TReX Questions (FAST)

1. What items may be included within the appendices?
   a. Any charts and figures directly relevant to the solution and referenced within the document.
2. What are the requirements for spacing (single, double etc)?
   a. There are no requirements for spacing. Please note, however, that obvious abuse of spacing in order to meet page counts is highly discouraged.
3. If software code is developed under this program that is an extension of existing proprietary software code will the Government expect government purpose rights the previously existing proprietary software code?
   a. As stated in 5.3, it is the Government's desire to receive government purpose rights for all development and deliverables, however, intellectual property and data rights are negotiable based on individual vendor solutions.
4. The RFS states (p.2, top of page) "After this solution is demonstrated, the Air Force intends to apply this software solution to currently fielded training systems employed to train air mobility and combat operators during scheduled software updates." Is this RFS asking for a deliverable capability or a prototype?
   a. This will be a prototype. A follow-on program could leverage what is learned in the prototype to integrate into currently fielded systems.
5. What is the expected display concept for output and user interface for the Sim instructor or training officer?
   a. Vendors are free to explore any user interface they deem best for flight training
6. What is the extent of the weather variability desired to vary scenario difficulty?
   a. In line with paragraph 3.2. Students should expect to encounter any weather scenario in the simulator they might reasonably encounter in real life.
7. Is the solution expected to enable a single sim instructor or training officer to control scenario difficulty for distributed simulator training?
   a. Reducing required instructors would be useful but is not a requirement.
8. Will the baseline training scenarios and boundaries of difficulty be provided by the government?
   a. The Government provided the scenarios in paragraph 3.1. Scenario boundaries will not be provided for the prototype, however the emphasis of the evaluation will be the unique, adaptive training model.
9. Do we assume simulator manufacturers will write APIs to convert data from the common solution for input to existing simulators?
   a. Yes, that is a valid assumption. The API's for the common solution will eventually be established through a separate existing effort.

10. Do we assume the ultimate solution will require encryption or use on classified networks?
    a. Not for Phase 1 or 2, but if the prototype were transitioned to a fielded system it would need to work on a classified network.
11. Is the prototype expected to deliver a common solution for both desktop simulators and fielded full sized weapon system simulators? Or is the deliverable prototype only meant to apply to desktop simulations?
    a. After the prototype is demonstrated, the Air Force intends to apply the software solution to currently fielded training systems. The prototype is only meant for the desktop simulation, but should consider the end goal of installing in a weapon system simulator.
12. In order to refine cost/pricing, what government provided standards, formats, software, hardware, or other materiel or non-materiel resources are available for use by the contractor during prototype development?
    a. The Government is not providing materiel or non-materiel resources for this demonstration.
13. Which government organization will be the primary Point of Contact and liaison during the prototype development process? Which government organization is the customer?
    a. Air Force Life Cycle Management Center, Simulators Division (AFLCMC/WNS)
14. Is the deliverable prototype software required to demonstrate variable scenarios for all training scenarios listed in the RFS? Or only one or two to demonstrate capability to vary scenarios? (Producing a prototype that specifically demonstrates each listed scenario is more costly and others can be added later for delivery.)
    a. The Government acknowledges this truth. While it is desired that prototype software be capable of each mission and variability, prototypes that vary only several of the missions will be considered.
15. Is the topic targeting fighter pilots? If so, are you interested in solutions for 4th generation or 5th generation fighters?
    a. The target is for all mobility and combat training aircraft across the USAF, to include 4th and 5th generation fighters.
16. The RFS mentions that the proposed solution should demonstrate capabilities to "Generate and modify training scenarios". Could you please clarify if the system is expected to automatically generate training scenarios? This is desired. Would the customer be interested in a system that provides an authoring tool for SMEs to generate scenario templates and then automatically tailors the template to an appropriate challenge level for each student? Yes.
17. There are several different ways to control the adaptation. One is where the system is provided with an assessment of student expertise ahead of time (e.g. instructor specified) and it configures scenario complexity accordingly. In

this case, once the scenario is configured, it does not adapt to student performance during the scenario. Or the system could be microadaptive where every interaction with the student in the scenario is an opportunity to assess their expertise and make adjustments accordingly. The latter is more challenging but more nuanced. In the middle of the spectrum is a system that automatically selects an appropriately challenging scenario for the student based on their prior performance (i.e. the system performs automated assessment and adaptive scenario sequencing) but does not adapt a scenario while it is in progress. Which end of this spectrum would be desirable to the customer?

   a. The Government is more interested in the microadaptive side of the spectrum.

18. Do you have a list of TReX members that we can refer to in order to find potential partners for teaming?

   a. Unfortunately this capability, while in the works, will likely not be "live" before the closing of this project.

