Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 1	**1 Introduction** In this document, the Scenario Planner user requirements are organized into the following categories: Input, Processing, Display, Communications, and Output. Each user requirement is mapped to its source: "*PMRF – Use Cases*" and/or "*PMRF – Matthews – e-mail 12-4-00*." A separate column is provided for each of these documents. To locate the source of user requirement R-322 (in this document), for example, refer to the "*PMRF – Use Cases*" document and locate Object ID 433.		
R - 2	**2 Input Requirements**		
R - 322	The user shall be able to load NIMA data from NIMA source media.	433	
R - 346	The user shall be able to import a high fidelity model of telemetry effective radiated power vs attitude.	443	
R - 272	The user shall be able to load target launch points (GOG files) within the mapped test area location.	434	
R - 273	The user shall be able to load the whole body/intact impact points of the target (GOG files) within the mapped test area location	434	
R - 274	The user shall be able to load the interceptor launch points (GOG files) within the mapped test area location.	435	
R - 275	The user shall be able to load the whole body/intact interceptor impact points within the mapped test area location.	435	
R - 276	The user shall be able to load the location of radars (to include fixed and mobile platforms) within the mapped test area location by hooking an icon and getting amplified information.	436	
R - 277	The user shall be able to load the location of Firing Unit elements within the mapped test area location.	436	
R - 278	The user shall be able to load the location of intercept points (to include altitude, latitude, longitude) within the mapped test area location.	437	
R - 279	The user shall be able to load the target ground tracks from launch to intercept within the mapped test area location.	438	
R - 280	The user shall be able to load the interceptor ground tracks from launch to intercept within the mapped test area location.	438	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 281	The user shall be able to load the location of each air aux sensor participant (to include altitude, latitude, longitude) within the mapped test area location.	452	
R - 282	The user shall be able to load the location of each surface aux sensor participant within the mapped test area location.	452	
R - 247	The user shall be able to manually enter the test objectives of the mission.	261	
R - 365	The user shall be able to input single nominal trajectories for a given launch vehicle where trajectory coordinate frame should be standard (WGS-84 ECI with epoch at t=0, ECEF or geodetic) and include time, position, velocity acceleration and three-dimensional body orientation (Euler angles or direction cosine matrix).		5
R - 366	The user shall be able to input multiple off-nominal (-100) trajectories for a given launch vehicle where trajectory coordinate frame should be standard (WGS-84 ECI with epoch at t=0, ECEF or geodetic) and include time, position, velocity acceleration, and three-dimensional body orientation (Euler angles or direction cosine matrix).		5
R - 367	The user shall be able to load aircraft flight paths (and orientation where available) from a text file.		6
R - 368	The user shall be able to manually input all participant locations as paths or fixed points.		6
R - 369	The user shall be able to input a basic launch window closure table from a text file (e.g., satellite collision avoidance (COLA) launch window closure table)		31
R - 370	The user shall be able to manually enter solar orbital element sets.		33
R - 371	The user shall be able to manually enter lunar orbital element sets.		33
R - 372	The user shall be able to manually enter launch window closure criteria for various sensors (e.g., sun or moon exclusion angles, no radiation into geosynchronous belt, etc.)		34
R - 14	The user shall be able to import hazard patterns within a scenario.	9	
R - 15	The user shall be able to assign sensors (to include timing and tracking responsibility) within a scenario.	9	
R - 16	The user shall be able to define Operational Areas within a scenario as GOG files for tankers, orbits, shooters, etc.	9	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 19	The user shall be able to install a runtime version of the Scenario Planner from a CD with minimal instruction on specified hardware.	4	
