



EXHIBIT A

Evaluation Process

**Amtrak/Authority Tier III Next Generation
Trainsets**

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Attachments: Attachment AA, Regulations and Standards

1 INTRODUCTION TO THE EVALUATION PROCESS

Proposals will be evaluated using a comprehensive four stage process designed to lead to the selection of a Recommended Awardee whose proposal represents the best overall value for Amtrak and the Authority.

Proposals will first be reviewed for general pass/fail requirements and responsiveness.

In Stage 1 of the Evaluation Process, Offerors must comply with the "Pass/Fail Requirements Evaluation Criteria" as shown in Table 1. Proposals that pass Stage 1 will continue to the next stage of evaluation.

In Stage 2, Offerors' proposals will be evaluated for compliance with the "Performance Specification Evaluation Criteria" as shown in Table 2.

Proposals that receive the required score in the second stage will move forward to Stage 3.

In Stage 3, the deliverability of the Technical Description as provided in Stage 2 will be evaluated. Only those proposals that achieve the required score in Stage 3 will move forward to Stage 4.

In Stage 4, the proposals' whole-life cost will be evaluated.

Please note that if a common platform does not pass Stage 1, the procurement may proceed as an Amtrak-based procurement. In this case, an Amendment to the Solicitation may be issued advising Offerors that the Authority is no longer a part of the Solicitation and that the need for a common platform no longer applies.

All proposal requirements identified in this Instruction to Offerors apply to both Amtrak and the Authority unless expressly stated otherwise.

The scores received during the evaluation process are provided solely for evaluation purposes. The Contractor is responsible for complying with the terms and conditions of each Contract, including the criteria contained in the Performance Specification.

Unless otherwise expressly stated for a particular proposal section there is no page limit for the Offeror's proposal.

2 STAGES OF EVALUATION

Offeror must submit the following documents with their proposal submission or its proposal may be deemed non-responsive:

- An original executed transmittal letter for the Authority(Form A);
- The required Buy America submittals, as set forth in Exhibit B; and
- The required bid security, as set forth in this RFP.

2.1 EVALUATION STAGE 1 – PASS/FAIL REQUIREMENTS

2.1.1 Pass/Fail Information

Amtrak/Authority has identified criteria that must be satisfied by Offerors in order for their Proposals to advance to Stage 2 of the evaluation process. These are the basic characteristics and features required for any Trainset to be able to gain access to the respective Amtrak Northeast Corridor (NEC) Corridor (for Amtrak Trainsets) and the Authority’s Corridor (for Authority Trainsets).

2.1.2 Pass/Fail Requirements Evaluation Criteria

The list of requirements of the Next Generation Amtrak/Authority Trainsets Performance Specification, Schedule 1, Part A (the “Performance Specification”) and (for Amtrak) Maintenance Requirements Specification (MRS) shown in Table 1 are considered critical and will be assessed in Stage 1 of the Evaluation Process. Instructions are given on the evidence which is expected to be submitted by the Offeror in support of a compliant response. The evidence supplied must enable Amtrak and the Authority to ascertain whether the proposed design will comply with the requirements. It is in the interest of the Offeror to ensure that the requirements are addressed in an unambiguous way. In order for a proposal to be considered a Common Platform both the response to the Amtrak requirements and the response to the Authority requirements must pass Stage 1.

Table 1 – Pass/Fail Requirements Evaluation Criteria

Section	Requirement Description	Information to be Provided, at a Minimum, to Address the Referenced Clause
1.0	Executive Summary – Product Platform	The Offeror shall provide evidence that it is offering a Service-Proven high speed Trainset, or a variant thereof.
4.1	Regulations and Standards	The Offeror shall provide a statement confirming that the Offeror will comply with all applicable U.S. laws, regulations, advisories, and standards (excluding exterior noise metrics (40CFR 201) and low track classes (49CFR 213 Track Class 1, 2 and 3). In support of this statement, the Offeror shall provide a completed Regulations and Standards evaluation spreadsheet form (see Attachment AA). Note: content will be evaluated as a part of Stage 2.
5.1.1	Journey Time	For Amtrak, the Offeror shall provide Trainset characteristic data requested in the required Train Performance Calculation (TPC) data format provided with Section 5.1.1 of the Performance Specification. This information will be used by Amtrak to conduct TPC simulations of the Offerors’ proposed Trainset performance against the required journey times and confirm that the stated trip time is met. For the Authority, the Offeror shall conduct a TPC simulation using the alignment information provided by the Authority (attached to the Performance Specification) to confirm that the stated trip time is met. Offeror shall provide all input data and assumptions used in the calculation of the TPC. The Offeror shall fully describe the TPC simulator used for the simulation and shall demonstrate that the simulator was validated. The Offeror shall also describe how the Trainset will complete its mission under various degraded modes.
7.2.1	Trainset Product Platform	The Offeror shall provide a general arrangement drawing and interior layout detailing the Trainset product platforms proposed.
7.3.1	Trainset Length	The Offeror shall provide a general arrangement drawing that demonstrates that the product offering complies with the Trainset length requirements.

8.1.1 12.3.17	Axle Loads	The Offeror shall provide details confirming that the Trainset shall not exceed the maximum axle load specified.
8.1.1	Floor Height	The Offeror shall provide a general arrangement drawing that demonstrates that the product offering complies with the floor height requirement.
8.20	Signal and Control	For Amtrak, the Offeror shall provide a technical response detailing how compliance with Amtrak's signaling and train control systems will be achieved. The Offeror shall demonstrate its ability to install and interface with major global suppliers of onboard and wayside signaling equipment by submitting past and present signaling applications, type, and functionality.
12.2.3 12.3.10	Track Geometry	The Offeror shall provide technical information for the Trainset concept design that demonstrates that the product offering can operate within the specified track geometry constraints of the respective Owner's system.
12.2.7 12.3.18	Clearances	The Offeror shall provide technical information for the Trainset concept design that demonstrates that the product offering complies with the clearance diagrams referenced in Sections 12.2 and 12.3 of the Performance Specification for all Trainset static and dynamic conditions.
MRS (TSSSA) TBD	Responsibilities Matrix	For Amtrak, evidence of a Maintenance proposal that addresses the requirements of the MRS as well as a statement of confirmation of the Offerors acceptance of the "Responsibilities Matrix" called out in the Maintenance Requirements Specification (MRS). For the Authority, the Offeror shall provide the maintenance information required to complete the Whole-Life Cycle Cost Model in Stage 4.

2.2 EVALUATION STAGE 2 – COMPATIBILITY WITH THE PERFORMANCE SPECIFICATION AND MAINTENANCE REQUIREMENTS SPECIFICATION

2.2.1 Requirements and Information

Proposals assessed as having fully complied with requirements of Stage 1 will then be evaluated in regards to:

- a. Compatibility with the Trainset evaluation criteria detailed in Section 2.2.2;
- b. Table 2;
- c. Compatibility with the MRS and the Maintenance Concept evaluation criteria detailed in Section 2.2.3 or 2.2.4.

To advance to Stage 3 proposals must achieve a minimum score of 65% in both Trainset and the Maintenance Proposal and Strategy evaluations. Where Amtrak and the Authority elements are different an average will be taken of the different elements and that is the score that will be used in the relevant table of scores.

2.2.2 Performance Specification Evaluation Criteria

The Offeror's technical proposal will be evaluated against the subsection criteria listed in Table 2 and will be scored as follows:

- a. 100%- Where applicable, information provided is a more than satisfactory response to the requested information.
- b. 70%- Information provided is a satisfactory response to the requested information.
- c. 0%- Information provided is not a satisfactory response to the requested information

Table 2 – Performance Specification Evaluation Criteria

	Section	Requirement/Description	Weighting within Section	Proportion of Overall Score	Section Weighting	Information to be Provided, at a Minimum, to Address the Referenced Clause
4		Regulations and Standards, Units, and Design Approval			3%	
	4.1	Regulations and Standards	100%	3%		A completed Regulations and Standards form(Attachment AA)
			100%			
5		Performance Capabilities			15%	
	5.1.1	Journey Time	60%	9%		Offeror shall provide the following comparative information for the Offeror's proposed Trainset to enable further TPC modelling to be completed by Amtrak and the Offeror. Offeror to provide the following: <ol style="list-style-type: none"> 1. A level, tangent track simulation to maximum authorized speed (MAS) for Amtrak's checking purposes; 2. A maximum speed profile against the Amtrak representative HSR track profiles (.xls files shown in Section 5.1.1 of the Performance Specification) for the proposed Trainset. Select the appropriate speed table for the proposed Trainset's characteristics, ie. speed profile corresponding to the proposed Trainset's cant deficiency characteristics. 3. Provide a commentary on the recommended comfort/ride quality to be incorporated into the simulation runs; 4. Suggested resistance data, rolling resistance, curving resistances and cant deficiency values to the Trainset proposed and supporting data for same; 5. A completed TPC Data Format sheet.
	5.4.1 8.13.1	Passenger Flows Door Systems	40%	6%		The Offeror shall provide details of the Trainset design for passenger flow, including estimated boarding and disembarkation timings based on the assumptions provided in the Performance Specification.
			100%			
6		Reliability, Availability, Maintainability, and Safety			15%	
	6.1.1 6.2.1	Reliability Availability	40%	6%		The Offeror shall provide a detailed overview of the reliability levels that will be achieved by its platform offering at both a trainset and subsystem level. Assumptions and data/ information in support of the reliability levels stated shall be provided and clearly explained. The Offeror shall provide the information requested in the Table titled TRAINSET RAM METRIC VALUES, one table to be completed each for Amtrak and for the Authority.

