General Bid Bulletin No. 8
14 January 2021

IFB No. PB20-023-4

THE MALOLOS-CLARK RAILWAY PROJECT
AND THE
NORTH-SOUTH COMMUTER RAILWAY EXTENSION (NSCR-EX) PROJECT

PACKAGE CP NS-02: ROLLING STOCK COMMUTER TRAINSETS

TO ALL PROSPECTIVE BIDDERS:

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**

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 CONRAD D DUEÑAS
Chairperson

North – South Commuter Railway Extension (NSCR-EX) Project

MEMORANDUM:

TO	:	**THE CHAIRMAN AND MEMBERS** Bids and Awards Committee IV
THRU	:	**THE BAC SECRETARIAT**
FROM	:	**THE JOINT TECHNICAL WORKING GROUP (TWG) FOR CONTRACT PACKAGE NS-02**
SUBJECT	:	**GENERAL BID BULLETIN NO. 8**
DATE	:	**14th January 2021**

This Memorandum serves as an endorsement of the contents and attachments[1] of General Bid Bulletin No. 8, as prepared and recommended by the tender assistant, GCR Consortium, and endorsed by the Joint Technical Working Group (TWG) for Contract Package NS-02: Rolling Stock – Commuter Trainsets.

The TWG is respectfully submitting the contents of General Bid Bulleting No. 8, for the BAC's review and approval.

Respectfully Submitted By:

SIGNATURE REDACTED

ENGR. NARCISO PRECLARO JR.
Primary Member

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ENGR. ALFONSO ANDALEON
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ATTY. CRESIELDA ECALNEA
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ENGR. WARREN ZINGAPAN
Primary Member

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MR. ROMMEL RIVERA
Primary Member

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MR. WAN KHAIRUL ANUAR
Representative,
Greater Capital Railway,
Member

[1] Annex A and B, including its attachment, for GBB8 are attached to this Memorandum

Annex A

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Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
1	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-4 1.2.8 Driver`s Cab and Mock-Up	GBB No.4 Annex A Item No. 9, Employer's response to Bidder's clarification request, states "the mock-up must be able to withstand external conditions for a short period of time." It is Bidder's understanding that "external conditions" means the condition that has a roof, and in case of severe weather such as heavy rainfall and/or strong wind, the mock-up will be covered carefully with a protective sheet to prevent damage. It is also Bidder's understanding that the ground where the mock-up will be located is a level surface in order not to deform nor to distort it. Please confirm if Bidder's understanding is correct.		The mockup location will be equipped with roof. In the case of the extreme weather condition, the cover shall be supplied by the contractor. For the ground of the mockup, it will be level surface.
2	Volume II, Part 2, Section VI ERT-10	Item No.26 of Annex A in GBB 6, Employer's response to Bidder's clarification, states “For the loading condition of each trainset,		Bidder's statement on the Item No. 26 of GBB 6 contradicted with sub clause 1.8.4.5 is not correct. The statement is in line with sub clause 1.8.4.5.

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	1.8.4.5 Degraded / Emergency Performance	the sum of the loading cannot be shared between these 2 trainsets. Empty train shall remain unloaded for the test." In Bidder's opinion, it is very likely that the wheels will spin, and the test cannot start to work if it is conducted under such conditions described in Sub-clause 1.8.4.5 of ERT without load transfer between trainsets. Sub-clause 1.8.4.5 of ERT also states "the adhesion at this requirement is not to be considered. The test shall be conducted under the non-slip condition", which contradicts with the response in Item No. 26 of Annex A in GBB 6. In addition, Sub-clause 1.8.4.6 of ERT states "it is also permitted to convert from the results of empty tests and certain loaded tests", so it is originally permitted to convert loading conditions in calculation after the test is done under the		In the case of bidder cannot demonstrate the test in clause 1.8.4.5, bidder can extrapolate the data from another test scenario as per clause 1.8.4.6.

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		condition based on Bidder's clarification request for Sub-clause 1.8.4.5. It is Bidder's understanding that it is required only to measure the traction force of the main circuit for this test by setting a feasible non-slip condition. Thus, Bidder would like Employer to accept loading condition of each trainset can be changed under the condition that total loading condition of two trainsets meets the requirement.		
3	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-49 5.18 Accessibility	Sub-clause 5.18.1.1 of ERT states "The Contractor shall comply with national philosophy of accessibility requirements to ensure that the works to be delivered are safe and reliable for railway operations." It is Bidder's understanding that national philosophy of accessibility requirements has been satisfied by adhering to the applicable		Bidder's understanding is not correct. There is national philosophy for the accessibility for the contractor to adhere. The guideline will be supplied to the contactor at later stage.

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		Employer's Requirements stipulated in the Bid Documents. Please confirm if Bidder's understanding is correct.		
4	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-58 8.2.2 Ventilation System	Sub-clause 8.2.2 of ERT states "Re-circulated air (return air) shall be drawn through return air grills in the ceiling and be mixed with the fresh air. This air mixture shall then pass through another filter into the evaporator unit". It is Bidder's understanding that filters are not needed at the entrance of the evaporator because there are filters located both at the inside air inlet and at the outside air inlet. The filters installed at the inside air inlet and at outside air inlet can remove dusts in the airflow; therefore, no filter is needed for an entrance of the evaporator unit. The VAC installed in commuter trains in Japan commonly does		Bidder's request is accepted. Bidder shall submit the proven record of the Japanese commuter train during the design stage for Engineer review. Addendum is issued. Please refer to Annex B Attachment 1.

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		not have a filter at the entrance of the evaporator. Bidder would like Employer to remove requirement of "another filter into the evaporator unit".		
5	Volume II Part II Section VI ERT-58 8.2.6 Ventilation System	Sub-clause 8.2.6 of ERT states "In order to reduce the frequency of maintenance of the filter, roll filter shall be used." It is Bidder's understanding that "the filter" mentioned here means the re-circulated filter installed on the ceiling for inside air intake. Please confirm if Bidder's understanding is correct. Otherwise, Bidder would like Employer to allow the Bidder to propose and discuss another type of a filter during design stage.		Bidder's understanding is correct.
6	Volume II Part II Section VI ERT-59	Sub-Clause 8.3.3 of ERT states that a condensation pan (drain pan) of the VAC shall be easily removed for cleaning. However,		Bidder's request is accepted. Addendum is issued. Please refer to Annex B Attachment 1.

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	8.3.3 Cooling System	condensation pans for VACs installed on most of commuter trains in Japan are not removable, but easily accessible for cleaning without removing the condensation pan. Thus, Bidder kindly requests Employer to allow such structure by replacing the description in Sub-clause 8.3.3. of ERT, "shall be easily removed for cleaning" to "shall realize easy cleaning".		
7	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-62 9.2.4 Friction Brakes	Item No. 42 of GBB No. 6 Annex A, Employer's response to Bidder's clarification request, declined Bidder's request concerning parking brake. From the requirement of Sub-clause 9.2.4 of ERT, "Should air pressure not be available", it is Bidder's understanding that the situation to release the parking brake is that a trainset without air pressure or electricity supply needs to be		The bidder's request is accepted for the normal condition. In the case of train stranded and to be rescued by other train, the parking brake shall be equipped with manual brake release mechanism to enable the train to be towed. Details to be finalized during the design stage.

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		rescued and it is dangerous to release parking brake too easily under the situation. As a common method in Japan and for the similar project in Manila, parking brake can be released from the cab only when both electricity and air are available on the trainset. Bidder would like Employer to accept the specification which parking brake can only be released when both air pressure and electricity is available.		
8	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-88 15.9.3 Train Radio System	Item No.57 of GBB No.6 Annex A, Employer's response to Bidder's clarification states "Bidder's understanding is correct. Addendum is issued. Please refer to Annex B Attachment 1." However, it is Bidder's understanding that there is no Addendum description in GBB No.6, which reflects the modified content of Item No.57. Bidder		Addendum is issued. Please refer to Annex B Attachment 1.

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		would like Employer to provide the addendum referred in Item No.57 of GBB No.6 Annex A.		
9	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-110 20.4.2 Acceptance Testing	Bidder has already asked for revision by submitting a request for clarification dated December 1st, concerning "k. Car body loading test (one car only)" listed in Sub-clause 20.4.2.4 of ERT, which should be moved to items of DQT described in Sub-clause 20.3 of ERT. In addition to that, Bidder also would like Employer to revise the description of "l. Jacking up test" listed for "Type Test of Acceptance Test (FAT)" in Sub-clause 20.4.2.4 of ERT to be a part of DQT because of the same reasons. The carbody structural tests require a specially arranged load test setting and the diagonal jacking test to be a part of such series of the carbody		Bidder's understanding is correct. Addendum is issued. Please refer to Annex B Attachment 1.

