

101	98	1.12, of Chapter 4E	TYPE TEST	The time for TSEC/TEC evaluation is not adequate. It is a lengthy process and needs lot of time to complete.	Tender condition is very clear .No change is proposed.
102	54	1.3-14 of Chapter 4A	Power splitter modules with a ratio of 95%/5% shall be available to use them where needed.	Power splitter modules with a ratio of 95%/5% shall be available to use them where needed. Are both needed?	Tender condition is very clear .Please go through tender document
103	55	26(2) of Chapter 4A	Amplifiers (Inc. Booster, Pre-Amp and In-line Amplifier)	As Pre-amplifier, booster amplifier and in-line amplifier are used in different places in the fiber optic network. Booster Amplifier : is installed in the transmitting end of the fiber optic network, which can amplify the amplify the optical signal launched into the fiber link. Pre-Amp : is usually installed at the receiver end of the DWDM network to amplify the optical signal to the required level to ensure that it can be detected by the receiver. In-Line Amp : The gain provided by the pre-amplifier and booster amplifier might not be enough due to the optical loss caused by long haul transmission. In-line amplifier is installed in the fiber optic link. As per shared fiber losses ,~30% link segment is having 35dB loss and Booster,In-Line & Pre-amplifiers are must in network so we request please allow Max.Three type of amplifier.	It is proposed to amend of the tender condition and same is defined in Corrigendum -V
104	58	41.1.5 of Chapter 4A	For the ILA and OADM Locations RailTel will provide space in Rack up to 4 RU for ILA site and 21 RU for OADM sites on standard 19" Telecom Rack. In case the offered ILA and OADM require more space in that case bidder shall provide the Rack.	As per last Tender #510 Space for ILA was 8RU on standard 19" so we request please allow same ILA space in this Tender as well	It is proposed to amend of the tender condition and same is defined in Corrigendum -V

105	63	Annexure-1(2) of Chapter 4A	Delhi-Kolkata	Please provide distance & losses details B/W NDLS & Ghaziabad.	It is proposed to amend of the tender condition and same is defined in Corrigendum-V
106	40	1.1 of Chapter 4A	Details of Routes are: 1. Delhi to Kolkata 2. Delhi to Mumbai 3. Bangalore to Mumbai & Bangalore to Chennai 4. Chennai to Mumbai.	The first three routes are Majorly new segments where Railtel is looking to have green field deployment. We recommend to remove the small legs of Alien segments in these three routes so that it is a fair competition for every vendor. Fourth segment (Chennai - Mumbai) is fully Alien. We recommend to have a separate RFP for pure Alien solution for this segment. This will give all vendors to have equal chance and Railtel will also get best of the product available in Industry.	Tender conditions are very clear, No change is proposed
107	40	1.1 of Chapter 4A	Details of Routes are: 1. Delhi to Kolkata 2. Delhi to Mumbai 3. Bangalore to Mumbai & Bangalore to Chennai 4. Chennai to Mumbai.	Fourth segment (Chennai -Mumbai) is fully Alien. We recommend to have a separate RFP for pure Alien solution for this segment. This will give all vendors to have equal chance and Railtel will also get best of the product available in Industry. Existing vendors must not be part of this Alien requirement as this segment no longer alien for them.	Tender conditions are very clear, No change is proposed
108	61	Annexure-1 of Chapter 4A	Link Losses and additional ILA	There are many spans in new DWDM segments where losses are in access of 30db , with fibre margining of 6db the total loss would be 36db or ever higher in many spans. Can we consider additional ILA's in addition to the list of ILA's mentioned in Pg no 67 of RFP.	Please see corrigendum-V
109	46	A 5.1 h of Chapter 4A	Existing node details	Mumbai Chennai Segment. Few sites are marked as ILA OADM & few are marked as ILA ROADM. What is the exact meaning of these two types of nodes and what differentiates them.	OEQ (Optical equalizations) sites

