

Recorded Notes on CBTC with Additional Member /Signal, Railway Board during the discussion held on 16.11.2019 at MRVC.

Following officials were present during the discussion:

SN	Railways	SN	MRVC
1	Shri Rajeev Sharma, AM/Signal	1	Shri. R. S. Khurana, CMD
2	Shri A. K. Shrivastava, CSTE, CR	2	Shri Ravi Agarwal, DT
3	Shri M. Uppal, CSTE, Project	3	Shri. Vijay Nathavat, DP
4	Shri Vinod Agrawal, CSE, CR	4	Shri. Harish Gupta, CSTE
5	Shri B. L. Solanki, CSTE, Planning, WR	5	Shri Sanjay Singh, ED/Plg.
6	Shri K. N. Kherotia, CSTE, Const., WR	6	Shri Dinesh Ruparelia, Manager, Signal
7	Shri V. K. Shrivastava, CSE, WR		
8	Shri N. K. Singh, Sr. DSTE, CSMT		
9	Shri Ghanashyam Verma, Sr. DSTE, HQ, BCT,		
10	Shri Ratan Basu, Sr. DSTE, North		

- 1) MRVC apprised that the work of CBTC has been sanctioned under MUTP 3A for CSMT-Panvel on Harbour Line and CSMT-Kalyan of Main line of Central Railway and Churchgate-Virar on Western Railway.
- 2) MRVC made a presentation on CBTC and its implementation plan on Mumbai Suburban Railway System. CBTC system will cover only exclusive suburban corridor, however, the corridors for main line operation will continue to be on the conventional signalling system.
- 3) It was apprised that MRVC has initiated the process for selection of consultant for framing technical specification, bidding document and bid evaluation process. Terms of the reference of the same was also shared with Railways and RDSO. The RFP of the same has been issued to all prospective bidders.

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- 4) Scope of Consultancy covers –
- Brown field complexity of the project
  - Interface requirement of Rolling Stock, Signalling and other sub-systems
  - Mixed Train Operation
  - Migration process
  - Inter-operability
  - Implementation plan
  - Bid preparation & bid-evaluation
- 5) Consultant is expected to be engaged by March 2020. During the consultancy study Central Railway, Western Railway & RDSO will also be involved for the preparation of technical specification and accordingly the technical specification will be finalized.
- 6) MRVC explained the requirement of change in operation manual, working rules and other documents because of introduction of moving block system which is new to Indian Railways.
- 7) Arrangement for interface with existing interlocking, signalling system, new interlocking needs to be clearly planned. It was apprised by MRVC that this issue will be further discussed in detail with Railways during consultancy study and finalised jointly with Railways. Following point were also discussed –
- The effect of additional services on present signalling system, electrical traction, station crowding etc.
  - To achieve headway of 150 seconds on all the corridors and necessary changes required to be done in any of the yard layout.
  - The existing signalling system to be used as fall-back system and for mix operation.
  - A close optical fibre network as communication back bone for CBTC system to ensure high-availability.
- MRVC apprised that all the above items are covered in the scope of consultancy.
- 8) PCSTE/CR suggested that adequate provision for Annual Maintenance contract should be made in procurement contract to ensure stable performance and any interruption in services. Western Railway also suggested that consultancy should cover long term maintenance arrangement of CBTC including training of maintenance staff. MRVC apprised that the same will be taken care during the bid preparation.
- 9) AM/Signal emphasized the importance of safety margin, braking system of the EMU trains, acceleration and braking performance of trains as these are going to affect headway performance. These points should be examined carefully by the Consultant and RDSO should be fully associated.

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- 10) AM/Signal also advised that while planning CBTC implementation, other projects sanctioned in Mumbai area such as project of Raising of Speeds to 160 kmph semi High-speed, ETCS level II/CTC etc. should be suitably interfaced.
- 11) AM/Signal suggested to provide common Operation Control Centres (OCC) for Central & Western Railway for suburban operations under CBTC. The OCCs could be in same building on two different floors. This shall enable CBTC Servers, Software, Communication Equipment and Power Supply to be shared by the two OCCs. The integration of the WR & CR systems shall also be easier to accomplish as trains move from one suburban section to the other.

Both the Railways should discuss and take a final call keeping all the aspects of operations in view.

AM/Signal suggested that experience of Metros in CBTC should be utilized for the project.

- 12) MRVC suggested to form three groups during consultancy and implementation period for successful implementation of the project.
  - Core group – SAG officer of Railway Board, RDSO, Central Railway, Western Railway, MRVC
  - Working group - Central Railway, Western Railway, MRVC, SG/JAG
  - Field group - Central Railway, Western Railway, MRVC
- 13) AM/Signal emphasized that CBTC being an important project for increasing carrying capacity on Mumbai Suburban system will provide relief to Mumbai commuters, therefore, MRVC and Railways should effectively co-ordinate and implement in time bound manner.

*(Signature)*  
29/11/19

(Rajeev Sharma)  
Additional Member (Signal)  
Railway Board/New Delhi

Copy to:-

- (A) General Managers, Central Railway & Western Railway.
- (B) Chairman & Managing Director/Mumbai Rail Vikas Corporation, Mumbai

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Ministry of Railways  
Central Railway Signal  
Mumbai with Enclosure  
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