Question #	Source Document	Paragraph (s)	Question	Answer
1			What is the threshold requirement for operation time utilizing a battery?	The Government does not have a threshold. The objective is seven days of operational usage between battery changes. The Government is not constraining a vendor's potential innovation related to the design factors of size, weight and battery life.
2			Are there specific battery categories, standards or requirements that need to be met?	The Government is not directing any battery type or category as long as the battery solution is able to receive a Soldier Safety release. The Army has approved tablet/ cell phone batteries for Soldier usage.
3			Do we utilize the same connectors as the existing LTE IPU or can we use new connectors?	Any connecter can be used as long as it mates to the TESS connector (5 pin LEMO/RS-232 barrel type)
4			Does the method for associating the IPU need to be mobile, fixed or both?	Any method (mobile, fixed, or both) of associating the participant to the IPU as long as it can occur at the soldiers location - example: staging area, training area.
5			What are the required cyber security controls?	The data has the classification category of unclassified but should be protected from disclosure by a method of encryption or authentication. The Government is not constraining a vendor's potential use of commercial security controls.
6			Is FIPS-140-2 required down to the device?	No, the FIPS-140-2 is not required down to the device.
7			Is it required that the private AT&T APN be used or may Internet-hosted cloud infrastructure with a gateway be used?	The use of AT&T's (or any carrier's) APN or Cloud infrastructure with a gateway are not required for operation. Alternate connectivity means may be acceptable if they satisfy the requirement.
8			Is network level encryption required (i.e. VPN) or will application level encryption be considered (i.e. DTLS/TLS)?	Network level encryption is not required. DTLS/TLS is a valid encryption method.
9			How many hours per month is the device expected to operate actively reporting position and location?	The average hours per month that a device will actively report position and location is 262 hours at a CTC.
10			What is the eventual interface into the CIS? An existing gateway or is this solution expected to replace an existing gateway device?	The current interface to the CIS is the PU-XML standard. Venders may provide an alternate, non proprietary, interface.
11	RFS	5.1.7.2.4	"Provide soldier safety features such as a help button" We need clarification and intent in this requirement and feature?	A method for soldier to send a help alert to the Exercise Control cell.
12	RFS	5.1.7.2.4	Is the government certain that the radio is IP57 proof for NTC and JRTC? The five in IP is dust protected and not Dust tight as normal as IP67.	Government will update the RFS to the IP67 standard, which supports the NTC and JRTC environmental conditions. The RFS will also be amended to add a temperature range from 0 degrees to 130 degrees Fahrenheit.
13	RFS	5.1.7.2.4	What is the difference of getting 10 second updates for GPS and 60 seconds to send to Excon? Why is the update frequency 6 times as high as sending the message to EXCON?	This was an example illustrating that the Government is not expecting traditional solutions. In this example, if consolidating individual messages into a larger package is beneficial, the Government will consider that solution.
14	N/A	N/A	Is there possibility for an extension on the submittal for the proposal?	Yes, the RFS is amended to reflect the new solution due date of 28 Feb 2020.
15	N/A	N/A	Is there possibility for an extension for the demonstration? The amount of time between proposal and demonstration is too constraint for a lifecycle project and increases risk in source selection.	Yes, the demonstration date is updated in the RFS to 30 March 2020.

16	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 7, Phase 1. Testing	Can you provide any ICD (Interface Control Document) or other details on the EXCON system that the Instrumentation Prototype will communicate with? The RFS mentions an IDE-F EXCON however we have not been able to identify any information on such interface or system.	The current interface to the CIS is the PU-XML standard. Venders may propose an alternate, non proprietary, interface.
17	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 7, Phase 1: Design, Development, and Testing of the LPIoT Instrumentation Prototype	The RFS refers to requirement to support a cloud-based EXCON. Will the existing cloud-based EXCON system be made available for this OTA effort or is it expected that the Vendor will establish one for prototype development? If the government will provide the EXCON system, can you provide the following technical details for planning? a. What cloud provider is this system hosted on? AWS GovCloud, Azure, etc.? b. What type of interface is provided by the Cloud endpoint? RESTful API, MQTT, etc.? c. What TLS versions any requirements are required? d. Is SNI (Server Name Indication) support required?	A cloud based EXCON does not currently exist. The Government will not provided a cloud based EXCON. The Government is considering a cloud based EXCON and believes this effort may provide insight into this capability. Vendors may proposed a cloud based EXCON.