	Section	Requirement/Description	Weighting within Section	Proportion of Overall Score	Section Weighting	Information to be Provided, at a Minimum, to Address the Referenced Clause
	6.3.1	Maintainability	30%	4.5%		The Offeror shall provide a detailed overview of the maintainability levels that will be achieved by its platform offering at both a trainset and subsystem level. Assumptions and data/ information in support of the maintainability levels stated shall be provided and clearly explained.
	6.4.2	Safety	30%	4.5%		The Offeror shall provide a Preliminary Product Safety Plan that shall include, at a minimum, a description of the approaches to: a) Mitigating derailment risk. b) Mitigating fire, smoke, and toxicity. c) Managing passenger evacuation and escape. d) Managing staff safety in maintaining the Trainsets. e) Managing electrical safety. f) Managing safety of materials used in construction. g) Managing Safety Integrity Level of systems.
			100%			
7		Trainset-Wide Requirements			10%	
	7.2.1	Trainset Product Platform	30%	3%		Relative to the Trainset platforms referenced, the Offeror shall provide a technical description that shall cross reference the applicable requirements of the Performance Specification and also identify where the requirements of the Performance Specification: a) Are met or exceeded by the standard product platform (i.e., intrinsic compliance). b) Can be added to the standard product platform (i.e., customization). c) Are not compatible with the standard product platform (i.e., alternative solution).
	7.3.1 8.7.1	Trainset Configuration Americans with Disabilities Act Requirements	35%	3.5%		The Offeror shall provide a detailed technical response of the proposed design of the Trainset configurations. The Offeror shall propose solutions for complying with ADA requirements for boarding/disembarking and for evacuation of the Trainset.

	Section	Requirement/Description	Weighting within Section	Proportion of Overall Score	Section Weighting	Information to be Provided, at a Minimum, to Address the Referenced Clause
	7.4.1	Energy Usage and Efficiency	4%	0.4%		<p>The Offeror's proposal shall provide simulated Trainset energy consumed and returned details for the respective Owner's system service patterns. Attachments for alignment and schedule information shall be used as reference. (Performance Spec attachments).</p> <p>The Offeror shall declare energy consumption for the Trainsets. Traction energy shall be measured in kWh/mile based on the average for typical operations in accordance with Sections 5.1 and 7.1 at fully loaded conditions travelling at revenue speeds. A typical power consumption figure for the train auxiliaries shall also be provided in kW assuming an ambient temperature of 15°C (59°F).</p> <p>The Offeror shall declare the power consumption for a Trainset stabled at an ambient temperature of 15°C (59°F) in calm conditions.</p>
	7.5.1	Noise	3%	0.3%		<p>The Offerors shall describe the noise levels that will be generated under all static and dynamic conditions on the respective Owner's system, and how this compares with CFR requirements.</p> <p>The Offeror shall explain whether these regulations can be met, including through Offeror-developed new technologies and manufacturing techniques. If these regulations cannot be met, the Offeror shall explain in detail why technologically and otherwise meeting these regulations is not feasible.</p>
	7.7.1	Security, Anti-Social Behavior and Vandalism Resistance	8%	0.8%		<p>The Offeror shall describe how security, anti-social behavior, and vandalism resistance are addressed in the Trainset design.</p> <p>The Offeror shall describe its approach to designing security into the Trainset based on the potential threats and the process for assessing the impact of those security design mitigating elements.</p>
	7.8.1	Flexibility	20%	2%		The Offeror shall refer to Section 7.8.1 of the Performance Specification and describe the level of flexibility that is built into the Trainset interior design.
			100%			
8		Vehicle and Subsystem Performance Requirements			50%	
	8.1.1	General Vehicle Performance Requirements	4%	2%		<p>The Offeror shall provide details of any changes required of the standard platform to meet the respective Owner's system conditions throughout the required life of the Trainset.</p> <p>In addition (For Amtrak only) the Offeror shall provide details on the maximum speed that its proposed platform is capable of achieving as well a narrative on what technical, cost and timeframe implications</p>

	Section	Requirement/Description	Weighting within Section	Proportion of Overall Score	Section Weighting	Information to be Provided, at a Minimum, to Address the Referenced Clause
						would be associated with a future modification upgrade (assuming this is technically viable) for providing a trainset operating speed capability of (i) 186mph and (ii) 220 mph
	8.2	Structure and Crashworthiness	1%	0.5%		The Offeror shall provide evidence that crashworthiness will be incorporated in the design for the Trainset and how the following issues are addressed to provide occupant protection in the event of a collision, by: a) Reducing the risk of overriding b) Absorbing collision energy in a controlled manner c) Maintaining survival space and structural integrity of the occupied areas d) Limiting the interior deceleration experienced by occupants, and e) Reducing the risk of derailment and limiting the consequences of hitting a track obstruction.
	8.4	Interior Design	15%	7.5%		The Offeror shall provide proposals for the interior design arrangement. The Offeror shall define the interior equipment, fittings, and finishes in the proposal.
	8.4.6 8.4.7 8.4.8 8.4.9	Seating Provision Seating Classification First Class Seating Business Class Seating	10%	5%		The Offeror shall provide a general arrangement drawing with dimensions that demonstrates that the product offering meets the respective Owner's requirements for seating capacity, seating classification (First Class to Business Class ratio), First Class seating configuration, and Business Class seating configuration.
	8.5.1	Amtrak Food Service Requirements	5%	2.5%		The Offeror shall provide baseline proposals for the food service facilities in the Trainsets that address the requirements for Amtrak defined in Section 8.5.1. The Offeror shall also show impact on seating (refer to Design Vision document (Appendix D))
	8.5.2	Authority Food Service Requirements	2.5%	1.25%		The Offeror shall provide proposals for the food service to be provided on the Authority's Trainsets. The Offeror shall describe the equipment involved in loading, storing, and serving food onboard.
	8.7.1	Americans with Disabilities Act Requirements	10%	5%		The Offeror shall describe how the ADA requirements will be satisfied and shall demonstrate a clear understanding of the issues required to be considered in meeting or exceeding those requirements.
	8.8	Cab	2%	1%		The Offeror shall provide details of the cab design and driving controls including full cab layout and the proposed seating layout. The Offeror shall provide a description for the supply of a driving simulator.
	8.9	Current Collection Equipment	1%	0.5%		The Offeror shall describe the operation of the current collection equipment including the interface with the infrastructure and, for Amtrak, the management of changeovers between power supplies.

	Section	Requirement/Description	Weighting within Section	Proportion of Overall Score	Section Weighting	Information to be Provided, at a Minimum, to Address the Referenced Clause
	8.10	Traction System	5%	2.5%		The Offeror shall describe the design and operation of the traction system, including details on dynamic braking and performance levels in degraded traction modes. The Offeror shall confirm that the specified operating speeds are achievable.
	8.11	Auxiliary Power Supply	2%	1%		The Offeror shall describe the design and operation of the auxiliary power supply including details of redundant system, load shedding strategy and performance levels in degraded modes.
	8.12	Braking System	5%	2.5%		The Offeror shall describe the design and provide an overview of the controls and operation of the proposed braking system. Details shall be provided for the proposed deceleration rates and associated maximum stop distances on both level track and on the proposed system gradients.
	8.13	Door Systems	5%	2.5%		The Offeror shall provide a detailed description, including method of operation, staff and passenger interfaces and safety systems, for the proposed passenger side door and safe evacuation to ground level.
	8.14	Heating, Ventilation, and Cooling	5%	2.5%		The Offeror shall provide a detailed description, including method of operation, staff and passenger interfaces, degraded modes of operation, and safety systems, for the HVAC system.
	8.15	Lighting	2.5%	1.25%		The Offeror shall provide a description of the interior and exterior lighting installations, describing how the requirements defined in the Performance Specification are met. This description shall also include details for the emergency lighting system. The proposal shall include a description of a control system to change the appearance of the interior lighting (e.g., dimmable lights, etc.).
	8.16	Trainset Communications, Passenger Information, and Interfaces	2.5%	1.25%		The Offeror shall provide a description of the passenger information and communication systems. The response shall describe how the safety requirements of the systems have been considered in the design.
	8.17	On-Train Monitor and Diagnostics System	2.5%	1.25%		The Offeror shall provide details of the TMDS system. The description shall also include details of the wayside-to-train and train-to-wayside interfaces and support systems, and the proposed strategy for software maintenance. The description shall also describe interfaces to each of the Trainset's subsystem and respective self-test features.
	8.18	Fire Safety Systems	5%	2.5%		The Offeror shall provide a technical description that describes the construction details to meet fire safety requirements (e.g., materials, design, fire systems), the fire detection and suppression systems, the fire resistance elements (e.g., barriers), and explanation of the measures to be taken to minimize the risk and consequences of

