Update:
Laser Ranging of GPS III Satellites

John LaBrecque
Lead Earth Surface and Interior Focus Area
NASA HQ
• General Shelton, Commander Air Force Space Command, has determined that Laser Retro-reflector Arrays (LRAs) will be mounted on all GPSIII satellites following SV 8

• General Kehler, USSTRATCOM, and NASA Administrator Charles Bolden have provisionally concurred.

• An MOU is in the final phases of review for signature by these principals of the AFSPC, USSTRATCOM, and NASA.
The Multi-agency Mitigation Study

Gen. Whelan, Director of Requirements AFSPC, and Mr. Chris Scolese, Director GSFC convened a multi-agency study to determine whether Laser Ranging can meet NSPD-39 requirements.

**Participating Agencies:**
- DoD (Various Agencies and Commands),
- NASA
- DOE
- DOS
- USGS

The Aerospace Corporation conducted an independent study.

Full study to be documented in a NASA technical report.
Mitigation Study Report Conclusions

• The overall assessment of this study is that “cooperative laser ranging and other hosted payloads mission can coexist on GPS III.”

• “While it is undetermined if materiel and non-materiel solutions are required for cooperative ILRS lasing at current and anticipated future power levels, the solutions should be considered together to help mitigate uncertainty…”
NRL is developing the LRA design requirements;
April 3-4, 2013: GPS III SV 9+ dPDR;
April 25, 2013: LRA PDR
GPS III SV 9+ CDR postponed to mid 2015
NASA and NGA will continue to move forward with procurement of LRA engineering and flight models and to conduct appropriate testing as per the mitigation study and MOU recommendations.
LRA Performance

- An excellent location on GPS III has been identified.
- Current GPS III LRA design will meet or exceed ILRS standards and surpass the performance of the GLONASS, Galileo, and Compass LRAs.
- The design will provide optimal tracking capability for GPS III to low elevation angles.
- Funding is identified to conduct testing, procurement, and integration of the GPS III LRAs.
To the PNT ExCom Advisory Board

• Thank-you for your careful review, recommendation, and on-going support of laser ranging to GPS III. Your efforts will help to insure that GPS remains the gold standard for defense, science and societal applications.
• Special thanks also goes to the many partnering agencies and organizations who worked to get us to this point.
• We are about to pass a critical milestone but much still needs to be done before reaping the benefits of GPS III laser ranging.