18	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 8, Phase 2: Further Development and Testing of the LPIoT Instrumentation Prototype	What LTE CAT-M1 carriers (beyond AT&T) are required to be supported	The requirement is to use the LTE CAT M1 standard.
19	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 7, Phase 1: Design, Development, and Testing of the LPIoT Instrumentation Prototype	What is a rough order of magnitude of the number of TESS messages/events that a single Instrumentation System (IS) can expect within a 60 second period?	For the CTC use case, using the current method of exchanging data between participants and the EXCON, the number of messages in 60 seconds is 21,600.
20	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 11, 5.1.11: Rough Order of Magnitude (ROM) -	Can we consider the ROM an early version of the manufacturing cost estimate that will be developed as part of Phase 2?	No, the ROM is not an early version of the manufacturing cost estimate that will be developed as part of the Phase 2 prototyping development. The ROM is associated with the potential follow-on production after the successful completion of the prototype. See RFS 5.1.11 ROM: Vendors shall provide a ROM pricing for potential follow-on production activities. Please note, the Follow-On ROM will assist in future planning efforts for potential follow-on efforts. The Follow–On ROM is not part of the evaluation; and Section 9 Follow-On Production.
21	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 7, Phase 1: Design, Development, and Testing of the LPIoT Instrumentation Prototype	What are the specific NTC and JRTC environmental conditions referenced in the Phase 1 requirements? Is the requirement IP 57 or are their additional requirements?	The Government updated the RFS to include the IP67 standard, which supports the NTC and JRTC environmental conditions. The RFS is also amended to add a temperature range from 0 degrees to 130 degrees Fahrenheit.
22	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 8, Phase 2: Further Development and Testing of the LPIoT Instrumentation Prototype	Will the Government provide the AT&T service plan and sim cards	No, Government will not provide data plan or sim cards

23	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 7, Phase 1. Testing	Will the Government provide the awardee access to, or possession of the referenced TESS hardware for testing	The Government will provide up to 5 IWS TESS kits to the awardee.
24	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 7, Phase 1. Testing	Will the Government provide the awardee access to the referenced cloud EXCON	A cloud based EXCON does not currently exist. The Government will not provided a cloud based EXCON. The Government is considering a cloud based EXCON and believes this effort may provide insight into this capability. Vendors may proposed a cloud based EXCON.
25	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf	Page 15. 7.6.1.2.	What are the expected Technology and Manufacturing Readiness Levels for the prototype at the start of Phase 1	During the demonstration phase, the vendors will use an existing LTE CAT M1 device. Government assume these demonstration items are TRL 9 and MRL 9.
26	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf & Instrumentation System (IS) Tactical Engagement Simulation Systems (TESS) Interface Standard	RFS- Page 5, 5.1.7.1: Technical Approach IS TESS - Page 25, 3.3.3.2 Battery	Dimensions and weight (radio and battery weigh approximately 5 pounds with dimensions approximately 12 x 12 x 4 inches) are provided for the current instrumentation radio and battery – is this the same battery referenced in the TESS documentation (The Land Warrior Battery Pack)?	Yes, the dimensions include the Land Warrior Battery Pack
27	TREX, NSTXL Websites		In previous postings on the TREX and NSTXL websites a Government budget of $400,000 - $500,000 was provided in the OTA synopsis. Will the Government confirm that this estimate is still valid, and clarify if the budget is for phase 1 (8 months), phase 2 (4 months), or all phases (12 months)?	The total budget for this OT effort (includes all phases) is approximately $500K.
28	RFS-LPIoT-Instrumentation - Prototype	5.1, 5.1.6	5.1.6, Technical Solution Paper indicates that a CWBS does count towards the page count limit. 5.1, Solution Paper Responses does list a CWBS as being required in the combined technical and price volume. Can the Government confirm that a CWBS is required? If a CWBS is required can the Government indicate the CWBS level they desire to see in our response?	Although the solution paper is a combined technical and price volume, specific aspects are not included in the page count as stated in RFS section 5.1.6 Technical Solution Paper: The Cover Page, Table of Contents Sub-Vendor List, Government Desired Rights in Technical Data and Computer Software, FOCI documentation, List of Figures, IMS, CWBS, Cost and Pricing Breakdown, Acronym Definitions, and Traceability Matrices do not count towards the page count limit.
29	RFS-LPIoT-Instrumentation - Prototype	5.1.7.1	Please confirm the dimensions to be 12x12x4?	Yes, this is an approximate dimension of current radio/battery/cable units.
