

Corrigendum -04 (Correction to Addendum 01)
CMRL/PHASE -II/SYS/CP22/ASA04/2021
27 January 2022

SN	Part	Section	Clause	Revised Bid condition (as in Addendum 01)	Corrected Revised Bid condition
1	Part 2	Particular Specifications	1.1	Coasting: An increase of inter-station runs time over the maximum Train performance time, usually by a zero constant percentage value.	Coasting: An increase of inter-station runs time over the maximum Train performance time, usually by a zero percentage value of motoring and braking.
2	Part 2	Particular Specifications	3.9.9	The speed values, run time values, the headway possible etc as an outcome of the headway simulation document shall be validated as a part of the headway test in the Testing and commissioning stage.	The speed values, run time values, the headway possible, recoverability requirements etc as an outcome of the headway simulation document shall be validated as a part of the headway test in the Testing and commissioning stage.
3	Part 2	Particular Specifications	4.19.10.1	The Contractor shall ensure that all the Train control & Signalling equipment are designed and constructed in accordance with the latest issues or versions of internationally recognized EMC standards, including but not limited to EN 50121-1 to 4, IEC-61000-6-1 to 4 & IEC 61000-4-2 to 4-6, 4-8 , 4-9,9,IEC 61000-4-11 to ensure proper functioning.	The Contractor shall ensure that all the Train control & Signalling equipment are designed and constructed in accordance with the latest issues or versions of internationally recognized EMC standards, including but not limited to EN 50121-1 to 4, IEC-61000-6-1 to 4 & IEC 61000-4-2 to 4-6, 4-8 , 4-9,IEC 61000-4-11 to ensure proper functioning.
4	Part 2	PS-Appendix 2P-10	4.1.7	The STC contractor and the wheel profile measuring device contractor shall agree on the precise location of the wheel profile measuring device on the Depot track and its operation.	The wheel profile measuring device contractor shall advise the STC contractor on the precise location of the wheel profile measuring device on the Depot track and its operation.
5	Part 2	PS-Appendix 2P-8	5. INTERFACEDivision of Responsibility	Item: Display of TVS/E&M SCADA system feed in Video wall systems at OCC/BOCC. STC contractor: Shall connect the feed and arrange for the display of PSD health information TVS contractors: Shall extend the TVS/E&M SCADA system feeds in a format compatible with the displays, as specified by the Signaling Contractor.	Item: Display of TVS/E&M SCADA system feed in Video wall systems at OCC/BOCC. STC contractor: Shall connect the feed and arrange for the display ofTVS SCADA information TVS contractors: Shall extend the TVS/E&M SCADA system feeds in a format compatible with the displays (HDMI)
6	Part 2	Particular Specifications	5.10.10	It shall be only possible to lift Maintenance block/work zone protection, Temporary speed restriction, Route block (particular route is blocked), Signal block (particular signal blocked for both Mainline and Depot) and Point block (throwing of point blocked) from the ATS and the interlocking VDU at OCC or stations depending on the existing level of control. The logic shall be implemented in the interlocking.	It shall be only possible to lift Maintenance block/work zone protection, Temporary speed restriction, Route block (particular route is blocked), Signal block (particular signal blocked for both Mainline and Depot) and Point block (throwing of point blocked) from the ATS and the interlocking VDU at OCC or stations depending on the existing level of control. The logic shall be implemented in the interlocking or ATP system as applicable.
7	Part 2	Particular Specifications	5.20.16.14	Video wall at BOCC: The contractor shall develop detailed video wall layout for the OCC using Appendix 2U as the base document. A common video wall is envisaged which shall be used for displaying the inputs from all systems referred above. In addition to it, the video wall system shall be interfaced to recieve the feeds of Phase 1 systems namely, signalling system, CCTV system and Traction SCADA system to display these feeds also into it.	Video wall at BOCC: The contractor shall develop detailed video wall layout for the BOCC using Appendix 2U as the base document. A common video wall is envisaged which shall be used for displaying the inputs from all systems referred above. In addition to it, the video wall system shall be interfaced to recieve the feeds of Phase 1 systems namely, signalling system, CCTV system and Traction SCADA systems of Phase 1 to display these feeds also into it.