110	61	Annexure 1 of Chapter 4A	Link Losses	Two fiber losses are given, Is bidder allowed to use any of the fiber, kindly confirm.	In case of fiber loss variations is more than 2 dB in 1st Fiber Loss and 2nd Fiber Loss of same fiber. In that case Bidder is allowed to consider lower of both these fiber loss value for Link engineering.
111	41	1.2.1 of Chapter 4A	Routes with traffic matrix	There are transponders which are based on PAYG model. Means on D1 they can be configured for lower channel rates but later can be upgraded to higher rates based on paid licences. Can we offer such PAYG model with a distributed pricing.	Tender conditions are very clear, No change is proposed
112	53	1.3-2 of Chapter 4A	Bidder shall propose minimum 4-degree Flex Grid C- band WSS at ROADM sites in Backbone segment depicted in 1.2.1.	ROADM's or WSS are part of one time optical infra for any DWDM network which means that they should cater for atleast 10 years. We strongly recommend Railtel not to allow anything below 8 degree Flex Grid C-band WSS at ROADM sites.	Tender conditions are very clear, No change is proposed
113	53	1.3 of Chapter 4A	New DWDM system	New DWDM system specs: Wave tracker based optical channel monitoring is mandatory for long haul transport; we recommend to make this as mandatory requirement. This will ensure seamless monitoring and speed up trouble shooting.	Tender conditions are very clear, No change is proposed
114	41	1.2.1 of Chapter 4A	Routes with traffic matrix	At the alien hand off point every alien vendor has to regenerate the signal but the existing vendors will get advantage as they necessarily don't need to regenerate. This factor must be edited as part of the evaluation criteria so that it is applicable to apple comparison.	Tender conditions are very clear, No change is proposed
115	63	Annexure-1(2) of Chapter 4A	Delhi-Kolkata	NDLS -Ghaziabad direct Link Losses not available in table, kindly share the same.	Please see corrigendum-V

116	63	Annexure-1(2) of Chapter 4A	Delhi-Kolkata	Please allow additional ILA's in segments where link losses (including margin) are higher than 30db. Around 40 number of additional ILA's are required in such segments.	Please see corrigendum-V.
117	43	1.2.1 (b-1) of Chapter 4A	Delhi to Kolkata	LKN -Kanpur segment is common segment for traffic towards Delhi and Mughalsarai. Is the understanding correct.	Kanpur -Lucknow path common between "GZB-Kanpur" and "Kanpur-Mhugalsarai" rings. Please see in corrigendum-V
118	69	Annexure-1(5)of Chapter 4A	Existing Network	Pune -Ahmednagar-Manmad Link Losses. There is no topology indicated in the diagram wrt these losses, kindly confirm if we need to design this also.	This segement is for Alien wavelength
119	67-73	Annexure-1(5)of Chapter 4A	Existing Network	Forward-Reverse path losses: For few segments the difference between forward and reverse losses is up to 12db which is very high for designing a stable network. Please suggest what is the reason for such big diffrence and can we consider the minimum of two.	In case of fiber loss variations is more than 2 dB in 1st Fiber Loss and 2nd Fiber Loss of same fiber. In that case Bidder is allowed to consider lower of both these fiber loss value for Link engineering.
120	53	1.3.1 of Chapter 4A	The NG DWDM system shall support transmission of single carrier channel with Software Configurable 100G & 200G line rate as per link budget requirement. DWDM Line Port shall be tunable to 100G/200G through software only to run different line rates to cover different application on the same card with no changes to any of the common equipment at the optical or application on the same card with no changes to any of the common equipment at the optical or photonic layer provided meeting link budget.	For 100G client this requirement is fine , but for 10X10 we recommend to consider only 100G line rates	Please see the corrigendum-V

121	54	1.3-24.d of Chapter 4A	The Optical Amplifiers shall be of 'Mid-Access' type with due implementation for gain-flatness, feed-back gain-control & channel-power balancing etc. The Optical amplifiers have to work on 80 @ 50GHz or 40 @ 100GHz channels from day one.	Mid-Access type amplifier must not be mandatory.	Please see the corrigendum-V
122	55	1.3 (26-2) of Chapter 4A	Amplifiers (Inc. Booster, Pre-Amp and In-line Amplifier) - Max 2 Types	Max 2 types for amplifiers must not be a mandatory requirement	Please see the corrigendum-V
123	85	9.5 of Chapter 4B	100G client interface shall be LR4/SR4 type with dual rate	Please confirm the client type for each service. ie. If it is SR4 or LR4.	Please see the corrigendum-V
124	58	41.1.6 of Chapter 4A	(minus) - 48 Volt DC Power Supply will be made available by RailTel (For the ILA 300W and for OADM 600W per direction) at locations adjacent/near to the Equipment.	Per site power consumption should be limited. It is very difficult to limit the power calculation per degree. e.g. If transponder power consumption is calculated in any direction, power consumption of that specific direction will go up. So, request you to limit the power consumption to site rather than direction.	Tender Conditions are very clear .Power calculation will be calculated in totality (e.g. In case of 3 Direction OADAM site , power consumption should be less than 3x600W)
125	52	1.2.1-b-5 (Page no- 52) of Chapter 4A	Bidder shall consider following fiber losses with 1 dB additional fiber repair margin per span for Alien Wavelength design & 6 dB fiber repair margin for new DWDM system in Backbone. Bidder is also required to submit full link budget calculation of required channels (40/80) along with input parameters Vs output of planning tool. Fiber Characteristic – Forward and reverse path for the existing and New DWDM ILA and OADM Locations are placed as Annexure-I of this chapter.	Many spans have span loss as greater than 35 db and if we add 6db margin on top of the same, Span loss will be greater than 40db which will be difficult to design. So, request railtel not to consider fiber margin on the spans which have greater than 35db as span loss.	Please see the corrigendum-V