R - 20	The user shall be able to initiate a scenario plan.	6	
R - 21	The user shall be able to incorporate inputs from their weapons' customers	6	
R - 54	The user shall be able to import nominal target trajectories.	20	
R - 55	The user shall be able to import nominal missile trajectories.	20	
R - 56	The user shall be able to import monte carlo target trajectories.	20	
R - 57	The user shall be able to import monte carlo missile trajectories.	350	
R - 68	The user shall be able to input generic footprint patterns (GOG files) with labels in planned scenarios.	454	
R - 77	The user shall be able to import IR signatures.	360	
R - 334	The user shall be able to set a classification banner.	360	
R - 78	The user shall be able to import RF signatures.	360	
R - 92	The user shall be able to manually enter solar criteria (date, time, boresight angle, interval) for the purpose of calculating a launch window.	361	
R - 93	The user shall be able to manually enter luner criteria (date, time, boresight angle, interval) for the purpose of calculating a launch window.	361	
R - 102	The user shall be able to import emitter data, as applicable, to include frequency range, primary mission frequency, back-up mission frequency, function, transmitter power, peak/average, pulse width, PRF.	365	
R - 103	The user shall be able to manually enter emitter data to include frequency range, primary mission frequency, back-up mission frequency, function, transmitter power, peak/average, pulse width, PR.	365	
R - 104	The user shall be able to import COLA window closures.	368	
R - 150	The user shall be able to enter a timeline for the plan.	101	
R - 156	The user shall be able to identify the Operation's participants.	103	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 157	The user shall be able to position the Operation participants (i.e., put a participant at a particular latitude/longitude).	103	
R - 176	The user shall be able to input Target Support Position (TSP) for all the Aux Sensors	136	
R - 180	The user shall be able to import a unique checklist for Aux sensors for each mission	141	
R - 195	The user shall be able to manually enter a Scenario Plan from APL	379	
R - 198	The user shall be able to create the TBM Model used with the Scenario Planner. (Generated outside of the Planner.)	383	
R - 235	The user shall be able to output raw data from the ITCS/MAGICC tracking systems.	223	
R - 251	The user shall be able to import PMS-451 decision aid tool output.	264	
R - 252	The user shall be able to receive inputs from the PMRF Range.	265	
R - 266	The user shall be able to link to the Op clock.	420	
R - 269	The user shall be able to import a PFPS route for various support aircraft such as the SRALT C-130's flight path.		
R - 309	The user shall be able to manually enter hardware parameters within the TM support plan.	443	
R - 398	The user shall be able to manually enter data to generate a go/no-go table.	443	
R - 342	The user shall be able to import data to generate a go/no-go table.	443	
R - 310	The user shall be able to manually enter bandwidth limits of the narrowband receivers in each Receiver-Combiner (RC) combination within TM support plan.	443	
R - 311	The user shall be able to manually enter bandwidth limits of the wideband receivers in each Receiver-Combiner (RC) combination within TM support plan.	443	
R - 312	The user shall be able to manually enter recording capability data rates of the data recorders area of interest within the TM support plan.	443	
R - 313	The user shall be able to manually enter recording capability recording time limits of the data recorders area of interest within the TM support plan.	443	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 315	The user shall be able to manually enter time of intercept required for detection within the plot for the TM support plan.	443	
R - 317	The user shall be able to manually enter minimum SNR required for detection within the plot for the TM support plan.	443	
R - 318	The user shall be able to manually enter minimum SNR required for processing within the plot for the TM support plan.	443	
R - 3	**3 Processing Requirements**		
R - 339	The user shall be able to identify ID, lat/long and status as a user-defined event (e.g., in or out of the box).		
