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DELHI METRO RAIL CORPORATION LTD.

DELHI METRO RAIL CORPORATION

CONTRACT NO: CE-25

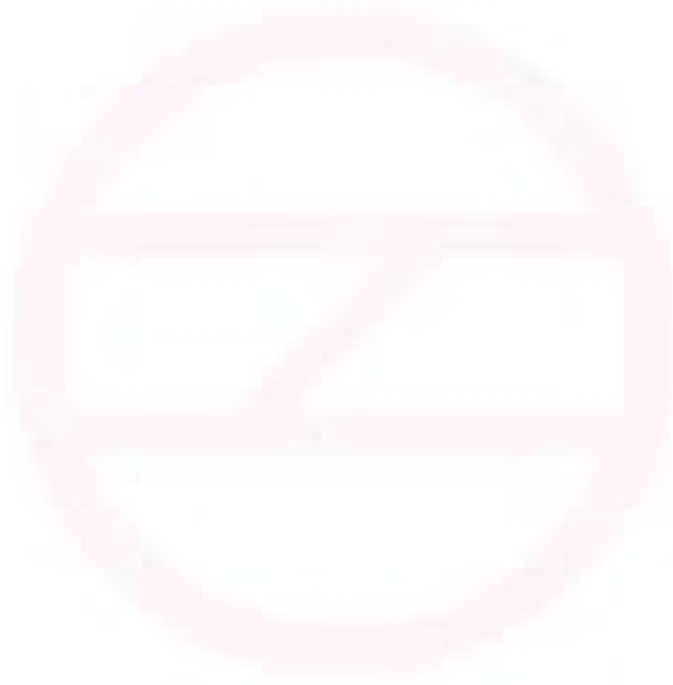
**“ONLINE MONITORING OF STATUS AND FAULTS OF LIFT,
ESCALATOR & MOVING WALKWAYS FOR LINE-7 OF DELHI
MRTS PROJECT PHASE - III”.**

EMPLOYER’S REQUIREMENT

DELHI METRO RAIL CORPORATION LTD.
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Employer Requirement

1. OBJECTIVE

The objective of the contract is the fixing of agency for **Online Monitoring of status and faults of Lift, Escalator & Moving Walkways of Line-7 of Delhi MRTS Project Phase – III** as mentioned in Employer Requirement. In full recognition of this objective, and with full acceptance of the obligations, liabilities and risks which may be involved, the Contractor shall undertake the execution of the Works.

2. GENERAL

2.1 **Online Monitoring of status and faults of Lift, Escalator & Moving Walkways of Line-7 of Delhi MRTS Project Phase – III** shall be done in accordance with Employer's Requirements and the other requirements of the Contract.

2.2 **Online Monitoring of status and faults of Lift, Escalator & Moving Walkways of Line-7 of Delhi MRTS Project Phase – III** shall be of highest standards available using proven up-to-date good Engineering practices. The Specification shall in any case not specify standards which, in the Engineer's opinion, are less than or inferior to those described in the Technical Specifications contained in the Tender Documents.

3. SCOPE OF WORK

The work shall be executed as per given schedule.

3.1 The schedule of work includes the following:

3.1.1 Online Monitoring of status and faults of Lift, Escalator & Moving Walkways of Line-7 of Delhi MRTS Project Phase – III as per BOQ at following stations:

Online Monitoring System for Lift & Escalators and Moving Walkways of Line-7 of Phase-III

Mukundpur - Shiv Vihar (Line-7 of Phase-III)				
S. No	Station Name	Esc. (Otis Make)	Lift (Kone Make)	No of Equipment required per Station (Separate for lift & Escalator)
1	Mukundpur	2	2	2
2	Azadpur	12	3	2
3	Shalimar Bagh	7	3	2
4	Netaji Subhash Place	8	3	2
5	Shakarpur	3	3	2
6	Punjabi Bagh	3	3	2
7	ESI	3	3	2
8	Rajouri Garden	6	2	2
9	Mayapuri	4	4	2
10	Narina Vihar	4	2	2
11	Delhi Cantt	3	4	2
12	Dhaura Kuan	4	4	2
13	Moti Bagh	3	5	2
14	Bhikaji Kama Place	5	3	2
15	Sarojini Nagar	4	2	2
16	INA	14	5	2
17	South Extension	7	3	2
18	Lajpat Nagar	14	3	2
19	Vinoba Puri	5	2	2