126	105	1.3.2.2 of Chapter 4G	100G Muxponder shall support 10x10G client ports. 10G client shall support 10GbE LAN-PHY, OC-192, STM-64, 10G WAN-PHY, 10G FC, OUT2 & OUT2e data rates with same XFP/SFP+ modules.	In order to provide the latest generation card to RailTel and utilize the 200G capacity on single port, we request to modify the clause as below : "100G/ 200G Muxponder shall support 20x10G client ports . 10G client shall support 10GbE LAN-PHY, OC-192, STM-64, 10G WAN-PHY, 10G FC, OUT2 & OUT2e data rates with same XFP/SFP+/ QSFP modules."	Tender conditions are very clear, No change is proposed.
127	105	1.3.2.4 of Chapter 4G	100G Transponder and Muxponders shall support OTU4 DWDM line rate.	In order to provide the latest generation card to RailTel and utilize the 200G capacity on single port, we request to modify the clause as below : 100G 200G Transponder and Muxponders shall support OTU4 and OTUC2 DWDM line rate.	Please see the corrigendum-V
128	85	9 of Chapter 4B	TYPES OF OADM EQUIPMENT: As per SOR 10G Clients	Please specify the types of 10G clients to quoted in SoR. For Ex: 10G LR, 10G SR, or multirate.	Please see the corrigendum-V
129	52	1.2.1-b-5.4 of Chapter 4A	RailTel will provide Rack Space, power (DC) for equipment Installation & Commissioning.	Please clarify, whether the rack provided by RailTel will have PDU power points to terminate equipment power cables or the bidder needs to extend power to the RailTel Rack.	Power supply will provided at Rack PDU power points.
130	108	1.4.3 of Chapter 4G	System shall support CFP/ with following client side services & specified reach on 100G Transponder:	System shall support CFP/? With following client side services.? Is missing info. QSFP28 may also be a desirable optics.	CFP/ means , Any other form factors are also acceptable like Qsfp28,CFP2,CFP4 and etc.

131	54	24.d of Chapter 4A	The Optical Amplifiers shall be of 'Mid-Access' type with due implementation for gain-flatness, feed-back gain-control & channel-power balancing etc. The Optical amplifiers have to work on 80 @ 50GHz or 40 @ 100GHz channels from day one.	Optical Amplifier Shall be of Mid-Access type. For pure coherent system with 100G/200G Line, DCM is not required. Mid-Stage Amplifiers which is must for only 10G application may be rather carried on 100G Muxponder line Card, should this be required. Co-existence of 10G with 100G with mid-stage amplifier may adversely impact OSNR degradation and thus affecting cost associated with frequent regeneration required for 100G/200G and the DCM & Mid-stage arrangements. The arrangement needs to done on day one even to provide future provision for 10G traffic to ensure no traffic disturbance. This becomes EVEN more challenging with already installed fiber with high losses and requested fiber margin.	Please see the corrigendum-V
132	108	2.1.3 of Chapter 4G	DWDM System shall support Optical Supervisory Channel (OSC) or GCC that is inserted and extracted at each node. All network elements shall be managed through the offered OSC/GCC.	DWDM system shall support optical supervisory channel (OSC) or GCC that is inserted and extracted at each node. All network elements shall be managed through the offered OSC/GCC. [System shall support DCN realization via OSC and OTN frame overhead].	Please see the corrigendum-V
133	113	4.6.2 of Chapter 4G	System shall support DCN realization via Optical Supervisory Chanel (OSC) and OTN frameoverhead (GCC0, GCC1, and GCC2 channel).	Where 1st clause gives a choice, second clause seemingly makes it mandatory.	
134	85	9.2 of Chapter 4B	Power Supply shall be redundant and field replaceable	Power supply shall be redundant and field replaceable. Redundant Power Supply requirement is a relevant requirement. However field replaceable requirements as mandated is relevant for AC to DC Converters. In case of DC to DC modules, they are on-board and at some point of voltage derivation they cannot be neither redundant nor field	Tender condition is very clear , No change is required

