

**Frequently Asked Questions  
for  
FITT DARPA-BAA-10-05**

**As of 2/18/10**

**Q34: Is it possible to submit attachment via SIPR email instead of mailing it in?**

A34: No. Classified attachments must be submitted per the BAA instructions.

**Q33: I do not see any FAQ list at [http://www.darpa.mil/ipto/solicit/solicit\\_open.asp](http://www.darpa.mil/ipto/solicit/solicit_open.asp) -- is there another place that they are posted?**

A33: A FAQ list will be published at the referenced site.

**Q32: We are seeking clarification regarding the amendment posted on January 7th for FITT DARPA BAA 10-05. The amendment states that it is correcting a numbering error but there is no amended document posted. Is the intent of the amendment to assert that the original instructions, with no paragraph 2.7, are correct and that no change will be made?**

A32: Yes, the amendment identified a paragraph numbering error, but did not provide a revised document.

**Q31: It appears from the description of the seedling that the analyst constructed the tracks by viewing the raw imagery.**

**Were you able to estimate what were the most important factors behind the analyst ability to out-perform the auto-trackers by 100x, such as**

- maintaining order in the lane
- behavior at turns
- ID information (color, intensity, size)

A31: The analysts used their individual understanding of traffic flow such as simple context (road network) and simple rules (conservation of mass and momentum) as the core for the improvement.

**Q30: What will be the nature of the test data - simulation? test? real-life? what countries? Will it have real intel targets within traffic?**

A30: All evaluation data will be preprocessed sensor data. The locations are TBD.

**Q29: I note in the BAA that "all proprietary subcontractor proposal documentation be prepared at same level of detail as the prime.....; and shall be made Immediately available, upon request, under separate cover" .....Shall I wait until the Government requests the subcontractor proprietary proposal or have the Subcontractor send immediately upon my receipt of an assigned reference number?**

A29: Subcontractor proposal documentation should come with the prime's proposal, but proprietary info from a sub can come under separate cover, if need be. If the prime cannot submit non-proprietary subcontractor cost info and the

sub does not want the prime to have access to its proprietary info, the subcontractor can provide this information directly to the Contracting Officer via the BAA mailbox and reference the Prime's Technical POC.

**Q28: Will test data contain long-term tracking information about the observed area? (enough to build statistics of vehicle behaviors on each road segment)**

A28: The offeror's proposal will have to specify the level of data required and how the proposed concept will work with less information.

**Q27: Is tracking through stops desired?**

A27: Yes, the FITT goal is extended tracking in an urban environment in which stops are a given condition.

**Q26: Is average track length measured for all vehicles or only for certain vehicles of interest?**

A26: Both

**Q25: In the BAA p.18 section 2.18, it asks for participation strategy for classified effort. I understand the first part of what is being requested, but the "strategy" part is what is unclear to us.**

A25: The offeror's proposal should address their plan to manage the classified material, data, processing, and communications during the program execution.

**Q24: Traffic Data - We understand the sensor data format. I understood "urban traffic data" to be contextual/environment data, such as, nominal traffic flows, road network definition and constrains (e.g. no left turn). Is this type of data GFI or should we propose what we would use?**

A24: Proposals should describe what is needed to execute the program as proposed and describe the minimum needed to perform tracking in actual deployed operations.

**Q23: The BAA posits that traffic flow theory will help with detection to track association and thereby dramatically improve track life expectancy (TLE). What about track linking? Can the TLE objectives be met with a combination of improvements in detection to track association as well as improved track to track association? If track to track association is allowed, then there may be short track segments, but through the track association (lining) process they are combined together to create the long track.**

A23: As discussed in the BAA, the FITT program is interested in reconstructing the vehicle motion models in DoD tracking to better align with the flow-based approach to traffic motion. Track linking approaches without a restructuring of the kinematic motion models will not be considered responsive.

**Q22: Regarding computer resource utilization, the phase 1 constraints indicate no more that 20% increase in automated processing time. Is it really time or throughput (FLOPS)?**

A22: Proposals should provide reasoning as to how a solution set will run in real-time and batch processing modes on a typical sensor system processor.