19. What is the anticipated award amount for each phase?

   a. There is a certain amount of funding available to resource the Phase 1 efforts between the dLVC and FAST prototype projects and we are not releasing that information. Phase 2 will be determined on individual solutions.

20. What level of detail should be provided for the cost proposal?

   a. Cost data is not required to be submitted, rather pricing has been asked for as outlined within the RFS. If additional detail is needed, it will be asked for on a case-by-case basis.

21. The RFS requests 8 page technical proposal. Is there a desired format for the proposal? Do the 8-pages include team bios and cost proposal?

   a. There is no specified format provided your response meets the information spelled out in Section 5. Pricing data shall be submitted in a separate document (see paragraph 5.5). Team bios are not a requirement of the proposal and if submitted, would be included within the page count requirement.

22. Can you provide any guidance on specifically what material is expected in the 8 pages of the proposal, that would be great. I presume a technical description and statement of work; is that it?

   a. Details for the technical response are outlined in paragraphs 5.1 – 5.4 which does call for a technical description. Vendors are free to present that information in the method of their choice, with relevant charts and figures in appendices (paragraph 5.10) as appropriate.

23. Should we include key personnel, a description of related work, description of milestones, or any coverage of a management plan? Any guidance on what material, beyond a technical approach, should be included in the 8 pages would be much appreciated.

a. Key personnel is not necessary, but the other items mentioned could potentially be helpful depending on the individual response. Generally, details for the technical response are outlined in paragraphs 5.1 – 5.4. Vendors are free to present that information in the method of their choice, with relevant charts and figures in appendices (paragraph 5.10).

24. What is the simulation system that is targeted for this effort? What kind of communication framework does it use? Will we have access to that simulation from an early stage, and how much access?
   a. Phases 1 and 2 are for a standalone prototype. The future concept is to learn from the prototype and transition the technology into mobility and combat aircraft simulators.

25. Is the simulation able to run in an offline, headless mode for using a machine learning approach to scenario adaptation?
   a. Since the long term vision is to install on aircraft simulators that will not connect to unclassified networks, prototypes that do not require network connectivity are more representative. The Government is interested in any methods for adaptive training scenarios.

26. Regarding the capability areas, capability area 3 specifically (systems modeled), is the scope of this effort intended to provide system functionality in these areas for the simulation, or is it to rather have those systems included as aspects of the scenarios, so that the scenario sets various existing features in the simulation?
   a. The intent is to include those systems as aspects of the scenarios in 3.1.

27. Does the simulation have an existing AI engine for automated force entities that we are expected to use, or do you envision behavior modeling for adaptive automated forces as a part of what would make these scenarios adaptive?
   a. To clarify, the Government is not providing any software or equipment including models or AI engines. The Government is interested in any methods for adaptive training scenarios.

28. In generating behavior for automated forces, should we expect to have to generate low-level maneuvering, or does the simulation include those kinds of features?
   a. To clarify, the Government is not providing any software or equipment including models or AI engines. Additionally, the prototype will not use any classified information or be used for validation of tactics, techniques, and procedures (TTPs). While realism is nice, the correct usage of TTPs and maneuvers will not be evaluated for this prototype since the emphasis is on adaptive training techniques.

29. In determining how to adapt scenarios, one of the things we need to understand is how trainees are reacting to the current scenario/training. What sensors or data are available to drive this analysis? Is this just basic performance data, or is there other sensor information available (e.g.,

physiological data, stress level, etc.)? Are solutions expected to address a wide variety of sensor options?

    a. Vendors are free to use any inputs and sensors deemed useful to enhance training. The Government is interested in any methods for adaptive training scenarios. However, vendors should consider that the long term goal is to integrate into an aircraft training device (with security concerns), so elaborate sensors that would be difficult to integrate into an aircraft simulator could present additional risk.

30. What maturity level should the technologies performers are bringing be at currently? We believe that this is an unsolved problem, and while we have pieces that accomplish some aspects, we believe novel solutions are needed for other aspects – is that inclusion of novel solutions anticipated/expected?

    a. The inclusion of novel solutions is anticipated and expected. Certainly, a higher technology readiness level (TRL) is preferred, but the Government understands this phase of the program could have TRLs less than 6 (i.e., not demonstrated as a system in a relevant environment).

31. Can you provide any information about the scope/size of the anticipated effort in Phase 1 and Phase 2? Are you seeing this as relatively small (e.g., 1-2 full-time equivalents (FTE)s, more on the larger end (e.g., 5-7 FTEs), or somewhere in the middle?

    a. This will be up to the individual vendor and the complexity of the vendor's solution.