	Section	Requirement/Description	Weighting within Section	Proportion of Overall Score	Section Weighting	Information to be Provided, at a Minimum, to Address the Referenced Clause
						false detection.
	8.19	Bogie Requirements	2.5%	1.25%		<p>The Offeror shall describe how the Performance Specification requirements will be met.</p> <p>The Offeror shall explain how all safety-related requirements and passenger comfort are met on the respective Owner's system and at all operating speeds.</p>
	8.19.8 12.3.47	Trainset Dynamic Behavior Preliminary Vehicle/Track Analytical Simulation	2.5%	1.25%		<p>The Offeror shall provide simulation modeling data that demonstrates the ability of the product offering to meet the Performance Specification requirements.</p> <p>The Offeror shall conduct MCAT simulations as described in the Performance Specification for track Classes 2 to 9 and identify any changes that would be required to the service proven suspension design or the track geometry safety limits in order for the vehicle to comply with the VTI Safety Criteria for track Classes 2 and 3.</p> <p>The Offeror shall describe its approach to mitigating low speed wheel-climb derailments and conduct analyses in accordance with the FRA Low Speed Derailment Safety Advisory SA-2013-02.</p> <p>The Offeror shall provide analysis in accordance with APTA PR-M-S-014-06 Wheel Load Equalization Standard.</p> <p>The Offeror shall provide details of the recommended wheel profile to be used on the equipment. Final wheel profile will be validated during qualification testing.</p> <p>For the Authority, the Offeror shall perform a preliminary vehicle/track analytical simulation in accordance with Section 12.3.47 of the Performance Specification. Column (2) of Table 3 shall be completed for a minimum of one full Trainset. A single value shall be entered by the Offeror for each parameter in Column (2). A range of parameters will not be accepted. Up to two additional full preliminary Trainset designs may be provided in Columns (3) and (4) of Table 3, to reflect alternative design concepts, to accommodate a range of parameters for different Trainsets, or to illustrate specific performance enhancements. Each preliminary Trainset design shall be in general compliance with the Authority-related performance requirements as defined in the procurement documents, including the Performance Specification. For each specified parameter in Table 3, the Offeror shall specify the expected required tolerance for final design and complete Columns (6) and (7). Tolerances proposed for final design require justification. For each preliminary Trainset design, a preliminary vehicle/track analysis shall be performed using the</p>

	Section	Requirement/Description	Weighting within Section	Proportion of Overall Score	Section Weighting	Information to be Provided, at a Minimum, to Address the Referenced Clause
						<p>methodology described in 49CFR Part 213 Appendix D. For purposes of preliminary analysis only, the MCAT simulations shall be completed for the specific scenarios defined in Table 4. For a given preliminary analysis scenario, relevant track perturbations and amplitudes shall be defined in accordance with 49CFR Part 213 Appendix D. At a minimum, MCAT analysis results shall be submitted for all parameters reflected in the VTI safety limits table in 49CFR Part 213.333. It is expected that the analysis results for each preliminary Trainset design shall be in general compliance with VTI safety limits for all scenarios defined in Table 4.</p> <p>For the Authority, the Offeror's proposal shall provide a preliminary evaluation of VTI safety limits using vehicle/track computer simulation methodology mandated by the FRA. The proposal requirements shall not be interpreted to reduce the scope of final design requirements as defined elsewhere in the Performance Specification and 49CFR Part 213 Appendix D.</p>
	8.19.10	Ride Quality	2.5%	1.25%		The Offeror shall propose the evaluation method and the ride quality performance.
	8.20	Signal and Control	2.5%	1.25%		The Offeror shall reference Sections 8.20, 12.2.15 and 12.3.38 and shall describe how the Performance Specification requirements will be met. The Offeror shall demonstrate its ability to install and interface with major global suppliers of onboard and wayside signaling equipment by submitting past and present signaling applications, type, and functionality.
	8.21.1	Control Demand and Onboard Data System	5%	2.5%		The Offeror shall provide an overview of the design showing the divisions of systems between software/data bus and hard wired/pneumatic systems. Any safety critical software applications shall be identified. There shall be a clear differentiation between safety and operationally critical software and the less critical functions (e.g., passenger information systems, entertainment, etc.).
			100%			
9		Operations and Maintenance				For Amtrak, to be scored in section 2.2.3. For Authority, to be scored in section 2.2.4
11		Trainset Exhibits and Mock-ups			2%	
	11.1.1	Mock-ups	100%	2%		<p>The Offeror shall describe how the requirements for mock-ups will be addressed. Under the Amtrak contract the Contractor is required to provide two full-scale mock-ups, one for Amtrak and one for the Authority.</p> <p>Under the Amtrak contract, the Contractor is responsible for receiving Amtrak approval for the Amtrak mock-up and Authority approval for the Authority mock-up, and under the Authority contract, the Contractor is responsible for receiving Authority approval to update the Authority mock-up.</p>
12		Appendices			5%	

	Section	Requirement/Description	Weighting within Section	Proportion of Overall Score	Section Weighting	Information to be Provided, at a Minimum, to Address the Referenced Clause
	12.2 12.3	Appendix B Appendix C	100%	5%		The Offeror shall provide a technical description addressing the Trainset platform's ability to comply with all interfaces associated with the respective Owner's system.
			100%			

2.2.3 Amtrak – Maintenance Concept and Strategy

The Offeror's Maintenance Concept shall include a response to each clause of the MRS, a *draft* Maintenance Plan and responses to the items stated below. The draft Maintenance Plan shall follow the criteria described in the MRS. The intent of this Maintenance Concept is to summarize the Offeror's approach for developing Amtrak's maintenance regime to ensure that the Trainsets will be able to achieve the required levels of reliability and availability.

The sections of the Maintenance Concept will be allocated as shown below, with the indicated weightings, and will be reviewed separately and allocated a score:

- a) Design for Maintenance - 40%;
- b) Maintenance Strategy, Organization and Delivery - 50%;
- c) Maintenance Costs Commentary - 10%.

The Maintenance Concept sections with content descriptions are as follows:

- a) Design for Maintenance:
 - a. An overview of how its Trainsets have been designed and built to ensure that:
 - i. The incidence of corrective maintenance and the time required for preventive maintenance is minimized. Discuss the design considerations entertained to achieve this goal, and;
 - ii. The preventive maintenance is planned in such a way that all work can be completed within the available maintenance times provided in MRS Section 6.1 – make sure correct reference.
- b) Maintenance Strategy, Organization and Delivery
 - a. The draft Maintenance Plan shall clearly describe the Offeror's maintenance philosophy that is being proposed for the Trainsets and demonstrate how this will meet the requirements of the MRS, summarized in the Responsibilities Matrix. This shall include a full description of the maintenance regime and how this will be used to meet the reliability targets;
 - b. The Maintenance Concept shall include a summary of Preventive Maintenance Operations necessary to maintain the Offeror's Trainset;
 - c. The Maintenance Concept shall include a summary of the Contractor's anticipated Unplanned Maintenance likely to be experienced in Amtrak's operations;

- d. Maintenance operations shall be presented in a chart form with prescribed intervals across the top (horizontal axis) of the sheet and individual maintenance operations down the side (vertical axis) of the sheet;
 - e. Given the hypothetical scenario of implementing the Offeror's maintenance plan, discuss the resulting fleet availability of the Trainsets that Amtrak would have to operate service. The availability shall be expressed as a function of both weekday and weekend hours. The Offeror shall identify any constraints that limit availability, and demonstrate provide suggestions for improving fleet availability considering the noted constraints.
- c) Maintenance Costs Commentary
- a. Offerors shall provide additional information and ideas on how the whole-life cycle costs can be reduced over the life of the assets without adversely affecting fleet performance.

A total weighted score for the Maintenance Concept will then be calculated. A submission that has a weighted score of less than 65% for the Maintenance Concept will not progress to Stage 3. The following details the relative score that will be allocated based on the strength of the response:

- a. **100%** - Excellent, fully comprehensive evidence that the Offeror has the skills, experience, results or trends required;
- b. **80%** - Good evidence that the Offeror has the skills, experience, results or trends required;
- c. **65%** - Adequate evidence that the Offeror has the skills, experience, results or trends required;
- d. **0%** - Inadequate evidence that the Offeror has the skills, experience, results or trends required.

2.2.4 Authority Maintenance Concept Evaluation Criteria

The Offeror's Maintenance Concept description should be a comprehensive document consolidating the Offeror's Proposal to ensure that from a technical perspective, the Trainsets will be able to achieve the required levels of reliability within the time, costs and resources identified by the Offeror.

Each section of the Maintenance Concept will be allocated a weighting as shown below and will be reviewed separately and allocated a score:

- (a) Design for Maintenance - 40%;
- (b) Maintenance Strategy, Organization and Delivery - 50%;
- (c) Whole-Life Cycle Costs - 10%.

The Maintenance Concept shall respond to the following subsections below.