R - 336	The user shall be able to save generic emitter data to be used for other missions	365	
R - 338	The user shall be able to compute real time events (e.g., time to specified altitude, time to apogee altitude, impact point).	101	
R - 340	The user shall be able to generate a go/no-go table from manually entered data.	443	
R - 343	The user shall be able to generate a go/no-go table from imported data.	443	
R - 316	The user shall be able to manually enter time of intercept required for processing within the plot for the TM support plan.	443	
R - 359	The user shall be able to generate generic "X,Y" plots from readily accessible track data, specifying fixed scales and increments.	441	
R - 362	The user shall be able to copy plots from the Scenario Planner for pasting into PowerPoint slides.	8	
R - 363	The user shall be able to paste copied plots from the Scenario Planner into PowerPoint slides.	8	
R - 382	The user shall be able to write aircraft flight paths (and orientation where available) from a text file.		6
R - 383	The user shall be able to compare parameters from various participants.		7
R - 384	The user shall be able to tag one (1) or more vehicles and participants and flip the scenario about a vertical plane.		15

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 385	The user shall be able to attach IR sensors to participants and define azimuth limits, elevation limits, or boresight and half-angle.		16
R - 386	The user shall be able to attach visual sensors to participants and define azimuth limits, elevation limits, or boresight and half-angle.		16
R - 387	The user shall be able to attach RF sensors to participants and define azimuth limits, elevation limits, or boresight and half-angle.		16
R - 388	The user shall be able to calculate tracking parameters for given participants and targets including: slant range, horizon angle, elevation angel, azimuth angle, aspect angle and roll angle as a function of time.		17
R - 389	The user shall be able to calculate estimated target RF and IR signatures as a function of time for a given sensor		19
R - 390	The user shall be able to calculate polarization angle and interpolate RCS tables to plot RCS vs. time for various sensors, given percentile and RF band.		26
R - 391	The user shall be able to interpolate IR tables and plot IR vs. time for various sensors given the waveband.		27
R - 392	The user shall be able to conduct launch window planning.		29
R - 393	The user shall be able to conduct rudimentary link margin analysis.		38
R - 175	The user shall be able to generate and process, in standalone, INET data in messages 25 and 26 (from an ASCII file)	428	
R - 90	The user shall be able to calculate solar data.	361	
R - 91	The user shall be able to calculate lunar data.	361	
R - 36	The user shall be able to set the accuracy of trajectory readings (e.g., by selecting higher level fidelity vs. nominal that is shown in the top down view) prior to Mission Operations.	12	
R - 42	The user shall be able to store a read-only configuration-managed version of the baselined scenario.	432	
R - 43	The user shall be able to access the baselined version of the scenario with no threat of overwriting that scenario.	432	
R - 45	The user shall be able to develop the scenario missile trajectory within the tool.	349	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 46	The user shall be able to develop the target trajectory within the tool.	349	
R - 47	The user shall be able to maintain configuration control of scenarios.	432	
R - 49	The user shall be able to save a working copy of an original baselined scenario under a name different than the baselined scenario name.	432	
R - 50	The user shall be able to modify a working copy of an original baselined scenario.	432	
R - 51	The user shall be prevented from overwriting original baselined scenarios.	432	
R - 52	The user shall be able to analyze radar tracking using link margin, sensor coverage, and tradeoffs if there are gaps.	431	
R - 58	The user shall be able to translate missile trajectory, target, and ship auxiliary as a unit.	453	
R - 59	The user shall be able to rotate the missile trajectory, target, and ship auxiliary as a unit.	453	
R - 62	The user shall be able to maintain Configuration Management (CM) control of the target trajectories.	352	
R - 63	The user shall be able to maintain CM control of missile trajectories.	352	
R - 64	The user shall be able to maintain CM control of Auxiliary Sensors – TSPS footprints received from outside the lab.	352	
R - 66	The user shall be able to develop a missile trajectory.	353	
R - 79	The user shall be able to perform launch window planning.	361	
R - 94	The user shall be able to analyze radar-tracking parameters (e.g., time, position, velocity, acceleration, 3-D body orientation) for AST-to-Target launches.	362	
R - 95	The user shall be able to analyze radar-tracking parameters (e.g., time, position, velocity, acceleration, 3-D body orientation) for missile-to-target launches.	362	
R - 96	The user shall have access to all aspects of tracking during analysis to include roll angle.	362	
R - 97	The user shall be able to save to a file in table format the tracking parameters for given participants and targets including: slant range, horizon angle, elevation angel, azimuth	363	17

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
	angle, aspect angle and roll angle as a function of time.		
