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| E-ZPass Transponder (TDM & 6C)  Request for Proposals  TDM Transponder Conformance Matrix |
| Solicitation Number 2019-IAGPA-0001 |

| **Requirement #** | **Requirement** | **Status** | **Comment** |
| --- | --- | --- | --- |
| **(C – Conforming,** | **(Required if "Non-Conforming" is selected, otherwise, optional)** |
| **N – Non-Conforming)** |
| **1** | **TDM Transponders** |  |  |
| **1.1** | **TDM Transponder Models** |  |  |
| 101 | If a proposal includes TDM Transponders, it may include models a), b), c), d), and/or e) as listed below:   1. Interior, windshield-mounted, hard-case TDM Transponders; 2. Interior, windshield-mounted, hard-case, feedback TDM Transponders; 3. Interior, windshield-mounted, hard-case, switchable TDM Transponders; 4. Exterior, license plate mounted, hard-case TDM Transponders; and 5. Exterior, roof-mounted, hard-case TDM Transponders;   Notes:  The license plate and roof-mounted Transponders (items d and e) may be the same physical device with different mounting components and a data parameter programmed unique to each model.  IAG Participating Members use other types of TDM Transponders, but they are *not* required for this procurement. |  |  |
| **1.1.1** | **Interior, Windshield Mounted, Hard Case TDM Transponders** |  |  |
| 102 | The Interior Transponder shall be a programmable, windshield mounted RFID Transponder that is incorporated within a plastic case. |  |  |
| 103 | The Interior Transponder shall be new, not refurbished. |  |  |
| 104 | All components used in the Interior Transponder shall be approved for safe use in consumer products. The Interior Transponder shall not give off dangerous substances at any time including when damaged. |  |  |
| 105 | Proposer shall provide the appropriate adhesive material and/or devices to allow the Interior Transponder to be affixed to the windshield of the vehicle in accordance with the Transponder manufacturer’s mounting instructions.  Note: One (1) set of mounting components shall be included with each Transponder. Additional sets of mounting components shall be available for purchase. |  |  |
| 106 | The Interior Transponder shall be able to be detached from vehicle windshield and reattached back to the vehicle windshield without the use of any tools. |  |  |
| 107 | The attachment method shall allow removal without risk of damage to the Interior Transponder or vehicle. Any strips, tabs, cups or other mounting device used to meet these Requirements shall be completely removable without damaging or marring the vehicle in any way. |  |  |
| 108 | Interior Transponders shall be held stationary in their location by means sufficient to provide reliable attachment. The attachment methods shall be sufficient to prevent inadvertent displacement or projectile motion in case of rough road surfaces or accident. |  |  |
| 109 | The attachment method shall ensure that the integrity of the mounting is maintained for the life of the Transponder under the full range of environmental conditions. |  |  |
| 110 | The Interior Transponder shall be marked in such a manner as to render unlikely incorrect orientation of the Interior Transponder upon installation or reinstallation. |  |  |
| 111 | The Interior Transponder shall not require any additional external power supply in order to meet the Performance Requirements described in these Requirements. |  |  |
| **1.1.2** | **Interior, Windshield-Mounted, Hard-Case, Feedback TDM Transponders** |  |  |
| 112 | The Interior Feedback Transponder shall be a programmable, windshield mounted RFID Transponder that is incorporated within a plastic case. |  |  |
| 113 | The Interior Feedback Transponder shall meet all Requirements for Interior Transponders as set forth in Section 1.1.1 of these Requirements. |  |  |
| 114 | The Interior Feedback Transponder shall include audible and visual feedback triggered by a toll transaction. The audible feedback shall be reasonably considered audible in a typical moving vehicle interior environment (road noise and audio system). The visual feedback shall be reasonably considered visible to the driver. |  |  |
| **1.1.3** | **Interior, Windshield-Mounted, Hard-Case, Switchable TDM Transponders** | | |
| 115 | The Interior Switchable Transponder shall be a programmable, windshield mounted RFID Transponder that is incorporated within a plastic case. |  |  |
| 116 | The Interior Switchable Transponder shall meet all Requirements for Interior Transponders as set forth in Section 1.1.1 of these Requirements. |  |  |
| 117 | The Interior Switchable Transponder shall include a switch that allows the driver to select a supported status indication. |  |  |
| 118 | The switch shall be operable while the Transponder is attached to the windshield. |  |  |
| 119 | The Interior Switchable Transponder shall support two statuses: low (typically single) occupancy vehicle and high occupancy vehicle (HOV).  Transponders providing capability for more than two statuses are acceptable. Functionality of such a transponder if a status unused by the IAG Participating Members is selected shall be confirmed with the IAG Participating Members. |  |  |