- (a) Design for Maintenance:
An overview of how its Trainsets have been designed and built to ensure that:
 - i. Vehicle downtime for planned maintenance is minimized;

- ii. The planned maintenance is capable of being performed within the available maintenance windows; and
 - iii. Reliability and availability of the trains in service operation is to be maximized.
- (b) Maintenance Strategy, Organization and Delivery
 - i. The Maintenance Concept shall clearly describe the reliability-centered maintenance philosophy and associated systems (e.g., Maintenance Management Information System (MMIS)) that are being offered for the Trainsets and demonstrate how this will deliver the requirements of the Contract. This shall include a full description of the maintenance regime and how this will meet the reliability targets
 - ii. The Maintenance Concept shall include a summary of Preventative Maintenance Operations;
 - iii. The Maintenance Concept shall include a summary of Corrective Maintenance Operations.
 - iv. The Maintenance Concept shall describe the Fleet Availability of the Trainsets, relative to their maintenance proposal and the required maintenance resources and maintenance windows. The supplier shall identify any constraints that limit this availability, and demonstrate how relaxation of these constraints will result in quantifiable improvements to Fleet Availability.
- (c) Whole -Life Cycle Cost Model
 - i. Offerors shall provide, in the Maintenance Concept, additional information and ideas on how the whole-life cycle costs can be minimized over the life of the assets.

A total weighted score for the Maintenance Concept will then be calculated. A submission that has a weighted score of less than 65% for the Maintenance Concept will not progress to Stage 3. The following details the relative score that will be allocated based on the strength of the response:

- a. 100% - Excellent, fully comprehensive evidence that the Offeror has the skills, experience, results or trends required;
- b. 80% - Good evidence that the Offeror has the skills, experience, results or trends required;
- c. 65% - Adequate evidence that the Offeror has the skills, experience, results or trends required;
- d. 0% - Inadequate evidence that the Offeror has the skills, experience, results or trends required.

2.2.5 Stage 2 Score

In order to advance to Stage 3, the Offeror must achieve a combined score of at least 65% based on each section in that stage. The Stage 2 score consists of 70% of the Trainset

Performance Specification Evaluation (2.2.2) and 30% of the combined Maintenance Strategy (2.2.3 and 2.2.4) scoring as determined below:

Stage 2 Score = Score from Section 2.2.2 X 0.7 + Score from Section 2.2.3 X 0.15 + Score from Section 2.2.4 X 0.15

2.3 EVALUATION STAGE 3 – PROJECT DELIVERABILITY

2.3.1 Requirements and Information

In Stage 3 the deliverability of the Offeror's technical description will be evaluated.

Where Amtrak and the Authority elements are different, an average will be taken of the different elements and that is the score that will be used in the relevant table of scores. The following details the relative score that will be allocated based on the strength of the response:

The evaluation will be split in five distinct areas and weighted accordingly. Each of the five areas listed below must achieve a minimum score of 65% to progress to Stage 4:

- a) Offeror's Credentials - 20%;
- b) Management Plans - 20%;
- c) Program - 30%;
- d) Maintenance Deliverability Plan - 20%;
- e) Financial Capability - 10%

As part of Stage 3, Offerors shall describe their approach, deployment, assessment and review and results for managing and controlling the work necessary to convert their proposals into a fully functional and maintainable fleet of Trainsets.

2.3.2 Offeror's Credentials

Offeror's Credentials material will be evaluated and the credentials score will make up 20% of the available score in Stage 3. The score for Offeror's credentials will be allocated (out of 100%). The percentage will be multiplied by the weighting available for each section to give the total score.

A maximum of 70 single sided pages (excluding tables and appendices) shall be used to respond to all of the following parts for Offeror's Credentials.

Offerors are free to choose their own page allocation for each section within the overall page limit. Offerors shall note that marketing brochures/CDs/DVDs etc. will not be considered as part of their Proposal. The Offeror shall make reference to example projects in responding to the content in Sections 2.3.2.1 through 2.3.2.7.

Each section under Offeror's Credentials shall be answered separately. In responding, the Offeror shall present its experience in narrative form, covering all of the points listed and giving as many examples as the Offeror feels necessary to demonstrate experience which is relevant to Amtrak/Authority requirements as described in this RFP. Offerors shall note that, as well as success stories, Amtrak/Authority is interested in examples where lessons have been learned through projects which have been difficult.

While experience across all modes of transportation (e.g., Light Rail, Intercity, Metro, etc.) is relevant, Offerors shall consider the requirements detailed in the Performance Specification and other RFP documentation and provide the information necessary to demonstrate experience that is considered relevant to Amtrak/Authority applications.

Table 3 below details the weighting that will be applied to the scores for Offeror's Credentials in order to calculate a total weighted score for the Offeror's Credentials.

Table 3 - Offeror's Credentials Weighting

Technical Experience, Capacity and Capability Requirements	Weighting
Project Case Studies	15%
Design	15%
Manufacture	15%
Testing, Commissioning and Customer Acceptance	15%
Maintenance and Service Provision	20%
Compliance	10%
Commercial Approach and Contract Management	10%

2.3.2.1 Project Case Studies

As part of the Offeror's technical proposal, the Offeror shall provide details of all of the high speed Trainset contracts the Offeror has been awarded and/or delivered into service within the last 7 years. When including this information, please provide a contact name, job title and telephone number for each Trainset owner and Trainset operator. The response shall include the following required information:

- a) Details of High Speed Trainsets;
- b) Contract Award Date;
- c) High Speed Equipment Description;
- d) Customer (Trainset Owner) and contact details;
- e) Operator (and Country) and contact details;
- f) Maintainer;
- g) Quantity of vehicles (and Trainset formation if appropriate);
- h) Date 1st Trainset entered service;
- i) Date final Trainset entered service;
- j) Contractual Reliability Requirement;
- k) Average fleet reliability(as defined in the Performance Specification) achieved 1 year after 1st Trainset introduction;
- l) Average fleet reliability (as defined in the Performance Specification) achieved 3 years after 1st Trainset introduction.

2.3.2.2 Design

- a) Explain how designs are developed from customer requirements or specifications (for example, vehicle specifications and/or infrastructure interface specifications). Give details of how the customer and/or prospective operator have been involved throughout the design process.
- b) Explain how technology was used to bring innovation to customer features. Give details of the design time required to successfully introduce these innovations.
- c) Explain how technology was used to optimize vehicle mass. Give details of the design time required to successfully introduce these technologies.
- d) Explain how technology was used to improve energy efficiency. Give details of the design time required to successfully introduce these innovations.
- e) Explain how the risks associated with new technology and/or designs were mitigated, using examples where appropriate.
- f) Explain if and how national and international standards were used in the design process, and how any conflicts between these standards and customer requirements were addressed.
- g) Using examples, explain how the design process ensured that the required reliability of the fleet was achieved, or what subsequent steps were taken to achieve the required reliability.
- h) Using examples, explain how the design process ensured that the whole- life cost to the customer was optimized.
- i) Give details of the processes used to ensure that subsystems supplied are properly integrated at the system level, at the Trainset level and within the operating infrastructure. Give examples of where this process worked well. Give examples of where the process did not work and demonstrate how the problem was resolved both in that specific application and how lessons learned are applied to future designs.
- j) Give examples of how train designs – platform designs - have been updated during their life to incorporate advances in technology and explain how and why such changes were implemented.

2.3.2.3 Manufacture

- a) Give examples of where you have established new final assembly facilities in order to meet the specific requirements of an order.
- b) Give examples of where you have been required to ensure significant proportions of local content in the production of trains. Explain how you developed and managed supply chain relationships to ensure these requirements were met.
- c) Give details of your sub-supplier management processes, ensuring that their production is of the right quality and delivered at the right time.
- d) Give details of the processes you employ to ensure that Trainsets are delivered to your customer on time and at the right levels of quality and reliability. Provide evidence of your track record in delivering new trains to contractual timescales.

2.3.2.4 Testing, Commissioning, and Customer Acceptance

- a) Give details of the processes employed at your factory, or elsewhere, to demonstrate that the vehicles comply with the customer specification and all other relevant requirements.
- b) Describe the processes you employ to carry out "on track" commissioning and testing of your Trainsets, giving details of the methods you employ to ensure that system interfaces within the vehicle, interfaces between the infrastructure and the train, vehicle performance and reliability can all be demonstrated prior to delivery.

2.3.2.5 Maintenance and Service Provision

- a) Referring to Section 2.3.2.1, highlight specific examples of your experience (if any) of technical support obligations (i.e., TSSSA arrangements). Give details of the conditions of payment for each of your examples. This shall include details of any performance incentives where applicable. Explain how the performance incentives, if applicable, improved the rolling stock performance.
- b) Give examples of your experience of fault investigation, with specific reference to the way in which both repeat faults and "no fault found" incidents are managed. Explain how you and your customers reach agreement on fault causes.
- c) Give examples of where you have developed and implemented training programs for operator's maintenance personnel. Explain how you have ensured an acceptable level of competence is achieved and maintained on an on-going basis.