30	RFS-LPIoT-Instrumentation - Prototype	5.1.7.2.1	What is the current data rate and latency required by the range instrumentation system?	Latency requirements are not defined. As a prototype effort, the team may make trade offs between performance, size and weight.
31	RFS-LPIoT-Instrumentation - Prototype	Phase 1	Please confirm that the IDE-F EXCON is able to support the required MILES variants for demonstration purposes	In the event that the IDE-F at Ft Benning may not be available, the Government will provide an appropriate EXCON that will support the required MILES variants during Phase 1 and Phase 2.
32	RFS-LPIoT-Instrumentation - Prototype	Phase 1	The current IPU supports FIPS 140-2. Is the prototype expected to support the same security feature?	No, FIPS 140-2 is not a requirement

33	RFS-LPIoT-Instrumentation - Prototype	Phase 1	Phase 1 prototype conditions list support for a cloud-based EXCON. Will the Government confirm that the cloud-based EXCON is the IDE-F EXCON? Will the Government release additional information about the IDE-F EXCON, similar to the information provide in Attachment 1, IS_TESS_Standard?	A cloud based EXCON does not currently exist. The Government will not provided a cloud based EXCON. The Government is considering a cloud based EXCON and believes this effort may provide insight into this capability. Vendors may proposed a cloud based EXCON.
34	RFS-LPIoT-Instrumentation - Prototype	Phase 2	Will the government make a version of the CTC Instrumentation System available for testing prior to rotational testing?	The Government will provide an appropriate EXCON during Phase 1
35	RFS-LPIoT-Instrumentation - Prototype	Phase 1, 2	Is EMI/EMS testing expected to be done by EPG; do we need to account for this in our CWBS and schedule?	No, the vendor does not need to account for this in our CWBS and schedule.
36	RFS-LPIoT-Instrumentation - Prototype	7.5.2	7.5.2, Demonstration indicates that "Vendors may propose the demonstration sites, but the Government reserves the right to provide an alternate site if the proposed site(s) are not suitable for the demonstration. Because the demonstration event is anticipated to occur quickly after RFS submissions and site availability maybe limited or difficult to secure without advanced coordination, will the Government consider selecting a single site of their choosing for the demonstration, or require that offerors submit their requested site location prior to submission of the RFS responses so that approval of the site can be obtained?	As the Government does not know which carrier a vendor's demo unit uses, the Government believes that the vendor should choose the site. As long as the areas meet the broad description in the RFS, the government will agree to the site. The RFS estimated demonstration date has been extended to the week of 30 March 2020.
37	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 6, Paragraph 5	What is the current battery size and capacity?	The current NTC/JRTC battery used by the IPU is the PB-LW-01 (NSN 6140-01-585-1658). Vendors solutions are not required to use this battery.
38	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 6, Paragraph 5	What battery life does the current battery provide for the systems under normal usage? What is the desired battery life under normal usage?	The battery life for current instrumentation (consistently on and reporting) is approximately 96 hours. In prototype effort, the team will make design decisions on operational time and unit size and weight.
39	RFS-LPIoT-Instrumentation-Prototype_1.6.21_Final	Page 6, Paragraph 5	Is the battery considered part of the instrumentation unit prototype? or will the instrumentation unit power consumption be use to determine battery size capacity only?	Yes, the battery is part of the Player Unit prototype. The MILES (IWS) uses a separate battery.
40	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 6, Paragraph 3	What are the cyber security requirements and/or guidelines for the system?	The data has the classification category of unclassified but should be protected from disclosure by a method of encryption or authentication. The Government is not constraining a vendor's potential use of commercial security controls.
41	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 6, Paragraph 3	What are the latency requirements for the system?	Latency requirements are not defined. As a prototype effort, the team may make trade offs between performance, size and weight.
42	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 5, Paragraph 6	Will the government be able to provide source code currently running on the current instrumentation units for reference?	Source code for the current instrumentation units is proprietary and is not available during the OT effort.
43	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 5, Paragraph 6	Will the government be able to provide specifications, wiring diagram, and schematics of the current instrumentation units for reference?	No, the government will not be providing specifications, wiring diagram, and schematics of the current instrumentation units.

44	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 5, Paragraph 6	Will sample instrumentation devices be available as GFE for the development of the prototypes?	The Government will provide up to 5 IWS TESS kits to the awardee.
