RAILTEL CORPORATION OF INDIA LTD.

(A Govt. of India Enterprise)

Plot No. 143, Institutional Area, Opposite-Gold Souk, Sector-44, Gurgaon-122003

No. RailTel/Tender/OT/CO/Project/2015-16/DWDM/329 Date : 09.06.2016

Corrigendum-I

Sub: "Supply and Supervision of Installation, Testing & Commissioning of DWDM Equipment for the OFC based Communication System of RailTel"

Ref: (i) Open Tender notice No. E-Tender No. RailTel/Tender/OT/CO/Project/2015-16/DWDM/329 dated 20.05.2016.

In reference to above, the following amendments to the tender clauses are issued.

S. N.	Clause No. / Chapter / Page No.	Revised Clause Description
1	**SN-A 1(a) of Schedule of Requirement / Chapter-2/ Page-7**	Description under Column No. (2) may be read as: "Type A DWDM equipment with all required cards/modules/accessories (excluding Racks) sufficient for dropping 50G capacity at client level as defined in clause 2.8.3.1 of chapter 3B.
2	**SN-A 1(b) of Schedule of Requirement / Chapter-2/ Page-7**	Description under Column No. (2) may be read as: "Type B DWDM equipment with all required cards/modules/accessories (excluding Racks) sufficient for dropping 50G capacity at client level from each direction. As defined in clause 2.8.3.2 of chapter 3B.
3	**SN-A 1(c) of Schedule of Requirement / Chapter-2/ Page-7**	Description under Column No. (2) may be read as: Type C DWDM Equipment- In Line Amplifier (ILA) as defined in clause 2.8.3.3 of chapter 3B. This excludes Racks.
4	**SN-A 1(e) of Schedule of Requirement / Chapter-2/ Page-7**	Description under Column No. (2) may be read as : "Variable gain optical Amplifier (EDFA) with **minimum** 11 dBm output power. The same should be configured as Booster/ Pre-Amplifier/ Inline Amplifier . The amplifier should be fitted in slots as provided in the offered equipment under item 1(a), 1(b) and 1(c) above. The Quantity Under Column No. (4) may be read as "0 (Zero)"
5	**SN-A 1(f) of Schedule of Requirement / Chapter-2/ Page-7**	Description under Column No. (2) may be read as : "Variable gain optical Amplifier (EDFA) with **minimum** 13 dBm output power. The same should be configured as Booster/ Pre-Amplifier/ Inline Amplifier . The amplifier should be fitted in slots as provided in the offered equipment under item 1(a), 1(b) and 1(c) above.

