

General Bid Bulletin No. 3 12 April 2021

IFB No. 21-031-4

THE MALOLOS-CLARK RAILWAY PROJECT AND THE NORTH SOUTH RAILWAY PROJECT-SOUTH LINE (COMMUTER) PACKAGE CP NS-03: ROLLING STOCK-LIMITED EXPRESS TRAINSETS

This General Bid Bulletin is issued to amend/clarify certain provisions in the Bidding Documents for the abovementioned project. Please refer to the attached Annexes of this General Bid Bulletin duly approved by the end-user and co-implementer for details:

- 1. **Annex "A"** –Answers to Queries from Prospective Bidders including clarifications to the Bidding Documents;
- 2. Annex "B" Revisions to the Bidding Documents; and
- 3. **Annex "B 1"** Revised pages/amendments and final form as revised/amended.

All other portions of the Bidding Documents affected by these revisions, amendments and/or clarifications shall be made to conform to the same.

Revisions/amendments/clarifications made herein shall be considered an integral part of the Bidding Documents for this project.

For your information and guidance.

For the Bids and Awards Committee IV:

SIGNATURE REDACTED

JOSEPH ZONRAD D. DUEÑAS

Chairperson

PROJECT-SOUTH LINE COMMUTER PACKAGE CP NS-03: ROLLING STOCK-LIMITED EXPRESS TRAINSETS

Annex A

Annex A

Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
1	Part 1 – Bidding Procedures Section IV – Bidding Forms BF88 Form ELG: Japanese Origin of Plant, Materials and Services [Without Prices]	Note: 1) The Bidder shall attach the documentary evidence/certificate substantiating the origin of the listed plant, materials and services to meet the requirements of Section V, Eligible Source Countries of Japanese ODA Loans. The Bidder understands company profile for each proposed source of Plant, Materials and Services procured from Japan are enough to satisfy this requirement. Please confirm if the Bidder' understanding is correct.	-NA-	The Bidder's understanding is correct.

Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response	
2	Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical Requirements ERT29 1.21 Rolling Stock Gauge	[General] A calculation method is not specified in the tender documentation. Therefore, the bidder proposes to use the method described in Annex 1. Please confirm whether this calculation method (an extrapolation of the UIC 505-1/ EN 15273-2 formulas) can be applied for the project or not. Furthermore, please provide maximum track gauge (I value) and maximum cant or cant deficiency (D value) for calculation purpose.	-NA-	Please be informed the calculation method for rolling gauge should be finalized during the design stage. The method is open for the bidder to propose in the design submission. In any calculation method proposed by the contractor at design stage, the calculation shall not exceed the rolling stock gauge in appendix- C of the tender specification. The calculation shall be reviewed and given notice of no objection by the Engineer. Clause 1.21.5 ERT. Track gauge (I value) and maximum cant or cant deficiency (D value) information shall be obtained through interfaces with others contractor during project implementation.	

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Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response	
3	Volume Part 1 – Bidding Procedures Section II. Bid Data Sheet BDS-1, BDS-2 BDS-10 New ITB 6.5 ITB 7.1 ITB 24.1	"Site Information" (a 'read only' soft copy) may be downloaded from the PS, DOTr and PNR websites listed in ITB 7.1, and is made available to Bidders for their reference. The Bidder should visit, examine and assess the Site, including the likely working conditions, for itself. The Site Information, which will not be a part of the Contract, comprises the following: Site Data - Environmental Impact Statement - Environmental Management Plan - Environmental Monitoring Plan - Existing Utility Drawings Site Reference Information	-NA-	The primary delivery location for the Limited Express Trainsets is the Mabalacat Depot. However, the Employer shall reserve the right to change the delivery location during the project implementation.	

Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
		- Topographic Survey Report - Hydrological Report - Traffic Assessment Survey Report - Existing Structure of Historical Importance Report - Safety Rules and Manuals Published by Philippine National Railway (PNR) - available for inspection at the office of PNR with prior appointment		
		Address: Procurement Service RR Road, Cristobal Street, Paco, Manila		
		In order to asses all possible risks in the commissioning of the units in Manila (road access, obstacles,), please		