| 120 | The Interior Switchable Transponder shall display a visual indication of the present status setting, readable by the driver. |  |  |
| 121 | The Interior Switchable Transponder shall emit a tone when its status is set to HOV. The tone shall be reasonably considered audible in a typical moving vehicle interior environment (road noise and audio system). |  |  |
| **1.1.4** | **Exterior, License Plate or Roof Mounted, Hard-Case TDM Transponders** | | |
| 122 | The Exterior Transponder shall be a programmable RFID Transponder that is incorporated within a plastic case. |  |  |
| 123 | The Exterior Transponder shall be new, not refurbished. |  |  |
| 124 | The Exterior Transponder shall be for installation on surfaces outside of the passenger compartment of motor vehicles. |  |  |
| 125 | The Exterior Transponder shall not require any additional external power supply in order to meet the Performance Requirements described in these Requirements. |  |  |
| 126 | All components used in the Exterior Transponder shall be approved for safe use in consumer products. The Exterior Transponder shall not give off dangerous substances at any time including when damaged. |  |  |
| 127 | 1. Proposer shall describe the recommended exterior *license plate* attachment method. If mounting components in addition to the Transponder case are required, they shall *not* be included in the Transponder price, but shall be available for purchase separately. 2. Proposer shall describe the recommended exterior *roof mount* attachment method. The mounting components shall *not* be included in the Transponder price, but shall be available for purchase separately. |  |  |
| 128 | The Exterior Transponder shall withstand ice, snow, steam, dirt, mud, and any solutions used in the lanes, as well as stones and other projectiles such as sand particles and gravel. |  |  |
| 129 | The attachment methods shall be sufficient to prevent inadvertent displacement or projectile motion in case of rough road surfaces or accident. |  |  |
| 130 | The attachment methods shall allow for removal of the Transponder from the mounting attachment without risk of damage to the Exterior Transponder or vehicle. |  |  |
| 131 | The Exterior Transponder shall be marked in such a manner as to render unlikely incorrect orientation of the Exterior Transponder upon installation or reinstallation. |  |  |
| **1.2** | **Transponder Functional Requirements** | | |
| 132 | Transponders shall be fully compatible with E-ZPass systems (current and legacy readers). |  |  |
| 133 | Transponders shall implement full Read/Write functionality. |  |  |
| 134 | The Transponders shall meet the requirements set out in the document:  “Rev\_C\_Active\_TDM\_Over\_Air\_Spec\_for\_Electronic\_Toll\_Communications.pdf” (available from Kapsch® TrafficCom IVHS Inc. via the E-ZPass Group website <https://www.e-zpassiag.com/> | Interoperability | TDM Specifications).  Specific requirements as to the contents for the Agency and Reader programmable memory areas will be made available to the successful bidder after notice to proceed. |  |  |
| 135 | The Group ID allocated to IAG shall only be used for Transponders produced for IAG Participating Members. The Proposer shall certify that Transponders have not and will not be produced with different data formats that could be read and incorrectly identified as having an IAG Participating Member Group ID. |  |  |
| **1.3** | **Transponder Form Factor and Mounting** | | |
| **1.3.1** | **Dimensions and Mounting** | | |
| 136 | Interior Transponders shall be as small as possible, such that they can be mounted to the windshield behind the rear view mirror. |  |  |
| 137 | When properly mounted, Interior Transponders shall not obstruct the driver’s field of vision. |  |  |
| 138 | If a different interior mounting location is proposed, Proposer shall clearly describe.  Notes:   * Mounting location shall not violate any state or province DMV regulations and shall not conflict with vehicle registration or inspection decals which are typically on the lower left or right corner of the windshield. * Transponder shall be visible from outside the vehicle. |  |  |
| 139 | When properly mounted, Exterior Transponders shall not obscure the license plate numbering (numbers and letters) or issuing jurisdiction information. |  |  |
| 140 | Proposer shall clearly describe the desired exterior roof and license plate mounting locations.  Notes:   * Mounting location shall not violate any state or province DMV regulations and shall not conflict with vehicle registration or inspection decals which are typically on the lower left or right corner of the windshield. * Exterior Transponders and mounting techniques shall be designed to discourage theft. To do so, exterior Transponders should be as inconspicuous as possible when installed on a motor vehicle. Transponders shall also be secure and not be easily removable from the vehicle without the use of common tools. |  |  |