<table>
<tr><td></td><td></td><td>The Quantity Under Column No. (4) may be read as “1014”</td></tr>
<tr><td>6</td><td>New SN A 1(g) of Schedule of Requirement</td><td>New item added in Schedule of Requirement with following details:
<table>
<tr><th>SN</th><th>Description of Item</th><th>Unit</th><th>Qty.</th><th>Unit rate in Fig (in Rs.)</th><th>Total Cost in Fig. (in Rs.)</th><th>Unit rate in words (in Rs.)</th><th>Total Cost in words (in Rs.)</th></tr>
<tr><td>(1)</td><td>(2)</td><td>(3)</td><td>(4)</td><td>(5)</td><td>(6)</td><td>(7)</td><td>(8)</td></tr>
<tr><td>A</td><td>SCHEDULE OF SUPPLIES</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td>DWDM Equipment</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>(g)</td><td>Telecom Rack capable for housing the offered equipment under item A1(a) to A1(c) above. The Rack to be provided as per technical specification in chapter 8B.</td><td>Nos.</td><td>300</td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>7</td><td>SN-B4 of Schedule of Requirement / Chapter-2/ Page-8</td><td>Description under Column No. (2) may be read as :
“Cost per Engineer for level II support during Warranty Period for two years.”</td></tr>
<tr><td>8</td><td>Note III under Schedule of Requirement / Chapter-2/ Page 9</td><td>May be Read as:
“Tenderer shall attach Unit Rate Analysis of item nos. A1 (a) to A1(g) and A2 of the Schedule of Supply (A), i.e. cost of each sub-assembly, card, module, Transponder, Muxponder, Patch Cords, ROADM etc., in their Price Bid. The quoted Unit Rates should correspond to the referred Rate Analysis. In absence of same, the bid shall be summarily rejected.”</td></tr>
<tr><td>9</td><td>Note IX under Schedule of Requirement / Chapter-2/ Page 9</td><td>May be read as:
“In SOR item no. B4 (Cost per Engineer for level II support), tenderer has to quote unit cost of One Engineer during Warranty Period (i.e. cost of one engineer for two years) and total for 2 nos. of Engineer for level II support one each at main NMS & DR Location) . Price to be quoted for per engineer for two years and total for two engineers”.</td></tr>
<tr><td>10</td><td>Note X under Schedule of Requirement / Chapter-2/ Page 9</td><td>May be read as:
“Tenderer should submit the soft copy (Word/Excel/PDFs format) of offer. Bill of Material (BOM) must be in PDF as well as Excel format.”</td></tr>
<tr><td>11</td><td>Note XI under Schedule of Requirement / Chapter-2/ Page 9</td><td>Column for new item A 1(g) is also to be included in the given table.</td></tr>
<tr><td>12</td><td>Opening lines of Para A2 of</td><td>May be read as:
“The procurable quantity, against item nos. A1 (a) to A1(g), A4, B1 (a) to B1(d)</td></tr>
</table>

<table>
<tr><td></td><td>Note XII under Schedule of Requirement / Chapter 2/ Page 10</td><td>and B3 of SOR above shall be distributed in the ratio of 65:35 between two eligible L-1 & L-2 tenderers respectively, rounded off to the nearest whole number.</td></tr>
<tr><td>13</td><td>Sub para A 2 (i) of Note XII Under Schedule of Requirement/ Chapter-2/ Page 10</td><td>May be read as:
“The quantity of spares (item no. A2) will be calculated as per the clause 5.8.1 of Chapter 3-E.”</td></tr>
<tr><td>14</td><td>Sub para A 2 (iii) of Note XII Under Schedule of Requirement/ Chapter-2/ Page 10</td><td>May be read as:
“The cost against NMS SW (in item no. A3 (b) and B2 will be decremented to the 65% or 35% of the accepted rates of the L-1 and L-2 tenderers respectively.”</td></tr>
<tr><td>15</td><td>Sub clause 1.2.3(c) / Chapter 3A/ Page 17</td><td>May be read as:
“Supply of Patch cords: The tenderer has to supply 02 Nos. of 10 Mtrs patch long cords per equipment/ per direction with one end as E2000 and other end as per system offered by tenderer.
In addition of above, the Patch cords are required to be supplied by tenderer for all the optical ports offered as required for system design and client interfacing. The length and connectors types required are as per followings:
<table>
<tr><th>SN</th><th>Qty of Patch Cords (% of total Supplied)</th><th>Length of Patch Cord</th><th>Connector Type at “End A”</th><th>Connector Type at “End B”</th></tr>
<tr><td>1</td><td>20%</td><td>20Mtrs</td><td>LC/PC or SC/PC or FC/PC</td><td>LC/PC or SC/PC or FC/PC</td></tr>
<tr><td>2</td><td>20%</td><td>10 Mtrs</td><td>LC/PC or SC/PC or FC/PC</td><td>LC/PC or SC/PC or FC/PC</td></tr>
<tr><td>3</td><td>60%</td><td>5 Mtrs</td><td>LC/PC or SC/PC or FC/PC</td><td>LC/PC or SC/PC or FC/PC</td></tr>
</table>
The bidder is required to consider that any connector type may be asked to supply. The exact type of connectors (End A and End B) will be communicated to successful bidder at the time of Purchase order. In addition of above bidder has to supply 25% spare patch cords according to the total numbers of Optical ports used in the system.”</td></tr>
<tr><td>16</td><td>Clause 2.8.3.1 / Chapter 3B page 24-25</td><td>May be read as:
“DWDM Type A Equipment (One Direction, Terminal Equipment) :
This type of equipment should be capable to serve one Direction. On day one, the DWDM equipment should be equipped with mux / demux with line side dropping capacity for 8 wavelengths with100 G capacity per channel (all the required Mux/Demux for 8 channel is required to provided however the amplifiers/ Booster will be required to be quoted separately as per SOR). The equipment should be equipped with Client cards/modules/plugs with dropping</td></tr>
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<td></td>
<td>capacity of 50G . Separate Amplifier/Booster will be required to use for each direction. The equipment must have sufficient slots for amplifiers/Boosters procured under SOR . Separate Muxponder/transponders will be required for dropping traffic from each direction. The channel modules (Transponders, Muxponders, SFP,XFP,CFP,SFP+ etc.) offered should be capable to carry the signal up to minimum 200 kms without OEO regeneration (assuming 2 ILA locations in between the OADMs.) The typical traffic channel dropping requirement at client level is 5x 10 G from each direction with following combination:

<table>
<tr><th>SN</th><th>Port Speed</th><th>Port Type</th><th>Wavelength</th><th>Reach in Km</th><th>Qty</th></tr>
<tr><td>1</td><td>10 Gbps</td><td>10GbE/STM-64</td><td>1550 nm</td><td>80 km</td><td>01 Nos.</td></tr>
<tr><td>2</td><td>10 Gbps</td><td>10GbE/STM-64</td><td>1550 nm</td><td>40 km</td><td>02 Nos.</td></tr>
<tr><td>3</td><td>10 Gbps</td><td>10GbE/STM-64</td><td>1310 nm</td><td>10 km</td><td>02 Nos.</td></tr>
</table>

The DWDM equipment should be capable to deliver present channel delivery (client side 50G) on day One. The system should be seamlessly scalable up to drop at client level all eight Nos. of 100 G wavelength (C-Band) from each direction in non-traffic disruption manner. Per equipment cost with BOM to be quoted against SOR item no. A1 (a) of SOR.” Offered Type A equipment should be convertible into offered type B equipment in future by adding additional hardware. All the optical client ports should be open for use third party SFP/XFP/CFP/SFP+.”</td>
</tr>
<tr>
<td>17</td>
<td>Clause 2.8.3.2 / Chapter 3B page 25</td>
<td>May be read as:
“DWDM Type B Equipment (Two Direction, Add-Drop Equipment)

This type of equipment should capable to serve two Directions. On day one, the DWDM equipment should be equipped with Mux/Demux with line side dropping capacity for 8 wavelengths with100 G capacity per channel (all the required Mux/Demux for 8 channel is required to provided however the amplifiers/ Booster will be required to be quoted separately as per SOR). The equipment should be equipped with Client cards/modules/plugs with dropping capacity of 50G . Separate Amplifier/Booster will be required to use for each direction. The equipment must have sufficient slots for amplifiers/Boosters procured under SOR . Separate Muxponder/transponders will be required for dropping traffic from each direction. The channel modules (Transponders, Muxponders, SFP,XFP,CFP,SFP+ etc.) offered should be capable to carry the signal up to minimum 200 kms without OEO regeneration (assuming 2 ILA locations in between the OADMs.) The typical traffic channel dropping requirement at client level is 5x 10 G from each direction with following combination:

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<tr><td>1</td><td>10 Gbps</td><td>10GbE/STM-64</td><td>1550 nm</td><td>80 km</td><td>01 Nos.</td></tr>
<tr><td>2</td><td>10 Gbps</td><td>10GbE/STM-64</td><td>1550 nm</td><td>40 km</td><td>02 Nos.</td></tr>
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</table>

<table>
<tr><td></td><td></td><td>
<table>
<tr><td>3</td><td>10 Gbps</td><td>10GbE/STM-64</td><td>1310 nm</td><td>10 km</td><td>02 Nos.</td></tr>
</table>

