



**INDRADHANUSH GAS GRID LIMITED**  
(Joint Venture of IOCL, ONGC, GAIL, OIL and NRL)  
**GUWAHATI, ASSAM**

## **CORRIGENDUM # 5**

**FOR**

**SCADA & APPS SYSTEM FOR PIPELINE SECTIONS  
(1,2,3,4,5,6,7,8,9,12,13&14) UNDER NORTH EAST GAS GRID  
PIPELINE PROJCT OF M/s IGGL**

**OPEN DOMESTIC COMPETITIVE BIDDING**

**Tender no.: 05/51/23VC/IGGL/094**

**Visit:** [www.tenderwizard.com/MECON](http://www.tenderwizard.com/MECON)  
**(Tenderwizard helpdesk: 011-49424365)**



**PREPARED AND ISSUED BY**  
**MECON LIMITED**  
(A Govt. of India Undertaking)  
Delhi, India



**CORRIGENDUM # 5**  
**SCADA & APPS SYSTEM FOR PIPELINE SECTIONS (1,2,3,4,5,6,7,8,9,12,13&14) UNDER NORTH EAST GAS GRID PIPELINE PROJCT OF M/s**  
**IGGL**



**Tender No. 05/51/23VC/IGGL/094**

**Date: 29.04.2022**

| Sl. No. | Description                                      | Volume   | Page No.        | Clause / Para / Section | Amendment / Addition / Modification / Deletion |   |
|---------|--|----------|-----------------|-------------------------|--|---|
| 1       | AVAILABILITY OF TENDER DOCUMENT ON WEBSITE(S)    | I of II  | 10 of 269       | 2.0 (G) of IFB          | Amendment                                      | The clause no. 2.0 (G) of IFB, shall be read as From 24.02.2022 to <b>09.05.2022</b> (1400 Hrs, IST) on following websites:<br><br>(i) Tender Wizard's e-Procurement Portal (e-Portal): <a href="http://www.tenderwizard.com/MECON">www.tenderwizard.com/MECON</a><br>Contact person:- Mr. Suraj Singh<br>Mobile:- 9599653865/01149424365<br>(The same may also be referred as IGGL's E-Portal in this tender document)<br>(ii) IGGL Website – <a href="https://iggl.co.in/">https://iggl.co.in/</a> /<br>(iii) MECON's Tender Website - <a href="http://www.meconlimited.co.in">www.meconlimited.co.in</a> |
| 2       | DUE DATE & TIME OF BID-SUBMISSION (ON OR BEFORE) | I of II  | 10 of 269       | 2.0 (I) of IFB          | Amendment                                      | The clause no. 2.0 (I) of IFB , shall be read as DUE DATE & TIME OF BID-SUBMISSION (ON OR BEFORE) : Upto 1400 hrs. (IST) on <b>09.05.2022</b>   |
| 3       | DATE AND TIME OF UN-PRICED BID OPENING           | I of II  | 10 of 269       | 2.0 (J) of IFB          | Amendment                                      | The clause no. 2.0 (J) of IFB , shall be read as<br><br>DATE AND TIME OF UN-PRICED BID OPENING<br><br>At 1500 hrs. (IST) on <b>09.05.2022</b><br>Shall be conducted through Video Conferencing<br>Details of VC as under<br><br>Google Meet joining info<br>Video call link: <a href="https://meet.google.com/fho-bfgq-iai">https://meet.google.com/fho-bfgq-iai</a>  |
| 4       | Cut Out Slip                                     | I of II  | 13 of 269       | -                       | Amendment                                      | The revised cut out slip is enclosed as <b>Annexure-I to this Corrigendum.</b>  |
| 5       | Completion Schedule                              | I of II  | 5 of 269        | Cl 2.0 E of Section I   | Amendment                                      | The revised Completion schedule is enclosed as <b>Annexure-II to this Corrigendum.</b>  |
| 6       | Price reduction schedule                         | I of II  | 253 of 269      | Clause no. 21 , SCC     | Amendment                                      | The revised Price reduction schedule clause is enclosed as <b>Annexure-III to this Corrigendum.</b>   |
| 8       | PJS - MMS/BMS-1&2                                | II of II | 22 to 26 of 367 | Cl 8.3, 8.4, 8.5        | Modified                                       | In addition to the requirement as defined in these clause; following to be considered<br>1. The loaction of MMS, BMS-1 and BMS-2 as address throught the tender / PJS are tentative and will be finalised during detailed Engineering.<br>2. For Integrated Tape based back-up system; bidder may consider LTP 7 drive or SAN storage (Redundant at MMS and non-Redundant at BMS-1 & 2).  |
| 9       | I/o List for RTU                                 | II of II | 138 of 367      | Annexure II of PJS      | Modified                                       | The revised I/o list for RTU is enclosed as <b>Annexure-IV to this Corrigendum.</b>   |

