

## **PMRF SCENARIO PLANNER DESIRED ENHANCEMENTS (DRAFT 01)**

### **1. Scenario Set-up**

For each scenario, a map of the test area depicting the location of the following items is required.

1. Target launch point(s) and whole body/intact impact point(s)
2. Interceptor launch point(s) and whole body/intact impact point(s)
3. Location of radars and other firing unit (FU) elements
4. Location of intercept points
5. Target and Interceptor ground tracks from launch to intercept

Maps should also show coastlines, islands, other geographic features, and air routes (fixed and transient) in the test area. Maps must be annotated with latitude and longitude grids and show the distances between the FU elements. Notional diagrams are not acceptable and should be depicted by scenario planner.

### **2. Target Presentation**

For each target considered in each scenario, the following plots are required:

1. Altitude vs. Time
2. Downrange Distance vs. Time

The time at which PMRF's radars first detect the target showing the SNR on its approach to PMRF must be marked on each plot also include a Link Margin analysis. Plots should indicate the time of intercept and the minimum SNR required for detection and processing.

### **3. Data Collection**

For each scenario, PMRF must demonstrate their ability through the use of the scenario planner to satisfy the Interceptor and Target flight test data collection requirements.

PMRF scenario planner should be able to account for any mobile sensor or instrumentation platform that is deemed necessary.

In regards to telemetry, PMRF must provide a telemetry support plan and the ability of the scenario planner to develop this TM support plan, if possible should be considered. Parameters such as the availability of the necessary hardware, bandwidth limits of the narrowband and wideband receivers in each Receiver-Combiner (RC) combination, and the recording capability (data rates and recording time limits) of the telemetry data recorders are of interest. The telemetry support plan must also include a Link Margin analysis. Plots showing the SNR of the telemetry signal from the target and interceptor as a function of time are required. Plots should indicate the time of intercept and the minimum SNR required for detection and processing.

#### **4. Flight Safety**

PMRF scenario planner should provide a detailed description of their flight safety management plan to support requirements. The following items should be addressed and supported by scenario planner if possible:

1. Minimum acceptable data sources (radars, vehicle telemetry, etc.) for the safety solution
2. Instrumentation requirements for the target and interceptor
3. Flight termination criteria for the target and interceptor
4. Flight termination footprints for the target and interceptor
5. Frequency range of command destruct system
6. Use of mobile sensor platforms
7. Additional instrumentation investments required supporting range safety operations.

#### **5. Data Display**

PMRF scenario planner must depict how to support the data display requirements, In addition to trajectory displays of the interceptor(s) and target(s), PMRF scenario planner should also depict how to support the real-time health/status data display requirements of the interceptor(s) and target(s).

#### **6. Debris Containment**

Post-intercept debris footprints for each scenario are required. Debris footprints (post-intercept and early flight termination) are required to pose minimal risks to population, ground assets, air traffic, and sea traffic. Debris footprints are to be calculated in accordance with the safety groundrules provided by PMRF Flight/Range Safety personnel. For each scenario, target and interceptor debris footprints must consider an annually representative set of winds for the timeframe considered for a particular operation. Use of mean annual winds in lieu of timeframe representative winds should not be used.