R - 98	The user shall be able to calculate estimated slant range vs. time during tracking parameter calculations.	363	
R - 99	The user shall be able to calculate Radar Cross Section (RCS) data vs. time during tracking parameter calculations..	363	
R - 100	The user shall be able to calculate IR history during tracking parameter calculations.	363	
R - 101	The user shall be able to calculate link margins during tracking parameter calculations.	363	
R - 108	The user shall have access to Global Positioning Satellite (GPS) location to be used in launch window planning	366	
R - 109	The user shall be able to determine where RF emission may interfere with satellites.	366	
R - 110	The user shall be able to analyze link margins.	367	
R - 111	The user shall be able to use WGS-84 formatted data.	367	
R - 115	The user shall be able to access downloaded solar data, lunar data, and COLA results in a single window.	368	
R - 117	The user shall be able to rotate scenarios.	371	
R - 118	The user shall be able to translate scenarios.	371	
R - 119	The user shall be able to add the TSPs at the nominal trajectory	371	
R - 120	The user shall be able to change the time at a waypoint for a vehicle within a scenario.	371	
R - 122	The user shall be able to monitor targets real-time.	46	
R - 123	The user shall be able to monitor radars real-time, via a radar status display..	46	
R - 124	The user shall be able to compare radar “on target” delta azimuth and delta elevation for all sensors vs. chosen source.	46	
R - 128	The user shall be able to verify the instrumentation, via a decision aid that provides an indication when a set constraint is not met.	50	
R - 130	The user shall be able to monitor the nominal scenario vs. actuals for all key participants during real time operations.	72	
R - 135	The user shall be able to monitor time on target from first	74	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
	detection including SNR and link margin, including predicted intercept for one (1) to many participants.		
R - 151	The user shall be able to synchronize vehicle patterns.	101	
R - 154	The user shall be provided a sensor assignment timeline graph.	102	
R - 158	The user shall be able to enter the vehicle types.	104	
R - 159	The user shall be able to enter the vehicle characteristics to include maximum/minimum velocity, turn rate, climb rate and launch rate, RCS, head-on and side aspect.	104	
R - 162	The user shall have access to three-dimensional graphically formatted profiles.	106	
R - 163	The user shall be able to synchronize the countdown to the mission time, via a message interface to the INET.	107	
R - 164	The user shall be able to play back the mission from an operator-selectable start time.	107	
R - 165	The user shall be able to record real time the trajectory information.	108	
R - 166	The user shall be able to iterate the scenario start.	109	
R - 167	The user shall be able to iterate the scenario re-start.	109	
R - 169	The user shall be able to modify and play back a modified scenario from an operator-selectable time.	109	
R - 170	The user shall be able to plan functions in a standalone mode on a laptop personal computer.	427	
R - 171	The user shall be able to rehearse in a standalone mode on a personal computer.	427	
R - 172	The user shall be able to run an INET simulator such that it is possible to run in a standalone mode.	428	
R - 173	The user shall be able to run an INET simulator such that it is possible to view simulated messages when running in standalone mode.	428	
R - 174	The user shall be able to run the INET SIM demon to kick off the simulator.	428	
R - 179	The user shall be able to run through the Aux Sensor checklist in simulation mode verifying all systems go at the various time checks up to weapon launch.	145	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 185	The user shall be able to modify the Aux Sensor checklist.	145	
R - 187	The user shall be able to incorporate status updates with all OPS participants, keeping them on time.	146	
R - 188	The user shall be able to coordinate development of the Flight Test Plan (FTP) with the Aux Sensors.	147	
R - 206	The user shall be able to add in the BQMs, ships and other vehicles to the scenario.	425	
R - 211	The user shall be able to add range sensors, or any other sensors.	389	
R - 213	The user shall be able to make telemetry assignments	390	
R - 214	The user shall be able to make surveillance assignments	391	
R - 215	The user shall have a decision aid matrix.	401	
R - 216	The user shall be able to automatically run scripts to check Scenario Planner configuration and status.	392	
R - 218	The user shall be able to play back the scenario in a preview mode.	394	
R - 228	The user shall be able to add detailed specifications to targets	209	
R - 229	The user shall be able to produce time marks.	210	
R - 230	The user shall be able to generate the manually controlled aerial targets profile using the scenario planner.	211	
R - 232	The user shall be able to generate a Generalized Overlay Generator (GOG) file of the target flight path.	213	
R - 242	The user shall be able to create down range and cross range plots for all participant vehicles.	242	
R - 243	The user shall be able to synchronize multiple targets, showing the position/time relationship between them for use with manned targets.	243	
R - 253	The user shall be able to perform analysis of the real time scenario mission (i.e., Go/No-go)	268	
R - 254	The user shall be able to perform critical risk analysis real time.	269	
R - 255	The user shall be able to identify options real time: (a) mitigation planning; (b) risk planning; (c) contingency planning; (d) rehearsal phase.	269	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 267	The user shall be able to produce a generic "X,Y" plot from readily accessible track data.	422	
R - 268	The user shall be able to link from real time to Op time to be able to time sync vehicle movement and departure times for T-0.		
