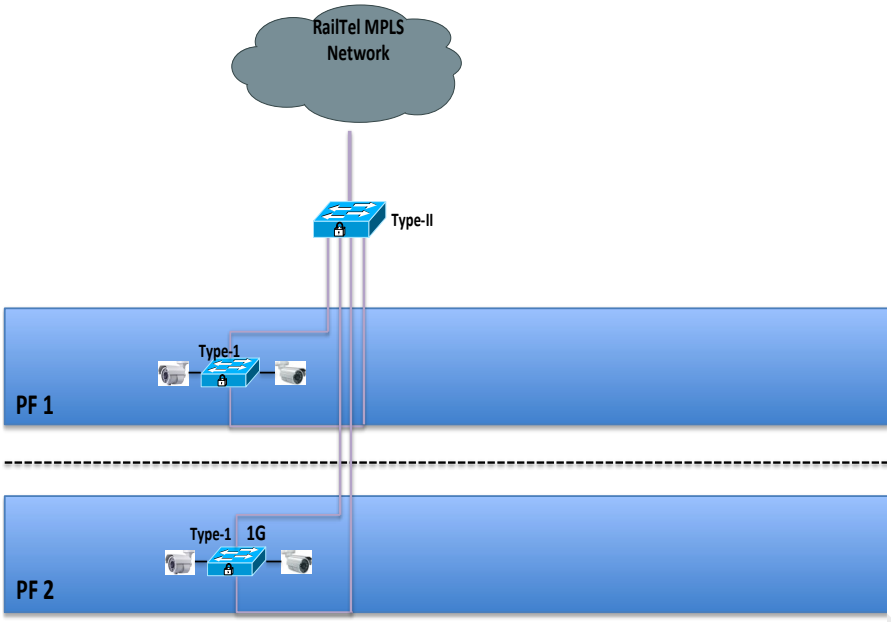
3.B.4.4.3 Tentative network diagram for B type station is given as:



3.B.4.4.4 Tentative network diagram for C type station is given as:



3.B.4.4.5 Tentative network diagram for D and E type (NOT COVERED IN THE SCOPE OF WORK. However, Hardware and Software required for D & E category stations at RPF Thana/Post and Datacentres have been included in the scope of this tender) stations are given as:



3.B.4.5 **Surveillance VPN on RailTel Backbone**

A separate VPN instance will be created on Type-IV Switch for different type of services (Surveillance, Display Network etc). Access switches will separate these services in form of unique VLANs and maintain logical segregation between these services. This will maintain each service separately from traffic flow and QoS implementation perspective and improve network performance along with securing and isolating these services from each other.

A separate VPN instance may be created on Type-IV switch for Railway Protection Force(RPF) users. Railway Protection Force users will have a secure client for monitoring stations through IP surveillance cameras.

This network architecture must have features like port security, DHCP snooping, Dynamic ARP inspection, IP Source guard, BPDU Guard and Spanning tree root guard. These features will enable network to implement first level of network security at these switches as a protection from sniffing and reconnaissance attacks.

This network architecture must have loop avoiding feature like MSTP/RSTP to implement dual homing/redundancy successfully.

IP Video Surveillance System is traffic hungry and delay sensitive service. To ensure proper functioning of this project, network architecture must have features like Multicast VLAN Registration, IP SLA, AutoQoS, Auto Ports configuration to detect end device type connected to port and configuring QoS automatically on basis of device. Network should have IPv4 and IPv6 port and time based access list with time ranges.

3.B.5 IP based Video Surveillance solution for Different Type of Stations

The main objective of the project is to implement IP based Video Surveillance Solution to monitor and manage multiple Railway Stations across various divisions at RPF Thana/Post, central locations as well as from any other locations.

The system implemented shall act as tool to respond to situations/incidents effectively, aiding faster decision making and act as a great learning for better preparedness to meet any incident and eventualities.

The system is expected to help in following area:

a) Centrally Monitor and Control Security Systems
b) Immediate Response and Management System
c) Integration with Video Management

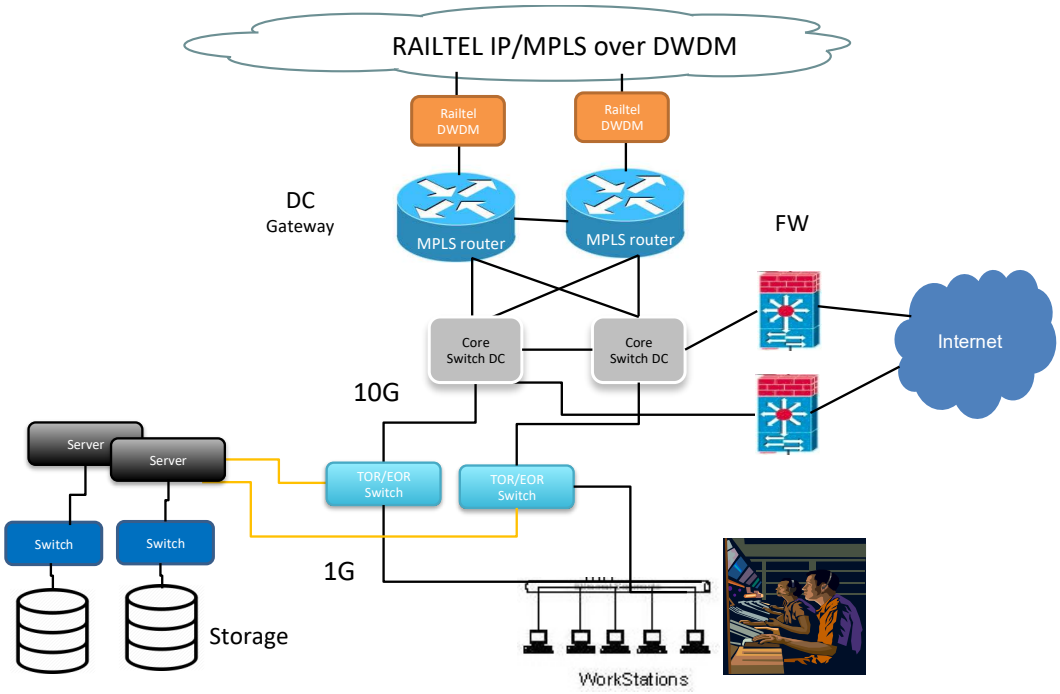
IP based cameras could be Dome Type, PTZ Type, Fixed Bullet and 4K UHD Cameras. Below are major listed areas, which will cover by various type of cameras:

a) Platform, Foot over areas should be covered by Fixed Bullet cameras
b) Entry/Exit should be covered by 4K UHD Bullet cameras.
c) Ticketing Counter, Waiting, Food Plaza, Railway Refreshment Room, Low ceiling Entry /Exits should be covered by Dome cameras
d) PTZ should be mounted for bigger open areas, where Pan, Zoom & Tilt functionality will be used

The above arrangement is only tentative in nature and any other additional locations can be added as decided by purchaser as per site requirement. The necessary LAN infra for above cameras is required to be provided by the bidder.

3.B.6 Network layout at RailTel Datacenters and RPF Thana/Post

3.B.6.1 At RailTel Datacenters (Gurugram and Secunderabad)



Data Centre Architecture including networking, computing, storage, management, and security is planned as described below:

In each Data Centre, there will be two Core Routers (to be provided by RailTel) interfacing towards the RailTel MPLS network thorough DWDM in physical layer.

The two Core routers will work as a Gateway Router from the network towards RailTel Datacenter.

There will Two-tier Architecture Core/Aggregation and Access Switching Layer. This architecture accommodates a north-south traffic pattern where client data comes in from a WAN or the Internet to be processed by a server/workstation in the data center and is then pushed back out of the data center.

Data Centre Core and Aggregation layer—Provides the high-speed packet switching backplane for all flows going in and out of the data center. Provide important functions such as Layer 2 domain definitions, spanning tree processing, and default gateway redundancy. Server-to-server multi-tier traffic flows through the aggregation layer and can use services, such as firewall, to optimize and secure applications.

Data Centre Access layer—Where the servers/workstation physically attach to the network. The server/workstation components consist of 1RU rack servers/workstations, blade servers/workstations with integral switches, blade servers/workstations with pass-through cabling, clustered servers/workstation. The access layer network infrastructure consists fixed configuration 1 or 2RU stackable switches (Top of Rack/End of ROW). Switches provide both Layer 2 and Layer 3 topologies.

Resiliency is achieved by load balancing the network traffic between the tiers
Security is achieved by placing firewalls between the tiers.

3.B.6.2 **<u>At RPF Thana/Post</u>**

Each RPF Thana/Post location will have architecture for connectivity of Server(s)/Workstations/Network Video Recorders with Video Management, Recording, Analytic and FRS Software/Application for Video Surveillance System at stations.

At RPF Thana/Post location, where VMS is already available, the selected bidder shall integrate the proposed VSS infra with the existing VMS infra (including software, server/workstation, storage, PC Workstation etc.)without any additional cost to RailTel including installation, configuration & commissioning with existing VMS, of any additional video recording server/workstation supplied under the scope of the work.

At RPF Thana/Post locations, where new VMS is required to be installed as per the scope of work, the selected bidder shall configure the existing VSS infra (in-

cluding cameras, servers/workstations, storage, PC workstation etc.) with by supplied VMS by him (without any additional cost to RailTel).

The selected bidder shall integrate the complete VSS infra (existing & proposed) with Video Analytic Software, EMS and Facial Recognition Software without any additional cost to RailTel for his portion of work for integration.

Network design at RPF Thana/Post will consist of Type-III switches. These switches will have redundant power supply.

3.B.7 Deleted

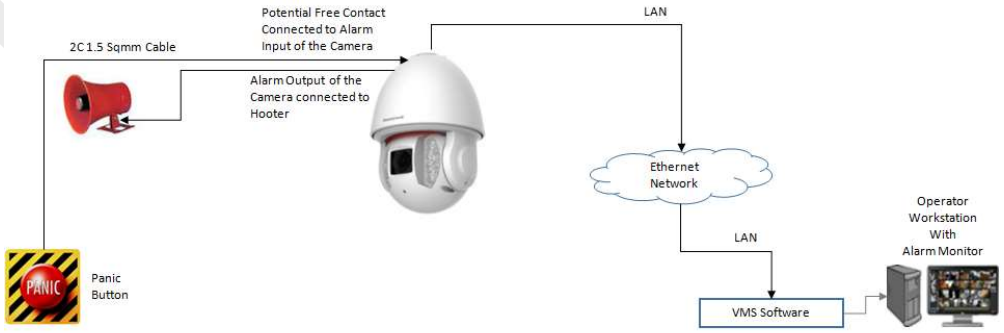
3.B.8 Installation of Panic Button and Associated VMS Requirements for Stations

3.B.8.1 The VMS software shall include required licenses to support Alarm Input monitoring and Output activation for the proposed IP Cameras. **Number of licenses should be as per the quantity of panic buttons mentioned in SOR & number of panic buttons at D & E Category Stations mentioned in Annexure-V of Chapter-7.**

3.B.8.2 Two numbers of Panic Button shall be installed at each Platform. The potential free contact of the Panic Button shall be connected to the Alarm Input of the IP Fixed or PTZ Camera installed nearby wherein Panic Button is in the Field of View of the Camera.

3.B.8.3 Once the Panic Button is activated by any person in distress, an alarm shall appear on the VMS along with the pop-up of the associated camera on the operator workstation. In case, associated camera is a PTZ type, the camera shall move and zoom on to the Panic Button to see the person in distress.

3.B.8.4 Panic Button shall be installed at average person's height at the platform.



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SECTION-I
CHAPTER-3

C. ENTERPRISE MANAGEMENT SYSTEM

3.C.1 Introduction

For the provision of Video Surveillance System (VSS) at Railway Stations, Region-wise tenders (Eastern, Northern, Southern and Western) are being floated by RailTel. Accordingly, for monitoring of VSS Equipment installed/ planned to be installed at Railway Stations & RPF Thanas, Enterprise Management System (EMS) to be provisioned.

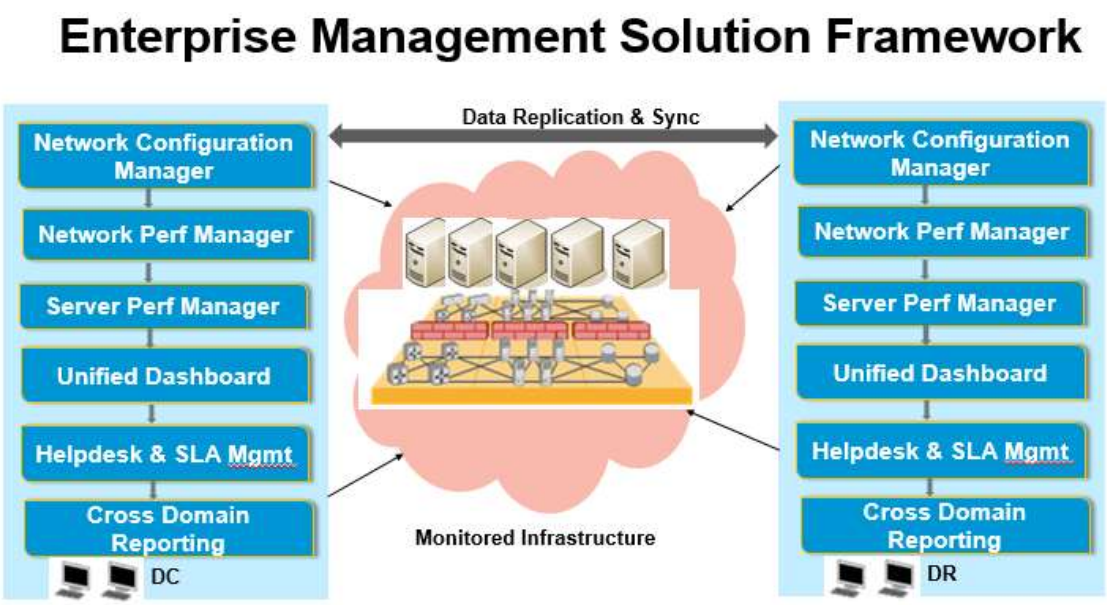
Enterprise Management System (EMS) will be required to integrate all the IP devices of VSS system including Camera, Server/Workstation, Storage, Switches, VMS, VA, FRS System etc. to be procured under Schedule of Requirement.

3.C.2 Enterprise Management System (EMS)

3.C.2.1 For effective operations and management of IT Operations, an industry standard Enterprise Management System (EMS) has been provisioned for monitoring of VSS Equipment (Cameras, Switches, Server/Workstation, Storage, PC Workstations and UPS etc). Given the expanse and scope of the project to operate, configure, monitor & maintain IP based Video Surveillance System (VSS) across Railway Station of Indian Railways, EMS becomes very critical for IT Operations and SLA Measurement.

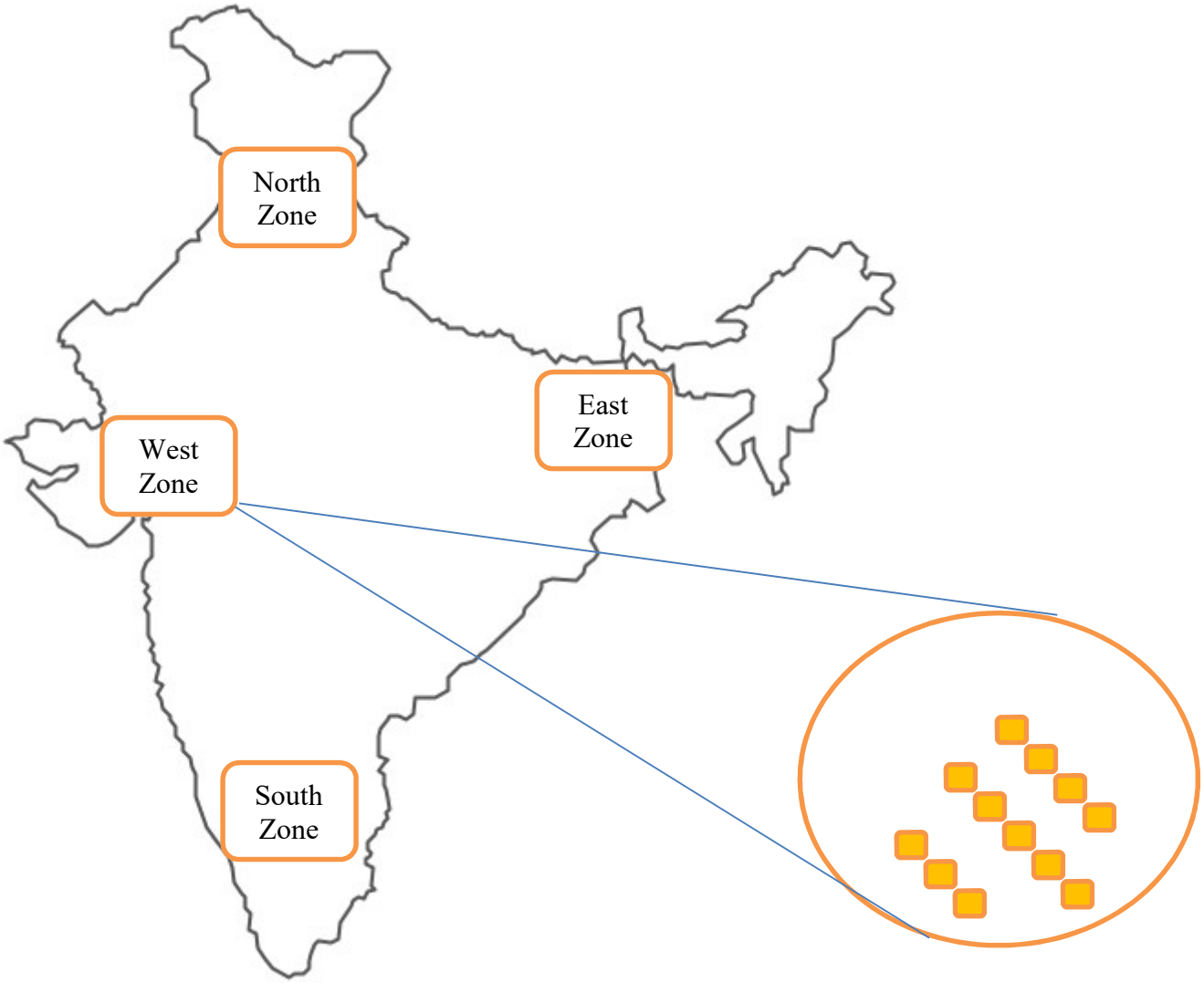
3.C.2.2 Some of the critical aspects that need to be considered for operations of IT setup are:

- Centralized and Integrated Dashboard View
- Centralized and Customizable Service Level Reporting
- Server/workstation Change, Provisioning & Configuration
- Network Automation
- Service Management (Helpdesk) & SLA Management
- Centralized IT Asset Inventory discovery & tracking
- Server/Workstation Monitoring
- Network Fault & Performance Management
- Penalty Monitoring and Management



3.C.2.3 All the assets of VMS System (including all IP devices of VSS System like Cameras, Storage, Servers/Workstations, Switches, Routers, UPS etc) are required to be monitored through the concerned Regional NOC, Central NOC (CNOC) and concerned Railway unit. EMS System to be deployed at one Data Center as a DC with the redundant infrastructure configured in other Data Center as a DR, in case of failover. There will be a continuous data replication & synchronization from DC to DR site on daily basis to prevent a loss of configuration changes in the event of losing the production instance.

The EMS solution deployed in DC will act as a manager of manager, where all the events from cameras, storages, servers/workstations, networks (switches, routers etc.) and UPS solutions would be aggregated. It provides the advanced level of correlation like the event de-duplication, filtering, enrichment etc. to find out the most casual event in the network. The dashboard can be personalized by individual users based on their roles & thus can be extended to various RPF Thana/Post, Divisional HQ's etc. for web based access, as per their role & responsibilities. The operators in various RPF Thana/Post, HQ's will have personalized views of topology, alarms & reports as per the business requirement.



Service Desk Manager would be the central service desk solution, which would act as a single point of contact for logging incidents automatically from the monitoring solutions from event management console as well as manual incidents via mail and telephone from the end users. The solution would also provide Knowledge Management for the engineers to populate and search solutions. The knowledge management component would also be installed on the same server/workstation. The processes of Change Management will be carried out using the same solution. The incident, problem, change and request process can be tied to the Service Level Management process to send notifications, escalate etc. so that the response and availability SLAs are met. Email will be the primary notification method. There are a number of out-of-box reports available. Customized reports can be created, scheduled and published on a central portal.

Network Management component offers fault, availability, and performance monitoring, with real-time network monitoring and network incident management, for physical and virtualized network infrastructure. It will also provide historical performance reporting on all the managed nodes.

3.C.2.4 Specification of EMS is given in Chapter-8 for information to the bidders.

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SECTION-I
CHAPTER-3

D. INSPECTION AND SUPERVISION OF INSTALLATION, TESTING & COMMISSIONING

3.D.1. Inspection

(A) Inspection will be carried by RDSO for all the items for which RDSO specifications are referred. For other items the inspection will be carried out by RailTel or its authorized agency.

(B) **Test Categories (This should be for all the items to be inspected by RailTel)**

i) The following tests shall be conducted for acceptance of the equipment and the system before final acceptance of the system. Waiver of Part or whole of type tests can be considered if proof of having done the tests by independent body or PTT authority is submitted.

a) Pre-Factory Acceptance Testing
b) Factory Acceptance Testing
c) Pre-commissioning test (after installation) for total integrated system.
d) Site Acceptance Testing (SAT)
e) Trial Run

ii) These tests shall be carried out on all equipment supplied by bidder including those supplied by sub-vendors, if any.

iii) Bidder shall arrange all necessary test instruments, manpower, test-gear, accessories etc.

iv) All technical personnel assigned by the bidder shall be fully conversant with the system specifications and requirements. They shall have the specific capability to make the system operative quickly and efficiently and shall not interfere or be interfered by other concurrent testing, construction and commissioning activities in progress. They shall also have the capability to incorporate any minor modifications/suggestions put forward by purchaser /Engineer.

v) **Test Plan:** The Contractor shall submit to Purchaser 'Test Plans' well in advance of commencement of actual testing in each of the above mentioned test categories.

The plans shall include:

1) System/Equipment functional and performance description (in short) and Tests to be conducted and purpose of test.

2) Test procedures (including time schedule for the tests) and identification of test inputs details and desired test results

3) **Test Report:**

The observations and test results obtained during various tests conducted shall be compiled and documented to produce Test Reports by bidder. The Test Reports shall be given for each equipment/item and system as a whole. The report shall contain the following information to a minimum:

i) Test results

ii) Comparison of test results and anticipated (as per specifications) test result as given in test plans and reasons for deviations, if any.

iii) The data furnished shall prove convincingly that

a. The system meets the Guaranteed Performance objectives
b. Mechanical and Electrical limits were not exceeded.
c. Failure profile of the equipment during the tests are well within the specified limits

vi) **Failure of Equipment/Cards/Components:**

Till the system is accepted by the Purchaser, a log of each and every failure of equipment/cards/components shall be maintained. It shall give the date and time of failure, description of failed equipment, circuit, module, equipment designation, effect of failure of equipment on the system/equipment, cause of failure, date and time of repair, mean time to repair etc. Repair/modification done at any point of time at one site, shall be carried out by bidder at all the sites. Detailed documentation for the same shall be submitted to Purchaser for future reference.

If the malfunction and/or failures of a unit/module/sub-system/equipment repeat during the test, the test shall be terminated and bidder shall replace the necessary equipment or module to correct the deficiency. Thereafter, the tests shall commence all over again from the start.

If after the replacement the equipment still fails to meet the specification, bidder shall replace the equipment with a new one and tests shall begin all over again. If a unit/ subsystem/module have failed during the test, the test shall be suspended and restarted all over again only after the bidder has placed the equipment back into acceptable operation. Purchaser's approval shall be obtained for any allowable logical time required to replace the failed equipment/unit/module/sub-system.

vii) **Readjustments**

No adjustments shall be made to any equipment during the acceptance tests. If satisfactory test results cannot be obtained unless readjustments are made, bidder shall carry out only those readjustment needed to ready the equipment/system for continuance of tests. A log of all such adjustments shall be kept giving date and time, equipment, module, circuit, adjustments, reasons, test result before and after adjustment etc. Fresh acceptance tests shall be conducted after the readjustments have been completed.

3.D.2. Pre-Factory Acceptance Testing

The bidder on his own exactly in line with pre-approved test plan shall conduct pre-factory acceptance testing and test reports for the same shall be forwarded to Purchaser/Engineer before inspection.

3.D.3. Inspection/Factory Acceptance Test

Inspection will be carried by RDSO for all the items for which RDSO specifications are referred. For other items the inspection will be carried out by RailTel or its authorized agency.

Testing Procedure for VSS equipment for which requisite testing facility is not available in India:

Necessary type tests as well as acceptance tests on the equipment offered shall be conducted to ascertain conformance of the equipment to the requisite RDSO specification. These tests shall be got conducted by the OEM/Vendor at 3rdparty test houses of international repute such as UL, TUV etc.

3.D.3.1 In case the requisite test facilities are available with OEM, the 3rd party test house may conduct these tests in the OEM premises if specifically requested by OEM to RDSO. **The details of 3rd party test house (proposed-to be entrusted with the testing) shall be submitted by the bidder along with the technical bid document.** The same shall be sent to RDSO for prior clearance. These details shall include testing capability of the test house & shall confirm that the test house has undertaken testing of such equipment earlier. Only after the clearance of RDSO, testing shall be entrusted to proposed 3rd party test house. RDSO shall advise the test format and details regarding quantity of equipment on which type test and acceptance test is required to be conducted.

3.D.3.2 3rd(Third) Party test house after conducting requisite type test & acceptance test shall submit the test report directly to RDSO. In case the equipment conforms to the RDSO specification, necessary clearance for supply of the equipment shall be given by RDSO to the OEM/vendor.

3.D.3.3 On arrival of such cleared equipment in India, sample tests covering only visual and functional parameters shall be undertaken by RDSO.

3.D.3.4 On successful visual and functional tests as above, the equipment may be considered to be in conformance with RDSO specification. However, the vendor shall submit special bank guarantee equivalent to 10% of the value of the equipment inspected by third party abroad & valid for a period of one year (in addition to Performance Guarantee) and undertaking to the purchaser that the equipment supplied shall meet all the requisite parameters of the specification and shall work satisfactorily failing which bank guarantee may be encashed. Firm shall also submit suitable undertaking regarding satisfactory repair /service support to the purchaser.

3.D.3.5 Once type test has been successfully completed on a equipment, only acceptance test shall be conducted subsequently, in case the same equipment (make, model & version) is offered again within a period of 2 years.

3.D.3.6 Any expenses against inspection by 3rd party shall be borne by the bidder. Traveling, lodging & boarding expenses of RailTel's/Railway representative shall be borne by RailTel/Railway.

3.D.4. Installation

After successful completion of inspection, equipment shall be sent to site for installation. Equipment without factory acceptance/inspection certificates shall not be acceptable at site.

Prior to installation, all equipment shall be checked for completeness as per the specifications of equipment required for a particular station. Installation shall be carried out in accordance with the installation manuals and approved installation drawings& site plan in the best workmanship.

Bidder shall indicate the number of teams and the list of equipment for each team to be required for installation of the Video Surveillance System in order to complete the work within the stipulated time frame.

Bidder shall bring all installation tools, accessories, special tools, test gears, spare parts etc. at his own cost as required for the successful completion of the job.

If during installation and commissioning under the supervision of the bidder any repairs are undertaken, the maintenance spares supplied with equipment shall not be used for the repair. Bidder shall arrange his own spare parts for such activities till such time the system has been finally accepted by the Purchaser. A detailed report & log of all such repairs shall be made available by the bidder to Purchaser/Engineer and shall include cause of faults and repair details, within 2 weeks of fault occurrence.

A detailed time schedule for these activities shall be submitted by bidder to Purchaser/Engineer to enable their representatives to be associated with the job.

Bidder shall supply all installation materials required for proper installation of the equipment. These shall include but not be limited to, all connectors, interbay and inter equipment cables, power supply cables and connectors, power distribution boxes, anchoring bolts, nuts, screws, washers, main distribution frames, audio distribution frames, voice frequency cables, junction boxes etc.

The installation of equipment shall be supervised by the bidder in such a manner so as to ensure neat and clean appearance in accordance with approved installation document drawings. All inter bay, power supply and other cables shall be routed through wall mounted cable trays. No cable shall be visible. All through wall openings, trenches etc. shall be properly sealed to prevent the entry of rodents, insects and foreign materials.

3.D.5. Pre-Commissioning

On completion of installation of VSS system, the correctness and completeness of the installation as per Manufacturer's manual and approved installation documents shall be checked by the bidder on his own.

A list of Pre-Commissioning tests (same as approved by the Purchaser/Engineer for site acceptance testing) and activities shall be prepared by bidder and the test shall be carried out by the bidder on his own. After the tests have been conducted to the bidder's own satisfaction, the bidder shall provide the test results for review by Purchaser/Engineer and then offer the system for Site Acceptance Testing.

During pre-commissioning, if any fault occurs to any equipment or system, bidder shall identify the same and provide report/history of all faults to the Purchaser.

During installation and pre-commissioning of the Edge Infrastructure of VSS system, bidder shall have enough number of commissioning spares so that the installation is not held up because of non-availability of commissioning spares.

3.D.6. Site Acceptance Testing (SAT)

On completion of Pre-commissioning, site acceptance testing shall be conducted on the system as per approved SAT procedures and its constituents by the bidder under the presence of Purchaser/Engineer.

The tests shall include, but not be limited the following:

a) Checks for proper installation as per the approved installation drawings for each equipment/item and system as a whole.
b) Guaranteed performance specifications of individual equipment/item.
c) Self diagnostics test on individual equipment.
d) Tests on remote alarm transmission and reception.
e) System tests on END TO END for the system, all complete.

3.D.7. Trial Run/Field Trials

Upon conclusion of the Site Acceptance Testing (SAT) the bidder shall keep the facilities commissioned for one month for 'TRIAL RUN/FIELD TRIALS'. During this period bidder shall provide all Support engineers & Technicians to maintain the total log, incidents and failures. However, the normal operation and maintenance of the system shall be performed by the personnel of the Purchaser trained for the purpose.

If during 'Trial run' any defect is noted in the system, the bidder shall rectify, replace the same to the satisfaction of Purchaser's/Engineer. The decision to repeat the final test or restart the 'Trial' shall be of Purchaser/Engineer depending upon the severity of the defect.

During trial run, if any fault occurs to any equipment of system, bidder shall identity and rectify the same and provide report, history of all faults to the Purchaser.

Ideally, during the 'Trial run, no shutdown of the system due to failure of equipment, power supply etc. should happen. A record of all failures shall be kept for each station and the availability of the system per station basis shall be calculated, accordingly and results submitted to Purchaser/engineer.

If the system fails to come up to the guaranteed performance, the bidder, within a period of thirty (30) days shall take any and all corrective measures and resubmit the system for another 'Trial Run' of trial period. All modifications, changes, corrective measures, labour etc. shall be at the cost of the bidder. In case the date of completion for the second trial run exceeds the time schedule for the project, he shall be liable to pay liquidated damages. If the system fails to reach the guaranteed performance even after the second trial run, the Purchaser shall be free to take any action as he deems fit against the bidder and to bring the system to the guaranteed performance with the help of third party at the expense of the bidder.

3.D.8. Provisional Acceptance Certificate (PAC)

(i) After SAT, Station wise physical installation and commissioning report shall be jointly signed by representatives of Railway (RPF and S&T), RailTel and contractor for successful commissioning and testing covering all cameras and other VSS infrastructure at stations clustered within the controlling RPF Thana/Chowki and Fiber/Network connectivity, monitoring facilities extended. In case of any deficiency affecting the overall working of the system, the contractor shall rectify the deficiencies within one month and verify them from RailTel and Railway representatives. On the basis of physical Installation & commissioning report by RailTel/ Railway RPF & Railway S&T, the Railway S & T department will issue work completion report.

(ii) All completion drawings/plans and joint report duly signed by RAILTEL Officers shall be handed over to the respective division of each zonal railway at the time of signing of completion certificate in soft copies and hard copies of which prints in the required numbers shall be supplied by the bidder. One set of diagrams of the concerned station along with Working Rules Booklet for VSS System has to be provided by the bidder for each station.

(iii) For VSS work at Railway Stations, RailTel's respective Territory Managers shall issue a Provisional Acceptance certificate (PAC) for RPF Thana/Chowki-wise cluster stations (including station where RPF Thana/Post-wise is located and stations being recorded at that particular RPF Thana/Post) after receiving completion report from Railway (including attending all deficiencies mentioned in commissioning report of all concerned stations). PAC for first cluster station of RPF Thana/Post shall be issued after successful compliance of all critical points (related to network security) raised by STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-In empanelled Information Security Auditing Organization. All non-critical points raised by Auditing Organization shall be complied by the bidder before issuance of Provisional Acceptance Certificate (PAC) for IT setup at RailTel Datacenters at Gurugram & Secunderabad.

(iv) For IT setup at RailTel Datacenters at Gurugram and Secunderabad, Provisional Acceptance certificate (PAC) shall be issued by the respective Datacenter in-charges after issue of PAC for last cluster station of RPF Thana/Chowki (including station where RPF/Than/Chowki is located and stations being recorded at that particular RPF Thana/Chowki) subject to closure of all non-critical points raised by STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-In empanelled Information Security Auditing Organization. In case PAC for last cluster(s) station of RPF Thana/Chowki is pending for want of site readiness, PAC for IT setup at Data Center shall be released after approval of RGM/ED.

3.D.9. Maintenance Spares

3.D.9.1 Unit rates for each spare required for operation and maintenance shall be provided. Bidder shall also provide the address, contact person, mail-id, fax, and telephone no. of the manufacturer of the spare parts, if different from the bidder itself. The bidder shall warrant that spare part for the system would be available for minimum of 8(1 Year Maintenance Supervision + 2Year Warranty + 5 Year AMC) years after issue of PAC for IT setup at DC-DR as per clause no. 3.D.8 (iv).

In case of stoppage/discontinuation of production of spares for the installed equipment by OEMs, the bidder has to provide one year advance intimation to the Purchaser so that the Purchaser may order the requirements of spares in one lot.

Sufficient number of spares (for operation and maintenance) shall be kept against SOR items as mentioned (with round off at the higher side) to maintain the SLAs. Spares shall be provided from the same manufacturing facilities/location from where the respective equipment, subsystems are offered.

The list of the required spares being supplied with unit cost and total cost should be attached along with the bid.

8% spares taken in the SOR (Chapter-2) against Schedule ‘A’ are not maintenance spares and should not be considered for maintaining SLAs during the entire project duration (i.e. upto AMC period).

3.D.9.2. Spare part management for spare during the maintenance support services, warranty and AMC phase in order to meet the SLAs shall be undertaken by the successful bidder.

3.D.9.3. The list of maintenance spares, required for providing maintenance support with Uptime being asked for, shall be worked out by the bidder in consultation with the OEM and submitted for RailTel's approval. These spares shall be stocked at various locations proportionately and checked by RailTel at the time of acceptance of the network (to be defined by RailTel later).

3.D.9.4. RailTel shall hold successful bidder responsible for all SLAs mentioned in the RFP and subsequently in the contract document, however, for ensuring the same, Certificates from all OEMs and/or authorized vendors/representatives (as per Forms of Chapter 6, (Section-I)will be produced to confirm that the life time

maintenance support (three years warranty & five years AMC) by provisioning of spares.

3.D.9.5. In case the equipment offered/supplied under the contract is out of production/support or not available due to any reason, the contractor shall supply equipment with prior approval of purchaser's engineer.

3.D.10. Commissioning spares

The commissioning spare shall be arranged by the bidder to cater to the requirement during installation, commissioning, site acceptance testing, trial run and warranty period. These spares shall be readily available with the bidder, at specified locations.

3.D.11 Final Acceptance

Before issue of FAC, the bidder will offer its complete VSS work for sample testing of any randomly selected station by STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-IN empanelled Information Security Auditing Organization for arranging security verification certification. FAC shall be issued only after submission of security verification certification by the bidder and closure of all points raised by the Auditing Organization.

The final acceptance of the complete work shall take effect from the date of successful completion of 12 months of Maintenance Supervision (Clause 4.A.2.5 of Chapter-4, Section-I) of IT setup at RailTel Datacenters at Gurugram & Secunderabad and the contractor has complied fully with his obligations in respect of each item under the contract. The Final Acceptance Certificate shall be signed by authorized representative of RailTel nominated by the Executive Director of the Region and the contractor. Notwithstanding the issue of Final Acceptance Certificate the contractor and the purchaser shall remain liable for fulfillment of any obligation incurred under the provision of the contract prior to the issue of Final Acceptance Certificate which remains unperformed at the time such certificate is issued and for determining the nature and extent of such obligation the contract shall be deemed to remain in force between the parties hereto.

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SECTION-I
CHAPTER-3

E. TRAINING, VENDOR DATA REQUIREMENT, DOCUMENTATION, AND DESIGN GUIDELINES

3.E.1 Training of RailTel/Railway Personnel

3.E.1.1. Scope of Training:

The successful bidder shall provide hands on training and online training with detailed course material on the installed equipment and software covering at least the following as per the schedule given by RailTel during complete project duration:

i) Configuration and their operation of Networking Equipment, Cameras and other equipment etc. supplied under the project.
ii) Introduction to computers, servers/workstations/NVR, and their configuration and operations
iii) Trouble shooting and preventive maintenance
iv) Training on operation of CCTV system.

These personnel shall work with the Bidder technical team staff to gain confidence and to get expertise right from the execution stage of the project till completion of AMC period. The training content to be designed and delivered by successful bidder at successful bidder's own cost. All equipment used for training shall be identical to those quoted and supplied for site installation in hardware and software versions.

3.E.1.2 Timelines for Training and Development:

SN	Deliverable	Timeline in Months (M) (D= Date of award of LoA)
1.	Preparation of training material, course etc. for IT awareness, role/function based training of CCTV monitoring room operators, system technicians and supervisors etc.	D + 2M
2.	Completion of IT awareness training	D + 3M
3.	Continuous online training during installation, warranty & AMC phase	As and when required by RailTel/Railways

Sets of training manual in two hard copies & two soft copies containing details of technical specification, installation & commissioning, troubleshooting & maintenance schedule etc. shall be supplied by the bidder.

The bidder shall update the course material of manuals in case there are any changes owing to revision/modifications in equipment/system specifications.

The training course shall be conducted at the manufacturing facilities from where the respective equipment/subsystems are manufactured/ offered or atfull-fledged training facilities.

It shall be explicitly understood, that Purchaser's/Engineer's personnel shall be fully associated during Engineering, Installation, Testing and Commissioning activities and this opportunity shall be taken by bidder to impart on the job training in addition to the above training course.

Bidder offer excludes costs of transportation, lodging and boarding of the trainees which shall be arranged by the Purchaser.

The training course to be conducted at the manufacturing facilities or at full-fledged training facility as the case may be, shall be designed to train the trainees in all aspects of System engineering, equipment operation, installation and functional details, theory of operation of equipment, trouble shooting and familiarization with the equipment at card and component level. All equipment used for training shall be identical to those quoted and supplied for site installation in hardware and software versions.

Bidder shall provide comprehensive documentation, course material, manuals, literature etc. as required for proper training of personnel at his own cost. Consolidated and comprehensive documentation shall be available to each participant. After the completion of course, all such materials shall become the property of the PURCHASER. Bidder shall update the course material of manuals in case there are any changes owing to revision/modifications in equipment/system specifications.

Bidder shall, prior to start of training, send complete training program including details of each course, duration, subject matter etc. The Purchaser/Engineer reserves their right to suggest any additions/deletions in the program, which shall be incorporated by the bidder at no additional cost.

3.E.2 Vendor Data Requirement and Documentation

One set of Documentation with hard and soft copy shall be supplied for each station.

The following documents for the complete system shall be supplied and approved by Purchaser/Engineer in order to start Factory Acceptance Testing:

A) System description, System configuration diagram & Connectivity diagram

B) Detail technical manual of each type of equipment

Equipment interconnection diagram including details of various interfaces, signaling protocols used at each stage.

Layout of equipment and space requirements for each station.

Installation manual including installation procedure and commissioning.

Supervisory configuration, alarm list, operator interface etc.

C) Maintenance manual of each type of equipment containing:

i) Preventive maintenance procedures.

ii) Trouble shooting/repairs procedures including failure analysis shall provide exhaustive information about repairs including but not limited to removal, reinsertion of components and cards, repairs, adjustments, tuning, calibration, tools required for a particular operation, test points, including turn-around time for repair and the details of the maintenance support service centre to be furnished in the bid and all other maintenance related details.

iii) Expansion possibilities of the system without causing deterioration in the system performance.

iv) Any other data, document not specifically mentioned, but required for the satisfactory testing, installation and commissioning, operation and maintenance of the system shall be provided.

v) Documents to be supplied after trial runs but before System commissioning (Acceptance of the System by Purchaser/Engineer).

3.E.3 Design Guidelines

i) Equipment shall conform to the similar housing standards and shall preferably be integrated in one 19" rack.

ii) All venting, cooling shall be natural. However, in case of equipment with internal forced cooling, suitable dust filters may be used, if required.

iii) All equipment shall be immune to EMI; RFI interference generated by any nearby source including traction overhead equipment& shall meet the latest international standards in this regard.

iv) The equipment shall be capable of functioning with minimum maintenance and shall be preferred to have no requirement of any preventive maintenance.

v) All the wiring work whether power cable, network cable or OFC cable should be wired and clamped properly on the channels and coding may be provided for the identification of the cables.

vi) All equipments (except for equipments at DC-DR) proposed for procurement in this tender document, are planned to be installed at Railway station/RPF Thana. Therefore, all such equipments should be able to withstand Heat and Dust in accordance with Indian environment.

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SECTION-I
CHAPTER 4

A. COMMERCIAL TERMS & CONDITIONS

4.A.1 Offer letter and Validity of offer

4.A.1.1 The bidder shall complete the offer letter (Chapter-1, Section-I) and the Price Schedule(Chapter-2, Section-I) furnished in the tender documents, indicating the goods to be supplied, description of the goods, associated technical literature, quantity and prices etc.

4.A.1.2 The offer should remain valid for a minimum period from the date of opening of tender including the date of opening as indicated in Bid Data Sheet (BDS) Chapter-5, Section-I.

4.A.2 Warranty

4.A.2.1 The warranty would be valid for a period as indicated in Bid Data Sheet (BDS) Chapter-5, Section-I. The supplier shall warrant that stores to be supplied shall be new and free from all defects and faults in material, workmanship and manufacture and shall be of the highest grade and consistent with the established and generally accepted standards of materials of the type ordered and shall perform in full conformity with the specifications and drawings. The supplier shall be responsible for any defects that may develop under the conditions provided by the contract and under proper use, arising from faulty materials, design or workmanship such as corrosion, inadequate quantity of material to meet equipment requirements, inadequate contact protection, deficiencies in design and/or otherwise and shall remedy such defects at his own cost when called upon to do so by the Purchaser who shall state in writing in what respect the stores are faulty.

4.A.2.2 If it becomes necessary for the contractor to replace or renew any defective portion/portions of the supplies under this clause, the provisions of the clause shall apply to the portion/portions of the equipment so replaced or renewed or until the end of the above mentioned period or twelve months, whichever may be later. If any defect is not remedied within a reasonable time of 30 days, the Purchaser may proceed to do the work at the contractor's cost, but without prejudice to any other rights which the Purchaser may have against the contractor in respect of such defects.

4.A.2.3 Replacement under warranty clause shall be made by the contractor free of all charges at site including freight, insurance and other incidental charges.

4.A.2.4 Warranty Support

4.A.2.4.1 Material for repair during Warranty Period shall be handed over /taken over by contractors engineer at respective site or mutually agreed RailTel PoP location.

4.A.2.4.2 During the warranty period, the contractor shall be responsible to the extent expressed in this clause for any defects that may develop under the conditions provided for by the contract and under proper use, arising from faulty materials,

design or workmanship in the plant, or from faulty execution of the work by the contractor but not otherwise and shall remedy such defects at his own cost when called upon to do so by the Purchaser Engineer who shall state in writing in what respect the portion is faulty.

4.A.2.4.3 During the free warranty maintenance period, contractor should stabilize the working of the system. Purchaser has the right to extend the period of supervision of the maintenance free of cost till the system stabilizes and works satisfactorily for a reasonable period of time. If during the time any equipment etc. is to be added or deficiencies are to be rectified to make the system work trouble free, the same also will have to be done by the contractor at no cost to RailTel as to make good all the deficiencies. The bidder shall ensure that the downtime of the VSS infra installed at RPF Thana/Post shall not be more than 4 hours. Additional Manpower, if considered necessary, shall be provided by the bidder to stabilize the network at no additional cost to RailTel. A penalty of Rs. 1000/- per hour of down time of network shall be imposed on the contractor for not meeting the down time prescribed. The Contractor's Engineer shall be responsible to identify the fault and advise corrective measures and ensure that defective cards are replenished.

4.A.2.4.4 Replacement Services

In case of hardware failure the replacement must be given in next business day. If the bidder fails to replace as per below mentioned duration, the following penalties will be imposed:

If the Bidder fails to replace /Equipment card/Part in next business day, the following penalties will be imposed.

Equipment	Duration of repair	Deduction/Penalties
All Modules and accessories	More than 1 days and up to 7 days	2% of the cost of affected Equipment.
All Modules and accessories	More than 7 days and up to 15 days	10% of the cost of affected Equipment.
All Modules and accessories	More than 16 days and up to 30 days	25% of the cost of affected Equipment.
All Modules and accessories	More than 30 days	100% of the cost of affected Equipment.

Note:

a. OEM should provide facility to RailTel for direct fault case open on TAC Support in case of emergency.

b. The above replacement services will be applicable during maintenance supervision, warranty and AMC period.

4.A.2.5 Maintenance Supervision

4.A.2.5.1 After issue of last provisional acceptance certificate {as mentioned in Clause 3.D.8 (iv)} is issued (including trial run period if any), the contractor shall be responsible for proper maintenance supervision of the complete system free of cost

for a period of twelve months. For this purpose he shall prepare a maintenance plan and make available the services of qualified maintenance engineer stationed at the location approved by RailTel authorized representative who will supervise and maintain the VSS infra.

4.A.2.5.1.2 The Contractor's Engineer shall be responsible to identify the fault and advise corrective measures and ensure that defective cards are replenished. The bidder shall ensure that the downtime of the VSS infra installed at RPF Thana/Post shall not be more than 4 hours. Additional Manpower, if considered necessary, shall be provided by the bidder to stabilize the network at no additional cost to RailTel. A penalty of Rs. 1000/- per hour of down time of network shall be imposed on the contractor for not meeting the down time prescribed. The Contractor's Engineer shall be responsible to identify the fault and advise corrective measures and ensure that defective cards are replenished.

4.A.2.5.2 During this period of maintenance supervision if any shortfall is noticed in the functioning, as a result of any deficiency in work, the contractor will rectify the same at no cost to RailTel. During such rectification if any faulty equipment/modules need replacement or repair, they shall be provided by the contractor from the set of equipment or modules that the contractor should bring to the site of installation in addition to all the materials to be supplied against this contract.

4.A.2.5.3 To summarize, the total period of warranty as per BDS in Chapter-5 (Section-I), will comprise of first 12 months of Maintenance Supervision (after issue of PAC) extendable by RailTel for reasons as explained, as per para 4.A.2.5 above, post which FAC will stand issued. Issue of FAC will be followed by 24 months of warranty as per para 4.A.2 &4.A.2.4 above.

4.A.3 Long Term Maintenance Support (AMC)

4.A.3.1 Bidder shall provide maintenance support after successful completion of the warranty obligations for a minimum period of 5 years. The long term maintenance support shall be comprehensive and include all hardware and software of equipment VMS, VA, FRS, UPS, EMS, CCC etc. supplied against this contract. RailTel should be extended the benefits of software update/up-grades made by Bidder on the system from time to time to improve performance. During this period the scope of work as mentioned in Clause 3.A.1.4 (Chapter-3, Section-I) & its sub clauses will be applicable.

4.A.3.2 Bidder shall be paid @ 3.5% (minimum) of overall cost (excluding Taxes and Duties) of supply portion of Schedule (A) per annum towards Long Term Maintenance Support after completion of warranty period, to undertake maintenance, repairs and replacements of all type of equipment/module/ card/assembly/subassembly and update/upgrade of software released during this period and /or which may fail in the system after the warranty. Taxes will be as per actual at the time of execution of the AMC i.e. issue of AMC LOA.

If the bidder quotes a higher base rate for AMC, he will be paid at his quoted rate per annum. Total AMC cost for five years will be taken for evaluation purpose.

AMC would have to be valid for minimum period of 5 years after completion of warranty.

In case a bidder quotes AMC rates lower than 3.5% and if the bidder wins the contract, his cost against supply items will be reduced by differential (w.r.t. 3.5%) of AMC rates & bidder will be paid accordingly against the cost of supply. AMC charges to him, however, will be paid only @ 3.5% per annum.

4.A.3.3 Separate LOA for AMC shall be issued by RailTel and separate Agreement shall be signed with the Bidder after completion of warranty period. A fresh Bank Guarantee valid for a period of 4 months beyond the completion of AMC of five years from the date of issue of LOA for AMC shall be required to be submitted by OEM/Tenderer for due fulfillment of long term maintenance support obligation.

Value of PBG will be @10% of the total value of LOA for AMC of five years or as per Government of India guidelines applicable at the time of issue of LOA for AMC. This PBG of AMC shall be submitted by the bidder within 30 days from the date of issue of LOA for the AMC. In case bidder does not submit the PBG in the stipulated time period, RailTel may encash the PBG given with the original LOA.

4.A.3.4 Deleted

4.A.3.5 Quarterly payment for AMC Charges as per the Service Level Agreement (SLA) at the end of every quarter would be made by RailTel after successful completion of AMC Services of that quarter and on the certificate furnished by concerned RailTel representative of the Executive Director of the Region.