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| **1.3.2** | **Transponder Labeling and Color** | | |
| 141 | Transponders shall be provided with an external label (printed in up to 4 colors) containing human readable data that shall be visible when mounted on or inside a vehicle. The data shall include but not be limited to:   * Issuing IAG Participating Member number; * IAG Participating Member designated graphics and data such as the IAG Participating Member logo; and * IAG Participating Member designated mailing address and contact telephone number.   Sample labeling is included in Part 3: Technical Requirements, Appendix A. |  |  |
| 142 | In addition to any other branding required by the IAG Participating Member, the Transponders shall bear the "E-ZPass" logo. The "E-ZPass" logo may be embossed in the Transponder case or printed on the label. If printed, the "E-ZPass" logo shall be colored in Pantone 259 Purple. |  |  |
| 143 | In addition to human readable data, the external label shall also contain a barcode encoded with IAG Participating Member and other ID, such as an internal serial number, as designated by the IAG Participating Member. |  |  |
| 144 | Final graphic design of labels for all Transponders procured pursuant to this Contract will be approved by the IAG Participating Member specific to each order. |  |  |
| 145 | Proposer shall provide specifications and restrictions for pigments and labels to be used on Transponders to ensure that pigments or labels will not interfere with Transponder operation and will not be significantly impacted by temperature or UV degradation for the life of the Transponder. |  |  |
| 146 | Interior Transponder cases (shells) shall be available in different colors for various application distinctions (e.g., passenger vehicle, truck, bus, non-revenue, commuter), with the mix of colors ordered at the discretion of the IAG Participating Member. The following colors shall be included in the range of options: white, blue, yellow, green, and orange.  Exterior Transponder cases (shells) shall be black. |  |  |
| 147 | Transponders shall not carry any visible manufacturer or vendor brand names. |  |  |
| **1.3.3** | **Transponder Battery** | | |
| 148 | Transponders shall *not* have a customer or IAG Participating Member-replaceable battery. |  |  |
| **1.4** | **Transponder Physical/Environmental** | | |
| **1.4.1** | **Operating Environment** | | |
| 149 | Transponders shall be designed to operate without Performance degradation under worst case traffic conditions including the following:   * Vehicles traveling up to 100 miles per hour; * Stop-and-go traffic with continuous intermittent acceleration and deceleration between 0 and 15 miles per hour; * Vehicles tailgating; * Different mixes of all vehicle types encountered on North American roads including but not limited to cars, trucks, tractor-trailers, recreation vehicles, motorcycles, buses, and delivery vans; * Vehicles arriving simultaneously at the Transponder Capture Zone; * Vehicles changing and/or straddling lanes; and * Vehicles travelling through a toll plaza lane with overhead metal canopy, metal toll booths, lane separation and support structures. |  |  |
| 150 | Transponders shall be designed to operate without performance degradation under worst case environmental conditions that may be encountered in North America including but not limited to:   * Interior Transponder Operating Temperatures ranging from -40° F to +185° F; * Exterior Transponder Operating Temperatures ranging from -40° F to +150° F; * Storage Temperatures ranging from -40° F to +150° F; * Rain: 1⁄4 inch of rain per minute; * Fog: 10 feet visibility; * Relative Humidity: 0% - 100%; * Ice: 1⁄4-inch thickness between the Transponder and the Antenna; * All forms of driving precipitation (sleet, hail, blizzard, etc.); and * Direct sunlight. |  |  |
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| **1.4.2** | **Electromagnetic Interference** |  |  |
| 151 | Transponders shall be resistant to electromagnetic interference or noise, electrical interference, and mechanical interference that may typically be found in a tolling environment from sources such as, but not limited to:   * Wireless data and voice Services; * Satellite radio signals; * GPS devices; * Vehicle electronics; * Ignition systems; * Electrical appliances; * Lightning (except for direct hits); * Power tools; * Power lines; * Power transformers; * Mobile and portable communications radios; * Video Enforcement and Automatic Vehicle Classification Equipment, including inductive loops and lasers; * Toll plaza infrastructure such as overhead metal canopy, metal toll booths, lane separation and support structures; * Security systems; * Lighting; * Speed radar sources and detectors; * Air conditioning units; * Windshield wipers; * Detuned engines; * Defrosters; and * Anything else that would reasonably be found in a tolling environment. |  |  |
| **1.4.3** | **Other** |  |  |