**Q21: Given the recent weather events in the DC Metro area and the resulting disruptions, is DARPA considering an extension to the current 12:00 noon, 18 February initial closing of the FITT BAA?**

A21: The BAA has been amended to EXTEND the initial closing proposal due date from 12:00 noon (ET), 18 Feb 2010 to 12:00 noon (ET), 02 Mar 2010.

**Q20: On page 7 of the BAA it is stated: "The flight demonstration is anticipated to use a Doppler radar and a real-time implementation of the FITT algorithms however, the performers may provide a suitable replacement sensor and flight demonstration plan." For a Doppler radar, the cross-range resolution is insufficient to resolve individual cars. Therefore, if many cars are present in the cross-range direction, then they will not be resolved. This is going to create a problem for generating detections for individual vehicles. How is this problem going to be handled?**

A20: The data will be provided pre-processed into detections which can be fed directly into the BRAT and the offeror's FITT tracking architectures. The performance metrics are based on the relative performance of the two trackers vice the performance of the offeror's FITT tracker. This approach removes the issues described..

**Q19: During the Industry Day in November I believe there was mention of a classified addendum or appendix to the BAA that would become available. I have not seen or heard any mention of this since, is there or will there be additional classified information available? If so, how may it be obtained?**

A19: There is no classified addendum to the BAA. A DD254 and Security Classification Guide is available upon request. To receive this, email the information requested in the BAA on page 12.

**Q18: The BAA states that "The Government will provide urban traffic data to support the traffic flow theory and modeling task." Has any additional information concerning the type, content and format of this data become available? If so, how may it be obtained?**

A18: Data will be provided in a sensor agnostic format -- primarily detections in the ground plane. Data will be provided to the performer(s) after contract award. Proposals should describe any additional information that is critical to the offeror's development approach and how the offeror's system would work in the absence of such information.

**Q17: Can you provide more details on the types and quantities for GFE data that will be provided? Specifically, is the lab test data EO, RF or both (simultaneous) and what level of processing has been done to it (raw data, detections, etc). How much data will be provided (in addition to the portion to be benchmarked against BRAT) in order to train the FITT algorithms?**

A17: The data will be sensor agnostic and presented as processed detections. DARPA is expecting to provide ~2 hours of data with some ground truth. Additional ground truth will be withheld for phase 1 measurement testing.

**Q16: How will the resource management capabilities be tested? Will they be utilized in real time on the flight demo?**

A16: The resource management capabilities won't be tested and no work will be funded in this area. The offeror's proposal should describe how the offeror's approach supports sensor feedback/resource management.

**Q15: Please clarify how the increase in processing needs will be evaluated. Is it compared to the BRAT tracker on the same data set or an increase from a baseline tracker with additional flow based and information theoretic logic added?**

A15: The comparison is to the BRAT tracker on a similar processing system. NO work will occur in developing and testing real-time code, only that the code is implementable in real-time processing with minimal additional resource requirements. The proposal should state how the offeror's approach will be verified.

**Q14: Is the modeling of obscurants to predict track breaks within the scope of FITT or should broken tracks be spliced together to increase TLE?**

A14: The offeror's proposal can exploit the probability of obscuration. The offeror's proposal should detail how the predicted probability of obscuration will be used to increase TLE if this is the approach taken.

**Q13: Will road networks be provided as part of the GFE data sets?**

A13: The offeror's proposal should describe the minimum level of road network required to operate the offeror's concept as well as how the system will function with little or no road network information. **The proposal should request the minimum as GFE and/or include the information as part of the cost estimate.**

**Q12. In reviewing the BAA, the Technical Proposal section directions is missing Section 2.7. The directions go from 2.6 to 2.8 on pages 15-16 and do not include 2.7. Is this a paragraph numbering error or is there a Para. 2.7 missing?**

A12. This was a numbering oversight. Paragraph 2.7 does not exist. An amendment to the BAA corrects the error.