				replaceable. This requirement is restrictive for DC power units.	
135	108	3.0 of Chapter 4G	General Fixed-OADM System Attributes	General Fixed-OADM system Attributes There is no information subsequent to this clause	Please see the corrigendum-V
136	55	26.1 of Chapter 4A	Chassis (ROADM, OADM, Regen, ILA)	Chassis (ROADM, OADM, Regen, ILA). ILA should be ILA-OADM that is upgradeable to ROADM/Regenerator.	Tender condition is very clear , No change is required
137	107	1.4.2.8 of Chapter 4G	10GbE (ZR/ZW, 1550nm, MM)	10GbE (ZR/ZW, 1550nm MM). There are many such SFP+ which calls for optics specification like ER, ZR, LR. The SFP+ should be SM and NOT MM	Please see the corrigendum-V
138	52	1.2.1-b of Chapter 4A	Bidder shall consider following fiber losses with 1 dB additional fiber repair margin per span for Alien Wavelength design & 6 dB fiber repair margin for new DWDM system in Backbone. Bidder is also required to submit full link budget calculation of required channels (40/80) along with input parameters Vs output of planning tool. Fiber Characteristic – Forward and reverse path for the existing and New DWDM ILA and OADM Locations are placed as Annexure-I of this chapter	Bidder shall consider following fiber losses with 1 dB additional fiber repair margin per span for Alien Wavelength design & 6 dB fiber repair margin for new DWDM system in Backbone. Bidder is also required to submit full link budget calculation of required channels (40/80) along with input parameters Vs output of planning tool. Fiber Characteristic – Forward and reverse path for the existing and New DWDM ILA and OADM Locations are placed as Annexure-I of this chapter Considering 6dB fiber margin with scenario like (eg Naranda to Nandur Marg 35dB, Karur to Trichi 38.7dB) are very extreme constraints.	Please see the corrigendum-V
139	41	1.1 of 4A	The system must be programmable and highly intelligent, with very basic, robust and simple architecture.	The system must be programmable and highly intelligent, with very basic, robust and simple architecture. Does intelligent means Control plane with GMPLS?	Tender condition is very clear , No change is required.
140	41	1.1 of Chapter 4A	The required network shall be Dense Wave Division Multiplexing (DWDM) based system and End of Life (EoL) shall not be less than 8 Years and capacity shall be 4 Tbps in Backbone.	The channel width is a function of Baud rate. The most common and commercially deployed systems are of ~ 30Gbaud and ~ 60 Gbaud. The spectrum required for a ~ 60Gbaud system	Tender condition is very clear, No change is proposed.

	53	1.3-1 of Chapter 4A	1. Next Generation (NG) new DWDM system shall be based on state of art Modern technology which drives high capacity cost effectively..... DWDM link in Next Generation Optical Network shall be designed for 4 Tbps Capacity with End of Life (EoL) not less than 8 years	is 75Ghz, which allows 64 channels of DWDM in C Band. Railtel has sought only 40 channels and a final capacity of 4Tbps, which reflects into 40x100Gbps. We understand though the Railtel requirement for now is not beyond this, however a line system once installed for certain channel width can't be changed later on and it should be factored for the whole lifespan of the network. We recommend Railtel to consider following suggestions: 1. The proposed system should support atleast 64 channels at 75 Ghz in C Band 2. The final capacity of the system should be $64 \times 200G = 12.8$ Tbps	
141	41	1.2.1 of Chapter 4A	Routes with traffic matrix	Please clarify the following queries: 1) For traffic links having few spans on new DWDM and few spans on existing DWDM, please clarify the modalities for handoff of Channels to existing DWDM nodes. a. Whether it would be Optically patch through from New DWDM Mux/Demux to existing DWDM Mux/Demux? b. Or it's required to be regenerated afresh? (for ex. at location Asansol, do we need to regenerate the traffic from Mughalsarai to	1a. it would be Optically patch through transponder in between New DWDM Mux/Demux to existing DWDM Mux/Demux. b. Figure of 8 protection" means that the channel has to be protected in each ring.e.g. Mughalsarai-Kolkata link, then Channel should be protected in Mughalsarai- ASANSOL and ASANSOL-Kolkata separately by dropping the channel at

				Kolkata) 2) For traffic requirement of 2x100G, we understand a vendor is free to propose two channels of 100G or a single channel of 200G capacity. Please clarify if the same is allowed. 3) For traffic from Delhi to Mugalsarai its mentioned to have a figure of 8 at Kanpur. We understand the traffic is expected to be regenerated at Kanpur for both the diverse paths from Delhi, and then carry forwarded to two separate paths upto Mugalsarai. Please clarify if our understanding is correct. 4) We understand that for the end traffic locations in existing DWDM network (for ex. Kolkata), vendors need to propose only transponders. Please clarify if our understanding is correct.	ASANSOL. 2. Bidder is free to propose two channels of 100G or a single channel of 200G capacity ,however proposed transponder & DWDM system should support Software Configurable 100G & 200G line rate per channel. 3. Yes, Traffic should be regenerated at Kanpur for both the diverse paths from Delhi, and then carry forwarded to two separate paths upto Mugalsarai. 4. Tender condition is very clear.
142	45	5.1(a) of Chapter 4A	OADM & ILA-OADM sites are equipped with ROADM 8x1 & 4x1 for 100G	Please clarify the architecture difference between OADM and ILA-OADM	ILA-OADM mens OEQ (Optical equalizations)
143	49	5.2-a of Chapter 4A	OADM & ILA-OADM sites are equipped with ROADM 8x1 Coherent Photonics with flexi grid C- band ROADM.	Please clarify the slice width supported by existing system. This is important to propose the accordingly width signal to avoid any interop issues	Vijayawada –Kolkata & Nagpur--Kolkata sections , OADM & ILA-OADM sites are equipped with ROADM 8x1 Coherent Photonics with flexi grid C- band ROADM and Mux/Demux is with 100GHz spacing with 44 Channels .
144	51	5.3 of Chapter 4A	Alien wavelength solution must be designed without impacting existing channel however few tuning (Amplifier Gain, tilt.) allowed for optimization	Please specify the gain ranges available with the amplifier. Please clarify if the existing amplifiers support power and gain control features.	Existing Amplifiers is supporting Power/Gain control and Gain Range for Ciena (11-28) and Adva (12-27) .