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		structural tests. In addition, the time point of FAT will be too late to reflect any unexpected design changes which may become evident as a result of the structural tests. Please confirm if Bidder's understanding is correct.		
10	Volume II Part II Section VI ERT-111 20.4.3 Integrated Factory Acceptance Test	Sub-clause 20.4.3.3 of ERT states that all items of IFAT are "to be carried out in designated factory of the CP NS-02 Contractor" or "to be carried out at the designated test track of the CP NS-02 Contractor." Meanwhile, a similar railway project in Manila, for example of MMSP, has descriptions for signaling equipment tests like "The Rolling Stock Contractor shall provide facilities including a test track for comprehensive static, dynamic, and interface testing between the rolling stock and ETCS systems at their premises. If it is difficult to		The IFAT test will not require the trainset to transmit any signal from the rollingstock. This bench test is to check the continuity of the circuit between the on-board equipment and the train component. However, the bidder's request to allow flexibility will be discussed during the design stage is accepted.

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		implement it at their premises, then it is acceptable to use the test line or main line." Certain IFAT items in relation to signaling cannot be implemented in the manufacture's factory due to Japanese regulations regarding radio waves and restriction of factory facilities. Moreover, some of IFAT items could be more efficient to be done at close-to-actual circumstances on main line in Manila. Bidder would like Employer to allow alike flexibility under Engineer's review at the design stage.		
11	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-127 24.2 Spare Parts	Item No.11 of GBB No.2 Annex A, Employer's response to Bidder's clarification request, states "The quantity shall be based on one (1) trainset basis." However, the quantity of spare parts to be prepared is excessive from the		As ERT 24.2.5 (revised in GBB6) mentions as below: If necessary, the Contractor shall adjust the quantity of each parts where required, considering two (2) depots and maintainability and reliability, and actual

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		viewpoint of actual necessity and our experience in Japan. Therefore, Bidder would like Employer to accept the following suggestions regarding quantity basis of spare parts. ・Two (2) car basis for the parts equipped only in a Trailer car or only in a Motor car. ・Two (2) car basis in total, one Motor car basis plus one Trailer car basis, for the parts equipped in both a Trailer car and a Motor car		fault record submitted by the Contractor for the Engineer's review. Based on the above mentioned, the bidder is allowed to adjust the quantity. Note that the evidence shall be submitted for the Engineer's review during detailed design stage.
12	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-130 24.8 Main Special Tools and Diagnostic Test Equipment	According to Item No.8 of Annex B "Volume II. PART 2 - Employer Requirement" in GBB No.6, ITEM 2.5 in "Revised Table B.2" states “Portable test unit(s) for TMS (with software)” are to be supplied not for North WKS but for North LRS, and South LRS. On the other hand, according to Item No.20 of		PTU is the Portable Test Unit (with TMS). Please refer to ERT-132 for the correct table. Addendum is issued. Please refer to Annex B Attachment 1.

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		Annex B "Volume II. PART 2 - Employer Requirement" in GBB No.6, items of the ID “PTU” group, including the NAME "TMS", are to be supplied to all of North WKS, North LRS, and South LRS. "Annex B - Attachment 1" has the same differences in ERG-99 and ERT-132. It is Bidder’s understanding that “Portable test unit for TMS (with software)” and “PTU” of "TMS" are the identical item. Therefore, Bidder would like Employer to clarify which requirement is correct.		
13	Volume Ⅱ Part Ⅱ Section Ⅵ ERT-132 25.1 Equipment for Driving Simulator	Item No.65 of GBB No.6 Annex A, Employer's response to Bidder's clarification request states "Refer to item 64 response". However, the content of item 64 is not relevant to item 65. It is Bidder's understanding that Item No.67 seems the correct response to be		Bidder's understanding is correct.

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		quoted. Thus, Bidder would like Employer to amend the sentence of Item No.65 response to "Refer to Item 67 response." if the Bidder's understanding is correct.		
14	Volume Ⅱ Part Ⅱ Section Ⅵ ERG-13 4.3 General Health and Safety Requirements	Item No. 12 of GBB No.6 Annex A, Employer's response to Bidder's clarification request states “In any conditions and stages, the bidder need to comply with EIA report and EIS report.” , in the meantime, the Employer's response did not include the information about where and how the bidder can access to such reports. To properly review the referenced reports and reflect the related information to the proposal, it is essential to study the reports during the proposal preparation work. Bidder kindly asks Employer to provide the "EIA report" and the "EIS report", or the site where		Updated EIA and EIS report are available through the link: https://dotr.gov.ph/component/k2/item/988-north-south-commuter-railway-extension-project.html

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		such reports can be accessed long enough to review before the deadline of bid submission		
15	Volume Ⅱ Part Ⅱ Section Ⅵ ERG-APPENDIX D 1 of 16 APPENDIX D: WORK PROGRAMME REFERENCE	Sub-clause 1.1 (4) in "APPENDIX D: WORK PROGRAMME REFERENCE" of ERG states “For more details, the Contractor can refer to the Employer’s Planning and Schedule Manual” regarding coding structure. However, such a manual seems currently not available. Bidder is concerned that the “Planning and Schedule Manual” might contain important information for coding; thus, Bidder would like to request Employer to provide "Planning and Schedule Manual" or its draft if not completed. If such code is not ready to release, please provide a guideline for the Bidder to reasonably include a preliminary plan for the coding.		The Table D-1 to Table D-13 in Appendix D has described the preliminary coding structure as required by the Employer. During the project implementation, the Contractor can propose further breakdown and additional codes for project use upon the review and approval by the Employer or the Engineer.

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16	Volume Ⅱ Part Ⅱ Section Ⅵ ERG-APPENDIX D 1 of 16 APPENDIX D: WORK PROGRAMME REFERENCE	WBS and activity codes predefined by DOTr, which are shown in APPENDIX D of ERG, seem based on management for construction and civil engineering type project, and not necessarily fit for rolling stock design /manufacturing processes. For example, WBS Level 4 & 5 shown on Table D-6 in APPENDIX D of ERG have the following description at the design stage: "Preliminary Engineering", "Detailed Design and Engineering", and "Final Design and Shop Drawing". On the other hand, Sub-Clause 9.4.3 of ERG states design shall be submitted in the following stages: "Conceptual design", "Preliminary design", and "Final design". It is Bidder's understanding that WBS and activity codes predefined by DOTr should better be arranged so that		The guidelines shown in Table D-1 to Table D-13 is typical and applicable to all civil, systems and rolling stock contract packages. Bidders could utilize the coding available in the Table D. If the codes are not available, bidders can propose additional coding (which comply with the format) to fit the design stage (Conceptual design, Preliminary design; and Final design) or other components/items as required by the Employer's Requirements.

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		it is suitable for rolling stock design/manufacturing process and other requirements. Please confirm if Bidder's understanding is correct.		
17	Volume III Part 3, Section VIII PC-8 ATTACHMENT 1 SUMMARY OF KEY DATES	Item 71 and 72 of GBB No.6 Annex A, Employer's response to Bidder's clarification request, rejected revision of KD 1 and KD 3. Bidder will make an effort to ensure achievement of other key dates such as KD 6 "Delivery of First Batch of 5 trainsets and completion of testing and commissioning thereof plus handing over" on time, but KD 1 and KD 3 are set too early in no accordance with KD 5 to 15 and will bring long time gaps after their achievements until rolling stock delivery. It can also become a burden for Employer and Engineer at the standpoint of resource		KD 1 and KD 3 has been revised. Addendum is issued. Please refer to Annex B Attachment 1

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		allocation especially for design and test stages. Similar railway projects in Manila also have set such flexibility in design and production scheduling until the key dates for delivery of the first trainset. Bidder would like Employer to reconsider revision of KD 1 and KD 3 and set more flexibility for KDs before KD 6.		
18	Volume III Part 3, Section VIII PC-8 ATTACHMENT 1 SUMMARY OF KEY DATES	Sub-clause 22.4.1 of ERT states "Prior to serial production taking place, the Contractor shall conduct a First Article Configuration Inspection (FACI)". Therefore, production will start after completion of FACI and FAT and it will be only few months before shipment of the first trainset in common, which will be approximately 36 months from Commencement Date in compliance with KD 6.		KD 4 is revised to 40 months. Addendum is issued. Please refer to Annex B Attachment 1

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		Since equipment and parts described in KD 4 will be designed and produced at the similar timing of the first trainset, not earlier than it, Bidder estimates the date of equipment supply to the NS-01 contractor will be no sooner than 40 months from Commencement Date, considering shipment, inspection and installation. Therefore, Bidder would like Employer to adjust KD 4 to be consistent with the above related schedule described above.		
19	GBB No.3 Item No.34 i 1. NSCR-EX has 2 depots: the Mabacalat Depot in the North and the Banlic Depot in the South. The depot is the facility whereby the train will be stabled and all the	1 .It is Bidder's understanding that Bidder can set reasonable assumption on the number of rolling stocks and delivery timing to the CP N-05 depot and the CP S-07 depot for the total management planning in accordance with Key Dates and Access Dates defined in PC. It is because detailed information has		1. Bidder's understanding is correct. 2. Bidder's request is not accepted.