| 152 | Transponders shall not have their performance affected by the nearby presence of common objects such as beverage cans, cell phones, sunglasses, cigarette packs, etc., by other electronic devices that may be integrated with or placed in the vehicle, e.g. commercial vehicle RF transponders. |  |  |
| 153 | Transponders shall be designed to prevent penetration of fluids, dust, etc., including automotive fluids, salt spray, and fuels, whether through the design of the Transponder case or the mounting of the Transponder. They shall be designed such that external conditions as listed above do not affect performance. |  |  |
| 154 | Exterior Transponders shall withstand ice, snow, steam, dirt, mud, any solutions used in the lanes, as well as stones and other projectiles such as sand particles and gravel. |  |  |
| 155 | Transponders shall be droppable from 4 feet onto concrete in any orientation and continue to function without degradation in performance and accuracy. The Transponder case shall not open as the result of being dropped. |  |  |
| 156 | Transponders shall withstand thermal shocks and gradients associated with dashboard or window mounting and temperature gradients of up to 20º F per minute. |  |  |
| 157 | Transponders shall operate as specified while undergoing the recommended shock and vibration of SAE J1211 for the proposed mounting location. |  |  |
| 158 | Transponders shall withstand any damage or corruption of data when subjected to an electrostatic discharge of up to 15,000 Volts (air discharge) or 8,000 Volts (contact discharge) attributable to normal handling by an IAG Participating Member or its customers. |  |  |
| 159 | Proposer shall describe the limits of flexing, bending, or any other physical manipulation of the Transponder without any effect on Transponder performance and accuracy. |  |  |
| **1.5** | **Transponder Performance Requirements** |  |  |
| **1.5.1** | **Read/Write Performance** |  |  |
| 160 | Transponders properly mounted on vehicles passing through a Toll Zone shall be detected and read accurately at least 99.9% of the time, or no more than one (1) missed read or incorrect detect in one thousand (1,000) Transponder equipped vehicle passages. Transponders determined to be damaged or defective will be excluded from this performance requirement. |  |  |
| 161 | Transponders properly mounted on vehicles passing through a Toll Zone configured to write to TDM Transponders, shall be successfully and accurately written to with an accuracy of 99.8%, or no more than two (2) missed or incorrect writes in one thousand (1,000) Transponder equipped vehicle passages. Transponders determined to be damaged or defective will be excluded from this performance requirement. |  |  |
| 162 | Proposer shall define vehicle types for which these performance thresholds may not be achieved, regardless of Transponder model and/or mounting location. |  |  |
| **1.6** | **Transponder Warranty** |  |  |
| 163 | Vendor shall provide replacement Transponders (or at IAG Participating Member option, a credit at the price currently in effect for new purchase) for any Transponder not functioning for any reason for ten (10) years (except that for the feedback Transponder and the switchable Transponder the period shall be 7.5 years), with the ten (10) years (or 7.5 years in the case of the feedback Transponder and the switchable Transponder) beginning the date the Transponder is delivered to the IAG Participating Member’s designated delivery location. The warranty period for the replacement Transponder shall be for the time remaining in the ten (10) year (or 7.5 year for feedback Transponder and the switchable Transponder) warranty period for the replaced defective Transponder.  Refer to Part 5: Terms and Conditions, Article 1.8 Warranties. |  |  |
| 164 | In addition, the switchable Transponder shall be warranted for a minimum of 5,200 switch transitions. |  |  |
| 165 | Transponder life expectancy shall be at least equivalent to the warranty period. |  |  |
| 166 | Transponder battery life shall be at least equivalent to the warranty period. |  |  |
| **1.7** | **Transponder Security** |  |  |
| 167 | The Proposer shall describe measures implemented to protect the Transponder from being tampered with, read by unauthorized readers, cloned, or otherwise “spoofed”. |  |  |
| 168 | The IAG Participating Members prefer that any compromised Transponder be rendered inactive or that a coded signal be created that would identify a tampered Transponder to RSE. |  |  |
| 169 | Proposers shall describe all known incidents of successful or unsuccessful counterfeiting of their Transponders, including a description of the measures taken as a result. The Vendor shall have an ongoing obligation to provide Notice to the Participating Operators of any known incidents of counterfeiting during the term of this Agreement. |  |  |
| **1.8** | **Equipment Certification** |  |  |
| **1.8.1** | **IAG Equipment Certification** |  |  |
| 170 | Transponders shall be formally approved in writing by the IAG before being placed into service. |  |  |