The DWDM equipment should be capable to deliver present channel delivery (client side 50G) on day One. The system should be seamlessly scalable up to drop at client level all eight Nos. of 100 G wavelength (C-Band) from each direction in non-traffic disruption manner. Per equipment cost with BOM to be quoted against SOR item no. A1(b) of SOR. All the optical client ports should be open for use third party SFP/XFP/CFP/SFP+.”
</td></tr>
<tr><td>18</td><td>3. Traffic Matrix / Chapter-3B-1 / Page 27-28</td><td>In addition of traffic Matrix, the Client interfaces to be taken as below:
<table>
<tr><td colspan="6">Channel 1and 2 each:</td></tr>
<tr><td>SN</td><td>Port Speed</td><td>Port Type</td><td>Wavelength</td><td>Reach in Km</td><td>Qty</td></tr>
<tr><td>1</td><td>10 Gbps</td><td>10GbE</td><td>1550 nm</td><td>80 km</td><td>06</td></tr>
<tr><td>2</td><td>10 Gbps</td><td>10G/STM-64</td><td>1550 nm</td><td>40 km</td><td>01</td></tr>
<tr><td>3</td><td>10 Gbps</td><td>4xSTM-16</td><td>1310 nm</td><td>10 km</td><td>01</td></tr>
<tr><td>4</td><td>10 Gbps</td><td>8xSTM-4</td><td>1310 nm</td><td>10 km</td><td>01</td></tr>
<tr><td>5</td><td>10 Gbps</td><td>4x1GbE</td><td>1310 nm</td><td>40 km</td><td>01</td></tr>
<tr><td></td><td></td><td>4x1GbE</td><td>1310 nm</td><td>10 km</td><td>01</td></tr>
<tr><td colspan="6">Channel 3 to 7 each:</td></tr>
<tr><td>SN</td><td>Port Speed</td><td>Port Type</td><td>Wavelength</td><td>Reach in Km</td><td>Qty</td></tr>
<tr><td>1</td><td>10 Gbps</td><td>10GbE</td><td>1550 nm</td><td>80 km</td><td>06</td></tr>
<tr><td>2</td><td>10 Gbps</td><td>10G/STM-64</td><td>1550 nm</td><td>40 km</td><td>02</td></tr>
<tr><td>3</td><td>10 Gbps</td><td>4xSTM-16</td><td>1310 nm</td><td>10 km</td><td>01</td></tr>
<tr><td>4</td><td>10 Gbps</td><td>8xSTM-4</td><td>1310 nm</td><td>10 km</td><td></td></tr>
<tr><td>5</td><td>10 Gbps</td><td>4x1GbE</td><td>1310 nm</td><td>40 km</td><td>01</td></tr>
<tr><td></td><td></td><td>4x1GbE</td><td>1310 nm</td><td>10 km</td><td>01</td></tr>
</table>
</td></tr>
<tr><td>19</td><td>New para 4 space and power Analysis in Chapter 3B-1</td><td>4. Space and Power analysis of Jaipur, Ajmer and Beawer node to be provided along with credential Bid:
4.1 The tenderer is required to provide the step by step loading details of space and power consumption of Jaipur (Terminal Equipment, Type A), Ajmer (OADM, Type B) and Beawer (ILA, Type C) Nodes covering all items of complete BOM offered against each node for Typical network traffic matrix. The order of the items listed should be in the same sequence as required at site for actual installation incorporating all items of complete BOM. A sample is given below for assistance:
<table>
<tr><td colspan="6">Station Name: Jaipur
Equipment Model Offered: (To be Provided by Bidder)</td></tr>
<tr><td>SN</td><td>Item Description</td><td>Power Consumption in Watts and Amp@-48 Vdc by</td><td>Rack Space in RU or Slots require</td><td>Total Power Consumption in Watts and</td><td>Total Space in RU required including</td></tr>
</table>
</td></tr>
</table>