R - 293	The user shall be able to develop a Telemetry (TM) Support Plan provided by PMRF.	443	
R - 320	The user shall be able to access a three-dimensional perspective view of planned vs. actual trajectories for the purpose of evaluating the deltas.	12	
R - 4	**4 Display Requirements**		
R - 270	The user shall be able to view a map of the test area to include the display of NIMA products (e.g., charts and DTED) and World Vector Shoreline (WVS).	433	
R - 323	The user shall be able to view target launch points (GOG files) within the mapped test area location.	434	
R - 324	The user shall be able to view the whole body/intact impact points of the target (GOG files) within the mapped test area location	434	
R - 325	The user shall be able to view the interceptor launch points (GOG files) within the mapped test area location.	435	
R - 326	The user shall be able to view the whole body/intact interceptor impact points within the mapped test area location.	435	
R - 327	The user shall be able to view the location of radars (to include fixed and mobile platforms) within the mapped test area location by hooking an icon and getting amplified information.	436	
R - 328	The user shall be able to view the location of Firing Unit elements within the mapped test area location.	436	
R - 329	The user shall be able to view the location of intercept points (to include altitude, longitude, latitude) within the mapped test area location.	437	
R - 330	The user shall be able to view the target ground tracks from launch to intercept within the mapped test area location.	438	
R - 331	The user shall be able to view the interceptor ground tracks from launch to intercept within the mapped test area location.	438	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 332	The user shall be able to view the location of each air aux sensor participant (to include altitude, latitude, longitude) within the mapped test area location.	452	
R - 333	The user shall be able to view the location of each surface aux sensor participant within the mapped test area location.	452	
R - 335	The user shall be able to display a classification banner.	360	
R - 341	The user shall be able to display a go/no-go table generated from manually entered data.	443	
R - 344	The user shall be able to display a go/no-go table generated from imported data.	443	
R - 314	The user shall be able to display plots showing the SNR of the telemetry signal from the target and interceptor as a function of time.	443	
R - 347	The user shall be able to display the tracking parameters.	363	
R - 349	The user shall be able to display slant range vs. time in table and graphic format.	363	
R - 351	The user shall be able to display Radar Cross Section (RCS) data vs. time.	363	
R - 353	The user shall be able to display IR history during tracking parameter calculations.	363	
R - 355	The user shall be able to display link margins during tracking parameter calculations.	363	
R - 357	The user shall be able to display the test objectives of the mission.	261	
R - 360	The user shall be able to display generic "X,Y" plots from readily accessible track data, specifying fixed scales and increments.	441	
R - 364	All test participants shall be able to view the Mission Checklist.	154	
R - 394	The user shall be able to view multiple Radar Cross Section (RCS) tables as a function of target aspect and roll angle, and polarization for a given target at a given RF band and a given percentile for each target.		21
R - 395	The user shall be able to view IR signature tables as a function of altitude and aspect angle for different wavebands.		22

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 396	The user shall be able to display PMS-451 decision aid tool output.	264	
R - 86	The user shall be able to view solar data for user input date and time.	361	
R - 87	The user shall be able to view lunar data for user input date and time.	361	
R - 116	The user shall be able to display COLA window closures.	368	
R - 126	The user shall be able to graphically view a plot of the sidelobe vs. main beam radar tracks.	46	
R - 137	The user shall be provided a visual warning of any deviations to nominal outside set criteria limits to the plan.	76	
R - 139	The user shall be provided with a visual warning of any deviations to nominal outside set criteria limits with plan modifications.	76	
R - 140	The user shall be able to play back the nominal track in real time.	78	
R - 141	The user shall be able to play the simulation real time.	79	
R - 142	The user shall be able to watch the nominal.	79	
R - 186	The user shall be able to display the Aux Sensor checklist.	145	