Note: The acceptance of the above clause is mandatory and specific acceptance from OEM is required to be enclosed as per Form no. 3 (Chapter-6, Section-I). Any deviation /non acceptance will lead to **REJECTION** of the bid summarily.

4.A.4 Phase-wise Delivery/Implementation timelines

Milestones for Design, Supply, Installation and Commissioning from the date of issue of Letter of Acceptance (LOA) is tabulated as under.

Phase	Completion Target	Deliverable	Timeline in Months (M) (D= Date of issue of LOA)
I.	Stations & associated RPF Thana/ Post (This Timeline is indicative).	Submission of Initial Design documents for all stations after doing site survey.	D + 10 Days
		Supply and Inspection plan along with destination(s) for delivery to RailTel	D + 15 Days

		Submission of Final Design Document for all stations after doing site surveys for approval and complete due diligence along with mobilization of equipment, materials etc. required.	D + 60 Days
II.	Completion of Installation, Testing and Commissioning of VSS at all stations (This Timeline is binding on the Bidder).		D + 6 M

All timeline calculations are from the date of issue of LOA. Bidders need to share their detailed project plan as per the schedule mentioned above. Time is essence of the contract.

4.A.4.1 The first phase of deliverable also includes security verification as per Clause 8.3 (Chapter-8), Note, Point-iv.

4.A.4.2 In case the security verification is declared unsuccessful, either on the basis of delay in implementation and/or on the basis on inability to adhere to the functional and operational requirements of the System as stated in this RFP, RailTel will be within its right to take measures as detailed in Terms and Conditions of the Contract.

4.A.4.3 All spare items as mentioned in SOR shall be supplied before issuance of PAC for first cluster station of RPF Thana/Post (including station where RPF Thana/Post is located and stations being recorded at that particular RPF Thana/Post).

4.A.4.4 Bidder in all cases is required to adhere to the project timelines and the project plan shared. In case of delay in implementation and/or on the basis on inability to adhere to the functional and operational requirements of the System as stated in this RFP, RailTel will be within its right to take measures as detailed in Terms and Conditions of the Contract.

4.A.4.4 RailTel Region's Details:

SN	Region/Head Office	Address
1	Northern Region/ New Delhi	Executive Director 6th Floor, IIIrd Block, Delhi Technology Park, Shastri Park, New Delhi-110053 Fax: +91-11-22185978 Tel: +91-11-22185933 Email: vijaylaxmi@railtelindia.com
2	Eastern Region/ Kolkata	Executive Director 3rd floor, Chatterjee International Centre,

		33A, Jawaharlal Nehru Road, Kolkata - 700071 Fax: +91-33-44041499, Tel: +91-33-44041499, Email: suresh@railtelindia.com
3	Southern Region/ Secunderabad	Executive Director 2nd Floor, B-Block, Rail Nilayam, Secunderabad-500071. Fax: +91-40-27820682, Tel: +91-40-27821134 Email: kmr@railtelindia.com
4	Western Region/ Mumbai	Executive Director Western Railway Microwave Complex, Senapati Bapat Marg, Mahalaxmi, Mumbai-400013 Fax: +91-22-24923913, Tel: +91-22-24923907, Email: vinod.agarwal@railtelindia.com

4.A.4.5 Project Preparation

4.A.4.5.1 The successful bidder shall submit a detailed implementation plan as per the project deliverables timelines before the commencement of the project.

4.A.4.6 Design and approval phase

4.A.4.6.1 The successful bidder shall conduct a detailed study of functional and technical requirements of the Video Surveillance System work to make the required system configuration and design modifications to its solution if required in order to achieve the desired functionality. However the same must be tested, accepted and approved by RailTel/Railways.

4.A.4.6.2 Submission of Design Document for proposed IP based Video Surveillance System (VSS) indicating all the components of the Edge infrastructure of VSS system including Cameras, UPS, Servers/workstations, Storage, Switches, NVR, EMS, CCC etc. for RailTel/Railway's approval

4.A.4.7 Installation, Configuration and Customization

4.A.4.7.1 Installation and commissioning of software, hardware and equipment as per terms and condition of the tender.

4.A.4.7.2 Carry out all the customization/configuration activities as identified during Design phase by RailTel/Railway.

4.A.4.7.3 RailTel/Railways reserves the right to seek customization to meet its requirements.

4.A.5 Payment Terms

Note: It may be noted that bidder is permitted to quote only in Indian Rupees. Accordingly, all payments will be made in Indian Rupees only.

4.A.5.1 Payment Terms for Supply Items:

4.A.5.1.1 For hardware supply items, payments will be made on the basis of stations covered under RPF Thana/Post each separately for the material supplied in stages for various items supplied.

a) 75% payment of the items would be made on receipt and acceptance of material by the consignee duly inspected and on submission of the following documents subject to any deductions or recovery which RailTel may be entitled to make under the contract:
   i) Tax Invoice
   ii) Delivery Challan
   iii) Packing list.
   iv) Factory Test Report.
   v) Consignee receipt
   vi) Warranty certificate of OEM
   vii) Insurance certificate for transit insurance
   viii) Contractor's All Risk Insurance Policy (refer clause 4.A.10)
   ix) Inspection certificate (refer clause 3.D.1/3.D.3)
   x) A certificate duly signed by the firm certifying that equipment/ materials being delivered are new and conform to technical specification or RDSO inspection certificate wherever applicable.

b) 15% payment of the value of items of Schedule – A shall be made by RailTel on issue of Provisional Acceptance Certificate (PAC)for concerned cluster station of RPF Thana/Post (including station where RPF/Thana/Post is located and stations being recorded at that particular RPF Thana/Chowki)

c) 5% payment on issue of Final Acceptance Certificate (FAC) after deduction of penalty, if any, as per clause4.A.2.4 and 4.A.8.

d) Remaining 5% payment shall be made by RailTel on successful completion of Warranty Period after deduction of penalty, if any, as per clause 4.A.2.4 and 4.A.8.

4.A.5.1.1.1 15% payment of value of supply items of Schedule–A, which could not be installed for want of site readiness, will be made on issue of PAC of the last cluster of station of RPF Thana/Post where site was available for CCTV at stations as per the decision of Executive Director/Regional General Manager of the region.5% on issue of FAC and remaining 5% after completion of warranty period after deduction of penalty, if any, as per clause 4.A.2.4 and 4.A.8.

For spares 15% will be made after issue of PAC of the first RPF Thana/Post for CCTV at stations, 5% on issue of FAC and remaining 5% payment after completion of warranty period.

4.A.5.1.2 For software items, payment will be made for the software/licenses supplied in stages for various items supplied.

a) 40% payment of the items would be made on receipt of software/licenses by the consignee duly inspected and on submission of the documents as mentioned in para 4.A.5.1.1 above.

b) 25% payment of the value of items of Schedule – A shall be made by RailTel on installation & commissioning of stations/sites including at the concerned RPF Thana/Post of the cluster for CCTV at stations.

c) 25% payment on issue of Provisional Acceptance Certificate (PAC).

d) 5% payment on issue of Final Acceptance Certificate (FAC) after deduction of penalty, if any, as per clause 4.A.2.4 and 4.A.8.

e) Remaining 5% payment shall be made by RailTel on successful completion of Warranty Period after deduction of penalty, if any, as per clause 4.A.2.4 and 4.A.8.

4.A.5.1.2.1 (25% + 25%) payment of value of software items of Schedule – A which could not be installed for want of site readiness or as per the decision of Executive Director/Regional General Manager of the region, will be made on issue of PAC of the last RPF Thana/Post for CCTV at stations, each separately.5% on issue of FAC and remaining 5% after completion of warranty period after deduction of penalty, if any, as per clause 4.A.2.4 and 4.A.8.

4.A.5.2 Payment of Service Items:

4.A.5.2.1 90% payment of items (except those mentioned in paras below) shall be made **by respective Executive Director/Regional General Manager of the Region** on successful Installation, Testing and Commissioning of the stations/sites including at the concerned RPF Thana/Chowki of the cluster, 5% on issue of PAC and final 5% on issue of Final Acceptance Certificate.

4.A.5.2.2 Payment towards "Training of personnel over and above the on-site training during the installation, maintenance and supervision period as detailed in the tender document" shall be made **by respective Executive Director/Regional General Manager of the Region** on successful completion of specified trainings.

4.A.5.3 Payment of Services (Long Term Maintenance, AMC)

4.A.5.3.1 For VSS work at stations, Payment of due amount for SOR item towards "AMC/Long term maintenance Support" would be paid quarterly by the concerned Region after satisfactory completion of AMC Services of that quarter and on certificate furnished by concerned RailTel(RCIL)’s representative of the Region.

4.A.5.4 All the invoices raised by the bidder will be raised in the name of M/s RailTel Corporation of India Limited and corresponding payments will be made by RailTel (RCIL).

4.A.5.5 Accounting unit/bill passing unit for the supplies under SOR is Executive Director/RGM of the Region. Bills to be submitted to the authorized representative of Executive Director/RGM of the Region for certifying receipt of material & services, for passing for payment.

4.A.5.6 The breakup of taxes has to be furnished and same should be reflected in the bills so that input GST credit can be availed by RailTel(RCIL).

4.A.5.7 All invoices will be raised by the contractor state-wise as per clause 4.A.7.

4.A.6 Performance Bank Guarantee (Security Deposit)

4.A.6.1 The successful bidder has to furnish security deposit in the form of Performance Bank guarantee @**10%** for issued PO/ LOA value, the same should be submitted within 30 days of issue of LOA/PO, failing which a penal interest of 15% per annum shall be charged for the delay period i.e. beyond 30 (thirty) days from the date of issue of LOA/PO. This PBG should be from a Scheduled Bank and should cover warranty period plus four months for lodging the claim. The performance Bank Guarantee will be discharged by the Purchaser after completion of the supplier's performance obligations including any warranty obligations under the contract. PBG claim period should be valid till 1 year after PBG Validity.

4.A.6.2 The earnest money shall be released on submission of PBG. The Performa for PBG is given in Chapter 6 Form No. 1.

4.A.6.3 The Performance Bank Guarantee (security deposit) will bear no interest.

4.A.6.4 This PBG would be released after satisfactory completion of contract including warranty period plus 4 months. This PBG would be released after satisfactory completion of contract including warranty period and only after submission of PBG towards AMC as per clause 4.A.3.3 of this Chapter. In case of any extension of the project, the PBG shall be extended for the extended period plus 4 months.

4.A.6.5 A separate advice of the BG will invariably be sent by the BG issuing bank to the RailTel's Bank through SFMS and only after this the BG will become acceptable to RailTel. It is therefore in own interest of bidder to obtain RailTel's bank IFSC code, its branch and address and advise these particulars to the BG issuing bank and request them to send advice of BG through SFMS to the RailTel's Bank.

4.A.7 Taxes & Duties

The price quoted in the offer should be firm, fixed indicating the breakup and inclusive of all taxes & duties like import, custom, antidumping, CGST, SGST, IGST, UTGST etc. The Offer should be inclusive of packing, forwarding, freight upto destination, insurance charges.

4.A.7.1 Tenderer shall quote all inclusive rates, but there shall be break up of basic price and all type of applicable taxes such as SGST/CGST/IGST/UT GST along with respective HSN/SAC Code under GST Law (Including tax under reverse charges payable by the recipient).

4.A.7.2 Bidder shall issue valid tax invoice to RailTel for availing proper credit of CGST/SGST/IGST/UTGST incase of award of Contract. GST will not be reimbursed in the absence of valid tax invoice.

4.A.7.3 For all the taxable supplies made by the vendor, the vendor shall furnish all the details of such taxable supplies in the relevant returns to be filed under GST Act.

4.A.7.4 If the vendor fails to comply with any of the above, the vendor shall pay to purchaser any expense, interest, penalty as applicable under the GST Act.

4.A.7.5 In case of incorrect reporting of the supply made by the vendor in the relevant return, leading to disallowance of input credit to purchaser, the vendor shall be liable to pay applicable interest under the GST Act to the credit of purchaser. The same provisions shall be applicable in case of debit/credit notes.

4.A.7.6 Wherever the law makes it statutory for the Purchaser to deduct any amount towards GST at sources, the same will be deducted and remitted to the concerned authority.

4.A.7.7 In regards to works contract, the tenderer should have registration no. of GST in respective state where work is to be executed and shall furnish GST registration certificate on award of LOA.

4.A.7.8 The imposition of any new tax and/or increase/ in the aforesaid taxes, duties levies, after the last stipulated date for the receipt of tender including extensions if any and the bidder there upon necessarily and properly pays such taxes/levies/cess, the bidder shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of RailTel attributable to delay in execution of work within the control of bidder. The bidder shall, within a period of 30 days of the imposition of any such tax or levy or cess, give a written notice thereof to RailTel that the same is given pursuant to this condition, together with all necessary information including details of input credit relating thereto. In the event of non-payment/default in payment of any of the above taxes, RailTel reserves the right to with-hold the dues/payments of bidder and make payment to state/Central Government authorities as may be applicable. However, if the rates are reduced after the last stipulated date for receipt of tender, bidder has to pass on the benefits to RailTel.

4.A.7.9 **Incase of imported equipment**

Anti-Dumping duty if applicable on the equipment proposed to be supplied by OEM/Tenderer as per extant instructions of Ministry of Commerce/Finance Government of India, has to be borne by the tenderer and shall be deducted from the amount payable to the bidder at the time of making payment to the firm, if this duty amount is paid to Custom Authority by RailTel.

4.A.8 Service Level Agreement (SLA) and Penalties during AMC

4.A.8.1 The purpose of this Service Level Agreement (SLAs) is to define the level of service to be provided by the successful bidder to RailTel for the AMC period. The successful bidder has to comply with all SLAs defined below to ensure adherence to project timelines, quality and availability of VSS System. Non-compliance of SLAs will lead to penalties as defined in subsequent sections.

4.A.8.2 Penalties shall not be levied on the successful bidder in the following cases:-

a) Non-compliance of SLAs has been solely due to reasons (acceptable to RailTel) beyond the control of the successful bidder and
b) There's a Force Majeure event affecting the SLA which is beyond the control of the successful bidder.

4.A.8.3 Definitions

For the purposes of this SLA, the definitions and terms are specified in the contract along with the following terms shall have the meanings set forth below:

- **"Uptime"** shall mean the time period for the specified services / components with the specified technical service standards are available to the user department. Uptime, in percentage, of any component (Non IT& IT) will be calculated as: Uptime = {1- [(Downtime) / (Total Time – Planned Downtime)]} * 100

- **"Downtime/ Non-Availability"** shall mean the time period for which the specified services / components with specified technical and service standards are not available to the user department and excludes downtime owing to Force Majeure & Reasons beyond control of the bidder. For items being monitored/reported by EMS, downtime/non-availability will be reckoned from the time failure has been reported by EMS. For other item not being monitored/informed by EMS, down time/non-availability will be reckoned from the time contractor or his representative has been informed by the means of Telephone/mobile, fax, email or any other method at the address as specified by the contractor (whichever is earlier). The bidder shall specify the details of a) Telephone no. for calling, b) Fax no., c) Mobile no. for calling & SMS, d) e-mail id, e) postal address for correspondence. **Non-availability of back-up/stand-by system shall also be counted for downtime calculation.**

- **"Incident"** refers to any event / abnormalities in the functioning of the VSS System specified as part of the Scope of Work of the Bidder that may lead to disruption in normal operations of the VSS System.

- **"Helpdesk Support"** shall mean the L2 Support Engineer at Regional NOCwhich shall handle Fault reporting, Trouble Ticketing and related enquiries during this contract.

- **"Resolution Time"** shall mean the time taken (after the incident has been reported at the helpdesk or EMS), in resolving (diagnosing, troubleshooting and fixing) the incident by making the service/component available to the user department.

4.A.8.4 Planned Downtime

Any planned application / System downtime would not be included in the calculation of application / System availability. However, the Successful Bidder should take at least 10 days prior approval from RailTel in writing for the planned outage, which should not be for more than 30 minutes, would be in lean period (non-movement period) and limited to max. 4 outages in a year. The bidder would ensure that the activities under the planned downtime are started only after getting the approval from the authorized representative of RailTel. In case activities are carried out without approval, the time period shall be considered as downtime under SLA.

4.A.8.5 Measurement of SLA

The SLA metrics specifies performance parameters as baseline performance, lower performance and breach conditions. All station wise SLA calculations will be done on monthly basis and penalties will be recovered on quarterly basis during AMC period. Payment to the successful bidder will be linked to the compliance with the SLA metrics.
For period pertaining to Pre-Implementation SLA- Please refer to Liquidated damages Clause at 4.A.11.

SLA Matrix for AMC period:

SN	SLA Parameter	Description/ Reporting	Target	Definition of Downtime	Monitoring Mechanism
1	Availability of Cameras & associated VSS hardware and Software.	Reporting per RPF Thana/Chowki (including station where RPF/Thana/Chowki is located and cluster stations being recorded at that particular RPF Thana/ Chowki)	Uptime- 98% (System functional at least 98% of time measured on monthly basis for a 24x7x365 time period)	Shall include the service disruptions caused due to reasons including but not limited to camera failures, server/workstation failures, NVR failures, software breakdowns, networking device failures, UPS failures, electricity circuit breakdown (excluding AC Mains outage) or data network break down), Display, Video Management, Viewing and Recording System, Switches and UPS (24x7x365)	Automated EMS Reports. In case EMS report is not available for the incident, down time/non-availability will be reckoned from the time contractor or his representative has been informedby the means of Telephone/mobile, fax, email or any other method at the address as specified by the contractor (whichever is earlier)
2	Workstation Unit	Same as above	Uptime- 98% (System functional at least 98 % of time measured on	Shall include the disruption in display of VSS at system at the location of workstation installation	Automated EMS Reports. In case EMS report is not available for the incident, down

SN	SLA Parameter	Description/ Reporting	Target	Definition of Downtime	Monitoring Mechanism
			monthly basis for a 24x7x365 time period.)	caused due to reasons including but not limited to failure of Large format display, workstation failures, networking device failures, UPS failures or data network break down.	time/non-availability will be reckoned from the time contractor or his representative has been informed by the means of Telephone/mobile, fax, email or any other method at the address as specified by the contractor (whichever is earlier)
3	Availability Centralized help desk.	Two L2 Support engineer (for Network and VMS, System, server/workstation& storage system) 24x7 in RailTel Regional NOC	Availability 100%	Non-availability	Attendance log/register mechanism to be maintained by bidder and shared with RailTel every month. The actual availability on ground-reported by RailTel officials will also be cross-checked and taken into consideration while finalizing SLA penalty.
4	Log and Response to issue raised	Response to an incident call will include sending a notification to the person raising the call, either through email or on Phone/SMS, acknowledging the call and informing him/her of the expected resolution time for the call. The contractor is expected to log and respond to 98% of all the incident calls registered within the stipulated time frame of max. 60mins.	98% (Log and response in max. 60 minutes of min. 98% of incident raised)	Response to calls raised in more than 60 mins or non-response	Automated reporting tool from helpdesk

Note: Period for SLA calculation: Monthly

4.A.8.6 Penalty

Penalty table includes penalty that would be levied on the successful bidder on non-achievement of SLAs defined above. Slabs have been created for each SLA and penalty would be imposed on bidder as per the SLA achievement/non-achievement for the period under consideration. System downtime/Non availability will be calculated as per monitoring mechanism defined in SLA matrix.

- Annual Maintenance Charges shall be paid on quarterly basis at the end of the quarter, subject to the deduction for the down time mentioned below.
- SLAs will be monitored and reported through EMS on monthly basis to RailTel by the 5th working day of each month.
- Penalties shall be calculated and is to be deducted from the Annual Maintenance Charges on quarterly basis. Overall penalty in a quarter shall not exceed 15% of the due amount of the quarterly AMC work executed by the Bidder.

Penalty during AMC Period

SN	Penalty Description	
1	Availability of Cameras	Penalty to be charged on a quarterly basis of annual cost of AMC.
	Above or equal to 98%	No penalty
	Below 98% to more than or equal to 95%	5%
	Less than 95%	10%
2	Availability of Workstation units	Penalty to be charged on a quarterly basis
	Above or equal to 98%	No penalty
	Below 98% to more than or equal to 95%	5%
	Less than 95%	10%
3	Availability of L-2 support	Penalty to be charged on a quarterly basis
	Equal to 100%	No penalty
	Below 100% to more than or equal to 95%	5%
	Less than 95%	10%
4	Log and Response to issue raised	Penalty to be paid on a quarterly basis
	Above or equal to 98%	No penalty
	Below 98% to more than or equal to 95%	5%
	Less than 95%	10%

In addition to the above penalty for breach of the SLA parameters, No payment for the month would be made for the all stations under RPF Thana/Chowki (including station where RPF/Thana/Chowki is located and stations being recorded at that particular RPF Thana/Chowki) where the down time observed would be more than 20% for Availability of cameras.

In case of frequent SLA breaches, RailTel reserve the right to forfeit the PBG submitted by the bidder.

4.A.9 Manpower Support

For VSS work at Railway Stations, bidder shall keep suitable no. of L1 Support engineer in Field (for RPF Chowkis/Thanas)and two L2 Support engineer (for Network and VMS, Server/Workstation & Storage system) 24x7 in RailTel Regional NOC during Maintenance Supervision, Warranty and Long term Maintenance (AMC) period. The Field engineer will visit the total installation sites once in every month or earlier if the situation so warrants with the provision that monthly/quarterly reports of the failures and health of the equipment is generated from the NMS and submitted to the Purchaser. Additional manpower, if considered necessary shall be provided by contractor to stabilize the network. The bidder shall arrange the suitable replacement in case the assigned support engineer goes on leave or is unavailable due to any other reason to ensure uninterrupted support services.

4.A.10 Insurance

4.A.10.1 The Contractor shall take out and keep in force a policy or policies of insurance against all liabilities of the Contractor or the Purchaser at common law or under any statute in respect of accidents to persons who shall be employed by the contractor in or around the site for the purpose of carrying out the works on the site. The Contractor shall also take out and keep in force a policy or policies of Insurance against all recognized risks to their offices and depots. Such insurance shall in all respects be to the approval of the Purchaser and if he so requires, in his name.

4.A.10.1.1 The Contractor shall take out and keep in force a policy or policies of insurance from the date, the delivery of material starts (including the transit portion) against all liabilities of the Contractor or the Purchaser. The contractor shall take out and keep in force a Policy or policies of Insurance for all materials covered in schedule of requirement irrespective of whether used up in the portion of work already done or kept for the use in the balance portion of the work until such material are provisionally handed over to RailTel. The goods will be issued by purchaser to supplier and risk of goods shall remain with supplier until the issue of PAC by RailTel (RCIL). Insurance policy has to be kept valid by the contractor till issue of PAC by RailTel (RCIL).

4.A.10.2 The Contractor should also insure the stores brought to site, against risks in consequence of war and invasion, as required under the Emergency Risk (Goods) Insurance Act in force from time to time.

4.A.10.3 It may be noted that the beneficiary of the insurance policy should be RailTel(RCIL) or the policies should be pledged in favor of RailTel(RCIL). The contractor shall keep the policy/policies current till the equipment are installed and commissioned on the site. It may also be noted that in the event of contractor's failure to keep the policy current and alive, renewal of policy will be done by purchaser for which the cost of the premium plus 20% of premium shall be recovered from the contractor.

4.A.11 Liquidated Damages

The timely delivery is the essence of this tender. Liquidated damages will be applicable at the rate of half percent per week or part thereof for undelivered portion

of SOR subject to a maximum of 10% of the cost of Purchase order/LOA for any reason whatsoever attributed to failure of bidder. RailTel will have the right to cancel the order, place order on alternative source besides levying the liquidated damages as above.

4.A.12 Transportation

4.A.12.1 The rates quoted should be CIP destination. The destination shall be defined Station/POP/designated place of RailTel/Railways in the proposed sections/zone which shall be indicated by RailTel's representative.

4.A.12.2 It shall be the responsibility of Bidder to transport the equipment to site for the Installation & Commissioning. Materials not installed / not to be installed at one location need to be shipped from that location to another location by the bidder as may be decided by RGM/Executive Director of the Region. All transportation cost to be borne by the bidder.

4.A.13 Statutory Deduction

These will be made at source as per the rules prevalent in the area of work.

4.A.14 Qualification Criteria

Qualifying criteria under this clause lays down minimum acceptable qualifications in various areas to ensure that qualified bidder has necessary experience, technical expertise, equipment and financial and human resources to successfully complete the project. Bids from bidder not meeting these qualification criteria may liable to be **REJECTED**. Bids from the consortia of tenderers and Joint Ventures meeting the below defined Qualification criteria would also be considered for award of work.

In case bidder has submitted the CA certificate or statutory auditor certificate against eligibility clause, contact details of CA or statutory auditor along with UDIN No. shall be mandatorily mentioned.

4.A.14.1 Eligibility Criteria Requirements for Bidders:

SN	Basic Requirement	Eligibility Criteria Requirements	Supporting Document Required
1.	EMD	The responding bidder should have deposited EMD on IREPS Portal.	Scanned copy of EMD submitted on IREPS portal is to be submitted along with the bid.
2.	Legal Entity	The bidder should be a Company registered in India under the Companies Act (India) with their registered office in India should have been operating for the last three years	**Bidder (Lead member in case of Consortium) –** (i) Certificate of Incorporation / Registration (ii) Memorandum of Associa-

SN	Basic Requirement	Eligibility Criteria Requirements	Supporting Document Required
		Note: (i) In case of Consortium, requirement shall be met by the lead bidder. (ii) In case of JV, requirement shall be met as per Clause 4.A.15.14.14.	tion (MoA) **Bidder as JV** – as defined in Clause 4.A.15.14.14 of Tender document.
3.	**Financial Capability**	The bidder should have received a minimum cumulative turnover as mentioned in BDS (Chapter-5, Section-I) from the operations in the last three financial years plus current year upto the date of opening of tender. **Note:** (i) In case of Consortium, Lead bidder should meet the eligibility criteria as defined in Clause 4.A.15. (ii) In case of JV, requirement to be met as per Clause no. 4.A.15.14.16 of Tender document. (iii) For Startups (recognized by Department of Industrial policy and promotion, Ministry of Commerce and Industry) minimum cumulative turnover as mentioned in BDS (Chapter-5, Section-I) is required.	Bidder should provide (i) Audited Balance Sheets / annual reports as documentary evidence. In case of photocopy of Audited Balance Sheet/P&L, the same should be certified by Chartered Accountant as true copy. (ii) For current year, the Statutory Auditor's certificate for turnover of current year up to the date of bid opening for which Balance Sheet/P&L may not be available. **Contact details of CA/Statutory Auditor along with UDIN No. shall be mandatorily mentioned on copy of certified Balance sheet/ Certificate.**
4.	**Technical Capability**	The Bidder must have successfully completed or substantially completed any of the following during last 07 (seven) years, ending last day of month previous to the one in which tender is invited: Three similar works# each costing not less than the amount equal as mentioned in BDS (Chapter-5, Section-I), or Two similar works# each costing not less than the amount as mentioned in BDS (Chapter-5, Section-I),	(i) Completion certificates from the User Organizations along with POs (for amount of completed work) is required to be submitted In case of composite work purchase orders, bidder shall submit CA certificate certifying the actual amount pertaining to similar work definition as mentioned in the clause. (ii) Past Experience Form as per **Form No.13** of Chapter-6 (Section-I).

SN	Basic Requirement	Eligibility Criteria Requirements	Supporting Document Required
		or One similar work# each costing not less than the amount as mentioned in BDS (Chapter-5, Section-I). For Startups (recognized by Department of Industrial policy and promotion, Ministry of Commerce and Industry),the bidder should have completed in last three financial years plus current year upto the date of opening of tender : Single order of similar work# for an amount as mentioned in BDS (Chapter-5, Section-I) OR Two orders of similar work# for an amount as mentioned in BDS (Chapter-5, Section-I) OR Three orders of similar work# for an amount as mentioned in BDS (Chapter-5, Section-I) Note: (i) In case of Consortium, Lead bidder should meet the eligibility criteria as defined in Clause 4.A.15. (ii) In case of JV, requirement to be met as per Clause no. 4.A.15.14.15 of Tender document. Completed work means, work should be physically completed or substantially completed. In addition to project value for single work order, Annual Maintenance Contract (AMC) amount for the completed period as on date of opening will also be counted in the value of completed work. Substantial completion shall be	(The set of document(s) submitted should clearly certify eligibility criteria and should be verifiable from the user/customer)

SN	Basic Requirement	Eligibility Criteria Requirements	Supporting Document Required
		based on 80 (eighty) per cent (value wise) or more works completed under the contract. For contracts under which the applicant participated as a joint venture member or sub-contractor, only the applicant's share, by value, shall be considered to meet this requirement. For arriving at cost of similar work, the value of work executed shall be brought to current costing level by enhancing the actual value of work at simple rate of **seven percent per annum**, calculated from the date of completion to the date of Bid opening. # Similar Work: Works entailing completion of Supply, Installation, Testing and Commissioning of a project in the field of CCTV/VSS/Security Surveillance/IT/ICT/Telecom for any Government department or Public Sector Units or public listed companies (as per note below). Note: Work experience certificate issued by Public listed company having average annual turnover of Rs 500 Cr and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange, incorporated/registered at least 5 years prior to the date of opening of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.	
5.	Undertaking to be Submitted by the Bidder	A. The bidder (in case of consortium/JV, all members) should not have been black-listed currently by	**Point-A, B of Form no. 8 (Chapter-6)** - To be signed by the Bidder (in case of consortium/JV, all members on their respective letter heads).

SN	Basic Requirement	Eligibility Criteria Requirements	Supporting Document Required
		Central Govt./State Govt./CPSU in India or anywhere globally by Government for security reasons. B. The bidder shall ensure that the Intellectual Property Rights of Hardware and Source Code of Software supplied under this project must not reside in any Country that shares a Land Border with India.	
6.	**Bidder Type**	A. The bidder should be OEM or a System Integrator authorized by OEMs for supply of licenses/commercial support, solution implementation and maintenance support under warranty/AMC/commercial support, for the following products: i. Camera, ii. Switches, iii. Servers/Workstations iv. Storages v. Network Video Recorder (NVR), if applicable. vi. VMS vii. VA viii. FRS ix. EMS x. CCC B. Hardware and Software supplied by OEM should not have any malicious code (Point-D of **form no. 8**).	(i) **Point-A of Form no. 7(Chapter-6)** - MAF/Authorization Letter by OEM. (ii) **Form no. 3 (Chapter-6)**– Bidder as well as OEM undertaking for Long Term Maintenance Support. (iii) **Point-D of Form no. 8 (Chapter-6)**–Bidder undertaking for no Malicious Code.
7.	Financial Capability	As per clause no. 3 (b) of the PPP-MII Order dated 16.09.2020, only bidders offering minimum 20% of local content of supply portion of their offered bid (Class-I Local sup-	**Form no. 9 (Chapter-6)** - Certificate by statutory auditor or cost auditor of the company. Contact details of Statutory auditor or cost auditor along with UDIN No.

SN	Basic Requirement	Eligibility Criteria Requirements	Supporting Document Required
		pliers/bidders-minimum 50% LC and Class-II Local Suppliers/bidders- minimum 20% LC as per PPP-MII Order) are eligible to participate in this tender. Bid of bidders offering less than 20% local content of supply portion of their offered bid will be SUMMARILY REJECTED.	shall be mandatorily mentioned.
8.	**Bidder's Capacity**	Bidder's available bid capacity shall be equal to or more than the total bid value for this Tender (as mentioned in BDS Chapter-5). In case of Consortium, only Lead bidder's available bid capacity shall be considered. In case of JV, each members available bid capacity shall be considered. **In case, the available bid capacity is lesser than total bid value for this Tender, Bidder's offer shall not be considered even if Bidder's has been found eligible in other eligibility criteria/tender requirement.**	Capacity duly certified by Statutory Auditor of the Bidder/Lead member of Consortium/each member of JV - (a) Form no. 14 of Chapter-6 as mentioned in Clause no. 4.A.14.1.1. (b) Bidder/Lead member of Consortium/each member of JV are also required to submit form no. 15 of Chapter-6 on their letterhead. In case if a bidder has participated as JV (each members) / Consortium (Lead member), the tenderer must furnish the required details as mentioned in Clause no. 4.A.14.1.1.

Note:

Credentials if submitted in foreign currency shall be converted into Indian currency i.e., Indian Rupee as under:

The conversion rate of US Dollars into Rupees shall be the daily representative exchange rates published by the Reserve Bank of India for the relevant date. Where, relevant date shall be as on the last day of month previous to the one in which tender is invited. In case of any other currency, the same shall first be converted to US Dollars as on the last day of month previous to the one in which tender is invited, and the amount so derived in US Dollars shall be converted into Rupees at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date
[Explanation for clause - Eligibility Criteria]:

1. In case a contract is started prior to 07 (seven) years, ending last day of month previous to the one in which tender is invited, but completed in last 07 (seven) years, ending last day of

month previous to the one in which tender is invited, the completed work shall be considered for fulfillment of credentials.

2. If a contract is physically completed and completion certificate to this extent is issued by the concerned organization but final bill is pending, such contract shall be considered for fulfillment of credentials.

3. If a part or a component of contract is completed but the overall scope of contract is not completed, this work shall not be considered for fulfillment of technical credentials even if the cost of part completed work/component is more than required for fulfillment of credentials.

4. In case a contract is considered similar in nature for fulfillment of technical credentials, the overall cost of that work including PVC amount if any shall be considered and no separate evaluation for each component of that work shall be made to decide eligibility.

5. The value of final bill including PVC amount-if paid, or otherwise in case final bill is pending the contract cost in last approved variation statement plus PVC amount paid or cumulative amount paid up to last on-account bill including PVC amount and statutory deductions whichever is less, shall be considered as the completion cost of contract.

6. In case of newly formed partnership firm, the credentials of individual partners from previous propriety firm(s) or dissolved previous partnership firm(s) or split previous partnership firm(s), shall be considered only to the extent of their share in previous entity on the date of dissolution / split and their share in newly formed partnership firm. For example, a partner A had 30% share in previous entity and his share in present partnership firm is 20%. In the present tender under consideration, the credentials of partner A will be considered to the extent of 0.3*0.2*value of the work done in the previous entity. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.

7. In case of existing partnership firm, if any one or more partners quit the partnership firm, the credentials of remaining partnership firm shall be re-worked out i.e., the quitting partner(s) shall take away his credentials to the extent of his share on the date of quitting the partnership firm (e.g. in a partnership firm of partners A, B & C having share 30%, 30% & 40% respectively and credentials of Rs 10 crore; in case partner C quits the firm, the credentials of this partnership firm shall remain as Rs 6 crore). For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deed(s), dissolution deed(s) and proof of surrender of PAN No.(s) in case of dissolution of partnership firm(s) etc.

8. In case of existing partnership firm if any other partner(s) joins the firm, the credentials of partnership firm shall get enhanced to the extent of credentials of newly added partner(s) on the same principles as mentioned in item 6 above. For this purpose, the tenderer shall submit along with his bid all the relevant documents which include copy of previous partnership deeds, dissolution/splitting deeds and proof of surrender of PAN No.(s) in case of dissolution of partnership firm etc.

9. Any partner in a partnership firm cannot use or claim his credentials in any other firm without leaving the partnership firm i.e., In a partnership firm of A&B partners, A or B partner

cannot use credentials of partnership firm of A&B partners in any other partnership firm or propriety firm without leaving partnership firm of A&B partners.

10. In case a partner in a partnership firm is replaced due to succession as per succession law, the proportion of credentials of the previous partner will be passed on to the successor.

11. If the percentage share among partners of a partnership firm is changed, but the partners remain the same, the credentials of the firm before such modification in the share will continue to be considered for the firm as it is without any change in their value. Further, in case a partner of partnership firm retires without taking away any credentials from the firm, the credentials of partnership firm shall remain the same as it is without any change in their value.

12. In a partnership firm "AB" of A&B partners, in case A also works as propriety firm "P" or partner in some other partnership firm "AX", credentials of A in propriety firm "P" or in other partnership firm "AX" earned after the date of becoming a partner of the firm AB shall not be added in partnership firm AB.

13. In case a tenderer is LLP, the credentials of tenderer shall be worked out on above lines similar to a partnership firm.

14. In case company A is merged with company B, then company B would get the credentials of company A also.

4.A.14.1.1 BIDDER'S AVAILABLE BID CAPACITY

4.A.14.1.1.1 The Bidder will be qualified only if its available bid capacity shall be equal to or more than the total bid value for this Tender (as mentioned in BDS Chapter-5). The available bid capacity shall be calculated as under:

Available Bid Capacity = [A x N x 2] – 0.33xNxB (**as per details mentioned in form no. 14 of Chapter-6**)

Where,

A = Maximum value of works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender), taking into account the completed as well as works in progress.

N= Number of years prescribed for completion of work for which bids has been invited as defined in clause no. 4.A.4 (I &II).

B = Value of existing commitments and balance amount of ongoing works (**as per details mentioned in form no. 15, Chapter-6**) with the tenderer as on date one month prior to the tender closing date to be completed in next 'N' years.

Note:

(a) The Tenderer(s) shall furnish the details of -

(i) Maximum value of works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) for calculating A, and

(ii) Existing commitments and balance amount of ongoing works with tenderer as per the prescribed formulae for **"Available Bid Capacity"** for statement of all works in progress and also the works which are awarded

to tenderer but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.

The submitted details for (i) and (ii) above should be duly verified by Statutory Auditor. UDIN Number to be mandatorily mentioned.

4.A.14.1.1.2 In case of Consortium, above mentioned criteria shall be met by the Lead member only.

4.A.14.1.1.3 **In case if a bidder is JV,** the tenderer(s) must furnish the details of

(i) Maximum value of works executed and payment received in any one of the previous three financial years or the current financial year (up to date of inviting tender) by each member of JV for calculating A, and

(ii) Existing commitments and balance amount of ongoing works with each member of JV either in individual capacity or as a member of other JV as per the prescribed formulae for **"Available Bid Capacity"** for statement of all works in progress and also the works which are awarded to each member of JV either in individual capacity or as a member of other JV but yet not started upto the date of inviting of tender for calculating B. In case of no works in hand, a 'NIL' statement should be furnished.

The submitted details for (i) and (ii) above should be duly verified by Statutory Auditor. UDIN Number to be mandatorily mentioned.

(iii) Value of a completed work/Work in progress/Work awarded but yet not started for a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above-mentioned bid capacity in the tender under consideration.

(iv) The arithmetic sum of individual "bid capacity" of all the members shall be taken as JV's "Bid Capacity".

4.A.14.1.1.4 In case, the tenderer/s failed to submit the above statement along with offer, their/his offer shall be considered as incomplete and will be **REJECTED SUMMARILY**.

4.A.14.1.1.5 The available bid capacity of tenderer shall be assessed based on the details submitted by the tenderer. **In case, the available bid capacity is lesser than estimated cost of this tender, his offer shall not be considered even if Bidder's has been found eligible in other eligibility criteria/tender requirement.**

4.A.14.2 Eligibility Criteria Requirements for OEM's:

OEM's of **Camera, Switches, Servers/Workstation, Storages, Network Video Recorder (NVR), VMS, VA, FRS, EMS & CCC** whose products are proposed to be used in this video surveillance system deployment should meet following criteria –

SN	Eligibility Criteria Requirements	Supporting Document Required
1.	The Equipment offered by the OEM or equipment/software of the same series/family from the same OEM should have been satisfactorily working in Government/PSUs/Telecom Service Provid-	Satisfactory Working certificate from **End User** clearly mentioning the make & model number of the offered Hardware. An undertaking by the OEM has to be submitted in support, in case issued satisfactory working certifi-

SN	Eligibility Criteria Requirements	Supporting Document Required
	ers/ Public Listed Company for at least 12 months as on date of opening of tender, in India or Abroad. Work experience certificate issued by Public listed company having average annual turnover of Rs 500 Cr and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange or any global stock exchange,incorporated/registered at least 5 years prior to the date of opening of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates.	cate is the immediate predecessor of same series/family of the offered Hardware.
2.	OEM should have supplied the equipment offered or equipment/software of the same series/family at least of the value {as mentioned in BDS (Chapter-5, Section-I)} during last preceding 3 financial years(i.e. current year and three previous financial years) as on opening date of bid to Government/PSUs/Telecom Service Providers/Public Listed Company in India or Abroad. Work experience certificate issued by Public listed company having average annual turnover of Rs 500 Cr and above in last 3 financial years excluding the current financial year, listed on National Stock Exchange or Bombay Stock Exchange or any global stock exchange, incorporated/ registered at least 5 years prior to the date of opening of tender, shall also be considered provided the work experience certificate has been issued by a person authorized by the Public listed company to issue such certificates. Note: For Startups (recognized by Department of Industrial policy and	OEM should submit self-certificate with proper contact detail of clients along with PO reference and amount supplied (Details of purchaser Organization - Firm Name, Firm Address, Name of Contact person, Designation, Telephone Number, Fax, Official mail id etc.). The self-certificate by OEM shall mention that the supplied equipments/software are of same series/family or its immediate predecessor. RailTel reserves the right to verify PO reference and amount supplied from Purchaser Organization. POs issued in the name of System Integrator are also acceptable. For required amount {as mentioned in BDS (Chapter-5, Section-I)}, multiple POs in favour of OEM's System Integrators are also acceptable.

SN	Eligibility Criteria Requirements	Supporting Document Required
	promotion, Ministry of Commerce and Industry) only 1/3 of value as mentioned above is required.	
3.	Undertaking by OEM on their respective letter Heads - 1. OEM should have proven facilities for Engineering, manufacture, assembly, integration, testing and basic facilities with respect to space, Engineering, Personnel, Test equipment, Manufacture, Training, Logistic Supports for at least past three years in the country from where the proposed equipment are planned to be supplied. In case OEM is located outside India, it should have training, repair and service center facilities in India also (Point-B of **Form no. 7**). 2. OEM should not have been black-listed currently by Central Govt./State Govt./CPSU in India or anywhere globally by Government for security reasons (Point-C of **Form no. 7**). 3. Hardware and Software supplied by OEM should not have any malicious code (Point-D of **Form no. 7**). 4. The OEM shall ensure that Intellectual Property Rights of Hardware (including MAC address) and Source Code and of Software must not reside in any Country that shares a Land Border with India. Moreover, OEM must ensure that they are not getting 3rd party manufacturing from any Country that shares a Land Border with India. Note: OEM's from country that shares a Land Border with India are allowed to offer their products provided OEM's is registered with DPIIT as per Clause 4.A.18.6 (Point-E of **Form no.**	**Point- B, C, D & E of Form no. 7 (Chapter-6)**.

SN	Eligibility Criteria Requirements	Supporting Document Required
	7)	

4.A.14.3 Eligibility Credentials and Verification

4.A.14.3.1 The bidder is required to submit purchase order and satisfactory working/implementation certificate issued by the user/customer. Purchase orders without relevant organization's confirmation through a credential letter will not be considered as implementation certificate from the client.

4.A.14.3.2 For client credentials where NDA has been signed, the bidder may submit the corresponding NDA document along with a self-declaration confirming the requirements of the eligibility criteria for which the NDA is being submitted.

4.A.14.3.3 The tenderers shall submit a notarized affidavit on a non-judicial stamp paper stating that they are not liable to be disqualified and all their statement/documents submitted alongwith bid (including documents submitted by OEMs) are true and factual. Standard format of the affidavit to be submitted by the bidder is enclosed as Form no. 4 (Chapter-6, Section-I). **NON SUBMISSION OF AN AFFIDAVIT BY THE BIDDER SHALL RESULT IN SUMMARY REJECTION OF HIS/THEIR BID.** And it shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self attested by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document. It will not be obligatory on the part of Tender Committee to scrutinize beyond the submitted document of tenderer as far as his qualification for the tender is concerned.

The RailTel (RCIL) reserves the right to verify all statements, information and documents submitted by the bidder in his tender offer, and the bidder shall, when so required by the RailTel (RCIL), make available all such information, evidence and documents as may be necessary for such verification. Any such verification or lack of such verification by the RailTel (RCIL) shall not relieve the bidder of its obligations or liabilities hereunder nor will it affect any rights of the railway there under.

In case of any wrong information submitted by tenderer, the contract shall be terminated. Performance Guarantee (PG) and Security Deposit (SD) of contract forfeited and agency barred for doing business on RailTel (RCIL) for 5 (five) years.

4.A.14.3.4 For International project if the original client certificate and other documents are in language other than English than a translated copy duly confirmed by Indian embassy/ One of the board of directors of the lead bidder/ consortium member shall be submitted along with bid document.

4.A.14.3.5 In the event of Foreign Original Equipment Manufacturer (OEM), it's Indian Subsidiary fully authorized for bidding on behalf of OEM is allowed to participate with the experience and financial credential of parent company with specific authorization for doing so from the OEM. The specific authorization addressed to RailTel should be submitted by the bidder.

4.A.14.4 RailTel Reserves the right:

(i) To verify, if so desired, the correctness of documentary evidence furnished by the bidder.

(ii) To verify the successful operation and performance of qualifying projects and bidder shall arrange permission for the same.

(iii) To carry out capability assessment of the bidder(s) including referral to in-house information.

(iv) RailTel shall not be responsible for any delay in the receipt of tenders and reserves the right to **ACCEPT/REJECT** any or all tenders without assigning any reason.To ask the clarification and supporting documents in respect to submitted eligibility documents.

4.A.15 Consortium Bids

4.A.15.1 In view of nature of work, it is anticipated that some of the intending tenderers will pool their resources and experience to form consortia. Consortium bids are permitted with each consortia of tenderers allowed to have at maximum three members, the consortium of tenderers must clearly define the lead bidder of the consortia along with its roles and responsibilities.

4.A.15.2 The Lead bidder should meet the eligibility criteria. In their own interest the tenderers who form such a consortia are advised to investigate capabilities, availability of resources, experienced personnel, financial soundness, past experience and concurrent engagements of Constituting partners.

4.A.15.3 Consortia of tenderers, if any, must clearly define role/scope of store/work of each partner/member. Further the legal agreement for a consortium must accompany the bid and should clearly define the leader of such a consortium who will be the contractor and will be responsible for timely completion of work as also during execution of work, if awarded, coordinate with Purchaser on behalf of the consortium, receive payments for the works executed and be liable for due performance of the contract in all respect.

4.A.15.4 Qualification documents, details etc. must however, be provided for Lead member firm complete in all respects strictly in requisite proforma.

4.A.15.5 A consortium formed will not be subject to alteration with regard to change in constituting firms and/or reorientation of roles. Any changes, if proposed by consortium to take advantage of certain developments during evaluation stage will render the bid liable to be **REJECTED**. As all details are required to be furnished along with the bids and will be critically examined during evaluation of bids, it is imperative that such details should have been thoroughly examined as a safeguard against a possible disqualification of bids on these grounds.

4.A.15.6 All partners of the consortium shall be jointly and severally liable to RailTel for the execution of the entire contract in accordance with its terms.

4.A.15.7 Deleted.

4.A.15.8 For evaluation purposes, Exchange rate applicable on the date of technical bid opening (T.T. selling Exchange rate of State Bank of India applicable on the date technical bid opening) will be considered.

4.A.15.9 Release of payments in foreign exchange for imported items to foreign companies as A consortium partner, shall be on request of lead bidder along with bill.

4.A.15.10 Consortium shall not have more than three members and each consortium member shall have minimum 20% contribution in the work. A Consortium must submit a Power of Attorney by the other member of the Consortium in favor of the Lead Member. This is also to be enshrined in Memorandum of Agreement signed by the Consortium Members and submitted along with the bid. Members of consortium should sign every sheet of price bid as a token of acceptance of all quoted prices by members, failing which the offer will stand summarily **REJECTED**.

4.A.15.11 An individual bidder or a member of Consortium cannot be a member of another Consortium or a JV partner and participate in this tender.

4.A.15.12 Firms should submit the affidavit (As per Form no. 10 of Chapter-6, Section-I) & Consortium Agreement (As per Form no. 12 of Chapter-6, Section-I) along with the bid/offer.

4.A.15.13 Each consortium member shall make equal contribution towards the total PBG amount to be submitted along with acceptance of LOA.

4.A.15.14 Conditions for Participation of Joint Venture (JV) Firms

4.A.15.14.1 Separate identity/name shall be given to the Joint Venture.

4.A.15.14.2 Number of members in a JV shall not be more than five. One of the members of the JV shall be its Lead Member who shall have a majority (at least 51%) share of interest in the JV. The other members shall have a share of not less than 10% each in case of JV with more than three members. In case of JV with foreign member(s), the Lead Member has to be an Indian firm/company with a minimum share of 51%.

4.A.15.14.3 A member of JV shall not be permitted to participate either in individual capacity or as a member of another JV in the same tender.

4.A.15.14.4 The tender form shall be purchased and submitted only in the name of the JV and not in the name of any constituent member. The tender form can however be submitted by JV or any of its constituent member or any person authorized by JV through Power of Attorney to submit tender.

4.A.15.14.5 Earnest Money Deposit (EMD) shall be deposited by lead bidder of JV through e-payment gateway as mentioned in Clause 4.A.22 of Tender document.

4.A.15.14.6 A copy of Memorandum of Understanding (MoU) duly executed by the JV members on a stamp paper, shall be submitted by the JV along with the tender. The complete details of the members of the JV, their share and responsibility in the JV etc. particu-

larly with reference to financial, technical and other obligations shall be furnished in the MoU (Form No. 11 of chapter-6).

4.A.15.14.7 Once the tender is submitted, the MoU shall not be modified / altered / terminated during the validity of the tender. In case the tenderer fails to observe/comply with this stipulation, the full Earnest Money Deposit (EMD) shall be liable to be forfeited

4.A.15.14.8 Approval for change of constitution of JV shall be at the sole discretion of the Rail-Tel. The constitution of the JV shall not be allowed to be modified after submission of the tender bid by the JV, except when modification becomes inevitable due to succession laws etc., provided further that there is no change in qualification of minimum eligibility criteria by JV after change of composition. However, the Lead Member shall continue to be the Lead Member of the JV. Failure to observe this requirement would render the offer invalid.