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8	Part 2	Particular Specifications	5.20.16.16	Video wall at Depot Control Centre (Poonamallee and Madhavaram Depot): For a depot; Video wall of LCD panels 3x2 is envisaged in the depot control room catering for the two depot controllers. This video wall shall be capable of accepting feeds from the Signalling system, CCTV system, RTR DMS systems. The video wall for Depot control room can be wall mounted or floor mounted based on the layout design by the STC contractor.	Video wall at Depot Control Centre (Poonamallee and Madhavaram Depot): For a depot; Video wall of LCD panels 3x2 is envisaged in the depot control room catering for the two depot controllers. This video wall shall be capable of accepting feeds from the Signalling system,VMS system, CCTV system, RTR DMS systems. The video wall for Depot control room can be wall mounted or floor mounted based on the layout design by the STC contractor.
9	Part 2	Particular Specifications	5.20.8.1	The system shall be operated with the CBI control workstation with VDU displays from a station in each unit block of the ACR or centrally from OCC in the event of failure of ATS servers at OCC and BOCC. Details shall be finalized during detailed design stage.	The system shall be operated with the CBI control workstation with VDU displays from a station in each unit block of the ACR (approximately 5 km) or centrally from OCC in the event of failure of ATS servers at OCC and BOCC. Details shall be finalized during detailed design stage.
10	Part 2	Particular Specifications	5.8.1.8	The system shall be able to close-up trains, in a safe manner using appropriate braking model, in stabling line of the depot and the mainline sidings for train without passengers parking in an automated /scheduled/remote manner in its nominated parking slots (currently 2 number of 3Car trains to be stabled on the siding which is of typically 6 car length slots). Movements within the sidings shall also be possible in an automated/scheduled manner in UTO/DTO/ATO/ATP/RM mode in all sidings and stabling lines, especially for those in Light house and Sipcot 2, which includes automatic induction and retrieval from any stabling slot, where numerous stabling slots are provided as a part of additional stabling facilities.	The system shall be able to close-up trains, in a safe manner using appropriate braking model, in stabling line of the depot and the mainline sidings for train without passengers parking in an automated /scheduled/remote manner in its nominated parking slots (currently 2 number of 3Car trains to be stabled on the siding which is of typically 6 car length slots). Movements within the sidings shall also be possible in an automated/scheduled manner in UTO/DTO/ATO/ATP/RM mode in all sidings and stabling lines, especially for those in/near Light house ,Avichi School, Elcot and Sipcot 2 stations, which includes automatic and scheduled induction and retrieval (including sleep and wakeup of trains) from any stabling slot, where numerous stabling slots are provided as a part of additional stabling facilities.
11	Part 2	PS-Appendix 2P-12	4.1.5	The Signalling system design shall provide facility for the ATP movement of OMV into the work zone. Once inside within the work zone, the OMV shall be able to move as many times as possible in both the directions in ATP mode without the intervention from the OCC/SCR. The system shall protect the OMV from moving outside the work zone area in ATP mode unless a route is set by the Operator from OCC/SCR.	The Signalling system design shall provide facility for the ATP movement of OMV into the work zone. Once inside within the work zone, the OMV shall be able to move as many times as possible in both the directions in RM mode.
12	Part 2	PS-Appendix 2P-12	4.1.9	The OMV contractor shall ensure that the OMV is designed for a maximum speed which provides a nonstop average speed of the OMV as a minimum 40 kmph. The signalling system shall control the OMV in such a way that the ATR regulates the recommended speed based on the Operational scenario.	The OMV contractor shall ensure that the OMV is designed for a maximum speed which provides a nonstop average speed of the OMV as a minimum 40 kmph (or higher as in the respective particular specification of OMV). The signalling system shall provide indications in the signalling on-board screen in such a way that the ATR regulates the recommended speed based on the Operational scenario. (eg: To travel non-stop between two passenger trains matching the average speed of trains). The ATR functionality for OMV shall be based on the regulation of runtime as no dwell time/ station stoppage is defined for it.