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		confirm which is the Site for delivery of the units.				
4	Volume II Part 2 - Employer's Requirements Technical Requirements ERT-32 2.3.1.3 Structural Requirements	The Contractor shall ensure the carbody, bogie and axle mounted components have a minimum design fatigue life of at least five (5) years in excess of the declared service design life. The Contractor is required to submit supporting calculations to demonstrate compliance, with the calculations taking into consideration the operating environment in MCRP, NSCR and NSRP-S. An item that failed within the Contractor's declared life shall be repaired at the Contractor shall provide proposals for this in the bidding	The Contractor shall ensure the carbody, bogie and axle mounted components have a minimum design fatigue life of at least five (5) years in excess of the declared service design life. The Contractor is required to submit supporting calculations to demonstrate compliance, with the calculations taking into consideration the operating environment in MCRP, NSCR and	Please carefully refer to item 2.4 of Appendix 6.3: Proposed Method of Implementation of The Works, Part 1 – Bidding Procedures; Section IV – Bidding Forms. The tenderer shall submit their proposal in the bidding submission which to ensure the carbody, bogie and axle mounted components have a minimum design fatigue life of at least five (5) years in excess of the declared service design life with a calculation method that will consider the operating environment in MCRP, NSCR and NSRP-S. Details calculations/simulations etc. shall be		

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		The Tenderer understands that the required documentation must be delivered to the Engineer/Employer at a Project stage. Please confirm that the Tenderer's understanding is correct.	NSRP-S. An item that failed within the Contractor's declared life shall be repaired at the Contractor's expense. The Contractor shall provide proposals for this in the bidding Project Stage.			
5	Volume II Part 2 - Employer's Requirements Technical Requirements ERT-48 5.8.1 Accommodation for Disadvantaged Passengers	The Contractor shall provide space on the leading vehicles to cater for people on wheelchairs, and people with prams. The prospective wheelchair space shall be prominently labeled on the floor with the appropriate standard sign. Additionally, fully retractable and non-obstructive wheelchair tie downs shall be made available for ready	5.8.1 The Contractor shall provide space on the leading vehicles to cater for people on wheelchairs, and people with prams: Two wheelchair spaces on the Train, one (1) in each leading car. The prospective wheelchair space	ERT clause 5.8.1 is the requirement to cater for people on wheelchairs, and people with prams on the leading car. ERT clause 5.8.2 is the requirement of total numbers of one (1) wheelchair space and 6 priority seats per car. Total per a train consist is (8) wheelchair		

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		installation for each wheelchair space. Each car shall be equipped with one (1) wheelchair space per car and 6 priority seats per car. The disabled and elderly passenger seat's label shall be prominently displayed. Requirement 5.8.1 requires wheelchair spaces in cabin cars. Requirement 5.8.2 requires 1 wheelchair space per car. Therefore, in a 8 car configuration, 8 wheelchair spaces are required. The Tenderer understands that it is a mistake and 2	shall be prominently labeled on the floor with the appropriate standard sign. Additionally, fully retractable and non-obstructive wheelchair tie downs shall be made available for ready installation for each wheelchair space. 5.8.2 Each <i>leading</i> car shall be equipped with one (1) wheelchair space per car and 6 priority seats per car. The disabled and elderly passenger seat's label shall be prominently displayed.	the IMPLEMENTING RULES AND REGULATIONS (IRR) / IRR of BP 344.

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		wheelchair spaces are requested, 1 in each cabin car. Please confirm that the Tenderer's understanding is correct.			
6	Volume II Part 2 - Employer's Requirements Technical Requirements ERT-74 9.4.13 Wheel Slide Control System	The Contractor shall incorporate the complete compatibility for slide with the signaling system and interfaces. The Tenderer shall submit full details of wheel slide protection scheme and equipment; and The Tenderer understands that the required documentation must be delivered to the Engineer/Employer at a Project stage. Please confirm that the Tenderer's understanding is correct.	The Contractor shall incorporate the complete compatibility for slide with the signaling system and interfaces. The Tenderer Contractor shall submit full details of wheel slide protection scheme and equipment in Project Stage;	correct. The full details of wheel slide protection scheme and equipment shall be submitted in Appendix 6 Technical Proposal (Part 1 – Bidding Procedures Section IV – Bidding Forms).	