**All other terms & conditions of tender document remain unaltered.**

**ANNECURE-I TO CORRIGENDUM 5**  
**DO NOT OPEN - THIS IS A QUOTATION**

***Tender Document No.*** : 05/51/23VC/IGGL/094

***Description*** : SCADA & APPS SYSTEM FOR PIPELINE  
SECTIONS (1,2,3,4,5,6,7,8,9,12,13&14) UNDER  
NORTH EAST GAS GRID PIPELINE PROJCT OF  
M/s IGGL.

***Due Date& Time*** : 09.05.2022 at 1400 Hrs (IST)

***From:*** ***To:***

|  |  |
|--|--|
|  | <p><b><i>The Sr. General Manager ( Contracts)</i></b><br/><b><i>MECON LIMITED</i></b><br/><b><i>15TH FLOOR, NORTH TOWER,</i></b><br/><b><i>SCOPE MINAR,</i></b><br/><b><i>LAXMI NAGAR,</i></b><br/><b><i>DELHI – 110092</i></b><br/><b><i>Ph No.: 91-11-22401112/22401143</i></b><br/><b><i>Fax No.: 91-11-22041214</i></b><br/><b><i>Email : <a href="mailto:cont-delhi@mecon.co.in">cont-delhi@mecon.co.in</a></i></b></p> |
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***(To be pasted on the envelope containing Physical documents)***

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**ANNEXURE-II to CORRIGENDUM # 5**

**COMPLETION PERIOD (REVISED)**

Completion period for SCADA & APPS System on turnkey basis for successful supply, installation, testing, SAT, integration of RTU with SERVERS & Centralized SCADA, APPS SYSTEM, trial Run & commissioning, handing over to client, Warranty, Extended warranty, Post warranty maintenance, complete in all respect, shall be as indicated below:

