

PREDICTION SYSTEMS, INC.
PREDICTION AND CONTROL SYSTEM ENGINEERS
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Prediction Systems, Inc. (PSI) has been in the modeling and simulation business since its inception in 1974. It has built models and simulations for the DoD since 1982 starting with fast Line-Of-Sight (LOS) and sensor models for the TACTical SIMulator (TACSIM). This was followed by development of models for all of the Army's communication systems and those used by the NATO countries. PSI built simulations of MSE, SINCGARS, EPLRS, JTIDS/LINK-16, MIL SATCOM, and many others for the prime contractors as well as the Navy, Air Force and Joint Services Commands. These were used in large scale simulations such as FAAD and AFATDS, including models of hundreds of airborne platforms, sensors, missiles, C2 systems, etc. These models were also used to develop and evaluate standards, and interfaced with the actual hardware. Many new models have been added each year to other large scale simulations, and incorporated into tools for mission planning for the Air Force, e.g., for SIGINT collections, and included the IADS and other systems for neutralizing the red IADS. PSI has performed well over 100 modeling, simulation, and planning tool projects for its DoD clients over the years.

PSI is the developer of TEL-SCOPE for the National Air & Space Intelligence Center (NASIC), and of the Joint Airborne Network Control (JANC) system for AFRL, the GCIC, and Air Combat Command. The first version of TEL-SCOPE was delivered to operational users in 2003. It has evolved based upon feedback from critical out-of-country operations in over 100 user sites world-wide as well as the IWPC. JANC, which started as an SBIR program, is on a similar path, having participated in JEFX 08 and 09. A subset of JANC is currently being used to support operations in Afghanistan.

PSI has produced a huge inventory of high fidelity models that have been tested against operational systems. These models have been used for test planning and prediction, and have proven extremely accurate compared to counterparts from other sources. PSI simulations are also known for their run-time speed when used in large scale scenarios, often being 10 to 100 times faster than the competition. Highly detailed 3D graphical interfaces allow users to interact with running simulations, changing scenarios and equipment parameters on-the-fly.

PSI's simulation and planning tool architectures contain platforms that include space, airborne, ground and naval surface vehicles as well as fixed stations. Platforms contain models of C2 systems, host computers, sensors, weapons, and communications equipment that interface to electro-magnetic environments, with missiles, bombs, etc., on separate platforms. C2 models support complex mission threads that initiate message strings, and messages can initiate mission threads. This minimizes scripting so that complex scenarios can be developed fast and unfold based upon realistic events, e.g., target sightings, C2 assignments, damage assessments, etc.

These facilities have been refined over many projects, including huge JANC scenarios, a Weapons Data Link (WDL) analysis, and currently an analysis of the Network Enabled Weapons (NEW) system. These simulations contain many closed loop control systems, from sensors to C2 systems to weapon systems, and from mission initiation to getting pictures off weapons and back to C2 centers. PSI has been moving its large simulations and planning tools to its new graphical Globe interface, where satellites and large Mid-East scenarios are viewed with ease.

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