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	maintenance work for the train will be done. It also will be the location for the train delivery. 2. Bidder's understanding is correct. And, both depots shall be considered. The two offices shall be provided while trains are delivered to each depot. After starting full service operation, the above-mentioned office can be integrated into one office. 3. Bidder's understanding is not correct. Bidder shall keep the office during DNP. Therefore, Sub clause 22.6.7 of ERT modifies as below. 'All equipment stated above shall be handed over to the	yet to be provided in the bidding document. It is also Bidder's understanding that after the trainset is delivered at each depot, on-site testing & commissioning will be performed in the delivered depot and/or on the mainline adjacent to the delivered depot. Please confirm if bidder's understanding is correct. 2. In addition, although Bidder understands that trainsets' final destination will be required as both depots, Bidder would like to ask Employer whether it would be an option to deliver trainsets to Valenzuela Depot at first, then, delivery them to CP N-05/S-07 depots through new tracks which will be constructed. For reference, the distance from Manila Port to each depot location will be as follows.		

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	Employer after the completion of DNP.' But regarding one office, after service operation starts and one office is closed, all equipment of closing office shall be handed over to the Employer at the same time of closing.	- Manila Port to Valenzuela: Approx. 17km - Manila Port to Mabacalat: Approx. 100km - Manila Port to Banlic: Approx. 60km Above mentioned option would help to decrease the project total cost because Inland transportation to North/South Depots will cost more than that option. Your consideration would be highly appreciated.		
20	GBB No.3 Item No.34 1. NSCR-EX has 2 depots: the Mabacalat Depot in the North and the Banlic Depot in the South. The depot is the facility whereby the train will be stabled and all the	Bidder has understood that two Employer`s offices shall be established nearby both the CP N-05 depot and the CP S-07 depot while the trains are delivered, and also understood the timing of hand over of office equipment. In Bidder`s understanding, the office nearby the CP S-07 depot shall be established later than the one in		Bidder's understanding is correct.

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	maintenance work for the train will be done. It also will be the location for the train delivery. 2. Bidder's understanding is correct. And, both depots shall be considered. The two offices shall be provided while trains are delivered to each depot. After starting full service operation, the above-mentioned office can be integrated into one office. 3. Bidder's understanding is not correct. Bidder shall keep the office during DNP. Therefore, Sub clause 22.6.7 of ERT modifies as below. 'All equipment stated above shall be handed over to the	the north, because the starting of trainset deliveries to the CP S-07 depot will be later than the timing of the delivery to CP N-05 depot due to the differences of Access Dates. Thus, Bidder understands that the Employer`s offices nearby CP S-07 depot shall be established before the trainset delivery at first time to the CP S-07 depot. On the other hand, the office nearby the CP N-05 depot shall be established as a main Employer`s office when project implementation start. Please confirm if Bidder`s understanding is correct.		

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	Employer after the completion of DNP.' But regarding one office, after service operation starts and one office is closed, all equipment of closing office shall be handed over to the Employer at the same time of closing.			
21	Volume Ⅲ Part Ⅲ Section Ⅸ PC-12 ATTACHMENT 2: TIME FOR ACCESS TO THE DATE	"AD-1A" in ATTACHMENT 2 "TIME FOR ACCESS TO THE SITE" of PC states "On-board Signaling System and other equipment to be mounted on the Rolling Stock supplied by CP NS-01 Contractor from E&M Systems and Track Works" and "for trainsets one to nineteen supplied under this contract" are to be supplied by "30 months" from Commencement date. However, the KD of the NS-02 trainsets delivery is set at every 5 trainsets,		Bidder's request is accepted. Addendum is issued. Please refer to Annex B Attachment 1

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		and there is inconsistency between the definition of KD and that of AD. Bidder would like Employer to change range of AD-1A to "for trainsets one to twenty supplied under this contract", and AD-1B to "for trainsets twenty-one to thirty-eight supplied under this contract" for the consistency		
22	GBB No.6 Vol. 1 Section IV BF-57, BF-58 Item No. 3	Bidder understands that 7.41% shall be used as a rate for General Administrative Expenses under STEP rule. Bidder also notices that there is discrepancy between BF-57 and BF-58 regarding base value of calculation for General Administrative Expenses. In BF-57, it is stipulated that 7.41% shall be multiplied to “Total Bid Amount excluding Value Added Tax”, however, in BF-58, it stipulates that 7.41% shall be multiplied to “Total Price Schedule		The base value of calculation in the BF-57 is correct. Addendum is issued. Please refer to Annex B Attachment 1.

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Item No.	Volume Section No. Page No. Clause No. / Title Reference Text	Clarification Request	Proposed Revised Text (if any)	Response
		plus Provisional Sums and VAT". Bidder would like to follow the instructions in BF if it is Employer`s intention, however, please let us clarify just in case whether we can use different base amount for this calculation.		
23	GBB No.6 Vol.1 Section IV Item No.9	Bidder notes Employer`s intention, and would like to kindly request to discuss about this matter during contract negotiation phase in order to agree reasonable index to use.		Bidder's understanding is correct. This item will be discussed during the contract negotiation and finalization.

Annex B

PACKAGE CP NS-02: ROLLING STOCK COMMUTER TRAINSETS
General Bid Bulletin No. 8
Annex B

ITEM NO.	REFERENCE/CLAUSE/ SECTION	REVISIONS / AMENDMENTS
Volume I. Part 1 – Bidding Procedures		
1.	Page BF-59 FORM SCJ: Summary for the Total Cost of Goods and Services Procured from Japan	Revised item C for the following: (C) Base for Calculation (Total Price Schedule and Provisional Sum)

PACKAGE CP NS-02: ROLLING STOCK COMMUTER TRAINSETS
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Volume II. Part 2 – Employer Requirement
Section VI
1. Scope of Work
2A) General Requirements (ERG)
2B) Technical Requirements (ERT)

ITEM NO.	REFERENCE/CLAUSE/SECTION	REVISIONS / AMENDMENTS
1.	Page ERG-48 Item 8.1.5	Revised item 8.1.5 with the following: 8.1.5 A Taking Over Certificate (TOC) will be issued for each train set. In order to obtain a TOC for the Rolling Stock from the Engineer, it is required that each train set achieves 1,500 km of Fault-Free Running (FFR) during the integrated testing and commissioning.
2.	Page ERG-49 Item 8.2.2.1	Revised item 8.2.2.1 with the following: 8.2.2.1 Each train set shall achieve: a. Integrated Testing and Commissioning– 1,500 km FFR. b. Trial Operation (selected trainset) – No major fault c. In-service Operations - 10,000 km or two (2) months of continuous in-service operational FFR.