	Annex A				
Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response	
7	Volume II Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical Requirements ERT-147 24.2.1 Spare Parts 24.2.5	The Contractor shall provide a list of capital spares and consumables (spares and consumables) and supply for the Defects Notification Period (DNP). The spare part supplied during DNP shall include at least the below list of spare parts as minimum. The quantity shall be based on one (1) trainset basis. Final list shall be confirmed during design stage.	-NA-	1) The bidder's understanding is correct. However, reference to the ERT Clause 24.2.6, the list is not exhaustive, The Contractor shall provide a list for material and spare use for 2 years based on the anticipated train mileage and previous contracts experience. Reference to the ERT Clause 24.3.3, if any additional spares and consumables including parts replacement, which has not been listed, become necessary during the DNP, the same shall be added to the list and shall be provided by the Contractor, along with one additional set for any further requirement at no additional cost. The cost for the same shall be deemed to have been included in the Price Schedules	
	Volume II Part 2 – Employer's Requirements Section V1. Employer's Requirements	The Contractor is to provide recommended list of Capital Spares for the limited express train.		2) The bidder's understanding is correct.3) The bidder's understanding is correct.Bidder shall also include all the spares in the Appendix 6.8 and Form SPA-1. Final	

Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
	General Requirements ERT-71 11.4.1 Capital Spares 11.4.2	The proposed capital spares by the Contractor shall be able to support the unit exchange program and to achieve the efficient CMTTR as per clause 8.5.3.		list shall be confirmed and submitted during design stage. 4) The bidder's understanding is not correct.
	Part 1 – Bidding Procedures Section II. Bid Data Sheet ITB 16.1 BDS-4 Schedule 1.7: Capital Spares BF-46	The contract spare parts, special tools, etc. shall be supplied for a period of four (4) years from the date of completion of the Works, as a part of a Lump Sum offer, and as specified in the Employer's Requirements. The spare includes the Operation and Maintenance spare after the DNP. Reference must also be made to the Employer's Requirements Technical Specifications Sections regarding the provision of spare parts and special		"Capital Spares" means those items which are expected to remain in operation and not require replacement until well beyond the end of the 2-year O&M period and which, because of the length of time it would take to get a replacement for such items, could cause a prolonged shutdown if they had to be replaced. The provision of these items is not included in the Accepted Contract Amount and, if required, shall be ordered by the Employer under separate purchase orders not forming part of the Contract. The applicable purchase rates shall nonetheless be those committed to by the Contractor under this Contract, which rates shall remain valid for a

Volume Section No. **Proposed Revised** Page No. Item **Clarification Request** Text Response Clause No. / Title No. (if any) **Reference Text** tools, required during and period of one year after the end of the after the Defects Notification **Defects Notification Period.** Period. 1. The Bidder may list down the size and type of the above items and/or add appropriate proposed Capital Spares. These unit pricing shown in pricing schedule above shall not be evaluated based on the EQC nor included in the final Bid Price. 2. In case of more than one foreign currency, the Bidder shall split the column Foreign Currency in two. Information to be provided in the Schedule is only for reference and not subject to evaluation.

Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
		Please clarify the following aspects: - Price of spares parts list referred in clause 24.2 must be included in Schedule 1.6: Spare Parts and Special Tools and, therefore, are part of the total contract price amount. - The minimum Spare Parts list referred in clause 24.2.5 must contain for each item the similar amount of such item presented 1 complete unit. As an example, in item 45. Passenger Seats, must be included as many units as the amount		
		corresponding to one complete unit.		

Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
		 In case the Tenderer considers the minimum Spare Parts list referred in clause 24.2.5 is not enough and must be extended, this must be explained and indicated with a dedicated document. Spares parts list referred in ITB-16.1 must be included in Schedule 1.7: Capital Spares and, therefore, are NOT part of the total contract price amount. 		
8	Volume III Part 3 – Conditions of Contract and Contract Forms Section VIII – Particular Conditions	For the purposes of this Sub-Clause: (i) the word 'Section' shall be deemed to refer to the elements of work identified in 'Table 1 – Key Dates' shown in Attachment	-NA-	The bidder's understanding is not correct. Reference to the Section VIII Particular Conditions, Part B Specific Provisions, first and second paragraph; "These Particular Conditions changes (add,

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Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response		
	PC-6 Sub-Clause 14.9 Relevant Percentage Weighting for Release of Retention for each Section	1 hereto, and (ii) the relevant percentage for each such Key Date ('Section') shall be as follows: In Particular Condition Sub-Clause 14.9, it is mentioned that the release timing has 3 times. However, in the General Condition (GC), Sub-Clause 14.9, it is described that 50% of Retention Money shall be released at the time of issuance of Taking Over Certificate. And the other 50% is at the expiry date of Defect Notification Period. Moreover, Contract Form CF7 is also made based on same condition as the GC.		amend, modify, replace or delete) the Clauses contained in the General Conditions, and shall take precedence over those contained in the General Conditions." "The Appendix to Tender has been reworded as "Contract Data". Any remaining references to Appendix to Tender in the General Conditions shall be understood to be reworded as "Contract Data"." The Relevant Percentage Weighting for Release of Retention for each Section will be based on the Part A – Contract Data, CD 14.9. Reference to the General Conditions, GC 14.9, first paragraph; relevant percentage of the first half of the Retention Money shall be certified and paid when the Section passes all tests.		