4.A.15.14.8 Similarly, after the contract is awarded, the constitution of JV shall not be allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and minimum eligibility criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all consequential penal action as per contract conditions.

4.A.15.14.10 On award of contract to a JV, a single Performance Guarantee shall be submitted by the JV as per tender conditions. All the Guarantees like Performance Guarantee, Bank Guarantee for Mobilization Advance, Machinery Advance etc. shall be accepted only in the name of the JV and no splitting of guarantees amongst the members of the JV shall be permitted.

4.A.15.14.11 On issue of LOA (Letter of Acceptance), the JV entity to whom the work has been awarded, with the same shareholding pattern as was declared in the MOU/JV Agreement submitted along with the tender, shall be got registered before the Registrar of the Companies under 'The Companies Act -2013' (in case of Company) or before the Registrar/Sub-Registrar under the 'The Indian Partnership Act, 1932' (in case of Partnership Firm) or under 'The LLP Act 2008' (in case of LLP). A separate PAN shall be obtained for this entity. The documents pertaining to this entity including its PAN shall be furnished to the RailTel before signing the contract agreement for the contract. In case the tenderer fails to observe/comply with this stipulation within 60 days of issue of LOA, contract is liable to be terminated. In case contract is terminated RailTel shall be entitled to forfeit the full amount of the Earnest Money Deposit and to forfeit other dues payable to the Contractor under this contract. The entity so registered, in the registered documents, shall have, inter-alia, following Clauses:

a) Joint And Several Liability - Members of the entity to which the contract is awarded, shall be jointly and severally liable to the RailTel for execution of the project in accordance with General and Special Conditions of Contract. The members of the entity shall also be liable jointly and severally for the loss, damages caused to the RailTel during the course of execution of the contract or due to non-execution of the contract or part thereof.

b) Duration of the Registered Entity - It shall be valid during the entire currency of the contract including the period of extension, if any and the maintenance period after the work is completed.

c) Governing Laws - The Registered Entity shall in all respect be governed by and interpreted in accordance with Indian Laws.

4.A.15.14.12 Authorized Member - Joint Venture members in the JV MoU shall authorize one of the members on behalf of the Joint Venture to deal with the tender, sign the agreement or enter into contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/contract. All notices/correspondences with respect to the contract would be sent only to this authorized member of the JV.

4.A.15.14.13 No member of the Joint Venture shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other members and that of the RailTel in respect of the said tender/contract.

4.A.15.14.14 Documents to be enclosed by the JV along with the tender:

a) In case one or more of the members of the JV is/are partnership firm(s), following documents shall be submitted:

i) A notarized copy of the Partnership Deed,

ii) A copy of consent of all the partners or individual authorized by partnership firm, to enter into the Joint Venture Agreement on a stamp paper,

iii) A notarized or registered copy of Power of Attorney in favour of the individual to sign the MOU/JV Agreement on behalf of the partnership firm and create liability against the firm.

b) In case one or more members is/are HUF, the following documents shall be enclosed:

i) A copy of notarized affidavit on Stamp Paper declaring that he who is signing the affidavit on behalf of HUF is in the position of „Karta" of Hindu Undivided Family (HUF) and he has the authority, power and consent given by other members to act on behalf of HUF.

c) In case one or more members of the JV is/are companies, the following documents shall be submitted:

i) A copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement,

ii) The copies of MOA (Memorandum of Association) / AOA (Articles of Association) of the company

iii) A copy of Certificate of Incorporation

iv) A copy of Authorization/copy of Power of Attorney issued by the Company (backed by the resolution of Board of Directors) in favour of the individual to sign the tender, sign MOU/JV Agreement on behalf of the company and create liability against the company

d) All the Members of JV shall certify that they are not blacklisted or debarred by RailTel or Railways or any other Ministry / Department of the Govt. of India from participation in tenders/contract on the date of opening of bids either in their individual capacity or as a member of the JV in which they were/are members.

e) All other documents in terms of explanatory notes in clause 4.A.15.14 above.

f) Credentials & Qualifying Criteria: Technical, financial eligibility and Bid capacity of the JV shall be adjudged based on satisfactory fulfillment of the following criteria:

4.A.15.14.15 Technical Eligibility Criteria ('a' or 'b' mentioned hereunder):

(a) Deleted

(b) For Contracts with composite components

(i) The technical eligibility for major component of contract as per para 4.A.14.1 above, shall be satisfied by either the 'JV in its own name & style' or 'any member of JV having min 26% share' and technical eligibility for other components of contract as per para 4.A.15.14.2 above, shall be satisfied by either the 'JV in its own name & style' or 'any member of the JV'. Each other member of JV shall have technical capacity of minimum 10% of the cost of any component of contract. i.e., each JV member must have satisfactorily completed during the last 07 (seven) years, ending last day of month previous to the one in which tender is invited, one similar single work for a minimum of 10% of cost of any component of contract.

(Note for Clause 4.A.15.14.15):

(a) The Major component of the contract for this purpose shall be the component of contract having highest value. In cases where value of two or more component of contract is same, any one work can be classified as Major component of contract.

(b) Value of a completed contract done by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying his/her compliance to the above mentioned technical eligibility criteria in the tender under consideration).

4.A.15.14.16 Financial Eligibility Criteria

The JV shall satisfy the requirement of "Financial Eligibility" mentioned at para 4.A.14.1 above. The "financial capacity" of the lead partner of JV shall not be less than 51% of the financial eligibility criteria mentioned at para 4.A.15.14.2 above.

The arithmetic sum of individual "financial capacity" of all the members shall be taken as JV's "financial capacity" to satisfy this requirement.

(Note: Contractual payment received by a Member in an earlier JV shall be reckoned only to the extent of the concerned member's share in that JV for the purpose of satisfying compliance of the above mentioned financial eligibility criteria in the tender under consideration).

4.A.15.14.17 Participation of Partnership Firms in contracts:

i) The Partnership Firms participating in the tender should be legally valid under the provisions of the Indian Partnership Act.

i) The partnership firm should have been in existence or should have been formed prior to submission of tender. Partnership firm should have either been registered with the Registrar or the partnership deed should have been notarized prior to date of tender opening as per the Indian Partnership Act.

ii) Separate identity / name should be given to the partnership firm. The partnership firm should have PAN / TAN number in its own name and PAN / TAN number in the name of any of the constituent partners shall not be considered. The valid constituents of the firm shall be called partners.

iii) Once the tender has been submitted, the constitution of the firm shall not normally be allowed to be modified / altered / terminated during the validity of the tender as well as the currency of the contract except when modification becomes inevitable due to succession laws etc., in which case prior permission should be taken from RailTel and in any case the minimum eligibility criteria should not get vitiated. The re-constitution of firm in such cases should be followed by a notary certified Supplementary Deed. The approval for change of constitution of the firm, in any case, shall be at the sole discretion of the RailTel and the tenderer shall have no claims what-so-ever. Any change in the constitution of Partnership firm after opening of tender shall be with the consent of all partners and with the signatures of all partners as that in the Partnership Deed. Failure to observe this requirement shall render the offer invalid and full EMD shall be forfeited

If any Partner/s withdraws from the firm after opening of the tender and before the award of the contract, the offer shall be **REJECTED** and EMD of the tenderer will be forfeited. If any new partner joins the firm after opening of tender but prior to award of contract, his / her credentials shall not qualify for consideration towards eligibility criteria either individually or in proportion to his share in the previous firm. In case the tenderer fails to inform RailTel beforehand about any such changes / modification in the constitution which is inevitable due to succession laws etc. and the contract is awarded to such firm, then it will be considered a breach of the contract conditions liable for determination of the contract under Clause 62 of General Conditions of Contract.

iv) A partner of the firm shall not be permitted to participate either in his individual capacity or as a partner of any other firm in the same tender.

v) The tender form shall be submitted only in the name of partnership firm. The EMD shall be deposited by partnership firm through e-payment gateway as mentioned in Clause 4.A.22 of tender document.

vi) One or more of the partners of the firm or any other person (s) shall be designated as the authorized person (s) on behalf of the firm, who will be authorized by all the partners to act on behalf of the firm through a “Power of Attorney”, specially authorizing him / them to submit & sign the tender, sign the agreement, receive payment, witness measurements, sign measurement books, make correspondences, compromise / settle / relinquish any claim (s) preferred by the firm, sign “No Claim Certificate”, refer all or any dispute to arbitration and to take similar such action in respect of the said tender / contract. Such “Power of Attorney” shall be notarized / registered and submitted along with the tender.

vii) On issue of Letter of Acceptance (LOA) to the partnership firm, all the guarantees like Performance Guarantee, Guarantee for various Advances to the Contractor shall be submitted only in the name of the partnership firm and no splitting of guarantees among the partners shall be acceptable.

viii) On issue of Letter of Acceptance (LOA), contract agreement with partnership firm shall be executed in the name of the firm only and not in the name of any individual partner.

ix) In case the Letter of Acceptance (LOA) is issued to a partnership firm, the following undertakings shall be furnished by all the partners through a notarized affidavit, before signing of contract agreement.

Joint and several liabilities:

The partners of the firm to which the Letter of Acceptance (LOA) is issued, shall be jointly and severally liable to the RailTel for execution of the contract in accordance with General and Special Conditions of the Contract. The partners shall also be liable jointly and severally for the loss, damages caused to the RailTel during the course of execution of the contract or due to non-execution of the contract or part thereof.

Duration of the partnership deed and partnership firm agreement:

The partnership deed/partnership firm agreement shall normally not be modified/altered/ terminated during the currency of contract and the maintenance period after the work is completed as contemplated in the conditions of the contract. Any change carried out by partners in the constitution of the firm without permission of RailTel, shall constitute a breach of the contract, liable for determination of the contract under Clause 62 of the General Conditions of Contract.

Governing laws: The partnership firm agreement shall in all respect be governed by and interpreted in accordance with the Indian laws.

No partner of the firm shall have the right to assign or transfer the interest right or liability in the contract without the written consent of the other partner/s and that of the RailTel.

x) The tenderer shall clearly specify that the tender is submitted on behalf of a partnership firm. The following documents shall be submitted by the partnership firm, with the tender:

A notarized copy of partnership deed: A notarized or registered copy of Power of Attorney in favor of the individual to tender for the work, sign the agreement etc. and create liability against the firm.

(i) An undertaking by all partners of the partnership firm that they are not blacklisted or debarred by RailTel or Railways or any other Ministry / Department of the Govt. of India from participation in tenders / contracts as on the date of opening of bids, either in their individual capacity or in any firm in which they were / are partners. Concealment / wrong information in regard to above shall make the contract liable for determination under Clause 62 of the General Conditions of Contract.

(ii) All other documents in terms of explanatory notes in clause 4.A.14.1 above.

xi) Evaluation of eligibility of a partnership firm:

Technical and financial eligibility of the firm shall be adjudged based on satisfactory fulfillment of the eligibility criteria laid down in Clause 4.A.14.1 above.

4.A.15.15 **Foreign Exchange & Custom Clearance**

Deleted

4.A.16 System Performance Guarantee

4.A.16.1. The Bidder shall give unqualified and unconditional guarantee that when the equipment/material supplied by him is installed and commissioned at site, it shall achieve the desired objective and that in the event of performance of the system when installed not complying with the end objective or with the specifications, he shall further strengthen the system to realize the end objectives with full compliance of the specifications contained in these documents and inform RailTel. No additional payment will be made to the contractor for supply of any additional goods and service required in this regard.

4.A.16.2. This certificate in the Performa given in Chapter-6(Section-I) Form No. 2, shall accompany the final offer. Absence of this certificate which will form part of the agreement shall **DISQUALIFY** the bidder automatically.

4.A.16.3 The OEM has also to give unqualified and unconditional guarantee that when the Hardware/Software supplied by him is installed and commissioned at site, it shall achieve the desired objective mentioned in the Tender document. The certificate in the Performa given in Chapter-6(Section-I) Form No. 2.

4.A.17 Evaluation of Offer

4.A.17.1 During evaluation of offer, if required RailTel may ask clarification from the bidder.

4.A.17.2 Additional features offered by the bidder, over and above the ones asked for in the tender documents, shall not be considered for evaluation of bids.

4.A.17.3 The bidder should make available the offered products, if desired during technical evaluation of offered equipment for testing and benchmarking at any testing facility approved by RailTel.

4.A.17.4 The bidders should quote for all items & the offer will be evaluated in totality (read with clause 4.A.3.2). The bidders should indicate brand name, type/model number of the products offered. Optional items (if any) will not be considered for evaluation of offers. The equipment and software should be supplied as per Technical Specifications given in Chapter-8.

4.A.17.5 Inter se position of the offers will be determined on total cost which will include basic rate, custom duty, CGST, SGST, IGST, UTGST, freight, insurance and any other charge or cost quoted by the tenderer, including GST payable, on reverse charge by RailTel.

4.A.17.6 After opening of Price Bid, Reverse Auction (RA) will be applicable as per clause 4.B.9.1.1 of tender document.

4.A.17.7 Eligible Bidders who have fulfilled the eligibility criteria as detailed in Clause 4.A.45 and are within 20% of L1 price, will be added to the list of bidders eligible for eRA.

4.A.17.8 Further after eRA, if reduced price of PMA bidder(s) is within 20% of revised L1 price received after eRA, PMA bidder(s) will be considered for award of work under PMA in terms of Clause 4.A.45 of tender document.

4.A.18 Security Considerations & Security Agreement

4.A.18.1 The system shall become integral part of RailTel's network, which already serving the requirement of NIC for National Knowledge Network and further requirement of defence and other strategic sectors of government. Accordingly, while evaluating the tender, regards would be paid to National Defence and Security considerations indicated by these key customers.

4.A.18.2 The directives issued from time to time by the Department of Telecommunications(DoT), Ministry of Communications and IT or any other Ministry of Govt. of India on security considerations shall be applicable to the present tender.

4.A.18.3 To ensure security and network vulnerabilities & breaches and to discourage false undertaking from OEMs, Security auditing and testing shall be carried out from STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-In empanelled Information Security Auditing Organization agencies as mentioned in Clause 4.A.47 of Chapter-4A (Section-I) and Clause 8.3, Chapter-8 (Section-I), Note, Point-iv.

4.A.18.4 In case any security breach is found in the system at any stage, the contract shall be terminated and PBG shall be forfeited and the banning/blacklisting of the bidder and the concerned OEM will be initiated.

4.A.18.5 Deleted.

4.A.18.6 **Additional guidelines issued by Ministry of Finance through OM no. 6/18/2019-PPD dated 23.07.2020.**

4.A.18.6.1 Relevant guidelines have been given below and in case of contradiction with any condition of this tender document, guidelines issued by Ministry of Finance vide above mentioned OM (including any addendum/corrigendum issued by MoF and any other relevant guidelines pertaining to the subject issued by GoI) shall prevail:

1. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority.

2. "Bidder" (including the term 'tendered', 'consultant', 'service provider' or 'OEM' in certain contexts) means any person or firm or company, including any member of a consortium, every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

3. "Bidder from a country which shares a land border with India" for the purpose of this Order means:

i) An entity incorporated, established or registered in such a country; or
ii) A subsidiary of an entity incorporated, established or registered in such a country; or
iii) An entity substantially controlled through entities incorporated, established or registered in such a country; or
iv) An entity whose beneficial owner is situated in such a country; or
v) An Indian (or other) agent of such an entity; or
vi) A natural person who is a citizen of such a country; or
vii) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

4. Subcontractor for the purpose of this order means:
i) An entity engaged by the bidder for execution of work or part of work; or
ii) An entity engaged by any Subcontractor for execution of work or part of work; or
iii) An entity engaged by OEM for supply of part of material used in manufacturing of supplied item under VSS Project.

5. The beneficial owner for the purpose of (iii) above will be as under:

I. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation-

"Controlling ownership interest" means ownership of or entitlement to more than twenty-five percent of shares or capital or profits of the company;

"Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;

II. In case of a partnership firm, the beneficial owner is the natural persons(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership:

III. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen

percent of the property or capital or profits of such association or body of individuals;

IV. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

V. In case of a trust, the identification of beneficial owner(s)shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

6. An agent is a person employed to do any act for another, or to represent another in dealings with third person.

7. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with Competent Authority i.e. DPIIT.

4.A.18.6.2 Undertaking regarding such clause need to submit in the format given below:

i) Certificate to be provided by Tenderer/OEMs on their letter heads:

"I have read the clause regarding restrictions on procurement from a bidder/OEMs of a country which shares a land border with India; I certify that this bidder/OEM is not from such a country or, if from such a country, has been registered with the Competent Authority, I hereby certify that this bidder/OEM fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

ii) Certificate for Tenderer for Works involving possibility of sub-contracting

"I have read the clause regarding restrictions on procurement from a bidder/OEM of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder/OEM is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder/OEM fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached]".

4.A.18.6.3 The said instructions will not apply to the bidders from those countries (even if sharing a land border with India) to which the Government of India has extended lines of credit or in which the Govt. Of India is engaged in development projects. Updated list of countries to which line of credit have been extended or in which development projects are undertaken are given in the website of the Ministry of external affairs.

4.A.18.6.4 Any discrepancy between above mentioned clause and guidelines issued from Public Procurement Division of Department of Expenditure under Ministry of Finance vide letter no. F. No. 6/18/2019-PPD dt. 23.07.2020 later will be applicable.

4.A.19 Purchaser's Right to Vary Quantities

The purchaser shall be at liberty to enhance or reduce the quantity mentioned in the LOA as indicated in Bid Data Sheet (BDS) Chapter-5(Section-I) without assigning any reasons. The bidder shall comply with such modifications unconditionally provided these are made before completion of the deliveries under the purchase order/LOA.

4.A.20 Purchaser's Right to accept any offer / Bid and to REJECT any or all offer/ Bid

4.A.20.1 The Purchaser reserves the right to ACCEPT or **REJECT** any offer / bid, and to annul the bidding process and REJECT all offers / bids, at any time prior to award of order without assigning any reason whatsoever and without thereby incurring any liability to the affected bidder or bidders on the grounds for the Purchaser's action.

4.A.21 Annulment of Award

Failure of the successful bidder to comply with the requirement of various clauses of tender document shall constitute sufficient ground for the annulment of the award and forfeiture of EMD & other dues payable to the Contractor under this contract in which event the Purchaser may make the award to any other bidder at the discretion of the Purchaser or call for new offers/ bids.

4.A.22 Earnest Money Deposit (EMD)/ Bid Security

4.A.22.1 The tenderer (or lead bidder in case of Consortium/JV) shall furnish amount mentioned in Open E-Tender Notice (Page no. 2 of Tender document) as Earnest Money Deposit (EMD)/Bid Security online though IREPS tendering Portal only.

4.A.22.2 The EMD may be forfeited if a bidder withdraws or amends its/his tender or impairs or derogates from the tender in any respect within the period of validity of the tender or in the case of a successful bidder, if the bidder fails to accept the Purchase order/LOA or fails to furnish performance bank guarantee (security deposit) in accordance with clause 4.A.6.

4.A.22.3 Offers not accompanied with EMD shall be summarily rejected.

4.A.22.4 EMD of the unsuccessful bidder will be returned as promptly as possible but not later than 30 days after the expiry of the period of offer / bid validity prescribed by the Purchaser.

4.A.22.5 The successful bidder's EMD will be refunded upon the bidder's acceptance of the purchase order/LOA satisfactorily and furnishing the performance bank guarantee in accordance with clause 4.A.6.

4.A.22.6 Earnest Money will bear no interest.

4.A.23 For Micro and Small Enterprises (MSEs)

Being a works Tender, no exemption (for Tender fee and submission of EMD) is available for MSEs in this Tender.

4.A.24 Rate Contract

4.A.24.1 RailTel would also enter into Rate Contract with the firm to whom the contract is awarded for catering to additional requirement as per items covered in Schedule of requirements (SOR) as and when arise in future. Rate Contract on the successful tenderer would be placed separately and would be operative from the date of PAC of the first Station/RPF /Thana/Post and would be valid for a period of 12 months. The validity of rate contract may be extended for further 12 months with mutual agreement. This Rate Contract would be at the same rates as finalized in main contract or Variation PO, whichever is lesser. During the validity of Rate Contract, RailTel will place Sub Purchase Orders for items detailed in SOR, as per requirement. The total value of all the Sub Purchase Orders under Rate Contract shall be restricted to 50% of the main contract value, however, there is no guaranteed offtake against this Rate Contract.

Note: Under Rate Contract, Hardware/Software (supplied under SOR) may also be procured for D&E Category Stations

4.A.24.2. The supplier shall have to implement the items against these Sub Purchase Orders within 60 days from the date of issue of such Sub Purchase Orders and should submit a Performance Bank Guarantee (PBG) within 30 days of the issue of such Sub Purchase orders @ 10% (rounded off to nearest Ten of rupees) of the Sub PO as per performa given in Chapter-6 (Section-I), Form No.1. The PBG submitted against Sub PO is for the satisfactory performance of materials/software and should be valid for a period of 4 months beyond warranty period. Terms & conditions of this tender document (including AMC period) will be applicable for the Sub POs issued against rate Contract, if any. If the delivery period gets extended, the PBG should also be extended appropriately. Terms and condition for submission of PBG shall be as per clause 4.A.6. The PBG submitted against SPO's issued under Rate Contract will be released after successful completion of warranty obligations.AMC for items under Rate Contract will be as per same Terms and Conditions as mentioned in the clause 4.A.3.AMC rates for items under Rate Contract will be at same percentage as finalized in the main contract.

4.A.24.3 **Payment Conditions against Rate Contract**

The payment conditions against Rate Contract will be as under:

4.A.24.3.1 75% of the payment at the time of delivery;

4.A.24.3.2 Additional 15% of the payment at the time of delivery, if installation is not included in LOA. In case installation is included, the terms will remain same as in clause 4.A.5 of Chapter-4(Section-I).

4.A.24.3.3 Additional 5% of the payment after one year from the date of delivery, if supervision of installation is not included in LOA. In case installation is included, the terms will remain same as in clause 4.A.5 of Chapter-4(Section-I).

4.A.24.3.4 5% of the payment after expiry of three year from the date of delivery, if installation is not included in LOA. In case installation is included, the terms will remain same as in clause 5 of this Chapter-4.

4.A.24.3.5 In case installation is not included, warranty of the supplied item will be 3 years from the date of delivery of material. In case installation is included, warranty of the material will be as per Clause 4.A.2.

4.A.25 Offer/ Bid Prices

4.A.25.1 The bidder shall give the prices indicating all levies and taxes, packing forwarding, freight and insurance etc. The basic unit price and all other components of the price need to be individually indicated against the goods it proposes to supply under the tender document as per schedule given in Chapter-2(Section-I). The price shall be quoted in Indian Rupees only.

4.A.25.2 The break-up of price of each item of SOR in terms of basic Unit price, GST/CGST/IGST, Freight, Custom Duty, Forwarding, Packing, Insurance and any other Levies/charges already paid or payable by the bidder shall be quoted in the SOR Chapter-2(Section-I). Bidder has to quote all inclusive rates (with tax break-up).

4.A.25.3 Deleted

4.A.26 NIL Deviation Compliance

4.A.26.1 Bidder is required to submit the **"NIL Deviation compliance undertaking"** for all the terms and conditions of tender including all corrigenda and RDSO specification version-6 or latest shall be enclosed with the offer as per proforma given in Form no. 6 (Chapter-6, Section-I).

4.A.27 Inspection

4.A.27.1 RDSO specifications are to be followed for the items for which the specifications have been defined by RDSO in the latest version available on the RDSO Website. Any change in the specifications may be noted from website and will be followed. For the items which are not in the RDSO specifications shall be inspected by RailTel as under:

4.A.27.2 Pre-shipment / pre-dispatch inspection shall be carried out at manufacturer's / bidder's works by RailTel's authorized representative. At least part of the material should be offered for inspection within 30 days of issue of confirmed LOA. Traveling, lodging & boarding expenses of RailTel's representative shall be borne

by RailTel but necessary facilities to carry out tests/witness inspection shall be provided by the manufacturer/ bidder, free of cost.

4.A.27.3 Along with inspection call, the Bidder/manufacturer shall submit details of test procedures, test programme, test parameters together with permitted values, etc., and their Quality Assurance Plan.

4.A.27.4 In case material fails during inspection, the fresh lot of material shall be offered without any extra cost, by the manufacturer/bidder. In such a case, total cost of re-inspection including travel, lodging & boarding of the inspecting officials shall be to manufacturer's/ bidder's account.

4.A.28 Force Majeure

4.A.28.1 If during the Agreement, the performance in whole or in part, by either party, of any obligation under this is prevented or delayed, by reason beyond the control of the parties including war, hostility, acts of the public enemy, civic commotion, sabotage, Act of State or direction from Statutory Authority, explosion, epidemic, quarantine restriction, strikes and lockouts (as are not limited to the establishments and facilities of the parties), fire, floods, earthquakes, natural calamities or any act of GOD (hereinafter referred to as EVENTS), provided notice of happenings of any such EVENT is given by the affected party to the other, within twenty one (21) days from date of occurrence thereof, neither party shall have any such claims for damages against the other, in respect of such non-performance or delay in performance. Provided service under this Agreement shall be resumed as soon as practicable, after such EVENT comes to an end or ceases to exist.

4.A.28.2 In the event of a Force Majeure, the affected party will be excused from performance during the existence of the Force Majeure. When a Force Majeure occurs, the affected party after notifying the other party will attempt to mitigate the effect of the Force Majeure as much as possible. If such delaying cause shall continue for more than thirty (30) days from the date of the notice stated above, the party injured by the inability of the other to perform shall have the right, upon written notice of thirty (30) days to the other party, to terminate this Agreement. Neither party shall be liable for any breach, claims, damages against the other, in respect of non-performance or delay in performance as a result of Force Majeure leading to such termination.

4.A.29 Settlement of Disputes/Arbitration

1) Any dispute or difference whatsoever arising between the parties out of or relating to the construction, meaning, scope, operation or effect of this contract or the validity or the breach thereof shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996 as amended and the award made in pursuance thereof shall be binding on the parties. The venue of such arbitration or proceedings thereof shall be at New-Delhi.

2) All arbitration proceedings shall be conducted in English. Recourse against any arbitral award so rendered maybe entered into court having jurisdiction or application may be made to such court for the order of enforcement as the case may be.

3) The Arbitral Tribunal shall consist of the Sole Arbitrator appointed by CMD/RailTel Corporation of India Limited, if the value of claim is up to Rs. 10 lakhs. If the value of the claim or amount under dispute is more than Rs. 10 Lakhs, the matter shall be referred to the adjudication of arbitral council. Chairman Managing Director (CMD) of RailTel Corporation shall furnish a panel of three names to the contractor, out of which, contractor will recommend one name to be his nominee and then CMD/RailTel shall appoint one name as RailTel's nominee and these two arbitrators with mutual consent shall appoint a third arbitrator who shall act as the deciding arbitrator in terms of Arbitration and Conciliation Act. The award of the sole arbitrator or the Arbitral council, as the case may be, shall be final and binding on both the parties. Each of the parties agree that notwithstanding that the matter may be referred to Arbitrator as provided herein, the parties shall nevertheless pending the resolution of the Controversy or disagreement, continue to fulfill their obligation under this Agreement so far as they are reasonably able to do so.

4.A.30 Governing Laws

The LOA shall be interpreted in accordance with the laws of India. The courts at New Delhi shall have exclusive jurisdiction to entertain and try all matters arising out of this contract.

4.A.30.1 Indemnity by Contractors

The Contract shall indemnify and save harmless the RailTel from and against all actions, suit proceedings, losses, costs, damages, charges, claims, and demands of every nature and description brought or recovered against the RailTel by reason of any act or omission of the Contractor, his agents or employees, in the execution of the works or in his guarding of the same. All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

4.A.31 Termination for Default

4.A.31.1 The purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default, sent to the bidder, terminate this contract in whole or in part.

a) If the bidder fails to deliver any or all of the goods within the time period(s) specified in the contract.
b) If the bidder fails to perform any other obligation(s) under the contract; and
c) If the bidder, in either of the above circumstance(s) does not remedy his failure within a period of 30 days (or such longer period as the Purchaser may authorize in writing) after receipt of the default notice from the Purchaser.

4.A.32 Risk & Cost

If the contractor fails to deliver the equipment or honour the contractual commitment within the period fixed for such delivery in the contract, the Purchaser may terminate the LOA/contract in whole or in part, the Purchaser may proceed to

purchase, upon such terms and in such manner as it deems appropriate, goods similar to those undelivered at no risk and cost to contractor. However, Performance Bank Guarantee shall be encashed. The failed bidder shall not be permitted to take part in the tender for balance work.

The Maximum Liability of bidder to any Loss/Damages to RailTel including Liquidity Damages and Performance Guarantee shall be limited to 100% of Value of contract.

4.A.33 Termination for Insolvency

The purchaser may at any time terminate the LOA by giving written notice to the bidder, without compensation to the bidder, if the bidder becomes bankrupt or otherwise insolvent as declared by the competent court provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

4.A.34 Rates During Negotiation

The purchaser may call the successful bidder for the negotiation for reducing the rates. During negotiation the bidder/s shall not increase his/their quoted rates including payment terms in case the RailTel negotiates for reduction of rates. Such negotiations shall not amount to cancellation or withdrawal of the original offer and the rates originally quoted will be binding on the bidder/s.

4.A.35 Pre-Bid Clarification Requests

It is solicited that the written queries/ clarifications may be sent to the RailTel's office latest by date as indicated in the Bid Data sheet (BDS, Chapter-5, (Section-I) through e-mail in (Excel format) as mentioned in BDS (Chapter-5). All relevant clarifications sought will be addressed during the pre-bid meeting scheduled as per BDS(Chapter-5). The clarification should be submitted in the below given format:

SN	Page No	Chapter No.	Tender Clause No.	Point number of Clause, if any	Bidders Query	Justification/Reason
1						
2						

4.A.36 Submission of Offer (Online Tendering)

4.A.36.1 All offers in the prescribed forms should be submitted before the time and date fixed for the receipt of the offers.

4.A.36.2 In case the schedule of requirement quoted by tenderer is incomplete with reference to tender document, the offer is liable to be **REJECTED**.

4.A.36.3 ATTESTATION OF ALTERATION: No scribbling is permissible in the tender documents. Tender containing erasures and alterations in the tender documents are liable to be **REJECTED**. Any correction made by the tenderer/ tenderers in his/their entries must be signed (not initialed) by him/them.

4.A.36.4 The tenderer shall submit his bid online using the e-Procurement Portal https://IREPS.gov.in. For detailed instructions please refer to IREPS Portal.

4.A.36.5 The offer shall be submitted in two packet. Both Bids, Credential Bid (Techno-Commercial Bid) & Price Bid shall be submitted online using the e-Procurement Portal https://IREPS.gov.in.The bid shall consist of following documents as mentioned in Checklist of **Chapter-9.**

4.A.37 Constitution of Firm and power of Attorney

4.A.37.1 Any individual(s) signing the tender or other documents connected therewith should specify whether he is signing: -

(a) As sole proprietor of the concern or as attorney of the sole Proprietor.

(b) As a partner or partners of the firm.

(c) As a Director, Manager or Secretary in the case of Limited Company duly authorized by a resolution passed by the Board of Directors or in pursuance of the authority conferred by Memorandum of Association.

4.A.37.2 In the case of a firm not registered under the Indian Partnership Act, all the partners or the attorney duly authorized by all of them should sign the tender and all other connected documents. The original Power of Attorney or other documents empowering the individual or individuals to sign should be furnished to the Purchaser for verification, if required.

4.A.37.3 The RailTel will not be bound by Power of Attorney granted by the bidder or by the changes in the composition of the firm made subsequent to the execution of the contract agreement.

4.A.37.4 In case where the Power of Attorney partnership deed has not been executed in English, the true and authenticated copies of the translation of the same by Advocate, authorized translators of Courts and Licensed Petition Writers should be supplied by the Contractor(s) while tendering for the work.

4.A.37.5 Power of attorney in favour of the signatory duly authorizing the signatory. Original copy is need to be submitted by the successful bidder before issuance of LOA.

4.A.38 Opening of Tender

4.A.38.1 Bidder's Credential Bid (Part-I) will be opened on specified date & time as mentioned in BDS Chapter-5(Section-I) of the tender

4.A.38.2 After scrutinizing Credential Bid, "Price Bid (Part- II)" will be opened on a time and date to be informed separately to those bidders who qualify in "Credential Bid (Part-I)" as per qualifying criteria laid down in Clause 4.A.14of this Chapter-4 (Section-I).

4.A.38.3 Price Bid (part-II) envelopes of those bidders who are not found to meet tender conditions will not be opened.

4.A.39 Non-Transferability & Non-Refundability

The tender documents are not transferable. The cost of tender paper, if any, is not refundable.

4.A.40 Errors, Omissions & Discrepancies

The Contractor(s) shall not take any advantage of any misinterpretation of the conditions due to typing or any other error and if in doubt, shall bring it to the notice of the purchaser without delay. In case of any contradiction only the printed rules, and books should be followed and no claim for the misinterpretation shall be entertained.

4.A.41 Wrong Information by bidder

If the Bidder/s deliberately gives/give wrong information in his/their tender which creates/create circumstances for the acceptance of his/their tender the RailTel(RCIL) reserves the right to **REJECT** such bidder at any stage.

4.A.42 Limitation of Liability:

Provided the following does not exclude or limit any liabilities of either party in ways not permitted by applicable law:

4.A.42.1 The Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and

4.A.42.2 The aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to any obligation of the Supplier to indemnify the Purchaser with respect to intellectual property rights infringement.

4.A.43 Mandatory Updation of Labour Data on Railway's Shramikkalyan Portal

4.A.43.1 Contractor is to abide by the provisions of Payment of Wages Act & act in terms of clause 54 and 55 of Indian Railways General Condition of Contract. In order to ensure the same, an application has been developed and hosted on website 'www.shramikkalyam.indianrailways.gov.in'. Contractor shall register his firm/company etc. and upload requisite details of labour and their payment in this portal. These details shall be available in public domain. The Registration/updation of Portal shall be done as under:

(a) Contractor shall apply for onetime registration of his company/firm etc in the Shramikkalyam portal with requisite details subsequent to issue of Letter of Ac-

ceptance. Engineer shall approve the contractor's registration on the portal within 7 days of receipt of such request.

(b) Contractor once approved by any Engineer, can create password with login ID (PAN No.) for subsequent use of portal for all LoAs issued in his favour.

(c) The contractor once registered on the portal, shall provide details of his Letter of Acceptance (LoA)/Contract Agreements on shramikkalyan portal within 15 days of issue of any LoA for approval of concerned engineer. Engineer shall update (if required) and approve the details of LoA filled by contractor within 7 days of receipt of such request.

(d) After approval of LoA, contractor shall fill the salient details of contract labours engaged in the contract and ensure updating of each wage payment to them on shramikkalyam portal on monthly basis.

(e) It shall be mandatory upon the contractor to ensure correct and prompt uploading of all salient of engaged contractual labour& payments made thereof after each wage period.

4.A.43.2 While processing payment of any 'On Account bill' or 'Final bill' or release of 'Advances' or Performance Guarantee/Security deposit', contractor shall submit a certificate to the Engineer or Engineer's representatives that "I have uploaded the correct details of contract labours engaged in connection with this contract and payments made to them during the wage period in Railway's Shramikkalyam portal at 'shramikkalyam.indianrailways.gov.in' till Month Year."

4.A.44 Integrity Pact Program

RailTel has adopted Integrity Pact Program and for implementation thereof all tenders relating to procurement of OFC, quad cable, prefab shelters, electronic equipment and its installation and/or commissioning etc and other item(s) or activity/activities proposed to be carried out or required by the Company for the value exceeding Rs. 15 crores at a time including for repair and maintenance of cable/network and any other items required for special works assigned to RailTel will be covered under the Integrity Pact Program and the vendors are required to sign the IP document and submit the same to RailTel before or along with the bids.

a) Only those vendors who have purchased the tender document and signed the IP document can send their grievances, if any, to the Independent External Monitors (IEMNs) through the nodal officer, i.e. ED/NR, RailTel.

Name of IEMs and contact details:

1. Shri. Vinit Kumar Jayaswal, E-Mail: gkvinit@gmail.com
2. Shri. Punati Sridhar, E-mail:poonatis@gmail.com

Name & contact details of Nodal Officer (IP) in RailTel:

ED/NR

Address as mentioned in BDS,
E-Mail: vijaylaxmi@railtelindia.com

b) If the order, with total value equal to or more than the threshold value, is split to more than one vendor and even if the value of PO placed on any/each vendor(s) is less than the threshold value, IP document having been signed by the vendors at bid stage itself, the Pact shall continue to be applicable.

c) Bidder of Indian origin shall submit the Integrity Pact (in 2 copies) on a non-judicial stamp paper of Rs. 100/- duly signed by the person signing the bid. If the bidder is a partnership or a consortium, the Integrity Pact shall be signed by all the partners or consortium members.

d) Bidder of foreign origin may submit the Integrity Pact on its company's letter-head, duly signed by the person signing the bid.

e) The 'Integrity Pact' shall be submitted online by all the Bidders duly signed in all pages along with the Bid. Tender received online without signed copy of the Integrity Pact document along with the technical bid documents will be liable to be **REJECTED**. Proforma for signing the Integrity Pact is available in Chapter-6 (Section-I) of this tender document (Form No. 5). Original copies are needed to be submitted by the successful bidder before issuance of LOA as per Clause 4.B.3, Point (b) of Chapter-4B.

f) One copy of the Integrity Pact shall be retained by RailTel and the 2nd copy will be issued to the representative of the bidders before issuance of LOA to the successful bidder. If the Bidders representative is not present during the issuance of LOA, the 2nd copy shall be sent to the bidder by post/courier.

g) The Integrity Pact is applicable in this tender vide CVC circular no. 10/05/09 dated 18.05.09 and revised guideline of CVC circular no. 015/VGL/091 dated 13.01.17 or the latest updated from time to time shall be followed.

4.A.45 Preference to Domestic Manufacturers

The provisions of the revised "Public Procurement (Preference to Make in India), Order 2017", dated 16.09.2020 (and subsequent amendments, if any, till opening of the tender) by Department of Industrial Policy and Promotion, GoI shall apply to this tender to the extent feasible. The criteria for Capability (verifiable evidence that they have manufacturing capability to manufacture the specified quantity and supply the same with in stipulated time period), Equipment and Manufacturing facilities as well as net worth under the financial standing eligibility criteria shall be applicable to local suppliers also.

Bidders seeking Purchase preference for this tender shall submit the documents/ declarations etc. as per latest DIPP guidelines and the applicable/associated latest letters if any till date of opening of the bid.

The necessary documentation for items being declared to be Local shall be as per the stipulated guidelines as laid down in above mentioned policy letters and to be

signed by the Bidder's Statutory Auditor/Cost Auditor as per **Form no. 9 (Chapter-6)**.

4.A.45.1 As per clause no. 3 (b) of the PPP-MII Order dated 16.09.2020, only bidders offering minimum 20% of local content of supply portion of their offered bid (Class-I Local suppliers/bidders - minimum 50% LC and Class-II Local Suppliers/bidders- minimum 20% LC as per PPP-MII Order) are eligible to participate in this tender. Bid of bidders offering less than 20% local content of supply portion of their offered bid will be SUMMARILY REJECTED.

As per DPIIT's OM dated 4th March 2021, services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CMC etc. can't be claimed as local value addition.

4.A.45.2 The margin of purchase preference shall be 20% and shall be given to 'Class-I local suppliers/bidders '. 'Margin of purchase preference' means the maximum extent to which the price quoted by a Class-I local suppliers/bidders may be above the L1 (Class-II local suppliers/bidders) for the purpose of purchase preference.

4.A.45.3 Since value of procurement under this tender is more than ₹ 10 Cr, Class-I & Class-II local suppliers/bidders are required to provide a certificate (with UDIN number) from the statutory auditor or cost auditor of the company giving percentage of local content of all scheduled supply items. Certificate as per **Form-9 (Chapter-6)** issued by statutory auditor or cost auditor of the company on their letter head to be submitted along with the technical bid.

The certificate shall not mention any unit price or total amount quoted by the bidder. Any mention of price or quoted amount will lead to SUMMARILY REJECTION of the bid. In case of non-submission of above-mentioned undertaking/certificate with technical bid documents, RailTel reserves the right to reject the bid.

4.A.45.4 In price bid, the bidder shall submit price Break-up of "Local Content" and "Imported Content" for each SOR item issued by statutory auditor or cost auditor of the company on their letter head (with UDIN No.) as per DPIIT's PMI Policy and its clarifications and same shall be uploaded by the bidders along with their price bid in the e-procurement portal.

4.A.45.5 If after opening of price bid, lowest bid is of Class-II local supplier/bidder the eligible (techno-commercially qualified) Class-I local supplier(s)/bidder(s) shall be granted a purchase preference of 20% i.e., where their evaluated price bid is within 20% of the evaluated lowest price bid of Class-II local supplier/bidder. Such eligible Class-I local bidders, to whom purchase preference of 20% has been granted, will be allowed to participate in eRA irrespective of the selection criteria for eRA mentioned in Clause no. 4.B.9.1.6.

However, if after opening of price bid, lowest bid is of Class-I Bidder then bidders for eRA will be selected as selection criteria mentioned in Clause no. 4.B.9.1.6. After completion of eRA process, RailTel's reserve the right to negotiate price with the eligible lowest bidder.

4.A.45.7 After completion of e-RA process as detailed in Clause 4.B.9.1.12, if L1 is a Class-I bidder then the contract will be awarded to L1. If L1 is a Class-II bidder then only those Class-I bidders, whose bids after completion of e-RA are within 20% of the Class-II L1's bid, would be allowed an opportunity to match L1's bid as detailed in Para 3A(c) of DPIIT's PMI Policy dated 16-09-2021. All the such eligible Class-I bidders shall be asked to submit their confirmation to match their price in sealed envelopes as per PMI Policy. Envelopes of the bidders shall be opened and award for the complete tender shall be made to the lowest evaluated TA/CA (Techno-Commercial Acceptable) bidder among the eligible Class-I bidders. In case the lowest eligible Class-I bidder fails to match L1 price, the offer of next eligible Class-I bidder in sealed envelope will be checked and so on. In case none of the eligible Class-I bidders matches the Class-II bidder's L1 bid, complete contract will be awarded to the Class-II bidder holding L1 price.

4.A.45.8 For the purpose of this policy, all terms used vide aforesaid policy shall be governed by the definitions specified in Para 2 of the policy document notified by DIPP vide letter No. P-45021/2/2017-B.E.-II dated 16.09.2020.

4.A.45.9 The successful bidder shall be obliged to fulfill the requirements of quality and delivery time in accordance with the provisions of the Purchase order/contract.

4.A.45.10 Sanctions

4.A.45.10.1 RailTel shall impose sanction of bidder/successful bidder for not fulfilling LC in accordance with the value mentioned in certificate of LC.

4.A.45.10.2 The sanctions may be in the form of written warning, financial penalty and blacklisting.

4.A.45.10.3 If the bidder does not fulfill the obligation after the expiration of the period specified in such warning. RailTel shall initiate action for blacklisting such bidder/successful bidder.

4.A.46 The Network for customers

The VSS Network is being provided primarily to meet the requirements of Ministry of Women & Child Development. Accordingly, the VSS network shall take into consideration the National Security requirements and National Security aspects.

4.A.47 Proof of Concept (POC)

4.A.47.1 All Bidders offering VSS solutions different from STACK-1 to 6 (as mentioned below) are required to conduct POC immediately after bid opening time (as mentioned in BDS). Please note that in case of any deviation in terms of Make/Model from the STACK, bidder is required to conduct complete POC. Details of Functional requirement are mentioned in Annexure-VII of Chapter-7 (Section-I).

EXEMPTION FOR POC

Bidders who are offering their VSS solution (i.e. same make and model of Hardware and Software) as per one of the complete **STACK** (from Stack-1 to Stack-6) mentioned below in the table are **EXEMPTED** for conducting the POC:

		STACK-1		STACK-2		STACK-3		STACK-4		STACK-5		STACK-6	
SN	**Item Description**	**Make**	**Model**	**Make**	**Model**	**Make**	**Model**	**Make**	**Model**	**Make**	**Model**	**Make**	**Model**
1	Full HD Fixed dome type IP colour camera	CP Plus	CP-UNC-VE21ZL4P-VMD	CP Plus	CP-UNC-VE21ZL4P-VMD	CP Plus	CP-UNC-VE21ZL4P-VMD	Sparsh	SC-IL22DP-I(Z)(S)	Sparsh	SC-IL22DP-I(Z)(S)	IDIS	DC-D4236WRX
2	Full HD bullet type IP colour camera	CP Plus	CP-UNC-TE21ZL5P-VMD	CP Plus	CP-UNC-TE21ZL5P-VMD	CP Plus	CP-UNC-TE21ZL5P-VMD	Sparsh	SC-IL22BP-I(Z)(S)	Sparsh	SC-IL22BP-I(Z)(S)	IDIS	DC-T4236WRX
3	Full HD P/T/Z type IP colour camera	CP Plus	CP-UNP-F4521L25-DFP	CP Plus	CP-UNP-F4521L25-DFP	CP Plus	CP-UNP-F4521L25-DFP	Sparsh	SS-EM212-(I) with 36X	Sparsh	SS-EM212-(I)	IDIS	DC-S6283HRXL
4	4K UHD bullet type IP colour camera	CP Plus	CP-UNC-TE81ZL6E-VMDS	CP Plus	CP-UNC-TE81ZL6E-VMDS	CP Plus	CP-UNC-TE81ZL6E-VMDS	Sparsh	SC-IL82BP-I(Z)(S)	Sparsh	SC-IL82BP-I(Z)(S)	IDIS	DC-T3C33HRX
5	VMS Software	M/s HFCL	M3S+	Videonetics	IVMS 3.0	M/s I2V	I2V	Videonetics	IVMS 3.0	M/s I2V	I2V	IDIS	iNEX-IDIS Solution Suite
6	VA Software	M/s HFCL	M3S+	Videonetics	VA-DL-CCL	M/s I2V	I2V	Videonetics	VA-DL-CCL	M/s I2V	I2V	IDIS	IDLA IDIS Solution Suite
7	FRS Software	Real networks	SAFR	Real networks	SAFR	Real networks	SAFR	Real networks	SAFR	Real networks	SAFR	Herta	Bio Master

4.A.47.2 Before start of functional verification by RailTel or its authorized representative, bidders will install their offered VSS solution (as offered in their technical bid) at location specified by RailTel & offer installation for checking by RailTel or its authorized representative, after submission of details as per Table-2 of Annexure-VII of Chapter-7. During POC stage, room where POC equipments have been installed by Bidder will remain under the custody of RailTel or its authorized representative till completion of POC. Bidders must ensure that make and model of Hardware & Software used in POC should be same as offered in their submitted bids. The same will be verified by the RailTel or its authorized representative (nominated by ED/RGM of the region).

4.A.47.3 Bidder shall offer its complete VSS solution as per list of Hardware/Software mentioned in Table-1 of Annexure-VII of Chapter-7 for functional requirement by RailTel or its authorized representative at location specified by RailTel. **All expenses for the POC (including testing charges, if any) will be borne by the bidder.**

4.A.47.4 RailTel or its authorized representative will certify at the start of testing that the bidder has installed complete VSS solution at location specified by RailTel as per its offered VSS solution submitted in bid documents clearly mentioning Make & Model number of the Hardware and Make &Version of software as per format given in Table-2 of Annexure-VII of Chapter-7. RailTel or its authorized representative will also ensure that the set-up of bidder's VSS solution remain same and intact during complete testing process.

4.A.47.5 POC should be completed within 30 Days from the date of opening of bid. In case bidder fails either to arrange POC or to meet any functional requirement given in Annexure-VII of Chapter-7 within given timeline, **RailTel reserves the right to REJECT their bid.** Extension of POC time period will be given only in exceptional cases beyond the control of bidder.

4.A.47.6 RailTel or its authorized representative and authorized representative of Bidder are required to Jointly signed the Annexure-VII of Chapter-7 for completion of POC. In case of refusal to sign the Joint report by bidder, copy of report signed by RailTel or its authorized representative will be sent to the bidder for information only. Final POC report for each bidder will be submitted to RailTel for further evaluation of Tender bids.

4.A.47.7 Financial bids will be opened for those bidders who have successfully completed the POC and are also eligible as per tender eligibility criteria.

4.A.48 Make in India

The bidder may set up his manufacturing unit in India to the extent possible through a subsidiary or under license or through transfer of technology to any local manufacturer permitted by the purchaser. The bidder may indicate such tie ups for manufacturing in India if an arrangement is already in place.

The provisions of the Public Procurement (Preference to Make in India) Order 2017 dated June 15, 2017 (including revision issued on and 16.09.2020 subsequent amendments issued till opening of tender, if any) by Department of Industrial Policy and Promotion, GoI shall apply to this tender to the extent feasible. The eligibility criteria as mentioned in clause 4.A.14.2 shall be applicable to local manufacturers/OEMs also.

4.A.49 Contract Agreement

On completion of the selection process, RailTel will enter into a contract agreement with the selected bidder(s) as per **Form no. 16, Chapter-6** of Tender document. The contract entered with RailTel would be operated by RailTel. The Contract Agreement shall be entered by RailTel only after submission of valid Performance Guarantee by the successful bidder. Failure to do so shall constitute a breach of the agreement affected by the acceptance of the tender. In such cases the RailTel may determine that such tenderer has abandoned the contract and there upon his tender and acceptance thereof shall be treated as cancelled and the RailTel shall be entitled to forfeit the EMD and to forfeit other dues payable to the Contractor under this contract. The failed Contractor shall be debarred from participating in the re-tender for that work.