2.3.2.6 Compliance

- a) Give details of your experience in meeting relevant international standards.
- b) Give examples of your ability to work within national and/or international standards in all phases of the rolling stock life cycle.
- c) Give details of your experience in working to international environmental standards.
- d) Give examples where you have supported your customers in obtaining the necessary regulatory approvals required to introduce new vehicles into service.

2.3.2.7 Commercial Approach and Contract Management

- a) Describe three projects where problems have arisen (i.e., you were or you expected to be in breach of the relevant contractual provisions) and how you addressed such problems.
- b) Describe three projects where there have been significant variations or changes to requirements and how you have helped to address such issues.
- c) Provide three examples of close and effective working relationships with operators and owners including an explanation of why you think the relationship is effective i.e. how you measure "effective". Describe what makes the relationships work well.

2.3.3 Management Plans

For Authority only: The term "management plans" as used in this Section 2.3.3 shall refer to management plan summaries.

Offeror's management plans will make up 20% of the available score in Stage 3. The score for Offeror's management plans will be allocated (out of 100%). The percentage will be multiplied by the weighting available for each section to give the total score.

The proposal must achieve a score of 65% for the management plans. The plans will be assessed against the following sub-criteria:

- a) Compliance to the areas of content expected in the plan;
- b) To what extent the Offeror has demonstrated a sound interpretation of the requirements of the plan and an understanding of project issues relating to the plan and the degree to which the proposed solutions that have been developed to address such issues;
- c) The extent to which the plans and the solutions described are demonstrated through analysis and evidence, to be workable, through the identification and allocation of adequate, suitable resources and the design of business process and procedures which are coupled with methods for reviewing outcomes and implementing constant improvement; and
- d) The extent to which, where necessary plans include required actions clearly identifying allocation of responsibility and timescales by which such actions will be completed. The allocation of resources and identification of milestone points will be supported by analysis and evidence to demonstrate that such actions are appropriate and the achievement of them can be met.

The weighted section and sub-components are listed in order of importance in Table 4.

Table 4 – Evaluation of Management Plans

Project Management Plan - 30%
Project Execution
Configuration Management
Risk Management (including Risk Register)
Safety
Security
Quality (Project/Service/Maintenance)
Engineering Management Plan - 45%
System Assurance
Acceptance
System Integration (Trains/Facilities/Service)
Design Management
Standards/Regulations
RAMS
Manufacturing Management (Train)
Testing (not including commissioning) (Train)
Delivery and Acceptance

In-service Management Plan - 25%
Training (Locomotive Engineers/Train Crew/Food Service)
Vehicle Modification Management

Offerors shall note that the selected awardee for Amtrak will be required to develop the management plans to a level sufficient for incorporation into the appropriate schedules (refer to Table 5 for additional information). For the Authority, these schedules will be considered draft plans and shall be refined by the Contractor (post Contract award) for review and approval by the Authority. Any management plans not specifically identified in the RFP are expected to be developed during the term of and in accordance with the applicable Contract.

Table 5 – Summary of Amtrak Management Plans

Project Management Plan	
Project Execution	To be developed and incorporated into Schedule 5 (Contract Program) and Schedule 6 (Agreement Management) prior to Contract Award.
Configuration Management	To be developed and incorporated into Schedule 15 (Configuration Management) prior to Contract Award.
Risk Management (including Risk Register)	To be developed and incorporated into Schedule 5 (Contract Program) prior to Contract Award.
Safety and Security	To be developed into Schedule 12 (Safety and Security Plan) prior to Contract Award.
Quality (Project/Service/Maintenance)	To be developed into Schedule 11 (Quality Plan) prior to Contract Award.
Engineering Management Plan	
System Assurance	To be developed and incorporated into Schedule 2 (The Design Review Process) prior to contract Award.
Acceptance	To be developed and incorporated into Schedule 5 (Contract Program) prior to Contract Award
System Integration (Trains/Facilities/Service)	To be developed and incorporated into Schedule 2 (The Design Review Process) prior to Contract Award.
Design Management	To be developed and incorporated into Schedule 2 (Design Review Process) prior to Contract Award.
Standards/Regulations	To be developed and incorporated into Schedule 2 (Design Review Process) prior to Contract Award.
RAMS	To be developed and incorporated into Schedule 2 (Design Review Process) prior to Contract Award.
Manufacturing Management (Train)	To be developed and incorporated into Schedule 6 (Agreement Management) prior to Contract Award.
Testing (not including commissioning) (Train)	To be developed and incorporated into Schedule 5 (Contract Program) and Schedule 6 (Agreement Management) prior to Contract Award.
Delivery and Acceptance	To be developed and incorporated into Schedule 9 (Template Testing Program) prior to Contract Award.
In-Service Management Plan	

Training (Locomotive Engineers, Train Crew, Operator)	To be developed and incorporated into Schedule 13 (Training Requirements) and Schedule 8 (Template Manuals and Maintenance Plan) prior to Contract Award.
Vehicle Modification Management	To be developed and incorporated into

2.3.3.1 Project Management Plan

2.3.3.1.1 Plan Content

The Project Management Plan document shall set out the overall approach to managing the project throughout the duration of the contract and shall cover, but shall not be limited to, the following specific areas:

- a) Project Execution
- b) Configuration Management
- c) Risk Management (including Risk Register)
- d) Safety
- e) Security
- f) Quality (Project/Service/Maintenance)

The requirements for each of the above subject areas of the Project Management Plan are set out below:

2.3.3.1.2 Project Execution

The Offerors shall propose an approach and methodology for managing the project as a whole through all stages of the project. It shall include the full scope of the design and manufacture of the Trainsets. At a minimum this section shall include, but shall not be limited to:

- a) A description of the project;
- b) Resource plans including roles and responsibilities (including named key personnel and their resumes; this includes working arrangements with other project parties);
- c) Organization structure(s) and how it will change over the project's life;
- d) Project management processes and procedures;
- e) Procurement and contracting strategy including supplier selection, financial standing checks, management;
- f) Identification of proposed outsourced services and associated procurement and management;
- g) Supply chain management, reporting and control;
- h) Proposed approach for interfacing with Amtrak/Authority both as an owner and/or operator of the new Trainsets;
- i) Systems integration process and procedures;
- j) Key deliverables;
- k) Key milestones;
- l) Schedule of information requirements from Amtrak/Authority including dates when it is required;
- m) Explanation of relationship and interfaces between all project plans;
- n) Approach to project controls, milestones, work breakdown structure document management, change management, reporting;
- o) Assurance processes;

- p) Development of user documents.

2.3.3.1.3 Configuration Management

Configuration Management shall define the process for controlling changes to the design and identification of individual vehicles to a particular set of design configurations.

Configuration shall be managed through a controlled database and shall define methods for labelling and identifying particular components and systems. Configuration control shall be applied to hardware, software and documentation.

At a minimum the Configuration Management shall include:

- a) Reference to a relevant standard that will be applied, if applicable;
- b) Description of how the current build states of the constituent components of the fleet will be tracked and maintained and ultimately updated following retrospective engineering changes;
- c) Approval Process for Engineering changes including both physical and non-physical (such as software);
- d) Process for identifying changes which would impact upon documentation (such as training manuals) and definition of how documentation will be controlled and updated;
- e) An understanding that updates must comply with Regulations and standards at time of introduction.

2.3.3.1.4 Risk Management

This section of the plan will define the approach and methodology to be used for identifying, and managing and mitigating project risks throughout the life of the project. At a minimum this section shall include, but shall not be limited to, risk management objectives, the risk management process and the approach (which will adopt the use of detailed risk register) to:

- a) Identification and assessment of risks (e.g., construction, physical, contractual, legal, performance, economic, political, and public risks);
- b) Top risks and proposed mitigation plans;
- c) Areas of opportunity and items proposed for discussion;
- d) Risk management planning and residual risks;
- e) Risk response (e.g., risk avoidance/elimination, mitigation, risk absorption/retention);
- f) Quantitative risk assessment (e.g., likelihood of a risk event occurring and the potential impact of that risk on cost, schedule);
- g) Monitoring of risks and their impacts;
- h) Identifying and managing opportunities.

2.3.3.1.5 Safety

This section of the Project Management Plan shall consider the approach to safety by ensuring that all parties involved in the design, development, production/construction, testing, commissioning, and subsequent use of the Trainsets are protected from threats to safety by implementing appropriate safety measures. It shall describe, but shall not be limited to, organization structures and resource plans (including roles, responsibilities, and accountability) arrangements for safety accreditations, processes, procedures and approach to identifying, evaluating and managing safety risks that will be put in place to ensure that the Offeror's statutory, regulatory and standards related safety obligations are met.

2.3.3.1.6 Security

This section shall consider the approach to ensuring that all parties involved in the design, development, production/construction, testing, commissioning and subsequent use of the Trainsets and depots are protected from threats to security by implementing appropriate measures. It shall describe, but shall not be limited to, the organizational structures and resource plans (including roles, responsibilities and accountability), arrangements for security accreditations, processes and procedures to ensure that security is addressed. Consideration shall be given to ensuring that all staff from both the Offeror and other stakeholders is protected from security threats at the Offeror's premises, including manufacturing sites, throughout each Contract life. Methods of identifying and evaluating security risks throughout each Contract life along with methods of developing and agreeing appropriate mitigation plans shall be included. Security threats to be addressed will include, but not be restricted to, terrorism, trespass and vandalism, personal protection and data protection.