Annex A

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		Please confirm that the correct understanding is the one written in the GC and Form CF7.			

Annex B

Annex D						
ITEM NO.	REFERENCE/CLAUSE/ SECTION	REVISIONS / AMENDMENTS				
	Volume II Part 2 – Employer's Requirements					
1	ERG-107 Table B.2	Deleted Table B.2: Split Responsibility in Special Tools for Rolling Stock and Depot Equipment				
2	ERT-48 Item 5.8	Added Item 5.8.4: The priority seats location shall be nearest to the door as per Rule IV- Requirements for Public Transportation (BP 344)				
3	ERT-113 Item 18.1.1	Revised Item 18.1.1: The Limited Express trainsets shall be equipped with image monitoring system. The type of image monitoring system is saloon monitoring system by CCTV system for security. The system shall be integrated with the Train Management System (TMS) for the fault indication function.				

Annex B – Attachment 1

The Malolos – Clark Railway Project and the North South Railway Project-South Line (Commuter) CP NS-03: Rolling Stock - Limited Express Trainsets Part 2 – Employer's Requirements Section V1. Employer's Requirements General Requirements

1.1.3 Please note that design requirement mentioned above are not exhaustive, Contractor shall further elaborate the requirements in close coordination with interface Contractors. Associated interfaces works not mentioned in the above table but which may be inferred to be necessary for stability, or completion, or effective interface & integration or the safe reliable and efficient operation of the Works shall be carried out by the Contractor. The Interface work shall include any work which is necessary to satisfy the Employer's Requirements, the Contractor's proposal and schedules, or is implied by the Contract, or arises from any obligation of the Contractor and shall be fit for the purposes for which they are intended.

Table B.2: Split Responsibility in Special Tools for Rolling Stock and Depot Equipment

ITEM	DESCRIPTION	SUPPLY	North- WKS	North LRS
1	Workshop Facilities			
1.1	Turn table for bogie	CP NS-01		
1.2	Lifting jack for carbody	CP NS-01		
2	Testing Equipment			
2.1	Portable test unit for traction controller (with software)	CP NS-03		
2.2	Portable test unit for auxiliary power supply equipment (with software)	CP NS-03		
2.3	Portable test unit for air conditioning unit (with software)	CP NS-03		
2.4	Portable test unit for brake control unit (with-software)	CP NS-03		
2.5	Portable test unit for TMS (with software)	CP NS-03		
2.6	Test equipment for ACU	CP NS-03	*	
2.7	Test equipment for brake control unit	CP NS-03	*	
2.8	Testing equipment for relays	CP NS-01		
2.9	Testing equipment for magnetic valves	CP NS-01		
3	Jigs/Test Stands			
3.1	Test stands for bogie	CP NS-03	*	

The Malolos – Clark Railway Project and the North South Railway Project-South Line (Commuter) CP NS-03: Rolling Stock - Limited Express Trainsets Part 2 – Employer's Requirements Section V1. Employer's Requirements General Requirements

ITEM	DESCRIPTION	SUPPLY	North- WKS	North LRS
3.2	Lifting jig for ACU	CP NS-03	*	
3.3	Test stand for ACU	CP NS-03	*	
4	Machining Tools			
4.1	Wheel re-profiling machine	CP NS-01		
4.2	Wheel lathe	CP NS-01		
5	Tools For Maintenance Work			
5.1	Refrigerant retainer	CP NS-03		
5.2	Not used.	-		
5.3	Window glass lifting fixture (vacuum)	CP NS-03	*	*
5.4	Crimping tool for electric connector (for each equipment)	CP NS-03	*	*
5.5	Wrenches	CP NS-01		
5.6	Power supply for testing electrical equipment	CP NS-01		
5.7	Welding machine	CP NS-01		
5.8	Soldering iron	CP NS-01		
6	Cleaning Facilities			
6.1	Train washing plant	CP NS-01		
6.2	Parts washer	CP NS-01		
7	Measuring Tools			
7.1	Digital multi-meter	CP NS-01		
7.2	Ohmmeter	CP NS-01		
7.3	Laser based Electronic Wheel diameter measuring equipment	CP NS-03	*	*
7.4	Back gauge measuring equipment	CP NS-03	*	*

