INSTRUCTIONS FOR DoD SERB EXPERIMENT PRESENTATIONS

Experiment Rating Criteria: The SERB will rate presented experiments according to:

Military Relevance - 60%
Quality of Experiment - 20%
Service Priority - 20%

Security: Presentations may be classified up to the SECRET classification. All charts and computer disks must be marked accordingly. Receipt and storage of classified material will be available at Peterson Air Force Base. All presentations will be given in a secured room, and the clearances of all attendees will be verified prior to classified briefings. Unclassified charts are highly preferable, even if the verbal presentation contains classified material.

Briefing Content: To help ensure the proper information is available to the SERB, and briefing time limitations are observed, **each presentation must include the following five charts as a minimum**. The information outlined below must be contained on five charts, requiring careful selection of the necessary information. **These five charts must be the first five charts briefed**. Additional charts may be presented only after the required five have been briefed, and only if there is remaining time in the 15-minute limit. Sample charts are included to illustrate the type of information that must be provided as well as the required format. Each chart should be clearly labeled with the experiment title, short title and experiment number.

Chart 1 Chart Title: **CONCEPT**

Chart Content

- Experiment objective
- Experiment description (including detailed performance parameters, measurement accuracy and sensor specification, etc.)
- Descriptive graphic of the experiment

Chart 2 Chart Title: **JUSTIFICATION**

Chart Content:

- Military relevance (Reference US Space Command's Long Range Plan, http://www.spacecom.mil/LRP/LRP-FactSheet.htm, and cite specific needs of military agencies. Include specific references to documented military requirements, i.e. document name/number, page number, paragraph title/number.)
  - Relevance to existing operational programs
  - Relevance to programs in engineering and development phase
  - Relevance to high priority R&D initiatives (ACTDs)
- Justification for spaceflight (discuss the need for space test as opposed to ground test and why the experiment requires spaceflight)
- Comparison to alternatives, collateral or complementary technology experiments (both inside and outside of DoD)

Chart 3 Chart Title: **DETAILED OVERVIEW**

Chart Content:

- Flight data (orbit requirements, size, mass, power requirements, number of flights requested, mission duration, and any other specific needs or details)
- Status (include hardware completion date and current experiment status)
- Priority (address current and past year Service and DoD SERB rankings)
- Requested STP Services (Include one or more of the following: launch services, launch integration, spacecraft development, data distribution, operations, spacecraft/experiment integration)
- Funding (Identify total cost, funding requirement by fiscal year, and actual funded amounts by fiscal year) – **NOTE** – Not to include funds associated with requested STP services.

Chart 4 Chart Title: **SUMMARY OF DATA APPLICATION**

This chart is intended to summarize the intended application(s) of the data gained from the spaceflight of the experiment. The example chart should be used as a template, and customized as needed. You may replace the underlined text with your own (or customize the wording, if necessary) as long as the four bullets below are addressed.

Chart Content:
The first bullet should specifically identify what system or model will use the data from this experiment, and by which organization(s).
The second bullet specifies how the warfighter or national decision maker will use the eventual system or model to be more effective.
The third bullet specifies when the reduced experiment data will be available.
The last bullet defines the category of the research as Basic Research, Applied Research, or Advanced Technology Demonstration.

Chart 5 Chart Title: **FLIGHT MODE SUITABILITY**

With the expansion of some Shuttle capabilities and the addition of the International Space Station as an option for flying SERB experiments, STP now has a wide range of flight modes available for SERB experiments. Each of these modes has both advantages and disadvantages. Therefore, it has become important for the experimenter to provide additional guidance on the value of the various flight modes.

The information contained on this chart will enable STP to better consider trades involving priority, cost, time to flight, and percentage of objectives accomplished. Obviously, priority and available funding play a key role in the ability to fly via any of the modes.

Chart Content:

- An estimate of the percentage of experiment objectives that can be accomplished via each of the defined flight modes
- Need for flight hardware retrieval and associated cost savings
- Capabilities and constraints for each flight mode are included below:

Definitions of Flight Modes:

Shuttle

- 28 to 57° inclination
- 300 to 460 km altitude circular (160-250 nm)
- 16 days maximum duration
- Use existing power/data bus services
- Time-to-Flight: 1.5–2.5 years
- Flight Hardware recoverable

Shuttle Deployable

- 28 to 57° inclination
- 300 to 460 km altitude circular (160-250 nm)
- 3–12+ months duration dependent upon orbit decay
- Dedicated power/data bus required
- Time-to-Flight: 2.5 years
- Flight Hardware potentially recoverable (e.g. Spartan)

Shuttle Deployable with Propulsion

- 28 to 57° inclination
- 300 to 600 km altitude circular (160-324 nm) or equivalent elliptical
- 12+ months duration
- Dedicated power/data bus required
- Time-to-Flight: 3 years
- Flight Hardware potentially recoverable (e.g. Spartan)

International Space Station

- 51.6° inclination
- 400 km altitude circular (215 nm)
- 12+ months duration
- Use existing power/data bus services
- Time-to-Flight: 2-3.5 years
- Flight Hardware recoverable

"Piggyback" Free-flyer on ELV

- TBD inclination (dependent upon host space vehicle)
- TBD altitude circular (dependent upon host)
- 12+ months duration
- Use existing power/data bus services
- Time-to-Flight: 5-7 years (dependent upon host launch schedule)

Dedicated Free-flyer on ELV

- Any inclination
- Any altitude
- 12+ months duration

- Dedicated power/data bus required
- Time-to-Flight: 2-7+ years

Briefing Length: The core time allotted to each presentation is 15 minutes. It is vital that each presenter adhere to this time limit to ensure the Board is able to view all pertinent information on all experiments.

Miscellaneous:

- Although the Board members receive a pre-meeting package containing each experiment's 1721-1 (STP Flight Request Executive Summary), presenters should brief all aspects of their experiment.
- Limit the number of acronyms, and spell out all that are used.