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13	Part 2	PS-Appendix 2P-12	4.1.11	The high critical alarms and information shall be transmitted to ATS through the CBTC radio itself. The mode change, Emergency brake etc are some of the critical alarms. The instantaneous speed of OMV, Direction of travel etc shall be some of the information to be transmitted to ATS by Train-borne signalling system. The list of high critical of signalling system shall be decided in design phase.	The alarms and information shall be transmitted to wayside signalling from on-board signalling equipment through the CBTC radio itself. The mode change, Emergency brake, train integrity etc are some of the critical alarms. The instantaneous speed of OMV, Direction of travel etc shall be some of the information to be transmitted to ATS by Train-borne signalling system. The list of high critical of signalling system shall be decided in design phase. The retrieval of diagnostic data of the on-board signalling from centralised location shall use the Non-CBTC radio.
14	Part 2	PS-Appendix 2P-12	4.1.15	(ii) The running monitoring shall be the same as for RM. The ATP shall give cab signal indications as soon as the train reaches a track position where normal running can be resumed. The ATP authorizes the ROS request.	(ii) Not used.
15	Part 2	PS-Appendix 2P-12	4.1.17	a) Train-borne ATP/ATO equipment for OMV	b) Train-borne ATP equipment for OMV
16	Part 2	PS-Appendix 2P-12	4.1.20	Any train borne signalling equipments to support ATS related functionalities like timetable operation, ATR etc, if required, shall be part of the train borne signalling equipments for OMV. The ATR functionality for OMV shall be based on the run time control as no dwell time/ station stoppage is defined for it.	Not used
17	Part 2	PS-Appendix 2P-12	4.1.25	a) Signalling equipment cubicle environment requirements.	a) Signalling equipment cubicle environment requirements including AC requirement and Heat load.
18	Part 2	PS-Appendix 2P-12	4.1.25		h) Power requirement and earthing requirements. OMV contractor shall provide these facilities for the Signaling system.
19	Part 2	PS-Appendix 2P-12	4.1.26	Signalling System Outputs and Train Control Interfaces	Signalling System Outputs and interfaces
20	Part 2	PS-Appendix 2P-12	4.1.26	f) Earthing Requirements - The earthing shall be designed to minimise the noise voltage generated and to avoid creating earth loops susceptible to magnetic field and differences in potential. The Signalling Contractor shall specify the earth impedance required for the earthing point.	f) Earthing Requirements - The earthing shall be designed to minimise the noise voltage generated and to avoid creating earth loops susceptible to magnetic field and differences in potential. The Signalling Contractor shall specify the earth impedance required for the earthing point. The OMV contractor shall meet the requirements.
21	Part 2	PS-Appendix 2P-12	4.1.27	The Signalling and Rolling Stock Contractors shall coordinate with each other to ensure all works are carried out seamlessly. The following split (Not limited to) of installation works are envisaged between the Signalling and Rolling Stock Contractors:	The Signalling and OMV Contractors shall coordinate with each other to ensure all works are carried out seamlessly. The following split (Not limited to) of installation works are envisaged between the Signalling and OMV Contractors:
22	Part 2	PS-Appendix 2P-12	4.1.27.b		xii) Air conditioning, power and earthing arrangements as per the requirement for signalling equipments.

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23	Part 2	PS-Appendix 2P-12	4.1.29	STC Contractor shall certify the procedure of fixation of relevant connections, cables to on-board STC equipment after their assembling in first vehicle at OMV contractor's premises. This procedure shall be agreed between STC contractor and OMV contractor and the same shall be followed for all the subsequent vehicles of the manufacturing. STC contractor shall conduct random inspections in OMV contractor's manufacturing unit, if required, to ensure proper procedure is followed in all OMVs. Any change to the agreed procedure based on the subsequent supplier recommendations, or failure observed in previous OMVs, modification in the design, mounting arrangements shall be incorporated in complete fleet of OMVs.	STC Contractor shall certify the procedure of fixation of relevant connections, cables to on-board STC equipment after their assembling in first vehicle at OMV contractor's premises. This procedure shall be agreed between STC contractor and OMV contractor and the same shall be followed for all the subsequent vehicles of the manufacturing. . Any change to the agreed procedure based on the subsequent supplier recommendations, or failure observed in previous OMVs, modification in the design, mounting arrangements shall be incorporated in complete fleet of OMVs.