45	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 3, Paragraph 1	Is "PRF-PT-00552REV_G_IS_TESS_IF_Std.pdf" revision G dated 17 August 2017 the IS-TESS Standard document applicable to the effort?	Yes, "PRF-PT-00552REV_G_IS_TESS_IF_Std.pdf" revision G dated 17 August 2017 the IS-TESS Standard document applicable to the effort.
46	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 3, Paragraph 2	Will sample TESS devices be available as GFE for the development of the prototypes?	The Government will provide up to 5 IWS TESS kits to the awardee.
47	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 7, Paragraph 3	Could you provide additional information on the cloud-based EXCON that needs to be supported in Phase I?	A cloud based EXCON does not currently exist. The Government will not provided a cloud based EXCON. The Government is considering a cloud based EXCON and believes this effort may provide insight into this capability. Vendors may proposed a cloud based EXCON.
48	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 13, Paragraph 7	Is the LPIoT Instrumentation-Prototype expected to have a component (hardware and/or software) outside of the instrumentation unit to serve as interface/translator to/from the EXCON during Phase I?	Yes, prior to testing of the Beta Unit, a gateway to the GFI EXCON is needed.
49	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 13, Paragraph 7	Is the Instrumentation Unit to/from EXCON communication constrained or defined by any standard, message structure, and/or protocol? Will the government be able to provide information/guidelines for the Instrumentation Unit to/from EXCON communication?	The current interface to the CIS is the PU-XML standard. Vendors may propose an alternate, non proprietary, interface. Yes, the Government will provide information/guidelines for the Instrumentation Unit to/from EXCON communication.
50	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 13, Paragraph 7	Does the government have any emulation platform/tool to serve as EXCON during development of the prototypes?	No, the government does not have any emulation platform/tool to serve as EXCON during development of the prototypes. The Government will provide an appropriate EXCON during Phase 1
51	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 5, Paragraph 4	Are the antennas an integral part of the LPIoT Instrumentation Prototype design or will the device make use of existing, separate antennas for LTE & GPS?	Yes, antennas / GPS are an integral part of the prototype design
52	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 5, Paragraph 4	If not using existing antennas, what are the size/type constraints on the choice of antennas?	The antennas should meet the LTE use case, should not present a safety risk to the soldier and be reliable.
53	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 11, Paragraph 5	Is Phase 2 " Further Development and Testing of the LPIoT Instrumentation Prototype" considered a follow on effort/production activity as it is highly dependent on the outcomes of Phase 1? Should only a ROM be provided for this activity?	The entire prototype development effort is anticipated to be completed in two phased. Phase 1 must be completed in order to enter into Phase 2. Phase 2 is not considered a follow on production effort as described in Section 9. Section 5.1.11 ROM applies to section 9, Follow on production only.
54	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 15, Paragraph 6	Could the government provide details on the quantities and schedule of the Follow On Production?	The RFS is amended in Section 9, to include the following :After successful completion of the prototype project, testing and transition of the 50 prototype units to the operational user(s), the prototype project may lead to a Production OTA of the LPIoT Instrumentation Prototype device to support the replacement of the 3,000 IPUs at the JRTC.

55	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final	Page 7, Paragraph 4	Will the prototype require to be certified by an independent certification entity to meet IEC standard 60529 of IP 57?	Independent certification is not required for the prototype . Certification is required for potential follow-on production efforts.
56	RFS	5.1.7	How many vehicle interfaces are required for the Player Unit (PU) in both Phase I and Phase II?	No vehicle interfaces are required for either phase.
57	RFS	5.1.7	The list of Phase 2 deliverables includes "Design documents", identifying trade studies and analyses as examples, neither of which are technically 'design' documents. Can the deliverable design documents be more accurately identified?	Results of any study, analysis, design, and testing are considered design documents.
58	RFS	7.5.1	Subsection 7.5.1 states vendors will be notified 'weeks' prior to being informed of the need to provide a presentation and demonstration and that such activities will occur the week of 17 February 2020. Whereas responses to the subject Request for Solutions are due 05 February 2020, there are only 8 working days between submittal and the 17th, which leaves very limited time for the Government to complete its review of the submitted responses and to notify the vendors allowing time to incorporate Government feedback into the demonstrations. Is the Government's schedule realistic or will additional time be provided to all vendors to address government comments?	Yes, The solution due date is extended to 28 Feb 2020 to provide additional time to vendors to review the Governments responses to submitted questions. Additionally, the demonstration timeline is extended to 30 Mar 2020 to accommodate the revised solution due date and time for solution evaluation. These dates are updated in the amended RFS.
