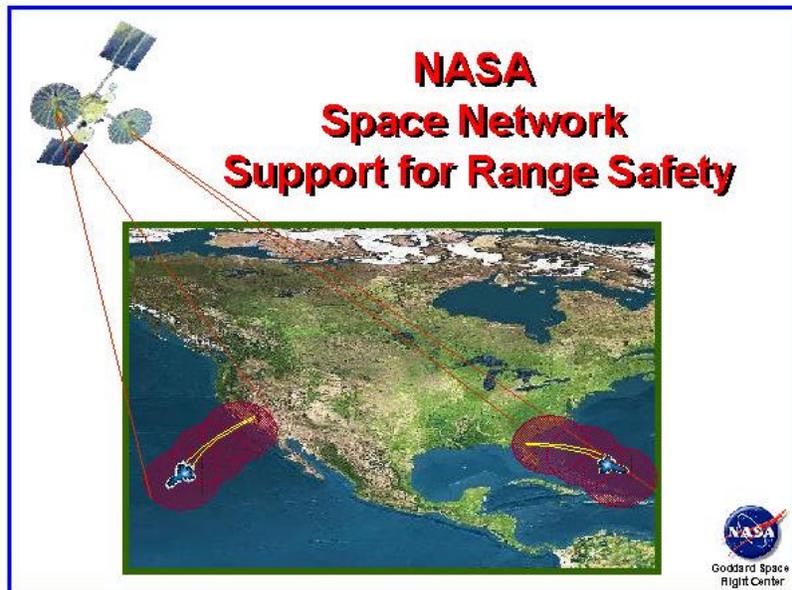


SN Range Safety: Are We There Yet? No – But We’re Getting Closer.....

It’s been several issues since an update on SN Space-Based Range-Safety Concept has been presented in *The Integrator*. In the intervening time, several events have taken place that are helping to form GSFC SN support for range safety.



As report in the November 1999 issue, GSFC has been working with the KSC Advanced Range Technologies Office (RTO) to promote the concept of SN support for Range Safety as a new US launch range technology. The focus is flight termination. In the case of Expendable Launch Vehicles (ELV), flight termination is the total destruction of the vehicle before causing harm to human life. In the process of evaluating the potential of the SN to provided range safety services for ELV’s, the focus on the user was projected into the future. Flight termination was extrapolated into an operations concept for Reusable Launch Vehicles (RLV), whereby the vehicle propulsion system is disengaged to allow for a controlled re-entry. The idea can be further expanded to include critical communication for RLVs from launch through orbit to re-entry and landing.

As result of teaming the KSC, the concept was presented to other organizations with interest in the idea of using a space-based platform to provide flight termination and more. KSC stirred the interest in the RLV community and was invited present space-based range service to an FAA user forum at FAA Headquarters- RLV Commercial Space Transportation Advisory Committee (COMSTAC). GSFC personnel presented the concept as a method to provide a critical communication link to RLVs from launch through re-entry. The support was overwhelming. The RLV COMSTAC Board wrote a letter to the FAA officials promoting the concept and recommending to FAA they work with NASA to find a means for budgeting the work. This relationship continues to blossom with the GSFC Team being invite to various meeting and follow-on RLV COMSTAC forums.

The GSFC/KSC/Range Team continues to focus on development of the multi-channel Range Safety transceiver and potential Proof-of-Concept activities. The transceiver under consideration is the Low Power Transceiver (LPT) being developed by ITT Industries under a current

technology contract to the SN Project Office. The LPT is a state-of-the-art transceiver featuring low power consumption, multiple receive channels for TDRSS-compatible communication, and the potential for GPS onboard navigation solutions.

The Proof-of-Concept endeavors include a range of candidate opportunities from investigations into a Wallops Recoverable Sounding Rocket program and a payload for the X-34 program to more recent interest from the X-43 program and LPT Shuttle payload testing.

Funding is tight but the space-based range safety concept continues to garner strong support. GSFC will continue to work with KSC and the range community on the concept with great hope of getting closer to seeing what the SN can do to “test the waters” of space-based range serves.