24	Part 2	PS-Appendix 2P-12	4.1.34	OMV Contractor to ensure that safety/train control related signals including brakes, position of safety cut out switches, direction, coupler status etc. are communicated to the signalling Contractor.	OMV Contractor to ensure that safety/train control related signals including brakes, position of safety cut out switches, Active cabin information, coupler status etc. are communicated to the signalling Contractor.
25	Part 2	PS-Appendix 2P-12	4.1.39	OMV Contractor shall provide facilities for comprehensive static and interface tests between Signalling and Telecommunications systems at his premises or at Depot as jointly agreed. Signalling and Telecommunication contractors shall be responsible for the provision of special test equipment and instrumentation.	OMV Contractor shall provide facilities for comprehensive static and interface tests between Signalling systems at his premises or at Depot as jointly agreed. Signalling contractor shall be responsible for the provision of special test equipment and instrumentation.
26	Part 2	PS-Appendix 2P-12	4.1.40	The Signalling, OMV and TETRA contractors shall coordinate and conduct the integrated testing of OMV in mainline. The basic features of ATC, Braking and acceleration of OMV, Testing of Vital inputs (e.g.: Coupler status) etc shall be tested apart from TETRA calls to OCC and other talk groups.	The Signalling, OMV contractors shall coordinate and conduct the integrated testing of OMV in mainline. The basic features of ATC, Braking and acceleration of OMV, Testing of Vital inputs (e.g.: Coupler status), Timetable operation of OMV including ATR etc shall be tested.
27	Part 2	PS-Appendix 2P-12	INTERFACE- Division of Responsibility	10. Guaranteed Emergency Brake Rate(GEBR) STC Contractor shall share the logics used for GEBR OMV Contractor shall furnish value of GEBR to STC Contractor.	10. Guaranteed Emergency Brake Rate(GEBR) STC Contractor shall use the value of the GEBR for Signalling system design OMV Contractor shall furnish value of GEBR to STC Contractor.
28	Part 2	Particular Specifications	12.8.4	The contractor shall provide consoles and chairs in OCC, BOCC, Depot control centres, Security control rooms for all controllers. Table and chair for rooms where Signalling or VMS workstations are installed except Station control room for which furniture will be provided by Civil contractor.	The contractor shall provide consoles and chairs in OCC, BOCC, Depot control centres, Security control rooms for all controllers. Table and chair for rooms where Signalling or VMS workstations are installed except Station control room for which furniture will be provided by Civil contractor.For BOCC, the signalling contractor shall design supply and install the consoles and chairs for the controllers handling the Phase 1 systems also.
29	Part 2	Particular Specifications	3.2.1.2.27	Consoles and chairs for OCC theatre, BOCC theatre, Security control centres, Depot control centres, furniture for SER of all station, SMR of stations with maintenance and diagnostic computer, LAB/Repair Centre, Operational Planning Room in OCC and BOCC buildings, Signalling Maintenance Management Room in OCC and BOCC buildings and other rooms where Signal workstations/equipments are proposed to be supplied by Contractor.	Consoles and chairs for OCC theatre, BOCC theatre (for phase 1 system controllers also along with Phase 2), Security control centres, Depot control centres, furniture for SER of all station, SMR of stations with maintenance and diagnostic computer, LAB/Repair Centre, Operational Planning Room in OCC and BOCC buildings, Signalling Maintenance Management Room in OCC and BOCC buildings and other rooms where Signal workstations/equipments are proposed to be supplied by Contractor.