2.3.3.1.7 Quality (Trainset and Maintenance Service)

At a minimum this section of the Project Management Plan shall include a description of the approach to and methodology for the Quality Management System that shall be adopted for the project. It shall describe, but shall not be limited to, the resources, tools and procedures required, to support the proposed Quality Management System and shall demonstrate how quality will be effectively managed, controlled and monitored throughout each contract life in the following distinct areas/aspects of the project:

- a) Project phase – from Contract Award to start of revenue trains in service;
- b) Post Acceptance
- c) Maintenance Service

2.3.3.2 Engineering Management Plan

2.3.3.2.1 Plan Content

The Engineering Management Plan documents shall set out the overall approach to the monitoring, managing and controlling of engineering issues throughout the project lifecycle. The Engineering Management Plan shall cover, but shall not be limited to, the following specific areas:

- a) System Assurance
- b) Acceptance
- c) Systems Integration (Trains/Facilities/Service)
- d) Design Management
- e) Standards/Regulations
- f) RAMS
- g) Manufacturing Management (Train)
- h) Testing (not including Commissioning) (Train)
- i) Delivery and Acceptance

2.3.3.2.2 System Assurance

The purpose of the System Assurance section is to describe the processes by which the Offeror will ensure that the Trainsets and other deliverables comply with the requirements of the Amtrak/Authority Contract Project Agreements to provide confidence in their application to the Project so that rapid and problem free acceptance and introduction into operational service is achieved.

System Assurance shall be key for validation and verification (refer to Performance Specification Section 12.3.2) and shall cover the methods for demonstrating compliance with all the requirements of the Performance Specification including both regulations and standards explicitly or implicitly called by the specifications and those which are required to meet statutory requirements.

At a minimum System Assurance shall include:

- a) A summary of the Offeror's robust and structured processes for verification and validation throughout the project lifecycle and including addressing down to the level of sub-suppliers and up to the level of interfaces with Amtrak/Authority and Trainset;
- b) Arrangements for requirements capture, design control, standards management, risk management and hazard analysis, with cross references to others (in particular, the testing), subsidiary documents and corporate processes where required;
- c) Arrangements for an inclusive approach to design including the generation of a coherent set of specifications applying to all aspects of the Trainsets;
- d) A summary of how compliance with each of the requirements of the Performance Specification will be demonstrated through drawing, calculation, analysis and test;
- e) A concept stage critical issues list showing those areas which will have to be most carefully managed during the product life cycle;
- f) A definition of the key stage reviews which will occur during the product life cycle, including the high level evaluation criteria at each stage, at which formal signoff by both internal and external stakeholders is achieved through the Offeror's quality process;
- g) Methodologies for the management of component and sub-system suppliers and sub-system interfaces and a summary of the critical areas to be managed;
- h) A summary of the Offeror's intended processes for engagement with key internal stakeholders, to ensure that the Trainset design meets their criteria for optimization, operational capability and infrastructure compatibility, and a summary of the critical areas to be managed;

- i) The methodology for achievement of Conditional Acceptance and Final and Fleet Acceptance.

2.3.3.2.3 Acceptance

The purpose of Acceptance is to define the formal stages through which customer acceptance is achieved.

At a minimum Acceptance shall include:

- a) A summary of the responsibilities of the parties involved in acceptance and their various perspectives and roles;
- b) A definition in principle of the key stages of acceptance through the validation and verification cycle and the involvement of the parties at the various stages, recognizing and identifying the acceptance stages defined in the Amtrak/Authority Contracts;
- c) The process of engagement with the accepting parties including the submission and approval of proposals, analysis, testing and trials and problem closure reports;
- d) A tailored plan for acceptance of the Trainsets including a definition of how formal contractual acceptance at each stage will be achieved, the expected criteria and the evidence which will be presented, covering all the various vehicles types and the delivery stages.

2.3.3.2.4 System Integration

The purpose of System Integration is to ensure that the integration risk associated with a complex and externally interactive product is addressed and mitigated at all stages of validation and test from train subsystem up to overall railway system level.

System Integration covers equipment, subsystems and systems from the level of acceptance from sub-suppliers up to the overall demonstration of Fleet performance, reliability and maintainability.

At a minimum System Integration shall include:

- a) A statement of the system integration approach, clearly identifying the logical stages and activities by which requirements are devolved to subsystem level, and by which subsequently the subsystems and equipment packages making up the various configurations of the Trainsets are brought together and demonstrated as capable of operating safely together and of meeting their individual and combined design criteria;
- b) A plan showing the proposed stages of integration for the Trainsets and their relationship with the Acceptance, Testing and Commissioning and start of revenue service;
- c) A high level definition of the tests and trials to be carried out at each integration stage including simulation trials, subsystem and system integration trials and trials and tests on the first completed Trainset in the factory, on a test track and on operational infrastructure;
- d) An explanation of the approach to problem resolution, showing how problems identified at each integration stage are (where appropriate) to be brought forward for resolution and closure at a subsequent stage;

- e) A high level definition of the required tests to be carried out on each and every Trainset, leading to Acceptance;
- f) The approach to engaging with stakeholders to ensure the successful delivery of the system integration activities.

2.3.3.2.5 Design Management

Design Management will set out how the Offeror intends to capture the requirements of the Performance Specification and use them to develop the design of the Trainsets.

At a minimum Design Management shall include:

- a) Details of the process for capturing the requirements in the Performance Specification;
- b) Details of the process to develop concept designs into detailed designs;
- c) Details of the proposed design process and how Amtrak's/Authority's comments will be addressed;
- d) Process to ensure that all relevant standards and Regulations codes are addressed at the appropriate stage in the design process;
- e) Consideration of reliability, availability and maintainability throughout the design process;
- f) Arrangements for the involvement of sub-system suppliers in systems integration process;
- g) Management tools to be used for process planning and control;
- h) Arrangements for the management of design status, "frozen" designs and change control procedures;
- i) Arrangements management for managing the interface with the manufacturing;
- j) Processes and procedures for risk assessment of the overall design and management of ongoing Trainset design risks;
- k) Application of a process quality management system;
- l) Processes and procedures for the application of lessons learned during previous designs and previous maintenance contracts;
- m) The approach to engaging with Amtrak/Authority to ensure the successful delivery of the design activities;
- n) Detailed description of how third party consents and approvals will be sought and obtained;
- o) Use of mock-ups and simulations for design finalization;
- p) Process for human factors and ergonomics assessment of design features affecting human interfaces with passengers, train crew and maintenance staff.

2.3.3.2.6 Standards/Regulations

The purpose of Standards/Regulations is to set out how the Offeror intends to identify the standards/regulations which apply to the Trainset design, how they are used in the development of the design and how the design will be shown to comply with the standards/regulations.

At minimum Standards/Regulations shall include:

- a) Details of how Federal regulatory requirements will be complied with;

- b) Arrangements for the involvement of sub-system suppliers in compliance of their systems to the relevant standards;
- c) Clarity of responsibility for identifying the requirements of each standard.

2.3.3.2.7 Reliability, Availability, Maintainability and Safety (RAMS)

The purpose of RAMS is to ensure a structured and consistent approach to delivery of the key reliability, availability, maintainability, and safety requirements for the Project.

RAMS shall cover the development of such requirements for the train and all of its subsystems within its operational and maintenance environment.

At a minimum the RAMS section shall include:

- a) Reliability and availability at summary level, showing how the requirements for reliability and redundancy of subsystems and components are developed with the Trainset architecture to deliver the service reliability outputs, including a description of the fault tree analysis (FTA) and other relevant techniques which will be applied;
- b) Operation and maintenance at summary level, showing the operational and maintenance context within which the Trainsets will have to operate, and the relevant constraints and requirements within which the design will have to perform;
- c) A safety program at summary level, showing how the risks associated with train operation and maintenance are to be managed down to the LRU level;
- d) A preliminary hazard analysis showing how the specific risks associated with operation and maintenance of the Trainsets will be mitigated;
- e) Reliability growth showing how the levels of reliability needed to deliver the overall Amtrak/Authority requirements outputs will be developed and demonstrated both during manufacture in the factory and during operation on the Amtrak/Authority operational environment, with minimum risk to reliability of the operational service.

2.3.3.2.8 Manufacturing Management

The Manufacturing Management section will set out how the Offeror intends to schedule the manufacturing and set up his factory facilities to build the Trainsets. It must provide confidence that the Offeror can produce Trainsets of the desired quality and that the required delivery dates will be achieved.

At a minimum the Manufacturing Management shall include:

- a) Structure of the manufacturing management team;
- b) Details of the planning tools, capabilities and processes used to schedule the manufacturing process;
- c) Compliance with quality and safety management systems;
- d) A description of interfaces with other plans, in particular design management and the Trainset maintenance;
- e) Arrangements for the production of manufacturing documentation (drawings, instructions, quality records);
- f) Training of manufacturing staff;
- g) Processes and procedures for procurement planning and sub-supplier management;
- h) Application of lessons learned during previous Trainset builds.