The following documents would form part of the agreement between RailTel & the successful bidder: -

i) This tender document/RFP and all the issued addendum/ corrigendum.

ii) The bidder's proposal in response to this tender/RFP and clarifications made in course of evaluation, including all Appendixes and supporting documents.

iii) The implementation plan identifying the tasks to be completed, the assigned responsibilities and the scheduled completion dates.

iv) Copy of Signed LOA along with the copy of the PBG document.

4.A.50 Damage to Railway/RailTel Property or Private Life and Property: The Contractor shall be responsible for all risk to the work and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of the Railway/RailTel or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the Railway/RailTel, although all reasonable and proper precautions may have been taken by the Contractor. In case the Railway/RailTel shall be called upon to make good any costs, loss or damages, or to pay any compensation, including that payable under the provisions of the Workmen's Compensation Act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid by reason of any act, or any negligence or omissions on the part of the Contractor; the amount of any costs or charges including costs and charges in connection with legal proceedings, which the Railway/RailTel may incur in reference thereto, shall be charged to the Contractor. The Railway/RailTel shall have the power and right

to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the Contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to Contractor, as aforesaid; any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the Contractor.

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RailTel

SECTION-I
CHAPTER-4

B. INSTRUCTIONS TO THE BIDDERS

4.B.0 General

These are the Special Instructions to the Bidders for e-Tendering.

4.B.1 Order of Priority of Contract Documents:

The documents forming this Tender document are to be taken as mutually explanatory of each other. For purpose of interpretation, the precedence and priority of the documents shall be in the following sequence:

1) Agreement (applicable after signing)
2) Letter of Acceptance of Tender
3) Notice Inviting Tender
4) Bid Data Sheet
5) Schedule of Requirements
6) Instructions to the Bidders
7) Annexure/Appendix to Tender
8) Form of Bid
9) Commercial Terms and Conditions of the Contract
10) Technical Specifications
11) Relevant Codes and Standards
12) Drawings

Note: If any ambiguity or discrepancies is found in the Tender document, RailTel reserves the right to issue any clarification or instructions necessary to correct such ambiguity or discrepancy and such clarification/instruction shall be final and binding on the bidder and RailTel.

4.B.2 Submission of Bids only through online process is mandatory for this Tender

E-Tendering is a new methodology for conducting Public Procurement in a transparent and secured manner. Now, the Government of India has made e-tendering mandatory. Suppliers/ Vendors will be the biggest beneficiaries of this new system of procurement. For conducting electronic tendering, RailTel has decided to use the portal https://IREPS.gov.in**.**

Benefits to Suppliers are outlined on the Home-page of the portal. Bidders are advised to visit the IREPS Portal for details related to E-Tender i.e. Registration, FAQ, Helpdesk, Learning Center etc.

In case there is a conflict regarding online bidding process between the IREPS condition and the Tender Condition, IREPS conditions will prevail.

4.B.2.1 Tender Bidding Methodology:

Sealed Bid System - 'Single Stage – Two Packet': In this, bidder has to submit each packet of the bid (Part I –Credential/ Techno commercial Bid and Part II - Price Bid) "ONLINE".

IREPS Helpdesk

Please visit Helpdesk section on IREPS Portal.

RailTel Contact-I (for general Information)

As mentioned in BDS (Chapter-5, Section-I)

RailTel Contact-II (for general Information)

As mentioned in BDS (Chapter-5, Section-I)

4.B.2.2 Bid related Information for this Tender (Sealed Bid)

The entire bid-submission would be online on IREPS Portal.

Broad outline of submissions are as follows:

1. Submission of Bid Security/ Earnest Money Deposit (EMD) as per BDS Chapter-5 (Clause 4.A.22).
2. Submission of digitally signed copy of Tender Documents/Addenda
3. Two Packet(Part I –Credential/ Techno commercial Bid and Part II - Price Bid)
4. Online response to Terms & Conditions of Tender.

NOTE:

I. Bidder must ensure that the bid must be successfully submitted online as per instructions of IREPS Portal.

II. Bidder may submit their offer depending upon meeting of the qualification criteria and other terms & conditions of the tender. However, Price bid of the bidder shall only be opened once the bidder offer is found meeting the qualification criteria and other terms & conditions of the tender.

4.B.3 Online Submissions:

The bidder is required to submit all the relevant documents online only with the following documents:

a) Tender Cost and EMD submission online **through IREPS portal only.**

b) Integrity pact to be submitted as per Clause 4.A.44 (Form No. 5, Chapter-6). Original copies are needed to be submitted by the successful bidder before issuance of LOA.

c) Constitution of Firm and Power of attorney to be submitted online as per Clause 4.A.37. Original copy is needed to be submitted by the successful bidder before issuance of LOA.

d) Deleted

e) System Performance Guarantee (Form No. 2, Chapter-6). Original copy is needed

to be submitted by the successful bidder before issuance of LOA.

f) Affidavit (Form No. 9, Chapter-6). Original copy is needed to be submitted by the successful bidder before issuance of LOA.

Hard copy may be sought by RailTel offline for verification/clarification, after opening of the e-bid response on IREPS portal (e-Procurement), if required.

4.B.4 Submission of Eligibility Criteria related documents

All Eligibility criteria related documents as applicable shall be scanned and submitted ONLINE.

NOTE: It is advised to all bidders to submit their offer online well before the closing time of tender to avoid any last minute issues in uploading. Its bidders responsibility to proactively plan for the bid submission and in case of internet related problem at a bidder's end, especially during 'critical events' such as a short period before bid-submission deadline, during online public tender opening event, during e-auction, it is the bidder's responsibility to have backup internet connections.

4.B.5 Preparation of Bids

a) Bidder should take into account any corrigendum published on the tender document before submitting their bids. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers inwhich the bid documents have to be submitted, the number of documents including the names and content of each of the document that need to be submitted.

b) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document/schedule and generally, they can be in PDF/SLS/RAR/DWF formats. Bid documents may be preferably scanned with100 dpi with black and white option.

c) Before submitting a tender, the tenderer will be deemed to have satisfied himself by actual inspection of the sites and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates he enters in the tender forms are adequate and all inclusive.

4.B.6 Instructions for Tender Document TO THE BIDDERS

The NIT and link to Tender is published on www.railtelindia.com, IREPS portal and CPP portal and the tender is published on IREPS Portal https://IREPS.gov.inand CPP portal. **Tender offers shall be submitted online at IREPS portal-** https://IREPS.gov.in **only**. In addition to submitting the e Tender documents online, the tender fees & EMD has to be deposited online through IREPS portal. Tender notice will also be published in newspapers.

NOTE: For online bid submission the bidder will have to necessarily download an official online copy of the tender documents from IREPS portal, and this should

be done well before the deadline for bid-submission.

4.B.7 Submission of Offers and Filling of Tender:

This e-tender should be duly submitted online using the e-Procurement Portal https://IREPS.gov.in. For detailed instructions please refer to IREPS Portal.

4.B.8 Attendance of Representatives for Tender Opening:

Representatives of bidders desirous to attend the tender opening can do so on production of a proper letter of authority from the respective firm, failing which they may not be allowed to attend the tender opening. Authorized representatives of those firms who have submitted the tender documents alone shall be allowed to attend the tender opening.

4.B.9 e- Reverse Auction:

The procurement in this tender will be done on reverse auction. The procedure for the reverse auction will be as per IREPS.

4.B.9.1 Submission of Bids

4.B.9.1.1 In addition to the instructions given above, the bids shall be processed through Two Stage Reverse Auction method, to be implemented through IREPS portal. Two packets system shall be followed for the 1st stage of reverse auction, which means that Techno-commercial bid will be opened first; and after deciding the suitability or otherwise of the technical bids, the financial bids of only those firms which are found to be suitable shall be opened.

{For details please refer also user manual for contractors-for Two Stage Reverse Auction (Goods & Services Module) of IREPS available on IREPS portal.}

4.B.9.1.2 The financial bid of those firms whose technical bids have been found to be suitable shall be opened on or after scheduled date and time. The financial tabulation statement shall be generated immediately thereafter, and can be viewed by the participating bidders by logging into IREPS account.

4.B.9.1.3 After opening the financial bids, the tendering department shall schedule the start of reverse auction. The tenderers who are eligible for the participation in the reverse auction process can view the reverse auction catalogue by logging into their IREPS account.

4.B.9.1.4 The lowest Initial Price Offer (L1 offer price) as submitted by the technically qualified bidders during the financial evaluation stage shall be the base price for starting the reverse auction. The base price shall be notified to the bidder.

4.B.9.1.5 Date and time of start of RA will be informed on IREPS website.

4.B.9.1.6 **Selection of vendors for RA shall be as under:**

If the number of tenderers qualified for award of contract is less than 3, No RA shall be conducted and the tender shall be decided on the basis of initial price offer.If the numbers of tenderers qualified are 3 to 6, only 3 tenderers shall be eligible for participating in RA.

If the numbers of tenderers qualified are more than 6, only 50% of tenderers shall be eligible for RA (rounded off to next higher integer).

The bids disallowed from participating in the RA shall be the highest bidder(s). In case the highest bidders quote the same rate, the initial price offer received last as per time log of IREPS, shall be removed first, on the principle of last in first out, by IREPS system itself.

Initial Cooling Off period shall be 2 hours.
Auto Extension Period shall be 30 minutes.
Minimum Decrement in percentage shall be 0.1% of Current Lowest Bid.

4.B.9.1.7 Once the reverse auction process is closed the lowest rate received in the reverse auction/financial offer will be evaluated. RailTel reserves the right not to consider the lowest bid received in the reverse auction/financial bid process. Percentage rate reduction after RA will be proportionately done across all the items for all SOR items.

4.B.9.1.8 In case of no participation in RA process by any bidder, the base value of RA process will be considered for commercial bid assessment.

4.B.9.1.9 Technical e-RA training can be opted by the bidder to know the procedure of e-RA (Reverse Auction).

4.B.9.1.10 RailTel may discharge the tender at any stage without assigning any reason.

4.B.9.1.11 Bidders may please note that Bidding close Date/Time gets extended automatically every time an offer is received against the tender during a time interval equivalent to Cooling Off prior to the closing date and time. For example: If the Closing Time of RA is 13:00 Hrs and the Cooling Off period is 30 Minutes, if two offers are received between 12:30 Hrs and 13:00 Hrs, lets say at 12:40 Hrs and 12:55 Hrs, the Closing Time shall be extended by 30 Minutes from the time of submission of the last bid i.e. up to 13:25 Hrs.

4.B.9.1.12 Award of Contracts
Financial Evaluation

Reverse Auction (e-RA):
After the evaluation of technical proposals, the financial bids (initial price offer) of those firms whose technical bids meet eligibility criteria shall be categorized as qualified for the purpose of Reverse Auction (e-RA). These financial bids shall be opened on the scheduled date and time (as per procedure explained in the IREPS User Manual for vendors – Two Stage Reverse Auction Goods & Services Module para C, D and E available at IREPS Helpdesk & Learning Centre). The e-RA procedure has been implemented through IREPS Portal and as per guidelines issued by Ministry of Railways Letter No. 2017/Trans/01/Policy/Pt-S Dated

28.03.2018. As per the procedure a minimum of three bids are mandatory for conduct of e-RA. In case the numbers of qualified bids are less than three, the L-1 would be decided on the initial price offer quoted by the bidder on IREPS. In case of more than three qualified bidders, the e-RA as explained in the manual mentioned above will be implemented. After the end of e-RA, L-1, L-2 and so on stand identified.

4.B.10 Addenda / Corrigenda:

Addenda / Corrigenda to the tender documents may be issued by RailTel prior to the date of opening of the tenders, to clarify or reflect modifications in the contract terms and conditions or in the design. Such addendum/corrigendum shall be available on IREPS e-Procurement Portal, RailTel website and CPP portal. Bidders who are unable or unwilling to bring their tenders to conform to the requirements of the RailTel are liable to be **REJECTED**.

4.B.11 Ambiguity/ Pre- Bid Clarification Requests:

If there is any ambiguity or doubt as to the meaning of any of the tender clauses/ conditions or if any additional information required, the matter should immediately be referred to the RailTel in writing through emails to RailTel Contacts defined under Para 4.B.3.The format to be used for seeking clarification is mentioned in Clause 4.A.35.

4.B.12 Compulsory Compliance Conformations by all Participating Bidders

4.B.12.1 The instructions given in the tender document are binding on the bidder and submission of the tender shall imply unconditional acceptance of all the Terms & conditions by the bidder.

4.B.12.2 Each and every page of submitted tender document including documentation shall be serially numbered & indexed. Bidders shall enclose relevant documents in their bid document to support their claims of experience/ eligibility/compliance meeting criteria mentioned under different clauses of the tender.

4.B.12.3 **In case some false information is submitted by any bidder in support of experience, performance certificate, financial turnover, etc., then the bidder tender shall be REJECTED and EMD will be forfeited** including banning of business for five year on entire RailTel.

4.B.12.4 RailTel shall be sole judge in the matter of short listing bidders at all stages of the tender and the decision of RailTel shall be final and binding on the bidders.

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SECTION-I
CHAPTER- 5
BID DATA SHEET (BDS)

The section consists of provisions that are specific to various Clauses of the tender document {**Chapter-1, Chapter 3, Chapter 4(A) & Chapter-4(B), Chapter-6 of Section-I}.**

Clause	Description
Clause 3.A.1.3, Chapter-3-A, (Section-I)	**Project Background** (i) List of Divisional and Headquarter Control Offices covered under present Tender – Annexure-I (Chapter-7). (ii) Details of Existing VSS Stations/RPF Thanas having existing VSS Infra and List of Divisional controls and Headquarter controls having existing VSS Infra - Annexure-II (Chapter-7). (iii) List of stations covered under the scope of present tender - Annexure-III (Chapter-7). (iv) Indicative list of cameras required to be provided at each category of stations – Annexure-IV (Chapter-7).
Clause 3.A.1.4, Chapter-3-A, (Section-I)	**Scope of Work** (i) Number of stations covered under scope of this tender - 151 nos. of A1, A, B & C Category Stations of Indian Railway. (ii) List of Divisional and Headquarter Control Offices covered under present Tender – Annexure-I (Chapter-7). (iii) Details of Existing VSS Stations/RPF Thanas having existing VSS Infra and List of Divisional controls and Headquarter controls having existing VSS Infra is mentioned is Annexure-II (Chapter-7). (iv) List of stations covered under the scope of present tender is mentioned in Annexure-III (Chapter-7).
Clause 4.A.1, Chapter-4-A, (Section-I)	**Validity of offer** 120 Days
Clause 4.A.2, Chapter-4-A, (Section-I)	**Warranty** (i) 36 months (comprising of 12 months of Maintenance Supervision vide clause 4.A.2.5, between issue of last PAC {Clause 3.D.8 (iv)} and FAC, followed by 24 months of warranty support under clause 4.A.2 &4.A.2.4) . (ii) Warranty of material from Date of complete supply of material as per LOA upto issuance of last PAC {Clause 3.D.8 (iv)} is the responsibility of the Bidder backed up by OEM.

Clause 4.A.4, Chapter-4-A, (Section-I)	**Delivery/Implementation Timelines** Refer Clause 4.A.4 of Chapter-4
Clause 4.A.5.7, Chapter-4-A, (Section-I)	**Billing Address:** Executive Director/Northern Region RailTel Corporation of India Limited 6th Floor, IIIrd Block, Delhi Technology Park, Shastri Park, New Delhi-110053
Clause 4.A.14.1, Chapter-4-A, (Section-I)	**Eligibility Criteria Requirements for Bidders** **<u>Point-3</u> - Financial Eligibility –** Rs 1,62,26,60,962/- **<u>For Start-ups</u>** Rs. 54,08,86,987/- **<u>Point-4</u> - Technical Capability –** Three similar works each costing not less than the amount equal to Rs.32,45,32,192/- or Two similar works each costing not less than the amount equal to Rs.43,27,09,590/- or One similar work each costing not less than the amount equal to Rs.64,90,64,385/- **<u>For Start-ups</u>** (i) One similar work each costing not less than the amount equal to Rs.37,86,20,891/- or (ii) Two similar work each costing not less than the amount equal to Rs.21,63,54,795/- (iii) Three similar work each costing not less than the amount equal to Rs.16,22,66,096/-

	Point-8 – Total Bid value of this Tender - Rs 108,17,73,975/- (Total of Schedule-A, Schedule-B and Schedule-C including taxes and Duties)
Clause 4.A.14.2, Chapter-4-A, (Section-I)	**Point-3 – Eligibility Criteria Requirements for OEM's** (i) Cameras (all four type of Cameras) – Rs 2,88,22,127/- (ii) Switches (all type of Switches) – Rs 1,43,45,266/- (iii) Servers/Workstations for VA, VMS, FRS, EMS & CCC – Rs 7,89,43,306/- (iv) Storages - Rs 2,55,65,647/- (v) NVR (if applicable)- Rs 2,61,73,159/- (vi) VMS Software - Rs 1,39,99,021/- (vii) VA Software- Rs 32,99,779/- (viii) FRS Software – Rs 2,86,86,980/- (ix) EMS Software – Rs 1,94,11,965/- (x) CCC Software – Rs 4,18,31,302/-
Clause 4.A.19, Chapter-4-A, (Section-I)	**Purchaser's Right to Vary Quantities** (A) Upto maximum extent of +/- 50% subject to following condition i. Upto +25% with no rebate. ii. From +25% to +40% with 2% rebate iii. From +40% to +50% with 4% rebate (B) For variation beyond +50% of the quantity mentioned in the SOR may be done after proper negotiation with the selected bidder. (C) AMC rates for items under Variation Order will be at same percentage as finalized in the main contract.
Offer Letter and Clause 4.A.22, (Section-I)	**Earnest Money Deposit (EMD) – To be deposited online on IREPS Portal only** As mentioned in NIT of Tender
Clause 4.A.35, Chapter-4-A, (Section-I)	**Pre- Bid Clarification Requests (Online)** Last date of Submission of Clarification Date: 28-06-2023 Online Pre-bid Conference date Date: 30-06-2023 Time: 11:00 hours Online Meeting link: Link for Online Pre- Bid Meeting will be shared by RailTel on its website at least two days before the due date of Online Pre-Bid meeting.

	The Bidder/OEM who is attending the pre-bid conference should send their Pre-bid queries and Contact number along with company details to email id's as mentioned in clause 4.B.2.1 of BDS (Chapter-5) at least two days before the due date of Online Pre-Bid meeting. Pre-bid meeting of all the four regions will be done on the same date & time.
Clause **4.A.36, Chapter-4-A,** (Section-I)	**Last Date of Submission of Offer (Online)** Date: 14-07-2023 Time: 15:00 hours **Date of Opening of Tender (Online)** Date: 14-07-2023 Time: 15:30 hours
Clause 4.B.2.1, Chapter-4-B, (Section-I)	**RailTel Contact-I (for general Information)** RailTel's Contact Person /Designation 1.Name: Kanchan Pangtey, Designation: AGM/NTP Telephone/ Mobile: 9717644131 E-mail ID: kanchanmartolia@railtelindia.com 2.Name: Sh.Kumar Rahul Joshi Designation: JGM/NTP Telephone/ Mobile: 9717644200 E-mail ID: rahul@railtelindia.com **RailTel Contact-II (for general Information)** RailTel's Contact Officer Name: Smt. Vijaylaxmi Kaushik , Designation: ED/NR Telephone/ Mobile :8178305600 E-mail ID: vijaylaxmi@railtelindia.com
Chapter-1 and Chapter-6, Regional Address, (Section-I)	**Executive Director** **RailTel Corporation of India Limited** **Address -** 6th floor, Block-III, Delhi IT Park, Shastri Park, Delhi-110053

Note:

1. If the details given in BDS contradict with referred clause in the detailed tender document, the details in BDS will have overriding priority (as per clause 4.B.1) over the referred clause in the tender document.

2. In the tender document, RailTel and Indian Railways have been used at various places. It can be interchangeably used wherever required for various purposes of contract management purposes, as may be decided / intimated by the contract managing authority, i.e. RailTel.

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RailTel

SECTION-I
CHAPTER- 6 -FORM (S)/PROFORMA (S)

Form No. 1 - PROFORMA FOR "PERFORMANCE BANK GUARANTEE BOND (PBG)"
(On Stamp Paper of Rs one hundred)

(To be used by approved Scheduled Banks)

1. In consideration of the RailTel Corporation of India Limited, having its registered office at (**as mentioned in BDS, Chapter-5**) (Herein after called RailTel) having agreed to exempt ……(Hereinafter called "the said Contractor(s)") from the demand, under the terms and conditions of an Purchase Order No.……dated……made between……and…….. for (hereinafter called " the said Agreement") of security deposit for the due fulfillment by the said Contractor (s) of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. ……(Rs …….. only). We …… (indicate the name of the Bank) hereinafter referred to as "the Bank") at the request of ……. ……. Contractor(s) do hereby undertake to pay the RailTel an amount not exceeding Rs. ……. against any loss or damage caused to or suffered or would be caused to or suffered by the RailTel by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

2. We, ……. Bank do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on demand from the RailTel stating that the amount is claimed is due by way of loss or damage caused to or would be caused to or suffered by the RailTel by reason of breach by the said Contractor(s) of any of terms or conditions contained in the said Agreement or by reason of the Contractor(s) failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs . ……

3. We, …….. bank undertake to pay to the RailTel any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) / Tenderer(s) in any suit or proceedings pending before any court or Tribunal relating thereto our liability under this present being, absolute and unequivocal. The payment so made by us under this Bond shall be a valid discharge of our liability for payment there under and the Contractor(s) / Tenderer(s) shall have no claim against us for making such payment.

4. We, ……. Bank further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the RailTel under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till RailTel certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this Guarantee. Unless a demand or claim under the Guarantee is made on us in writing on or before the ……. …… We shall be discharged from all liability under this Guarantee thereafter.

5. We,…… (indicate the name of Bank) further agree with the RailTel that the RailTel shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the Agreement or to extend time of to postpone for any time or from time to time any of the powers exercisable by the RailTel against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension to the said Contractor(s) or for any forbearance, act or omission on the part of RailTel or any indulgence by the RailTel to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have affect of so relieving us.

6. The Bank hereby confirms that it is on the SFMS (Structured Financial Messaging System) and shall invariably send the advice of this Bank Guarantee to the following bank details –

Account No.	912020032008218
IFSC CODE	UTIB0003108
BANK NAME	Axis Bank Ltd.
BRANCH NAME	South Extension
CITY NAME	New Delhi
ADDRESS	D-15, South Extension New Delhi- 110049.
DISTRICT	New Delhi
STATE	New Delhi
BG ENABLED	YES

This Guarantee will not be discharged due to the change in the Constitution of the Bank or the Contractor(s) / Tenderer(s).

(indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the RailTel in writing.

Dated the day of 2023

for ……..
(indicate the name of the Bank)

Witness

1. Signature
   Name

2. Signature
   Name

Form No. 2 - PROFORMA FOR "SYSTEMPERFORMANCE GUARANTEE"

(On Stamp Paper of Rs. One Hundred)
(To be signed by the Bidder as well as the OEM's)

To

RailTel Corporation of India Limited,
(as mentioned in BDS, Chapter-5)

Tender No. RailTel/Tender/OT/CO/NTP/2022-23/VSS/005

Applicable for Bidder/OEM(s) directly participating in the tender

Dear Sir,

I / We ……. hereby guarantee that the design on the basis of which we have submitted our tender no. …… has been carefully made to conform to the end objectives in the tender documents and to technical specification therein. We further guarantee that in the event of the performance of the system, when installed, not complying with the end objectives or with the specifications contained in the tender documents, we shall provide further inputs to enable the RailTel to realize the end objectives contained in these documents without any additional payment for any additional equipment which may be required in this regard. We further guarantee that all the expenses for providing the additional inputs under the System Guarantee will be borne by us. We further guarantee that these additional inputs will be provided by us to make the system workable within 1 month from the date on which this guarantee is invoked by the Purchaser. The guarantee is valid for a period of one year from the date of commissioning of the system.

(Signature of Firm's Authorized Officer)
Seal

Signature of witness:

1. ……

2. …….

Or

Applicable for OEM(s)

I / We ……. hereby guarantee that the design on the basis of which we have submitted our tender no. …… has been carefully made to conform to the end objectives in the tender documents and to technical specification therein related to OEM's scope. We

further guarantee that in the event of the performance of the system, when installed, not complying with the end objectives or with the specifications contained in the tender documents as per OEM's scope, we shall provide further inputs to enable the RailTel to realize the end objectives contained in these documents without any additional payment for any additional equipment which may be required in this regard. We further guarantee that all the expenses for providing the additional inputs under the System Guarantee will be borne by us. We further guarantee that these additional inputs will be provided by us to make the system workable within 1 month from the date on which this guarantee is invoked by the Purchaser. The guarantee is valid for a period of one year from the date of commissioning of the system.

(Signature of OEM's Authorized Officer)
Seal

Signature of witness:

3. ……

4. …….

Form No. 3 - PROFORMA FOR "LONG TERM MAINTENANCE SUPPORT"
(To be signed by the Bidder as well as the OEM's)

To

RailTel Corporation of India Limited,
(as mentioned in BDS, Chapter-5)

Tender No. RailTel/Tender/OT/NR/NTP/2023-24/VSS/04

Applicable for Bidder/OEM directly participating in the tender

I / We ……. hereby confirm that we have read specifications & tender conditions of RailTel Tender No. ……..and accept that the requirement of Long Term Maintenance Support as per Clause 4.A.3 of Chapter-4(Section-I),shall be met **by us directly or through our subsidiary in India** as per rates quoted in the Price Bid. I / We shall provide services as per terms and conditions pertaining to Long Term Maintenance Support of tender document.

OR

Applicable for Authorized Distributor/Partner of OEM

I / We ……. hereby confirm that we have read specifications & tender conditions of RailTel Tender No. ……..and accept that the requirement of Long Term Maintenance Support as per Clause 4.A.3 of Chapter-4(Section-I) shall be met **by Authorized Distributor/Partner of OEM. However, if Authorized Distributor/Partner fails to fulfill the support obligation due to any un-foreseen circumstances, the same shall be provided by us directly or through our subsidiary in India for the mentioned/remaining period at the quoted prices by the bidder. I/We have gone through the requirement mentioned in the Tender Document and shall provide services as per terms and conditions** pertaining to Long Term Maintenance Support of tender document.

(Signature of Firm's Authorized Officer)
Seal

Signature of witness:

5. ……

6. …….

Note: Please Strike out whichever is not applicable.

Form No. 4 -PROFORMA FOR AFFIDAVIT TO BE UPLOADED BY TENDERERA-LONGWITH THE TENDER DOCUMENTS

(To be signed by the Bidder)

(To be executed in presence of Public notary on non-judicial stamp paper of the value of Rs.100/-. The stamp paper has to be in the name of the tenderer)**

I……..(Name and designation)** appointed as the attorney/authorized signatory of the tenderer (including its constituents),
M/s._____ (hereinafter called the tenderer) for the purpose of the Tender documents for the work of _____
as per the tender No._____ of (-------RailTel Region), do hereby solemnly affirm and state on the behalf of the tenderer including its constituents as under:

1. I/We the tenderer (s), am/are signing this document after carefully reading the contents.

2. I/we the tenderer(s) also accept all the conditions of the tender and have signed all the pages in confirmation thereof.

3. I/We hereby declare that I/We have downloaded the tender documents from electronic-tender portal. I/We have verified the content of the document from the website and there is no addition, no deletion or no alteration to the content of the tender document. In case of any discrepancy noticed at any stage i.e. evaluation of tenderers, execution of work or final payment of the contract, the master copy available with the railway Administration shall be final and binding upon me/us.

4. I/We declare and certify that I/we have not made any misleading or false representation in the forms, statements and attachments in proof of the qualification requirements.

5. I/We also understand that my/our offer will be evaluated based on the documents/credentials submitted alongwith the offer and same shall be binding upon me/us.

6. I/We declare that the information and documents submitted alongwith the tender by me/us are correct and I/we are fully responsible for the correctness of the information and documents submitted by us.

7. I/We undersigned that if the certificates regarding eligibility criteria submitted by us are found to be forged/false or incorrect at any time during process for evaluation of tenders, it shall lead to forfeiture of the tender EMD besides banning of business for five year in RailTel. Further, I/we (*insert name of the tenderer*)** _____ and all my/our constituents understand that my/our offer shall be **Summarily REJECTED**.

~~8.~~ I/we also understand that if the certificates submitted by us or by OEM's of the offered Hardware/Software are found to be false/forged or incorrect at any time after the

award of the contract, it will lead to termination of the contract, alongwith forfeiture of SD and Performance Guarantee besides any other action provided in the contract including banning of business for five year on entire RailTel.

DEPONENT
SEAL AND SIGNATURE
OF THE TENDERER

VERIFICATION

I/We above named tenderer do hereby solemnly affirm and verify that the contents of my/our above affidavit are true and correct. Nothing has been concealed and no part of it is false.

DEPONENT
SEAL AND SIGNATURE
OF THE TENDERER

Place:
Dated:

** The contents in Italics are only for guidance purpose. Details as appropriate, are to be filled in suitably by tenderer. Attestation before Magistrate/Notary Public.

Form No. 5 - PROFORMA FOR "SIGNING THE INTEGRITY PACT"
(To be signed by the Bidder)

RailTel Corporation of India Limited, hereinafter referred to as "The Principal".

AND

……., hereinafter referred to as "The Bidder/ Contractor"

Preamble

The Principal intends to award, under laid down organizational procedures, contract/s for ……The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relations with its Bidder(s) and /or Contractor(s).

In order to achieve these goals, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

1. The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

b. The Principal will during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the process or the contract execution.

c. The Principal will exclude from the process all known prejudiced persons.

2. If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

Section 2- Commitments of the Bidder(s) / Contractor(s)

1. The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

a. The Bidder(s)/contractor(s) will not, directly or through any other persons or firm, offer promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage during tender process or during the execution of the contract.

b. The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

c. The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s) /Contractors will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly, the bidder(s)/contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers' as annexed and marked as Annexure A.

e. The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3: Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of business dealings". Copy of the "Guidelines on Banning of business dealings" is annexed and marked as Annex-"B".

Section 4: Compensation for Damages

1. If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/Bid Security.

2. If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to be terminated the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section 5: Previous Transgression

1. The Bidder declares that no previous transgressions occurred in the last three years with any other company in any country conforming to the anti-corruption approach or with any other public sector enterprise in India that could justify his exclusion from the tender process.

2. If the bidder makes incorrect statement on this subject, he can be disqualified from the tender process for action can be taken as per the procedure mentioned in "Guidelines on Banning of business dealings".

Section 6: Equal treatment of all Bidders / Contractors/Subcontractors.

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.

2. The Principal will enter into agreements with identical conditions as this one with all bidders, contractors and subcontractors.

3. The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7: Criminal charges against violation by Bidder(s) / Contractor(s) / Sub contractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or ofan employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

Section 8: Independent External Monitor / Monitors

1. The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, RailTel.

3. The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat

the information and documents of the Bidder(s)/ Contractor(s)/Subcontractor(s) with confidentiality.

4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

5. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

6. The Monitor will submit a written report to the CMD, RailTel within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.

7. Monitor shall be entitled to compensation on the same terms as being extended to provided to Independent Directors on the RailTel Board.

8. If the Monitor has reported to the CMD, RailTel, a substantiated suspicion of an offence under relevant IPC/PC Act, and the CMD, RailTel has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

9. The word ‘Monitor’ would include both singular and plural.

Section 9: Pact Duration

This pact begins when both parties have legally signed it. It expires for the Contractor 10 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made / lodged by either party during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged / determined by CMD of RailTel.

Section 10: Other Provisions

1. This agreement is subject to Indian Law, Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi.

2. Changes and supplements as well as termination notices need to be made in writing.

3. If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(For & on behalf of the Principal)
(Office Seal)

(For & On behalf of Bidder/Contractor)
(Office Seal)

Place ——————————

Date ——————————
Witness 1:

Annexure-A of INTEGRITY PACT

GUIDELINES FOR INDIAN AGENTS OF FOREIGN SUPPLIERS

1.0 There shall be compulsory registration of agents for all global (Open) Tender and Limited Tender. An agent who is not registered with RailTel Units shall apply for registration in the prescribed Application-Form.

1.1 Registered agents will file an authenticated Photostat copy duly attested by a Notary Public/ Original certificate of the principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission/ remuneration/retainer-ship being paid by the principal to the agent before the placement of order by RailTel.

1.2 Wherever the Indian representatives have communicated on behalf of their principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.

2.0 DISCLOSURE OF PARTICULARS OF AGENTS/ REPRESENTATIVES IN INDIA, IF ANY.

2.1 Tenderers of Foreign nationality shall furnish the following details in their offer:

2.1.1 The name and address of the agents/representatives in India, if any and the extent of authorization and authority given to commit the Principals. In case the agent/representative be a foreign Company, it shall be confirmed whether it is real substantial Company and details of the same shall be furnished.

2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/representatives in India.

2.1.3 Confirmation of the Tenderer that the commission/ remuneration if any, payable to his agents/ representatives in India, may be paid by RAILTEL in Indian Rupees only.

2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:

2.2.1 The name and address of the foreign principals indicating their nationality as well as their status, i.e. whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents/representatives.

2.2.2 The amount of commission /remuneration included in the price(s) quoted by the tenderer for himself.

2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/ remuneration, if any, reserved for the Tenderer in the quoted price(s), may be paid by RAILTEL in India in equivalent Indian Rupees on satisfactory completion of the Project or supplies of Stores and Spares in case of operation items.

2.3 In either case, in the event of contract materializing, the terms of payment will provide for payment of the commission/ remuneration, if any payable to the agents/representatives in India in Indian Rupees on expiry of 90 days after the discharge of the obligations under the contract.

2.4 Failure to furnish correct and detailed information as called for in paragraph 2.0 above will render the concerned tender liable to **REJECTION** or in the event of a contract materializing, the same liable to termination by RAILTEL. Besides this there would be a penalty of banning business dealings with RAILTEL or damage or payment of a named sum.

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Annexure-B of INTEGRITY PACT

GUIDELINES ON BANNING OF BUSINESS DEALINGS

CONTENTS

S.N.	Description
1	**Introduction**
2	**Scope**
3	**Definitions**
4	Initiation of Banning / Suspension
5	Suspension of Business Dealings
6	Ground on which Banning of Business Dealings can be initiated 8-9
7	Banning of Business Dealing
8	Removal from List of approved Agencies-Suppliers/ Contractors etc.
9	Procedure for issuing Show-cause Notice.
10	Appeal against the Decision of the Competent Authority
11	Review of the Decision by the Competent Authority
12	Circulation of the names of Agencies with whom Business Dealings have been banned

1. **Introduction**

1.1 RailTel Corporation of India Ltd (RAILTEL), being a Public Sector Enterprise, under the administrative control of the Ministry of Railways and therefore being an authority deemed to be 'the state' within the meaning of Article 12 of Constitution of India, has to ensure preservation of rights enshrined in Chapter III of the Constitution. RAILTEL has also to safeguard its commercial interests. RAILTEL deals with Agencies, who have a very high degree of integrity, commitments and sincerity towards the work undertaken. It is not in the interest of RAILTEL to deal with Agencies who commit deception, fraud or other misconduct in the execution of contracts awarded / orders issued to them. In order to ensure compliance with the constitutional mandate, it is incumbent on RAILTEL to observe principles of natural justice before banning the business dealings with any Agency.

1.2 Since banning of business dealings involves civil consequences for an Agency concerned, it is incumbent that adequate opportunity of hearing is provided and the explanation, if tendered, is considered before passing any order in this regard keeping in view the facts and circumstances of the case.

2. Scope

2.1 The General Conditions of Contract (GCC) of RAILTEL generally provide that RAILTEL reserves its rights to remove from list of approved suppliers/ contractors or to ban business dealings if any Agency has been found to have committed misconduct and also to suspend business dealings pending investigation. If such provision does not exist in any GCC, the same may be incorporated.

2.2 Similarly, in case of sale of material there is a clause to deal with the Agencies/ customers/ buyers, who indulge in lifting of material in unauthorized manner. If such a stipulation does not exist in any Sale Order, the same may be incorporated.

2.3 However, absence of such a clause does not in any way restrict the right of Company (RAILTEL) to take action / decision under these guidelines in appropriate cases.

2.4 The procedure of (i) Removal of Agency from the List of approved suppliers/ contractors; (ii) Suspension and (iii) Banning of Business Dealing with Agencies, has been laid down in these guidelines.

2.5 These guidelines apply to Corporate Office, all Regions and Subsidiaries of RAILTEL.

2.6 It is clarified that these guidelines do not deal with the decision of the Management to avoid entertaining any particular Agency due to its poor / inadequate performance or for any other reason.

2.7 The banning shall be with prospective effect, i.e., future business dealings.

3. Definitions

In these Guidelines, unless the context otherwise requires:

i) 'Party / Contractor / Supplier / Purchaser / Customer' shall mean and include a public limited company or a private limited company, a firm whether registered or not, an

individual, a cooperative society or an association or a group of persons engaged in any commerce, trade, industry, etc. 'Party / Contractor / Supplier / Purchaser / Customer' in the context of these guidelines is indicated as 'Agency'.

ii) 'Inter-connected Agency' shall mean two or more companies having any of the following features:

a) If one is a subsidiary of the other;

b) If the Director(s), Partner(s), Manager(s) or Representative(s) are common;

c) If management is common;

d) If one owns or controls the other in any manner;

iii) 'Competent Authority' and 'Appellate Authority' shall mean the following:

a) For Company (entire RAILTEL) wide Banning: The Director shall be the 'Competent Authority' for the purpose of these guidelines. CMD, RAILTEL shall be the 'Appellate Authority' in respect of such cases except banning of business dealings with Foreign Suppliers of imported items.

b) For banning of business dealings with Foreign Suppliers of imported items, RAILTEL Directors Committee (RDC) shall be the 'Competent Authority'. The Appeal against the Order passed by RDC, shall lie with CMD, as First Appellate Authority.

c) In case the foreign supplier is not satisfied by the decision of the First Appellate Authority, it may approach Railway Board as Second Appellate Authority.

d) For RailTel Regions only: Any officer not below the rank of General Manager appointed or nominated by the Executive Director of concerned Region shall be the 'Competent Authority' for the purpose of these guidelines. The Executive Director of the concerned Region shall be the 'Appellate Authority' in all such cases.

e) For Corporate Office only: For procurement of items / award of contracts, to meet the requirement of Corporate Office only, Concerned Group General Manager / General Manager shall be the 'Competent Authority' and concerned Director shall be the 'Appellate Authority'.

f) CMD, RAILTEL shall have overall power to take suo-moto action on any information available or received by him and pass such order(s) as he may think appropriate, including modifying the order(s) passed by any authority under these guidelines.

iv) 'Investigating Department' shall mean any Department or Unit investigating into the conduct of the Agency and shall include the Vigilance Department, Central Bureau of Investigation, the State Police or any other department set up by the Central or State Government having powers to investigate.

v) 'List of approved Agencies - Parties / Contractors / Suppliers/ Purchaser/ Customers' shall mean and include list of approved /registered Agencies - Parties/ Contractors / Suppliers / Purchasers / Customers, etc.

4. Initiation of Banning / Suspension

Action for banning / suspension of business dealings with any Agency should be initiated by the department having business dealings with them after noticing the irregularities or misconduct on their part. Besides the concerned department, Vigilance Department of each Region / Unit/ Corporate Office may also be competent to initiate such action.

5. Suspension of Business Dealings

5.1 If the conduct of any Agency dealing with RAILTEL is under investigation by any department (except Foreign Suppliers of imported items), the Competent Authority may consider whether the allegations under investigation are of a serious nature and whether pending investigation, it would be advisable to continue business dealing with the Agency. If the Competent Authority, after consideration of the matter including the recommendation of the Investigating Department, if any, decides that it would not be in the interest to continue business dealings pending investigation, it may suspend business dealings with the Agency. The order to this effect may indicate a brief of the charges under investigation. If it is decided that inter-connected Agencies would also come within the ambit of the order of suspension, the same should be specifically stated in the order. The order of suspension would operate for a period not more than six months and may be communicated to the Agency as also to Investigating Department. The Investigating Department may ensure that their investigation is completed and whole process of final order is over within such period.

5.2 The order of suspension shall be communicated to all the departmental heads within the unit/ region/ Corporate Office as the case may be. During the period of suspension, no business dealing may be held with the agency.

5.3 As far as possible, the existing contract(s) with the Agency may continue unless the Competent Authority, having regard to the circumstances of the case, decides otherwise.

5.4 If the gravity of the misconduct under investigation is very serious and it would not be in the interest of RAILTEL, as a whole, to deal with such an Agency pending investigation, the Competent Authority may send his recommendation to Chief Vigilance Officer (CVO), RAILTEL Corporate Office alongwith the material available. If Corporate Office considers that depending upon the gravity of the misconduct, it would not be desirable for all the units/ regions of RAILTEL to have any dealings with the Agency concerned, an order suspending business dealings may be issued to all the units/ Regions / Corporate Office by the Competent Authority of the Corporate Office, copy of which may be endorsed to the Agency and all concerned. Such an order would operate for a period of six months from the date of issue.

5.5 For suspension of business dealings with Foreign Suppliers of imported items, following shall be the procedure:

i) Suspension of the foreign suppliers shall apply throughout the Company/ Regions including Subsidiaries.

ii) Based on the complaint forwarded by ED / GGM / GM or received directly by Corporate Vigilance, if gravity of the misconduct under investigation is found serious and it is felt that it would not be in the interest of RAILTEL to continue to deal with such agency, pending investigation, Corporate Vigilance may send such recommendation on the matter to Executive Director / GGM / GM, to place it before a Committee consisting of the following:

1. ED / GGM/ GM (viz. Representative of Corporate Finance).
2. ED / GGM/ GM (viz. Representative of Department concerned withprocurement of imported items)- Convener of the Committee.
3. ED / GGM/ GM (to be nominated on case to case basis).
4. ED / GGM/ GM ((viz. Representative of Corporate Law).

The committee shall expeditiously examine the report and give its comments / recommendations within twenty one days of receipt of the reference by ED/ GGM/ GM.

iii) The comments / recommendations of the Committee shall then be placed by ED/GGM/GM, before RAILTEL Directors' Committee (RDC) constituted for import of items. If RDC opines that it is a fit case for suspension, RDC may pass necessary orders which shall be communicated to the foreign supplier by the ED/GGM/GM.

5.6 If the Agency concerned asks for detailed reasons of suspension, the Agency may be informed that its conduct is under investigation. It is not necessary to enter into correspondence or argument with the Agency at this stage.

5.7 It is not necessary to give any show-cause notice or personal hearing to the Agency before issuing the order of suspension. However, if investigations are not complete in six months time, the Competent Authority may extend the period of suspension by another three months, during which period the investigations must be completed.

6. Ground on which Banning of Business Dealings can be initiated

6.1 If the security consideration, including questions of loyalty of the Agency to the State, so warrants;

6.2 If the Director / Owner of the Agency, proprietor or partner of the firm, is convicted by a Court of Law for offences involving moral turpitude in relation to its business dealings with the Government or any other public sector enterprises or RAILTEL, during the last five years;

6.3 If there is strong justification for believing that the Directors, Proprietors, Partners, owner of the Agency have been guilty of malpractices such as bribery, corruption, fraud, substitution of tenders, interpolations, etc;

6.4 If the Agency continuously refuses to return / refund the dues of RAILTEL without showing adequate reason and this is not due to any reasonable dispute which would attract proceedings in arbitration or Court of Law;

6.5 If the Agency employs a public servant dismissed / removed or employs a person convicted for an offence involving corruption or abetment of such offence;

6.6 If business dealings with the Agency have been banned by the Govt. or any other public sector enterprise;

6.7 If the Agency has resorted to Corrupt, fraudulent practices including misrepresentation of facts;

6.8 If the Agency uses intimidation/ threatening or brings undue outside pressure on the Company (RAILTEL) or its official in acceptance/ performances of the job under the contract;

6.9 If the Agency indulges in repeated and / or deliberate use of delay tactics in complying with contractual stipulations;

6.10 Willful indulgence by the Agency in supplying sub-standard material irrespective of whether pre-dispatch inspection was carried out by Company (RAILTEL) or not;

6.11 Based on the findings of title investigation report of CBI / Police against the Agency for malafide/ unlawful acts or improper conduct on his part in matters relating to the Company (RAILTEL) or even otherwise;

6.12 Established litigant nature of the Agency to derive undue benefit;

6.13 Continued poor performance of the Agency in several contracts;

6.14 If the Agency misuses the premises or facilities of the Company (RAILTEL), forcefully occupies tampers or damages the Company's properties including land, water resources, etc.

(Note: The examples given above are only illustrative and not exhaustive. The Competent Authority may decide to ban business dealing for any good and sufficient reason).

7. Banning of Business Dealings

7.1 Normally, a decision to ban business dealings with any Agency should apply throughout the Company including subsidiaries. However, the Competent Authority of the Region/ Unit except Corporate Office can impose such ban Region-wise only if in the particular case banning of business dealings by respective Region/ Unit will serve the purpose and achieve its objective and banning throughout the Company is not required in view of the local conditions and impact of the misconduct/ default to beyond the Region/ Unit. Any ban imposed by Corporate Office shall be applicable across all Regions/ Units of the Company including Subsidiaries.

7.2 For Company-wide banning, the proposal should be sent by ED of the Region/ Unit to the CVO/RailTel setting out the facts of the case and the justification of the action proposed along with all the relevant papers and documents except for banging of business dealings with Foreign Suppliers of imported items.

The Corporate Vigilance shall process the proposal of the concerned Region/ Unit for a prima-facie view in the matter by the Competent Authority nominated for Company-wide banning.

The CVO shall get feedback about that agency from all other Regions/ Units. Based on this feedback, a prima-facie decision for banning / or otherwise shall be taken by the Competent Authority.

If the prima-facie decision for Company-wide banning has been taken, the Corporate Vigilance shall issue a show-cause notice to the agency conveying why it should not be banned throughout RAILTEL.

After considering the reply of the Agency and other circumstances and facts of the case, a final decision for Company-wide banning shall be taken by the competent Authority.

7.3 There will be a Standing Committee in each Region/ Unit to be appointed by Chief Executive Officer for processing the cases of "Banning of Business Dealings" except for banning of business dealings with foreign suppliers. However, for procurement of items/ award of contracts, to meet the requirement of Corporate Office only, the committee shall be consisting of General Manager/ Dy. General Manager each from Operations, Finance, Law & Project. Member from Project shall be the convener of the committee. The functions of the committee shall, inter-alia include:

(i) To study the report of the investigating Agency and decide if a prima-facie case for Company-wide / Region wise banning exists, if not, send back the case to the Competent Authority.

(ii) To recommend for issue of show-cause notice to the Agency by the concerned department.

(iii) To examine the reply to show-cause notice and call the Agency for personal hearing, if required.

(iv) To submit final recommendation to the Competent Authority for banning or otherwise.

7.4 If the Competent Authority is prima-facie of view that action for banning business dealings with the Agency is called for, a show- cause notice may be issued to the Agency and an enquiry held accordingly.

7.5 Procedure for Banning of Business Dealings with Foreign Suppliers of imported items.

i) Banning of the agencies, shall apply throughout the Company including subsidiaries.

ii) Based on the complaint forwarded by Executive Director or received directly by Corporate Vigilance, an investigation shall be carried out by Corporate Vigilance. After investigation, depending upon the gravity of the misconduct, Corporate Vigilance may send their report to Executive Director/ GGM/ GM, to be placed before a Committee consisting of the following:

1. ED / GGM/ GM (viz. Representative of Corporate Finance).

2. ED / GGM/ GM (viz. Representative of Department concerned with procurement of imported items)- Convener of the Committee.

3. ED / GGM/ GM (to be nominated on case to case basis).

4. ED / GGM/ GM ((viz. Representative of Corporate Law).

The Committee shall examine the report and give its comments/ recommendations within 21 days of receipt of the reference by ED.

iii) The comments/recommendations of the Committee shall be placed by ED/ GGM/ GM before RAILTEL Directors' Committee (RDC) constituted for import of foreign items. If RDC opines that it is a fit case for initiating banning action, it will directED/ GGM/ GM to issue show-cause notice to the agency for replying within a reasonable period.

iv) On receipt of the reply or on expiry of the stipulated period, the case shall be submitted by ED to RDC for consideration & decision.

v) The decision of the RDC shall be communicated to the agency by ED/GGM/GM concerned.

8. Removal from List of Approved Agencies –Suppliers/ Contractors, etc.

8.1 If the Competent Authority decides that the charge against the Agency is of a minor nature, it may issue a show-cause notice as to why the name of the Agency should not be removed from the list of approved Agencies - Suppliers / Contractors, etc.

8.2 The effect of such an order would be that the Agency would not be disqualified from competing in Open Tender Enquiries but LTE (Limited Tender Enquiry) may not be given to the Agency concerned.

8.3 Past performance of the Agency may be taken into account while processing for approval of the Competent Authority for awarding the contract.

9. Show-cause Notice

9.1 In case where the Competent Authority decides that action against an Agency is called for, a show-cause notice has to be issued to the Agency. Statement containing the imputation of misconduct or misbehavior may be appended to the show-cause notice and the Agency should be asked to submit within 15 days a written statement in its defence.

9.2 If the Agency requests for inspection of any relevant document in possession of RAILTEL, necessary facility for inspection of documents may he provided.

9.3 The Competent Authority may consider and pass all appropriate speaking order:

a) Forex one rating the Agency if the charges are not established.

b) For removing the Agency from the list of approved Suppliers/ Contactors, etc.

c) For banning the business dealing with the Agency.

9.4 If it decides to ban business dealings, the period for which the ban would be operative may be mentioned. The order may also mention that the ban would extend to the interconnected Agencies of the Agency.

10. Appeal against the Decision of the Competent Authority

10.1 The agency may file an appeal against the order of the Competent Authority banning business dealing, etc. The appeal shall lie to Appellate Authority. Such an appeal shall be preferred within one month from the date of receipt of the order banning business dealing, etc.

