

**GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS**

**LOK SABHA
UNSTARRED QUESTION NO.4619
TO BE ANSWERED ON 24.03.2021**

MOBILE TRAIN RADIO COMMUNICATION SYSTEM

**4619. SHRI KULDEEP RAI SHARMA:
DR. DNV SENTHILKUMAR. S.:
DR. AMOL RAMSING KOLHE:
SHRI SUNIL DATTATRAY TATKARE:
SHRIMATI SUPRIYA SULE:
DR. SUBHASH RAMRAO BHAMRE:**

Will the Minister of RAILWAYS be pleased to state:

- (a) whether the Indian Railways has introduced Mobile Train Radio Communication System (MTRC);**
- (b) if so, the details thereof and the aims and objective behind the move;**
- (c) the number of railway zones in which the MTRC system is to be made operational;**
- (d) the amount allocated for the implementation of this system and the amount utilized;**
- (e) the time by which this system will be made operational in all zones of the Indian Railways; and**
- (f) the other steps taken by the Government to develop state-of-the-art and high tech method of monitoring, inspection and maintenance of the rail tracks to avoid train accidents?**

ANSWER

**MINISTER OF RAILWAYS, COMMERCE & INDUSTRY AND
CONSUMER AFFAIRS, FOOD & PUBLIC DISTRIBUTION
(SHRI PIYUSH GOYAL)**

(a) to (f): A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (f) OF UNSTARRED QUESTION NO.4619 BY SHRI KULDEEP RAI SHARMA, DR. DNV SENTHILKUMAR. S., DR. AMOL RAMSING KOLHE, SHRI SUNIL DATTATRAY TATKARE, SHRIMATI SUPRIYA SULE, AND DR. SUBHASH RAMRAO BHAMRE ANSWERED IN LOK SABHA ON 24.03.2021 REGARDING MOBILE TRAIN RADIO COMMUNICATION SYSTEM

(a) to (e) Yes, Sir. Indian Railways has introduced Mobile Train Radio Communication (MTRC) system over Indian Railways. The aim and objective for implementing MTRC is to establish direct voice communication between Loco Pilot, Station Master, Controller and also to use it for Modern Train Control System. The system has been provided over 3460 Route KM. Details of MTRC provided are appended as Appendix-I.

Further, new works for Long Term Evolution based MTRC System over 34304 Route KM have been approved at a cost of ₹ 6861 crore. Details are appended as Appendix-II.

The total amount for MTRC allocated till Financial Year 2020-21 is ₹ 232.54 crore which has been fully utilized.

(f) Other steps taken to develop state-of-the-art and high tech method of monitoring, inspection and maintenance of rail tracks to avoid train accidents are as under:-

(i) Periodical inspection and monitoring of tracks is done by contactless sensor based Track Recording Cars (TRCs). Inspection of track is also performed by Zonal Railways using Oscillation Monitoring system (OMS).

Besides this, Automatic Track Geometry-cum-Video Inspection System, Self-Propelled Turn-out Geometry Measurement System and Ground Penetration Radar (GPR) are also in the procurement stage for further strengthening the monitoring and inspection of rail tracks.

(ii) Indian Railways is using state-of-the-art track maintenance machines like High Output Rail Grinding Machine, High Output Ballast Cleaning Machine. High Output Integrated 3X-Dynamic Tamper etc for maintenance of the rail tracks.

(iii) Improvements in Alumino Thermic welding - Mechanised preheating, Three piece prefabricated mould, Auto Tapping Thimble, Single shot crucible has been provided for improved quality of welding.

- (iv) Improvement in Ultrasonic Flaw Detection (USFD) Testing Machines - Analogue USFD testing machines have been replaced by digital USFD testing machines capable of data logging, saving and transferring testing results to on-line application Track Management System (TMS) and PCs. USFD testing machines have been introduced having features for location tagging, time stamping of recording and improved scan (B-scan) capability. Self-propelled Ultrasonic Rail Testing (SPURT) Cars has been introduced on Indian Railways for faster ultrasonic testing of rails.**

- (v) Introduction of Thick Web Switches & Weldable CMS Crossing (WCMSC) - Thick web Switches & Weldable CMS Crossings have been introduced in Indian Railways. This will help in better Track maintenance and safety.**