59	RFS	5.1.8.3	Section 5.1.8.3 identifies several deliverables under Phase 2 to be provided with Government Purpose Rights. The type of data identified in Subsections (d) form, fit and function data and Subsection (e) [data] necessary for installation, operation, maintenance or training is typically provided to the Government with unlimited rights under DFARS 252.227-7015. Please confirm the category of rights required.	Typically, the Government seeks unlimited rights to all development and deliverables of technical data and computer software funded under the transaction agreement. For the purpose of this effort, Government Purpose rights are being requested. The DFARS reference is correct; However, the OTA acquisition process is not bound by those regulations.
60	RFS	5.1.10	Subsection 5.1.10 states the "price volume has no page limitation'. Section 5.1.10 conflicts with Section 5.1 which states the technical and price submittals are to be in a "combined volume: and subsection 5.1.6 that states the combined volume is limited to 'no more than 12 pages". Please clarify	Although the solution paper is a combined technical and price volume, specific aspects are not included in the page count as stated in RFS section 5.1.6 Technical Solution Paper: The Cover Page, Table of Contents Sub-Vendor List, Government Desired Rights in Technical Data and Computer Software, FOCI documentation, List of Figures, IMS, CWBS, Cost and Pricing Breakdown, Acronym Definitions, and Traceability Matrices do not count towards the page count limit.
61	RFS	5.1	You request an Anticipated Delivery Schedule as a separate section from the Solution Paper (Vendor\'s Technical Approach), but on Page 6 it is described as part of the Technical Approach . Does the Anticipated Delivery Schedule count against the 12 page limit of the Solution Paper?	The anticipated delivery schedule is not part of the page count and this will be revised in the amended RFS.
62	RFS	5.1.7.1	The RFS states that the modem will require cyber security controls. What are the cyber security requirements for the use case specified in RFS section 5.1.7.1?	The data has the classification category of unclassified but should be protected from disclosure by a method of encryption or authentication. he Government is not constraining a vendor's potential use of commercial security controls.
63			What protocols are used to communicate with the IDE-F EXCON? Is an ICD or similar available?	The current interface to the CIS is the PU-XML standard. Venders may propose an alternate, non proprietary, interface.

64			I am struggling to understand the concept of a demonstration in Orlando on 17 FEB 2020 when submissions are due 5 FEB	The solution due date is extended to 28 Feb 2020 to provide additional time to vendors to review the Governments responses to submitted questions. Additionally, the demonstration timeline is extended to 30 Mar 2020 to accommodate the revised solution due date and time for solution evaluation. These dates are updated in the amended RFS.
65	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf, page 7	Connect to the Combat Vehicle Tactical Engagement Simulation Systems (CV TESS), Tactical Vehicle System (TVS) and Individual weapon System (IWS) through RS 232 interface.	Will more than one system be connected at a time? This impacts the number of RS 232 interfaces required.	No, only one TESS system connects to a Play Unit at the same time.
66	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf, page 7	Connect to the Combat Vehicle Tactical Engagement Simulation Systems (CV TESS), Tactical Vehicle System (TVS) and Individual weapon System (IWS) through RS 232 interface.	What are the connector types used for each of these RS 232 connectors, 9 pin D, sub D, MIL-STD- 38999, or other? For example, the Government could provide a reference connector and desired cable length for each interface so that cabling can be provided to mate each desired connection.	Connector is a 5 pin LEMO/RS-232 barrel type. Figure 3.0-1, ICD 3262-001 ,shows the pin out of the connector. RFS is amended to include Attachment 8 to provide this information.
67	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf, page 7	Meet NTC and JRTC environmental conditions.	Can the Government be more specific on the desired environmental conditions? For example, Government could provide a reference to specific environmental test case sections within MIL-STD-810G, such as Wind Driven Rain.	Government will update the RFS to the IP67 standard, which supports the NTC and JRTC environmental conditions. The RFS will also be amended to add a temperature range from 0 degrees to 130 degrees Fahrenheit.
68	RFS-LPIoT-Instrumentation-Prototype_1.6.20_Final.pdf, page 7	Provide soldier safety features such as a help button.	What are the must-have safety features vs the nice to have features? For example, the Government could publish a list of the device must-have safety features.	Safety features are not being defined. During design, the team will make decisions between features and size/weight/power consumption considerations.