**Q11. What is/will be the policy on publications for this work? My understanding is that my school will not allow any restricted research to be conducted on campus.**

A11. The FITT program is being funded with 6.3 funding and, therefore, will have relevant publication review and approval requirements (see page 30 of the BAA).

**Q10. On page 11 of on industry day briefing, I didn't see the pressure (i.e. traffic pressure) term in the conservation of momentum equation. Was there a specific reason for the omission? In our experience, some models behave very badly without this term**

A10. The industry day briefing isn't comprehensive, just generally explanatory of what DARPA is looking for in proposed solutions. Pressure is certainly one of the fluid constraints effecting traffic flow.

**Q9. If automatic operation is expected, can the traffic flow model be constructed off-line from training data? Or is it expected that the model will be constructed adaptively and on-the-fly, from the same observed data-stream that is fed into the flow-based tracker?**

A9. The offeror's proposal should address how the offeror's proposed model will function in varying conditions. The expectation is that the tracker function in real-time when operationalized (the FITT program metric is that the tracker be implementable in real-time. DARPA will not be developing real-time operational software. It is not the goal of the program.) The offeror's tracker architecture should be sufficiently described to explain the operational concept.

**Q8. How much a priori information is the traffic flow model permitted to use? At the one extreme, persistent surveillance by (say) a Constant Hawk sensor would permit analysts to construct a priori information such as street maps, stop sign and stop light locations, etc. At the other extreme, the traffic flow model would have to automatically assemble this information from collected data. What are the ground rules?**

A8. The amount and type of a priori information required to run the offeror's tracker concept should be included in the offeror's proposal. Some parts of the world will have detailed information available immediately, some will not. Proposals should describe how solutions would accommodate these typical operational variances.

**Q7. Will the baseline MHT tracker be made available to program participants? If so, at their locations or only on-site at AFRL?**

A7. Performer(s) will receive the baseline kinematic MHT tracker (BRAT) software, technical description, user's manual, and support from AFRL upon contract award for use at the performer's facility.

**Q6. On the one hand, the RFP appears to state that both EO and RF measurements will take the form of "target detection reports" such as position and velocity. On the other hand, it states that measurements may also be 2-D image chips. Does this mean that preprocessing (e.g., feature extraction) of raw EO video (or raw GMTI signatures, for that matter) will be necessary? Or can we assume that, for purposes of comparison against the baseline MHT, measurements are detections and not images or RF signatures?**

A6. The evaluation data will be preprocessed into detection reports only.

**Q5. Must respondents address both sensor management and flow-based tracking, or can we address just tracking?**

A5. The program is about flow-based tracking. Sensor management shouldn't be precluded by the offeror's tracker architecture and offerors may identify advantages of the offeror's tracker architecture in increasing information content per sensor resources spent, but funding for sensor management tasks is not included in the current program.

**Q4. Must respondents address both EO and RF, or can we address just one?**

A4. DARPA will be providing evaluation data from both sensor types, but this will be transparent to the performer as all data will be preprocessed by the government to remove sensor specific artifacts.

**Q3. What sensors are to be addressed in the Phase I: EO only? RF only? Both EO and RF?**

A3. Both Phase 1 and Phase 2 are sensor agnostic. The FITT tracker will be compared to the BRAT tracker in terms of relative performance using detections only (see Phases 1 and 2 Milestone tables). There are no plans to use sensor specific information (color, Doppler, etc) under this program, but the offeror's design solution should not prohibit the use of features.

**Q2. Is it possible that we respond to your BAA only for the Technical Area Two: Flow-Based Tracking Algorithm Development?**

A2. DARPA is seeking complete solution sets and responsive proposals will address both Technical Areas. . If an offeror believes motion models exist with sufficient fidelity to meet the FITT objectives, then the offeror's proposal must substantiate this belief. A proposal that doesn't address the underlying motion models will not be considered responsive.

**Q1. Is there a preferred format and/or codec for the supplementary videos that are allowed?**

A1. DARPA's system currently supports the following codecs:

DivX  
XviD  
DivX, XviD - FFDSHOW  
MPEG2  
OGG Vorbis  
AC3