| Sl. No.  | Scope of Work  | Schedule Completion period                                     | Maximum period for written intimation from the date of FAX of Acceptance (FOA).  |
|----------|--|--|--|
| <b>1</b> | <b>Design, Engineering and approval of documents, Manufacturing, Inspection &amp; FAT, Supply at site complete in all respect as per the tender requirement.</b>   |  |  |
| <b>a</b> | RTUs (appx 25 % of total quantity or more as per MR/SOR) and Mandatory spares of RTU   | 06 months from the date of written intimation from client/PMC. | The written intimation will be issued within 12 Months from the date of FAX of Acceptance (FOA).   |
| <b>b</b> | Balance RTUs (balance appx next 25 % of total quantity or more as per MR/SOR)  | 06 months from the date of written intimation from client/PMC. | The written intimation will be issued within 18 Months from the date of FAX of Acceptance (FOA).   |
| <b>c</b> | Balance RTUs (balance appx next 25 % of total quantity or more as per MR/SOR)  | 06 months from the date of written intimation from client/PMC. | The written intimation will be issued within 24 Months from the date of FAX of Acceptance (FOA).   |
| <b>d</b> | SCADA System (At least One MMS, One BMS, One RWS)with APPS System (Server & WS)<br>Note – Bidder initially must have to provide the redundant PC based SCADA Machine preloaded with SCADA software for polling and remote monitoring & control of supplied RTU as per Sl 1 a to c above. | 06 months from the date of written intimation from client/PMC. | The written intimation will be issued within 24 Months from the date of FAX of Acceptance (FOA). However, PC based SCADA machine with preloaded SCADA software shall be supplied as per the schedule of 1 a. |
| <b>e</b> | Balance SCADA System (Balance BMS, balance RWS) with balance APPS Modules for respective section etc   | 06 months from the date of written intimation from client/PMC. | The written intimation will be issued within 30 Months from the date of FAX of Acceptance (FOA).   |
| <b>d</b> | Balance RTUs (RTUs are appx last 25 % of total quantity less or more as applicable as per MR/SOR)  | 06 months from the date of written intimation from client/PMC. | The written intimation will be issued within 30 Months from the date of FAX of Acceptance (FOA).   |

|   |   |   |  |
|---|---|---|--|
| 2 | <b>Installation, Testing, SAT, trial run (30 days), Integration of RTU with MMS, BMS, Integration with Telecom, Commissioning&amp; handing over to IGGL, complete in all respect</b>  |   |  |
| a | RTUs (appx 25 % of total quantity or more as per MR/SOR) and integration with MS, BMS, Telecom, Instrumentation and Electrical Trial run complete in all respect.   | 06 months from the date of written intimation from client/PMC.            | The written intimation will be issued within 18 Months from the date of FAX of Acceptance (FOA).   |
| b | Balance RTUs (of balance next 25 % or more / less Ordered and erected equipment till date of written intimation) and integration with MMS, BMS, Telecom, Instrumentation and Electrical Trial run complete in all respect.  | 06 months from the date of written intimation from client/PMC.            | The written intimation will be issued within 24 Months from the date of FAX of Acceptance (FOA).   |
| c | Balance RTUs (of balance next 25 % or more / less Ordered and erected equipment till date of written intimation) and integration with MMS, BMS, Telecom, Instrumentation and Electrical Trial run complete in all respect.  | 06 months from the date of written intimation from client/PMC.            | The written intimation will be issued within 30 Months from the date of FAX of Acceptance (FOA).   |
| d | SCADA System (At least One MMS, One BMS, One RWS) & APPS System (Server & WS)<br><br>Note – Bidder initially must have to installed & commissioned supplied redundant PC based SCADA Machine preloaded with SCADA software for polling and remote monitoring & control of installed RTU as per SI 2 a to c above. | 06 months from the date of written intimation from client/PMC.            | The written intimation will be issued within 30 Months from the date of FAX of Acceptance (FOA).<br><br>However, PC based SCADA machine with preloaded SCADA software shall be installed as per the schedule of 2 a. |
| e | Balance SCADA System (Balance BMS, balance RWS), APPS Modules and integration with MS complete in all respect   | 06 months from the date of written intimation from client/PMC.            | The written intimation will be issued within 36 Months from the date of FAX of Acceptance (FOA).   |
| f | Balance RTUs (of next appx 25 % more or less as balance Ordered and erected equipment till date of written intimation) and integration with MMS, BMS, Telecom, Instrumentation and Electrical, Trial run complete in all respect.   | 06 months from the date of written intimation from client/PMC.            | The written intimation will be issued within 36 Months from the date of FAX of Acceptance (FOA).   |
| g | Any residual works, Integrations, Overall Trial run, overall commissioning and Handing over, As built documentation complete in all respect.  | 02 months from last RTU/ RWS/ BMS installed, integrated and commissioned. | Within 42 Months from the date of FAX of Acceptance (FOA).   |
| 3 | PWMC (Comprehensive) – CAMC for complete SCADA & APPS system  | 05 years from completion of Main warranty.                                | Order for CAMC will be placed by client separately. It will start after completion of main warranty of 24 months from date of Handing over of the system.  |