<table>
<tr><td>3.</td><td>Page ERG-68
Item 12.2.4 e.</td><td><u>Revised item 12.2.4 e with the following:</u>

12.2.4 The inspection, testing and commissioning plan shall include as a minimum the following tests:
e. Trial Operations: The Contractor shall support Trial Operations which shall take place at the completion of the testing and commissioning process. The Trial Operations shall be supported by the Engineer and other interested parties. It consists of operating the newly procured Rolling Stock, consideration simulating…</td></tr>
<tr><td>4.</td><td>Page ERG-99
Table B-2</td><td><u>Revised table B-2 with the following:</u>

<table>
<tr><td>Item</td><td>Description</td><td>Supply</td><td>North WKS</td><td>North LRS</td><td>South LRS</td></tr>
<tr><td>2.4</td><td>Portable test unit for brake control unit(with software)</td><td>CP NS-02</td><td>✔</td><td>✔</td><td>✔</td></tr>
</table>
</td></tr>
<tr><td>5.</td><td>Page ERT-4
Item 1.2.8.4</td><td><u>Add item 1.2.8.4 with the following:</u>

1.2.8.4 The contractor shall deliver a full-sized generic mock-up of half a car which will be used for public view. This mock-up does not have to identical to cars being supplied but shall provide an indication of the layout and quality of finished to be expected in the final product. This mock-up shall be delivered to a designated location for 6 times in Manila which shall be advised by the Engineer. The mock-up shall be delivered to the site on Q1 2022.</td></tr>
<tr><td>6.</td><td>Page ERT-58
Item 8.2.2</td><td><u>Revised item 8.2.2 with the following:</u>

8.2.2 Re-circulated air shall be drawn through grills in the ceiling and mix with the fresh air. This air mixture shall then pass through the evaporator unit, from where the blower shall force the air through the evaporator coils into the main air ducts. The ventilation system shall ensure that the inside pressure be positive value with all doors and windows closed with a pressure range of 20 to 40 N/m2.</td></tr>
</table>

7.	Page ERT-59 Item 8.3.3	Revised item 8.3.3 with the following: 8.3.3 Air flow over the evaporator coils shall be no more than 2.5 m/s. Evaporator coils shall preferably be manufactured from copper, and shall have copper fins; however, aluminum elements are also acceptable provided they are sufficiently protected from the elements. A condensate pan shall be provided beneath the evaporator coil. The pan shall be made from stainless steel with suitable drain lines and shall realize easy cleaning. The condensate drain lines shall be insulated to prevent condensation.
8.	Page ERT-88 Item 15.9.3 item c	Revised item 15.9.3 c with the following: 15.9.3 The TOCP shall be equipped with all facilities necessary for driver operation of the on-board radio facilities and other on-board radio communication equipment and shall typically include: c. Handset type microphone.
9.	Page ERT-109 Item 20.3.12	Add item 20.3.12 with the following: 20.3.12 The Carbody for the first trainset shall be tested for the Carbody Loading Testing (one car only) and Jacking Up Testing.
10.	Page ERT-110 Item 20.4.2.4 l and k	Remove item l and k from 20.4.2.4
11.	Page ERT-113 Item 20.8.2	Revised item 20.8.2 with the following: 20.8.2 The Contractor shall support the Employer during the Trial Operations which shall take place at the completion of the Testing and Commissioning and Fault Free Run (FFR).

PACKAGE CP NS-02: ROLLING STOCK COMMUTER TRAINSETS
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<table>
<tr><th>ITEM NO.</th><th>REFERENCE/CLAUSE/ SECTION</th><th>REVISIONS / AMENDMENTS</th></tr>
<tr><td colspan="3">Volume III. Part 3 – Conditions of Contract and Contract Forms</td></tr>
<tr><td>1.</td><td>Page PC-8
Attachment 1
Summary of Key Dates</td><td><u>Revised KD 1, KD 3 and KD 4 with the following:</u>
<table>
<tr><th colspan="3">TABLE 1-KEY DATES</th></tr>
<tr><td>Key Date</td><td>Element of Work</td><td>No of Months</td></tr>
<tr><td>KD 1</td><td>Achievement: Completing Final Design Review.</td><td>18 Months</td></tr>
<tr><td>KD 3</td><td>Achievement: Completing FAI and FAT.</td><td>35 Months</td></tr>
<tr><td>KD 4</td><td>Achievement: Supply and delivery of the following Rolling Stock equipment for training purposes to the CP NS-01 Contractor at the North Depot for Training Center Facility:
- Equipment for driving simulator,
- Pantograph, and
- Bogie assembly for motor car including traction motor, gearbox and coupling.</td><td>40 Months</td></tr>
</table></td></tr>
<tr><td>2.</td><td>Page PC-12
Attachment 2</td><td><u>Revised AD 1A and AD 1B with the following:</u></td></tr>
</table>

<table>
<tr>
<td></td>
<td>TIME FOR ACCESS TO THE SITE</td>
<td></td>
<td colspan="3">
<table>
<tr><th>Access Date</th><th>Site (Works Area)</th><th>Months No.</th></tr>
<tr><td rowspan="3">AD1</td><td>On-board Signalling System and other equipment to be mounted on the Rolling Stock supplied by CP NS-01 Contractor from E&M Systems and Track Works.
The E&M System and Track Works Contractor will supply this equipment in Japan at the Rolling Stock Contractor’s premises</td><td></td></tr>
<tr><td>AD-1A: for trainsets one to twenty supplied under this contract</td><td>30 Months</td></tr>
<tr><td>AD-1B: for trainsets twenty-one to thirty-eight supplied under this contract</td><td>49 Months</td></tr>
</table>
</td>
</tr>
<tr>
<td>3.</td>
<td>Page PC-19
Item 9.1 Contractor`s Obligations</td>
<td colspan="3"><u>Added item 9.1 with the following:</u>
9.1 Contractor`s Obligations
Delete the subparagraph (c) and fourth paragraph, replace fourth paragraph with the following:
“During Tests On Completion, when the Works are operating under stable conditions, the Contractor shall give notice to the Engineer that the Works are ready for any other Tests on Completion, including Integrated Testing and Commissioning, performance tests to demonstrate whether the Works conform with criteria specified in the Employer's Requirements and Compliance Matrix. Refer to the Employer’s Requirements for the Inspection, Testing and Commissioning related requirements.</td>
</tr>
</table>

Annex B – Attachment 1

Form SCJ: Summary for the Total Cost of Goods and Services Procured from Japan

The Bidder is to complete the Form SCJ: Summary for the Total Cost of Goods and Services Procured from Japan below, including the calculation of the percentage which is to be not less than thirty percent (30%) of the Accepted Contract Amount (inclusive of Provisional Sums and VAT), in accordance with the requirement of Eligible Source Countries of Japanese ODA Loans.

Summary for the Total Cost of Goods and Services Procured from Japan

Item	Description	Country	Price
		Japan	
		Japan	
		Japan	
	TOTAL (A)		

Exchange Rate: (as provided in BDS ITB 37.1)

Description	Local PHP	Foreign JPY	Total JPY
Sub-total of Price Schedules 1.1 to 1.6 of the Grand Summary			
Provisional Sum as per Schedule 1.9	348,000,000	36,000,000	
(B) Total Amount without VAT			
VAT			
(C) Base for Calculation (Total Price Schedules and~~plus~~ Provisional Sums ~~and VAT~~)			
(D) General Administration Expenses (7.41%): **(C)*7.41%**	JP	JAPAN	
(E) Total Amount Japanese Content (A) + (D)			
Total % of Japanese Contents (E) / (C)			

Bidder's Signature_____

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(E) Total Amount Japanese Content (A) + (D)			
Total % of Japanese Contents (E) / (C)			

Bidder's Signature_____

retain all inspection certificates, test certificates and certificates of conformity, which shall be collated to allow easy traceability and made available for inspection by the Engineer at the Contractor's premises.

7.13 Quality Audit

7.13.1 The Contractor shall make available on request any documents, which relate to their recent internal audits.

7.13.2 Periodically during the life of the Contract, the Engineer shall conduct compliance audits of the quality system. During any audits by the Engineer, the Contractor shall provide qualified staff to accompany the auditor.

8 System Assurance

8.1 General

8.1.1 System Assurance Management is applicable for all stages of the Rolling Stock development, including design, manufacture, testing, commissioning, systems integration, trial operations, and in-service operations.

8.1.2 The Contractor shall submit a comprehensive System Assurance Management Plan (SAMP) which contains all requirements within this ERG Section 8 of this document, for the Engineer's review.

8.1.3 The SAMP shall also include a configuration management tracing system. This system shall be in place throughout the contract to ensure that all deliverable items of equipment are of the same configuration. All changes to equipment and configuration change control process shall include the phases of configuration identification, control of change and configuration verification.

8.1.4 The SAMP shall be certified by the Contractor's internal department or by a third-party independent engineer from the design and manufacturing section. The SAMP shall be specifically developed for this Contract. The SAMP shall address the Performance (Reliability, Availability, Maintainability) and Safety of the Rolling Stock.

8.1.5 A Taking Over Certificate (TOC) will be issued for each train set. In order to obtain a TOC for the Rolling Stock from the Engineer, it is required that each train set achieves 1,500 km of Fault-Free Running (FFR) during the integrated testing and ~~system integration and trial operations~~commissioning.

8.1.6 A Performance Certificate will be issued by the Engineer for the total performance of the fleet. This Performance Certificate is required to be achieved by the end of the Defect Notification Period (DNP). Prerequisites to obtain the Performance Certificate includes: each train set shall achieve 10,000 km or 2 months of FFR, the fleet (38 train sets) shall achieve a Mean Distance Between Failures (MDBF) of 50,000 km causing a delay greater than 5 minutes, a fleet in-service Operational Mean Time To Restore (OMTTR) of 15 minutes, and the fleet maintainability of capital components a Corrective Mean Time To Repair (CMTTR) of 4 hours.