| 171 | If any of the proposed Transponders have not previously been approved for use by IAG, Proposer shall complete Validation Testing per Part 3: Technical Requirements, Section 5 Validation Testing. |  |  |
| 172 | Provide battery certification and/or test results to justify Proposer claims regarding battery life. If not available at time of Proposal submittal, Proposer to furnish the battery certification and/or test results within two (2) weeks of Proposal submittal. |  |  |
| **1.8.2** | **Other Compliance Requests** |  |  |
| 173 | The proposed Transponders shall comply with applicable federal, province, state and local licensing and regulations for the technology in question. |  |  |
| 174 | The Transponders shall utilize such FCC allocated radio frequencies as appropriate for this application. |  |  |
| 175 | Transponders shall comply with FCC’s Part 15 requirements. |  |  |
| 176 | Transponders shall meet or exceed all applicable safety and environmental requirements. |  |  |
| 177 | Proposer shall confirm that it has the right to manufacture and deliver the proposed Transponders and support devices.  IAG Participating Members have no liability for Intellectual Property or copyright claims related to the proposed Transponders or support devices.  Refer to Part 5: Terms & Conditions, Article 1.26 Intellectual Property. |  |  |
| **1.9** | **Transponder Orders, Retail Packaging, and Delivery** |  |  |
| **1.9.1** | **Notes regarding Transponder Orders** |  |  |
| **1.9.2** | **Retail Transponder Packaging** |  |  |
| 178 | Retail Packaging consists of a sealed, RF shielded pouch/bag which prevents Transponders from being read. |  |  |
| 179 | The bag will typically contain:   * A single interior non-switchable or switchable Transponder. * A corresponding Transponder ID validation code label. This label shall be produced and affixed to the reverse side of the Transponder. The Transponder ID validation code shall be a separate check code, different from the Transponder number that is entered by the customer or the CSR when registering to ensure that the correct Transponder number is entered. IAG Participating Members will provide the logic to be used for creation of the Transponder ID validation code when a contract is awarded. * Mounting accessories. * Printed documentation, e.g. terms & conditions. * Instructions for Transponder mounting/installation document. * Instructions for Transponder registration document. |  |  |
| 180 | The exterior labeling on the bag will typically include:   * E-ZPass and IAG Participating Member logos. * Other graphics / text as defined by the IAG Participating Member. * The Transponder manufacturing date. * A window positioned so that the Transponder identification is visible *or* printed Transponder identification. * An approved UPC code. |  |  |
| **1.9.3** | **Transponder Delivery** |  |  |
| 181 | Transponders shall comply with any and all current U.S. and international safety standards to permit unrestricted shipment by mail and commercial carriers with appropriate documentation and in the recommended packaging. |  |  |
| 182 | Vendor shall ship Transponders (with or without retail packaging) in boxes with dividers and placeholders. |  |  |
| 183 | If mounting components are to be included with the Transponders, they shall be included in the shipping box with the Transponders. |  |  |
| 184 | The shipping boxes shall have RF shielding to prevent reading of the enclosed Transponders. |  |  |
| 185 | Each box of Transponders shall contain Transponders with consecutive serial numbers starting at a value determined jointly by the IAG Participating Member and the Vendor. |  |  |
| 186 | Each box of Transponders shall have a barcode marked packing slip and exterior identification with the beginning and ending serial numbers for inventory tracking. |  |  |
| 187 | Vendor shall provide a spreadsheet of boxes and serial number ranges along with each shipment of Transponders. |  |  |
| 188 | Vendor shall coordinate with the IAG Participating Member’s designated CSC Contractor to develop the exact content and format of the spreadsheet. |  |  |
| 189 | Vendor shall deliver IAG Participating Members’ orders within 6 weeks (42 calendar days) from order date.  Note: This will not apply to delivery of first order for each model of Transponder due to the requirement for Factory Testing (Part 3: Technical Requirements, Section 1.10 Transponder Factory Testing). |  |  |
| 190 | If Vendor fails to deliver Transponders in accordance within the time stated above, the Vendor shall pay as liquidated damages one percent (1%) of the retail value of Transponders overdue for each day (Limit 100% of the retail value of Transponders overdue).  Refer to Part 5: Terms & Conditions, Article 1.4.1 Liquidated Damages. |  |  |
| 191 | Delivery shall occur at the IAG Participating Member’s specified location during business hours. |  |  |
| 192 | Expedited delivery may be requested by an IAG Participating Member. Vendor shall respond promptly (within 3 business days) to such a request indicating if the requested delivery is possible. The direct costs for expedited delivery will be the responsibility of the IAG Participating Member requesting the service. |  |  |