The Malolos – Clark Railway Project and the North South Railway Project-South Line (Commuter) CP NS-03: Rolling Stock - Limited Express Trainsets Part 2 – Employer's Requirements Section V1. Employer's Requirements General Requirements

ITEM	DESCRIPTION	SUPPLY	North- WKS	North- LRS
7.5	Non-Contact laser based Electronic Wheel profile gauge	CP NS-03	*	*
7.6	Coupler head wear gauge	CP NS-03	*	*
7.7	Leak detector for refrigerant	CP NS-03	*	*
7.8	Tension gauge for measuring upward force of pantograph	CP NS-01		
7.9	Vacuum pump for refrigerant	CP NS-01		
7.10	Thermal Imaging cameras for electrical and mechanical systems	CP NS 03		*
7.11	Vibration analyzers for Traction motors and other Auxiliary machines	CP NS 03		✓
8	Transportation Equipment			
8.1	Shunting vehicle	CP NS-01		
8.2	Truck for transporting air conditioning unit	CP NS-01		

Part 2 – Employer's Requirements Section V1. Employer's Requirements General Requirements

1.1.3 Please note that design requirement mentioned above are not exhaustive, Contractor shall further elaborate the requirements in close coordination with interface Contractors. Associated interfaces works not mentioned in the above table but which may be inferred to be necessary for stability, or completion, or effective interface & integration or the safe reliable and efficient operation of the Works shall be carried out by the Contractor. The Interface work shall include any work which is necessary to satisfy the Employer's Requirements, the Contractor's proposal and schedules, or is implied by the Contract, or arises from any obligation of the Contractor and shall be fit for the purposes for which they are intended.

Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical Requirements

- 5.7.5 The electrical sockets (220V 60Hz) / USB ports shall be provided adequate position on the seats one socket per person. The sockets shall be protected by a low amp breaker. As there are three (3) designs of socket sed in the Philippines, types A, B and C the most popular type shall be provided.
- 5.7.6 The seat design shall be ergonomically designed for passenger comfort, aesthetically pleasing, and eliminated gaps that will trap dirt or liquids.
- 5.7.7 The Contractor shall be required to supply documented evidence the proposed seats to have troubled-free service in a similar operating environment.
- 5.7.8 Specification of the seat shall be submitted by the Contractor for review by the Engineer.

5.8 Accommodation for Disadvantaged Passengers

- 5.8.1 The Contractor shall provide space on the leading vehicles to cater for people on wheelchairs, and people with prams. The prospective wheelchair space shall be prominently labeled on the floor with the appropriate standard sign. Additionally, fully retractable and non-obstructive wheelchair tie downs shall be made available for ready installation for each wheelchair space.
- 5.8.2 Each car shall be equipped with one (1) wheelchair space per car and 6 priority seats per car. The disabled and elderly passenger seat's label shall be prominently displayed.
- 5.8.3 The wheelchair spaces shall be close to disabled type toilets.
- 5.8.35.8.4 The priority seats location shall be nearest to the door as per Rule IV- Requirements for Public Transportation (BP 344).

5.9 Toilet

- 5.9.1 The Contractor shall provide the two western type toilets per train. Both toilets must be designed for disabled Passengers and easy using with wheel chair.
- 5.9.2 The toilet system should have manure dirt tank and discharge it at depot and dispose. The capacity of waste tank shall be enough to store the toilet waste for three (3) days.
- 5.9.3 The fresh water tank at each toilet location, shall be sufficient for 3 days of usage.
- 5.9.4 Regarding the amount of waste per one person for the definition of tank-capacity, the Contractor shall be reviewed by the Engineer.
- 5.9.5 Regarding the direction of vent of waste tank, the Contractor shall discuss with CP N-05 Contractor and the Engineer.
- 5.9.6 The toilet system shall be vacuum flushing type.
- 5.9.7 In the toilet room shall be installed mirror, paper holder, hand wash corner and bidet shower (water hose with tap).
- 5.9.8 And shall be installed folding baby chair and folding baby bed on which the baby diaper can be changed.
- 5.9.9 There shall be waste bins in the toilet, one for common rubbish and one for diapers or sanitary products. They shall be clearly identified. The sanitary bin shall carry a Hazard Label.
- 5.9.10 The toilet room shall be easy to clean, and shall be completely watertight.

