

# GPS Modernization Program Update and GNSS International Cooperation

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## SUMMARY

The modernization program that is underway for the U.S. Global Positioning System (GPS) and developments underway for other space-based positioning, navigation, and timing (PNT) systems are leading to improved compatible and interoperable positioning capabilities worldwide. The GPS service, evolving as a modernized component of the GNSS, is characterized by consistent, predictable, and dependable performance as a global utility. The 2004, U.S. Space-Based Positioning, Navigation, and Timing (PNT) policy responds to changing international conditions and in particular, the worldwide growth in surveying and scientific applications. The PNT Policy ensures continuity in the U.S. national management of GPS as a dual-use civil and military system, a partnership that maintains GPS as a modernized global utility and in providing a solid foundation for international use by the civil scientific and geodetic surveying community. Actively coordinated with other GNSS service providers, the U.S. objectives are to assure compatibility — ability of U.S. and non-U.S. GNSS services to be used separately or together without interfering with each individual service or signal, and in achieving interoperability – ability of civil U.S. and non-U.S. GNSS services to be used together to provide the user better capabilities than would be achieved by relying solely on a single service. Interoperability includes adoption of a common timing reference standard and geodetic reference frame for the satellite orbital coordinate computations. This presentation reports on the current GPS constellation status and performance, improvements underway for the GPS signals (L2C, L5, and L1C), design goals for the next generation of satellites (GPS-III), international coordination activities, and an overview on the U.S. national policy adopted in December 2004 on PNT systems and the management role of the National PNT Coordination Office (NCO) [<http://pnt.gov>].

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