8.1.7 The Contractor shall provide sufficient documented information for review by the Engineer. It is expected that the design demonstration of the Rolling Stock performance shall be achieved through supplier-based material self-certification, including cross-references to proven and accredited in-service performance of Rolling Stock equipment supplied in a similar railway application.

8.1.8 The Contractor shall establish a Data Reporting and Corrective Action System (DRACAS) to monitor the performance of the equipment, from testing and commissioning and into operation. The system shall be used to monitor the performance

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of components and to identify patterns of failures so that corrective action can be taken to improve both current and future systems.

8.1.9 With regard to Safety, it is expected that certification shall be achieved through supplier-based information via application of cross references to previously certified acceptances from a reputable body (e.g., train operators, national railways authorities, independent accredited safety bodies, etc.) of similarly supplied Rolling Stock equipment, with a product-generic safety case application to be made based on existing safety certification.

8.2 Performance Assurance Plan (PAP)

8.2.1 Within the SAMP, the Contractor shall provide a Performance Assurance Plan (PAP) for the Engineer's review. The PAP shall describe the activities that the Contractor proposes to carry out during the life cycle of the design, implementation and operation of the Rolling Stock, and shall demonstrate compliance with the Employer's Requirements, achievement of a TOC for each train set, and a Performance Certificate for the total fleet (38 train sets).

8.2.2 Performance Acceptance Criteria (PAC)

8.2.2.1 Each train set shall achieve:

a. **Integrated Testing and Commissioning** ~~**Trial operations**~~ – 1,500 km FFR.

~~a.~~b. **Trial Operation (selected trainset)** – No major fault

~~b.~~c. **In-service Operations** - 10,000 km or two (2) months of continuous in-service operational FFR.

8.2.2.2 The train fleet (38 train sets) as a whole shall achieve:

a. **MDBF** – In service operational faults, MDBF no less than 50,000 km causing a delay greater than 5 minutes.

b. **OMTTR** – Operational Mean Time To Restore (OMTTR) capital components; the train sets shall be restored to operational order in an OMTTR of 15 minutes.

c. **CMTTR** – Corrective Mean Time To Repair (CMTTR) capital components shall not be greater than 4 hours.

8.3 Performance Reports

8.3.1 The Contractor shall provide Performance Reports to support the applications for Rolling Stock TOC for each train set and the Performance Certificate for the fleet (38 train sets).

8.3.2 The Rolling Stock TOC Performance report shall be issued for each train set prior to operational acceptance and shall provide:

a. Technical design justification of performance;

b. Cross reference to Rolling Stock performance in a similar application;

c. The design prediction for MDBF, OMTTR and CMTTR of all capital components; and

d. Individual train set FFR trail operations performance.

8.3.3 The Rolling Stock Performance report shall be issued progressively on a monthly basis, shall be finalized at the end of DNP, and shall provide:

a. In-service FFR operational performance of individual train sets;

to improve both current and future systems.

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a. In-service FFR operational performance of individual train sets;

b. In-service operational performance of the fleet (38 train sets) MDBF; and

12.1.4 All tests shall be carried out by the Contractor in the presence of the Employer and the Engineer in accordance with the agreed Quality Management Plan.

12.1.5 The Contractor shall provide testing procedures that shall be in accordance with the Technical Requirements and the International and Philippine Standards (as specified in the Technical Requirement Sub-Clause 1.2.2, Codes, Standards and Requirements).

12.1.6 The Contractor shall appoint a dedicated test and commissioning manager, to coordinate all activities of the commissioning schedule.

12.1.7 All costs associated with testing shall be borne by the Contractor, including any expenses incurred due to re-testing caused by defects or failure of equipment to meet the requirements of the Contract in the first instance.

12.1.8 The Contractor shall provide a sufficient number of train driver for testing and commissioning and any related works utilizing the commuter train.

12.1.9 The cost of permanent power which is consumed in testing and commissioning by the Contractor as part of the Works shall not be the responsibility of the Contractor.

12.1.10 The cost to provide water and other services including train operation personnel (train operators and rolling stock personnel) required for inspection, testing and commissioning including integrated testing and commissioning and trial operation shall be borne by the Contractor. Train operator and associated rolling stock personnel required for all Interfacing Contractors will be provided by the CP NS-02 Contractor (24/7) as required) for the completion of testing & commissioning.

12.2 Inspection, Testing and Commissioning Plan

12.2.1 According to Sub-Clause 20.2.2 of the ERT the Contractor shall submit to the Engineer for review an inspection, testing and commissioning plan giving full details of all tests to be carried out under the Contract with an explanation of the planned achievements.

12.2.2 The plan shall demonstrate that the Rolling Stock conforms to specifications, standards and other normative documents.

12.2.3 Testing and commissioning shall be in accordance with the Railway Application Standard JIS E4041 for testing of Rolling Stock or on completion of construction and before entry into service and according to Clause 20 of the ERT.

12.2.4 The inspection, testing and commissioning plan shall include as a minimum the following tests:

a. Design Qualification Testing: As part of the design verification process, type tests shall be carried out to demonstrate that the design of the Rolling Stock and its systems are in full compliance with the requirements;

b. First Article Inspection: The first component produced shall be subjected to a rigorous test and inspection to confirm that the hardware fully complies with the Contractor's design and manufacturing process requirements;

c. Factory Acceptance Tests: Tests to be performed at the factory, before equipment is shipped as it is set out in the Sub-Clause 20.4.2 of the ERT;

d. On-Site Testing and Commissioning: Tests to be performed after delivery of the Rolling Stock at the Site comprising static and dynamic tests. After static tests at the depot, dynamic tests shall be carried out on the main line; and

e. Trial Operations: The Contractor shall ~~undertake~~ support Trial Operations which shall take place at the completion of the testing and commissioning process. The Trial Operations shall be supported by the Engineer and other interested parties. It consists of operating the newly procured Rolling Stock, consideration simulating

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

ITEM	DESCRIPTION	SUPPLY	North WKS	North LRS	South LRS
1	**Workshop Facilities**				
1.1	Turn table for bogie	CP NS-01			
1.2	Lifting jack for car body	CP NS-01			
2	**Testing Equipment**				
2.1	Portable test unit for traction controller (with software)	CP NS-02	✔	✔	✔
2.2	Portable test unit for auxiliary power supply equipment (with software)	CP NS-02	✔	✔	✔
2.3	Portable test unit for air conditioning unit (with software)	CP NS-02	✔	✔	✔
2.4	Portable test unit for brake control unit (with software)	CP NS-02	✔	✔	✔
2.5	Portable test unit for TMS (with software)	CP NS-02	✔	✔	✔
2.6	Test equipment for ACU	CP NS-02	✔		
2.7	Test equipment for brake control unit	CP NS-02	✔		
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-02	✔		
3.2	Lifting jig for ACU	CP NS-02	✔		
3.3	Test stand for ACU	CP NS-02	✔		
4	**Machining Tools**				
4.1	Wheel re-profiling machine	CP NS-01			
4.2	Wheel lathe	CP NS-01			

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

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2.4	Portable test unit for brake control unit (with software)	CP NS-02	✔	✔	✔
2.5	Portable test unit for TMS (with software)	CP NS-02	✔	✔	✔
2.6	Test equipment for ACU	CP NS-02	✔		
2.7	Test equipment for brake control unit	CP NS-02	✔		
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-02	✔		
3.2	Lifting jig for ACU	CP NS-02	✔		
3.3	Test stand for ACU	CP NS-02	✔		
4	**Machining Tools**				
4.1	Wheel re-profiling machine	CP NS-01			
4.2	Wheel lathe	CP NS-01			

1.2.8 **Driver's Cab and Saloon Mock-up**

1.2.8.1 In order to evaluate the effectiveness of the driver's cab and saloon layout and function as specified in Sub-Clause 5.3 and 5.15 of the ERT, the Contractor shall develop the interior and exterior design of a full size, fully equipped driver's cab and saloon mock-up. The driver's cab, saloon and exterior mock-up shall be fully equipped to show completely built interior and exterior condition. The entire design of the driver's cab, saloon and exterior shall be reviewed by the Engineer. The mock-up shall be strong enough to accommodate persons inside without the damage or deformation. It shall be constructed on a substantial platform, to facilitate transportation and to prevent damage (cracking) and distortion of the hardware.

1.2.8.2 The Contractor shall make two leading car Mock-up whose length is 10m. These Mock-up shall be shown to Philippine people in several public spaces. The Contractor shall pay the transfer fee of these Mock-up from Japan to the above public space and some public space to another public space.