			and shall not require truck roll5.3 Alien wavelength solution must be designed without impacting existing channel however few tuning (Amplifier Gain, tilt.) allowed for optimization and shall not require truck roll		
145	52	5.6 of Chapter 4A	The locations can be used as ILA & OADM locations. List of location and Segments for New DWDM is placed at Annexure-II of this chapter..... Bidder shall consider following fiber losses with 1 dB additional fiber repair margin per span for Alien Wavelength design & 6 dB fiber repair margin for new DWDM system in Backbone. Bidder is also required to submit full link budget calculation of required channels (40/80) along with input parameters Vs output of planning tool	Query: 1. We understand the mentioned calculation need to be done for all of the links as per traffic mentioned in page 41 with a final capacity of 200G per channel. Please clarify if the understanding is correct. 2. Please clarify if this calculation needs to be done for 40 or 80 channels. 3. The fiber losses mentioned in Annexure one are at an average of the order of 0.4 or higher. The 6 dB fiber margin is way too high, we suggest Railtel to use industry norm of 3db fiber margin. Suggestion: The 40/80 channel grids in C band are older channel grids. We understand for the existing systems who are having this grid, the newer channels need to follow the same, however for newer system we strongly suggest Railtel to consider the 96 channel systems for fixed grid applications. 96 channels are very much possible in fixed grid starting from 1528.77 nm/196.10THz to 1566.72nm/191.35THz and there are more than one vendors supporting this.	1. Bidder is required to submit full link budget calculation of required channels 40 along with input parameters Vs output of planning tool .Calculation to be done for all of the channels as per traffic mentioned in page 41 (clause 1.2.1) with a final capacity of 200G per channel. 2. Please see corrigendum-V. 3. Please see corrigendum-V. Tender Conditions are very clear. No change is proposed

146	52	1.2.2 of Chapter 4A	Bidder should propose solution in New DWDM system with following minimum OADM sites with ROADM & Mux/Demux.	We understand wherever a OADM is required in the newer systems, it has to be a flex-grid based ROADM node, however the same need not support any CDC (Colorless, Directionless, Contentionless) functionality. Railtel wants a Mux/Demux for the Add/drop layer followed by a ROADM card for each direction in all newer OADM systems. Please clarify if we are correct in our understanding of required architecture.	Tender Conditions are very clear. RailTel wants a Mux/Demux for the Add/drop layer followed by a ROADM card for each direction in all newer OADM Sites.
147	53	1.3-2 of Chapter 4A	Bidder shall propose minimum 4-degree Flex Grid C- band WSS at ROADM sites in Backbone segment depicted in 1.2.1.	As per ITU-T 694.1 the systems for flexible grid are defined for 12.5 Ghz. Please clarify if our understanding is correct if we understand that the Flex-grid system need to support slice width of same of more granular width.	Tender Conditions are very clear.
148	53	1.3.3 of Chapter 4A	WSS shall support full C-band spectrum i.e. 4000/4800 GHz.	4000Ghz width of C band has been extended to 4800Ghz. This addition of 800Ghz allows a capacity increase of 20% more capacity. Further this is commercialized as well. Deploying a 4000Ghz system will limit any future expansion as well. We suggest Railtel to use the 4800 Ghz systems	Tender Conditions are very clear. No change is proposed
	54	1.3-24-b of Chapter 4A	Amplifiers shall support full C- band spectrum 4000/4800 GHz.		Tender Conditions are very clear. No change is proposed
149	53	1.3-5 of Chapter 4A	Bidder shall propose two type of WSS module for all the sites i.e. ROADM, OEQ & Regenerator site for operational spare simplicity & in future any OEQ & Regenerator site shall be easily converted into the ROADM site with incremental hardware only	We understand that Railtel expects that a OEQ or a regenerator site can be upgraded to a ROADM site without discarding any of WSS or Amplifier cards. Please clarify if our understanding is correct	If required , OEQ or a regenerator site can be upgraded to a ROADM site without discarding any of WSS or Amplifier cards