APPENDIX-I REFERRED TO IN REPLY TO PARTS (a) TO (e) OF UNSTARRED QUESTION NO.4619 BY SHRI KULDEEP RAI SHARMA, DR. DNV SENTHILKUMAR. S., DR. AMOL RAMSING KOLHE, SHRI SUNIL DATTATRAY TATKARE, SHRIMATI SUPRIYA SULE AND DR. SUBHASH RAMRAO BHAMRE TO BE ANSWERED IN LOK SABHA ON 24.03.2021 REGARDING MOBILE TRAIN RADIO COMMUNICATION SYSTEM

(a) to (e): Status of Mobile Train Radio Communication (MTRC) System based on GSM-R and TETRA over Indian Railways

Zonal RAILWAY	Section	TECHNOLOGY	ROUTE KM
Eastern	Howrah-Dhanbad	GSM(R)	270
East Central	Dhanbad-Mughalsarai	GSM(R)	400
North Central	Palwal -Jhansi	GSM(R)	353
North Central	Ghaziabad-Aligarh-Kanpur-ALD-DDU	GSM(R)	760
Northern	New Delhi-Ambala-Ludhiana Including New Delhi - Palwal and Delhi area	GSM(R)	372
Northern	Ludhiana-Pathankot-Jammu Tawi-Amritsar	GSM(R)	455
Northern	Lucknow – Kanpur	GSM(R)	75
Northeast Frontier	New Jalpaiguri - Bongaigaon-Guwahati	GSM(R)	410
Northeast Frontier	New Jalpaiguri-Barsoi-Malda Town & Barasoi-Katihar	GSM(R)	270
Metro Railway, Kolkata	North-South Corridor – Kabi Subhas to Dakshineswar	GSM(R)	28
Metro Railway Kolkata	East-West Corridor- Phoolbagan to Sector-V	TETRA	7.5
Western	Churchgate – Virar	TETRA	60
	TOTAL		3460.5

GSM(R) = Global System for Mobile Communication-Railway.

TETRA = Terrestrial Trunk Radio

APPENDIX-II REFERRED TO IN REPLY TO PARTS (a) TO (e) OF UNSTARRED QUESTION NO.4619 BY SHRI KULDEEP RAI SHARMA, DR. DNV SENTHILKUMAR. S., DR. AMOL RAMSING KOLHE, SHRI SUNIL DATTATRAY TATKARE, SHRIMATI SUPRIYA SULE AND DR. SUBHASH RAMRAO BHAMRE TO BE ANSWERED IN LOK SABHA ON 24.03.2021 REGARDING MOBILE TRAIN RADIO COMMUNICATION SYSTEM

(a) to (e) List of sanctioned LTE works over Indian Railways.

SN	Zonal Railway	Name of the Umbrella Work	Route KM
1	Central	Umbrella work for provision of LTE based mobile Train Radio equipment at GD/GQ Section of CR @ ₹ 20 lakh per Km on 1854 Rkm	1854
2	Central	Central Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
3	Central	Under Modern Signalling work	175
4	Eastern	Eastern Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
5	Northern	Northern Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
6	North Eastern	North Eastern Railway-Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
7	Northeast Frontier	Northeast Frontier Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
8	Southern	Southern Railway-Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
9	South Central	South Central Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
10	South Central	Umbrella work for provision of LTE based mobile Train Radio equipment at GQ/GD	1549

		Section of SCR @ ₹ 20 lakh per Km on 1549 RKm.	
11		Under Modern Signalling work	165
12	South Eastern	South Eastern Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
13	South Eastern	Umbrella work for provision of LTE based mobile Train Radio equipment at GQ/GD Section of SER @ ₹ 20 lakh per Km on 692 RKm.	692
14	Western	Western Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
15	East Central	East Central Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
16	East Coast	Umbrella work for provision of LTE based mobile Train Radio equipment at GQ/GD Section of ECoR, NCR and SR @ ₹ 20 lakh per Km on 894 RKm.	894
17	East Coast	East Coast Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
18		Under Modern Signalling work	142
19	North Central	North Central Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
20		Under Modern Signalling work	153
21	North Western	North Western Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
22	South East Central	Umbrella work for provision of LTE based mobile Train Radio equipment at GQ/GD Section of SECR and WCR @ ₹ 20 lakh per Km on 831 RKm.	831
23	South East Central	South East Central Railway-Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563

24	South Western	South Western Railway- Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
25	West Central	West Central Railway-Umbrella works for provision of LTE System on low density Railway Network in connection with TCAS @ ₹ 20 Lakh per Km on 1563 Km	1563
		Total Route KM	31463
26		Under Mission raftaar	
i		NDLS-HWH (ER 243, ECR 420, NCR 752, NR-39)	1454
ii		NDLS-Mumbai (NR-58, NCR-83, WCR-549 , WR-697)	1387
		Total	34304