1.2.8.3 The contractor shall be responsible for the arrangement and the cost of moving the mock-up around the designated areas nominated by the Client for 12 times over 18 months period of times.

~~1.2.8.3~~1.2.8.4 The contractor shall deliver a full-sized generic mock-up of half a car which will be used for public view. This mock-up does not have to identical to cars being supplied but shall provide an indication of the layout and quality of finished to be expected in the final product. This mock-up shall be delivered to a designated location for 6 times in Manila which shall be advised by the Engineer. The mockup shall be delivered to the site on Q1 2022.

1.3 Basic Train Formation

1.3.1 Basic Car Configuration

1.3.1.1 The Rolling Stock shall consist of 8 cars. The schematic diagram of train configuration is shown in Appendix A.

1.3.1.2 Under emergency conditions and/or train recovery, one train must be capable of operating with another train coupled to it for hauling (pushing or pulling).

1.3.1.3 The mass (tare weight) of the 8-cars trainset shall be 270 tons or less. Weight balance, lower center of gravity, etc., shall be taken into consideration.

1.3.2 Power and Auxiliary Electric System Configuration

1.3.2.1 The motor car shall be powered with one (1) power conversion equipment driving four AC motors each for the propulsion and the trailer car shall be supplied with a primary inverter to serve the auxiliary loads.

1.3.2.2 The simplified block diagram explaining this is shown in Appendix A for reference.

1.3.3 Rolling Stock Gauge

1.3.3.1 The car body and installed equipment in static mode shall not exceed the Rolling Stock Gauge in the following conditions:

a. On a level, tangent track, the Rolling Stock is in a stopped state with the car body and bogies center lines aligned with the track center line;

b. The load condition is between the empty condition and the crush load condition; and

c. The car body and bogies are not tilting due to passengers or loaded material.

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b. The load condition is between the empty condition and the crush load condition; and

c. The car body and bogies are not tilting due to passengers or loaded material.

8.2 Ventilation System

8.2.1 Blower fans supplied as part of the overhead evaporator units shall be capable of providing car ventilation. Fresh air shall enter the car through screened openings in the roof on each side, pass through stainless steel ducts (sloped downwards to drain), and pass through a filter into a plenum chamber adjacent to each overhead evaporator unit. The design shall prevent blown rain from entering the plenum and leaking into the car interior.

8.2.2 Re-circulated air shall be drawn through grills in the ceiling and mix with the fresh air. This air mixture shall then pass through ~~another filter into~~ the evaporator unit, from where the blower shall force the air through the evaporator coils into the main air ducts. The ventilation system shall ensure that the inside pressure be positive value with all doors and windows closed with a pressure range of 20 to 40 N/m2.

8.2.3 Means shall be provided to adjust the volumes of fresh and re-circulated air. A minimum of 2,500 m3/h of fresh air per car shall be provided.

8.2.4 The main air distribution duct shall be manufactured from anodized aluminum or service-proven material, and shall be constructed to ensure that the exiting air velocity is constant along its length.

8.2.5 Air filters shall be washable/re-useable and shall be well supported to prevent passing air from dislodging them should the filters become blocked; they shall seal well at all edges. The filters shall be easily replaced and shall be sized such that they shall be serviced monthly.

8.2.6 In order to reduce the frequency of maintenance of the filter, roll filter shall be used. The roll filter is furnace material wound around the core, and when the set time has elapsed, a new furnace material portion is automatically set. Setting time of the winding is able to be changed arbitrarily by maintenance people. The length of the roll filter shall be reviewed by the Engineer.

8.2.7 Furthermore, each air-conditioning unit shall incorporate a mechanical ventilation system. Alternatively dedicated type shall also be considered. This ventilation system shall provide fresh air ventilation to the cars which will be supplied by the battery in the absence of catenary power (1,500V dc).

8.2.8 The entire ventilation system shall be submitted to the Engineer for review.

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8.2.8 The entire ventilation system shall be submitted to the Engineer for review.

8.3 Cooling System

8.3.1 The VAC shall be thermostatically controlled and shall be service-proven and shall automatically maintain the specified interior temperature conditions. Relative humidity in the car shall not exceed 60% under stabilized conditions. The capacity of the VAC shall be calculated considering the maximum number of passengers due to demand forecasts. The calculated capacity could be about 98,000 kcal/h/car but this would depend on the ability to maintain temperature and humidity levels with prescribed limits. The outside units of VAC shall be mounted on the roof of the car into two separate units.

8.3.2 In order to lower the center of gravity, the weight of one outside unit shall be as light as possible. The Contractor shall, for example use aluminum or any equivalent material that is rust-resistant and selecting the most adequate compressor, etc.

8.3.3 Air flow over the evaporator coils shall be no more than 2.5 m/s. Evaporator coils shall preferably be manufactured from copper, and shall have copper fins; however, aluminum elements are also acceptable provided they are sufficiently protected from the elements. A condensate pan shall be provided beneath the evaporator coil. The pan shall be made from stainless steel with suitable drain lines and shall ~~be easily removed for~~realize easy ~~-~~cleaning. The condensate drain lines shall be insulated to prevent condensation.

8.3.4 The refrigerant used shall be environmentally friendly such as R407C or equivalent; the use of refrigerant containing fluorocarbons shall not be allowed. To avoid issues of moisture and water, connectors in outside units shall be waterproof.

8.3.5 The evaporator unit shall include all required components, such as the liquid line, solenoid valve, modulating solenoid valve, thermal expansion valves, liquid line strainer, liquid line sight glass/moisture indicator, etc. Appropriate gauge ports to aid troubleshooting shall be provided.

8.3.6 Blowers shall be direct-driven by a motor, which shall be powered by the 440 V ac auxiliary power supply system.

8.3.7 The compressor-condenser unit shall be heavy duty transportation grade, service-proven combined hermetic compressor/condensing unit. The compressor motor shall be powered by the 440 V ac auxiliary power supply system. Cylinder unloaders shall be easily adjusted, and shall provide stages of unloading.

8.3.8 Sequential starting of compressors on a train shall be provided. Condenser coils shall preferably be manufactured from copper, and shall have copper fins; however, aluminum elements suitably protected from the environment are also acceptable. The coil shall be designed with adequate capacity to provide a condensing temperature no greater than 16 °C above the condenser cooling air temperature, under full rated load conditions.

8.3.9 VAC units shall be easily removed by lifting without the need to break any connections in the refrigeration circuit.

8.3.10 The VAC units shall be capable of cooling down an empty car, which has stabilized throughout the surface design temperature without sun radiation, to the control temperature of 25 °C in the passenger saloon within 30 minutes.

8.3.11 Full details of the entire VAC system shall be submitted for review by the Engineer.

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8.3.2 In order to lower the center of gravity, the weight of one outside unit shall be as light as possible. The Contractor shall, for example use aluminum or any equivalent material that is rust-resistant and selecting the most adequate compressor, etc.

8.3.3 Air flow over the evaporator coils shall be no more than 2.5 m/s. Evaporator coils shall preferably be manufactured from copper, and shall have copper fins; however, aluminum elements are also acceptable provided they are sufficiently protected from the elements. A condensate pan shall be provided beneath the evaporator coil. The pan shall be made from stainless steel with suitable drain lines and shall realize easy cleaning. The condensate drain lines shall be insulated to prevent condensation.

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8.3.10 The VAC units shall be capable of cooling down an empty car, which has stabilized throughout the surface design temperature without sun radiation, to the control temperature of 25 °C in the passenger saloon within 30 minutes.

8.3.11 Full details of the entire VAC system shall be submitted for review by the Engineer.

15.6 Digital Signage for Advertising

15.6.1 Space and power supply provision shall be made available within the train carriages to enable digital signage as described in Sub-Clauses 15.1 item 2 and 15.4 herein.

15.7 Passenger Emergency Intercom

15.7.1 A full-duplex and highly reliable intercom and alarm facility shall be provided to enable an emergency call to be established between passengers in each carriage and the train driver.

15.7.2 Quantity of four (4) intercom units shall be provided per carriage and the location shall be reviewed by the Engineer.

15.7.3 The intercom communications shall provide high voice quality free from distortions, audible noise and other audio impairment. The carriage intercom unit shall be bulkhead mounted and protected by a break-glass cover.

15.7.4 The unit shall be positioned in a readily accessible location and at a suitable height for customer use.

15.7.5 The intercom unit shall consist of a switch to initiate a call along with a flush mounted noise-cancelling microphone and loudspeaker.