2.3.3.2.9 Testing

The purpose of the Testing section of the plan is to set out the logical sequence of testing that will be carried out at the level of a partially or fully assembled Trainset, leading from factory acceptance testing through to readiness for Commissioning and start of revenue service.

The Test Plan shall address all aspects of the testing called out in Section 10.2 of the Performance Specification and at a minimum provide:

- a) A definition of the physical testing stages that will be included during train build and preparation for service introduction – for example Type Tests (tests that must be carried out on a representative train and its subsystems early in the production process to validate aspects of the design), Production Tests (factory tests that must be carried out on every train to demonstrate satisfactory quality in manufacture), Corridor Tests (tests of one or more trains operating on a representative section of infrastructure);
- b) A test matrix showing how the requirements aspects map to the physical test stages (for example, functionality, performance, operability, maintainability, reliability) and the key requirements that will be tested at each stage; and
- c) A summary of the external resources (for example operator staff, track time) that will be required at the appropriate stages of testing.
- d) Regulatory compliance, or equivalent

2.3.3.2.10 Delivery and Acceptance

The Delivery and Acceptance section will set out how the train will be supplied to Amtrak/Authority after the completion of routine testing. The purpose of this section is to define the formal stages through which the train is demonstrated as fit for passenger service on the Amtrak/Authority network, so that it can be handed over to the service operator.

At a minimum this section shall include:

- a) Configuration of the train at the point it is passed to Amtrak/Authority;
- b) Where and how it is to be delivered;
- c) Documentation to be supplied.

2.3.3.3 In-Service Management Plan

2.3.3.3.1 Plan Content

The In-Service Management Plan document shall set out the overall approach to defining, monitoring, managing and controlling the Offerors' activities following the commissioning and introduction into service of the Trainsets. The In-Service Management Plan shall cover, but shall not be limited to, the following specific areas:

- a) Training (Locomotive Engineers/Train Crew/Food Service)
- b) Vehicle Modification Management

2.3.3.3.2 Training

The Training Plan will consider the overall staff training requirements, how they should be trained, when they should receive their training and how the knowledge retention will be tested.

The Offeror shall note that the RFP “base” requires the Offeror to provide Train the Trainer as a mandatory submittal requirement. The Training Plan will contribute to the Proposal’s evaluation score; however the RFP does require the Offeror to provide additional training as an option, this applies to Amtrak only and is not evaluated.

Training shall include staff associated with the Trainsets. Training shall be based on including Train the Trainer approach and include training for the following personnel:

- a) Mechanical Instructors – 8
- b) Transportation Instructor – 20
- c) Mechanical Service Engineers – 30
- d) On Board Service Trainers – 10
- e) Train Service (Conductors) – 20

At a minimum the training shall include:

- a) A robust process for management of the training;
- b) Competence assessment to be provided;
- c) Detail of training qualifications and accreditations required and how they will be obtained;
- d) Anticipated training techniques and methodology, content and duration, the training materials to be provided;
- e) Process for identifying training needs at all stages of the project;
- f) Structured training program and competence assessment scheme for maintenance staff and line-of-route support staff;
- g) Resource management, organization and key accountabilities.

2.3.3.3.3 Vehicle Modification Management

Vehicle Modification Management shall identify how modifications to Trainsets will be managed prior to and following their acceptance by Amtrak/Authority as identified in the Contract.

Vehicle Modification Management shall describe how the management of post-delivery modification work will be done including any facilities that will be required. If Offeror proposes for any of the post-delivery modification work to be completed at any facility, use of the facility must be approved. Vehicle Modification Management shall address the following:

- a) Trainset modifications that are reasonably anticipated following acceptance;
- b) Description of approach for carrying out the modification;
- c) Timescales for completion of modification activities proposed;
- d) Facilities and staff needed;

- e) Process for agreement with Amtrak/Authority of the release of Trainsets for Modification.

2.3.4 Program

The project program evaluation represents 30% of the Stage 3 score and must achieve a minimum score of 70%. The program shall be assessed on the basis of:

- a) 25% (maximum) - Amtrak Project Schedule based on:
 - i. 25% of the available score for the ability to deliver the first production Trainset for Amtrak 24 months from Contract Award through delivery of the final Trainset the later of 2018 or 48 months from Contract Award; OR
 - ii. 20% of the available score for the ability to deliver the first production Trainset for Amtrak 36 months from Contract Award through delivery of the final Trainset the later of 2019 or 60 months from Contract Award; OR
 - iii. 5% of the available score for the ability to deliver the first production Trainset for Amtrak 48 months from Contract Award through delivery of the final Trainset the later of 2020 or 72 months from Contract Award; OR
 - iv. 0% -unable to meet the schedules above.
- b) 40% Buy America Table Score - refer to Table 6;
- c) 20% Small Business Enterprises, including Disadvantaged Business Enterprises, Utilization Plan Veteran's Utilization Plan and High Speed Trainset U.S. Employment Plan as detailed in Exhibit D.
- d) 15% Development plans for domestic content, as detailed in Exhibit B.

2.3.4.1 Amtrak Project Schedule

The Amtrak Project Schedule shall be divided into a number of phases, as follows:

- a) Commencement and initial mobilization;
- b) Design and Development;
- c) Manufacturing;
- d) Commissioning;
- e) Trainset introduction.

The Offerors shall assume commencement of the Amtrak Project Schedule will be at Contract Award. In assessing the deliverability of the milestones the following sub-criteria will be used:

- a) Clear and logical sequence of work with key dependencies clearly understood;
- b) Demonstration of the Offeror's understanding of the key milestones within the program and the critical activities necessary to achieve them
- c) Evidence of the resources assigned to activities to complete the project and the entity that will complete each activity;
- d) Timescales allowed to complete activities are practical and the activities are logically linked;
- e) Risks identified in the Risk Register assessment and the Offerors' strategy to manage and mitigate such risks.

2.3.4.2 Buy America

For Buy America, the completed scores from the table found in Exhibit B will be added and awarded scores on the scale identified in Table 6. These points represent 40% of the Program Management Section of Stage 3. As identified in Exhibit B, the total possible points are 409.

Table 6 – Buy America Plans

Buy America Points	Weighting
Over 400 points	Full 40% available will be awarded
301 to 400 points	30%
251 to 300 points	25%
201 to 250 points	20%
151 to 200 points	15%
101 to 150 points	10%
100 or less points	0%

2.3.4.3 Small Business Enterprises, including Disadvantaged Business Enterprises, Utilization Plan Veteran’s Utilization Plan and High Speed Trainset U.S. Employment Plan as detailed in Exhibit D.

Each of the 4 areas will be scored 25% of the available marks.
Please provide the plans as outlined in Exhibit D

2.3.4.4 Domestic Content

Domestic Content makes up 15% of the Program score, and will be scored as follows:

Domestic Content Score	Description
15%	Significantly working toward full domestic manufacture which will be achieved during the first order of trains
10%	Major steps taken to increase domestic content during the period of the first order/or significant work done toward full domestic production in future orders
5%	Some steps taken but not significant progress either during the delivery of the first order or major steps taken but no impact felt until future order
0%	Little or no steps taken to significantly change domestic content

2.3.5 Maintenance Deliverability Plan (for Amtrak: Technical Support and Spares Supply Agreement – TSSSA and for the Authority: Trainset Service Period)

Offeror’s Maintenance Deliverability Plan will make up 20% of the available score in Stage 3. The score for Offeror’s Maintenance Deliverability Plan will be allocated (out of 100%).

The Offeror will provide a comprehensive document describing how the Maintenance Concept document provided as part of Stage 2 evaluation shall be delivered.

Note: The Maintenance Delivery Plan may cross refer to the In-Service Management Plan as described in Section 2.3.3.3.

The Maintenance Delivery Plan shall be no more than 20 pages. For Amtrak, the Maintenance Delivery Plan shall include the subsections defined in Sections 2.3.5.1 through 2.3.5.3 in response to the requirements set out in the Maintenance Requirements Specification. For the Authority, the Maintenance Delivery Plan shall address the Authority's General Provision Article 13.

Each section of the Maintenance Delivery Plan is allocated a weighting as shown below and will be reviewed separately and allocated a score, and a total weighted score for the Maintenance Delivery Plan will then be calculated. A submission that has a weighted score of less than 65% for the Maintenance Delivery Plan will not advance to Stage 4.

- a) Maintenance Strategy, Organization and Delivery - 70%;
- b) Spares Management –15%;
- c) Whole Life Cycle Cost Information – 15%

2.3.5.1 Maintenance Strategy, Organization and Delivery

- a) The Maintenance Delivery Plan shall include a detailed explanation of how the Offeror expects to collaborate with the Owner and, for the Authority, possible maintenance concessionaires, in a joint 'team approach' in order to successfully deliver high reliability and availability of the Trainset fleet. This description shall be based on current relevant experience.
- b) A detailed description of the strategy and delivery plan for the technical support organization and the spares management organization they are proposing. This shall include details of the number and location of staff and job descriptions (including required qualifications/skills/experience for candidates) for key personnel. Responsibilities, communication and reporting processes shall be described along with details of how the support organization shall support the day to day requirements of Amtrak in delivering the maintenance requirements for the trains. The plan shall include the management of the TSSSA during the fleet introduction phase, describing the mobilization plan, any interim organizational structure and processes, and the roles and responsibilities of key staff during this period. The plan shall include a description of the process for handover of responsibilities from the Trainset Purchase contract to the TSSSA.
- c) The Maintenance Delivery Plan shall include an outline of the proposed process for continuous review and development of the maintenance regime and its approval by the Owner. The Plan shall also identify the strategy for managing and delivering necessary, additional training of Amtrak staff and the Offerors on-site staff, where necessary.