150	54	1.3-24-d of Chapter 4A	The Optical Amplifiers shall be of 'Mid-Access' type with due implementation for gain-flatness, feed-back gain-control & channel-power balancing etc. The Optical amplifiers have to work on 80 @ 50GHz or 40 @ 100GHz channels from day one.	The importance for a Mid Access amplifier system was more viable in a 10G DCM network for introducing the DCM modules in between a Pre and Boost amplifier. However, for the Coherent systems no DCM modules are required and henceforth mid stage access amplifiers are not mandatory. The updated and more feature rich versions of Amplifiers uses same EDFA amplifier with several gain stages which can be used as per requirement and further they support mechanisms like Automatic power control, Gain flatness as well. Adding two amplifier for each of the OLA locations will lead to introducing extra noise in the system as each EDFA amplifier introduces nearly 6-8db of noise figure. We suggest Railtel to leave the gain flatness, gain control and power equalization mechanisms to be dealt in more latest and better ways without limiting vendors to use mid stage amplifier. This will allow vendors to be free to choose a two stage or single stage amplification in OLA locations, and will also lead to much better OSNR performance of the entire line system.	Please see corrigendum-V.
151	54	1.3-26-e of Chapter 4A	Sudden addition/removal of channels at intermediate site must not affect whole transmission of DWDM signals. The optical amplifiers shall respond automatically to changes in the number of channels without the need for manual intervention or realignment.	We understand same is supported on existing amplifiers as well. Please clarify the same	Existing Amplifiers is supporting Power/Gain control.
152	54	1.3-23	Equipment protection	Please clarify if the protection is envisaged at client layer, line layer or he multiplexed line layer. Also please clarify the protection option being used in existing network	Tender conditions are very clear

153	45	5 of Chapter 4A		Existing install base. Railtel is requested to provide following details of the installed network 1) OSNR penalty for ROADM nodes 2) Architecture of the ROADM, and FOADM node. 3) (G)OSNR from the existing TXPs. 4) DGE sites if used 5) Amplifier Noise figure	Please see corrigendum-V.												
154	56	30-a of Chapter 4A	To support "East-West separation (EWS) i.e. the add/drop channel traversing the east direction shall not share common cards with add/drop channels in west direction	We understand that Mux/demux, amplifiers and ROADMs should be separate for each directions, however if a vendor is having more compact and denser Transponder/ Muxponder system the same is allowed to house channels of different directions. Please clarify if our understanding is correct	It shall be separate Mux/demux, amplifiers and WSS for each direction in Single/Multiple chassis and bidder is allowed to use a single transponder card and provide the East-West Separation with the help of an Optical Splitter.												
155	61 and 41	Annexure-1 of Chapter 4A and 1.2 of Chapter 4A	Annexure 1 & Design of Network	Please help in identifying the following spans/links with required distance and losses <table><tr><th>Traffic No.</th><th>Path</th><th>Query</th></tr><tr><td>1</td><td>Delhi – Mughalsarai</td><td>Please provide the distance and loss for direct span of Delhi to Ghaziabad</td></tr><tr><td>1</td><td>Delhi – Mughalsarai</td><td>Please provide ths spans between lucknow to Kanpur.</td></tr><tr><td>6</td><td>MX to BSL Path-1 -Mumbai</td><td>Please clarify which node to</td></tr></table>	Traffic No.	Path	Query	1	Delhi – Mughalsarai	Please provide the distance and loss for direct span of Delhi to Ghaziabad	1	Delhi – Mughalsarai	Please provide ths spans between lucknow to Kanpur.	6	MX to BSL Path-1 -Mumbai	Please clarify which node to	1. Please see corrigendum-V. 1. Please see Tender document page 63, SN 22 & 23 for Lucknow-Ajgain-Kanpur. 6. MX means Mumbai.
Traffic No.	Path	Query															
1	Delhi – Mughalsarai	Please provide the distance and loss for direct span of Delhi to Ghaziabad															
1	Delhi – Mughalsarai	Please provide ths spans between lucknow to Kanpur.															
6	MX to BSL Path-1 -Mumbai	Please clarify which node to															

					-Manmad-Bhusaval (Alien wavelength).	consider for Mumbai in mentioned table	4. Please see corrigendum-V.
				4	MX-BSL Path-2 Mumbai-Pune-Bhusaval (Alien wavelength).	Please help in identifying this link in the span details provided.	
156				Add on Suggestions. 1. We understand there are frequent cuts in the Railtel network, and a inbuilt feature of OTDR would be very helpful for Railtel. More than one vendors support functionality of OTDR within the equipment and we suggest Railtel to incorporate this as a ask in Tender. It can provide following benefits. a. Have a proactive indication of fiber cuts b. Have an indication of a fluctuation of losses in a specific section due to fiber bends or pressure points. 2. Vendors should describe the support for the Alien channels on there system and what on additional items needs to be quoted for that in there BoQ 3. All proposed HW should be available at latest, none of the proposed HW shall be EoL in next 3 years. 4. The proposed system should have option to augment channel rate in granularity of 50Gbps supporting rates of at least 100, 150, and			Tender Conditions are very clear. No change is proposed