15.7.6 Operation of the emergency switch shall result in the following actions on-board the train:

a. An audible and visual alarm by TMS (monitor) shall be made in the driver's cab also indicating location of actuation;

b. The driver shall be able to communicate via a separate dedicated handset for this purpose;

c. The emergency voice recorder shall record the conversation for the duration of the call; and

d. The event recorder in TMS shall record details of the intercom unit location together with the time and date of the emergency call.

15.8 Driver's Intercom System

15.8.1 A full-duplex and highly reliable intercom facility shall be provided to enable personnel within the driver's cab at each end of the train to establish voice communications.

15.8.2 The intercom communications shall provide high voice quality free from distortions, audible noise and other audio impairment.

15.9 Train Radio System

15.9.1 The Train Radio System for the Rolling Stock shall be designed and supplied by the CP NS-01 Contractor for the CP NS-02 Contractor to install on the Rolling Stock. The CP NS-01 Contractor shall provide installation for the first Train Radio System installation on-site. The second trainset shall be installed by CP NS-02 Contractor and supervise by CP NS-01 Contractor. The remaining trainsets radio system shall be installed by CP NS-02.

15.9.2 In addition to the communication devices mentioned above, at least the Train Operator Control Panel (TOCP) and the radio transceiver unit shall be included.

15.9.3 The TOCP shall be equipped with all facilities necessary for driver operation of the on-board radio facilities and other on-board radio communication equipment and shall typically include:

a. Integral flush mounted loudspeaker;

b. Volume control;

c. ~~Gooseneck~~ Handset type microphone;

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20.3 Design Qualification Testing

20.3.1 As part of the design verification process, type tests shall be carried out to demonstrate that the design of the train consist and its systems are in full compliance with the requirements specified in this ERT. The tests shall be completed at the Contractor's manufacturing facility unless otherwise specified or reviewed by the Engineer;

20.3.2 The Contractor shall perform an endurance test in accordance to the requirements of ERT Sub-Clause 7.1 - Passenger Side Entrance Doors on the proposed door design to demonstrate that the requirements specified therein are met;

20.3.3 The door system shall be endurance tested on a rig in suitable climatic conditions to demonstrate that the door system shall allow the train consist to meet the requirements of this ERT. The rig shall test opening and closing of the door, obstruction detection and re-opening of the door in a combination to simulate likely service operation and shall be submitted for review by the Engineer;

20.3.4 Design qualification testing shall be performed on the complete propulsion, braking and TMS systems configuration, using simulated loads on the traction motors. Combined propulsion system testing shall be in accordance with IEC 61287-1 and IEC 61377 or equivalent;

20.3.5 Design qualification testing shall be performed on the complete auxiliary power system configuration, using simulated loads. Combined auxiliary power system testing shall be in accordance with IEC 61287-1 or equivalent;

20.3.6 Design qualification testing shall be performed for the TMS system to verify designed capacity of the systems, functional requirement and correct interfacing. The real interface hardware and software shall be used where possible;

20.3.7 The braking system shall be tested to demonstrate its ability to satisfactorily interface with the train control and signaling systems, and provide performance as specified herein;

20.3.8 The parking brake shall be tested to demonstrate its ability to hold a consist on the specified gradient. The test shall be undertaken at the time of handing over of the Rolling Stock;

20.3.9 Before transporting the Rolling Stock to Manila, the Contractor shall perform a test to demonstrate that the emergency and service braking requirements have been met for each design deceleration;

20.3.10 The Contractor shall prepare and conduct qualification tests to demonstrate that all other equipment to be supplied shall operate properly within the limits of the environmental and/or physical parameters listed in this ERT. The test shall be undertaken at the time of handing over of the Rolling Stock at the depot; and

20.3.11 Running resistance and an energy consumption test shall be conducted during type test.

20.3.12 The Carbody for the first trainset shall be tested for the Carbody Loading Testing (one car only) and Jacking Up Testing.

~~20.3.12~~20.3.13 Any design changes, adjustments, etc., that are required to meet the performance requirements, shall be fully re-tested and documented. All equipment design changes shall be subject to prior review by the Engineer.

~~20.3.13~~20.3.14 For any unit previously qualified, or with a railroad proven service history, the Contractor may request a waiver from performing the qualification test. However, the request for a waiver must be accompanied by a duplicate test report or certification for review by the Engineer in order to satisfy qualification requirements. The waiver request must include justification of the claim that the equipment and test(s) are substantially the same as those in the current qualification requirements.

~~20.3.14~~20.3.15 Only with the written consent of the Engineer shall qualification testing or certification requirements be waived.

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20.3.15 Only with the written consent of the Engineer shall qualification testing or certification requirements be waived.

20.4.1.1 All cars, sets and consists shall undergo acceptance testing in accordance with the requirements of IEC 61133 or accepted equivalent as a minimum.

20.4.1.2 Acceptance tests shall be completed on every car supplied under this Contract to prove that manufacturing and assembly of the trains have been carried out appropriately.

20.4.1.3 A type test shall be conducted for the first 8-car train set and a routine test shall be completed on every trainset after that.

20.4.1.4 The tests shall be completed at the Contractor's manufacturing facility as a Factory Acceptance Test (FAT) and on-Site after delivery of the train as on-Site testing and commissioning.

20.4.2 **Factory Acceptance Test (FAT)**

20.4.2.1 The Contractor shall perform a FAT to ensure that the various train systems are functioning correctly before shipment of the trains.

20.4.2.2 The tests shall be conducted in the test track and any other special test facilities of the Contractor.

20.4.2.3 The following tests shall be carried out as a minimum but not limited to:

20.4.2.4 Type Test: These tests shall be performed on the 1st trainset:

a. Dimension inspection;
b. Weighing; and balancing the car weight over all eight (8) wheels;
c. Dielectric test;
d. Brake system test;
e. Auxiliary power supply operation;
f. Door system operation;
g. Air conditioning operation;
h. Water tightness test.
i. Propulsion system test;
j. Bogie car clearance test (one motor car and trailer car only);
~~k. Car body loading test (one car only);~~
~~l. Jacking up test;~~
~~m.~~k. Center of gravity measurement;
~~n.~~l. Interior lights illumination test;
~~o.~~m. Noise measurement (static);
~~p.~~n. Vibration measurement; and
~~q.~~o. On-board signaling function test.

20.4.2.5 Routine Test: These tests shall be performed on the 2nd to 38th trainset:

a. Dimension inspection;
b. Weighing; and balancing the car weight over all eight (8) wheels;
c. Dielectric test;
d. Brake system test;
e. Auxiliary power supply operation;

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20.4.2.4 Type Test: These tests shall be performed on the 1st trainset:

a. Dimension inspection;
b. Weighing; and balancing the car weight over all eight (8) wheels;
c. Dielectric test;
d. Brake system test;
e. Auxiliary power supply operation;
f. Door system operation;
g. Air conditioning operation;
h. Water tightness test.
i. Propulsion system test;
j. Bogie car clearance test (one motor car and trailer car only);
k. Center of gravity measurement;
l. Interior lights illumination test;
m. Noise measurement (static);
n. Vibration measurement; and
o. On-board signaling function test.

20.4.2.5 Routine Test: These tests shall be performed on the 2nd to 38th trainset:

a. Dimension inspection;
b. Weighing; and balancing the car weight over all eight (8) wheels;
c. Dielectric test;
d. Brake system test;
e. Auxiliary power supply operation;
f. Door system operation;
g. Air conditioning operation;

20.6.3.3 The test report shall provide a detailed description as to how the test was performed, clearly stating if any steps were different than specified, and describing the differences. The test report must provide a rational explanation for any deviations from the procedure.

20.6.3.4 The test report shall clearly detail the results obtained, and discuss the results in context with those expected.

20.6.3.5 The test report must provide a conclusion as to whether the test passed or failed.

20.7 Integrated Testing and Commissioning

20.7.1 During Integrated Testing and Commission of the railway, the CP NS-01 is the lead Contractor responsible for the tests plans, monitoring and test reports, with all interfacing Contractors supporting these activities accordingly.

20.7.2 The CP NS-02 and the CP NS-01 Contractors shall coordinate and submit the following Integrated Testing and Commissioning (ITC) deliverables:

a. Production of an ITC plan, for inspection and testing of equipment that interfaces with other contracts;

b. Coordination with interfacing parties regarding the requirements relating to interface testing;

c. Production of a test schedule of tests, providing full details of all tests to be carried out under the Contract; and

d. Testing procedures to be presented to the Engineer for review.