10.2 Appellate Authority would consider the appeal and pass appropriate order which shall be communicated to the Agency as well as the Competent Authority.

11. Review of the Decision by the Competent Authority

Any petition / application filed by the Agency concerning the review of the banning order passed originally by Chief Executive / Competent Authority under the existing guidelines either before or after filing of appeal before the Appellate Authority or after disposal of appeal by the Appellate Authority, the review petition can be decided by the Chief Executive / Competent Authority upon disclosure of new facts / circumstances or subsequent development necessitating such review. The Competent Authority may refer the same petition to the Standing Committee for examination and recommendation.

12. Circulation of the names of Agencies with whom Business Dealings have been banned

12.1 Depending upon the gravity of misconduct established, the Competent Authority of the Corporate Office may circulate the names of Agency with whom business dealings have been banned, to the Government Departments, other Public Sector Enterprises, etc. for such action as they deem appropriate.

12.2 If Government Departments or a Public Sector Enterprise requests for more information about the Agency with whom business dealings have been banned, a copy of the report of the Inquiring authority together with a copy of the order of the Competent Authority / Appellate Authority may be supplied.

12.3 If business dealings with any Agency have been banned by the Central or State Government or any other Public Sector Enterprise, RAILTEL may, without any further enquiry or investigation, issue an order banning business dealing with the Agency and its interconnected Agencies.

12.4 Based on the above, Regions / Units may formulate their own procedure for implementation of the guidelines.

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Form No. 6 - PROFORMA FOR "NIL DEVIATION COMPLIANCE UNDERTAKING"
(To be signed by the Bidder)

To

Region Address (as mentioned in BDS, Chapter-5)

Tender No. RailTel/Tender/OT/CO/NTP/2022-23/VSS/005

Sub: NIL Deviation Compliance

Over and above all our earlier conformations and submissions as per your requirements of the RFP, we confirm that,

1. All proposed in scope supplies (Cameras, Servers/Workstation, Storage, Switches, VMS, FRS, CCC and VA etc.) are compliant to the technical specifications of the equipment as mentioned in the latest version of the specifications for IP-based CCTV surveillance system issued by RDSO dated DD-Month-YYYY.

2. We hereby certify that the hardware and software mentioned in our technical solution and Bill of Material (BOM) are complete.

3. We confirm that there is no requirement of any other hardware and software to fulfill requirements as per scope against the RFP. If any additional hardware and software is required to meet in scope requirements, then it would be procured by us at no extra cost to RailTel.

4. We will also ensure our unconditional compliance of all the terms and conditions as mentioned in the Tender document including all corrigenda and RDSO specifications.

5. List of deviations (Partial Compliance and Non-compliance) from terms and conditions as mentioned in the Tender document including all corrigenda and RDSO specifications, if any, is enclosed as Annexure with this form. We understand that any partial compliance or non-compliance, may result in **REJECTION** of our bid.

Seal and signature of the bidder

Place:
Date:

(This letter should be on the letterhead of the bidder duly signed by an authorized signatory)

Form No. 7 –OEM'S UNDERTAKING ON LETTER HEAD FOR MAF, PROVEN FACILITY, BLACKLISTING, MALICIOUS CODE, IPR & RESTRICTION ON COMPANIES FROM LAND BORDER SHARING COUNTRIES WITH INDIA

(To be signed by the OEM)

To

Region Address (as mentioned in BDS, Chapter-5)

Sub: OEM Undertaking

Dear Sir,

Over and above all our earlier conformations and submissions as per your requirements of the RFP, we confirm that,

A. I/We, M/s……, are established and reputed manufacturer and service provider of ……. (Product details), having our registered office at ……..

We hereby authorize M/s …….. (OEMname), Office …… to participate in bid and subsequently upon award of the bid to execute the supply and Installation & Commissioning of our range of products against your above said bid.

I/We further extend our warranty for …… years and AMC for ..... years for our range of products offered by M/s ……. against the above-said bid.

B. I/We undertake/Certify that

"I/We have proven facilities at ..…….. (Complete Address along with Pin Code) for Engineering, manufacture, assembly, integration, testing and basic facilities with respect to space, Engineering, Personnel, Test equipment, Manufacture, Training, Logistic Supports for at least past three years in the country from where the proposed equipment are planned to be supplied."

"In case OEM is located outside India, we have training, repair and service center facilities in India at ……(Complete Address along with Pin Code) also."

C. I/We have not been black-listed or debarred currently by Central Govt./State Govt./CPSU in India or anywhere globally by Government for security reasons either in Individual capacity or as a member of partnership firm/LLP/JV/Society/Trust.

D. I/We Certify that,

(i) All proposed hardware and software components in scope of supplies when shipped by _____, does not contain embedded malicious code that would activate procedures to:-

a. Inhibit the desired and designed function of the equipment.
b. Cause physical damage to the user or equipment during the exploitation.
c. Tap information resident or transient in the equipment/networks.

(ii) I/We, _____ will be considered to be in breach in case physical damage or malfunctioning is caused due to activation of any such malicious code in embedded software and thus be liable to repair, replace or refund the price of the infected software if reported (or, upon request, return) to the party supplying the software to Customer, if different than _____

(iii) Security breach or damages to system, if any, so caused by any embedded malicious code or otherwise, due to the act of either OEM or bidder or both, the OEM as well as the bidder would be considered liable jointly or severally and shall be banned for conducting any business with RailTel. Also the present contract, may liable to be terminated by the purchaser.

E. I/We certify that our offered products are genuine, have our own manufacturing setups and IPR for the hardware(s)/software(s), and not have 3rd party manufacturing from any company blacklisted in India or abroad (due to proven backdoor access and data vulnerability) or any company sharing land border with India. The Intellectual Property Rights (IPR) of all offered product and source code of all offered software including camera firmware, switch firmware etc. are not residing in countries sharing land borders with India. Proof of IPR & source code will be provided by the OEM.

or

IPR of offered products and source code of offered software including camera firmware, switch firmware etc. are residing in …….country (Please mention the country name) and OEM has been registered with the Competent Authority of Govt. of India and are eligible to be considered(evidence of valid registration by the competent authority is enclosed)

In case any breach or false declaration is found at any stage, immediate strict penal action will be taken by RailTel.

F. I/We have read the clause regarding restrictions on procurement from a OEMs of a country which shares a land border with India; I certify that I/We is/are not from such a country or, if from such a country, has been registered with the Competent Authority, I/We hereby certify that I/We fulfils all requirements in this regard and is eligible to be considered.

Hardware/Software offered by us under this tender are fully compliant with RDSO specification as prescribed in this Tender document and in case any information provided by us in this form is found false at any time during tendering process or after award of contract then suitable action including banning of business for five years on entire RailTel may be initiated against us.

Place:
Date:

Seal and signature of the authorized representative of OEM
Name and Designation of the authorized representative of OEM

RailTel

Form No. 8 – BIDDER'S UNDERTAKING ON LETTER HEAD FOR BLACKLISTING, IPR, INTEROPERATIBILITY, MALICIOUS CODE, SITE INSPECTION & RESTRICTION ON COMPANIES ON LAND BORDER SHARING COUNTRIES WITH INDIA.

(To be signed by the Bidder)

To

Region Address (as mentioned in BDS, Chapter-5)

Tender No. RailTel/Tender/OT/NR/NTP/2023-24/VSS/04

Sub: Bidder Undertaking

Dear Sir,

I / We …….hereby certify that

A. I/We have not been black-listed or debarred currently by Central Govt./State Govt./CPSU in India or anywhere globally by Government for security reasons either in Individual capacity or as a member of partnership firm/LLP/JV/Society/Trust.

B. I/We have ensured that the Intellectual Property Rights of Hardware and Source Code of Software supplied under this project are not residing in any Country that shares a Land Border with India. I/We have read the clause regarding restriction on Procurement from a Bidder of a Country which shares a Land Border with India and certify that I am / We are not from such a country or,

If from such a country, have been registered with the Competent Authority. I/We hereby certify that I/We fulfill all the requirement in this regard and are eligible to be considered (evidence of valid registration by the competent authority is enclosed).

C. All the Hardware and Software, offered in our bid documents, are as per Technical specifications mentioned in Chapter-8 of the above referred tender document.

I/We hereby also certify the following:

i. Interoperatibility certificate (as per clause 3.3 of RDSO specification) and Security Verification Certification required as per RDSO specification no. RDSO/SPN/TC/106/2022 version 2.1 or latest, for various Hard-wares/Softwares will be submitted at the time of supply while offered for Inspection.

ii. In case of failure in arranging Interoperatibility Certificate or Security Ver-ification certificate for offered Hardware/Software at the time of supply, I/We shall arrange alternate Hardware/Software as per RDSO specification no. RDSO/SPN/TC/106/2022 version 2.1 or latest without any additional cost to RailTel.

D. All proposed hardware and software components in scope of supplies when shipped by _____, does not contain embedded malicious code that would activate procedures to:-

a. Inhibit the desired and designed function of the equipment.
b. Cause physical damage to the user or equipment during the exploitation.
c. Tap information resident or transient in the equipment/networks.

i. I/We, _____ will be considered to be in breach in case physical damage or malfunctioning is caused due to activation of any such malicious code in embedded software and thus be liable to repair, replace or refund the price of the infected software if reported (or, upon request, return) to the party supplying the software to Customer, if different than _____

ii. Security breach or damages to system, if any, so caused by any embedded malicious code or otherwise, due to the act of either OEM or bidder or both, the OEM as well as the bidder would be considered liable jointly or severally and shall be banned for conducting any business with RailTel. Also the present contract, may liable to be terminated by the purchaser.

E. Before submitting a tender, the tenderer will be deemed to have satisfied himself by actual inspection of the sites and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates he enters in the tender forms are adequate and all inclusive.

F. I/We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I/We certify that I/We is/are not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that I/We fulfils all requirements in this regard and is eligible to be considered.

G. I/We certify that all the licenses of Firmware and Software of the offered CCTV solution under this Tender would be registered in favor of M/s RCIL or its nominated organization.

Seal and signature of the authorized representative of Bidder

Name and Designation of the authorized representative of Bidder

Place:
Date:

Form No. 9 -CERTIFICATE FROM BIDDER'S COST/STATUTORY AUDITOR

To

Region Address (as mentioned in BDS, Chapter-5)

Tender No. RailTel/Tender/OT/CO/NTP/2022-23/VSS/005

Sub: Calculation of Local Content of Supply Items as per formulae given in Tender Clause no. 4.A.45.1

1. I/We_____ the statutory auditor/cost auditor of M/s.__ (name of the bidder) hereby certify that M/s_____ (name of bidder) are offering_____% Local Content against the supply item of the Project Work under this tender in accordance with DPIIT's PMI Policy & it's clarifications/guidelines vide offer No._____ dated___ against RAILTEL tender No._____.

2. I/We certify that Local Content Calculation for Supply items in the offered bid has been done as per the formulae given in Tender Clause no. 4.A.45.1.

To be signed by Authorized signature of Bidder's Statutory Auditor/Cost Auditor
Name and Designation of the authorized representative of Bidder's Statutory Auditor/Cost Auditor

UDIN No. -

Form No. -10 –ANNEXURE AFFIDAVIT BY EACH CONSORTIUM/JV MEMBER (ON STAMP PAPER)

(To be given separately by each Consortium/Joint Venture member of the Bidder on Stamp Paper of appropriate value)
I, _ S/o , Resident of _ ,
, the [insert designation] of the [insert name of single bidder / Consortium/Joint Venture member if Consortium/Joint Venture] do solemnly affirm and state as follows:

1) I say that I am the authorized signatory of [insert name of company/Consortium/Joint Venture member] (hereinafter referred to as "Bidder/Consortium/Joint Venture Member") and I am duly authorized by the Board of Directors of the Bidder/Consortium/Joint Venture Member to swear and depose this Affidavit on behalf of the Bidder/Consortium/Joint Venture Member.
2) I say that I have submitted information with respect to our eligibility for RailTel Corporation of India Ltd. (hereinafter referred to as "RCIL") (NAME OF WORK) (hereinafter referred to as 'Project') Request for Proposal ('RFP') document and I further state that all the said information submitted by us is accurate, true and correct and is based on our records available with us.
3) I say that, we hereby also authorize and request any bank, authority, person or firm to furnish any information, which may be requested by RCIL to verify our credentials / information provided by us under this tender and as may be deemed necessary by RCIL.
4) I say that if at any point of time including the extension period, in case RCIL requests any further/additional information regarding our financial and/or technical capabilities, or any other relevant information, we shall promptly and immediately make available such information accurately and correctly to the satisfaction of RCIL.
5) I say that, we fully acknowledge and understand that furnishing of any false or misleading information by us in our RFP shall entitle us to be disqualified from the tendering process for the said Project. The costs and risks for such disqualification shall be entirely borne by us.
6) I state that all the terms and conditions of the Request for Proposal (RFP) document has been duly complied with.

DEPONENT

VERIFICATION

I, the above-named deponent, do very that the contents of paragraphs 1 to 6 of this affidavit are true and correct to my own knowledge. No part of it is false and nothing material has been concealed. Verified at , on this day of .

DEPONENT

Form No. -11 - JOINT VENTURE AGREEMENT/MEMORANDUM OF AGREEMENT
(On Stamp Paper of Rs fifty)

This Joint Venture Agreement/Memorandum of Agreement is executed at (place) on this _____ day of _____, 2023.

BETWEEN

M/s. _____, a Company incorporated under the Companies Act, 1956 and having its Registered Office at _____ acting through its Managing Director, _____ duly authorized by a resolution of the Board of Directors dated ____ (hereinafter referred to as the 'LEAD MEMBER' which expression unless excluded by or repugnant to the subject or context be deemed to mean and include its successors in interest, legal representatives, administrators, nominees and assigns) of the ONE Part;

AND

M/s. _____, a Company incorporated under the Companies Act, 1956 and having its Registered Office at _____ and Office at _____, acting through its Joint President, _____, duly authorized by a resolution of the Board of Directors dated _____ (hereinafter referred to as the ('Participant member') which expression unless excluded by or repugnant to the subject or context be deemed to mean and include its successors in interest, legal representatives, administrators, nominees and assigns) of the 'OTHER PART'

AND

M/s. _____, a Company incorporated under the Companies Act, 1956 and having its Registered Office at _____ and Office at _____, acting through its Joint President, _____, duly authorized by a resolution of the Board of Directors dated _____ (hereinafter referred to as the ('Participant member') which expression unless excluded by or repugnant to the subject or context be deemed to mean and include its successors in interest, legal representatives, administrators, nominees and assigns) of the 'OTHER PART'

Whereas RailTel Corporation of India Ltd. (hereinafter referred to as 'RCIL') has invited tenders for the **"(NAME OF WORK)**" in terms of the tender documents issued for the said purpose and the eligibility conditions required that the applicants bidding for the same should meet the conditions stipulated by RCIL for participating in the bid by the Joint Venture for handling the project for which the tender has been floated by RCIL.

AND WHEREAS in terms of the bid documents both the parties jointly satisfy the eligibility criteria laid down for a bidder for participating in the bid process by forming a Joint Venture between themselves.

AND WHEREAS both the parties hereto have discussed and agreed to form a Joint Venture for participating in the aforesaid bid and have decided to reduce the agreed terms to writing.

NOW THIS JOINT VENTURE AGREEMENT/Memorandum of Agreement hereby WITNESSES:

1. That in the premises contained herein the Lead Member and the Participant Member having decided to pool their technical know-how, working experiences and financial resources, have formed themselves into a Joint Venture to participate in the tender process

for "**(NAME OF WORK)**" in terms of the tender invited by RailTel Corporation of India Ltd., (RCIL).

2. That the members of the Joint Venture have represented and assured each other that they shall abide by and be bound by the terms and conditions stipulated by RCIL for awarding the tender to the Joint Venture so that the Joint Venture may take up the aforesaid "**(NAME OF WORK)**" in case the Joint Venture turns out to be the successful bidder in the bid being invited by RCIL for the said purpose.

3. That the members of the Joint Venture have satisfied themselves that by pooling their technical know-how and technical and financial resources, the Joint Venture fulfills the prequalification/ eligibility criteria stipulated for a bidder, to participate in the bid for the said tender process for "**(NAME OF WORK)"**

4. That the Joint Venture have agreed to nominate any one of_____, _____ and _____ as the common representative who shall be authorized to represent the Joint Venture for all intents and purposes for dealing with the Government and for submitting the bid as well as doing all other acts and things necessary for submission of bid documents such as Tender Application Form etc., Mandatory Information, Financial Bid. Etc., and such other documents as may be necessary for this purpose.

5. That the share-holding of the members of the Joint Venture for this specified purpose shall be as follows:
   (i) The Lead Member shall have _____ per cent (___ %) of share-holding/participation with reference to the Joint Venture for this specified project.
   (ii) The Participant Member shall have _____ (___ %) of share-holding/participation with reference to the Joint Venture for this specified project.
   (iii) The Participant Member shall have _____ (___ %) of share-holding/participation with reference to the Joint Venture for this specified project.

6. That in order to fulfill the requirement of the tender process and also keep an altogether separate legal entity of the Joint Venture, the Members of the Joint Venture undertake to provide their own nominees as share-holders to the extent of their respective share-holding for the purpose of formation of a Special Purpose Company (SPC) through which the Joint Venture proposes to undertake the _____ of RCIL.

7. That if any change in the membership of the Joint Venture be required to be made by the members of the Joint Venture, the same shall be done with the consent of RCIL subject to the conditions as may be stipulated by them in this regard.

8. That in case to meet the requirements of bid documents or any other stipulations of RCIL, it becomes necessary to execute and record any other documents amongst the members of the Joint Venture, they undertake to do the needful and to participate in the same for the purpose of the said project.

9. That it is clarified by and between the members of the Joint Venture that execution to this Joint Venture Agreement/Memorandum of Agreement by the members of the Joint Venture does not constitute any type of partnership for the purposes of provisions of the Indian Partnership Act and that the members of the Joint Venture shall otherwise be free to carry on their independent business or commercial activities for their own respective ben-

efits under their own respective names and styles. This Joint Venture Agreement is limited in its operation to the specified project.

10 That the Members of the Joint Venture undertake to specify their respective roles and responsibilities for the purposes of implementation of this Joint Venture Agreement and the said project if awarded to the Joint Venture in the Memorandum & Articles of Association of the proposed Special Purpose Company to be got incorporated by the Joint Venture Members to meet the requirements and stipulations of RCIL.

IN FAITH AND TESTIMONY WHEREOF, THE PARTIES HERETO HAVE SIGNED THESE PRESENTS ON THE DATE, MONTHS AND YEAR FIRST ABOVE WRITTEN.

1. (_____)	2. (_____)	3. (_____)
Managing Director	Managing Director	Managing Director
(_____)	(_____)	(_____)
For (Name of company)	For (Name of company)	For (Name of company)

WITNESSES:
1. _____
2. _____

Enclosure:

Board resolution of each of the Joint Venture Members authorizing:
(i) Execution of the Joint Venture Agreement, and
(ii) Appointing the authorized signatory for such purpose.

Form No. -12 - CONSORTIUM AGREEMENT /MEMORANDUM OF AGREEMENT
(On Stamp Paper of appropriate value)

This Consortium Agreement is executed at on this _ day of ____.

BETWEEN

M/s. , a Company incorporated under the Companies Act, 1956 and having its Registered Office at acting through its Managing Director, duly authorized by a resolution of the Board of Directors dated (hereinafter referred to as the „LEAD MEMBER" which expression unless excluded by or repugnant to the subject or context be deemed to mean and include its successors in interest, legal representatives, administrators, nominees and assigns) of the ONE Part;

AND

M/s . . . . . , a Company having its Office at and Office at .....
acting through its Joint President/ MD/.., , duly authorized by a resolution of the Board of Directors dated _ (hereinafter referred to as the ("Participant member") which expression unless excluded by or repugnant to the subject or context be deemed to mean and include its successors in interest, legal representatives, administrators, nominees and assigns) of the OTHER PART"

AND

M/s. . . . .. , a Company having its Office at and Office at .....
, acting through its Joint President/ MD/.., , duly authorized by a resolution of the Board of Directors dated (hereinafter referred to as the ("Participant member") which expression unless excluded by or repugnant to the subject or context be deemed to mean and include its successors in interest, legal representatives, administrators, nominees and assigns) of the OTHER PART"

Whereas RailTel Corporation of India Ltd. (hereinafter referred to as „RCIL") has invite tenders for the "(NAME OF WORK)" in terms of the tender documents issued for the said purpose and the eligibility conditions required that the applicants bidding for the same should meet the conditions stipulated by RCIL for participating in the bid by the Consortium for handling the project for which the tender has been floated by RCIL.

AND WHEREAS in terms of the bid documents the parties jointly satisfy the eligibility criteria laid down for a bidder for participating in the bid process by forming a Consortium between themselves.

AND WHEREAS the parties hereto have discussed and agreed to form a Consortium for participating in the aforesaid bid and have decided to reduce the agreed terms to writing.

NOW THIS CONSORTIUM Agreement hereby WITNESSES:

1. That in the premises contained herein the Lead Member and the Participant Member having decided to pool their technical know-how, working experiences and financial resources, have formed themselves into a Consortium to participate in the tender process for "(NAME OF WORK)" in terms of the tender invited by RailTel Corporation of India Ltd., (RCIL).

2. That the members of the Consortium have represented and assured each other that they shall abide by and be bound by the terms and conditions stipulated by RCIL for awarding the tender to the Consortium so that the Consortium may take up the aforesaid "(NAME OF WORK)" in case the Consortium turns out to be the successful bidder in the bid being invited by RCIL for the said purpose.

3. That the members of the Consortium have satisfied themselves that by pooling their technical know-how and technical and financial resources, the Consortium fulfills the prequalification/ eligibility criteria stipulated for a bidder, to participate in the bid for the said tender process for "(NAME OF WORK)"

4. That the Consortium have agreed to nominate any one of , and as the common representative who shall be authorized to represent the Consortium for all intents and purposes for dealing with the Government and for submitting the bid as well as doing all other acts and things necessary for submission of bid documents such as Tender Application Form etc., Mandatory Information, Financial Bid. Etc., and such other documents as may be necessary for this purpose.

5. That if any change in the membership of the Consortium be required to be made by the members of the Consortium, the same shall be done with the consent of RCIL subject to the conditions as may be stipulated by them in this regard.

6. That in case to meet the requirements of bid documents or any other stipulations of RCIL, it becomes necessary to execute and record any other documents amongst the members of the Consortium, they undertake to do the needful and to participate in the same for the purpose of the said project.

7. That it is clarified by and between the members of the Consortium that execution to this Consortium Agreement by the members of the Consortium does not constitute any type of partnership for the purposes of provisions of the Indian Partnership Act and that the members of the Consortium shall otherwise be free to carry on their independent business or commercial activities for their own respective benefits under their own respective names and styles. This Consortium Agreement is limited in its operation to the specified project.

8. That the Members of the Consortium undertake to specify their respective roles and responsibilities for the purposes of implementation of this Consortium Agreement and the said project, if awarded to the Consortium, to meet the requirements and stipulations of RCIL.

9. The consortium formed will not be subject to alteration with regard to change in constituting firms and/or reorientation of roles. Any changes, if proposed by Consortium to take advantage of certain developments during evaluation stage will render the bid liable to be **REJECTED**.
10. All partners of the consortium shall be jointly and severally liable to RailTel for the execution of the entire contract in accordance with its terms.
11. Each Consortium member has minimum 20% contribution in the work and role/scope of each member is enclosed.
12. Power of Attorney by all members of the Consortium in favor of the Lead Member is also enclosed.

IN FAITH AND TESTIMONY WHEREOF, THE PARTIES HERETO HAVE SIGNED THESE PRESENTS ON THE DATE, MONTHS AND YEAR FIRST ABOVE WRITTEN

1. ( )	2. ( )	3. ( )
Managing Director	Managing Director	Managing Director
For (Name of company)	For (Name of company)	For (Name of company)

WITNESSES:

1.

2.

Enclosure:

Board resolution of each of the Consortium Members authorizing:

(i) Execution of the Consortium Agreement, and

(ii) Appointing the authorized signatory for such purpose.

****

Form No. 13 - PAST EXPERIENCE FORM

SN	Item	Details
1. General Information		
1	Customer Name	
2	Details of Contact Person	
i.	Name	
ii.	Designation	
iii.	Email	
iv.	Mailing Address	
v.	Phone	
vi.	Fax	
2. General Information		
i.	Name of the Project	
ii.	Government/Private/PSU/Others please specify	
iii.	Start Date and End Date of PO/LOA	
iv.	Current Status (Completed/Work in Progress)	
v.	Contract Tenure	
vi.	Geographical Coverage (No. of locations the project covers)	
3. Size of the Project		
i.	Order Value of the project	
ii.	Capital Expenditure involved	
iii.	Cost of services provided by the bidder	
iv.	Cost of services provided by the partners if involved	
v.	Approximate number of concurrent users for VA/VMS/FRS/EMS/CCC	
vi.	No of Video Cameras implemented (if applicable)	
vii.	No of Network Devices managed (if applicable)	
viii.	Please Provide customer certificate/Work order for executed Scope	
4. Brief description of scope of Project		
	Highlights of the Key Result Areas expected and achieved	
	List of modules and sub-modules implemented	
	Narrative description of Project including technology deployed	
	Description of actual services provided by your firm	

Certification: I, the undersigned, certify that these data correctly describe the Projects implemented by our Company.

(Signature)
(Name of Authorized Signatory)
(Designation)
(Date)
(Name and address of the bidder)
(Company Seal)

Form no. 14 – Calculation for Bidder's Available Bid Capacity

(to be signed by Bidder's Statutory Auditor)

To

Region Address (as mentioned in BDS, Chapter-5)

Tender No. RailTel/Tender/OT/NR/NTP/2023-24/VSS/04

Sub: Calculation of **Bidder's Available Bid Capacity** as per formulae given in Tender Clause no. 4.A.14.1 (Point-8)

1. I/We_____ the statutory auditor of M/s._____ (name of the bidder) hereby certify that M/s_____ (name of bidder) are having Bid Capacity of Rs _____ and detailed calculation for their bid capacity as per Tender clause no. 4.A.14.1.1 has been given below.

2. **Calculation of A:** Following is the details of payment received by the bidder for completed works as well as works in progress during last three years and current financial year (upto date of inviting of Tender):

SN	Financial Year	Payment Receipt (in Rs)
1	2020-21 (Year-1)	
2	2021-22 (Year-2)	
3	2022-23(Year-3)	
4	2023-24 Current Year - upto date of inviting of Tender)	

Note – Bidders are allowed to include contractual payment received under Works, Goods and Services, AMC etc. under payment receipt.

2.1 Maximum value of payment receipt (A) during the FY-_____ out of last three FY including current FY is Rs _____.

3. **Calculation of B:** Following is the value of existing commitments and balance amount of ongoing works with the bidder as on date one month prior to the tender closing date:

SN	Completion Portion of Existing Commitments and Ongoing works as on date one month prior to the tender closing date to be completed in next 'N' years (Period as specified in Clause 4.A.4 of Chapter-4A):	Value of existing commitment and balance amount of ongoing works with the Bidder as per Form no. 15 (in Rs)
1	Value of B	

4. **Calculation of Bidder's Bid Capacity:**

SN	Description	Bidder's Bid Capacity (in Rs)
1	Bidders Available Bid Capacity	**[A x N x 2] – 0.33xNxB**

Name of the Statutory Auditor's
Signature:-
Seal of the Statutory Auditor's:
Name of signatory (in capital) :-
Membership No.:-
Firm Regn. No:-
UDIN :-

RailTel

Form no. 15 – Details of Completed and On-Going works executed by Bidder

(To be signed by Bidder's Statutory Auditor / **Lead Bidder's** Statutory Auditor **in case of Consortium / each JV member's** Statutory Auditor)

To

Region Address (as mentioned in BDS, Chapter-5)

Tender No. RailTel/Tender/OT/NR/NTP/2023-24/VSS/04

Sub: Details of Completed and On-Going works executed by Bidder (as per Clause no. 4.A.14.1 – Point-8)

Following are the details of completed and On-Going works during Previous three financial years and current financial year by _____ (Name of the Bidder/Lead Bidder in case of Consortium/member of JV):

DETAILED OF COMPLETED AND ON-GOING DURING PREVIOUS THREE FINANCIAL YEAR AND CURRENT FINANCIAL YEAR									
SN	**Description of the Work with Contract No.**	**Name and address of the Employer With Contact No.**	**Date of award**	**Stipulated date of completion**	**Value of work as per order (in Rs.)**	**Payment Received in Previous three financial year and current Financial year (Upto date of inviting of Tender) (in Rs.)**	**Anticipated date of Completion of work**	**Balance amount of ongoing works as on date one month prior to Tender closing date to be completed in period as specified in Clause 4.A.4 of Tender (in Rs.)**	**Any other relevant information**
1									
2									
3									
4									
5									
6									
7									
				Total	**Rs ____**	**Rs ____**		**Rs ____**	

Name of the Statutory Auditor's
Signature:-
Seal of the Statutory Auditor's:
Name of signatory (in capital) :-
Membership No.:-
Firm Regn. No:-
UDIN :-

Form No. 16 - CONTRACT AGREEMENT

(CA No. …….)

This AGREEMENT is made at <Location of RO Office> on this day of _____ two thousand and twenty one by and between RailTel Corporation of India Limited (A Govt. of India Undertaking) having its Registered & Regional office at Plat-A, 6th Floor, Office Block-II, East Kidwai Nagar, New Delhi-110023, acting in the premises through RGM/ED or his authorized representative (hereinafter referred to as 'RailTel', which expression should unless repugnant to the context or meaning thereof include its successors and permitted assigns) of the one part;

And _____having its registered office at ---------- acting in the premises through……. (hereafter referred to as "Contractor", which expression should unless repugnant to the context or meaning thereof include its successor and permitted assigns) of the other part.

Whereas in response to a call for Tender by RailTel for the work of "……..……..." for RailTel Corporation of India Limited as per tender papers at Annexure 'A' read with Corrigendum…….. issued by RailTel hereto, the Contractor has submitted offer letter as per Annexure 'B' hereto

AND WHEREAS the said Tender of the Contractor has been accepted for the work of "……" for RailTel Corporation of India Limited as per copy of Letter of Acceptance of Tender No. _____dated_____ complete with enclosures at the accepted rates and agreed deviations from tender papers as per Annexure-C hereto at contract value of Rs._____(Rupees _____ Only) duly accepted by the contractor.

Now this agreement witnesses that in consideration of the premises and the payment to be made by the Purchaser (RailTel) to the Contractor provided for herein, the Contractor shall supply all equipment and materials and execute and perform all works for which the said Tender of the Contractor has been accepted strictly according to the various provisions in Annexure 'B' and 'C' hereto and upon such supply, execute and performance to the satisfaction of the purchaser (RailTel) and the purchaser (RailTel) shall pay to the Contractor at the rates accepted as per the said Annexure 'C' and in terms of the provisions therein.

IN WITNESS whereof both the parties have hereunto set and subscribed their respective hands and/or seals on the day and year respectively mentioned against their respective signatures.

Signed and delivered by Shri _____ for and on behalf of RailTel Corporation of India Ltd.

The contract within named in the presence of:

1. Signatures
   Date
   Name in Block Capitals

Address:

2. Signatures
Date
Name in Block Capitals
Address:

Signed and delivered by Shri. _____ for and on behalf of _____

The contractor within named in the presence of :

1. Signatures
Date
Name in Block Capitals
Address:

2. Signature
Date
Name in Block Capitals
Address:

Annexure 'A' : Tender Document No……. with Corrigendum(s), if any.
Annexure 'B' : Contractor's offer letter.
Annexure 'C' : Letter of Acceptance No…….. with all enclosures.
Annexure 'D' : Copy of Performance Bank Guarantee (PBG)

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SECTION-I

CHAPTER-7

Annexure-I - List of Divisional and Headquarter Control Offices covered under present Tender

SN	Railway Zone	Headquarters	Divisional Control Office	Region
1	North Central Railway	Allahabad	Allahabad, Tundla, Agra, Jhansi	Northern
2	North Eastern Railway	Gorakhpur	Izzatnagar, Lucknow, Varanasi	Northern
3	North Western Railway	Jaipur	Jaipur, Ajmer, Bikaner, Jodhpur	Northern
4	Northern Railway	Delhi	Delhi, Ambala, Firozpur, Lucknow, Moradabad	Northern

RailTel

Annexure-II - Details of Existing VSS Stations/RPF Thanas having existing VSS Infra (either installed or under Installation)

SN	Name of Controlling RPF Thana/Post (Cluster)	Name of Station	Rail-way Zone	Stn Code	Category of Stations	State	Project Phase (IA/IB/IBV)	Dome	Fixed Box Type	PTZ	4K UHD	VMS SW	UPS (2x10KVA)	Server with 36TB usable Storage	PC Workstation with1 KVA UPS	LFD 55"	Rack 19" 42U	Switch Type-III
1	Aburoad	Aburoad	NWR	ABR	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
2	Adarshna-gardelhi	Adarshna-gardelhi	NR	ANDI	A	Delhi	IA		15				0	36	0	1	1	
3	Agra Cantt	Raja Ki Mandi	NCR	RKM	A	UP	IB	6	27	3	2	38	1	36	1	2	1	1
4	Agra Fort	Agra Fort	NCR	AF	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
5	Aligarh	Aligarh	NCR	ALJN	A	UP	IA	6	27	3	4		0	36	1	1	1	
6	Alwar	Alwar	NWR	AWR	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
7	Azamgarh	Azamgarh	NER	AMH	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
8	Balia	Ballia	NER	BUI	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
9	Banda	Banda	NCR	BNDA	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
10	Bandikui	Bandikui	NWR	BKI	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
11	Dausa	Dausa	NWR	DO	B	Raja-sthan	IBV	5	20	3	3	31	1	36	1	2	1	1
12	Barabanki	Barabanki	NR	BBK	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
13	Barmer	Barmer	NWR	BME	A	Raja-sthan	IBV	5	19	2	3	29	1	36	1	2	1	1
14	Basti	Basti	NER	BST	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
15	Khalilabad	Khalilabad	NER	KLD	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
16	Beas	Beas	NR	BES	A	Punjab	IB	6	27	3	4	40	1	36	1	2	1	1
17	Beawar	Beawar	NWR	BER	B	Raja-sthan	IBV	5	20	3	3	31	0.5	36	1	2	1	1
18	Pali Marwar	Pali Marwar	NWR	PMY	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
19	Bhilwara	Bhilwara	NWR	BHL	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
20	Bhiwani	Bhiwani	NWR	BNW	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1

21	Chandausi	Chandausi	NR	CH	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
22	Dehradun	Dehradun	NR	DDN	A1	Ut-tranchal	IA		15				0	36	1	2	1	
23	Delhi Kishanganj	SUBZI MANDI	NR	SZM	B	Delhi	IA		15				0	36	0	2	1	
24	Deoria Sadar	Deoria Sadar	NER	DEOS	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
25	Etawah	Etawah	NCR	ETW	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
26	Falna	Falna	NWR	FA	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
27	Falna	Rani	NWR	RN	A	Raja-sthan	IBV	5	19	2	3	29		36	1	2	1	
28	Faridabad	FARIDA-BAD	NR	FDB	A	Haryana	IB	4	31	3	4	42	1	36	1	2	1	1
29	Faridabad	BAL-LABGARH	NR	BVH	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
30	Firozabad	Firozabad	NCR	FZD	B	UP	IB	6	27	3	4	40	1	36	1	2	1	1
31	Firozpur Cantt.	Firozpur Cantt.	NR	FZR	A	Punjab	IB	6	27	3	4	40	1	36	1	2	1	1
32	Amroha	Amroha	NR	AMRO	B	Uttar Pradesh	IBV	6	20	3	4	33	1	36	1	2	1	1
33	Gandhinagar	Gandhina-gar-Jp	NWR	GADJ	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
34	Gonda Jn	Gonda Jn.	NER	GD	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
35	Gurgaon	GURGA-ON	NR	GGN	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
36	Gwalior	Gwalior	NCR	GWL	A1	MP	IA		15				0	36	1	2	1	
37	Hanuman-garh	Hanuman-garh Jn.	NWR	HMH	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
38	Suratgarh	Suratgarh	NWR	SOG	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
39	Hapur	Hapur	NR	HPU	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
40	Hisar	Hisar	NWR	HSR	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
41	Jagadhri	Jagadhri	NR	JUD	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
42	Jaisalmer	Jaisalmer	NWR	JSM	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
43	Jalandhar Cant	Jalandhar Cant	NR	JUC	A	Punjab	IB	6	27	3	4	40	1	36	1	2	1	1
44	Jalandhar Cant	Phagwara	NR	PGW	A	Punjab	IB	6	27	3	4	40	1	36	1	2	1	1

45	Janghai	Janghai	NR	JNH	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
46	Bhadohi	Bhadohi	NR	BOY	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
47	Datia	Datia	NCR	DAA	B	MP	IBV	6	20	3	4	33	0.5	36	1	2	1	1
48	Jaunpur	Jaunpur	NR	JNU	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
49	Jind	JIND	NR	JHI	B	Haryana	IBV	5	18	2	3	28	1	36	1	2	1	1
50	Kathgodam	Kathgodam	NER	KGM	A	Uttarak-hand	IB	6	27	3	4	40	1	36	1	2	1	1
51	Nazibabad	Nazibabad	NR	NBD	B	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
52	Roorkee	Roorkee	NR	RK	A	Ut-tranchal	IBV	6	20	3	4	33	1	36	1	2	1	1
53	Lalgarh	Lalgarh	NWR	LGH	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
54	Lalitpur	Lalitpur	NCR	LAR	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
55	Babina	Babina	NCR	BAB	B	UP	IBV	6	20	3	4	33	1	36	1	2	1	1
56	Rudrapur City	Rudrapur City	NER	RUPC	A	Uttarak-hand	IB	6	27	3	4	40	1	36	1	2	1	1
57	Badshahna-gar	Bad-shahnagar	NER	BNZ	B	UP	IBV	6	20	3	4	33	0.5	36	1	2	1	1
58	Mahoba	Mahoba	NCR	MBA	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
59	Mankapur Jn	Mankapur Jn.	NER	MUR	B	UP	IBV	6	20	3	4	33	1	36	1	2	1	1
60	Marwar Jn.	Marwar Jn.	NWR	MJ	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
61	Mau Jn	Mau Jn.	NER	MAU	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
62	Mau Jn	Belthara Road	NER	BLTR	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
63	Meerut City	MEERUT CITY	NR	MTC	A	Uttar Pradesh	IA		15				0	36	0	2	1	
64	Meerut City	MEERUT CANTT.	NR	MUT	A	Uttar Pradesh	IA		15				0	36	0	1	1	
65	Nagaur	Nagaur	NWR	NGO	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
66	Morena	Morena	NCR	MRA	A	MP	IB	6	27	3	4	40	1	36	1	2	1	1
67	Morena	Orai	NCR	ORAI	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
68	Ghazipur City	Ghazipur City	NER	GCT	B	UP	IA		15				0	36	1	2	1	

69	Faridabad	FARIDA-BAD TOWN	NR	FDN	B	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
70	Hardoi	Hardoi	NR	HRI	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
71	**LDH**	Phillaur	NR	PHR	B	Punjab	IBV	5	20	3	4	32	1	36	1	2	1	1
72	Panipat	PANIPAT	NR	PNP	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
73	KUN	KARNAL	NR	KUN	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
74	Partapgarh	Partapgarh	NR	PBH	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
75	Amethi	Amethi	NR	AME	B	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
76	Pathankot	Pathankot	NR	PTK	A	Punjab	IB	6	27	3	4	40	1	36	1	2	1	1
77	Phaphund	Phaphund	NCR	PHD	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
78	Phulera	Phulera	NWR	FL	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
79	Kishangarh	Kishangarh	NWR	KSG	B	Raja-sthan	IBV	5	19	2	3	29	1	36	1	2	1	1
80	Phul Pur	Phul Pur	NR	PLP	B	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
81	Raebareli	Rae - Bareli Jn.	NR	RBL	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
82	Rajpura Jn.	Rajpura Jn.	NR	RPJ	A	Punjab	IB	6	27	3	4	40	1	36	1	2	1	1
83	Rampur	Rampur	NR	RMU	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
84	Rewari	Rewari	NWR	RE	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
85	Rohtak	ROHTAK	NR	ROK	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
86	Shahganj	Shahganj	NR	SHG	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
87	Shahjahan-pur	Shahjahan-pur	NR	SPN	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
88	Shakurbasti	SHAKUR BASTI	NR	SSB	B	Delhi	IA		15				0	36	0	1	1	
89	Shakurbasti	NANGLOI	NR	NNO	B	Delhi	IA		15				0	36	1	2	1	
90	Shikohabad	Shiko-habad	NCR	SKB	B	UP	IB	6	27	3	4	40	1	36	1	2	1	1
91	Sirhind Jn.	Sirhind Jn.	NR	SIR	A	Punjab	IB	6	27	3	4	40	1	36	1	2	1	1

92	Sitapur	Sitapur	NER	STP	B	UP	IBV	6	20	3	4	33	0.5	36	1	2	1	1
93	Siwan Jn	Siwan Jn.	NER	SV	A	Bihar	IB	6	27	3	4	40	1	36	1	2	1	1
94	Sonipat	SONIPAT	NR	SNP	A	Haryana	IB	6	27	3	4	40	1	36	1	2	1	1
95	Sri Gan-ganagar	Sri Gan-ganagar	NWR	SGNR	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
96	Sultanpur	Sultanpur	NR	SLN	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
97	Tundla	Tundla	NCR	TDL	A	UP	IB	6	27	3	4	40	1	36	1	2	1	1
98	Udaipur City	Udaipur City	NWR	UDZ	A	Raja-sthan	IB	6	27	3	4	40	1	36	1	2	1	1
99	Unnao	Unnao	NR	ON	A	Uttar Pradesh	IB	6	27	3	4	40	1	36	1	2	1	1
							TOTAL	**531**	**2466**	**266**	**352**	**3440**	**86**	**3564**	**94**	**194**	**99**	**88**

Note:- 0.5 in UPS means 1unit of UPS of 1+1 configuration.

List of Divisional controls and Headquarter controls **having existing VSS Infra (either installed or under Installation)**

SN	Location (Division/Headquarter)	Railway Zone	Qty of PC Workstation	Qty of Large Format Display	Qty of GUI License (VMS)
1	**Baroda House Delhi N.Rly**	NR	1	2	1
2	Delhi division		1	2	1
3	Moradabad division		1	2	1
4	Firozpur division		1	2	1
5	Ambala division		1	2	1
6	Lucknow division		1	2	1
7	**Allahabad North central Rly**	NCR	1	2	1
8	Allahabad Division		1	2	1
9	Jhansi Division		1	2	1
10	Agra Division		1	2	1
11	**Gorakh pur North Eastern Rly**	NER	1	2	1
12	Varanasi Division		1	2	1
13	Lucknow Division		1	2	1
14	Izzatnagar Division		1	2	1

15	**Jaipur North West Rly**	NWR	1	2	1
16	Jaipur Division		1	2	1
17	Jodhpur Division		1	2	1
18	Bikaner Division		1	2	1
19	Ajmer Division		1	2	1
		Total	**19**	**38**	**19**

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Annexure-III - List of stations covered under the scope of present tender

SN	Name of Controlling RPF Thana/Posts (Cluster)	Name of station	Stn Code	Category of Stations	Division	Railway Zone	State
1	Aburoad	Aburoad	ABR	A	Ajmer	NWR	Rajasthan
2	Adarshnagardelhi	Adarshnagardelhi	ANDI	A	DLI	NR	Delhi
3	Agra Cantt	Raja Ki Mandi	RKM	A	AGC	NCR	UP
4	Agra Fort	Agra Fort	AF	A	AGC	NCR	UP
5	Akbar Pur	Akbar Pur	ABP	A	LKO	NR	Uttar Pradesh
6	Aligarh	Aligarh	ALJN	A	ALD	NCR	UP
7	Alwar	Alwar	AWR	A	Jaipur	NWR	Rajasthan
8	Azamgarh	Azamgarh	AMH	A	Varanasi	NER	UP
9	Azamgarh	Khorasan Road	KRND	B	Varanasi	NER	UP
10	Balia	Ballia	BUI	A	Varanasi	NER	UP
11	Balia	Suraimanpur	SIP	B	Varanasi	NER	UP
12	Banda	Banda	BNDA	A	JHS	NCR	UP
13	Banda	Atarra	ATE	B	JHS	NCR	UP
14	Bandikui	Bandikui	BKI	A	Jaipur	NWR	Rajasthan
15	Dausa	Dausa	DO	B	Jaipur	NWR	Rajasthan
16	Barabanki	Barabanki	BBK	A	LKO	NR	Uttar Pradesh
17	Bareilly City	Bareilly City	BC	B	Izzatnagar	NER	UP
18	Barmer	Balotra	BLT	B	Jodhpur	NWR	Rajasthan
19	Barmer	Barmer	BME	A	Jodhpur	NWR	Rajasthan
20	Basti	Basti	BST	A	Lucknow	NER	UP
21	Khalilabad	Khalilabad	KLD	A	Lucknow	NER	UP
22	Beas	Beas	BES	A	FZR	NR	Punjab
23	Beawar	Beawar	BER	B	Ajmer	NWR	Rajasthan
24	Pali Marwar	Pali Marwar	PMY	A	Jodhpur	NWR	Rajasthan
25	Bhatinda	Abohar Jn.	ABS	B	UMB	NR	Punjab
26	Bhatni	Bhatni Jn.	BTT	B	Varanasi	NER	UP
27	Bhatni	Salempur Jn.	SRU	B	Varanasi	NER	UP
28	Bhilwara	Bhilwara	BHL	A	Ajmer	NWR	Rajasthan
29	Bhiwani	Bhiwani	BNW	A	Bikaner	NWR	Haryana
30	Chandausi	Chandausi	CH	A	MB	NR	Uttar Pradesh

31	Chitrakutdham Karwi	Chitrakutdham Karwi	CKTD	A	JHS	NCR	UP
32	Dabra	Dabra	DBA	B	JHS	NCR	MP
33	Dehradun	Dehradun	DDN	A1	MB	NR	Uttranchal
34	Delhi Kishanganj	SUBZI MANDI	SZM	B	DLI	NR	Delhi
35	Delhi Shahdara	SAHIBABAD	SBB	B	DLI	NR	Uttar Pradesh
36	Deoria Sadar	Deoria Sadar	DEOS	A	Varanasi	NER	UP
37	Dholpur	Dholpur	DHO	B	JHS	NCR	Rajasthan
38	Etawah	Etawah	ETW	A	ALD	NCR	UP
39	Falna	Falna	FA	A	Ajmer	NWR	Rajasthan
40	Falna	Jawaibandh	JWB	B	Ajmer	NWR	Rajasthan
41	Falna	Rani	RN	A	Ajmer	NWR	Rajasthan
42	Faridabad	FARIDABAD	FDB	A	DLI	NR	Haryana
43	Faridabad	BALLABGARH	BVH	A	DLI	NR	Haryana
44	Faridabad	FARIDABAD TOWN	FDN	B	DLI	NR	Haryana
45	Farrukhabad Jn.	Farrukhabad Jn.	FBD	B	Izzatnagar	NER	UP
46	Farrukhabad Jn.	Fatehgarh	FGR	B	Izzatnagar	NER	UP
47	Fatehpur	Fatehpur	FTP	A	ALD	NCR	UP
48	Firozabad	Firozabad	FZD	B	ALD	NCR	UP
49	Firozpur Cantt.	Firozpur Cantt.	FZR	A	FZR	NR	Punjab
50	Amroha	Amroha	AMRO	B	MB	NR	Uttar Pradesh
51	Gandhinagar	Gandhinagar-Jp	GADJ	A	Jaipur	NWR	Rajasthan
52	Gonda Jn	Gonda Jn.	GD	A	Lucknow	NER	UP
53	Gurgaon	GURGAON	GGN	A	DLI	NR	Haryana
54	Gwalior	Gwalior	GWL	A1	JHS	NCR	MP
55	Hanumangarh	Hanumangarh Jn.	HMH	A	Bikaner	NWR	Rajasthan
56	Suratgarh	Suratgarh	SOG	A	Bikaner	NWR	Rajasthan
57	Hapur	Hapur	HPU	A	MB	NR	Uttar Pradesh
58	Haridwar	Raiwala	RWL	B	MB	NR	Uttranchal
59	Rishikesh	Rishikesh	RKSH	B	MB	NR	Uttranchal
60	Hisar	Hisar	HSR	A	Bikaner	NWR	Haryana
61	Jagadhri	Jagadhri	JUD	A	UMB	NR	Haryana
62	Jaisalmer	Jaisalmer	JSM	A	Jodhpur	NWR	Rajasthan
63	Jalandhar Cant	Jalandhar Cant	JUC	A	FZR	NR	Punjab
64	Jalandhar Cant	Phagwara	PGW	A	FZR	NR	Punjab
65	Janghai	Janghai	JNH	A	LKO	NR	Uttar Pradesh
66	Bhadohi	Bhadohi	BOY	A	LKO	NR	Uttar Pradesh

67	Datia	Datia	DAA	B	JHS	NCR	MP
68	Jaunpur	Jaunpur	JNU	A	LKO	NR	Uttar Pradesh
69	Jaunpur	Jaunpur City	JOP	B	LKO	NR	Uttar Pradesh
70	Jind	JIND	JHI	B	DLI	NR	Haryana
71	Jodhpur	Rai Ka Bagh Palace Jn	RKB	B	Jodhpur	NWR	Rajasthan
72	Kannauj	Kannauj	KJN	B	Izzatnagar	NER	UP
73	Kannauj	Kanpur (Anwarganj)	CPA	B	Lucknow	NER	UP
74	Kasganj Jn	Kasganj Jn.	KSJ	B	Izzatnagar	NER	UP
75	Kashipur Jn.	Kashipur Jn.	KPV	B	Izzatnagar	NER	Uttarakhand
76	Kathgodam	Kathgodam	KGM	A	Izzatnagar	NER	Uttarakhand
77	Kathgodam	Haldwani	HDW	B	Izzatnagar	NER	Uttarakhand
78	Kathua	Kathua	KTHU	B	FZR	NR	Jammu & Kashmir
79	Kotkapura	Faridkot	FDK	B	FZR	NR	Punjab
80	Laksar	Laksar	LRJ	B	MB	NR	Uttar Pradesh
81	Nazibabad	Nazibabad	NBD	B	MB	NR	Uttar Pradesh
82	Roorkee	Roorkee	RK	A	MB	NR	Uttranchal
83	Lalgarh	Lalgarh	LGH	A	Bikaner	NWR	Rajasthan
84	Lalitpur	Lalitpur	LAR	A	JHS	NCR	UP
85	Babina	Babina	BAB	B	JHS	NCR	UP
86	Lalkuan	Lalkuan	LKU	B	Izzatnagar	NER	Uttarakhand
87	Rudrapur City	Rudrapur City	RUPC	A	Izzatnagar	NER	Uttarakhand
88	Badshahnagar	Badshahnagar	BNZ	B	Lucknow	NER	UP
89	Lucknow City	Aishbagh	ASH	B	Lucknow	NER	UP
90	Mahoba	Mahoba	MBA	A	JHS	NCR	UP
91	Mahoba	Khajuraho	KURJ	B	JHS	NCR	MP
92	Lakhimpur	Lakhimpur	LMP	B	Lucknow	NER	UP
93	Manduadih	Manduadih	MUV	B	Varanasi	NER	UP
94	Manikpur	Manikpur	MKP	B	JHS	NCR	UP
95	Mankapur Jn	Mankapur Jn.	MUR	B	Lucknow	NER	UP
96	Marwar Jn.	Marwar Jn.	MJ	A	Ajmer	NWR	Rajasthan
97	Mau Jn	Mau Jn.	MAU	A	Varanasi	NER	UP
98	Mau Jn	Belthara Road	BLTR	A	Varanasi	NER	UP
99	Meerut City	MEERUT CITY	MTC	A	DLI	NR	Uttar Pradesh
100	Meerut City	MEERUT CANTT.	MUT	A	DLI	NR	Uttar Pradesh
101	Merta Road	Merta Road	MTD	B	Jodhpur	NWR	Rajasthan
102	Merta Road	Nokha	NOK	B	Jodhpur	NWR	Rajasthan
103	Makrana	Makrana	MKN	B	Jodhpur	NWR	Rajasthan
104	Nagaur	Nagaur	NGO	A	Jodhpur	NWR	Rajasthan
105	Mirzapur	Mirzapur	MZP	A	ALD	NCR	UP
106	Mirzapur	Vindhyachal	BDL	B	ALD	NCR	UP

107	Morena	Morena	MRA	A	JHS	NCR	MP
108	Morena	Orai	ORAI	A	JHS	NCR	UP
109	Muzaffarnagar	MUZAFFARNAGAR	MOZ	A	DLI	NR	Uttar Pradesh
110	Muzaffarnagar	DEOBAND	DBD	B	DLI	NR	Uttar Pradesh
111	Nangaldam	Una Himachal	UHL	B	UMB	NR	Himachal Pradesh
112	Nihal Garh	Nihal Garh	NHH	B	LKO	NR	Uttar Pradesh
113	Ghazipur City	Ghazipur City	GCT	B	Varanasi	NER	UP
114	Hardoi	Hardoi	HRI	A	MB	NR	Uttar Pradesh
115	**LDH**	Phillaur	PHR	B	FZR	NR	Punjab
116	Palwal	PALWAL	PWL	B	DLI	NR	Haryana
117	Panipat	PANIPAT	PNP	A	DLI	NR	Haryana
118	KUN	KARNAL	KUN	A	DLI	NR	Haryana
119	Partapgarh	Partapgarh	PBH	A	LKO	NR	Uttar Pradesh
120	Amethi	Amethi	AME	B	LKO	NR	Uttar Pradesh
121	Pathankot	Pathankot	PTK	A	FZR	NR	Punjab
122	Phaphund	Phaphund	PHD	A	ALD	NCR	UP
123	Phulera	Phulera	FL	A	Jaipur	NWR	Rajasthan
124	Kishangarh	Kishangarh	KSG	B	Jaipur	NWR	Rajasthan
125	Pilibhit Jn.	Pilibhit Jn.	PBE	B	Izzatnagar	NER	UP
126	Prayag	Pryag	PRG	B	LKO	NR	Uttar Pradesh
127	Phul Pur	Phul Pur	PLP	B	LKO	NR	Uttar Pradesh
128	Raebareli	Rae - Bareli Jn.	RBL	A	LKO	NR	Uttar Pradesh
129	Rajpura Jn.	Rajpura Jn.	RPJ	A	UMB	NR	Punjab
130	Rampur	Rampur	RMU	A	MB	NR	Uttar Pradesh
131	Rewari	Rewari	RE	A	Jaipur	NWR	Haryana
132	Sikar	Sikar	SIKR	B	Jaipur	NWR	Rajasthan
133	Rohtak	ROHTAK	ROK	A	DLI	NR	Haryana
134	Rohtak	BAHADURGARH	BGZ	B	DLI	NR	Haryana
135	Shahganj	Shahganj	SHG	A	LKO	NR	Uttar Pradesh
136	Shahjahanpur	Shahjahanpur	SPN	A	MB	NR	Uttar Pradesh
137	Shakurbasti	SHAKURBASTI	SSB	B	DLI	NR	Delhi
138	Shakurbasti	NANGLOI	NNO	B	DLI	NR	Delhi
139	Shikohabad	Shikohabad	SKB	B	ALD	NCR	UP
140	Sirhind Jn.	Sirhind Jn.	SIR	A	UMB	NR	Punjab
141	Sirsa	Sirsa	SSA	B	Bikaner	NWR	Haryana

142	Sitapur	Sitapur	STP	B	Lucknow	NER	UP
143	Siwan Jn	Siwan Jn.	SV	A	Varanasi	NER	Bihar
144	Siwan Jn	Mairwa	MW	B	Varanasi	NER	Bihar
145	Sonipat	SONIPAT	SNP	A	DLI	NR	Haryana
146	Sri Ganganagar	Sri Ganganagar	SGNR	A	Bikaner	NWR	Rajasthan
147	Sultanpur	Sultanpur	SLN	A	LKO	NR	Uttar Pradesh
148	Tundla	Tundla	TDL	A	ALD	NCR	UP
149	Udaipur City	Mavli Jn.	MVJ	B	Ajmer	NWR	Rajasthan
150	Udaipur City	Udaipur City	UDZ	A	Ajmer	NWR	Rajasthan
151	Unnao	Unnao	ON	A	LKO	NR	Uttar Pradesh

Note:
Above list of stations also include stations having existing (either installed or under installation)VSS Infra.