**NOTE :**

1. In case the time of completion of work is delayed beyond 48 months (i.e the time schedule of 44 months from the date of FOA plus a grace period of 4 months), due to reasons solely attributable to Employer/Consultant, and if contractor demands, Employer is liable to pay escalation on unexecuted quantities of Site works items after 48 months @ 5% per annum (maximum) on quoted unit rates as per Price Schedule. The same shall be paid based on certification of EIC. The decision of EIC will be final.
2. The Main warranty of the complete SCADA & APPS system including all RTUs, RWS will be 24 months from the date of completion of schedule as per 2 g above. In case any works not completed till 44 months from FOA; Extended warranty will start for all the supplied / commissioned system so that the main warranty is intact for 24 months from the date of completion of schedule as per 2 g above.
3. The extended warranty of the SCADA system (MMS, BMS, RWS) and APPS system will start after 44 months from FOA and shall continue till the start of main warranty as defined at note 2 above; payment of extended warranty shall be as per the rates quoted by the bidder.
4. For RTU (Lot wise) on completion of all activities as defined in 2 a/ 2 b/ 2 c /2 f respectively till the start of main warranty as defined at note 2 above will be under deemed warranty upto 44 months from FOA. After 44 months the extended warranty will be payable till the start of main warranty quoted by the bidder for respective items.

**Note:** Upon completion of main warranty of 24 months from date of acceptance of system after commissioning & handing over to IGGL, bidder has to provide Post Warranty Comprehensive Maintenance for 05 Year.

The order of Supply & Commissioning (except PWMC) will be placed with FOA; however separate order will be placed for PWMC for execution on completion of main warranty with same terms and condition of contract.

**ANNEXURE-III to CORRIGENDUM # 5**



21. **REVISED PRICE REDUCTION SCHEDULE (PRS)**

21.1 Pursuant to cl. no. 27.1 of GCC – Work, the Price reduction schedule shall be modified to the following extent:-

Price Reduction Schedule for delay in completion will be applicable separately for

- i) Supply Portion
- ii) Site works

Contract Value of Supply Portion & Site works respectively indicated in Letter of Award instead of Total Contract Value shall be considered for reduction in price for delay.

21.2 The Price Reduction Schedule shall be applied on delivery periods as indicated at sl. no. 2(E) of IFB , in the following manner

- a) Supply Portion

In a supply contract, the portion of supply completed in all respect which can be used for commercial operation shall not be considered for applying PRS, if delivered within contractual delivery period. The remaining supplies which are completed beyond the contractual delivery shall attract price reduction schedule @ $\frac{1}{2}$  % per week of the delayed delivery value maximum upto 5% of the total order value.

- b) Site Works

PRS shall be applied as per clause no. 27 of GCC-Works.

The total liability of the Contractor to Employer/ Consultant under sub clause no. 21.1 on Compensation for Delay/Price Reduction Schedule shall not exceed 5% (Five Percent) of Total contract value. The compensation on account of any liability (ies) other than above shall be as per provisions of Bidding Documents.