| **1.10** | **Transponder Factory Testing** |  |  |
| 193 | Vendor shall conduct First Article Factory Testing on Transponders from the production environment prior to delivery of the first order for each model of TDM Transponder proposed. First Article Factory Testing shall demonstrate that production Transponders are physically and operationally consistent with the Transponders submitted for Validation Testing and these Technical Requirements. Vendor shall submit its First Article Factory Testing plan for approval by IAG Participating Members prior to conducting the test.  Proposer shall provide a description of its First Article Factory Testing process for Transponders, and a copy of a typical factory testing certification statement that would be provided. |  |  |
| 194 | Proposer shall provide a description of its ongoing Factory Testing process for Transponders, and a copy of a typical factory testing certification statement that would be provided. |  |  |
| 195 | Vendor shall notify IAG Participating Members of any changes to the originally proposed Transponders during the Contract Term. IAG Participating Members may request that the new or revised product undergo Validation Testing and/or First Article Factory Testing. |  |  |
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| **1.11** | **Transponder Delivery Testing** |  |  |
| 196 | For each Transponder order placed, a sample (either partial or full) of Transponders may be lab tested (at the IAG Participating Members’ expense) to ensure that they remain operationally consistent with previously delivered Transponders and to ensure the Transponder programming is correct. Any batches failing testing shall be replaced at Vendor’s expense at IAG Participating Member’s sole discretion. A batch is considered as failed if there are more than one (1) Transponder error per two hundred (200) tested (0.5%). IAG Participating Members will provide the supporting test documentation. |  |  |
| **1.12** | **Transponder Disposal** |  |  |
| 197 | If there are environmental restrictions on disposal of any type of supplied Transponder, Vendor shall document the proper disposal procedures and the reason for the restrictions. |  |  |
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| **2** | **TDM Transponder Support Devices and Services** |  |  |
| **2.1** | **Support Devices - Handheld Reader** |  |  |
| 201 | Vendor shall provide a Handheld Reader that will be compatible with the provided Transponders. |  |  |
| 202 | The Handheld Reader shall be of ergonomic design and powered by a rechargeable battery. |  |  |
| 203 | The Handheld Reader shall be able to be carried, moved and operated by one person. |  |  |
| 204 | The Handheld Reader shall be able to read all compatible Transponders. |  |  |
| 205 | The Handheld Reader shall be equipped with a display which displays data for each Transponder read, including but not limited to:   * Date & Time of Transponder read; * Transponder ID; * Transponder encoded vehicle class; * Previous Toll Zone and read/write date/time as written to the Transponder; and * Position of HOV self-declaration switch as written to the Transponder at previous Toll Zone (if applicable). |  |  |
| 206 | The Handheld Reader shall support an external interface allowing it to exchange all Transponder data with a desktop or laptop workstation (supplied by others). |  |  |
| 207 | The handheld reader shall buffer (store) each Transponder read until uploaded to a computer or manually deleted by the handheld reader user. |  |  |
| 208 | Vendor shall provide any Software for installation on desktop or laptop workstations required to support interfacing with the Handheld Reader. |  |  |
| 209 | For the Contract Term, and at no additional cost to IAG Participating Members, Vendor shall provide the following Software Maintenance Services as they pertain to the Handheld Reader:   * Updates to the Handheld Reader firmware; * Updates to Software for use on connected workstation; * Release Notes for firmware and Software; and * Documentation Updates. |  |  |
| 210 | Vendor shall provide documentation as defined in Part 3: Technical Requirements, Section 2.5 Documentation. |  |  |
| 211 | Vendor shall provide operations and maintenance training to IAG Participating Members or their designated representatives as an optional extra (priced separately). |  |  |
| 212 | The microwave energy radiated from the Handheld Reader shall be below the limits set by health and telecommunication authorities of United States, and these units shall be allowed for continuous use in an operational environment. |  |  |
| 213 | Vendor shall deliver IAG Participating Members’ orders within 6 weeks (42 calendar days). |  |  |
| 214 | If Vendor fails to deliver Handheld Readers in accordance within the time stated above, the Vendor shall pay as liquidated damages five percent (5%) of the retail value of Handheld Readers overdue for each day (Limit 100% of the retail value of Handheld Readers overdue).  Refer to Part 5: Terms & Conditions, Article 1.4.1 Liquidated Damages. |  |  |