2.3.5.2 Spares Management

- a) The Offeror shall provide a provisional but detailed and priced recommended spares list. The prices should include delivery. The spares list shall identify the anticipated annual usage of all spares, and in respect of service exchange spares, the required float size for the fleet size of Trainsets delivered. Offerors are required to identify any Capital Spares which are recommended to be ordered at the time of contract award, to ensure sufficient float material exists to support future component overhauls or contingency components with long lead times.

2.3.5.3 Whole-Life Cost Information

The Offeror shall provide a narrative to support the inputs used to complete the Amtrak Whole Life Cost Model (see Exhibit E of the Instructions to Offerors) and the Authority Whole Life Cost Model (see Exhibit H and Exhibit F of the Instructions to Offerors). The information submitted by Offeror must enable Amtrak and the Authority to understand how the Offeror arrived at the inputs and also validate the inputs submitted by Offeror in the Amtrak Whole Life Cycle Cost Model and in the Authority Whole Life Cycle Cost Model. The narrative may reference other submittal requirements in Stages 1, 2, 3, and 4 of the Evaluation Process.

The information requested by this subsection is distinct from and in addition to the Cost Model required to be submitted by Offeror as part of the Authority Financial Proposal (see Section C of Exhibit F).

2.3.6 Financial Capability

Offeror's financial capability will make up 10% of the available score in Stage 3. A threshold weighted score of 65% or better is required for this qualification criterion to be fulfilled.

The Offeror (or if the Offeror consists of a consortium, partnership or joint venture, then its equity members) must provide evidence of its financial capability to carry out the responsibilities potentially allocated to it, including a letter from each guarantor stating that it will provide a performance guaranty in the form as set forth in Attachment G to the Authority Signature Document. The Financial Capability Submittal Requirements are set forth in Exhibit I of the Instructions to Offerors.

Amtrak and the Authority will evaluate the financial capability of the Offeror, Equity Members, and Guarantors, if any, based on certain financial metrics including but not limited to size, cash flow, profitability, and liquidity.

2.3.7 Oral Presentations/Site visits

Offerors who qualify at Stage 3 may be invited to make an oral presentation and to demonstrate their Trainset in operation. At the conclusion of these events, Amtrak and the Authority may adjust the scores obtained in Stages 2 and 3.

2.4 EVALUATION STAGE 4 – VALUE ASSESSMENT

2.4.1 Requirements and Information

Those proposals that have proceeded to the Stage 4 evaluation will already have achieved the minimum levels of technical compliance in Stage 1 and demonstrated a high level of technical and commercial competence and deliverability in Stages 2 and 3.

The Offeror's Amtrak Financial Proposal will be evaluated separately from Offeror's Authority Financial Proposal, normalized, and then scored. The scores received for the Offeror's Amtrak Financial Proposal and Authority Financial Proposal will then be weighted and combined. The combined score will ultimately be used by Amtrak/Authority in deciding which Offeror becomes the Recommended Awardee, as in Section 2.4.4 of this Exhibit A. All prices shall be in U.S. dollars.

2.4.2 Whole Life Cost Evaluation Criteria

The Financial Proposal for each proposal that passes Stages 1 to 3 will be evaluated on a whole-life cost basis based on one set of criteria for Amtrak and another set of criteria for the Authority.

2.4.3 Amtrak Whole Life Cost Evaluation

Amtrak will evaluate the whole life cost, rather than first cost basis, of each Offeror's Amtrak Financial Proposal using Exhibit E (the "Amtrak Whole Life Cost Model"). The value assessment shall cover the period October 1 2016 to September 30th 2046. All relevant amounts will be discounted to July 1st 2014. A cost model has been produced which calculates the Net Present Value (NPV) over 30 years based upon the Offeror's proposals for:

- a) Train Capital Acquisition costs as well as capital spares and special tooling;
- b) Energy consumption (calculated at a rate fixed by Amtrak).

The Amtrak Whole Life Cost Model allows Amtrak to consider the cost of owning and operating the Amtrak Trainsets and allows the costs over the entire lifecycle to be evaluated. Therefore, initial capital costs can be offset by future savings, where appropriate.

For Energy consumption, Offerors are to provide their stabled energy consumption and energy consumption per mile. The net present value (NPV) of the cost of the power consumption will form part of the whole life cost assessment.

Evaluation will consider the cost of owning and operating the units and will allow the full project costs to be evaluated thus allowing the Offerors to offset initial capital costs with future savings where this is appropriate.

To produce this assessment, Offerors are required to complete the whole-life cost proformas (Exhibit E), which will automatically calculate the present value of initial and all future costs.

Instructions on the use of the whole-life cost model are provided in the relevant proformas (Exhibit E) as well as the key assumptions.

2.4.4 Amtrak Financial Score

The Offeror's Amtrak NPV Price will be normalized against all other Offerors' Amtrak NPV Prices to calculate a ranked Amtrak Financial Score for each Offeror, as follows:

$$\text{Amtrak Financial Score} = (\text{Lowest Amtrak NPV Price} / \text{Offeror's Amtrak NPV Price}) \times 100$$

2.4.5 Authority Whole Life Cycle Cost Evaluation

The Authority will evaluate the whole life cost, rather than first cost basis, of each Offeror's Authority Financial Proposal using Exhibit H (the "Authority Whole Life Cost Model"). The Authority Whole Life Cost Model allows the Authority to evaluate the up-front purchase price of the Authority Trainsets, the ongoing operating and maintenance costs of the Authority Trainsets, and future savings, if any.

As described in greater detail in Exhibit F, Offeror shall populate the Authority Whole Life Cost Model and shall include:

- a) Milestone Payment Amount
- b) Design, Mock-up and Prototype Costs;
- c) Service Payments
- d) Fleet 2, Fleet 3 and Fleet 4 Milestone Payments
- e) Manufacturing Restart Payment
- f) Service Payment Options (Incremental Service Payment and Mileage Incremental Service Payment)
- g) Maintenance Labor Costs
- h) Track Maintenance Adjustments
- i) Energy Costs
- j) Seat Revenue Adjustment

All relevant amounts will be discounted to January 1st 2014 based on the discount rate specified in the Authority Whole Life Cost Model to a NPV price after adjustments ("Authority Whole Life Cost"). The Authority Whole Life Cost is calculated automatically based on values inputted by Offeror in the Authority Whole Life Cost Model.

See Exhibit F and the Authority Whole Life Cost Model for further instruction and detail on the assumptions and methodology for the development and evaluation of the Authority Whole Life Cost Model.

2.4.6 Authority Financial Score

The Offeror's Authority Whole Life Cost will be normalized against all other Offerors' Authority Whole Life Costs to calculate an Authority Financial Score for each Offeror, as follows:

$$\text{Authority Financial Score} = (\text{Lowest Authority NPV Price} / \text{Offeror's Authority NPV Price}) \times 100$$

2.4.7 Combined Financial Score

The Offeror's Combined Financial Score will be a weighted and combined score based on the Offeror's Amtrak Financial Score and Authority Financial score, as follows:

Combined Financial Score=
(Amtrak Financial Score X 0.6) + (Authority Financial Score X 0.4)

2.4.8 Identification of Recommended Awardee

The Recommended Awardee will be determined on the following basis:

- (a) All Combined Financial Scores will be ranked. The Offeror with the highest Combined Financial Score will be the “First Ranked Offeror”. If the First Ranked Offeror’s Combined Financial Score is more than 5 points greater than the next highest Combined Financial Score, then the First Ranked Offeror will be identified as the Recommended Awardee.
- (b) If one or more lower ranked Combined Financial Scores is within 5 points of the Combined Financial Score of the First Ranked Offeror, then in respect of the First Ranked Offeror and each of the Offeror’s within 5 points of the First Ranked Offeror, the following shall apply:
 - i. Scores for Stage 2 and Stage 3 will be combined and normalized to produce a Combined Technical Score (or CTS), as follows:

$CTS = \text{Offeror's Stage 2 Score} \times 0.7 + \text{Offeror's Stage 3 Score} \times 0.3$

- ii. If the CTS of the First Ranked Offeror is the highest CTS or within 10 points of the CTS of the Offeror with the highest CTS, then the First Ranked Offeror will be identified as the Recommended Awardee; otherwise the Offeror with the highest CTS will be identified as the Recommended Awardee.

NOTE: Notwithstanding the identification of the Recommended Awardee through this process, neither the Amtrak nor the Authority Board are under any obligation to continue the acquisition beyond this point.