20.8 Trial Operations

20.8.1 The objective of Trial Operations, is that operational readiness is verified, meaning that full training of operational staff including drivers, emergency-service personnel and others, has taken place successfully, demonstrating that the required railway operational safety, together with the requisite performance criteria in the employer's requirements, has been achieved.

20.8.2 The Contractor shall support the Employer during the Trial Operations which shall take place at the completion of the Testing and Commissioning and Fault Free Run (FFR).

20.8.3 The Trial Operations consist of operating the newly procured trains, taking into consideration requirements of operating the trains for revenue service, but without passengers.

20.8.4 The objectives of the Trial Operations shall include, but is not limited to:

a. Validation of all interfaces with the on-board signaling system;

b. Validation of train schedule running;

c. Training of drivers, OCC staff and line managers; and

d. Emergency exercises.

20.8.5 Different test cases shall be developed in normal operation (checking that new trains can achieve daily timetable without delays and incidents) and degraded modes (simulating different incidents) as follows:

a. Failure during pre-departure tests;

b. Traction mode failure;

c. Train doors fail to close;

d. On-board signaling defects; and

e. Rescue of Failed Train.

20.6.3.3 The test report shall provide a detailed description as to how the test was performed, clearly stating if any steps were different than specified, and describing the differences. The test report must provide a rational explanation for any deviations from the procedure.

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ATTACHMENT 1

SUMMARY OF KEY DATES

(1) The Employer requires the Contractor to complete certain elements of work by specific Key Dates (KD). Delay in achieving those Key Dates shall render the Contractor liable to pay Delay Damages (as set out in Part A, Contract Data, of the Particular Conditions).

(2) Achieving a Key Date for an element of work means that, before the expiry of the number of months relevant to the element in question (as specified in "Table 1 – Key Dates" below), all works related to that element have been completed to the satisfaction of the Engineer. The number of months shown in Table 1 against a Key Date and its specific element of work signifies the maximum duration in months from the Commencement Date within which the identified element must be completed. The number of months shown in Table 1 will be converted into actual calendar dates after receipt by the Contractor of the Engineer's notification of the Commencement Date for the Project.

TABLE 1 – KEY DATES

Key Date	Element of Work	No. of Months
KD 1	Achievement: Completing Final Design Review.	1~~8~~2 months
KD 2	Achievement: Deliver the mock up to the site	22 months
KD 3	Achievement: Completing FAI and FAT.	3~~2~~5 months
KD 4	Achievement: Supply and delivery of the following Rolling Stock equipment for training purposes to the CP NS-01 Contractor at the North Depot for Training Center Facility: - Equipment for driving simulator, - Pantograph, and - Bogie assembly for motor car including traction motor, gearbox and coupling.	4~~3~~0 months
KD 5	Achievement: Completion of training and delivery of Operation and Maintenance Manual.	46 months
KD 6	Achievement: Delivery of First Batch of 5 trainsets and completion of testing and commissioning thereof plus handing over.	44 months
KD 7	Achievement: Delivery of Second Batch of 5 trainsets and completion of testing and commissioning thereof plus handing over.	49 months
KD 8	Achievement: Delivery of Third Batch of 5 trainsets and completion of testing and commissioning thereof plus handing over.	54 months

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TABLE 1 – KEY DATES

Key Date	Element of Work	No. of Months
KD 1	Achievement: Completing Final Design Review.	18 months
KD 2	Achievement: Deliver the mock up to the site	22 months
KD 3	Achievement: Completing FAI and FAT.	35 months
KD 4	Achievement: Supply and delivery of the following Rolling Stock equipment for training purposes to the CP NS-01 Contractor at the North Depot for Training Center Facility: - Equipment for driving simulator, - Pantograph, and - Bogie assembly for motor car including traction motor, gearbox and coupling.	40 months
KD 5	Achievement: Completion of training and delivery of Operation and Maintenance Manual.	46 months
KD 6	Achievement: Delivery of First Batch of 5 trainsets and completion of testing and commissioning thereof plus handing over.	44 months
KD 7	Achievement: Delivery of Second Batch of 5 trainsets and completion of testing and commissioning thereof plus handing over.	49 months
KD 8	Achievement: Delivery of Third Batch of 5 trainsets and completion of testing and commissioning thereof plus handing over.	54 months

ATTACHMENT 2

TIME FOR ACCESS TO THE SITE

(1) The date on which the right to access to a part of the Site as the works area available to the Contractor are defined below and the extents of such areas are specified in the Employer's Requirements.
(2) Month numbers shown in the schedule signify the elapsed time in months from the Commencement Date. The month numbers shall be converted into actual calendar dates after receipt by the Contractor of the Engineer's notification of the Commencement Date. Access Date means the first day of the month specified below

Access Date	Site (Works Area)	Month no.
AD 1	On-board Signalling System and other equipment to be mounted on the Rolling Stock supplied by CP NS-01 Contractor from E&M Systems and Track Works. The E&M System and Track Works Contractor will supply this equipment in Japan at the Rolling Stock Contractor's premises	
	AD-1A: for trainsets one to ~~nineteen~~ twenty supplied under this contract	30 months
	AD-1B: for trainsets twenty-one to thirty-eight supplied under this contract	49 months
AD 2	Access to allocated areas within the North Depot for receiving trainsets, assembling, testing, commissioning and test running within the depot.	35 months
AD 3	Access to the mainline from CIA to Malolos (as available) for Test running and Performance Proving	36 months
AD 4	Access to allocated areas within the South Depot for receiving trainsets, assembling, testing, commissioning and test running within the depot.	48 months
AD 5	Access to the mainline from Calamba to Alabang	51 months
AD 6	Access to the whole mainline from Calamba to CIA	68 months
NB	1. *Access will be given progressively to the whole of the North South Commuter Railway for the use of this Rolling Stock.* 2. *Obtaining permission from the Railway Safety Inspector to use the Rolling Stock for commercial operations will be the responsibility of the Employer with the support of the Rolling Stock manufacturer*.	

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observe the highest ethical standards and refrain from any form of bullying, discrimination, misconduct and harassment, including sexual harassment and shall, at all times, behave in a manner that creates an environment free of unethical behavior, bullying, misconduct and harassment, including sexual harassment. The Contractor shall take appropriate action against any employees or sub-contractors, including suspension or termination of employment or sub-contract, if any form of unethical or inappropriate behavior is identified.

The Contractor shall conduct training programs for its employees and sub-contractors to raise awareness on and prevent any form of bullying, discrimination, misconduct and harassment including sexual harassment, and to promote a respectful work environment. The Contractor shall keep an up to date record of its employees and subcontractors who have attended and completed such training programs and provide such records to the Employer or the Engineer at their first written request."

9.1 Contractor`s Obligations

Delete the subparagraph (c) and fourth paragraph, replace fourth paragraph with the following:
"During Tests On Completion, when the Works are operating under stable conditions, the Contractor shall give notice to the Engineer that the Works are ready for any other Tests on Completion, including Integrated Testing and Commissioning, performance tests to demonstrate whether the Works conform with criteria specified in the Employer's Requirements and Compliance Matrix. Refer to the Employer's Requirements for the Inspection, Testing and Commissioning related requirements."

14.1 The Contract Price

Add the following paragraphs after the existing second paragraph;

"Notwithstanding the provision of subparagraph (b);

(1) The Government of the Republic of the Philippines shall, by itself or through its executing agency, assume:

i. all duties and related fiscal charges imposed in the Republic of the Philippines on the Japanese companies operating as suppliers and contractors with respect to the import and re-export of their own materials and equipment needed for the implementation of the Project; and

ii. all fiscal, levies and taxes imposed in the Republic of the Philippines on the Japanese companies operating as suppliers and contractors with respect to the payment carried out for and the income accruing from the supply of products and/or services required for the implementation of the Project; and

(2) The government of the Republic of the Philippines shall assume

observe the highest ethical standards and refrain from any form of bullying, discrimination, misconduct and harassment, including sexual harassment and shall, at all times, behave in a manner that creates an environment free of unethical behavior, bullying, misconduct and harassment, including sexual harassment. The Contractor shall take appropriate action against any employees or sub-contractors, including suspension or termination of employment or sub-contract, if any form of unethical or inappropriate behavior is identified.

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9.1
Contractor`s Obligations

Delete the subparagraph (c) and fourth paragraph, replace fourth paragraph with the following:
"During Tests On Completion, when the Works are operating under stable conditions, the Contractor shall give notice to the Engineer that the Works are ready for any other Tests on Completion, including Integrated Testing and Commissioning, performance tests to demonstrate whether the Works conform with criteria specified in the Employer's Requirements and Compliance Matrix. Refer to the Employer's Requirements for the Inspection, Testing and Commissioning related requirements."

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