R - 207	The user shall be able to display graphically and in tabular format launch times and Initial Point (IP) times of all launches based on input T-0 time.	425	
R - 208	The user shall be able to display the overlays.	425	
R - 283	The user shall be able to view user-specified coastlines in GOG and World Vector Shoreline (WVS) formats within the mapped test area location.	439	
R - 284	The user shall be able to view user-specified Hawaiian Islands chain in GOG and World Vector Shoreline within the mapped test area location.	439	
R - 285	The user shall be able to view user-specified geographic features within the mapped test area location.	439	
R - 286	The user shall be able to view user-specified fixed air routes within the mapped test area location.	439	
R - 287	The user shall be able to view user-specified transient air routes within the mapped test area location.	439	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 288	The user shall be able to view latitude/longitude grid annotations within the mapped test area location.	439	
R - 290	The user shall be able to view the distances between the Firing Unit elements within the mapped test area location.	439	
R - 291	The user shall be able to plot Altitude vs. Time of planned and actual trajectories for each target within each scenario.	441	
R - 292	The user shall be able to plot the down-range Distance vs. Time of each target within each scenario.	442	
R - 295	The user shall be able to view, in tabular format with color codes, the minimum acceptable data sources for the safety solution to include radars and vehicle telemetry.	445	
R - 296	The user shall be able to view instrumentation requirements in tabular format for the target within each scenario.	446	
R - 297	The user shall be able to view instrumentation requirements for the interceptor within each scenario.	446	
R - 298	The user shall be able to view flight termination criteria in tabular format for the target within each scenario.	447	
R - 299	The user shall be able to view flight termination criteria for the intercept or within each scenario as GOG files.	447	
R - 300	The user shall be able to view flight boundaries and associated hazard debris footprints for the target within each scenario.	448	
R - 301	The user shall be able to view flight termination boundaries and associated hazard debris footprints for the interceptor within each scenario.	448	
R - 302	The user shall be able to view the frequency range of command-destruct system within each scenario in tabular format.	449	
R - 304	The user shall be able to view Test Support Positions (TSPs) for each mobile air aux sensor participant within each scenario.	450	
R - 305	The user shall be able to view TSPs for each mobile surface aux sensor participant within each scenario.	450	
R - 306	The user shall be able to view vehicle vs. maximum range, in tabular or graphical format, coverage within each scenario.	450	
R - 361	The user shall be able to determine blockages using shadow graphs.	450	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 307	The user shall be able to view times of detection in tabular or graphical format within each scenario.	450	
R - 308	The user shall be able to identify additional instrumentation required supporting range safety operations within each scenario.	451	
R - 319	The user shall be able to monitor actual trajectories vs. planned trajectories during real-time operations.	11	
R - 5	**5 Communications Requirements**		
R - 112	The user shall be able to download current GPS data elements via INET through message 25 to be used in launch window calculation.	368	
R - 113	The user shall be able to download screen Kinetic Warhead (KW) solar exclusion satellite Collision Avoidance (COLA) results.	368	
R - 114	The user shall be able to download screen KW lunar exclusion satellite Collision Avoidance (COLA) results.	368	
R - 6	**6 Output Requirements**		
R - 337	The user will be able to output a report/graph showing emitters and their operating frequencies	365	
R - 345	The user shall be able to output plots showing signal-to-noise ratio (SNR) to the printer	443	
R - 348	The user shall be able to print the tracking parameters in table format.	363	
R - 350	The user shall be able to print and plot slant range vs. time in table and graphic format	363	
R - 352	The user shall be able to print and plot RCS data vs. time in table and graphic format.	363	
R - 354	The user shall be able to print IR history during tracking parameter calculations.	363	
R - 356	The user shall be able to print link margins during tracking parameter calculations.	363	
R - 358	The user shall be able to output data from the Scenario Planner to a file format that will allow easy import to MS Powerpoint.		