***The value referred in PRS clause is excluding taxes and duties reimbursable by IGGL.***

**ANNEXURE-IV to CORRIGENDUM # 5**

| Sl. No.                |                      | PARTICULAR JOB SPECIFICATION      |                       |          |                             |             |      |     |       |      |                             |                    |      |     |       |      |                             |             |          |     |       |      |             |             |      |                       |       |  |  |  |  |
|------------------------|----------------------|-----------------------------------|-----------------------|----------|-----------------------------|-------------|------|-----|-------|------|-----------------------------|--------------------|------|-----|-------|------|-----------------------------|-------------|----------|-----|-------|------|-------------|-------------|------|-----------------------|-------|--|--|--|--|
|                        |                      | PJS No.: MEC/05/E5/T/23VC/PJS-094 |                       |          |                             |             |      |     |       |      |                             |                    |      |     |       |      |                             |             |          |     |       |      |             |             |      |                       |       |  |  |  |  |
|                        |                      | Rev. 0                            |                       |          |                             |             |      |     |       |      |                             | ANNEXURE-II to PJS |      |     |       |      |                             |             |          |     |       |      | Page 1 of 1 |             |      |                       |       |  |  |  |  |
| I/O LIST Rev 01 - NEGG |                      |                                   |                       |          |                             |             |      |     |       |      |                             |                    |      |     |       |      |                             |             |          |     |       |      |             |             |      |                       |       |  |  |  |  |
| Sl. No.                | RTU                  | Location                          | Type of RTU as per MH | AI I/O's |                             |             |      |     |       |      | AD I/O's                    | DI I/O's           |      |     |       |      |                             |             | DO I/O's |     |       |      |             |             |      | Serial/Ethernet ports |       |  |  |  |  |
|                        |                      |                                   |                       | Inst     | CP/CC & Cathodic Protection | UPS / Solar | Fire | LEL | Total | Inst | CP/CC & Cathodic Protection | UPS / Solar        | Fire | LEL | Total | Inst | CP/CC & Cathodic Protection | UPS / Solar | Fire     | LEL | Total | Inst | Electrical  | UPS / Solar | Fire | LEL                   | Total |  |  |  |  |
| 1                      | RTU - Genshakt Ph-I  | DT, Genshakt Ph-I                 | DT                    | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 0   | 10    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |
| 2                      | RTU-SV 1             | SV-1                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 3                      | RTU-SV 2             | SV-2                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 4                      | RTU-SV3              | SV-3                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 5                      | RTU-SV 4             | SV-4                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 6                      | RTU-SP 1             | IPS                               | IP                    | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 0   | 10    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |
| 7                      | RTU-SV 5             | SV-5                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 8                      | RTU-SV 6             | SV-6                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 9                      | RTU-SV 7             | SV-7                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 10                     | RTU-SV 8             | SV-8                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 11                     | RTU-SP 2             | IPS                               | IP                    | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 0   | 10    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |
| 12                     | RTU-SV 9             | SV-9                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 13                     | RTU-SV 10 cum DT     | SV-10 cum DT                      | SV cum DT             | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 0   | 10    | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 14                     | RTU-SV 11            | SV-11                             | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 15                     | RTU-SV 12            | SV-12                             | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 16                     | RTU-SV 13            | SV-13                             | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 17                     | RTU-SP 3             | IPS                               | IP                    | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 0   | 10    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |
| 18                     | RTU-SV 14            | SV-14                             | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 19                     | RTU-SV 15            | SV-15 cum DT                      | SV cum DT             | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 20                     | RTU-SV 16            | SV-16                             | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 21                     | RTU-RT Namalipark    | RT Namalipark                     | RT                    | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 0   | 10    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |
| 22                     | RTU-SV 1 (I)         | SV-1 (I)                          | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 23                     | RTU-RT Bangalore     | RT Bangalore                      | RT                    | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 0   | 10    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |
| 24                     | RTU-SV 1D            | SV-1 D                            | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 25                     | RTU-SV 2D            | SV-2 D                            | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 26                     | RTU-SV 3D            | SV-3 D                            | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 27                     | RTU-SV 4D            | SV-4 D                            | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 28                     | RTU-SV 5D            | SV-5 D                            | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 29                     | RTU-SV 6D            | SV-6 D                            | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 30                     | RTU-SV 7D            | SV-7 D                            | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 0   | 4     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 31                     | RTU-RT Bangalore     | RT Bangalore                      | RT                    | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 0   | 10    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |
| 32                     | RTU - Genshakt Ph-II | DT cum DT, Genshakt Ph-II         | DT                    | 12       | 4                           | 6           | 0    | 0   | 22    | 2    | 26                          | 2                  | 10   | 2   | 2     | 42   | 8                           | 2           | 0        | 2   | 12    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |
| 33                     | RTU-SV 1             | SV-1                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 2   | 6     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 34                     | RTU-SV 2             | SV-2                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 2   | 6     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 35                     | RTU-SV 3             | SV-3                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 2   | 6     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 36                     | RTU-SV 4             | SV-4                              | SV                    | 6        | 4                           | 6           | 0    | 0   | 16    | 0    | 6                           | 2                  | 10   | 2   | 2     | 22   | 2                           | 2           | 0        | 2   | 6     | 0    | 1           | 2           | 0    | 0                     | 3     |  |  |  |  |
| 37                     | RTU-SP 1 cum DT      | IPS-1                             | IP                    | 19       | 4                           | 6           | 0    | 0   | 29    | 2    | 38                          | 2                  | 10   | 2   | 2     | 54   | 12                          | 2           | 0        | 2   | 16    | 2    | 1           | 2           | 1    | 1                     | 7     |  |  |  |  |