| 215 | Delivery shall occur at the IAG Participating Member’s specified location during business hours. |  |  |
| 216 | Expedited delivery may be requested by an IAG Participating Member. Vendor shall respond promptly (within 3 business days) to such a request indicating if sufficient inventory is available. The direct costs for expedited delivery will be the responsibility of the IAG Participating Member requesting the service. |  |  |
| **2.2** | **Support Devices – Transponder Programmer** |  |  |
| 217 | Vendor shall provide a Transponder Programmer that will be compatible with the Transponders. |  |  |
| 218 | The Transponder Programmer shall allow programming of all agency read-only data fields in the Transponders. |  |  |
| 219 | Vendor shall provide any Software for installation on desktop or laptop workstations required to support interfacing with the Transponder Programmer. |  |  |
| 220 | For the Contract Term, and at no additional cost to IAG Participating Members, Vendor shall provide the following Software Maintenance Services as it pertains to the Transponder Programmer:   * Updates to the Transponder Programmer firmware; * Updates to Software for use on connected workstation; * Release Notes for firmware and Software; and * Documentation Updates. |  |  |
| 221 | Vendor shall provide documentation as defined in Part 3: Technical Requirements, Section 2.5 Documentation. |  |  |
| 222 | Vendor shall provide operations and maintenance training to IAG Participating Members or their designated representatives as an optional extra (priced separately). |  |  |
| 223 | The microwave energy radiated from the Transponder Programmer shall be below the limits set by health and telecommunication authorities of United States, and these units shall be allowed for continuous use in an operational environment. |  |  |
| 224 | Vendor shall deliver IAG Participating Members’ orders within 6 weeks (42 calendar days). |  |  |
| 225 | If Vendor fails to deliver Transponder Programmers in accordance within the time stated above, the Vendor shall pay as liquidated damages five percent (5%) of the retail value of Transponder Programmers overdue for each day (Limit 100% of the retail value of Transponder Programmers overdue).  Refer to Part 5: Terms & Conditions, Article 1.4.1 Liquidated Damages. |  |  |
| 226 | Delivery shall occur at the IAG Participating Member’s specified location during business hours. |  |  |
| 227 | Expedited delivery may be requested by an IAG Participating Member. Vendor shall respond promptly (within 3 business days) to such a request indicating if sufficient inventory is available. The direct costs for expedited delivery will be the responsibility of the IAG Participating Member requesting the service. |  |  |
| **2.3** | **Support Devices – Transponder Tester** |  |  |
| 228 | The Transponder Tester shall be used by personnel in a field environment such as a toll plaza or an office environment such as a customer service center. |  |  |
| 229 | The Proposer shall provide the size and weight of the Transponder Tester. |  |  |
| 230 | Transponder Tester(s) shall be available for all proposed TDM Transponder models. It is preferable that all TDM Transponder models be accommodated by a single Transponder Tester. |  |  |
| 231 | The user interface should provide output for measurements as appropriate to the technology being offered, such as:   * The Transponder Tester successfully tested the functionality of all Transponder data fields; * The bit error rate; * The power output of the Transponder; * The sensitivity of the Transponder to the trigger signal; and * Load test the Transponder.   The output for the Transponder functionality test may be an audible indication, LED, or any other method to indicate whether the Transponder passed or failed. The output for bit error rate can be a simple LCD display. The output for the power and sensitivity tests should include a display of approximate power output or sensitivity level and a display of the power output and sensitivity in dBm.  If Vendor requires that printed documentation accompany Transponder returns (RMA), then Tester shall include printer interface capability. |  |  |
| 232 | The Transponder Tester shall consider a Transponder to have failed if any data field returns invalid data. With regard to power output or sensitivity measures, the Transponder Tester shall fail Transponders that would not meet accuracy requirements when properly mounted and presented.  The Proposer shall describe the measurement levels that would result in the Transponder failing and the reasons for the selection of those measurement levels.  The Proposer shall describe the positioning of the Transponder relative to the Transponder Tester such that the Transponder Tester result is valid. |  |  |
| 233 | For the Contract Term, and at no additional cost to IAG Participating Members, Vendor shall provide the following Software Maintenance Services as it pertains to the Transponder Tester:   * Updates to the Transponder Tester firmware; * Updates to Software for use on connected workstation; * Release Notes for firmware and Software; and * Documentation Updates. |  |  |