20	Ashram	7	4	2
21	Hazrat Nizamuddin	11	3	2
22	Mayur Vihar Ph 1	11	6	2
23	Mayur Vihar Pocket 1	3	4	2
24	Trilokpuri	4	4	2
25	Vinod Nagar East	3	4	2
26	Vinod Nagar	3	3	2
27	IP Extention	3	4	2
28	Anand Vihar	7	4	2
29	Karkarduma	17	6	2
30	Karkarduma Court	3	4	2
31	Krishna Nagar	3	4	2
32	East Azad Nagar	3	4	2
33	Welcome	7	4	2
34	Jafrabad	4	4	2
35	Maujpur	7	5	2
36	Gokulpuri	4	4	2
37	Johari Enclave	3	4	2
38	Shiv Vihar	3	4	2
Total (A)		217	138	76
Automatic Moving Walk Ways (Cranex-IFE Makes)				
1	Dhaura Kuan		22	2
2	Rajouri Garden		4	1
Total (B)			26	3
Total (A+B)			381	79

Note: - The quantity of equipment per station may vary and depend on compatibility of online monitoring equipment with total number of Lift or Escalators at one station. **Contractor can use one common device / equipment for lift, escalator & Moving walkways if their device is compatible.**

3.1.3 All hardware / Online Monitoring equipment will be the property of Contractor. The contractor shall be responsible for transportation / shifting / dismantling of equipment to / from the desired locations.

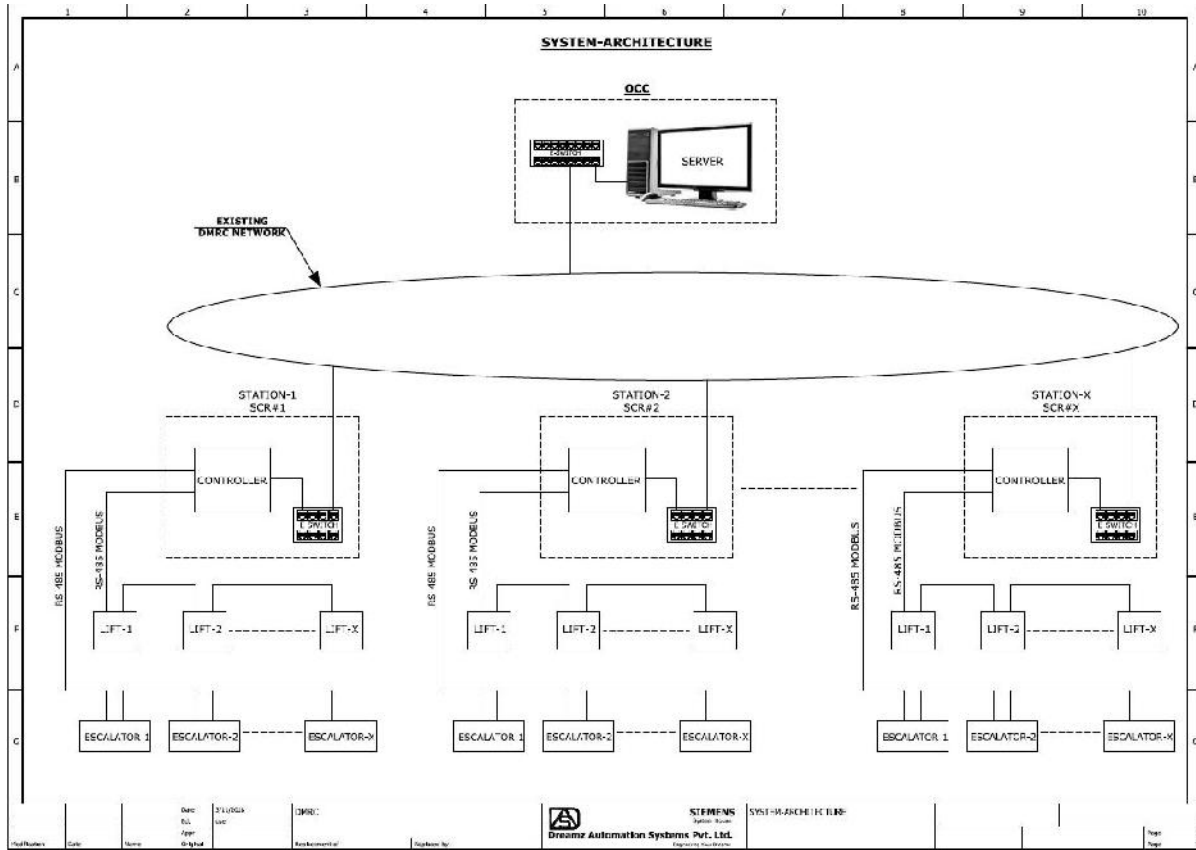
3.1.4 Location of installation of the equipment shall be as decided by the DMRC engineer-in-charge.