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Annexure-IV - Indicative list of Number of Cameras to be installed at Stations

SN	Type of Camera	A1 Category Station	A Category Station	B Category Station	C Category Station	D & E* Category Station
1	**Dome**	7	6	5	2	0
2	**PTZ**	9	6	4	3	1
3	**Fixed Bullet**	68	42	25	17	9
4	**4k UHD Bullet**	8	6	4	4	0
	Total	**92**	**60**	**38**	**26**	**10**

**D&E Category Stations not covered in the Scope of tender.*

Note:- Bidders to take a note that these numbers are assumed to estimate the infra-structure requirement like cameras, servers/workstations, storage capacity etc. at each RPF Thana/ Post, however the actual number of cameras deployed may vary as per the actual site requirements and design approved by Indian Railways and RailTel.

Annexure-V - List of RPF Thana wise number of cameras for VMS, VA& FRS server/workstation sizing

SN	Name of Controlling RPF Thana/Post (Cluster)	Railway Zone	Stn Code	Category of Station	State	Total Number of Cameras at Cluster stations for VMS Server/Workstation/NVR	20% of Total Number of Cameras at Cluster Stationsfor VA Server/Workstation	Total Number of 4K UHD Cameras at Cluster Stations for FRS Server/Workstaion	Panic Button at D & E Category Stations
1	Abohar Jn.	NR	ABS	B	Punjab	329	59	5	58
2	Abu Road	NWR	ABR	A	Rajasthan	139	32	5	28
3	Adarshnagardelhi	NR	ANDI	A	Delhi	36	9	5	2
4	Agra Fort	NCR	AF	A	UP	259	54	5	52
5	Aishbagh	NER	ASH	B	UP	148	27	4	22
6	Akbarpur Jn	NR	ABP	A	Uttar Pradesh	80	14	5	8
7	Aligarh	NCR	ALJN	A	UP	129	30	5	26
8	Alwar Jn	NWR	AWR	A	Rajasthan	89	23	5	18
9	Amethi	NR	AME	B	Uttar Pradesh	68	19	4	14
10	Amroha	NR	AMRO	B	Uttar Pradesh	105	25	4	20
11	Atarra	NCR	ATE	B	UP	69	12	4	6
12	Azamgarh	NER	AMH	A	UP	49	16	5	10
13	Babina	NCR	BAB	B	UP	57	16	5	10
14	Badshahnagar	NER	BNZ	B	UP	85	21	4	16
15	BAHADURGARH	NR	BGZ	B	Haryana	79	14	4	8
16	Balia	NR	BVH	A	Haryana	79	21	5	16
17	BALLABGARH	NER	BUI	A	UP	11	9	5	2
18	Balotra	NWR	BLT	B	Rajasthan	248	45	4	42
19	Banda	NCR	BNDA	A	UP	69	19	5	14
20	Bandikui	NWR	BKI	A	Rajasthan	59	18	5	12
21	Barabanki Jn	NR	BBK	A	Uttar Pradesh	59	18	5	12
22	Bareilly City	NER	BC	B	UP	188	34	4	30
23	Barmer	NWR	BME	A	Rajasthan	70	18	5	12

24	Basti	NER	BST	A	UP	109	27	5	22
25	BEAS Jn	NR	BES	A	Punjab	219	46	5	44
26	Beawar	NWR	BER	B	Rajasthan	107	25	4	20
27	Belthara Road	NER	BLTR	A	UP	79	21	5	16
28	Bhadohi	NR	BOY	A	Uttar Pra-desh	109	27	5	22
29	Bhatni Jn	NER	BTT	B	UP	89	16	4	10
30	Bhilwara	NWR	BHL	A	Rajasthan	139	32	5	28
31	Bhiwani	NWR	BNW	A	Haryana	99	25	5	20
32	Chandausi	NR	CH	A	Uttar Pra-desh	279	57	5	56
33	Chitrakutdh am Karwi	NCR	CKT D	A	UP	70	13	5	6
34	Dabra	NCR	DBA	B	MP	69	12	4	6
35	Datia	NCR	DAA	B	MP	55	16	4	10
36	Dausa	NWR	DO	B	Rajasthan	67	18	4	12
37	Dehradun	NR	DDN	A1	Uttranchal	56	13	6	6
38	DEOBAND	NR	DBD	B	Uttar Pra-desh	98	18	4	12
39	Deoria Sa-dar	NER	DEOS	A	UP	229	48	5	46
40	Dholpur	NCR	DHO	B	Rajasthan	118	21	4	16
41	Etawah	NCR	ETW	A	UP	59	18	5	12
42	Falna	NWR	FA	A	Rajasthan	30	12	5	6
43	Faridabad	NR	FDB	A	Haryana	38	14	5	8
44	FARIDA-BAD TOWN	NR	FDN	B	Haryana	10	9	4	2
45	Faridkot	NR	FDK	B	Punjab	158	28	4	24
46	Farrukhabad Jn.	NER	FBD	B	UP	89	16	4	10
47	Fatehgarh	NER	FGR	B	UP	69	12	4	6
48	Fatehpur	NCR	FTP	A	UP	309	56	5	54
49	Firozabad	NCR	FZD	B	UP	10	9	4	2
50	Firozpur Cantt.	NR	FZR	A	Punjab	189	41	5	38
51	Gandhina-gar-Jp	NWR	GADJ	A	Rajasthan	40	14	5	8
52	Ghazipur City	NER	GCT	B	UP	84	18	5	12
53	Gonda Jn	NER	GD	A	UP	369	74	5	74
54	GURGAON	NR	GGN	A	Haryana	99	25	5	20
55	Gwalior	NCR	GWL	A1	MP	215	41	6	38
56	Haldwani	NER	HDW	B	Uttarak-hand	50	9	4	2
57	Hanuman-garh Jn.	NWR	HMH	A	Rajasthan	229	48	5	46
58	Hapur	NR	HPU	A	Uttar Pra-desh	139	32	5	28

59	Hardoi	NR	HRI	A	Uttar Pra-desh	89	23	5	18
60	Hisar	NWR	HSR	A	Haryana	99	25	5	20
61	Jagadhri	NR	JUD	A	Haryana	50	16	5	10
62	Jaisalmer	NWR	JSM	A	Rajasthan	139	32	5	28
63	Jallandhar Cantt	NR	JUC	A	Punjab	179	39	5	36
64	Janghai Jn	NR	JNH	A	Uttar Pra-desh	99	25	5	20
65	Jaunpur City	NR	JNU	A	Uttar Pra-desh	69	12	4	6
66	Jaunpur Jn	NR	JOP	B	Uttar Pra-desh	40	14	5	8
67	Jawaibandh	NWR	JWB	B	Rajasthan	148	27	4	22
68	JIND	NR	JHI	B	Haryana	200	41	4	38
69	Kannauj	NER	KJN	B	UP	138	25	4	20
70	Kanpur (Anwarganj)	NER	CPA	B	UP	79	14	4	8
71	KARNAL	NR	KUN	A	Haryana	89	23	5	18
72	Kasganj Jn.	NER	KSJ	B	UP	218	39	4	34
73	Kashipur Jn.	NER	KPV	B	Uttarak-hand	98	18	4	12
74	Kathgodam	NER	KGM	A	Uttarak-hand	30	13	5	6
75	Kathua	NR	KTHU	B	Jammu & Kashmir	218	39	4	36
76	Khajuraho	NCR	KURJ	B	MP	79	14	4	8
77	Khalilabad	NER	KLD	A	UP	40	14	5	8
78	Khorasan Road	NER	KRND	B	UP	69	12	4	6
79	Kishangarh	NWR	KSG	B	Rajasthan	89	21	4	16
80	Lakhimpur	NER	LMP	B	UP	79	14	4	8
81	Laksar	NR	LRJ	B	Uttar Pra-desh	188	34	4	30
82	Lalgarh	NWR	LGH	A	Rajasthan	199	43	5	40
83	Lalitpur	NCR	LAR	A	UP	79	21	5	16
84	Lalkuan	NER	LKU	B	Uttarak-hand	89	16	4	8
85	Mahoba	NCR	MBA	A	UP	40	14	5	8
86	Mairwa	NER	MW	B	Bihar	148	27	4	22
87	makrana	NWR	MKN	B	Rajasthan	188	34	4	30
88	Manduadih	NER	MUV	B	UP	79	14	4	8
89	Manikpur	NCR	MKP	B	UP	128	23	4	18
90	Mankapur Jn	NER	MUR	B	UP	56	16	4	10
91	Marwar Jn	NWR	MJ	A	Rajasthan	139	32	5	28
92	Mau Jn	NER	MAU	A	UP	40	14	5	8
93	Mavli Jn.	NWR	MVJ	B	Rajasthan	128	23	4	18
94	MEERUT CANTT.	NR	MUT	A	Uttar Pra-desh	44	11	5	4

95	MEERUT CITY	NR	MTC	A	Uttar Pra-desh	44	11	5	4
96	merta road	NWR	MTD	B	Rajasthan	178	32	4	28
97	Mirzapur	NCR	MZP	A	UP	199	36	5	32
98	Morena	NCR	MRA	A	MP	40	14	5	8
99	Muzaffarna-gar	NR	MOZ	A	Uttar Pra-desh	179	32	5	28
100	Nagaur	NWR	NGO	A	Rajasthan	59	18	5	12
101	NANGLOI	NR	NNO	B	Delhi	64	14	4	8
102	Nazibabad	NR	NBD	B	Uttar Pra-desh	198	43	4	40
103	Nihal Garh	NR	NHH	B	Uttar Pra-desh	108	19	4	14
104	Nokha	NWR	NOK	B	Rajasthan	208	37	4	34
105	Orai	NCR	ORAI	A	UP	249	52	5	50
106	Pali Marwar	NWR	PMY	A	Rajasthan	89	23	5	18
107	PALWAL	NR	PWL	B	Haryana	50	9	4	2
108	Panipat	NR	PNP	A	Haryana	129	30	5	26
109	Partapgarh	NR	PBH	A	Uttar Pra-desh	129	30	5	26
110	Pathankot	NR	PTK	A	Punjab	409	81	5	82
111	Phagwara	NR	PGW	A	Punjab	199	43	5	40
112	Phaphund	NCR	PHD	A	UP	139	32	5	28
113	Phillaur	NR	PHR	B	Punjab	196	41	4	38
114	Phul Pur	NR	PLP	B	Uttar Pra-desh	29	12	4	6
115	Phulera	NWR	FL	A	Rajasthan	239	50	5	48
116	Pilibhit Jn.	NER	PBE	B	UP	328	59	4	58
117	Prayag	NR	PRG	B	Uttar Pra-desh	148	27	4	22
118	Rae - Bareli Jn.	NR	RBL	A	Uttar Pra-desh	139	32	5	28
119	Rai Ka Bagh Palace Jn	NWR	RKB	B	Rajasthan	248	45	4	42
120	Raiwala	NR	RWL	B	Uttranchal	58	11	4	4
121	Raja Ki Mandi	NCR	RKM	A	UP	251	52	5	50
122	Rajpura Jn.	NR	RPJ	A	Punjab	289	59	5	58
123	Rampur	NR	RMU	A	Uttar Pra-desh	100	25	5	20
124	Rani	NWR	RN	A	Rajasthan	61	16	5	10
125	Rewari	NWR	RE	A	Haryana	280	58	5	56
126	Rishikesh	NR	RKSH	B	Uttranchal	50	9	4	2
127	Rohtak	NR	ROK	A	Haryana	40	14	5	8
128	Roorkee	NR	RK	A	Uttranchal	57	16	5	10
129	Rudrapur City	NER	RUPC	A	Uttarak-hand	30	13	5	6
130	SAHIBA-BAD	NR	SBB	B	Uttar Pra-desh	179	32	4	28
131	Salempur	NER	SRU	B	UP	78	14	4	8

	Jn.								
132	Shahganj	NR	SHG	A	Uttar Pradesh	30	13	5	6
133	Shahjahanpur	NR	SPN	A	Uttar Pradesh	130	31	5	26
134	Shakurbasti	NR	SSB	B	Delhi	65	14	5	8
135	Shikohabad	NCR	SKB	B	UP	88	23	4	18
136	Sikar	NWR	SIKR	B	Rajasthan	299	54	5	52
137	Sirhind Jn.	NR	SIR	A	Punjab	269	56	5	54
138	Sirsa	NWR	SSA	B	Haryana	89	16	4	10
139	Sitapur	NER	STP	B	UP	255	52	4	50
140	Siwan Jn	NER	SV	A	Bihar	239	50	5	48
141	SONIPAT	NR	SNP	A	Haryana	19	11	5	4
142	Sri Ganganagar	NWR	SGNR	A	Rajasthan	89	23	5	18
143	SUBZI MANDI	NR	SZM	B	Delhi	36	10	5	2
144	Sultanpur	NR	SLN	A	Uttar Pradesh	209	45	5	42
145	Suraimanpur	NER	SIP	B	UP	298	54	4	52
146	Suratgarh	NWR	SOG	A	Rajasthan	69	20	5	14
147	Tundla Jn	NCR	TDL	A	UP	50	17	5	10
148	Udaipur City	NWR	UDZ	A	Rajasthan	69	20	5	14
149	Una Himachal	NR	UHL	B	Himachal Pradesh	178	32	4	28
150	Unnao	NR	ON	A	Uttar Pradesh	59	18	5	12
151	Vindhyachal	NCR	BDL	B	UP	50	9	4	2
Total						18624	3995	695	3266

List of RPF Thanas & stations is tentative and final list will be issued along with LOA.

Note:

(i) Number of Cameras for VMS Server/Workstation/NVR and VA Server/Workstation mentioned above include number of Cameras at D & E category of stations under the control of respective RPF Thana/Post.

(ii) At D & E category stations, 10 numbers (9 number of Full HD bullet type & 1 number of P,T,Z camera) will be provided at each station by RailTel separately.

(iii) Server calculation sheet for VMS Software, FRS Software & VA Software should be duly vetted by their respective OEMs for required number of cameras.

(iv) Licenses for Panic Buttons as mentioned in SOR & in the above table needs to be provided with VMS Application.

<u>Annexure-VI</u>- List of RPF Thana wise number of cameras for Storage sizing

SN	Name of Controlling RPF Thana/Post (Cluster)	Railway Zone	Stn Code	Category of Station	State	Total Number of 4K UHD Cameras at Cluster Stations	Total Number of Full HD Cameras at Cluster Stations
1	Abohar Jn.	NR	ABS	B	Punjab	5	324
2	Abu Road	NWR	ABR	A	Rajasthan	1	138
3	Adarshnagardelhi	NR	ANDI	A	Delhi	5	31
4	Agra Fort	NCR	AF	A	UP	1	258
5	Aishbagh	NER	ASH	B	UP	4	144
6	Akbarpur Jn	NR	ABP	A	Uttar Pradesh	5	75
7	Aligarh	NCR	ALJN	A	UP	1	128
8	Alwar Jn	NWR	AWR	A	Rajasthan	1	88
9	Amethi	NR	AME	B	Uttar Pradesh	0	68
10	Amroha	NR	AMRO	B	Uttar Pradesh	0	105
11	Atarra	NCR	ATE	B	UP	4	65
12	Azamgarh	NER	AMH	A	UP	1	48
13	Babina	NCR	BAB	B	UP	1	56
14	Badshahnagar	NER	BNZ	B	UP	0	85
15	BAHADURGARH	NR	BGZ	B	Haryana	4	75
16	Balia	NR	BVH	A	Haryana	1	78
17	BALLABGARH	NER	BUI	A	UP	1	10
18	Balotra	NWR	BLT	B	Rajasthan	4	244
19	Banda	NCR	BNDA	A	UP	1	68
20	Bandikui	NWR	BKI	A	Rajasthan	1	58
21	Barabanki Jn	NR	BBK	A	Uttar Pradesh	1	58
22	Bareilly City	NER	BC	B	UP	4	184
23	Barmer	NWR	BME	A	Rajasthan	2	68
24	Basti	NER	BST	A	UP	1	108
25	BEAS Jn	NR	BES	A	Punjab	1	218
26	Beawar	NWR	BER	B	Rajasthan	1	106
27	Belthara Road	NER	BLTR	A	UP	1	78
28	Bhadohi	NR	BOY	A	Uttar Pradesh	1	108
29	Bhatni Jn	NER	BTT	B	UP	4	85
30	Bhilwara	NWR	BHL	A	Rajasthan	1	138
31	Bhiwani	NWR	BNW	A	Haryana	1	98
32	Chandausi	NR	CH	A	Uttar Pradesh	1	278
33	Chitrakutdham Karwi	NCR	CKTD	A	UP	5	65

34	Dabra	NCR	DBA	B	MP	4	65
35	Datia	NCR	DAA	B	MP	0	55
36	Dausa	NWR	DO	B	Rajasthan	1	66
37	Dehradun	NR	DDN	A1	Uttranchal	6	50
38	DEOBAND	NR	DBD	B	Uttar Pra-desh	4	94
39	Deoria Sadar	NER	DEOS	A	UP	1	228
40	Dholpur	NCR	DHO	B	Rajasthan	4	114
41	Etawah	NCR	ETW	A	UP	1	58
42	Falna	NWR	FA	A	Rajasthan	1	29
43	Faridabad	NR	FDB	A	Haryana	1	37
44	FARIDABAD TOWN	NR	FDN	B	Haryana	0	10
45	Faridkot	NR	FDK	B	Punjab	4	154
46	Farrukhabad Jn.	NER	FBD	B	UP	4	85
47	Fatehgarh	NER	FGR	B	UP	4	65
48	Fatehpur	NCR	FTP	A	UP	5	304
49	Firozabad	NCR	FZD	B	UP	0	10
50	Firozpur Cantt.	NR	FZR	A	Punjab	1	188
51	Gandhinagar-Jp	NWR	GADJ	A	Rajasthan	1	39
52	Ghazipur City	NER	GCT	B	UP	5	79
53	Gonda Jn	NER	GD	A	UP	1	368
54	GURGAON	NR	GGN	A	Haryana	1	98
55	Gwalior	NCR	GWL	A1	MP	6	209
56	Haldwani	NER	HDW	B	Uttarak-hand	4	46
57	Hanumangarh Jn.	NWR	HMH	A	Rajasthan	1	228
58	Hapur	NR	HPU	A	Uttar Pra-desh	1	138
59	Hardoi	NR	HRI	A	Uttar Pra-desh	1	88
60	Hisar	NWR	HSR	A	Haryana	1	98
61	Jagadhri	NR	JUD	A	Haryana	1	49
62	Jaisalmer	NWR	JSM	A	Rajasthan	1	138
63	Jallandhar Cantt	NR	JUC	A	Punjab	1	178
64	Janghai Jn	NR	JNH	A	Uttar Pra-desh	1	98
65	Jaunpur City	NR	JNU	A	Uttar Pra-desh	4	65
66	Jaunpur Jn	NR	JOP	B	Uttar Pra-desh	1	39
67	Jawaibandh	NWR	JWB	B	Rajasthan	4	144
68	JIND	NR	JHI	B	Haryana	1	199
69	Kannauj	NER	KJN	B	UP	4	134
70	Kanpur (Anwar-ganj)	NER	CPA	B	UP	4	75
71	KARNAL	NR	KUN	A	Haryana	1	88

72	Kasganj Jn.	NER	KSJ	B	UP	4	214
73	Kashipur Jn.	NER	KPV	B	Uttarak-hand	4	94
74	Kathgodam	NER	KGM	A	Uttarak-hand	1	29
75	Kathua	NR	KTHU	B	Jammu & Kashmir	4	214
76	Khajuraho	NCR	KURJ	B	MP	4	75
77	Khalilabad	NER	KLD	A	UP	1	39
78	Khorasan Road	NER	KRND	B	UP	4	65
79	Kishangarh	NWR	KSG	B	Rajasthan	1	88
80	Lakhimpur	NER	LMP	B	UP	4	75
81	Laksar	NR	LRJ	B	Uttar Pra-desh	4	184
82	Lalgarh	NWR	LGH	A	Rajasthan	1	198
83	Lalitpur	NCR	LAR	A	UP	1	78
84	Lalkuan	NER	LKU	B	Uttarak-hand	4	85
85	Mahoba	NCR	MBA	A	UP	1	39
86	Mairwa	NER	MW	B	Bihar	4	144
87	makrana	NWR	MKN	B	Rajasthan	4	184
88	Manduadih	NER	MUV	B	UP	4	75
89	Manikpur	NCR	MKP	B	UP	4	124
90	Mankapur Jn	NER	MUR	B	UP	0	56
91	Marwar Jn	NWR	MJ	A	Rajasthan	1	138
92	Mau Jn	NER	MAU	A	UP	1	39
93	Mavli Jn.	NWR	MVJ	B	Rajasthan	4	124
94	MEERUT CANTT.	NR	MUT	A	Uttar Pra-desh	5	39
95	MEERUT CITY	NR	MTC	A	Uttar Pra-desh	5	39
96	merta road	NWR	MTD	B	Rajasthan	4	174
97	Mirzapur	NCR	MZP	A	UP	5	194
98	Morena	NCR	MRA	A	MP	1	39
99	Muzaffarnagar	NR	MOZ	A	Uttar Pra-desh	5	174
100	Nagaur	NWR	NGO	A	Rajasthan	1	58
101	NANGLOI	NR	NNO	B	Delhi	4	60
102	Nazibabad	NR	NBD	B	Uttar Pra-desh	0	198
103	Nihal Garh	NR	NHH	B	Uttar Pra-desh	4	104
104	Nokha	NWR	NOK	B	Rajasthan	4	204
105	Orai	NCR	ORAI	A	UP	1	248
106	Pali Marwar	NWR	PMY	A	Rajasthan	1	88
107	PALWAL	NR	PWL	B	Haryana	4	46
108	Panipat	NR	PNP	A	Haryana	1	128

109	Partapgarh	NR	PBH	A	Uttar Pra-desh	1	128
110	Pathankot	NR	PTK	A	Punjab	1	408
111	Phagwara	NR	PGW	A	Punjab	1	198
112	Phaphund	NCR	PHD	A	UP	1	138
113	Phillaur	NR	PHR	B	Punjab	0	196
114	Phul Pur	NR	PLP	B	Uttar Pra-desh	0	29
115	Phulera	NWR	FL	A	Rajasthan	1	238
116	Pilibhit Jn.	NER	PBE	B	UP	4	324
117	Prayag	NR	PRG	B	Uttar Pra-desh	4	144
118	Rae - Bareli Jn.	NR	RBL	A	Uttar Pra-desh	1	138
119	Rai Ka Bagh Palace Jn	NWR	RKB	B	Rajasthan	4	244
120	Raiwala	NR	RWL	B	Uttranchal	4	54
121	Raja Ki Mandi	NCR	RKM	A	UP	3	248
122	Rajpura Jn.	NR	RPJ	A	Punjab	1	288
123	Rampur	NR	RMU	A	Uttar Pra-desh	1	99
124	Rani	NWR	RN	A	Rajasthan	2	59
125	Rewari	NWR	RE	A	Haryana	1	279
126	Rishikesh	NR	RKSH	B	Uttranchal	4	46
127	Rohtak	NR	ROK	A	Haryana	1	39
128	Roorkee	NR	RK	A	Uttranchal	1	56
129	Rudrapur City	NER	RUPC	A	Uttarak-hand	1	29
130	SAHIBABAD	NR	SBB	B	Uttar Pra-desh	4	175
131	Salempur Jn.	NER	SRU	B	UP	4	74
132	Shahganj	NR	SHG	A	Uttar Pra-desh	1	29
133	Shahjahanpur	NR	SPN	A	Uttar Pra-desh	1	129
134	Shakurbasti	NR	SSB	B	Delhi	5	60
135	Shikohabad	NCR	SKB	B	UP	0	88
136	Sikar	NWR	SIKR	B	Rajasthan	5	294
137	Sirhind Jn.	NR	SIR	A	Punjab	1	268
138	Sirsa	NWR	SSA	B	Haryana	4	85
139	Sitapur	NER	STP	B	UP	0	255
140	Siwan Jn	NER	SV	A	Bihar	1	238
141	SONIPAT	NR	SNP	A	Haryana	1	18
142	Sri Ganganagar	NWR	SGNR	A	Rajasthan	1	88
143	SUBZI MANDI	NR	SZM	B	Delhi	5	31
144	Sultanpur	NR	SLN	A	Uttar Pra-desh	1	208

145	Suraimanpur	NER	SIP	B	UP	4	294
146	Suratgarh	NWR	SOG	A	Rajasthan	1	68
147	Tundla Jn	NCR	TDL	A	UP	1	49
148	Udaipur City	NWR	UDZ	A	Rajasthan	1	68
149	Una Himachal	NR	UHL	B	Himachal Pradesh	4	174
150	Unnao	NR	ON	A	Uttar Pradesh	1	58
151	Vindhyachal	NCR	BDL	B	UP	4	46
	Grand Total					343	18281

Note:

(i) Total Number of Full HD Cameras mentioned above includes Full HD bullet type camera, Full HD fixed dome camera & full HD P,T,Z camera proposed in SOR for stations mentioned in Annexure-III, Chapter-7 and for Cameras to be installed at D & E category of stations under the control of respective RPF Thana/Post.

(ii) At D & E category stations, 10 numbers (9 number of Full HD bullet type & 1 number of P,T,Z camera) of Cameras will be provided at each station by RailTel separately.

(iii) Storage calculation should be duly vetted by VMS Software OEM for required number of cameras.

(iv) In case of any shortage found (at later stage after implementation)between Storage calculation sheet submitted by the bidder with actual implemented storage solution in the field, Bidder has to supply the additional required storage, at no extra cost to RailTel.

Annexure-VII - Functional Requirement for Bidders during Proof of Concept (POC)

POC by all bidders who have submitted their Bid Documents, will be carried out as per Clause 4.A.47 of Chapter-4A (Section-I) as per following details:

1. Qualification Criteria for POC

All parameters/specifications mentioned in this document will be verified by RailTel or its authorized representatives in the presence of authorized representative of the Bidder.

In case of any conflict in the Functional requirements mentioned in this document with RDSO specification no. RDSO/SPN/TC/65/2021 version-6 or latest, RDSO specification version-6 or latest will prevail.

Bidder is required to meet all functional requirements mentioned in this document for successful completion of POC and incase of any deviation from these requirements, POC will be declared unsuccessful by RailTel and bidder's bid will be rejected.

In case, bidder fails to demonstrate all the parameters of POC successfully in first attempt, bidder shall demonstrate remaining parameters of POC within 7 days of first attempt. Please note that maximum 2 attempts will be given to demonstrate all the functional parameters during POC stage.

This is a basic testing of the bidder's offered solution and bidders need to qualify both POC and eligibility conditions mentioned in the tender document for becoming eligible for opening of price bid.

Bidder is required to record complete POC session on all four type of cameras installed for POC and should handover two copies of recording on storage device (except CD/DVD) to RailTel, along with required log files and alerts of VMS, VA & FRS. Bidder/OEM should delete all type of recordings on Hardware/Software used for POC after keeping one copy for their record.

POC is a preliminary pre-qualification requirement and successful bidders in POC should not be consider themselves as technically qualified. Decision regarding technical qualification of the bidder will be taken by RailTel based on technical bid submitted by bidder and successful completion of POC. Detailed testing of the selected Bidder's VSS solution will be done by RDSO and CERT-IN empanelled government audit agencies as per terms and conditions mentioned in the tender document.

Bidder is required to meet following qualification criteria for successful POC:

(i) **Physical Checks:** All bidders are required to offer Hardware and Software for POC as per their offered VSS solution in bid documents as per details given in Table-1 of Para-3 below and submit details of Hardware/Software offered for POC as per Format given in Table-2 of Para-3. No deviation in make and model/version of Hardware/Software will be accepted. In case of any deviation from bidders offered VSS solution, bidder will be declared unsuccessful in POC by RailTel.

(ii) **Functional Requirement:** Bidder will demonstrate all features/ configuration of the offered solution to RailTel or its authorized representative as per points mentioned below in Section-3 for PoC (Technical Evaluation).

Note: Only physical checks and Functional requirements will be done during POC. Required Certificates as per RDSO specifications are required at the time of Factory Acceptance Test (FAT) as per clause 3.D.3 of Chapter-3D of Tender document.

2. Applicable Schematic Diagram:

Network implementation scheme offered by the bidder in its offered solution should be based on Schematic Diagram-2 provided in para 2.6 (b) of RDSO Specification version-6 and Clause 3B of Chapter-3 (Section-I) of Tender Document. Bidders are required to connect Hardware as per above mentioned network implementation scheme.

3. Physical Check for POC

Bidder to submit the list of Hardware and Software to be evaluated for compliance to the technical specification and functional requirement as per RDSO Specification within 7 working days from the date of bid opening.

The Hardware/Software required for POC should be of the same Make and Model/Version as proposed in the bid. In case of any deviation, bidders bid will be declared unsuccessful in POC by RailTel.

Table-1: Minimum Hardware/Software to be offered for POC

SN	Required Hardware/Software for POC	Minimum Qty
1.	Full HD Bullet Type IP Colour Camera	1
2.	Full HD Fixed Dome Type IP Colour Camera	1
3.	Full HD PTZ (Pan, Tilt, Zoom) IP Colour Camera	1
4.	4K UHD Bullet type IP Colour Camera (Type A, 1/1.8")	1
5.	**Digital Keyboard**	1
6.	Panic Button	1
7.	Type-I/II/II Switch	1
8.	VMS Server/Workstation/NVR at RPF Thana/Post.	1
9.	Artificial Intelligence (AI) enabled Video Analytics (VA) Server/Workstation at RPF Thana/Post.	1
10.	Facial Recognition Server/Workstation at RPF Thana/Post.	1
11.	PC Workstation with Monitor for Client	1
12.	Large Format Display, minimum 55 inch	1
13.	Facial Recognition Server/Workstation with Central Database as Master Database installed at Data Centre	1
14.	All necessary software as proposed such as VMS, VA & FRS should be already installed and configured in the systems	As required

Any additional equipments or material or software and cables that may be required for performing test should be arranged by bidder at the time of PoC for successful testing.

Such additional Hardware/Software if used, should be as per the technical specification mentioned in tender documents.

Table-2: Details of the Hardware/Software offered by the Bidder for POC

Sr.	Equipment Type	Qty	Make	Model	Country of Manufacturing	Country(s) where IPR & Source Code is Registered	MAC address of each device and Country where MAC address is registered	Serial Number/Software version of Each Hardware/Software
1.	Full HD Bullet type IP Colour Camera	1						
2.	Full HD Fixed Dome Type IP Colour Camera	1						
3.	Full HD PTZ (Pan, Tilt, Zoom) IP Colour Camera	1						
4.	4K UHD Bullet type IP Colour Camera (Type A, 1/1.8")	1						
5.	Digital Keyboard	1						
6.	Panic Button	1						
7.	Type-I/II/III Switch	1						
8.	VMS Server/Workstation/NVR	1						
9.	VA Server/Workstation	1						
10.	Facial Recognition Server/Workstation	1						
11.	PC Workstation with Monitor for Client	1						
12.	Large Format Display, minimum 55 inch	1						
13.	Facial Recognition Server/Workstation with Central Database as Master Database installed at Data Centre	1						
14.	Video Management Software	1						
15.	VA Software	1						

16.	FRS Software	1						

4. Compliance to RDSO specification and Tender conditions

Video Surveillance System shall be end to end IP based with IP Cameras as per RDSO specification version-6 & Tender requirement.

In IP based Video Surveillance System, all type of Cameras along with Hardware/Software mentioned in Point-3 of Table-1 shall be connected as per network topology mentioned in Chapter-3B and RDSO specification 2.6 (b).

Bidder is required to submit an undertaking on his letter head (enclosing details of Hardware & Software as per Table-2 of Point-3) in which bidder will clearly mention that Hardware and Software offered for POC are in compliance with technical specification as mentioned in RDSO specification version-6 and specification mentioned in the Tender document.

No deviation from RDSO specification version-6 and specification mentioned in the Tender document shall be allowed during the POC stage. In case of any deviation, bidder will be declared unsuccessful in POC by RailTel.

5. **Set-up requirement for POC**

Bidder shall arrange all necessary equipments, cables and accessories that may be required to perform POC successfully. The Table below contains minimum tests parameters and RailTel or its authorized representative may demand to test additional parameters from RDSO specification no. RDSO/SPN/ TC/65/2021 Version 6.0 or latest to meet their satisfaction.

Sr.	Set-up Requirement for POC		Remarks (Yes/No)
1.	**Setup Connectivity:**		
	i.	All cameras should be configured in the VMS Server/Workstation/NVR.	
	ii.	All Cameras other than PTZ should be configured with AI based Video Analytics.	
	iii.	One Stream of UHD Camera to be configured for FRS.	
	iv.	VMS Server/Workstation/NVR connected	
	v.	AI based VA Server/workstation to be connected and configured for Alarms.	
	vi.	FRS Server/Workstation with Database to be connected and configured for Alarms.	
	vii.	Connect PC Workstation for Client with Large Format Display.	

Sr.	Set-up Requirement for POC		Remarks (Yes/No)
2.	**Setup, Configure, Access for VSS Functions:**		
	i.	All Cameras and equipments are configured and accessible over the network.	
	ii.	All cameras are configured with Memory card of at least 128GB.	
	iii.	Setup NVR/VMS for all cameras live viewing and recording.	
	iv.	Setup AI based VA with all fixed cameras.	
	v.	Setup FRS with Central Database.	
	vi.	Setup FRS with Local Database with 4K UHD Bullet camera	
	vii.	VMS client should be loaded in PC workstation and integrated with VMS for Live View & Playback, VA Alarms & FRS Alarms.	
3.	**Setup for VMS:**		
A.	**LIVE Viewing:**		
	i.	Login to Client Workstation	
	ii.	Change the Camera Grid View to 16 Cameras in a single Monitor Screen.	
	iii.	Live View four cameras in Monitor	
	iv.	All cameras live video is streamed on PC workstation in Real-time.	
B.	**Recording:**		
	i.	All FHD cameras at 1920x1080 resolution, 25FPS to record in External Storage	
	ii.	All UHD cameras at Ultra HD (3840x2160) @ 25 FPS to record in External Storage	
	iii.	All Cameras with Tampering Alarms and selected cameras with AI based VA Alarms to record in External Storage.	

6. Functional Requirement for POC

All parameters mentioned under this section are mandatory to pass for successful POC.

SN	Functional Requirement for POC		Result (Pass / Fail)
1.	**Playback Viewing through VMS:**		
	Video Playback: One 32/64/128 Channel VMS/NVR shall support Playback of recorded video for minimum 16 Channels simultaneously @ Full HD or higher.		
	i.	Search and Playback all cameras Video recording simultaneously	

	ii.	Search and Playback flagged/marked video.	
2.	**Camera Functional Checks**		
	All features of cameras listed below should be demonstrated through VMS.		

2.1	**Full HD Bullet and Dome Camera**		**Result (Pass / Fail)**	
			Bullet	**Dome**
	i.	Streaming Capability: a) Four (4) H.265 or higher Streams Note: All four streams should be activated in camera	**a.**	
	ii.	Video Resolution & Frame Rate: a) Full HD @ 25 FPS with H.265 or higher compression on one stream. b) FHD / HD / D1 @ 25 FPS with H.265 or higher compression on 2nd stream. c) VGA or CIF or QVGA or QCIF @ 15 FPS with H.265 or higher compression on 3rd & 4th stream.	**a.** **b.** **c.**	
	iii.	**Data Rate:** a) Shall work on 3 Mbps bit rate or less average for Full HD@ 25 FPS at Variable bit rate (VBR) on individual (Single) stream with H.265 or higher Video Compression. b) The camera shall also support Constant Bit Rate (CBR).	**a** **b**	
	iv.	**Activity Controlled Recording**: During periods of negligible motion, the bits rate shall drop and when motion occurs, the bit rate shall return to normal without any perceptible delay.	**a.**	
	v.	MAC Address: a) OEM Undertaking to confirm the MAC addresses of the IP Cameras are registered in the name of OEM supplying the Cameras. b) Use any of the suitable website to check details of MAC address. Note: The MAC address of all cameras should not be registered in the name of any OEM/company/ entity sharing land border with India until unless specifically allowed by the Government of India. Website references to check MAC owner firm details:	**a.** **b.**	

2.1	Full HD Bullet and Dome Camera		Result (Pass / Fail)	
			Bullet	Dome
		https://macaddress.io or any other suitable site.		
	vi.	In case of any failure or interruption of IP network between VMS server and Camera {Full HD Bullet and Dome Camera , 4KUHD Bullet Camera (Type-A) & Full HD PTZ Camera}, the Camera shall automatically start recording on Edge Storage Memory Card at resolution and frames per second as required and when the network recovers, the Video data shall automatically be transferred to the External Storage Device/Server/NVR installed at respective Stations or RPF/GRP Thana/Post without any impact on the system operations.		
	vii.	Once the Panic Button is activated by any person in distress, an alarm shall appear on the VMS along with the pop-up of the associated camera on the operator workstation. In case, associated camera is a Full HD PTZ type, the camera shall move and zoom on to the Panic Button to see the person in distress.		