| 234 | Vendor shall provide documentation as defined in Part 3: Technical Requirements, Section 2.5 Documentation. |  |  |
| 235 | Vendor shall provide operations and maintenance training to IAG Participating Members or their designated representatives as an optional extra (priced separately). |  |  |
| 236 | The microwave energy radiated from the Transponder Tester shall be below the limits set by health and telecommunication authorities of United States, and these units shall be allowed for continuous use in an operational environment. |  |  |
| 237 | Vendor shall deliver IAG Participating Members’ orders within 6 weeks (42 calendar days). |  |  |
| 238 | If Vendor fails to deliver Transponder Testers in accordance within the time stated above, the Vendor shall pay as liquidated damages five percent (5%) of the retail value of Transponder Testers overdue for each day (Limit 100% of the retail value of Handheld Readers overdue).  Refer to Part 5: Terms and Conditions, Article 1.4.1 Liquidated Damages |  |  |
| 239 | Delivery shall occur at the IAG Participating Member’s specified location during business hours. |  |  |
| 240 | Expedited delivery may be requested by an IAG Participating Member. Vendor shall respond promptly (within 3 business days) to such a request indicating if sufficient inventory is available. The direct costs for expedited delivery will be the responsibility of the IAG Participating Member requesting the service. |  |  |
| **2.4** | **Support Devices – Warranty & Maintenance** |  |  |
| 241 | The Warranty period for Support Devices shall be three (3) years commencing on the date such Devices were delivered to the IAG Participating Member’s designated delivery location. |  |  |
| 242 | Vendor shall provide on-call remote and on-site Maintenance Support Services and other technical support for delivered Handheld Readers, Transponder Programmers, and Transponder Testers throughout the Warranty Period. |  |  |
| 243 | Vendor shall repair or replace failed Handheld Readers, Transponder Programmers, and Transponder Testers throughout the Warranty Period within five (5) Business Days of the Vendor’s receipt of Equipment requiring warranty work. |  |  |
| 244 | If Vendor fails to repair or replace Support Devices in accordance within the time stated above, the Vendor shall pay as liquidated damages five percent (5%) of the retail value of the Support Devices in question for each day that the remedy is not performed to the satisfaction of the IAG Participating Member. (Limit 200% of the retail value of the Support Devices in question).  Refer to Part 5: Terms and Conditions, Article 1.4.1 Liquidated Damages |  |  |
| **2.5** | **Documentation** |  |  |
| **2.5.1** | **End User Instructions** |  |  |
| 245 | Vendor shall provide instructions suitable for use by end users which document the means of attachment and mounting devices used by all supplied Transponder models. |  |  |
| 246 | Vendor shall provide a list of vehicle features, such as metallic coated windshields or rear-view mirrors with displays that may interfere with Interior Transponders. |  |  |
| 247 | Vendor shall provide a list of vehicle makes and models equipped with features which may interfere with Interior Transponders. Where applicable, Vendor shall indicate alternate mounting locations or other special instructions which would prevent the interference in particular vehicle types. |  |  |
| 248 | Vendor shall update the lists of vehicle features that may interfere with Interior Transponders, and the vehicle makes and models equipped with such features, on an annual basis. |  |  |
| **2.5.2** | **Equipment Documentation** |  |  |
| 249 | Vendor shall provide instructions and Documentation regarding the storage, transport, issue, and disposal of all Transponder models as applicable. |  |  |
| 250 | Vendor shall provide Cut Sheets, Operating Instructions, Installation Instructions, and Maintenance Instructions as applicable for the Handheld Reader, Transponder Programmer, and Transponder Tester. |  |  |
| **2.5.3** | **Regulatory Compliance** |  |  |
| 251 | Vendor shall provide documentation stating that all provided Equipment and Transponder models are in compliance with appropriate regulations and standards. |  |  |
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| **2.6** | **Contract Management** |  |  |
| 252 | During the Contract Term, Vendor shall provide the IAG Technology Manager with a monthly status report, broken out by IAG Participating Member, including as a minimum:   * Orders received; * Deliveries made; * Current backlog; * Schedule for delivery of backlog; and * Returns (RMA) – quantity and reason. |  |  |

Any requirements with non-conformance shall be summarized in the table below:

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| **Section #** | **Requirement #** | **Explanation of Non-Conformance** |
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