				200Gbps. 5. Not just the system, but all cards proposed should be installed in a network and running satisfactorily since a year. 6. More than one Vendor provide Encryption as well. Encryption is a common ask for Enterprises, Banks and OTTs. Having the same in their network will attract more Bandwidth customers. We suggest Railtel to consider this.	
157	54	1.3-13 of Chapter 4A	The equipment shall have the provision for monitoring the performance of individual channel through overhead byte of OTUCn. Also, in the case Ethernet support, there shall be the provision of analysis of Ethernet frames	We understand that the client interfaces are 10G and 100G, or OTU2 and OTU4 and there is no requirement of OTUCn in the client. Kindly delete this for larger participation	Please see corrigendum-V.
158	55	27 of Chapter 4A	Performance Requirements: a) The equipment shall support the following performance parameters relating to the ODU-k as specified in ITU-T Recs.G.8201 and G.7710 b) Optical Channel Transport Unit Background Block Error (OTU_BBE). c) Optical Channel Transport Unit Errored Second (OTU_ES). Optical Channel Transport Unit Severely Errored Second (OTU_SES). d) Optical Channel Transport Unit Incoming Alignment Errored Second (OTU_IAES). e) Optical Channel Data Unit Path Monitoring Background Block Error (ODU_PM_BBE). f) Optical Channel Data Unit Path Monitoring Errored Second	f) Optical Channel Transport Unit Incoming Alignment Errored Second (OTU_IAES) is a not widely used parameter for monitoring purpose. Kindly make this optional for larger participation	Please see corrigendum-V.

			(ODU_PM_ES) g) Optical Channel Data Unit Path Monitoring Severely Errored Second (ODU_PM_SES). Optical Channel Data Unit Path Monitoring Unavailable Second (ODU_PM_UAS).		
159	6	Note: VIII of SOR Chapter-1	The NMS components shall be as follows: a) First location: One main NMS server. b) Second location: Disaster Recovery (DR) server	As clause in page 6 (in note of SOR) and page 86 (1.2.2) is contradictory. Kindly Clarify whether One or Two Server per site to be offered. Kindly clarify that NMS hardware would be located at datacenter environment and main monitoring system of the datacenter. We recommend NMS server should have hot swappable and redundant power supply in clause no. 1.2.2.7 DWDM ROM is generally less use for Servers and We recommend to allow External USB DVD drive in NMS Hardware in clause no. 1.2.2.8 in NMS Hardware in clause no. 1.2.2.6. Following requirement is specific to one OEM of hardware 1GB E NC 326i 2 port smart array P 410i (storage controller) Kindly include industry standard storage controller as below: 12G SAS RAID controller with 2GB cache instead of above	Tender Conditions are very clear. No change is proposed
160	86	1.2.2 of Chapter 4C	NMS Hardware: Hardware offered for NMS should be capable to efficiently manage large no. of alarms resulting due to power supply, equipment failures and 4-5 simultaneous fibre cuts.		Tender Conditions are very clear. No change is proposed

			It is suggested that two servers at each location may be used one for front end alarm processing and other for core operational functionalities of NMS. Minimum requirements for NMS hardware are as follows: 1.2.2.1 The server shall be rack mountable. 1.2.2.2 Processor: Xeon 8 Core Processor (2 Processors). 1.2.2.3 DDR Memory- min 64 GB DDR3 1.2.2.4 HDD- 2x 1 TB 1.2.2.5 Hardware RAID O & I 1.2.2.6 1GB E NC 326i 2 port smart array P 410i (storage controller) 1.2.2.7 Fixed & single Power Supply 1.2.2.8 DVD ROM 1.2.2.9 Keyboard & Mouse 1.2.2.10 18.5" LED Monitor		
161	109 and 110	3.4 and 3.5 of Chapter 4G	3.4 Environmental Requirements The product shall meet following standards and regulations: 3.4.1 Generic requirements defined in ETS 300 019 (environmental criteria) 3.4.2 NEBS level 3 3.4.3 Telcordia GR-3028-CORE: Thermal Management, Telecommunication Central Office 3.4.4 Operation: ETS300 019 Class 3.1 3.4.5 Transport: ETS300 019 Class 2.2 3.4.6 Storage: ETS300 019 Class 1.1 3.4.7 EN300386 Telecommunication centers	We would request kindly allow and following changes 3.4 Environmental Requirements The product shall meet following standards and regulations: 3.4.1 Generic requirements defined in ETS 300 019 (environmental criteria) 3.4.2 NEBS level 3 3.4.3 Telcordia GR-3028-CORE: Thermal Management, Telecommunication Central Office or Environmental Telcordia NEBS GR-63-CORE 3.4.4 Operation: ETS300 019 Class 3.1 or ETS 300 019-2-3 (Operational, Class 3.1E)	Please see corrigendum-V.