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30	Part 2	PS-Appendix 2C	OCC theatre (OCC building)	<p>Traffic Controllers Controller postion:9 Screens per controller: 3 Traffic controller -VDU: Controller postion:9 Screens per controller:2 Passenger information controller: controller position:2 Screens per controller: 3 Asst. Chief controller: Controller position:3 Screens per controller: 3 Chief controller: Controller position: 1 Screens per controller: 3 Rolling stock controller: Controller position: 3 Screen per controller: 1 Fault management Controller (FMC): Controller position: 3 Screens per controller: 3 Centralised maintenance and diagnostic workstation* (FMC desk) 3 sets Screen per controller: 2 Realtime and playback*: event log and train borne log tracing workstation (FMC desk) 3 sets Screen per controller: 1 Online Timetable workstation (Chief controller desk) 1 Screen per controller: 1 # work stations required for powering the video wall shall be extra from above.</p>	<p>Traffic Controllers Controller postion:6 Screens per controller: 3 Traffic controller -VDU: Controller position:6 Screens per controller:2 Passenger information controller: controller position:2 Screens per controller: 3 Asst. Chief controller: Controller position:3 Screens per controller: 3 Chief controller: Controller position: 1 Screens per controller: 3 Rolling stock controller: Controller position: 3 Screen per controller: 1 Fault management Controller (FMC): Controller position: 3 Screens per controller: 3 Centralised maintenance and diagnostic workstation* (FMC desk) 3 sets Screen per controller: 2 Realtime and playback*: event log and train borne log tracing workstation (FMC desk) 3 sets Screen per controller:1 Online Timetable workstation (Chief controller desk) 1 Screen per controller: 1 # work stations required for powering the video wall shall be extra from above. Note: 3 nos of future traffic controllers are envisaged in addition to the current requirement of 6 traffic controllers. The signalling system shall be expandable to accomodate the increase in the work stations for the future traffic controllers on a later stage.</p>
31	Part 2	PS-Appendix 2D	OCC theatre (OCC building)	<p>Traffic Controllers Controller postion:9 Screens per controller: 1 Passenger information controller: controller position:2 Screens per controller: 1 Asst. Chief controller: Controller position:3 Screens per controller: 1 Chief controller: Controller position: 1 Screens per controller: 1 Rolling stock controller: Controller position: 3 Screen per controller: 1 # work stations required for powering the video wall shall be extra from above.</p>	<p>Traffic Controllers Controller postion:6 Screens per controller: 1 Passenger information controller: controller position:2 Screens per controller: 1 Asst. Chief controller: Controller position:3 Screens per controller: 1 Chief controller: Controller position: 1 Screens per controller: 1 Rolling stock controller: Controller position: 3 Screen per controller: 1 # work stations required for powering the video wall shall be extra from above. Note: 3 nos of future traffic controllers are envisaged in addition to the current requirement of 6 traffic controllers. The signalling system shall be expandable to accomodate the increase in the work stations for the future traffic controllers on a later stage.</p>
32	Part 2	PS-Appendix 2U	Figure 14	TC desks 7,8 & 9 are for future expansion	TC desks 7,8 & 9 are for future expansion. These desks shall be designed, supplied and installed as a part of this contract along with other desks in OCC. The work stations on these desks will be provided on a future date.
33	Part 2	Particular Specifications	5.9.10.	Temporary speed restrictions shall be capable of being imposed over any track segment for a maximum track segmant length of 200m. It shall be possible to apply TSR in multiple adjacent segmants, if required.	Temporary speed restrictions shall be capable of being imposed over any track segment for a maximum track segmant length of 250m. It shall be possible to apply TSR in multiple adjacent segmants, if required.

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34	Part 2	Particular Specifications	5.20.15.8	The STC Contractor shall design the under-floor cable trays for OCC, BOCC, DCCs and SCCs. The STC contractor shall identify the requirement of all other system contractors in the Interface forum and design the common underfloor cable trays (Data and Power) and install. The EMC management plan shall be adhered to avoid EMC related issues. The STC contractor shall design the Access requirements of these cable trays for future and coordinate with Civil contractors to provide easy access in the nominated locations to the cable trays."	The STC Contractor shall design the under-floor cable trays for OCC, BOCC, DCCs and SCCs apart from that of the Signalling Equipment Room. The STC contractor shall identify the requirement of all other system contractors in the Interface forum and design the common underfloor cable trays (Data and Power) supply and install. The EMC management plan shall be adhered to avoid EMC related issues. The STC contractor shall design the Access requirements of these cable trays for future and coordinate with Civil contractors to provide easy access in the nominated locations to the cable trays."
