Space Weather System-Impact Products for the SSA Environmental Effects Fusion System (SEEFS)

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Abstract:
The Space Vehicles Directorate of the Air Force Research Laboratory (AFRL/RVBX) and the Space Environment Division of the Space and Missile Systems Center (SMC SYAG/SED) have combined efforts to design, develop, test, implement, and validate numerical and graphical products for Air Force Space Command's (AFSPC) Space Situational Awareness Environmental Effects Fusion System (SEEFS). These products are generated to analyze, specify, and forecast the effects of the near-earth space environment on Department of Defense weapons, navigation, communications, and surveillance systems. Jointly developed projects that have been completed as prototypes and are undergoing development for real-time operations include a SEEFS architecture and database, five system-impact products, and a high-level decision aid product.

This first round of SEEFS products includes the Solar Radio Burst Effects (SoRBE) on radar and satellite communications, Radar Auroral Clutter (RAC), Scintillation Effects on radar and satellite communications (RadScint and SatScint), and Satellite Surface and Deep Charge/Discharge (Char/D) products. The SEEFS architecture and database enable modular use and execution of the SEEFS products, and the high-level Decision Aid shows the combined effects of all SEEFS product output on a given asset and on multi-asset missions.

This presentation will provide general overviews of the SEEFS program, along with details of the first round of products expected to be operational for use in exercises and/or real-time operations in 2008-2009.