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 373	The user shall be able to output single nominal trajectories for a given launch vehicle where trajectory coordinate frame should be standard (WGS-84 ECI with epoch at t=0, ECEF or geodetic) and include time, position, velocity acceleration and 3-dimensional body orientation (Euler angles or direction cosine matrix).		5
R - 374	The user shall be able to output multiple off-nominal (-100) trajectories for a given launch vehicle where trajectory coordinate frame should be standard (WGS-84 ECI with epoch at t=0, ECEF or geodetic) and include time, position, velocity acceleration and three-dimensional body orientation (Euler angles or direction cosine matrix).		5
R - 375	The user shall be able to plot the tracking parameters for given participants and targets including: slant range, horizon angle, elevation angel, azimuth angle, aspect angle and roll angle as a function of time.		17
R - 376	The user shall be able to print multiple Radar Cross Section (RCS) tables as a function of target aspect and roll angle, and polarization for a given target at a given RF band and a given percentile for each target.		21
R - 377	The user shall be able to print IR signature tables as a function of altitude and aspect angle for different wavebands.		22
R - 378	The user shall be able to print signature vs. time reports for a given participant.		23
R - 379	The user shall be able to output an overall launch window closure table for a given time span on a given day.		32
R - 380	The user shall be able to plot all window closures for various criteria.		37
R - 381	The user shall be able to plot an overall launch window for a given day (primary or backup launch day).		37
R - 41	The user shall be able to export quick-look reports into MS Power Point.	347	
R - 7	The user shall be able to generate scenario files that can be transferred to other SP systems in binary format.	7	
R - 10	The user shall be able to export scenario files in generic text format.	8	
R - 11	The user shall be able to export scenario files with format to be determined.	8	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 12	The user shall be able to post scenario files to the web in a format to be determined.	8	
R - 38	The user shall be able to output a three-dimensional perspective view of planned vs. actual trajectories in viewgraph format for the purposes of evaluating the models.	347	
R - 69	The user shall be able to output generic footprint patterns (GOG files) with labels in planned scenarios.	358	
R - 80	The user shall be able to export estimated IR signature history.	360	
R - 81	The user shall be able to export estimated RF signature.	360	
R - 83	The user shall be able to print a Sensor ID/Vehicle ID form.	56	
R - 84	The user shall be able to print a manually entered summary of the Operation.	57	
R - 85	The user shall be able to print out collected track data from the operation as specified by the user.	58	
R - 129	The user shall be able to print an SRR report identifying the equipment used during the operation.	59	
R - 143	The user shall be able to generate real time data products.	84	
R - 144	The user shall be able to access records of real time occurrences.	85	
R - 145	The user shall be able to generate alternate scenario plan definitions at a time T+ x, where x is a user-defined number.	86	
R - 146	The user shall be able to generate approved missions that transition from working plans into certified plans.	88	
R - 147	The user shall be able to collect data from the Operation.	90	
R - 148	The user shall be able to post collected Operations data.	90	
R - 155	The user shall be able to output the sensor assignment timeline graph as a file.	102	
R - 189	The user shall provide data to prepare a report to document lessons learned.	148	
R - 190	The user shall provide data to support the following events, to include sensor acquistion and tracking: Mission Control Panel (MCP) -> Mission Readiness Review -> Mission Rehearsal -> Flight test -> 60-day review.	149	
R - 191	The user shall be able to print a Mission Checklist.	154	

Object ID	User Requirements for the PMRF Scenario Planner	PMRF - Use Cases	PMRF - Matthews - e-mail 12-4-00
R - 192	The user shall be able to output a Lessons Learned Report.	155	
R - 209	The user shall be able to print a timeline document as a graph or table.	387	
R - 220	The user shall be able to output to a file Vehicle reports, describing selected vehicle location vs. time, in ASCII text format.	399	
R - 221	The user shall be able to output to an ASCII file Waypoint reports containing time and performance.	400	
R - 231	The user shall be able to transfer data to a Microsoft Excel spreadsheet.	212	
R - 233	The user shall be able to output the Mission Profile.	221	
R - 234	The user shall be able to create or save Generalized Overlay Generator (GOG) in Microsoft Excel spreadsheet format and strip out extraneous data.	222	
R - 245	The user shall be able to produce a target performance report	250	
R - 257	The user shall receive on screen notification as oart if a decision aid. (Preferred MO)	273	
R - 264	The user shall be able to output a vehicle ID table.	333	
R - 265	The user shall be able to output a Sensor ID table.	334	
R - 321	The user shall be able to output a three-dimensional perspective view of planned vs. actual trajectories in viewgraph format for the purposes of evaluating the models.	12	