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|    |                   |                |           |    |   |   |   |   |    |   |    |   |    |   |   |    |    |   |   |   |   |    |   |   |   |   |   |   |
|----|-------------------|----------------|-----------|----|---|---|---|---|----|---|----|---|----|---|---|----|----|---|---|---|---|----|---|---|---|---|---|---|
| 38 | RTU-SV5           | SV-5           | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 39 | RTU-SV6           | SV-6           | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 40 | RTU-SV7           | SV-7           | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 41 | RTU-IP2           | IP5            | IP        | 12 | 4 | 6 | 0 | 0 | 22 | 2 | 26 | 2 | 50 | 2 | 2 | 42 | 4  | 2 | 0 | 2 | 0 | 8  | 2 | 1 | 2 | 1 | 1 | 7 |
| 42 | RTU-SV 8 com DT   | SV 8 com DT    | SV com DT | 12 | 4 | 6 | 0 | 0 | 22 | 2 | 26 | 2 | 50 | 2 | 2 | 42 | 4  | 2 | 0 | 2 | 0 | 8  | 2 | 1 | 2 | 1 | 1 | 7 |
| 43 | RTU-SV9           | SV-9           | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 44 | RTU-SV 10         | SV-10          | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 45 | RTU-SV 11         | SV-11          | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 46 | RTU-SV 12         | SV-12          | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 47 | RTU-RT Passenger  | RT Passenger   | RT        | 24 | 4 | 6 | 0 | 0 | 34 | 2 | 48 | 2 | 50 | 2 | 2 | 64 | 16 | 2 | 0 | 2 | 0 | 20 | 4 | 1 | 2 | 1 | 1 | 9 |
| 48 | RTU-SV 1 (SH)     | SV-1 (SH)      | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 49 | RTU-RT Shilong    | RT Shilong     | RT        | 12 | 4 | 6 | 0 | 0 | 22 | 2 | 26 | 2 | 50 | 2 | 2 | 42 | 4  | 2 | 0 | 2 | 0 | 8  | 2 | 1 | 2 | 1 | 1 | 7 |
| 50 | RTU-SV 1 (SL)     | SV-1 (SL)      | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 51 | RTU-SV 2 (SL)     | SV-12(SL)      | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 52 | RTU-RT Sikkur     | RT- Sikkur     | RT        | 12 | 4 | 6 | 0 | 0 | 22 | 2 | 26 | 2 | 50 | 2 | 2 | 42 | 4  | 2 | 0 | 2 | 0 | 8  | 2 | 1 | 2 | 1 | 1 | 7 |
| 53 | RTU-SV 1 Agartala | SV-1(AG)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 54 | RTU-SV 2 Agartala | SV-2(AG)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 55 | RTU-SV 3 Agartala | SV-3(AG)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 56 | RTU-SV 4 Agartala | SV-4(AG)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 57 | RTU-SV 5 Agartala | SV-5(AG)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 58 | RTU-SV 6 Agartala | SV-6(AG)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 59 | RTU-RT Agartala   | RT Agartala    | RT        | 19 | 4 | 6 | 0 | 0 | 29 | 2 | 38 | 2 | 50 | 2 | 2 | 54 | 12 | 2 | 0 | 2 | 0 | 16 | 2 | 1 | 2 | 1 | 1 | 7 |