		<table><tr><td></td><td></td><td>**item**</td><td>**d for item**</td><td>**Amp @ -48 Vdc including item**</td><td>**item**</td></tr><tr><td>**(a)**</td><td>**(b)**</td><td>**(c)**</td><td>**(d)**</td><td>**(e)**</td><td>**(f)**</td></tr><tr><td>1</td><td>Chassis-1</td><td>100w, 2 Amp</td><td>4 RU</td><td>100w, 2Amp</td><td>4RU</td></tr><tr><td>2</td><td>Controller</td><td>25w, 0.5 Amp</td><td>01 Slot</td><td>125w, 2.5 Amp</td><td>4 RU</td></tr><tr><td>3</td><td>FAN unit</td><td>50w, 1.0 Amp</td><td>01 Slot</td><td>175w, 3.5Amp</td><td>4RU</td></tr><tr><td>4</td><td>Amplifier</td><td>100w, 2Amp</td><td>02 Slots</td><td>275w 5.5 Amp</td><td>4RU</td></tr><tr><td>5</td><td>Mux- Demux</td><td>100w, 2Amp</td><td>1RU</td><td>375w, 7.5 Amp</td><td>5RU</td></tr><tr><td>6</td><td>Muxponder</td><td>100w, 2Amp</td><td>01 slot</td><td>475w, 9.5 Amp</td><td>5RU</td></tr><tr><td>7</td><td>Chassis 2</td><td>100w, 2 Amp</td><td>4 RU</td><td>100w, 2Amp</td><td>9RU</td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="6">Note: All the Data/ Values mentioned in column (b) to (f) above are indicative and for understanding the way to fill the format. It does not indicate any specific make/model/solution.</td></tr></table> 4.2 A schematic diagram of Equipment Layout is also required to be submitted for fully equipped equipment as per traffic matrix for each of the three location POP i.e. Jaipur, Ajmer and Beawar.
20	**Clause 3.1.5 / Chapter 3C/ Page 30**	May be read as: “The tenderer must provide North Bound CORBA or other ITU standard interface for integrating the NMS to an OSS platform. For integrating the NMS to an OSS platform, tenderer will share necessary details related to the interface provided for this purpose viz. dual NBI/API/MIB etc. whenever required by RailTel, conforming to FCAPS requirement.
21	**Clause 3.2.4/ Chapter 3C/ page 30**	May be read as: “The specification of client terminals at RailTel NMS centers shall be advised by tenderer. However the minimum specification of terminal is 4GB RAM, i5 processor , 500GB Hard and 18.5” LED display with each terminal”.
22	**Clause 3.2.2 (iv) / Chapter 3C/ Page 30**	May be read as : HDD- 2x 1 TB
23	**Clause 4.3.3/ Chapter 3D/**	May be read as : “The 48V DC supply shall be extended to equipment rack using stranded PVC