35	Part 2	Particular Specifications	14.5.9.2	Software source files and documentation and tools for design, development and modification 14.5.9.2 Any software item delivered in escrow pursuant to Paragraph above shall not be translated or modified by the Employer without the prior consent of the Contractor unless: a) The owner of the software becomes insolvent or has a receiving order made against them or makes an arrangement or assignment or composition with or in favour of its creditors (including the appointment of a committee of inspection) or goes into liquidation or commences to be wound up or has a receiver, liquidator, trustee or similar officer appointed over all or any part of its undertaking or assets or if distress, execution or attachment is levied on, or if another party takes possession of, any of its assets or any proceeding or step is taken which has an effect comparable to the foregoing in any relevant jurisdiction; or b) The owner of the software ceases to trade; or c) The owner of the software assigns copyright in the software and the Contractor fails within 60 days of such assignment to procure in favour of the Employer, a licence from the new owner in the same terms as that required by the Contract; or d) The Contractor is in breach of any of his obligations under the Contract.	Software source files and documentation and tools for design, development and modification 14.5.9.2 Any software item delivered in escrow pursuant to Paragraph above shall not be translated or modified by the Employer without the prior consent of the Contractor unless: a) The owner of the software becomes insolvent or has a receiving order made against them or makes an arrangement or assignment or composition with or in favour of its creditors (including the appointment of a committee of inspection) or goes into liquidation or commences to be wound up or has a receiver, liquidator, trustee or similar officer appointed over all or any part of its undertaking or assets or if distress, execution or attachment is levied on, or if another party takes possession of, any of its assets or any proceeding or step is taken which has an effect comparable to the foregoing in any relevant jurisdiction; or b) The owner of the software ceases to trade; or c) The owner of the software assigns copyright in the software and the Contractor fails within 60 days of such assignment to procure in favour of the Employer, a licence from the new owner in the same terms as that required by the Contract; or d) The Contractor is in breach of any of his obligations under the Contract. In case of any Source Code access or disclosure, there will be no transfer of any property rights to the Party to which Source Code access or disclosure is given. i. to ensure neutrality and impartiality of escrow agent appointed ii. to ensure safety of the system iii. to ensure confidentiality of the documents and system which cannot be disclosed to competitors.
36	Part 2	PS-Appendix 2Q	NA	<Serial Number 77,78,79,80 81,82 and 83 of Addendum 01 is mentioned as clause under Particular Specifications. These Addendums are for PS-Appendix 2Q>	<Serial Number 77,78,79,80 81,82 and 83 of Addendum 01 is mentioned as clause under Particular Specifications. These Addendums are for PS-Appendix 2Q>
37	Part 2	PS-Appendix 2Q	3.6.6	All indoor equipments, which requires an augmentation for supporting 6 car operation shall be installed and commissioned	All indoor and Train borne equipments, required for supporting 6 car operation shall be installed and commissioned now itself. This shall cater for 3 car operation currently.

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38	Part 2	PS-Appendix 2Q	3.6.7	All outdoor equipments, which doesn't require a replacement/ reposition/ augmentation at the time of 6 car introduction shall be designed for 3 car	All outdoor equipments which are common for 3 car and 6 car operation shall be commissioned initially itself to support 3 car as well as 6 car operation
39	Part 2	PS-Appendix 2Q	3.6.8	The Data communication system (DCS): telegrams, bandwidth calculation etc shall be designed for catering 6 car consist also.	The Data communication system (DCS): telegrams, bandwidth calculation, Radio mast locations etc shall be designed for catering 6 car consist also. This shall cater for 3 car operation currently.