3.1.5 Work to be executed

- Development of Software and User Interface as per requirement of Employer. DMRC reserve the right to seek changes in web based user interface as per requirement and no extra cost will be paid for changes / modification by Contractor.
- Supply and installation of hardware to take the data's of lifts, escalators & Moving Walkways from Station Control Room
- DMRC will provide the signals on MODBUS (Open Protocol) of all lifts, escalators & Moving Walkways Station wise at a centralized location, preferably in Station control room (SCR) of that station. The Register Map / Fault Code Mapping of lifts, Escalators and Moving Walkways shall be provided by DMRC to successful bidder (contractor) only at the time of execution of work as these are confidential. Contractor is advised to do not share the confidential information to any third party without getting approval of DMRC.

- **Data will be transferred from all above mentioned stations to OCC on DMRC fiber optic network. The Ethernet port will be available either in SCR (Station Control Room) or in TER (Telecom Equipment Room) at each station. If Ethernet port is available in TER, Contractor has to supply and the lay the fiber optic cable from SCR to TER. Fiber optic cable should have two extra spare pair. Any other material i.e. Ethernet switches, LIU (Light interface unit), fiber optic convertor etc, if required, will be supplied by the contractor. To collect the data in OCC (Operation Control Centre) local server will be provided by contractor. Fiber optic cable and other equipment required to connect the server from Ethernet port in OCC will be supplied by contractor. Computer with LED/LCD monitor of latest version (make and specification to be approved by engineer incharge) will be supplied by contractor for local server. The server at OCC will be web based and could be accessed on DMRC network by other client using Web Browser.**

Networking architecture for the system is as below:-



- Contractor is responsible for internet security to prevent any type of data theft etc.
- The Service Provider should take care of guidelines related to data and services issued by Govt of India for Cloud services (Meghraj)
- Necessary arrangement i.e. box for placing of hardware and looping arrangement of signals of all Lifts, Escalators and Moving Walkways wise, etc. to be done by contractor and no extra payment shall be paid by DMRC.
- The user name and password of user interface website shall be provided by contractor to only authorised persons of DMRC after getting approval of engineer-in-charge.
- Data Monitoring web based user interface Access to data shall consist:-
 - Station wise running status of all Lifts, Escalators & Moving Walkways
 - Data viewing
 - Real Time data

- Historic Data viewing
- Network tree view
- User configurable profile
- Report
- Download Data reports in excel for further evaluation and analysis
- Auto e-mail Reports to registered email ID's
- Auto SMS of faults to registered numbers
- Pop-up window of current faults
- Status of Maintenance
- Alert for Maintenance and predictive replacement of spare parts.
- Access to Authorized Maintenance staff to update maintenance status / Predictive replacement of spare parts.