			3.5 Electromagnetic Compatibility Compliance with following requirements has to be assured: 3.5.1 ETSI EN 300 386-2: EMC requirements for Telecommunication network equipment	3.4.5 Transport: ETS300 019 Class 2.2 or ETS 300 019-2-2 (Transportation, Class 2.3) 3.4.6 Storage: ETS300 019 Class 1.1 3.4.7 EN300386 Telecommunication centers 3.5 Electromagnetic Compatibility Compliance with following requirements has to be assured: 3.5.1 ETSI EN 300 386-2 or EN 300 386: EMC requirements for Telecommunication network equipment	
162	49	5.2 (e) of Chapter 4A	The proposed Alien 200G transponder shall be coherent technology based & link performance shall meet BER at 1E-15 without external DCM requirement.	We understand that the Bandwidth is required to be available as per the traffic matrix, hence is an industry practice to deploy 100G wavelength for 100G traffic & 200G wavelength for 200G traffic. It also provided the flexibility as client interfaces can be different & may not be the card required currently. We request you to please confirm if 2x100G Modules be proposed instead of 1x200G Line optics with 100G Line interfaces equipment as per current requirement. Please confirm.	Tender condition is very clear ,No change is proposed in tender condition
163	53	1.3-1 of Chapter 4A	Next Generation (NG) new DWDM system shall be based on state of art Modern technology which drives high capacity cost effectively and lowers operational cost. NG DWDM system shall operate at discrete wavelengths in the C-band centered around 193.1 THz frequency as per ITU-T Rec.G.694.1 grid. The NG DWDM system shall support transmission of single carrier channel with Software Configurable 100G & 200G line rate as per link budget requirement. DWDM Line Port shall	1. There are some linear requirements 1x100G in the service matrix of tender. So, 1x200G line rate might not be required on Day1. Please confirm. 2. We understand that Line rate if being used as 100G, there license cost of 200G should be considered on Day1. Kindly confirm. 3. We understand that the price of each 200G Lambda is uniform. In case, bidder quotes different prices for 200G Line rate, highest price quoted for 200G will be considered during evaluation. Kindly confirm. 4. Many links in service matrix of tender are 1x100G. So, in order to have the complete	Tender condition is very clear ,No change is proposed in tender condition

			be tunable to 100G/200G through software only to run different line rates to cover different application on the same card with no changes to any of the common equipment at the optical or photonic layer provided meeting link budget. DWDM link in Next Generation Optical Network shall be designed for 4 Tbps Capacity with End of Life (EoL) not less than 8 years.	flexibility in the network, 1x100G lambda should be lit up on 2x100G Line ports Modules. It will ensure 400G card (200G worth capacity on line side & 200G worth capacity on client side). By flexibility we mean 1x100G capacity between 1 link while other 1x100G Capacity on other link (eg A-B-1x100G Traffic drop while A-C -1x100G drop. In case if line rate is 200G, there would be requirement of 2 cards however with 2x100G, it can be achieved on existing card hence making network more scalable & future ready. Kindly confirm.	
164	7	Point No. XII of Note in Chapter-1	Bidder/OEM can also leverage existing DWDM hardware/ Management system of 100G DWDM system deployed in RailTel in proposal. In case if the cards/modules/Licenses in the existing hardware is proposed, OEM shall provide Undertaking for long term support for 8 years for all existing components irrespective of End of Life of the existing hardware.	We understand that Bidder/OEM can also leverage existing DWDM hardware/ Management system of DWDM system deployed in RailTel in proposal. In case if the cards/modules/Licenses in the existing hardware is proposed, OEM shall provide Undertaking for long term support for 8 years for all existing components irrespective of End of Life of the existing hardware. Please confirm.	Tender clause is very clear
165	9	Point-3 of Information to Bidder of Chapter-1	The Tenderer/bidder should be an Original Equipment Manufacturer (OEM) or authorized representative of OEM specifically authorized by OEM for bidding in this tender.	Please clarify the following: 1) Whether an OEM can authorize multiple partners to bid their product in case OEM is not bidding. 2) Whether an OEM can authorize multiple partners to bid their product in case OEM is also bidding.	Tender conditions do not prohibit number of the bidders
166	15	Clause 8 of Section-1, Chapter 2A	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.	You are requested to relook the clause and waive off reverse auction which demoralise the Vendors and create unhealthy competition. Please consider our request accordingly and delete this clause.	No change in the Tender clause