	Page 33	insulated copper cable as per IRS/TEC specs. Tenderer shall workout on power consumption of the equipment at each location and furnish the details in the bid. The tenderer will supply DC power cable with double current capacity of the required current for dropping all 8 channels from each direction at client level. The length of DC power/earthing cable shall be assessed and supplied by tenderer for each site as per site requirement. Physical work shall be done by RailTel. Alarm Cable of minimum 20 m length should also be supplied with 20% of equipments to extend external/power supply alarms from charger to the equipment for monitoring the alarms from NMS."
24	**Clause 5.1 of Chapter 3E/ Page 34**	**May be Read as:** "TESTS AND MEASUREMENTS (local as well as remote) The test loops should be provided for the following **Interface loop:** Test loop for the interface – the interface card shall enable looping back the incoming signal directly. **Equipment loop:** Test loop for the card-the outgoing signal is looped back directly into the unit. **Optical levels:** Measuring of the levels of transmitted and received optical signals should be possible. Rx and Tx power monitoring of each 100G line side is required to be available at NMS."
25	**Clause No. 5.8.1/ Chapter 3E/ Page 39**	**May be read as:** **"**MAINTENANCE SPARES Unit rates for each spares required for operation and maintenance shall be provided. Tenderer shall also provide the address, contact person, fax, telephone no. of the manufacturer of the spare parts, if different from the tenderer itself. The Tenderer shall warrant that spare part for the system would be available for minimum of 10 years after system commissioning (taking over). After this period if the Tenderer discontinues the production of the spare parts, then he shall give at least 12 months notice prior to such discontinuation so that Purchaser may order the requirements of spares in one lot. 8% mandatory spares (for operation and maintenance) shall be provided for all electronic cards including mother boards, back plane for each system, subsystem, equipment, etc. (with round off at the higher side with two cards minimum), as against SOR item no. A2. 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."
26	**Clause 13.1.2 of Chapter 4A/ page 56**	May be read as: "Release of payments in foreign currency for imported items to foreign companies shall be made on request of bidder along with the bill and will be governed by payment clause.
27	**Clause 13.2 of Chapter 4A/ Page 56**	May be read as: "Bidder while quoting the prices shall include all expenses like custom duty, anti dumping duty etc. leviable (will indicate the current prevalent rates), custom handling charges, storage, transportation, insurance, etc. in the quoted prices."
28	**New Clause no. 3.6 / Chapter 4A**	Detailed standard conditions applicable for the Annual Maintenance Contract between RailTel and the Contractor are given in Annexure-II, chapter-7.

29	**Clause 6 of Bid Data Sheet / Chapter 5/ Page 76**	"15 days" may be read as "30 days"
30	**New Clause 20 in Bid Data Sheet / Chapter 5**	**Reference of Clause 20 of Chapter 4A has been added as clause 20 in Bid Data Sheet as under:** **Execution of Advance Purchase Order and Sub PO/PO** The validity of the Advance Purchase Order will be 12 months from date of issue, which may be extended as per requirement of purchaser with mutual agreement between tenderer and RailTel on negotiation basis.
31	**Clause 6.0 of Annex-II / Chapter-7/ Page 99**	May be read as: "Dedicated NOC Support To enforce of fulfillment of support objectives, contractor shall provide two qualified engineers at NOC locations approved by RailTel where contractor network exists during the working day for level 2 support over the period of this contract."
32	**Clause 2.4.1/ Chapter 8A/ Page 110-111**	Sub clause 2.4.1.18 to 2.4.1.35 may be considered as "deleted".
33	**Clause 2.4.1/ Chapter 8A/ Page 111-112**	Sub Clause 2.4.2.9 to 2.4.2.16 may be considered as "deleted".
34	**Clause 2.4.3.2/ Chapter 8A/ Page 112**	May be considered as "deleted"
35	**Clause 4.8.2 / Chapter 8A/ Page 114**	May be read as: "The equipment shall operate with the input voltage in the range of - 40V DC to -60 V DC."
36	**Clause 5.4.8 of Chapter 8A/ Page 116**	May be read as: "Management system shall support End to End Provisioning. The user should be able to configure the circuit from NMS without the dependency of commissioning file from the planning tool/ OEM support."
37	**Clause 5.4.12 of Chapter 8A/ Page 116**	May be read as: "Management System shall provide exportable data tables in .CSV or other exportable text format that can be imported into third party network modelling tools (without the use of additional proprietary or fee-based software options). The bidder has to provide the planning tool along with the NMS for enabling RailTel to do link engineering. All the licences/ software required for planning tool are required to be quoted against NMS item in SOR on day one. Any future patch/upgrade for planning tool are required to be provided by bidder free of cost up to expiry of AMC period as per tender."
38	**Para III (i) of Chapter-2 / Page 13**	May be read as: " Total cost quoted for items A1(a) to A1 (g) in " Priced BOM for Schedule of Requirement" = X1"

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All other terms and conditions, dates of tender will remain unchanged.

(Sanjai Kumar)

General Manager/Project