2.2	4KUHD Bullet Camera (Type-A)		Result (Pass / Fail)
	i.	Streaming Capability: a) Four (4) H.265 or higher Streams Note: All four streams should be activated in camera	**a.**
	ii.	Video Resolution & Frame Rate: a) Ultra HD (3840x2160) @ 25 FPS or more with H.265 or higher compression on one stream. b) Full HD @ 15 FPS or more with H.265 or higher compression on another second stream. c) VGA or CIF or QVGA or QCIF @ 10 FPS with H.265 or higher compression on 3rd & 4th stream.	**a.** **b.** **c.**
	iii.	Data Rate: a) Shall work on 5 Mbps bit rate or less (average) for UHD@ 25FPS at Variable Bit Rate (VBR) on individual (Single) stream with H.265 or higher Video Compression. b) The camera shall also support Constant Bit Rate (CBR).	**a.** **b.**
	iv.	Activity Controlled Recording: a) During periods of negligible motion, the bits rate shall drop and when motion occurs, the bit rate shall return to normal without any perceptible delay.	**a.**

2.2	4KUHD Bullet Camera (Type-A)		Result (Pass / Fail)
	v.	MAC Address: a) OEM Undertaking to confirm the MAC addresses of the IP Cameras are registered in the name of OEM supplying the Cameras. b) Use any of the following website to check authenticity of MAC address Note: The MAC address of all cameras should not be registered in the name of any OEM/ company/ entity sharing land border with India until unless specifically allowed by the Government of India. Website references to check MAC owner firm details: https://macaddress.io	a. b.
	vi.	In case of any failure or interruption of IP network between VMS server and Camera {Full HD Bullet and Dome Camera , 4KUHD Bullet Camera (Type-A) & Full HD PTZ Camera}, the Camera shall automatically start recording on Edge Storage Memory Card at resolution and frames per second as required and when the network recovers, the Video data shall automatically be transferred to the External Storage Device/Server/NVR installed at respective Stations or RPF/GRP Thana/Post without any impact on the system operations.	
	vii.	***Once the Panic Button is activated by any person in distress, an alarm shall appear on the VMS along with the pop-up of the associated camera on the operator workstation.*** ***In case, associated camera is a Full HD PTZ type, the camera shall move and zoom on to the Panic Button to see the person in distress.***	

Sr.	Functional Requirement for POC		Result (Pass/Fail)
2.3	**Full HD PTZ Camera**		
	i.	Streaming Capability: **a)** Four (4) H.265 or higher Streams Note: All four streams should be activated in camera	**a.**
	ii.	Video Resolution & Frame Rate: a) Full HD @ 25 FPS with H.265 or higher compression on one stream. b) FHD / HD / D1 @ 25 FPS with H.265 or higher compression on 2nd stream.	**a.** **b.**

Sr.	Functional Requirement for POC		Result (Pass/Fail)
		c) VGA or CIF or QVGA or QCIF @ 15 FPS with H.265 or higher compression on 3rd & 4th stream.	**c.**
	iii.	Data Rate: a) Shall work on 3 Mbps bit rate or less average for Full HD@ 25 FPS at Variable bit rate (VBR) on individual (Single) stream with H.265 or higher Video Compression. b) The camera shall also support Constant Bit Rate (CBR).	**a.** **b.**
	iv.	Activity Controlled Recording: a) During periods of negligible motion, the bits rate shall drop and when motion occurs, the bit rate shall return to normal without any perceptible delay.	**a.**
	v.	Lens: a) Optical zoom 36xor better	**a.**
	vi.	Infra-Red: a) Built-in Infra-Red Illuminator with range 250 meter or more Check range of IR at night to display an object at 250 meters.	
	vii.	MAC Address: a) OEM Undertaking to confirm the MAC addresses of the IP Cameras are registered in the name of OEM supplying the Cameras. b) Use any of the following website to check authenticity of MAC address Note: The MAC address of all cameras should not be registered in the name of any OEM/ company/ entity sharing land border with India until unless specifically allowed by the Government of India. Website references to check MAC owner firm details: https://macaddress.io	a. b.
	viii.	In case of any failure or interruption of IP network between VMS server and Camera {Full HD Bullet and Dome Camera , 4KUHD Bullet Camera (Type-A) & Full HD PTZ Camera}, the Camera shall automatically start recording on Edge Storage Memory Card at resolution and frames per second as required and when the network recovers, the Video data shall automatically be transferred to the External Storage Device/Server/NVR installed at respective Stations or RPF/GRP Thana/Post without any impact on the system operations.	

	ix.	Once the Panic Button is activated by any person in distress, an alarm shall appear on the VMS along with the pop-up of the associated camera on the operator workstation. In case, associated camera is a Full HD PTZ type, the camera shall move and zoom on to the Panic Button to see the person in distress.	
2.4	**Digital Keyboard**		
	i.	PTZ movement in 360-degree PAN, 90 Degree Tilt, 36X Zoom.	
	ii.	Digital Keyboard shall be of same make as PTZ Camera.	
	iii.	Demonstrate variable controlled speed for Pan, Tilt, Zoom	
	iv.	MAC Address: a) OEM Undertaking to confirm the MAC addresses of the Digital Keyboard is registered in the name of OEM supplying the Cameras. b) Use any of the following website to check authenticity of MAC address Note: The MAC address of all cameras should not be registered in the name of any OEM/ company/ entity sharing land border with India until unless specifically allowed by the Government of India. Website references to check MAC owner firm details: https://macaddress.io	a. b.
3.	**Data Rate for Storage Calculation:**		
	Note-1 The Recording shall be stored at 25 FPS & Full HD resolution for Full HD Cameras and 25 FPS &Ultra HD resolution for 4K UHD Cameras with H.265 or higher Video Compression.		
	Note-2 Storage calculation and estimation duly vetted by VMS Software OEM should be provided by bidder and further be validated by RailTel or its authorized representative as per the following:		
	i.	Set the cameras at required resolutions as per Note-1 for respective cameras	
	ii.	Set the Frame Rate at required frame rate as per Note-1 Note: As per the RDSO Clause "Activity Controlled Video Recording: During periods of negligible motion, the bits rate shall drop and when motion occurs, the bit rate shall return to normal without any perceptible delay", the frame rate may be dynamic but should not show any frame loss in live and video recording.	
	iii.	Set the video compression as H.265 or higher	

<table>
<tr><td></td><td>iv.</td><td>Start recording of all connected cameras</td><td></td></tr>
<tr><td></td><td>v.</td><td>Check video stream information on Live View</td><td></td></tr>
<tr><td></td><td>vi.</td><td>In LIVE Mode, evaluate the data observed during with data provided by OEM in vetted proposal for calculating the storage size (Live stream settings to be stimulated at similar settings as recording settings proposed).
<table>
<tr><th></th><th>Full HD</th><th>4K UHD</th></tr>
<tr><td>Hourly storage based on OEM vetted Storage calculation sheet submitted by the bidder with technical bid.</td><td></td><td></td></tr>
<tr><td>Observed Average Hourly Storage used by camera during PoC (minimum 4 hours recording to be considered for calculation).</td><td></td><td></td></tr>
<tr><td>Observed Video Quality is Acceptable or Not-Acceptable (To be checked in Single Screen in original picture format).</td><td></td><td></td></tr>
<tr><td colspan="3">PASS, if observed data rate in average is equal or lesser than data rate estimated for calculation of storage size.</td></tr>
<tr><td colspan="3">FAIL, if observed data rate in average is more than data rate estimated for calculation of storage size.</td></tr>
</table></td><td></td></tr>
<tr><td></td><td>vii.</td><td>Check PLAYBACK of recorded video is same as observed in LIVE session.
<table>
<tr><th></th><th>Full HD</th><th>4K UHD</th></tr>
<tr><td>Picture Quality in PLAYBACK is same as LIVE VIEW (Yes / No)</td><td></td><td></td></tr>
<tr><td>Observed Video Quality in Playback mode is a real-time as observed in LIVE Mode (Yes / No)</td><td></td><td></td></tr>
<tr><td>Observed Video Quality is Acceptable or Not-Acceptable (To be checked in Single Screen in original picture format).</td><td></td><td></td></tr>
<tr><td colspan="3">PASS, if Playback of Picture & Video quality is same as Live picture quality.</td></tr>
<tr><td colspan="3">FAIL, if Playback of Picture & Video quality is not same as Live picture quality.</td></tr>
</table></td><td></td></tr>
<tr><td>4.</td><td colspan="2">Alarm Generation - FRS:</td><td></td></tr>
<tr><td></td><td>Note-1</td><td>Scenarios may be repeated by the bidder as required by RailTel or its authorized representative to verify in order to achieve best possible results.</td><td></td></tr>
<tr><td></td><td>Note-2</td><td>The test should be performed having people walk-in together (in a crowd scenario with all faces visible to camera, following COVID-19 related precautions as advised by GOI) with moderate face rotation either horizontal or vertical.</td><td></td></tr>
<tr><td></td><td>i.</td><td>Setup 4K UHD Bullet Camera at 3840x2160 resolution, @ 25 FPS or more with H.265 or higher compression on one stream for each camera. The cameras should be mounted and the field of view should be simulated as real scenario.</td><td></td></tr>
<tr><td></td><td>ii.</td><td>The system shall work on partial occlusion of face, glasses, scarfs, changes of facial expression etc.</td><td></td></tr>
<tr><td></td><td>iii.</td><td>The system shall be able to add photographs obtained from law enforcement agencies to the criminals‟ repositories along with option de-</td><td></td></tr>
</table>

		tails for sex, age, etc. for future searches.	
	iv.	The system shall have capacity to create different categories of people with option to customize the matching threshold for different categories.	
	v.	Setup Central Master Database with at least 500 people faces including 5 tagged as Blacklist faces	
	vi.	Setup Local FRS Database including 2 tagged as Blacklist faces	
	vii.	All enrolled faces in the Central Master Database should synchronize automatically with the local FRS database.	
		Scenario:	
	viii.	Send 10 registered people (present at the site of testing) with 5 blacklisted people (present at the site of testing) including newly enrolled and blacklist people walking casually in front of the FRS camera (as prescribed in Note-2, faces visible to camera with rotation)	
	ix.	All 10 people should be detected and minimum 9 people should be identified	
	x.	Minimum 4 blacklisted people must be detected and identified <can repeat the scenario maximum 3 times if this clause is not met satisfactorily>	
	xi.	Disconnect Network of Central Master FRS Database system &perform activity mentioned at item no X.	
	xii.	On re-connection, the local FRS Database should automatically update to Central Master Database i) all local generated alarms and ii) locally added people	
5.	**Alarm Generation – Camera Tampering:**		
	i.	Cover the camera to blind the view and camera tampering alarm should be triggered on PC Workstation.	
	ii.	Change the direction of the camera and camera tampering alarm should be triggered on PC Workstation.	
	iii.	Disconnect the camera network cable and the camera disconnection alarm should be triggered on PC Workstation.	
6.	**AI Based Video Analytics Alarm Creation, Detection & Search:**		
A.	**Instruction Detection**		
	i.	Mark an Zone/Area and any human entering that marked Zone/Area should trigger an alarm	
B.	**Loitering Detection**		
	i.	Define area and detection time in software and the software shall give an alarm as soon as a person is detected in a defined area above a predefined time limit (2 minutes for testing purpose only).	
C.	**Human & Vehicle Detection**		
	i.	Create a rule to generate alerts when a human is detected in the	

		marked area.	
D.	**Search of Human based on Attributes**		
	i.	Go to the playback or in Live mode, select cameras to search the marked person's movements across multiple cameras based on attributes of person and show results from various selected cameras.	
E.	**Color Search**		
	i.	Go to the playback, define the object as human and choose a color in AI software. The AI should be able to quickly locate human with interest of colour.	
	ii.	Deleted	
F.	**Fallen Person**		
	i.	AI should trigger an alarm upon detection of a person fall.	
G.	**Combination Search (Human/Vehicle &Color)**		
	i.	Artificial Intelligence (AI) enabled video analytics should be able to search for suspects with combination of search criteria like Colour and Object (Human).	
7.	**Mobile Upload:**		
	i.	The VMS should have the feature of mobile phones clients (for Android as well as Apple iOS based smartphones) so that in case of any emergency, the authorized users can a) Upload videos and b) Snapshot to local VMS Server/Workstation/NVR.	a. b.
8.	Handing over of 2 copies of recording of POC session on all four type of cameras in a Storage Device (except CD/DVD) along with required log files and alerts of VMS, VA & FRS to RailTel. Bidder/OEM should delete all type of recordings on Hardware/Software used for POC after keeping one copy for their record.		

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SECTION-I
CHAPTER- 8

8.0 TECHNICAL, FUNCTIONAL REQUIREMENTS & SPECIFICATIONS

Note 1: The proposed solution must meet all technical and functional specifications mentioned in the latest Technical specification released by RDSO **Specification no. RDSO/SPN/TC/65/2021 version-6 (or latest)** or else otherwise defined the tender document.

In case of any conflict on the solution design parameters, system functional requirements and technical specification of a system/item between RDSO Specification no. RDSO/SPN/TC/65/2021 version-6 or latest and the tender conditions, RDSO specification version-6 or latest will prevail.

Note 2: It may kindly be noted that in the specification wherever support for a feature has been asked for, it will mean that the feature should be available without RailTel requiring any other hardware/software/licenses. Thus all hardware/software/licenses required for enabling the support/feature shall be included in the offer.

Note 3: VSS, being a turnkey project, any additional hardware and software/license required for completion of VSS work as per scope of this work shall be supplied by the selected bidder without any additional cost to RailTel.

Note 4: The below mentioned technical specifications for the supply items are bare minimum requirements of the purchaser, the supply items quoted by bidder must comply with these technical specifications. However, the bidder can quote the items with higher technical specifications catering to the futuristic requirements of the proposed solution.

8.1 Video Surveillance System (VSS)/CCTV System

8.1.1 **Broadly, the system functionality, technical requirement and hardware specifications shall be as per RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments for IP based CCTV at Stations.**

8.1.2 General Requirement

8.1.2.1 Deleted

8.1.2.2 Deleted.

8.1.2.3 IP Camera and Software (Video Management, Video Recording and Video Analytic Software) may be from the same manufacturer or from different manufacturers. In case, IP Cameras and Software are from different manufacturers, then all features of Cameras shall be available through the Software for viewing, recording and analytics.

8.1.2.4 Either Server/workstation based solution or Network Video Recorder based solution can be accepted for Video Management and Video Recording for the

implementation schemes as per **Schematic Diagram-2** of RDSO Specification version-6 or latest.

Note: In case, Video Management and Video Recording is deployed on Network Video Recorders (NVRs), then NVRs shall integrate seamlessly with Video Analytics Software and Facial recognition Software deployed on Servers/Workstations.

8.1.2.5 The Video Recording and Management System shall provide secured recording for evidence purposes and user authentication to protect data integrity.

8.1.2.6 The equipment shall be able to work in the temperature range and humidity as specified in the corresponding clauses of the specification. All Equipment's Earthing strip should be of Copper make of suitable size extended to common Earth pit at a given station/location.

8.1.2.7 **Bidder is required to propose Server/Workstation sizing for required number of cameras for VMS, VA & FRS as per Annexure-V of Chapter-7 and Storage sizing for required number of cameras as per Annexure-VI of Chapter-7.**

8.1.3 Design parameters

8.1.3.1 General Parameters

8.1.3.1.1 Implementation scheme for Video Surveillance system will be RPF Thana/ Post Clustered based architecture as mentioned in RDSO specification no. RDSO/SPN/TC/65/2021Version6.0 or latest will all amendments. For implementation of the proposed system, RPF Thana/ Post would be receiving video feeds from group of stations based on jurisdiction of that respective RPF Thana/ Post through MPLS/ IP network for Video Management (Viewing and Monitoring) and Video Recording. Therefore, bidder is required to propose a cluster based solution at RPF Thana/Post locations on the basis of following design parameters.

8.1.3.1.2 **Bidder is required to study the existing VSS Infra deployed at many stations before planning their solution. Proposed solution to be integrated with existing VSS System deployed at Stations. Bidder may use existing Servers, Storage at RPF Thana/ Post as per their solution.**

8.1.3.1.3 Following assumptions have been considered while calculating the SOR Quantities of following major items, however, same may vary during implementation as per Railway's approved drawing:

SN	Item/Location	Assumptions
1.	Cameras	
i.	Identified Locations for PTZ Type Cameras	One for each Platform and One for Parking Area/Taxi Stand
ii.	Identified Locations for Bullet Type Cameras	To cover Platform area and Foot Over Bridges
iii.	Identified Locations for Fixed Dome Type	Waiting Halls, Ticketing counters, Refreshment Areas etc.

SN	Item/Location	Assumptions
	Cameras	
iv.	Identified Locations for 4K UHD Bullet Type Camera	Each entry and Exit Gate
2.	RPF Thana/Post (Local Monitoring Center)	
i.	Location for Local Monitoring Center	Nearest RPF Thana
ii.	Number of PC work-station	1
iii.	Number of LFD Moni-tor	2
iv.	Number of PTZ Con-troller enabled Digital Keyboard	1
v.	Video Management and Recording Soft-ware as per Cameras	For all cameras installed in the stations under the scope of this Tender and cam-eras in D/E Category stations.
vi.	Video Analytic Soft-ware as per Cameras	For 20% of cameras installed in the sta-tions under the scope of this Tender and cameras in D/E Category stations. Sup-plied licenses should support both online (for 20% of cameras) and offline mode (same licenses supplied for 20% of cameras for online mode should be used for the remaining cameras in offline mode).
vii.	Facial Recognition System Software as per Cameras	For each entry and exit points of A1/A/B/C category Stations i.e. with 4K UHD Cameras. Licenses will support both online and offline mode (same licenses supplied for entry/exit cameras for online mode will be used for the remaining cameras at stations in offline mode).
viii.	VMS Serv-ers/Workstation/NVR with Redundancy	For cameras installed in stations under the scope of this Tender and cameras in D/E Category stations as per RDSO Specification.
ix.	Video Analytic Serv-ers/Workstation with Redundancy	For cameras installed in stations under the scope of this Tender and cameras in D/E Category stations as per RDSO Specification.
x.	Facial Recognition Servers/Workstation	For cameras installed in all the cluster stations of the RPF Thana as per RDSO Specification.
xi.	External Storage Re-quirement	Recording for 30 days. In addition, 10% space as spare.
3.	Divisional Monitoring	

SN	Item/Location	Assumptions
	Center	
i.	Location for Divisional Monitoring Center	At Divisional Control Offices
ii.	Number of PC work-station	1
iii.	Number of LFD Monitor	2
iv.	Number of PTZ Controller enabled Digital Keyboard	1
4.	Zonal Monitoring Center	
i.	Location for Zonal Monitoring Center	At Zonal Control Offices
ii.	Number of PC work-station	1
iii.	Number of LFD Monitor	2
iv.	Number of PTZ Controller enabled Digital Keyboard	1
5.	Railway Board	
i)	Location for Railway Board	Railway Board
ii)	Number of PC work-station	1
iii)	Number of LFD Monitor	2
iv)	Number of PTZ Controller enabled Digital Keyboard	1
6.	DC-DR for VSS	
i.	VMS Server/ Work-station with Redundancy.	All alerts & image/configuration file from VMS at RFP Thana/Post will be stored at this site. There will be no viewing at this level. Server(s)/Workstation for Video Management System should be provided with N:1 redundancy (HA mode) in RailTel Data centres.
ii.	FRS Server / work-station including DB with Redundancy	All alerts & image/configuration file from FRS at RFP Thana/Post will be stored at this site. FRS Server/workstation including database should be provided with N:1 redundancy (HA mode) in RailTel Data centres.
iii.	External Storage Requirement.	For keeping flagged/ marked video data by RPF personnel for longer retention, VA alerts across all stations within the

SN	Item/Location	Assumptions
		jurisdiction of RailTel Region for 30 days, Audit trail logs, application data etc. will be stored at the data center where 240 TB of storage has been envisaged in the RFP.
7.	Command Control Centre (CCC)	All VMS (including existing VMS application, if required), VA & FRS applications of all the four regions (viz. NR, ER, WR & SR) should be integrated in CCC applications. If required, VMS, VA & FRS of Zonal Railways may also be required to be integrated on the same platform.
8.	Enterprise Management System (EMS)	
i)	EMS	EMS will be installed at DC and DR for monitoring of VSS Equipment installed/ planned to be installed at Railway Stations & RPF Thanas/DC-DR under the scope of this Tender and cameras, switches & UPS in D/E Category stations.
9.	Switches	
i.	Type-I Switch	As per Field Requirement
ii.	Type-II Switch	As per Field Requirement
iii.	Type-III Switch	As per Field Requirement
iv.	Type-IV Switch	To be supplied by RailTel.
10.	Panic Switch	Two numbers at each Platform
11.	19" 42U Rack	As per Field Requirement
12.	19" 9U Rack	As per Field Requirement
13.	1KVA UPS	As per Field Requirement
14.	2KVA UPS	As per Field Requirement
15.	2x 10KVA UPS	As per Field Requirement
16.	12F FMS	As per Field Requirement
17.	24F FMS	As per Field Requirement
18.	AC Distribution Box with Surge Protection	As per Field Requirement
19.	Earthing	As per Field Requirement

Note:

(i) Existing LAN Infra installed at Stations to be used by bidder as advised by RailTel and integration to be done with existing VSS Infra in consultation with RailTel's engineer.

(ii) Cameras, UPS and LAN infra structure at D & E category stations will be

provided by RailTel separately and is not covered under the scope of this Tender.

8.1.3.2 **Video Surveillance System Hardware sizing**

8.1.3.2.1 **Servers/Workstation at DC & DR**

i) Bidder to propose Server(s)/Workstation as Video Management with N:1 redundancy (HA mode) in RailTel Datacenters (Gurugram & Secunderabad) for centralized management of multiple clusters.

ii) Bidder to provide database Server(s)/Workstation for Facial Recognition system with N:1 redundancy (HA mode) in RailTel Datacenters (Gurugram & Secunderabad).

Face image database Server(s)/Workstation at Datacenters shall be in sync with each individual RPF Thana/Post FRS servers/workstation as and when any subject or alarm is generated/updated. Synchronization shall be done at least once daily.

iii) The VMS system shall also provide live streaming of atleast 4 to 5 Cameras per station covering platform, circulating area, ticketing area, entry/exit point or other important location on eDrishti Portal of Indian Railways. Bidder shall provision sufficient no. of Streaming Servers/workstation in their bid. Bidders may integrate streaming server with Video Management server/workstation/NVR mentioned above in para (i).

iv) Bidder to provide Server/Workstation for Command Control Centre (CCC) with N:1 redundancy (HA mode) in RailTel Datacenters (Gurugram & Secunderabad) for centralized management.

v) FRS database Server/Workstation at Datacentre for Northern Regions, Eastern Region, Western Region and Southern Region shall be in sync with each other and synchronization shall be done atleast once daily.

8.1.3.2.2 **Storage at DC-DR**

Bidder to propose storage solution at RailTel Datacenter for keeping flagged/ marked video data by RPF personnel for longer retention, VA alerts across all stations within the jurisdiction of RailTel Region for 30 days, Audit trail logs, application data etc. for minimum period of One year. For this, 240 TB of storage has been provisioned.

8.1.3.2.3 **Servers/Workstation/NVRs at RPF Thana/Post**

(i) The bidder to propose Servers/Workstations/NVRs as Video Management servers/workstation at RPF Thana/Post for all cluster stations with N:1 redundancy (value of N will be decided by the bidder based on the configuration of Server/Workstation/NVRs as per RDSO specification)as per total number of cameras installed at cluster stations. Details are given in Annexure-V (Chapter-7). Sizing for hardware requirement for Servers/Workstations/NVRs for D & E category stations are also included.

(ii) Bidder to propose servers/workstations for AI based VA and FRS at RPF Thana/Post for all cluster stations as per RDSO specification and number of Full HD/4K cameras installed at cluster stations as per details given in Annexure-V, Chapter-7).

Sizing for hardware requirement for Servers/Workstations for D & E category stations are also included.

Offered hardware for AI based VA & FRS (server or workstation, as the case may be) shall support redundancy

Note: Bidder may reorganize the existing Server/Workstation installed at RPF Thanas/Posts without any additional cost to RailTel.

8.1.3.2.4 **Storage at RPF Thana/Post**

Bidder to calculate the storage requirement for recording of video feeds for 30 days at each RPF Thana/Post as per Camera details given in Annexure-VI of Chapter-7 (Section-I). The bidder must ensure that the capacity of storage system supplied at the RPF Thana/Post should be supplied with an additional 10% capacity over and above the capacity required for 30 days recording computed on the basis of cameras mentioned for RPF Thana/Post from day one. In case, during implementation, if the bidder solution requires additional storage capacity as per their solution requirement same shall be provided by the bidder without any extra cost.

8.1.3.2.5 In case of failure of any Server/Workstations/NVR, the recording and playback availability should not be affected. The recording of last 30 days at any given point of time should be available through redundant Server/Workstation NVR in case of Server/workstation/NVR failure.

8.1.3.2.6 Station and RPF Thana/Postwise details are given in Chapter-7. Under one RPF Thana/ Post, cluster stations of A1, A, B and C Type Stations are also mentioned. From that detail, total nos. of Cameras to be recorded at that particular RPF Thana/ Post may be calculated.

In future, Cameras (to be provided by RailTel) for D & E Category Stations are also to be monitored from these planned RPF Thana/Post, accordingly, **Hardware requirement of Server/Workstation/NVR for VA, VMS, FRS and of Storage** have been asked in this tender. **Server/Workstation/NVR** and Storage requirement to be calculated as per Annexure-V and Annexure-VI of Chapter-7.

8.1.3.2.7 At each cluster i.e. RPF Thana/ Post location, bidder is required to size Server/workstation/NVRs for VA/VMS as defined in clause 8.1.3.2 and FRS with local matching capabilities with the watch list database without any impact on the performance of the system and overall solution requirement as detailed in para 8.1.3.2 of Chapter-8 (Section-I).

8.1.3.2.8 The bidder has to submit the calculations done to reach the quoted servers/workstations, NVRs numbers, storage capacity etc. with supported document. In case any additional server(s)/workstation, NVRs, other hardware are required to meet the above requirement, same shall be provided by the bidder without any cost to the purchaser.

8.1.3.3 **Recording Parameter**

8.1.3.3.1 Recording shall be stored for at least 30 days at 25 FPS and Full HD resolution for Full HD cameras and 25 FPS Ultra HD resolution for 4K UHD Cameras with H.265 or higher video compression at RPF Thana/Posts. The indicative storage capacities per camera with H.265 or higher video compression and 25 FPS shall be as under:

Days	Full HD Camera	4K UHD Camera
30 Days	750 GB after RAID 5/6	3TB after RAID 5/6

Note: RailTel may further reduce the above mentioned indicative storage capacity per Camera at 25 FPS with applicable resolution by using suitable compression without any reduction in the quality of Video.

8.1.3.3.2 The bidder must ensure that the capacity of storage system supplied at the RPF Thana/Post should be supplied with an additional 10% capacity over and above the capacity required for 30 days recording computed on the basis of cameras mentioned for RPF Thana/ Post from day one. In case higher compression protocol is offered, it is permitted that the requirement of minimum storage is reduced in proportion to improvement due to compression.

8.1.3.3.3 The additional capacity is required to meet the compliance requirement of keeping the flagged/marked images/video footage as evidence required by the RPF Appropriate authority for investigation purpose and also to cater the requirements of provision of any new cameras on the station.

8.1.3.3.4 In case of any shortage found (at later stage after implementation) between Storage calculation sheet submitted by the bidder with actual implemented storage solution in the field, Bidder has to supply the additional required storage, at no extra cost to RailTel.

8.2 Existing Infra already installed at RPF Thana/Post

8.2.1 Existing VSS infra has been installed by RailTel at few Stations/RPF Thanas/Post. Details of existing VSS infra are given in Annexure-II, Chapter-7.Bidder has to use the existing VSS infra as per the scope of work and integrate the existing infra with the proposed VSS infra under the scope of this tender.

8.2.2 The selected bidder shall integrate the proposed VSS infra with the existing VSS infra (including Camera, VMS software, Server/workstation cum Storage etc.) without any additional cost to RailTel.

8.2.3 The selected bidder is free is either use both existing and new VMS at any particular RPF Thana/ Post or use either of them. However, the selected bidder shall ensure that integration of existing VSS infra and the proposed VSS infra is seam-

less at that RPF Thana/Post as per the terms and condition of the tender document. In case bidder decides to use only one of the VMS system, then it is the responsibility of the selected bidder to shift existing VMS licenses at the required RPF Thana/Post (as per his plan) without any additional cost to RailTel. The selected bidder is also at his liberty to replace the existing VMS system completely at all RPF Thanas/Posts with his own VMS system without any additional cost to RailTel.

At RPF Thana/ Post locations, where new VMS is required to be installed as per the scope of work, the selected bidder shall configure the existing VSS infra (including cameras, servers/workstations, storage etc.) with supplied VMS by him without any additional cost to RailTel.

8.2.4 The selected bidder is free to use existing Server/workstation cum Storage installed at RPF Thana/Post according to his solution. To meet the tender requirement, bidder is also free to shift the Server from one location to any other location, if required without any additional cost to RailTel.

8.2.5 Make/model of Equipment/System already installed at RPF Thana/Post

Following are the technical details of existing VSS infra available at stations:

SN	Item name (make)	RDSO Specification
1	Camera (CP Plus, IDIS)	SPECIFICATION NO. RDSO/SPN/TC/65/2016 Revision 4.0
2	Server cum Storage (Netweb)	SPECIFICATION NO. RDSO/SPN/TC/65/2016 Revision 4.0
3	Large format Display (LG)	SPECIFICATION NO. RDSO/SPN/TC/65/2019 Revision 5.0
4	Workstation (Dell)	SPECIFICATION NO. RDSO/SPN/TC/65/2019 Revision 5.0
5	VMS Software (HFCL)	SPECIFICATION NO. RDSO/SPN/TC/65/2019 Revision 5.0
6	Rack (19” 42U)	RailTel Specification
7	Switch (D-link) – Type-III	
8	UPS(Make - ProstarM)	

8.2.5.1 <u>Camera</u>

CP plus make cameras {(i) Full HD Fixed Dome (Model No.: - CP-UNC-VB21FL3-VMD), (ii) Full HD Bullet Type (Model No.: CP-UNC-TB21ZL6S-VMD), (iii) Full HD PTZ camera (Model No.: CP-UNP-F3021L20-DAP), (iv)4k UHD Bullet Type (Model No.: CP-UNC-TB81ZL6-VMDS)}as per RDSO specification no. RDSO/SPN/TC/65/2019, Revision 4.0.

8.2.5.2 <u>Server cum Storage</u>

Netweb make Server (Model no. Tyrone Camarero DS300TR-28RL) as per RDSO specification no. RDSO/SPN/TC/65/2019,Revision 4.0. Following is the configuration(s):

i) In Phase-IB and Phase-IB(V) VSS Work

SN	**Component**	Product Code	Qty
1	CPU	Intel® Xeon® E5-2620 v4 (8-Cores, 2.1GHz, 20MB Cache, 85W)	2
2	Memory	32GB DDR4 ECC RDIMM (Total Memory)	1
3	Drives	1 TB SAS 7200 RPM (3.5”)	4
		6TB SAS 3.0 12.0Gb/s 7200RPM – 3.5”	3
4	OS & S/W	CentOS 7.0 Enterprise Linux (64-bit)	1
5	Storage	36 TB Usable Storage	1

ii) In Phase-IA VSS Work

SN	**Component**	**Product Code**	**Qty**
1	CPU	Intel® Xeon® E5-2620 v4 (8-Cores, 2.1GHz, 20MB Cache, 85W)	2
2	Memory	32GB DDR4 ECC RDIMM (Total Memory)	1
3	Drives	1 TB SAS 7200 RPM (3.5")	4
4	OS & S/W	CentOS 7.0 Enterprise Linux (64-bit)	1
5	Storage	36 TB Usable Storage	1

8.2.5.3 Large Format Display

LG make Large format Display (55”) as per RDSO specification no. RDSO/SPN/TC/65/2019 Revision 5.0.

8.2.5.4 PC Work Stations

Dell Make PC Workstation (Model DELL Precision 3430 SFF & 3431 SFF) as per RDSO specification no. RDSO/SPN/TC/65/2019 Revision 5.0 with all amendments (Windows-10 Pro-2019 is installed).

8.2.5.5 Video Management Software

HFCL make Video Management Software ($M3S^{+}$ VMS) as per RDSO specification no. RDSO/SPN/TC/65/2019 Revision 5.0 with all amendments.

8.2.6 All the Warranty and Long Term Maintenance (AMC) support/obligation of existing Infra installed will be done by the existing vendors only.

8.3 Technical Specification

The below mentioned technical specifications for the supply items are bare minimum requirements of the purchaser, the supply items quoted by bidder must comply with these technical specifications. However, the bidder can quote the items

with higher technical specifications catering to the futuristic requirements of the proposed solution.

A. For offered Cameras and software (including source code), following parameters are required for Security auditing & testing by STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-In empaneled Information Security Auditing Organization.

Description	RDSO Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest	Requirement
For cameras:	Clause No. 5.1 (xxxvii), 5.2 (xxxvi), 5.4 (xxxix), 5.5 (xxxix), 6.0 (xxxviii) & 7.0 (xliv)	All the parameters applicable to cameras with relevant and equivalent safeguards shall be assessed as per Level-2 of "Appendix C of OWASP: Internet of Things Verification Requirements" as per OWASP Application Security Verification Standard version 4.0.
Facial Recognition Software	Clause No. 19.28	All the parameters applicable to software for security, vulnerabilities, etc. shall be assessed which can be deployed to meet the security assurance requirements with "SAFE TO HOST CERTIFICATE" as per the OWASP Top 10 or latest.
For other software applications:	Clause No. 18.1.32 (VMS), 18.2.30 (GUI client software), 18.3.17 (Video recording software), 18.4.14 (AI enabled Video Analytics software), 18.5 (iv) (Remote viewing on web and mobile App), 18.6.23 (Command Control Centre software)	All the parameters applicable to software for security, vulnerabilities, etc. shall be assessed which can be deployed to meet the security assurance requirements as per the OWASP Top 10 or latest.

The compliance with RDSO clause no. 3.9, 3.10, 3.11, 3.12 & 3.13 shall be ensured, and requisite documents shall be submitted along with the call letter for RDSO inspection.

B. The technical specifications for different components/items of IP based Video Surveillance System shall be as below:

SN	Components/Items	Specifications
i.	Full HD Bullet type IP Colour Camera	As per Clause no. 5.4 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version6.0 or latest with all amendments.
ii.	4K UHD Bullet type	As per Clause no. 5.5 of RDSO Specification of IP Based

	IP Colour Camera **(with image sensor 1/1.8" as Type A)**	Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
iii.	Full HD Fixed Dome Type IP Colour Camera	As per Clause no. 6.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
iv.	Full HD P, T, Z (Pan/Tilt/Zoom) IP Colour Camera	As per Clause no. 7.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
v.	Digital Keyboard	As per Clause no. 8.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
vi.	Large Format Display Monitor	As per Clause no. 9.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
vii.	Server / Workstation Hardware (for Video Management & Recording and Video Analytics Software)	As per Clause no. 10.1 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
viii.	Network Video Recorder (NVR)	As per Clause no. 10.2 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
ix.	PC Workstation	As per Clause no. 11.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments. **Note:** **PC Work Station should also have atleast 2 nos. of HDMI Port to connect LFD Monitors.**
x.	External Storage Device	As per Clause no. 12.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
xi.	Core Switches as per Clause no. 13.0	Deleted.
xii.	Type-I Switch **(8 port Field Switch)**	As per Clause no. 14.0(III) of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
xiii.	Type-II Switch (Aggregation Switches)	As per Clause no. 14.0(I) of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021Version 6.0 or latest with all

		amendments.
xiv.	Type-III Switch (24 Port Layer 2 Switch)(**Non-PoE)**	As per Clause no. 14.0(II) of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/ TC/65/2021 Version 6.0 or latest with all amendments (Non-PoE, 24 x 10/100/1000 BASE-T ports • 4 x 1G (minimum) SFP+ ports).
xv.	Deleted	Deleted.
xvi.	Wireless Transmit-ter/Receiver Unit	Deleted.
xvii.	Copper to Fiber Media Convertor	As per Clause no. 16.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
xviii.	Various types of ca-bles	As per Clause no. 17.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
xix.	Video Management Software	As per Clause no. 18.1 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
xx.	Graphical User Inter-face Client Software	As per Clause no. 18.2 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
xxi.	Video Recording Software	As per Clause no. 18.3 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021Version 6.0 or latest with all amendments.
xxii.	Artificial Intelligence (AI) enabled Video An-alytics Software	As per Clause no. 18.4 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021Version 6.0 or latest with all amendments.
xxiii.	Remote viewing on Web and Mobile App	As per Clause no. 18.5 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 Version 6.0 or latest with all amendments.
xxiv.	Deleted	Deleted
xxv.	Software License	As per Clause no. 20.0 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 version6.0 or latest with all amendments.
xxvi.	HDPE Duct	As per TEC GR No. GR/TX/CDS-008/03/March 11 with latest amendment
xxvii.	SFP(s)	Specifications are given in Para 8.3.1 below.

xxviii.	UPS(s)	Specifications are given in Para 8.3.2 below.
xxix.	FMS	Suitable TEC Specifications for Outdoor applications.
xxx.	Patch Cords	As per RDSO Specifications no. RDSO/SPN/TC/69/2007 or latest.
xxxi.	Rack(s)	Specifications are given in Para 8.3.5 below.
xxxii.	EMS	Specifications are given in Para 8.3.6 below.
xxxiii.	Software for Command Control Centre at Data Centres (DC & DR)	As per Clause no. 18.6 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 version 6.0 or latest with all amendments.
xxxiv.	Server/Workstation for Command Control Centre at Data Centres (DC & DR)	As per Clause no. 10.1.1.1 of RDSO Specification of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2021 version 6.0 or latest with all amendments.
xxxv.	ACDB	Specifications are given in Para 8.3.8 below.
xxxvi.	Earthing	Specifications are given in Para II.5.1 of Section-II below.
xxxvii.	12 Core Aerial Drop Optic Fiber Cable	It will as per TEC/GR/TX/OFC-024/01/Mar-15
xxxviii.	CAT-6 Cable	It will as per latest specification of TEC/BSNL as mentioned in clause 17.1 of RDSO Specification no. RDSO/SPN/TC/65/2021 version 6 or latest.

Note:

i) Above mentioned specifications are applicable for bidder's proposed VSS system including its integration with existing VSS Infrastructure like Cameras, VMS, Server/workstation, Storage, PC Workstation, Display etc.

ii) RailTel reserves the right to use/shift licenses for VMS, VA & FRS software procured under this Tender to existing/additional Cameras at same location or at different location as per Field requirement without any additional cost to RailTel during entire project duration (i.e. upto AMC).

iii) Deleted

iv) **Security Verification Certification for VSS Solution:** It is required as per RDSO specification no. RDSO/SPN/TC/65/2021 version-6 or latest.

Note:
After completing installation at initial stations, the bidder shall ensure Security Audit of Bidder's VSS solution at one of the selected station (as selected by RailTel) for STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-IN empanelled Information Security Auditing Organization for arranging security audit as per RDSO specification version-6 or latest.

PAC for first cluster station of RPF Thana/Post shall be issued after successful compliance of all critical points (related to network security) by the bidder raised by the testing agency. Critical points related to network security and non-critical points will be as per the advice of the testing agency. All non-critical points raised by testing agency shall be

complied by the bidder before issuance of Provisional Acceptance Certificate (PAC) for IT setup at RailTel Datacenters at Gurugram/Secunderabad.

Before issue of FAC, the bidder will offer its complete VSS work for sample testing of any randomly selected station by STQC (Ministry of Electronics & Information Technology) or any other Government Agency from the list of CERT-IN empanelled Information Security Auditing Organization for arranging security verification certification. FAC (Clause 3.D.11) shall be issued only after submission of security verification certification by the bidder.

8.3.1 SFPs – All SFPs should be bidirectional single Fiber.

8.3.1.1 SFP-BX (10 KM) Single Fiber:

SN	Description
i.	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment.
ii.	Should support 10 km optical distance on single fiber
iii.	Should have LC type connector.
iv.	Should provide the cost in Pair (BX U & D).
v.	Should have 1 Gigabit Ethernet capacity on single mode fiber.
vi.	Should support DDMI/DOM feature. Option should be available for SFP+/XFP
vii.	OEM should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.
viii.	Should have CE and FCC regulatory compliances.
ix.	Operating Temperature of the SFP Should be mini 0 to 65 °C (23 to 149 °F)

8.3.1.2 SFP+ (10 Km):

SN	Description
i.	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment.
ii.	Should support 10 km optical distance (1550/1310 nm).
iii.	Should have LC type connector
iv.	Should have 10 Gigabit Ethernet capacities on single mode fiber.
v.	Should support DDMI/DOM feature. Option should be available for SFP+/XFP
vi.	Should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.
vii.	Should have CE and FCC regulatory compliances.
viii.	Operating Temperature of the SFP Should be minimum 0 to 65 °C (23 to 149 °F)

8.3.1.3 SFP+ (40 Km):

SN	Description

i.	SFP modules should comply with multi-source agreement (MSA), enabling compatibility with other vendors equipment.
ii.	Should support 40 km and 16dB link budget optical distance on single fiber.
iii.	Should have LC type connector.
iv.	Should have 10 Gigabit Ethernet capacities on single mode fiber.
v.	Should support DDMI/DOM feature. Option should be available for SFP+/XFP.
vi.	Should be having valid ISO 9000 & ISO 14000 certification on the date of opening of bid.
vii.	Should have CE and FCC regulatory compliances.
viii.	Operating Temperature of the SFP Should be minimum 0 to 65 °C (23 to 149 °F).

Note: All SFPs must support DDMI feature.

8.3.2 UPS

8.3.2.1 1KVA UPS

SN	Specification	
i.	Capacity	1KVA/900 W, better as per actual requirement
ii.	Technology	IGBT
iii.	Wave form	Pure Sine wave
iv.	Display	LCD/LED
v.	Input power factor correction	0.9
vi.	Input configuration	1Ph, L-N+PE
vii.	Output Power factor	0.9 or better
viii.	frequency (Input)	50Hz frequency
ix.	frequency (output)	50Hz +/- 0.5Hz frequency
x.	Voltage Range (Bypass)	230VAC+/-15%
xi.	V threshold	3% max full linear load, 6% max on Nonlinear load
xii.	Crest factor	3.0 or better
xiii.	AC-AC Efficiency	85% or better
xiv.	Transfer time Main-Battery	0
xv.	Transfer time Inverter-Bypass	4 m sec
xvi.	Emergency Power off function	Yes
xvii.	Monitoring software for	Battery, health of UPS, any critical parameter change
xviii.	Communication	SNMP V1/V2/V3
xix.	Port	USB

SN	Specification	
xx.	Battery Type	SMF
xxi.	Battery backup	1 Hrs. on full load (Single bank) with 1500 (minimum)VAH battery size (Battery to be installed in separate wall mount cabinet)
xxii.	**Environmental Parameter**	
A	Operating Temperature Range	0-55 deg
B	Over Temperature, Load on Battery, Battery on Charge, Battery low, Mains on	Indication required
C	Input AC mains and output power supply surge protection	inbuilt
D	Humidity	0% to 95% non-condensing
E	Noise Level	50 dBA max
F	Size	not more than 2U rack mountable
xxiii.	**Protection**	IP20
A	Mechanical Parameter	EMI or equivalent BIS/IS standard
B	Safety	EN or equivalent BIS/IS/IEC standard
C	Performance	IEC/EN or equivalent BIS/IS standard
	Voltage Range	175-280 VAC (1-phase) @ 100% load

8.3.2.2 2KVA UPS

SN	Specification	
i.	Capacity	2KVA/1800 W
ii.	Wave form	Pure Sine wave
iii.	Rectifier	IGBT based
iv.	Display	LCD/LED
v.	Input power factor correction	0.9
vi.	Input configuration	1Ph,L-N+PE
vii.	Output Power factor	0.9or better
viii.	Frequency (Input)	50Hz frequency
ix.	Frequency (output)	50Hz+/- 0.5Hz
x.	V threshold	3%max full linear load, 6% max on Nonlinear load
xi.	Crest factor	3.0 or better
xii.	AC-AC Efficiency	85% or better
xiii.	Transfer time Main-Battery	0
xiv.	Transfer time Inverter-Bypass	4 msec

SN	Specification	
xv.	Emergency Power off function	Yes
xvi.	Monitoring software for	Battery, health of UPS, any critical parameter change
xvii.	Communication	SNMP V1/V2/V3
xviii.	Port	USB
xix.	Battery Type	SMF
xx.	Battery backup	1 Hrs. with full load with 3000 (minimum) VAH battery size (Battery to be installed in separate wall mount cabinet)
xxi.	**Environmental Parameter**	
A	Operating Temperature range	0-55 deg
B	Over Temperature, Load on Battery, Battery on Charge, Battery low, Mains on	Indication required
C	EPO function	Yes
D	Input AC mains and output power supply surge protection	inbuilt
E	Humidity	0% to 95% non-condensing
F	Noise Level	50 dBA max
G	Size	not more than (2U+/-0.5U) rack mountable
xxii.	**Protection**	IP20
A	Mechanical Parameter	EMI or equivalent BIS/IS standard
B	Safety	EN or equivalent BIS/IS/IEC standard
C	Performance	IEC/EN or equivalent BIS/IS standard
D	Voltage Range (By-pass)	230VAC+/-15%
E	Voltage Range	175-280 VAC (1-phase) @ 100% load

8.3.2.3 2X 10KVA UPS connected in parallel redundant mode in separate chassis

SN	Specifications	
i.	Capacity	10000VA/9000 W
ii.	Phase	3 phase in / 1 phase out
iii.	**INPUT Characteristics**	
iv.	Power Factor	0.9 or better
v.	Voltage Range	175-280 VAC (1-phase) @ 100% load
vi.	Wave form	Pure Sine wave
vii.	Nominal Voltage	3 x 400 VAC (3Ph+N)
viii.	**OUTPUT Characteristics**	
ix.	Output Voltage	208/220/230/240V(L-N)

SN	Specifications	
	Rates	
x.	Voltage Accuracy	±1%
xi.	Transfer Time	0
xii.	Load Crest Ratio	3:1 max
xiii.	AC Mode Efficiency	>90%
xiv.	Output Frequency @ Line mode	50Hz +/-0.5Hz@50Hz system
xv.	Output Frequency@ Battery mode	50Hz +/-0.5Hz@50Hz system
xvi.	Frequency Converter Mode (CVCF)	50Hz
xvii.	UPS status, Load level, Battery level, Input /Output voltage, Discharge timer, and Fault conditions	Indication required
xviii.	Over Load Protection and Indication	Default: Yes
xix.	Transient recovery	100 ms recover to 90**%**of nominal Voltage
xx.	Efficiency	>90% Battery Mode @100%R/RCD Load
xxi.	UPS Type	Tower
xxii.	Monitoring software support	Battery , health of UPS, change in any critical parameter
xxiii.	Port	USB/RS-232,RJ45
xxiv.	Battery Type	SMF preferred
xxv.	Generator Compatible	Yes
xxvi.	Battery backup	2 Hrs. on full load with each UPS System with 28800(Minimum)VAH battery size
xxvii.	Acoustic Noise	<60 db
xxviii.	Operating Temperature	0-40 deg C
xxix.	Nominal Battery Input Voltage	Vendor to specify
xxx.	Battery Low Warning	10.8V X nos. of batteries
xxxi.	Battery Shutdown Voltage	10.5V X nos. of batteries
xxxii.	Battery Type	VRLA,12V
xxxiii.	**Battery Charger**	
xxxiv.	Nominal Recharging current	minimum 10% of the offered battery AH capacity
xxxv.	Maximum Charge	13.5V X nos. of batteries

SN	Specifications	
	Voltage	
xxxvi.	**Regulatory Standards**	
xxxvii.	ESD	IEC/EN61000-4-2 Level 4 or equivalent BIS/IS standard
xxxviii.	Safety	IEC/EN62040-1-1 or equivalent BIS/IS standard
xxxix.	Leakage Current	IEC/EN62040-1-1or equivalent BIS/IS standard
xl.	Protection	IP20
xli.	Certification	CE or equivalent BIS/IS standard
xlii.	Communication	SNMP V1/V2/V3
xliii.	Input AC mains and output power supply surge protection	Inbuilt

8.3.3 Fiber Management System (FMS) (12/24 Fiber)

The FMS should be of Suitable TEC Specifications for Outdoor applications.

8.3.4 Patch Cords

The Patch cords should be confirming to RDSO Specifications no. RDSO/SPN/TC/69/2007 or latest.

8.3.5 Telecom Rack

8.3.5.1 19" 9 U Rack (Wall mounted)

SN	Item	Description
i.	Type	Closed Telecom Rack wall/Pole mounted
ii.	Dimension	500 mm(Height)X600mm(Width)X 600 mm(Depth)
iii.	Mounting	Rack should have **wall/channel/beam mounting with heavy brackets and fasteners of required shape and size as per site condition.**
iv.	Front door	RackshouldhavefrontdoortoughandtransparentglassfittedonMS/CRCAsheet on sides with Lock and key.
v.		MS/CRCA door plain having ventilation holes bottom side with dust filters.
vi.	Top & Bottom	Rack top and bottom should be MS/CRCA steel made with cable entry provision with glands at both side.
vii.	Fan module	Compact fan module of 90 CFM working on 230VAC 2nos.with each rack properly fitted at top of rack.
viii.	Earthing Provision	Rack Should have earthing provisions.

SN	Item	Description
ix.	Cable manager	1no.horizontal and 1no.vertical cable manager with cable loops to be provided with each rack.
x.	Power Distribution Unit(PDU)	PDU is of 6 Sockets of branded make such as Havells or equivalent with 6Amp with switch.
xi.	The rack should be fitted with one modem tray19". **Back side of the rack should be closed with a removable panel.**	
xii.	The good quality powder coating light grey in colour shall be used for painting of the rack.	
xiii.	"INDIAN RAILWAYS LOGO along with Year" in bold and easily recognizable fonts should be written at the front top of the rack preferably in black or blue color.	
xiv.	OEM should have a valid ISO 9001 certification on the date of opening of bid.	
xv.	Rack should be minimum IP54 certified. Rack should also comply with EIA 310/DIN 41494 standards.	

8.3.5.2 19" 42U Rack

19" 42U Racks shall be used at Station/RPF Thana/Chowki for housing servers/workstation/NVR**, storage & switches**

SN	Item	Description
i.	Dimension	As per requirement
ii.	Side panels	To be provided across whole height of the rack should be openable with latching arrangement at top and bottom.
iii.	Front door	Rack should have front door tough and transparent glass fitted on MS/CRCA sheet on sides with Lock and key.
iv.	Rear side	Shall be perforated for appropriate level as per industry standard.
v.	Top & Bottom	Rack top and bottom should be MS/CRCA steel made with cab leen try provision with gland satboth side.
vi.	Fan module	Compact fan module of 90 CFM working on AC power supply 4 Nos teach rack properly fitted at top of rack.
vii.	Earthing Provision	Rack Should have earthing provisions.
viii.	Cable manager	2nos.horizontaland2nos.verticalcablemanagerwith cableloopstobeprovidedwitheachrack.
ix.	Power Distribution Unit(PDU)	Adequate and Redundant power distribution units with electronically controlled circuits for surge and spike protection, isolated input to ground and output to ground.
x.	Material used	CRCA/MS with Thickness varying from 1.6 Mm to 2.0 mm
xi.	The rack should be fitted with one modem tray 19"	
xii.	The earthing kit consisting of copper bus bar with dimensions 20 inch length, 1.0 inch breadth & 5mm thickness (min.) having appropriate num-	

SN	Item	Description
	ber of M6 tapped holes and 3 brass nut bolts and washers for fixing of earthing cables shall be fixed near the bottom of the rack.	
xiii.	Thegoodqualitypowdercoatinglightgreyincolourshallbeusedfor-paintingoftherack	
xiv.	The rack should be fitted with dual source power supply distribution board.	
xv.	"INDIAN RAILWAYS Logo along with Year" in bold and easily recognizable fonts should be written at the front top of the rack preferably in black or blue color.	
xvi.	OEM should have a valid ISO 9001 certification on the date of opening of bid.	
xvii.	Rack should be minimum IP20 certified. Rack should also comply with EIA 310/DIN 41494 standards.	

8.3.6 Enterprise Management System (EMS)

8.3.6.1 General

The EMS Solution (Hardware & Software) will provide monitoring of all IP based devices (including cameras) included in the scope of work (including existing IP devices as mentioned in Annexure-II of Chapter-7). Solution will be open, distributed, scalable, and multi-platform and open to third party integration.

Consolidate IT event management activities into a single operations bridge/dashboard that allows NOC operator quickly identify the cause of the IT incident, reduces duplication of effort and decreases the time it takes to rectify IT issues.

Consolidated dashboard of the proposed EMS solution will be the manager of managers window and capable of receiving events/alerts from multiple monitoring systems including system, network, storage, hardware, and application.

8.3.6.2 Consolidated Dashboard

SN	Features
i.	The tool should provide complete cross-domain visibility of IT infrastructure issues
ii.	Integrate events from ALL domain managers
iii.	Automatically relate events to impacted Configuration Items (CIs) like services, servers/workstation etc
iv.	Automated discovery of the infrastructure CIs and relationships
v.	The tool should Classify events based on business impact of Video Surveillance System service levels
vi.	Offer relevant tools, run books, graphs in context of a selected event
vii.	Instruction Text (knowledge base) integrated into events /alarms for which incident tickets were created with ability to define trouble shooting steps.
viii.	Guided creation of correlation rules for administrators

SN	Features
ix.	Tool should provide superior view of infrastructure health across system, networks, IT infrastructure and end-user into a consolidated, central console
x.	Tool should allow for customizable operator perspectives
xi.	Powerful correlation capabilities to reduce number of actionable events. Topology based and event streambased correlation should be made available.
xii.	Tool should provide support for maintenance windows and scheduled downtimes
xiii.	End-to-end visibility of infrastructure and alerts by showing relationships of events to CIs and business service SLAs that are impacted
xiv.	Tool should be able to highlight Priority of an event. Priority is based on both the event severity and the business impact. CI Business Impact is calculated based on Business Criticality of all affected business services, applications and business process CIs and eg. SLAs.
xv.	The operator should be able to analyze priority, business impact and affected CIs by selecting each event and checking the automatically updated Health Top View, Business Impact View etc.
xvi.	Tool should allow to browse performance metrics by selecting CIs or events. Tool should allow to compare different performance matrix of a device/CI in GUI/ Model Explorer.
xvii.	Ability to launch in-context to performance graphs or reports.
xviii.	The adaptive threshold capability automatically calculates a baseline from the historic samples to identify previous trends in performance. Based on these trends the threshold values are automatically and dynamically calculated. Once the automatic threshold values are set, comparing the current performance data with the adaptive thresholds indicates if the current infrastructure resource utilization is normal or not. An alert is generated when abnormal behavior is detected. "
xix.	The Event Correlation Engine shall use detailed, comprehensive, and automatically updated discovery and relationship information to analyze alerts and events and ultimately determine the event that is most likely the cause of an incident.
xx.	When many a combination of many events occurs in the monitored environment, the system must be able to automatically categorize them into causes and symptoms. The system needs to provide a single interface to view multiple layers of cause and symptoms.
xxi.	The system must allow modification and enhancement events during event processing.