3.1.5 Corrective maintenance: Failure Maintenance

Maintenance of user interface and hardware for one year from the date of successful commissioning and issuing completion certificate to contractor.

- a) Response time at site after lodging complain by DMRC : 03 hrs
- b) Attending time: 08 hrs
 - Contractor shall provide call center to DMRC where complain of non-functioning of system/any failure shall be registered. In all such cases reference number shall be provided by contractor.
 - For every site visit, for schedule / preventive maintenance of Wireless Energy Monitoring Devices contractor will prepare a service report, signed by contractor's service Engineer and DMRC engineer. One copy of it will be handed over to the DMRC engineer and second would be retained by contractor's service engineer.

- 3.2** The contract for online monitoring will be awarded for one year only. After completion of one year, DMRC reserves the right to extend the maintenance/DLP/service. The rate and duration of maintenance/DLP/service period will be finalized at that time but the cost of development / modification of software and user interface will not be applicable. DMRC reserve the right to ask some modification in user interface as per requirement for which nothing shall be paid extra
- 3.3** All the work associated with finishing such as welding, patching, grinding, complete in all respect shall be carried out by contractor for which nothing shall be paid extra.
- 3.4** Manning of site by guard shall be in the scope of contractor if required.
- 3.5** While executing work, damage if any to the property/asset of DMRC/other agency shall be compensated by the contractor.
- 3.6** All T&P material including providing of shall be in the scope of Contractor. No T& P support shall be provided by DMRC.
- 3.7** Safety of Man & material shall be ensured by contractor.
- 3.8** Manpower for loading and Unloading of cable route marker at different locations shall be provided by Contractor.
- 3.9** All the work associated with finishing such as welding, patching, grinding, complete in all respect shall be carried out by contractor for which nothing shall be paid extra.
- 3.10** DMRC is an ISO-14001 & OHSAS 18001 certified Organization for Environment, Health & safety. The work is to be carried out as per International Norms/Standards and in such a manner that all premises always look Neat & Clean. Similarly, the waste disposal is also carried out in totally sealed manner without affecting the Environment.
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4 Penalty

If at any stage, quality of route marker found inferior /poor workmanship, penalty of 10% of contracted amount shall be imposed.

5 Payment :

- (i) No advance payment of any type shall be paid.
- (ii) 80% of total cost shall be paid after issuing of completion certificate for successfully installation and commissioning of online monitoring system and handed over to O&M wing of DMRC.
- (iii) 20% of total cost shall be paid on quarterly basis in equal amount during one year of maintenance/DLP/Service period.
- (iv) The payment shall be made subjected to submission of jointly signed report of DMRC Engineer in charge & your representative.
- ~~(v) The payment for material/spare/parts replaced during corrective/breakdown maintenance shall be payable at the rate as per accepted BOQ.~~
- (vi) Payment shall be subjected to deduction of all T.D.S as per applicable law.
- (vii) Joint report with concerned officer / staff shall be made in triplicate duly signed by field staff and concerned officer. Bill along with copy of joint report shall be submitted to engineer-in-charge for verification and processing the bill for payment.

6. Additional Clause

- (i) Contractor shall keep close coordination and interface with Operation & Safety department of O&M as well as Project Wing for smooth working and proper execution & completion of work.
 - (ii) The manpower can also be deployed during off days/holidays/night hours as per site requirement for which nothing shall be paid extra.
 - (iii) The work is to be carried out under the guidance / supervision of DMRC only.
 - (iv) Power block / permit to work shall be arranged by DMRC on advance request by the contractor.
 - (v) The DMRC may make minor alterations /additions/substitutions in the specifications /scope of work or issue instructions that may be deemed necessary during the period of contract and contractor shall carry out the work in accordance with the instructions which may be given to him by authorized DMRC representative. No extra payment shall be payable on this account.
 - (vi) Complete time schedule shall be given by the contractor in advance to concerned engineer-in-charge. However availability of site shall be informed by engineer-in-charge.
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