| 60 | RTU-DT Kabil      | DT Kabil Field | RT        | 12 | 4 | 6 | 0 | 0 | 22 | 2 | 26 | 2 | 50 | 2 | 2 | 42 | 4  | 2 | 0 | 2 | 0 | 8  | 2 | 1 | 2 | 1 | 1 | 7 |
| 61 | RTU-SV 1 Aizawl   | SV-1(AZ)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 62 | RTU-SV 2 Aizawl   | SV-2(AZ)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 63 | RTU-SV 3 Aizawl   | SV-3(AZ)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 64 | RTU-SV 4 Aizawl   | SV-4(AZ)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 65 | RTU-SV 5 Aizawl   | SV-5(AZ)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 66 | RTU-SV 6 Aizawl   | SV-6(AZ)       | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 67 | RTU-RT Aizawl     | RT Aizawl      | RT        | 12 | 4 | 6 | 0 | 0 | 22 | 2 | 26 | 2 | 50 | 2 | 2 | 42 | 4  | 2 | 0 | 2 | 0 | 8  | 2 | 1 | 2 | 1 | 1 | 7 |
| 68 | RTU-SV 1 Tulumera | SV-1           | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 69 | RTU-SV 2 Tulumera | SV-2           | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 70 | RTU-SV 3 Tulumera | SV-3           | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 71 | RTU-SV 4 Tulumera | SV-4           | SV        | 6  | 4 | 6 | 0 | 0 | 16 | 0 | 6  | 2 | 50 | 2 | 2 | 22 | 2  | 2 | 0 | 2 | 0 | 6  | 0 | 1 | 2 | 0 | 0 | 3 |
| 72 | RTU-DT Tulumera   | DT Tulumera    | RT        | 12 | 4 | 6 | 0 | 0 | 22 | 2 | 26 | 2 | 50 | 2 | 2 | 42 | 4  | 2 | 0 | 2 | 0 | 8  | 2 | 1 | 2 | 1 | 1 | 7 |
| 73 | RTU-RT Nongpan    | RT Nongpan     | RT        | 12 | 4 | 6 | 0 | 0 | 22 | 2 | 26 | 2 | 50 | 2 | 2 | 42 | 4  | 2 | 0 | 2 | 0 | 8  | 2 | 1 | 2 | 1 | 1 | 7 |

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|               |   |
|---------------|---|
| <b>NOTES:</b> |   |
| 1             | In Addition to the above Quantities 25% Spare I/Os shall be considered while sizing of RTU for each Station.  |
| 2             | The I/Os are tentative. Detailed Engineering based on P&ID and Instruments Index for finalization of I/O counts is in Bidder's Scope.   |
| 3             | The I/Os are tentative. I/Os typically considered for Electrical, Solar, Fire & Safety, UPS & Cathodic Protection System (CP).  |
| 4             | The I/O Counts will be finalized during Detail Engineering.   |
| 5             | In addition to above, Minimum 1 no. spare RS-232 and 2 nos. of spare RS-485 ports shall be provided at each station.  |
| 6             | Serial Port includes for Electrical (Solar, UPS), Fire & Safety and Cathodic Protection (CP). If during detail engineering, any additional card has to be added, the same will be paid as per the rates available in the SOR, However wiring, erection etc will be in Bidder's scope. |