8.3.6.3 Service Level Reporter

SN	Features
i.	Should provide reporting templates for performance, availability, inventory, operation, virtualization and configuration
ii.	Should provide reports that can prove IT service quality levels, such as application response times and server/workstation resource consumption
iii.	Reports should be accessible via web browser
iv.	Reports can be scheduled to publish automatically or they can be pro-

	duced on demand
v.	Reports can be applied to all systems, to a group of systems, to a customer group of systems, or to a single system.
vi.	Reports can be published in HTML, PDF, Microsoft Word, and Microsoft Excel formats.
vii.	Should be possible to send reports via email from the Reporter GUI or from command line.
viii.	Automated report generation and publishing
ix.	Server/workstation reporting tool should be able to collect and collate specific information regarding the resource utilization, relationship of a business service with infrastructure elements and its SLA performance
x.	Tool should be able to report in the context of the business service SLAs that the infrastructure elements support—clearly showing how the infrastructure impacts business service levels
xi.	Tool should be able to deliver comprehensive, long-term, and customizable cross-domain reporting.
xii.	Tool should support long-term data retention and aggregation upto 24 months.
xiii.	Tool should provide a library of predefined reports that can be cross-launched in the context of business services.
xiv.	Tool should provide reports from both Network devices and Servers/workstation from the same console.
xv.	Tool should provide development environment where more Content/Reports can be created and data sources such as — Generic .csv files, and, — Databases supporting JDBC. Should also be included to pull data and create reports from such data.
xvi.	Tool should allow to configure downtime for Configuration Items and view the configured downtime in the reports

8.3.6.4 Network Automation

SN	**Features**
i.	Should be able to generate a graphical representation of your network. Identify which devices are inactive or out of compliance. Detecting non-compliance, issuing alerts. The ability to compare configurations is invaluable; system changes must be logged.
ii.	Manage network compliance by comparing devices to defined, best-practice standards. Speed audit processes with network compliance reports for ITIL and more. Validate device operating states in real time to stay in compliance.
iii.	In real time, detect configuration and asset information changes made across a multi-vendor device network, regardless of how each change is made and also support configuration deployment/rollback and configuration templates.
iv.	Recording every access to a device including not only scripted and automated access, but a full keystroke log. Who made what change, the reason for the change and associated ticket number must be captured.
v.	Manage dual-stack and pure IPv6 environments. Manage SNMPv3 configurations and communicate over SNMPv3.
vi.	In real time, store a complete audit trail of configuration changes, (hard-

	ware, and software,) made to network devices, including critical change information.
vii.	Configure granular, customizable user roles to control permissions on device views, device actions, and system actions. Support common authentication systems, such as TACACS+, Radius, SecurID, Active Directory and LDAP.
viii.	Manage device access and authorization through a centralized control model that is integrated with your standard workflow and approval processes.
ix.	Automate routine configuration tasks for updates, such as password or community string changes, configuration upload and download, compare configs, bulk configurations, config backup.
x.	Deploy and monitor operating system images from a centralized network management system. Create a repository, and synchronize all device software images across your enterprise network.
xi.	Enforce change processes in real time. Model complex approval processes with flexible rules. Force approvals for changes, including changes made by a direct command line interface (CLI) session.
xii.	The system must support heavily NAT environment and environments where network devices may have the same IP address.
xiii.	The system must provide an automated method to configure devices for real-time change detection via syslog (either direct syslog or syslog via a relay).
xiv.	Scalability – The network configuration management solution should be highly scalable with the largest tier capable of supporting devices as mentioned above at Clause 8.3.6.1 and carrying 4 task for each device per day.

8.3.6.5 Service Management (Help Desk) and SLA Management

SN	Features
i.	The proposed Helpdesk tool should be Axelos Gold level/Pink Elephant/ Service certified on at least 2 ITIL 2011 processes and complying at least 11 **(undertaking on OEM's letter head to be submitted)**of all the ITIL processes that are implemented for at least three IT organizations: Incident management, Problem Management, Change Management, Knowledge Management, Service Level Management, Service Asset and Configuration management, Service Catalogue and Request Fulfillment etc. The certification copy to be submitted.
ii.	Should be able to control access rights to modules and information by user profiles.
iii.	The CMDB should provide visualization (graphical view) as well as support federation (seamlessly federates information from other distributed data sources), reconciliation and synchronization.
iv.	Should provide predefined categorization, as well as routing and escalation workflows that can be triggered based on criteria such as SLA, impact, urgency, CI, location or customer.
v.	The Change Management module should provide a rule-based workflow system for controlling changes throughout their lifecycle: from initial request to approval, to planning and implementation, and to monitoring

	and evaluation.
vi.	Should include automated impact analysis, calculated risk analysis, collision detection, and unplanned change detection and validation.
vii.	The tool should automatically alert the responsible persons when a maintenance task is due or a scheduling conflict arises.
viii.	If multiple SLAs are triggered, the strictest one must drive the workflow
ix.	The product must monitor SLAs against Service, Problem, and Change Management
x.	The solution should show immediate (real-time) status of tickets
xi.	Should support KCS (Knowledge Centered Support) best practices.
xii.	Provide out of box and customizable reporting and personalized dashboard

8.3.6.6 Network Fault Management

SN	Features
i.	The solution should allow for discovery to be run on a continuous basis which tracks dynamic changes near real-time; in order to keep the topology always up to date. This discovery should run at a low overhead, incrementally discovering devices and interfaces.
ii.	The NMS must allow immediately determining the impact of a component failure and thus helping in prioritizing problem solving efforts.
iii.	The NMS should provide very powerful event correlation engine and thus must filter, correlate & process, the events that are created daily from network devices. It should assist in root cause determination and help prevent flooding of non-relevant console messages.
iv.	Polling intervals should be configurable on a need basis through a GUI tool, to ensure that key systems are monitored as frequently as necessary.
v.	The topology of the entire Network should be available in a single map along with a Network state poller with aggressive/customizable polling intervals.
vi.	The NMS application should provide a Unified Fault, Availability and Performance function from a single station only to reduce network and device loads with unified fault & performance polling.
vii.	The NMS performance system must provide predefined and highly customizable reporting across the network domain.
viii.	The Network performance operator console should provide operators with seamless transitions from fault data to performance reports and back. For example - select a node in NMS fault mgmt system and cross launch it for historical and near real time data.
ix.	Should have MIB browsing, MIB loading, and MIB expression collection features.
x.	NMS should be cloud ready, should have dynamic Root Cause Analysis capability
xi.	NMS should have Global Management capability, where in it can work in distributed environment.
xii.	NMS should support application based failover over the WAN.
xiii.	NMS should have support for SNMPv3 & IPv6, including dual-stack IPv4 & IPv6 to provide flexibility in protocol strategy and implementation.

xiv.	It should be able to correlate multiple occurrences of a specific fault on a device within a specified time frame to enable detection of chronic problems. At any given point in time there may not exist a fault for a chronic issue, but we need to know that the condition continues to happen. For example: Circuit down 20 times in last 24 hour, bandwidth thresholds exceeded 30 times in last month, etc.
xv.	The system should support a variety of discovery protocols. The system should take advantage of available information to aid in discovery of the network. Protocols should include ARP, DNS, SNMP, BGP, EIGRP, OSPF, CDP (Cisco), EDP (Extreme), NDP (SONMP-Nortel), FDP (Foundry), EnDP (Enterasys), and LLDP (link-level discovery protocol).
xvi.	Support for discovering and monitoring router redundancy groups using HSRP (Hot Standby Router Protocol) / VRRP (Virtual Router Redundancy Protocol) & recognizing situations that can result in multi-path conditions.
xvii.	Support for port aggregation protocols like LACP (Link Aggregation Control Protocol)including visual map-based views & automatic impact assessment based on the relationships between physical and virtual links.
xviii.	Scalability – Network Management Tool should be capable of managing upto devices as mentioned in Clause 8.3.6.1 above for a single/multiple instance, should be able to have 10 logical discovered interfaces per device.

8.3.6.7 Network Performance Management

SN	Features
i.	Should establish the status of network devices and interfaces with unified status calculation and visualization of network fault & performance data.
ii.	Should enable efficient workflows using contextual navigation between reports and rich interactive report configuration capabilities.
iii.	Network Performance reporting tool must provide the following capabilities: Data collection and thresholding of network device ports (any that support MIB2 including virtual interfaces): Bytes In, Bytes Out, Discards, Errors, Network Delay Data collection and threshold setting of network devices: CPU, Memory, Buffers, Component statistics A variety of reports summarizing the data including: Home page summary/trend summary, Calendar, Heat chart, Headline, Dashboard, Managed inventory report, Top ten, Most changed/occurring events, Data explorer
iv.	Should honours network fault management tools' secure grouping and multi-tenancy settings Secure reports by group Secure reports by tenant
v.	Should be able to schedule key reports for automated delivery Distribute reports by email in HTML, Excel or pdf formats. Single station scalability up to 2,00,000 performance polled interfaces Store as-polled data for up to 12 months

8.3.6.8 Server/Workstation Monitoring

SN	Features
i.	Should offer service driven operations management of the IT environment to manage distributed, heterogeneous systems - Windows, LINUX from a single management station.
ii.	Centralized view for Agent-based and agent-less monitoring managed from one central console.
iii.	Should provide a centralized point of control with predefined policy-based management intelligence for easy deployment for the servers/workstation, operating systems, applications and services for correlating and managing all the IT infrastructure components of a business service.
iv.	Should support Virtual platforms - Vmware and Microsoft Virtual Server/workstation, Citrix and provide capability to manage both Microsoft .NET and J2EE applications from the same platform.
v.	Should provide in built correlation to reduce the number of messages presented to the operators and to determine the root cause.
vi.	The system must be agent based for managing the nodes and have the capability of storing events / data locally if communication to the management server/workstation is not possible due to some problem. This capability will help to avoid losing critical events.
vii.	Complex dependencies between managed elements must be captured, allowing IT management staff to interpret lower level data in terms of its importance to the higher-level service.
viii.	Alarms with meaningful message text, instruction text, operator / automatic actions / linked graphs, duplicate message suppression.
ix.	Should be configurable to suppress events at the agent or managed node level itself and be configurable to suppress events for key systems/devices that are down for routine maintenance or planned outage.
x.	The system should allow for enriching of messages with incremental information and should allow for customization of message attributes.
xi.	There should be a single agent on the managed node that provides the system performance data, and for event management it should be able to prioritize events, do correlation & duplicate suppression ability to buffer alarms and provide automatic actions with capability to add necessary annotations.
xii.	Should provide console and a web browser interface that can be accessed from anywhere using industry-standard web browsers.
xiii.	Each operator should be provided with user roles that should include operational service views enabling operators to quickly determine impact and root cause associated with events.
xiv.	Highly scalable, and can manage in excess of 1000 managed nodes from a single server/workstation.
xv.	There should be secured communication between Management server/workstation and Managed nodes avoiding the need to open unsecure firewall ports.
xvi.	The system should integrate with Helpdesk / Service desk tool for automated incident logging and also notify alerts or events via e-mail or SMS.
xvii.	The system should have management polices to monitor and manage WMI, Performance, SNMP, Application, Log Files and Event logs and

	support automatic action in various forms like running a script to be taken on alerts from managed nodes.

8.3.6.9 Asset Management

SN	Features
i.	Asset Manager enables IT organizations to manage the physical, financial and contractual aspects of all IT assets—from request and procurement to retirement and disposal—making it easy to optimize costs, mitigate security and compliance risks and drive business decisions. It should automatically discover and inventory enterprise IT assets which reduces compliance risks, enable software license optimization & chargeback & constantly track changing asset configurations.
ii.	AM should provide a built-in workflow to suggest to the software asset managers in user organization that they should request more licenses or remove installed software that is not in use or assign rights to others users rather than procuring more licenses.
iii.	AM will directly alert users whenever a software installation exceeds the purchased volume. AM will also automatically ensure that no additional users are able to subscribe to that software until additional licenses are made available.
iv.	**Inventory Management** Able to manage inventory as individual or bulk items, set re-order levels and amounts and keep a history of transactions Able to provide ability to account for assets and components in inventory and facilitates maintaining appropriate levels of stock
v.	**Asset record detail:** Provide a general tab that stores specific information about the device depending on the device type. Provide a Components tab that stores sub-components information of the asset. E.g. ID, Serial Number, Licenses, Version, Status, Category, Type, Item. Provide an Additional Details tab that stores various types of detail for the respective type of asset. E.g. how much memory the printer has which might assist in a Help Desk call. Provide a Contracts tab that stores different types of contracts: Lease, Support, Warranty, Software, Maintenance. Provide a People tab that stores individuals or groups who are owners and users of the asset. Provide a Financials tab that stores associated costs by cost center, budget code, project. Static and incident costs. Provide Straight line depreciation cost calculation. Able to track the total cost of ownership for an asset.
vi.	**Software License Management** Should manage all types of software license and hence software compliance. Should be able to recover software licenses when hardware is retired, returned (for leases). Should track version, status, and upgrade information for each installed software package. The tool must be able to reconcile the number of installed copies of an application with the number of permitted licenses. Should be able to track the end-user's right to utilize software or hardware assets. Should be able to manage and count software entitlement separately from license counters as software is installed, removed and auto discovered.

	Software Asset Management should be capable of doing license compliance for vendors being offered in the subject work.
vii.	**Auto-Discovery** Proposed solution should have the auto-discovery tool, which should have tight Integration with the proposed ITAM (IT Asset Management) solution. Should be able to collects information from routers, switches, load balancers, storage, servers/workstations, and firewalls. Should have the ability to verify inventory data changes with current asset details before permanently updating the system of record. Discovery should be automatic and continuous to detect real time changes in the IT infrastructure. Discovery should work without requiring agent installation (that is, agent-less discovery) while discovery Layers 2 through Layers 7 of OSI model. Should use Industry-standard protocols such as WMI, SNMP, JMX, SSH to perform discovery without requiring the installation of an agent. Discovery system should have ability to modify out-of-box discovery scripts, create customized discovery scripts. Discovery system should have the ability to capture configuration files for the purposes of comparison and change tracking. Discovery system should be capable of supporting role-based access to various aspects of CMDB administration.

8.3.6.10 Service Management (Help Desk) and SLA Management under Enterprise Management System(EMS)

Auto assignment of tickets to field engineer to cut time to allocate ticket to the respective field engineer. Auto Assignment of Tickets based on availability of engineer; as per shift & as per ongoing repairs for resolution. Auto Assignment of Tickets as per Roster management of Field staff to enable auto allocation of relevant tickets.

Auto Assignment of Tickets as per Supervisors/Territory Manager of respective Territory to be given rights to manage (write/modify) shift duty of field engineers of their respective clusters.

Offered system must have mobile web interface (with screen adaptation and notification) or App for field engineers for Work Order Issuance, ERT & resolution.
Solution should provide a Framework to create SLA Templates.
Solution should offer collection framework for ease of integration with Alarm Management.
Solution should provide Hourly, Daily, Weekly, Monthly and yearly asset wise & Station wise failure position along with SLA calculation (as per 4.A.8, Chapter-4, Section-I).

8.3.7 Command Control Center (CCC):

Functional Requirement of Command Control Centre (CCC) Software will be as per Clause no. 18.6 of RDSO specification (Version-6.0). **Total number of licenses required with concurrent logins is as per details given below:**

S. No.	Description	Number of Licenses	Number of Locations	Total Licenses
1	RPF Thana/Post	1 at each location	425	425
2	Divisional Head Quarter	2 at each location	68	136
3	Zonal Headquarter	2 at each location	16	32
4	CCC Centre	24 numbers	1	24
5	Railway Board	2 numbers	1	2
	Total			619

8.3.7.1 Supply of IT Infrastructure at Command Control Centre (01 Lot)

Following IT Infrastructure is required to be provided at Command Control Centre at New Delhi:

SN	Name of Item	Qty
1	Computer : Intel Core i7, 7th generation, 2.9 GHz, 8 GB RAM DDR, ITB SSD storage, Monitor size 18.5 inch, Original Windows 10 professional, DVD R/W for work station, officers, data analytics centre	18
2	Intel core i5, 7th generation, 2.5GHz, 4GB RAM DDR, 500GB SSD storage, Monitor size 21.5inch, Original Windows 10 for Monitoring Cell	15
3	28 PPM color All-in-one Multification Laser Printer, RAM 2GB, Separate drum and toner (dual component) cartridge technology, wireless connectivity, networking feature, atleast 250 paper tray capacity	2
4	All-in-one wireless mono laser printer, minimum 22PPM for A4, 128 MB RAM, Wireless connectivity, networking feature	7
5	2TB portable Hard disk	20
6	4TB portable Hard disk	20
7	8TB portable Hard disk	10
8	Pen drive 64 GB	20
9	Computer UPS 1000VA, back up time >=20mins, protection for over voltage and over load	38

10	Multimedia projector, native resolution 1920x1200, light source UHP/UHE/UHM, minimum HDMI In port-, wireless screen sharing, WiFi & LAN connectivity, both front and year projection method	2
11	SMART LED Android 65 inch LED TV, bluetooth, wifi connectivity for VC room	2
12	43 INCH SMART LED TV, Bluetooth & wifi connectivity, HDMI, USB ports for Data analytics center	4
13	Touch enabled Biometric device with finger print scanning, RFID card reader, maximum finger print template storage of 100000, 256RAM, 8GB or more storage, wifi & LAN connectivity, USB Port, tamper detection, buzzer alarm. Door lock supported. 4G supported	2
14	Wireless Headphone with microphone	30
15	Motorized Projector screen (8'x6') with 3D and 4k display support technology, wireless remote controlled, antiUV coating	1

8.3.8 AC Distribution BOX with Required number of MCB's (as per site condition), AC SPD, Enclosure with IP67 rating and lock & key arrangement. Proper earthing arrangement from station earth to be provided by the bidder for ACDB distribution Box.

8.3.9 **Deleted.**

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SECTION-I
Chapter-9
CHECK LIST (To be filled up & uploaded)

A. List of Documents to be Submitted with Technical Bid

SN	Have you submitted the following documents	Submitted /complied or Not	Page No./ref No. of Offer
1.	**Cost of Tender Document (as per OPEN E-TENDER NOTICE, Page no. 2 of Tender)** - to be submitted online through IREPS portal only		
2.	**Submission of Earnest Money Deposit (EMD)**as mentioned in **Offer Letter (Chapter-1) -** to be submitted online through IREPS portal only.		
3.	**Offer Letter** as per Chapter-1 (Section-I)		
4.	**Schedule of Requirements (SORs)** with quantities but with prices blanked out (this will be a replica of price bid with prices blanked out) to be submitted along with the Technical Bid **as per Note-VI of Chapter-2 of SOR.**		
5.	**Breakup of individual itemized BO**M but prices blanked out (as per Format given in SOR) **as per Note-VI of Chapter-2(Section-I) of SOR.**		
6.	**Legal Entity -** Constitution of Firm and Power of Attorney **as per clause 4.A.14.1 of Chapter-4.**		
7.	**Financial Capability of Bidder -** as per eligibility Clause no. 4.A.14.1 (Point-3) of Chapter-4.		
8.	**Technical Capability** – Bidder's Eligibility Documents as mentioned in Clause no. 4.A.14.1 (Point-4) of Chapter-4.		
9.	Bidder's available Bid Capacity - as per Clause no. 4.A.14.1 (Point-8) of Chapter-4.		
10.	All Bidders as well as OEM's Eligibility Documents **as mentioned in Clause 4.A.14 of Chapter-4.**		
11.	Compliance to Technical Requirements **as mentioned in Clause 3.A.1.15 of Chapter-3 of Section-I.**		
12.	**Complete technical data a**nd particulars of the equipment offered, as specified in the Tender papers together with descriptive literature, leaflets, Drawings, if any, complete with list etc.		
13.	**Form no. 2 (Chapter-6) - System Performance Guarantee** as per Chapter 6, Form no. 2 (Section-I)– to be signed by the Bidder as well as OEM.		
14.	**Form no. 3 (Chapter-6) - Long Term Maintenance Support**- to be signed by the Bidder as well as OEM.		
15.	**Form no. 4 (Chapter-6) – Affidavit** – to be submitted by the bidder as per Clause no. 4.A.13.3.3.		
16.	**Form no. 5 (Chapter-6) - Integrity Pact** - to be sub-		

	mitted by the bidder as per Clause no. 4.A.44. For Consortium, this agreement must be signed by all partners or consortium members.		
17.	**Form no. 6 (Chapter-6) - NIL Deviation certificate** – to be signed by the Bidder as per Clause no. 4.A.26.		
18.	**Form no. 7 (Chapter-6) – OEM's Undertaking on Letter Head** for MAF, Proven Facility, Blacklisting, Malicious Code, IPR & restriction on companies from Land Border sharing Countries with India as per Clause no. 4.A.14.		
19.	**Form no. 8 (Chapter-6) - Bidder Undertaking on Letter Head** for Blacklisting, IPR, Interoperatibility, Malicious Code, Site Inspection & Restriction on companies on Land border sharing countries with India as per Clause no. 4.A.14.		
20.	**Form no. 9 (Chapter-6) - Certificate by Statutory Auditor/Cost Auditor** on their letter head (with UDIN number) as per Clause 4.A.45.3 of Tender document.		
21.	**Form no. 10 (Chapter-6) – Annexure Affidavit by EACH Consortium/JV Member**		
22.	**Form no. 11 (Chapter-6) – JV Agreement / MOA** **Enclosure –** Board resolution of each of the Joint Venture Members authorizing: (i) Execution of the Joint Venture Agreement, and (ii) Appointing the authorized signatory for such purpose		
23.	**Form no. 12 (Chapter-6) – Consortium Agreement / MOA**		
24.	**Form no. 13 (Chapter-6) – Past Experience Form**		
25.	**Form no. 14 (Chapter-6)** – Calculation for Bidder's Available Bid Capacity (to be signed by Bidder's Statutory Auditor)		
26.	**Form no. 15 (Chapter-6)** – Details of Completed and On-Going works executed by Bidder (To be signed by Bidder's Statutory Auditor / Lead Bidder's Statutory Auditor in case of Consortium / each JV member's Statutory Auditor)		
27.	Any other information required to be submitted by the bidder as per technical and eligibility criteria.		
28.	Relaxation to Start-ups as per Eligibility clause 4.A.14 of Chapter-4 (Section-I).		
29.	OEM of EMS Software should give undertaking as per clause 8.3.6.5, SN-1 of Chapter-8 (Section-I)		
30.	OEM (VMS Software) vetted Storage Calculation Sheet for required number of cameras **as per Note-XVII of SOR, Chapter-2 (Section-I) and Annexure-VI of Chapter-7.**		
31.	Server calculation sheet for VMS Software, FRS Software & VA Software for required number of cameras,		

	duly vetted by their respective OEMs **as per Annexure-V of Chapter-7.**		
32.	Required Rack space at Gurugram and Secunderabad Datacenters for hosting VSS infrastructure as defined in the tender. Bidders are requested to optimize the number of racks requirement in the datacenters.		

B. List of Documents to be Submitted with Financial Bid

SN	Have you submitted the following documents	Submitted /complied or Not	Page No./ref No. of Offer
1.	Schedule of Requirements with quantities and priced filled		

	up (this will be a replica of technical bid with prices).		
2.	**Breakup of individual itemized BOM (as per Format given in SOR) as per Note-VI of Chapter-2 (Section-I) of SOR.**		
3.	For VMS, VA, FRS, EMS & CCC applications, the bidder should provide unit license rate in detailed BOM. Bidder should also provide rates for bulk licenses. {as per Note-VI, Point (iii) of SOR, Chapter-2}.		
4.	The Bidder should provide unit Rate for additional server/workstation (along with additional necessary hardware & software if any) for face image data base of FRS software (for database of size 1 Lakh, 5 Lakh and 10 Lakh) at RPF Thana/Post & Datacenters along with necessary licenses in detailed BOM {as per Note-VI, Point (iv) of SOR, Chapter-2}.		
5.	For CCC application, the bidder should provide Unit Rate for Integration of various VA, VMS & FRS applications. API/SDK of these application for other regions will be provided by RailTel {as per Note-VI, Point (v) of SOR, Chapter-2}.		
6.	Per TB Storage Rate along with required Controller Rates to be provided with the Technical Bid {as per Note-VI of SOR, Chapter-2}.		
7.	Unit Price Breakup of all Type of UPS along with Unit Price Breakup of Batteries to be Given.		
8.	Any other information required to be submitted by the tenderer as per financial eligibility criteria.		

DETAILS OF CREDENTIALS SUBMITTED AGAINST ELIGIBILITY CRITERIA OF Bidder as per Clause 4.A.14of Chapter-4 (Section-I)

SN	Clause	Supporting documents	Details/Remarks	Page no of the Bid
1				
2				
3				

DETAILS OF CREDENTIALS SUBMITTED AGAINST ELIGIBILITY CRITERIA OF OEM as per Clause 4.A.14 of Chapter-4 (Section-I):

SN	Clause	Supporting documents	Details/Remarks	Page no of the

				Bid
1				
2				
3				
4				
5				

Note: Non submission/ non-compliance of above documents as deliberated in Check List will make the offer liable to be **REJECTED**.

RailTel

SECTION – II

TECHNICAL REQUIREMENTS & SUPPLEMENT

INDEX

Chapter No.	Content
1.	**Precautions to be taken in 25 KVA A.C Traction Area.**
2.	**Preparation of as built route plan.**
3.	**Technical specification for Trenching & Laying of OFC.**
4.	**Specification for Jointing & Termination of OFC.**
5.	**Technical specification for provision of Earthing**
6.	**List of Address for specification.**

RailTel

SECTION - II

CHAPTER - 1

Precautions TO BE TAKEN IN 25 KV A.C. Traction AREA:

II.1.1 GENERAL

Any Telecommunication circuits in the vicinity of AC Traction running parallel to 25 KV lines are liable to be affected by AC induced voltage. Therefore precautions should be taken to eliminate the possibility of induced voltage affecting equipment and humans.

Crossing of track, if any, should be negotiated by underground cables running at right angles to the track as far as practicable.

Special protective measures (viz. provision of G.D tubes, fuses and earthing etc) are required to be taken for telecommunication lines entering 25 KV sub-station /switching posts.

For the human safety considerations the safe working voltages should be 60 V under normal conditions and 150 V with special precautions and 430 V under fault conditions.

Instructions for protection of railway staff/working personals on signaling and telecommunications installations on 25 kV AC traction shall be strictly adhered to. Precautions are required to be taken on account of following,

(i) Proximity of live conductor.
(ii) Pressure of return current in Rails.
(iii) Induction in all metallic bodies situated closed to over head equipment.

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SECTION - II

CHAPTER - 2

PREPARATION OF AS-BUILT ROUTE PLANS

II.2.0 SCOPE:

The scope of this is to prepare a final set of As-Built drawings of route plans, based on the actual cable route (which in turn shall be based on a preliminary & approved drawings of route plans, already supplied to the contractor).

II.2.1 Points to be taken care of for laying the OFC cable:

II.2.1.1 Avoid underground structures, signaling cable, power cables and pipe lines etc.

II.2.1.2 Avoid rodent/termite infested or infected side of the alignment.

II.2.1.3 Avoiding areas prone to water logging.

II.2.1.4 For the straight runs as far as possible a separation of 10 Meter should be kept from the nearest track. This is as per CCITT recommendation K.8.

As a rule a minimum distance of 5.75 M should be maintained between the OHE masts and the cable. In Yards etc. where observance of this rule may be difficult, a minimum distance of 3 Meter should be maintained. In exceptional cases where the cable trench depth is less than 0.5 M the lateral distance may be reduced to 1 M.
Make the route of OFC cable within 1 meter of Railway boundary normally.

II.2.2 As-Built Cable Route plan.

Based on above actual route, the as-built cable route plan should be prepared:

II.2.3 Preparation of Drawings

All the plans and drawings shall be neatly prepared using Computer Aided Design System & plotter etc. The drawings shall be in A3 size & suitably filed for ease of handling.
Further, a soft copy of Auto-CAD drawings in CD shall be submitted.

II.2.4 Information in Cable route plan:-

The cable route plan shall contain following information:-

II.2.4.1 Whether the cable route is on the **up** or **down** side of the Railway Tracks. Exact locations and lengths where the cable is laid in RCC/DWC/G.I. pipes/ troughs and under the bed on culverts. Location of track crossing and the number of tracks being crossed. Location of road crossing and the no. of RCC/DWC/GI pipes provided. Locations of Pull Chambers/Joint Pits.

II.2.5 Protective works for Cable/ Ducts:-

II.2.5.1 For building, masonry platforms, crossing of tracks and roads etc. special protection for the cables are required. Some of the methods adopted for different types of protective works are specified in the following drawings:-

For Girder bridges M.S. Troughing Drg. S&T/RE/78/2/76 Page 1 & 2 and RE/42/172. (P-160 & 163).
For cable entries to Cabins, ASM's Offices etc. through HDPE pipe Drg.No. RE/S&T/ALD/SK/161/81 (P-174).
For unconsolidated emments Shoring for the cable trench as per Drg.No. RDSO/TC/35003. (P-168).For laying cables over the culverts in DWC pipes Drg. No. RE/S&T/ALD/SK/160/81. (P-162).

For laying cables over arch bridges brick channeling Drg. No.RE/S&T/ALD/SK/162/81. (P-173).

For route over rocky area through chase Drg.No. RE/S&T/SK/303/85withAlteration 'A'. (P-167).

For routes under bed of culverts in DWC pipes Drg.No. RE/S&T/ALD/SK/184/81.(P-165).For cable laying under railway track Drg. RE/S&T/ALD/SK/159/81 (P-169).For cable laying under road drg. No. RE/S&T/ALD/SK/497/2000 (P-157). For Stone/RCC cable route marker drg no. RCIL/NR/01 (P-172).

Note1: In non-RE area, wherever distances are reckoned with reference to overhead alignment, the distances from the nearest KM-post provided along the track, may also be mentioned.

Note 2: If any of the above-mentioned drawings are illegible or not clear, the clarifications may be sought from the office of Executive Director, RailTel.

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SECTION – II
CHAPTER - 3

TECHNICAL SPECIFICATION AND INSTRUCTIONS FOR TRENCHING AND LAYING OF OPTICAL FIBRE CABLE:

II.3.1 SCOPE:

This chapter deals with the specifications under which the various work for trenching & laying of optical fibre cable coming under the purview of the contract are to be executed by the contractor.

II.3.2 SUPPLY OF ROUTE PLAN:

Approved Cable Route plan and jointing schedule for mid section splicing of cable will be prepared and supplied by the RailTel. This shall give a preliminary idea of the number & locations and the quantities and type of various equipment to be fixed, wired and commissioned.

II.3.3 LEADING OF CABLE IN MASONRY BUILDINGS

II.3.3.1 The cable will have to be led inside any masonry building such as Cable hut, ASM's room at a depth of 0.75 meters by cutting the masonry structure of the wall as per Drg. No. RE/S&T/ALD/SK/161/81 as given at Annexure- 3.12. After the cable has been led inside the masonry wall, the floor inside shall be duly repaired and plastered.

II.3.4 LAYING OF CABLE IN SPECIAL CASES:

II.3.4.1 Near Power Cable

When the proposed cable route comes across any other cable already laid, the contractor shall first report the fact to the Engineer. Should the cable be identified by the Engineer as a power cable (LT or HT), the trench shall be dug as far away from the route of the power cable as practicable.

II.3.4.2 Crossing of Optical Fibre Cable with another cable

Crossing of the Optical Fibre cable with another cable shall be avoided wherever possible. Where, however, this is not possible, the Optical Fibre cable shall be laid in cement or asbestos cement pipes. The length of the pipe to be provided on either side of the crossing shall be atleast one meter.

II.3.4.3 Laying other than optical fibre cables in the same Trench

No cable other than quad cable shall be laid in the trench made for the Optical Fibre cable. Even in such cases, both the cables are to be laid as per approved drawing. Where, however, exceptional circumstances exist, the optical fibre cable may be laid along with another cable in the same trench provided a specific permission

of each such case is obtained in writing from Engineer. When optical fibre cable and L.T. power cable have to be laid in the same trench they shall be separated by placing a layer of second class bricks between them vertically (approx. 16 bricks/meter) or laid in RCC pipe.

II.3.4.4 Laying of cable through RCC/GI/DWC pipes

The cable shall be laid through RCC/GI/DWC pipes at the locations marked on the route plan and as advised by the Engineer or his representative.

For laying the cable through pipes galvanised steel wires of a cross section not less than 10 SWG shall be used as a lead wire. Two such lengths of wires shall be laid through the pipes, so that after the cable is threaded through the pipe, one lead wire is permanently left in the pipe with a suitable overlay at two ends, to enable the cable to be pulled out at a later stage if required to do so.

On arch bridges and culvert bridges the cables will be threaded through DWC pipes etc. While threading the cable through these pipes the Contractor shall do the trenching to the required depth wherever necessary for which no extra charge will be paid.

II.3.4.5 Laying cable near feeding post:

In the vicinity of feeding posts, as far as possible the cable shall be laid on the side of the track opposite to the feeding post. Further the Optical fibre cable shall be at least one metre away from any metallic part of the O.H.E. and other equipment at the sub station which is fixed on the ground and at least one metre away from the sub - station earthing. In addition, the cable shall be laid in RCC pipes 150 mm dia (standard 2 metre length) complete or capable of being split into two half as per specn. No. ISS-458 latest for a length of 300 metres on either side of the feeding point.

II.3.4.6 Running of cables at foundations others than OHE Masts and from pipe outlets.

Damages to cable is likely to occur if care is not taken in laying cable where the bed changes from solid support such as a foundation pipe or bridge to soft support such as soft soil. The cable must not press against the edge of the solid support. The soft soil near the edge must be tamped and the cable raised slightly.

II.3.5 HANDLING OF CABLE DRUMS & PAYING OF CABLES:

II.3.5.1 While collecting OFC/HDPE from RailTel depot the contractor must ensure that the materials should be received in good condition. The drums shall be unloaded by the side of the Railway Track/Road from either a crane or any other suitable means very carefully so as not to cause any damage to the cable. The drums at site shall be protected until they are laid. The cable must be tested before and after laying.

II.3.5.2 On each drum there are two ends, A & B. The 'B' end of one cable length shall meet 'A' end of the next cable at a joint. The 'A' end shall be normally on the top unless indicated otherwise on a drum.

II.3.5.3 The drums shall always be kept upright, i.e. axle in parallel position to the base. The drums shall not be set by jerks but shall be handled slowly and with care. The walls of the drums should not be damaged while moving the drums if required for unrolling.

II.3.5.4 The drums shall normally be unrolled at the same place and the cable carried by workmen near the trench. The drums shall not be dragged in any case. But where drums of cable have to be moved, would always be rolled in the direction of the arrow, otherwise the coils tend to unwind and the cable may get battered. In case no direction arrow is marked on the drum, remove several battens and determine the direction in which the cable is coiled. The arrow should then be painted on the drum pointing in the opposite direction in which the upper cable end is coiled so that future handling of the cable drum is facilitated and then replace the battens carefully.

II.3.5.5 The drum should be properly mounted on jacks (or on a cable wheel) making sure that the spindle is large enough to carry the weight without bending and that it is laying horizontally in the bearings so as to prevent the drum creeping to one side or the other while it is rotating. Before attempting to pull off the cable, remove the end protection box attached to the flange of the drum and cut the security ropes so as to leave the cable free to move.

II.3.5.6 If a portion of the cable only is taken out from the cable drum, the battens should be immediately replaced to prevent damage to the balance of the cable. This is important.

II.3.5.7 The use of steel bars between the bolt heads to 'jump' or turn the drum around is dangerous to staff and likely to damage the drums. A better method is to use two steel plates with grease between them. By standing the drum on these greased plates, it can be easily elevated round to the desired position.

II.3.5.8 All care should be taken in handling cable drums with a view to ensure safety not only of the cables but also of the working party handling them. The man should not be allowed to brake the cable drum by standing in front but only from side.

II.3.5.9 Rewinding and Redrumming of cables

(a) If for any reason it is found necessary to rewind a cable on a drum, cable drum with a proper barrel diameter not less than of the original drum should be chosen.

(b) The drums should be mounted on cable jacks during rewinding operations using proper size of spindles passed through the flange holes, which will not buckle under the lead. The cable should not be bent opposite to the set it is having already.

(c) In the re-drumming operations, drums should be so turned that the cable passes from the bottom of the original set with as little gap as possible.

(d) Replace all the lagging on the cable drum.

II.3.6 MINIMUM BENDING RADIUS:

Cables should always be bent (or straightened) slowly, they should never be bent to small radius while handling. The minimum safe bending radius for optical fibre cables should be 30 times the diameter of the cable but wherever possible larger radius should be used.

II.3.7 TOOLS REQUIRED FOR TRENCHING, CABLE LAYING AND FILLING.

TOOL'S NAME

Cable Jack
Cable Grip
Reopening Device
Free Hood Hook
Shackle free head hook
Grouling Hook
Pulling Bolt
Tension meter
Pulley
Anti Twist Device (swivel)
Roller
Flexible Cable
Pulling Rope
Brush
Mandrel
Chain
Measuring cord for strain gauge
Slip Winch
Wire rope
Portable VHF set
Measuring tape
Phowrah
Iron plate
Loader Backhoe for Drilling
Warning Tape
Caterpillar tractor
Fork Lifter
Vehicle Van type
Tacho- meter
Road measurer.

II3.8 Blowing /Drawing of Optical Fibre Cable:

II.3.8.1 **OFC** should normally be **blown** through the ducts by standard blowing machines Only in exceptional cases drawing may be adopted in short lengths with the permission of the site engineer of RailTel.

SECTION - II

CHAPTER - 4

JOINTING AND TERMINATION OF FIBRE OPTIC CABLE

II.4.1 TECHNIQUE FOR JOINTING OF OPTICAL FIBRE CABLE

Fusion splicing shall be used for splicing fibres. This is accomplished by applying localized heating (i.e. by electric arc or flame) at the interface between two butted, pre-aligned fibre ends, causing them to soften and fuse together.

II.4.2 STRAIGHT JOINT FOR FIBRE OPTIC CABLE

II.4.2.1 There are various types of joint enclosures available in the market. The procedure for assembly of joint closure is described in the installation manual supplied with straight joint closure. This includes the following:

Material inside joint closure kit

Installation tools required

Detailed procedure for cable jointing

Procedure for re-opening the closure.

II.4.2.2 The Optic Fibre straight through joint closure shall be as per specn. TEC TO 910 G92 (latest) or a proven design approved by RCIL. The joint shall be protected in RCC Joint Pitas per drawing given in Annexure 2.14. (The Optic Fibre straight through joint closure shall be of TVSE, R&M, Raychem, 3M make and shall be approved in advance by RailTel. The joint shall be protected in concrete chamber as approved by engineer- in-charge)

II.4.2.3 Generally, the following steps are involved for jointing of the cable:

- Preparation of cable for jointing
- Stripping/cutting the cable
- Preparation of Cable and joint closure for splicing
- Stripping and Cleaving of Fibres
- Fibre splicing
- Organising fibres and Finishing joints
- Sealing of joint closure and
- Placing joint in the Jointing Chamber/Pit.

II.4.3 STRIPPING/CUTTING OF THE CABLE

The cables are stripped of their outer and inner sheath with each sheath staggered approximately 10mm from the one above it.

Proper care must be taken when removing the inner sheath to ensure the fibres are not scratched or cut with the stripping knife or tool. To prevent this, it is best to only score the inner sheath twice on opposite sides of the cable, rather than cut completely through it. The two scores marking on either side of the cable are then stripped of the inner sheath by hand quite easily.

The fibres are then removed from cable one by one and each fibre is cleaned individually using Kerosene to remove the jelly.

II.4.4 STRIPPING AND CLEAVING OF FIBRE

Prior to splicing each fibre must have approximately 50mm of its primary protective U.V. cured coating removed, using fibre stripper which are manufactured to fine tolerances and only score the coating without contacting the glass fibre.

The bare fibre is then wiped with a lint free tissue doused with ethyl alcohol. Cleaving of the fibre is then performed to obtain as close as possible to a perfect 90 degree face on the fibre.

II.4.5 SPLICING OF THE FIBRES

The fusion splicing shall be used for fibre splicing. Some of the basic steps for fusion splicing are as given in 4.8 below.

II.4.6 FUSION SPLICING OF FIBRE

Some of the general steps with full automatic micro processor control splicing machine are as under

Wash hands thoroughly prior to commencing this procedure.

Dip the clean bare fibre in the beaker of ethyl alcohol of the ultrasonic cleaver. Switch on ultrasonic cleaver for 5-10 seconds (Some of the manufacturers do not prescribe the above cleaning).

Place the bare fibre inside 'V' grove of the splicing machine by opening clamp handle such that the end of fibre is app. 1 mm. over the end of the "V" groove towards the electrodes.

Repeat the same procedure for other fibre, however, first insert heat shrink splice protector.

Press the start button on the splice controller.

The machine will pre fuse, set align both in 'X' and 'Y' direction and than finally fuse the fibre.

Inspect the splice on monitor if provided on the fusion splicing machine and assure no nicking, bulging is there and cores appear to be adequately aligned. If the splice does not visually look good repeat the above procedure.

Slide the heat shrink protector over the splice and place in tube heater. Heat is complete when soft inner layer is seen to be 'oozing' out of the ends of the outer layer of the protector.
Repeat for other fibres.

II.4.7 FUSION SPLICER AND OTDR

The fusion splicer and Optical Time Domain Reflecto meter (OTDR), to be used for splicing and measurements of parameters respectively, shall be of approved design and quality. The contractor shall submit

Specification of fusion splicer and OTDR

Certificate from the users, who have used the splicer and OTDR of the make, the contractor intends to use, regarding their satisfactory performance.

The RCIL reserves the right to direct the contractor to use the same or any other proven design of fusion splicer and OTDR if in the opinion of RCIL the specification of Fusion splicer and OTDR are not suitable

II.4.8 ORGANISING FIBRE AND FINISHING JOINTS

After each fibre is spliced, the heat shrink protection sleeve must be slipped over the bare fibre before any handling of fibre takes place, as uncoated fibres are very brittle and cannot withstand small radius bends without breaking.

The fibre is then organized into its tray by coiling the fibres on each side of the protection sleeve using the full tray side to ensure the maximum radius possible for fibre coils.

The trays are placed in the position.

OTDR reading taken for all splices in this organized state and recorded on the test sheet to confirm that all fibres attenuation are within specification. This OTDR test confirms fibres were not subjected to excessive stress during the organizing process.

After this the joint can be closed with necessary sealing etc. and ready for placement in the pit.

II.4.9 TERMINATION JOINT FOR FIBRE OPTIC CABLE.

II.4.9.1 This joint is provided in the cable hut for terminating the outdoor fibre optic cable of both the sides, splicing through fibres, connecting fibres to pigtails for connection to Optical Line Terminal Equipment etc.

II.4.9.2 The OFC Cables shall be dressed up on teak wood plank/Aluminum ladder inside cable hut. The armour of the OFC Cable shall be cut before taking the cable in the equipment rack. The cables shall be terminated on FDMS and derive required pigtails.

Two pairs of fibres shall be derived from either side cable at every OFC cable hut through pigtails with FC/PC connectors. The remaining fibres shall be looped through.

II.4.9.3 The procedure for installation of termination joint box depend upon the type of joint enclosure. The installation manual supplied gives the step-by-step procedure for installation. However, the general steps are as under:-

- Marking the cable
- Stripping/cutting the cable
- Gripping cable in sheath/clamp
- Treatment of tension member
- Fibre splicing
- Enclosing fibre
- Fixing strength member
- Closing the cover
- Fixing termination box
- Fixing the cable.

II.4.10 MARKING THE CABLE

Determine the cable length up to the proposed location of termination box. It is also to be ensured that at least 10 meters of cable is coiled in the cable pit.

Determine the cutting point and mark the cable

Determine the sheath peeling point and mark the cable

II.4.11 CUTTING / STRIPPING THE CABLE

Cut the cable as per the marking
Remove the sheath from cable ends. During sheath stripping care should be taken not to damage the fibres.

The length and the steps for various sheath cutting shall be as per the instruction given in the manual.

II.4.12 GRIPPING THE CABLE

Wind PVC tape around the cable core just beside edge of the sheath.

Insert the bushing inside sheath by cutting the cable sheath for about 25mm.

Place the sheath grip (lower half and upper half) and tighten it with the help of torque wrench.

II.4.13 FIXING OF TENSION MEMBER

a) Mark the tension member for the specified length and cut it.

b) Clean the tension member thoroughly by Alcohol and cotton cloth.

c) Fix tension member holder with the help of instant adhesive at the end of tension member.

II.4.14 FIBRE SPLICING

The procedure for splicing is same as described for straight joint closure in Clause 4.7 above.

II.4.15 ENCLOSING FIBRES

a) Set the fibre cassette on the base

b) Arrange excess length of fibre to make double figure of eight.

c) Enclose the spliced fibre and its excess length carefully.

d) Repeat the procedure for other fibres.

e) After this, the box can be closed. However, a packet of silica gel may be placed inside for protection from entry of moisture.

II.4.16 MOUNTING OF TERMINATION BOX

Termination box can be fixed either on wall or on equipment rack. Mark the fixing holes on the walls/bracket/frame

a) Place the termination box and tightened the nuts inside the base box.
b) Put the covers.

II.4.17 FIXING THE CABLE

Secure the cable on wall/frame at two places within one meter from termination box keeping in view straight entry of cable in termination box.

II.4.18 ACCEPTANCE TEST FOR FIBRE OPTIC CABLE

The Procedure for Testing of Fibre Optic Cable shall be jointly finalized by Contractor with Engineer of the RCIL. The parameters in the concerned specification shall be taken as reference. The Test shall be conducted from cable hut to cable hut, after the Splicing & termination Joints are completed. The length of cable (as per marking in cable & as measured by OTDR), loss in cable, average loss per Km., No. of Splices, Splice loss, etc. shall be recorded and jointly signed as per pro-forma given in para 4.24 below.

II.4.19 TEST PROTOCOL FOR OPTICAL FIBRE CABLE

SYSTEM TEST PROTOCOL OPTICAL FIBRE CABLE FIELD TEST

Route: ---------- Date: ----------

Station: ---------- No. of mid-section splices: ----------

Section: ---------- Measured by: ----------

Length (by OTDR): ---------- Length as per meter marking on cable sheath----------

1)
2) Optical measurements (On Line):

Measurement	**Fibre – number 1 2 3 4 ……22 23 24**	**Accepted Value**
1.1 Total attenuation at 1300/1550 nm with OTDR		
1.2 Total attenuation per Km at 1300/1550 nm:		<0.40 dB/Km at 1300 nm &<0.25 at 1550 nm
1.3 Splice Loss in dB with OTDR Location		Average splice loss
OHE Mast No./ Overhead alignment post no. A. B. C. D. E.		
Average Splice Loss		0.15 db, no splice should have loss >0.2 db

NOTE : ALSO ATTACH OTDR RESULTS |----|

2) Visual Inspection (On Line):
2.1 No. of Cable drum used in the section: ----------
2.2 S.No. of cable and length of each drum:
S.No. LENGTH

1. ----------M

2. ----------M

3. ----------M

4. ----------M

5. ----------M

2.3 Location of Isolation Sleeves:

1.

2.

3.

Contractor's Representative RCIL's Representative

II.4.20 TOOLS AND EQUIPMENTS REQUIRED FOR JOINTING AND TERMINATION OF FIBRE OPTIC CABLE.

S.No.	TOOL's Name
1.	Branch Joint Closure
2.	Termination Box
3.	Rubber end Block
4.	Sheath Clamp
5.	Bushing
6.	Strength Member holder
7.	Heat Shrinkage tube
8.	Arc fusion splicer machine.
9.	Power cord AC/DC
10.	Walkie-Talkie 12V DC source
11.	Tube heater
12.	Precision cleaver
13.	Cable sheath stripper
14.	Fibre stripper
15.	Knife for HDPE cutting
16.	Hexa for strength membrane
17.	Isopropyl alcohol or methanol of high specific gravity
18.	Johnson Buds
19.	Tweezers
20.	Gun heater Blower type
21.	Sleeve for splice protection
22.	O.T.D.R.
23.	Stickers for numbering of splicers.
24.	Portable k. oil generator
25.	Umbrella's 2 Nos.
26.	Dust protection for splicing machine

Note:- Wherever cable has to be coiled/looped , the diameter of the coil/loop shall be greater than 30 times the diameter of the cable.

SECTION-II

CHAPTER – 5

TECHNICAL SPECIFICATION OF MAINTENANCE FREE EARTHING

II.5.1 **Maintenance Free Earthing –** Earthing should be as per RDSO Specification No. RDSO/SPN/197 (Version-1.0) or latest.

Note:- Bidder to ensure appropriate Surge Protection Device (SPD) arrangement with ACDB to protect IT infrastructure i.e. switches, server/workstation, storage, UPS etc. system being installed at platforms and RPF Thana/Post. Further, this proposed SPD arrangement should be connected with earthing system of the stations.

SECTION - II
CHAPTER –6

List of Address for Specification

II.6.1. Address from where specification copy can be purchased:

The copy of IRS, RDSO, TEC and BIS specification used in the tender documents can be purchased from following sources.

II.6.2 IRS Specification: i) Manager Publications,
Government of India
Civil Lines, New Delhi- 110054

ii) Government of India Book Depot,
8 - S.K. Roy Road, Calcutta – 700001

II.6.3 RDSO Specification : RDSO, Manak Nagar, Lucknow

II.6.4 DOT/TEC/ITD Specification : Khurshid Lal Bhavan, Janpath,
New Delhi- 110001

II.6.5 B.I.S. Specification :

Directorate General,
Indian Standards Institution,
9- Bahadur Shah Zafar Marg,
New Delhi -110002
F- block, Unity Building,
Narsimhraja Square,
Bangalore- 560002

534- Sardar Vallabh Bhai Patel Raod , Mumbai.
5- Choweringhee Approach, PO Princep Street, Calcutta- 700072
Ahinsa Building (1st floor) , SCO 82-83, Sector 27-C, Chandi-garh- 160017
5-8-56/57, L.N. Gupta Marg, Hyderabad- 208005.
117/418-B, Sarvoday Nagar, Kanpur – 208005
C.I.T. Campus, Adyar, Madras – 600020.

6. If any specifications and drawings referred but not enclosed in the tender documents may be seen in the RCIL's office on any working day.

…END of Tender Document…