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**No. EL/ 4.2.15/EoTT**

**Date: 12.03.2020**

M/s SIGNOTRON (INDIA) PVT. LTD. "SIGNOTRON TOWER", Plot J1-6, Block - EP, Sector - V, Salt Lake City, Electronics Complex, Kolkata - 700 091	Autometer Alliance Limited, C-63, Sector 57, Noida 201 307 (U.P.) India
M/s Siemens Ltd, RC-IN MO MM MT Plot 6A, Sector 18, Maruti Industrial Area, HUDA, Gurgaon 122 015	M/s Tata Power SED, 401 Mercantile House 15 Kasturba Gandhi Marg, New Delhi - 110 001

**Sub:** Minutes of Meeting held at RDSO on 06.03.2020 on issues related to development of End of Train Telemetry(EoTT) system on IR.

**Ref:** RDSO letter No. EL/4.2.15/EoTT dated 27.02.2020.

1. Please find attached Minutes of Meeting held at RDSO on 06.03.2020 on issues related to development of End of Train Telemetry(EoTT) system for your information and necessary action at your end.
2. Minutes of Meeting can also be downloaded through following path:  
[www.rdso.indianrailways.gov.in](http://www.rdso.indianrailways.gov.in) → Directorates → Electric Loco → Other important links → Reliability Meetings → Others → Minutes of Meeting

Encl - As above

(Jitendra Yadav)  
For Director General/ Elect

Copy to:

1. Secretary (Traction), Railway Board, Rail Bhavan, New Delhi - 110001  
- for kind information
2. Principal Chief Electrical Engineer, East Coast Railway, Bhubaneswar
3. Principal Chief Electrical Engineer, South Eastern Railway, Garden Reach Road, Kolkata

Encl - As above

(Jitendra Yadav)  
For Director General/ Elect

**Minutes of Meeting for 'Development of End of Train Telemetry(EoTT) system on IR held at RDSO on 06.03.2020**

**Present:**

RDSO			M/S AAL	
1	Sh. SanjivSwarup, PEDSE	1	Sh. Sajal Gupta, Sr VP & Country Head	
2	„ Jitendra Yadav, JDSE/TPS	2	„ R. K. Maurya, Sr. Manager, R&D	
3	„ Rajesh Kumar, DDSE/TM		<b>M/sSignotron</b>	
	<b>ECOR</b>	1	Sh. Sabyasachi Das, GM(Marketing)	
1	Sh. A.R.Mohanty, DyCEE(HQ)/ECOR	2	„ Nabendu Das , CPE(Design)	
2	„SoumyaKanti Das, ADEE/ANGL		<b>M/s Siemens</b>	
	<b>SER</b>	1	Miss. Kanika Gupta, Sales Executive	
1	„ Niranjana Kumar, DEE/TRS/BNDM		<b>M/s TATA Power</b>	
		1	Sh. Satya Nair, Head Alliances	

1. Railway Board vide letter No. 2018/Elect(Dev.)/181/4 dated 20.08.2018 had advised Electrical Directorate of RDSO to finalise the specification of End of Train Telemetry(EoTT) project.
2. RDSO had already prepared and issued Functional Requirements Specification (FRS) number RDSO/2019/EL/FRS/0025, Rev.'0' dated 25.06.2019 for the subject item.
3. Tender has been finalized by ECoR and POs issued to firms as per following details

Firm name	PO details	Qty.	Prototype inspection	Delivery Period
M/s Autometers Alliance Ltd., Noida- M/s Inteletrack	04195129100167 dated 14 Feb-2020	3 set	Within 60 days from PO date	Within 120 days from PO date
M/s Signotron(India Pvt. Ltd., Kolkata- M/s EMS Industries	04195129100165 dated 14 Feb-2020	3 set	Within 60 days from PO date	Within 120 days from PO date
M/s Siemens Ltd., Gurgaon	04195129100163 dated 14 Feb-2020	2 set	Within 60 days from PO date	Within 120 days from PO date
M/s TATA Power company Ltd., Mumbai	04195129100164 dated 14 Feb-2020	2 set	Within 60 days from PO date	Within 120 days from PO date

4. As per above POs, the Delivery period is within 120 days from date of issue of LOA i.e. 13<sup>th</sup> June, 2020.

*[Signature]*  
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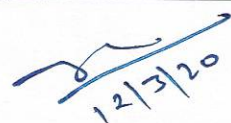
5. Since more than 20 days have already been passed, meeting was conducted with ECoR/SER, M/s AAL, M/s Signotron, M/s Siemens & M/s Tata power at RDSO, Lucknow on 06.03.2020 to review the progress.
6. M/s AAL & M/s Signotron mentioned that they require single frequency for communication from front to rear unit and rear to front unit irrespective of number of units of EoTT. M/s Siemens & M/s TATA require two different frequencies i.e. one from front to rear unit and 2<sup>nd</sup> one from rear to front unit irrespective of the number of units in service. However, it was informed that requirement of single frequency had already been deliberated in details during finalization of the FRS. As per discussion in the meeting, Siemens and Tata have interoperability features within their products and do not have the interoperability feature with other makes. Both the firms have confirmed that they will resolve this issue with their design team and revert back to RDSO within few days to meet the interoperable feature with other make EOT device, broadcasting & receiving of Emergency message by other EOT & HOT(Clause No. 2.2.27) and repeater functionality(Clause 2.2.13) as per FRS No. RDSO/2019/EL/FRS/0025, Rev.'0'.
7. Also, Clause No. 3.7.20 of FRS No. RDSO/2019/EL/FRS/0025, Rev.'0' dated 25.06.2019, clearly specified the use of single frequency for front to rear and rear to front communication. Therefore, M/s TATA & M/s Siemens are requested to follow single frequency as per the specification.
8. All the four firms informed that they require frequency allocation letter from ECoR to approach RLO(Regional Licensing Officer) for taking Import Permission Certificate for importing specified quantity of EoTT units by the respective suppliers. All the firms have informed that there would be about 6-8 weeks procurement lead time for radio equipment.
9. East Coast Railway has informed that an application in requisite format has been submitted to WPC vide letter no. ELS/ANGL/T-94/20/ dated 27.01.2020 for frequency allocation in 406-408 MHz band for EoTT operation.
10. As per the discussion in the meeting and to expedite the frequency allocation, RDSO vide letter No. EL/4.2.15/EoTT dated 06.03.2020 has requested WPC for meeting in their office in the coming week along with