- 5.7.5 The electrical sockets (220V 60Hz) / USB ports shall be provided adequate position on the seats one socket per person. The sockets shall be protected by a low amp breaker. As there are three (3) designs of socket sed in the Philippines, types A, B and C the most popular type shall be provided.
- 5.7.6 The seat design shall be ergonomically designed for passenger comfort, aesthetically pleasing, and eliminated gaps that will trap dirt or liquids.
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- 5.9.10 The toilet room shall be easy to clean, and shall be completely watertight.

Part 2 – Employer's Requirements Section V1. Employer's Requirements Technical Requirements

18 CCTV System

18.1 Image Monitoring System General

18.1.1 Two type of image monitoring systems shall be equipped to one train. One is saloon monitoring system by CCTV system for security, the other is platform monitoring system for PSD operation through millimeter wave. The Limited Express trainsets shall be equipped with image monitoring system. The type of image monitoring system is saloon monitoring system by CCTV system for security. The system shall be integrated with the Train Management System (TMS) for the fault indication function.

18.2 Saloon monitoring system by CCTV system for security.

- 18.2.1 Arrangement of cameras
- 18.2.1.1 Installation of cameras shall require to consider Legal Implications of Video Surveillance on Transit Systems.
- 18.2.1.2 The following shall be addressed:
 - 1) The federal and state laws that protect the privacy of those under surveillance and the current practices employed to comply with those laws;
 - Federal and state laws that provide for or deny public access to surveillance records and the current practices employed to comply with public access requirements that protect privacy rights;
 - 3) Federal and representative state laws that affect audio portions of surveillance records and the current practices employed to comply with those laws;
 - 4) Federal and state laws that provide for the retention of video and the current practices used to comply with these regulations;
 - 5) Employment-related implications for using in ward facing cameras that record the activities of operators and the current practices used by employers;
 - 6) Current policies used to determine when employees must activate or are forbidden from deactivating surveillance equipment and the legal issues associated with these policies; and
 - 7) Record-retention practices and public access requirements associated with tort litigation.
- 18.2.1.3 Basically, cameras shall be installed in each vehicle as below, however arrangement and numbers of cameras shall be subject to Engineer's review. Contractor shall demonstrate how cameras project interior and shall be permitted by Engineer. Passenger saloons and Baggage spaces: 4 cameras (2 cameras for each saloon is installed at the both corner of saloon for recognition around each doors and baggage spaces). Vestibules, if gangway doors are installed, shall require cameras Saloon: 2 cameras (each camera are installed on forward / backward ends) The number shall depend on vehicle layout but shall ensure all areas are monitored except for toilets, washrooms etc.
- 18.2.2 Monitoring and memory
- 18.2.2.1 The camera images shall be transmitted by the Ethernet network in the Rolling Stock. For this transmission, the monitor transmission line shall be used and not the control transmission line.

18 CCTV System

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18.1.1 The Limited Express trainsets shall be equipped with image monitoring system. The type of image monitoring system is saloon monitoring system by CCTV system for security. The system shall be integrated with the Train Management System (TMS) for the fault indication function.

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 - 3) Federal and representative state laws that affect audio portions of surveillance records and the current practices employed to comply with those laws;
 - 4) Federal and state laws that provide for the retention of video and the current practices used to comply with these regulations;
 - 5) Employment-related implications for using in ward facing cameras that record the activities of operators and the current practices used by employers;
 - 6) Current policies used to determine when employees must activate or are forbidden from deactivating surveillance equipment and the legal issues associated with these policies; and
 - 7) Record-retention practices and public access requirements associated with tort litigation.
- 18.2.1.3 Basically, cameras shall be installed in each vehicle as below, however arrangement and numbers of cameras shall be subject to Engineer's review. Contractor shall demonstrate how cameras project interior and shall be permitted by Engineer. Passenger saloons and Baggage spaces: 4 cameras (2 cameras for each saloon is installed at the both corner of saloon for recognition around each doors and baggage spaces). Vestibules, if gangway doors are installed, shall require cameras Saloon: 2 cameras (each camera are installed on forward / backward ends) The number shall depend on vehicle layout but shall ensure all areas are monitored except for toilets, washrooms etc.
- 18.2.2 Monitoring and memory
- 18.2.2.1 The camera images shall be transmitted by the Ethernet network in the Rolling Stock. For this transmission, the monitor transmission line shall be used and not the control transmission line.
- 18.2.2.2 When the Passenger Emergency Intercom (PEI) is activated, the driver shall be able to view nearby (several) camera image(s) of the activated PEI on TMS monitor in the