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Railway Board, ECoR/SER for expediting the allocation of frequency for EoTT operation.

11. Mounting arrangement of the EOT unit has been clarified to firms. As per Clause No. 2.3.8 of FRS/0025, the EOT shall be fitted on Centre Buffer Coupler of wagons to drawing no. WD-81010-S-03.
12. For emergency BP pressure sensing, all firms were advised to provide an additional pressure sensor/transducer in BP pipeline with suitable pressure settings for sensing the emergency condition of braking. As per Clause 2.3.3 of FRS/0025, Rev'0', firms are free to design their methodology to detect the emergency brake application in the locomotive and have to submit details during design submission.
13. KUR Division GPS Coordinates as required by M/s AAL & M/s Signotron has been given by ELS/ANGL. ELS/BNDM is also advised to collect similar data and provide to these firms.
14. Following time lines have been given to M/s AAL, M/s Signotron, M/s Siemens & M/s Tata Power. These firms have agreed to submit the design documents, test protocols etc. as per activity at SN-1 by 31.03.2020. All the firms have informed that frequency allocation letter from WPC is required for importing the radio equipment & prototype testing.


SN	Details of Activity	Responsibility	Target
1	Finalization of Internal design and Submission of Design details, test protocols as per Clause no. 1.10, & Trial Scheme as per Clause No. 1.8.4	AAL, Signotron, Siemens & Tata power.	31.03.2020
2	Evaluation of the submitted Design details & test protocols	RDSO	14.04.2020
3	Submission of prototype	Firms	20.04.2020
4	Prototype testing of EoTT system	Respective Firm & RDSO	05.05.2020
5	Clearance of Prototype testing	RDSO	15.05.2020
6	Clearance of Trial scheme	Jointly by RDSO & Firm	20.05.2020
7	Nomination of Locos for Fitment of EoTT systems	ECoR/SER	25.05.2020
8	Fixing arrangement of EOT as per Clause 2.2.19 & Locking arrangement of EOT	Firm has to submit on or before	07.06.2020

  
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	as per Clause 2.2.20	31.05.2020 for Railway's approval and approval by ECoR/SER by 07.06.2020	
9	Supply, Installation & Commissioning of EoTT system	Firms	12.06.2020
10	Starting of Field trial	ECoR/SER, RDSO & respective firm	20.06.2020

15. RDSO requested all the four firms to expedite the development work and adhere to the timelines and to complete the work within the prescribed time limit as per POs.

  
 (Jitendra Yadav)  
 Joint Director/Electrical

Encl: Participants list

**List of Participants for EoTT Meeting held on 06.03.2020 at RDSO, Lucknow.**

SN	Name of Delegate	Designation	Firm/Rly./Shed	Mobile No.	Signature
1.	Dudhara Mishra	Jr	Rly EUS/BNDM	7326977002	
2.	Tapas K. Pradhan	SSG	SER-H/G, ROL	8016080356	
3.	Babyasachi Das	G.M. (Marketing)	Signation	9831290695	
4.	Nalendu Das	Chk (Dm)	STATION	7903031977	
5.	Mahendra Lal	JED/RDSO	RDSO	745585025	
6.	Hemant Sharma	SSG/CLERK	RDSO	9794962934	
7.	SOUNYA KANTI DAS	ADDE/TRS	EUS/ANGUL	8455887312	
8.	Niranjan Kumar	DECTRS/BNDM	Railway/Shed	9777582392	
9.	A.R. MOHANTY	Dy. Secy. H/O/Secy	Railway	8455885304	
10.	Jitenendra Yadav	Jr. Dir. RDSO	RDSO	9794861196	
11.	Rajesh Kumar	Dy. Dir. E/Secy	RDSO	9794863255	
12.	Kanika Gupta	Sales Executive	Siemens	7597617173	
13.	Ty. Anand Kumar	Asst. Mgr. TATA Power	TATA Power SED	823587770	
14.	MUJEER UR REHMAN	Sr. Manager/Sales	WABTEC	958222475	
15.	Sajal Gupta	Country Head - E&S	Autometers - Intellect	98183-78735	
16.	Rajesh K. Mawrya	Sr. Mgr. R&D	Autometers - "	9910510473	
17.	Anubhav Mishra	Eng. Bos. Dev.	AAL - JTT	9648220333	
18.	Satya Nair	Head Alliance	TATA Power	837794218	
19.	Mohan Kumar Yadav	TE/DE/ELCTRL	RDSO - SED	9794862734	
20.	Sangiv Swarup	PE/DE/SE	"	9794863302	