

UNITED STATES OF AMERICA



**SPACE-BASED POSITIONING
NAVIGATION & TIMING**

NATIONAL EXECUTIVE COMMITTEE

ANNUAL REPORT

Calendar Year 2007



FOREWORD

12 March 2008

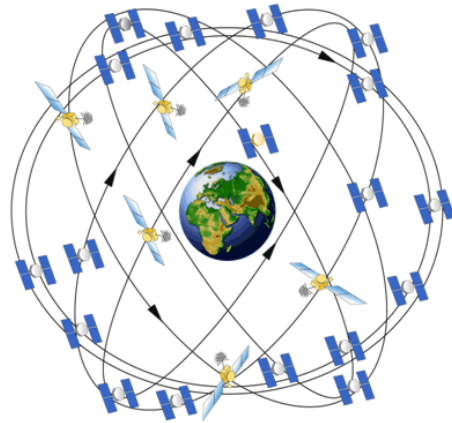
This annual report summarizes the activities and accomplishments of the National Executive Committee for Space-Based Positioning, Navigation and Timing (PNT) during calendar year 2007.

In 2007, the government accomplished significant tasks moving the United States forward as the global leader in space-based PNT. In support of that effort, the National Coordination Office for Space-Based PNT serves as the executive secretariat for the National Executive Committee.

I greatly appreciate the help and support from the many organizations involved in the U.S. space-based PNT effort.

A handwritten signature in black ink that reads "Michael E. Shaw". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael E. Shaw
Director, National Coordination Office



GPS

"...a global gold standard: providing accurate, reliable, continuous, free, worldwide positioning, navigation and timing services..."

DIRECTOR'S ANNUAL REPORT

PURPOSE

This annual report summarizes the activities and accomplishments of the National Executive Committee (EXCOM) for Space-Based Positioning, Navigation and Timing (PNT) and the supporting National Coordination Office (NCO) during calendar year 2007.



BACKGROUND

On December 8, 2004, the President signed a National Security Presidential Directive establishing the policy for U.S. Space-Based PNT.

The document updated the 1996 National Policy on the Global Positioning System (GPS).

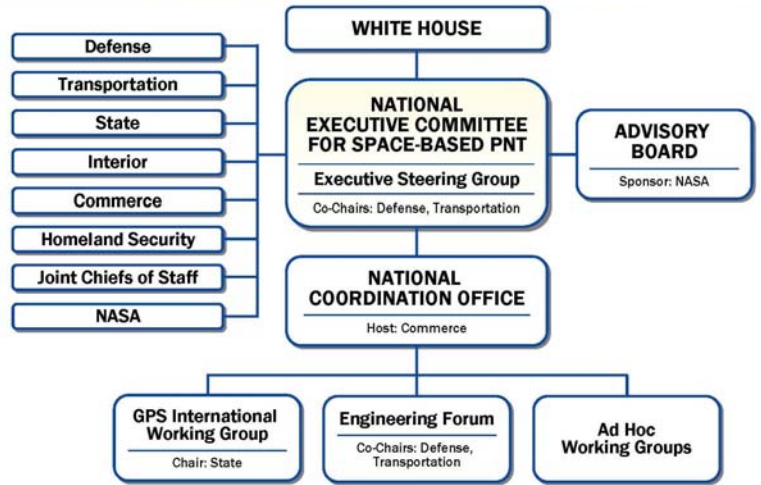
It also provided guidance for the procurement, management and protection of GPS and its U.S. government operated augmentations.

The policy created the EXCOM to advise the White House staff and coordinate space-based PNT related policies and issues among federal agencies. The EXCOM met three times during 2007 and addressed key issues relating to space-based PNT policy.

The EXCOM reviewed GPS modernization, funding, systems' management, international agreements and cooperation.



National Space-Based PNT Organization Structure



The NCO serves as the executive secretariat for the EXCOM with staff provided by the Departments of Defense, Transportation, State, Commerce, Homeland Security and NASA.

SPACE-BASED PNT POLICY

The Secretaries of Transportation and Defense signed the EXCOM charter in January 2006.

Under the charter, key NCO responsibilities include: ensuring transparency across U.S. space-based PNT policies, programs and budgets, and identifying mutual department interests or interagency dependencies.

The NCO uses this information for operations including interagency coordination, consensus development and issue resolution for matters presented to the EXCOM.

NATIONAL ADVISORY BOARD

The National Space-Based PNT Advisory Board, a federal advisory committee formed under the EXCOM charter, met in March and October 2007 in Washington.



The 24-member board of independent experts provided advice and recommendations about national space-based PNT policy, planning, program management and budgets.

To support international efforts, the board recommended the U.S. ensure GPS modernization programs move forward, and the next generation GPS III (and its augmentations) should meet or exceed planned services by other international space-based PNT systems.

The board is evaluating national and international needs for changes in space-based PNT capabilities. For the board's membership, charter, public presentations and other information visit: www.pnt.gov.

GLOBAL OUTREACH EFFORTS

It is a U.S. foreign policy goal to maintain GPS and its augmentations as a worldwide gold standard and ensure compatibility/ interoperability with foreign space-based global satellite navigation systems (GNSS).

The NCO and the State Department worked closely with other agencies during 2007 developing and implementing processes to reach this critical goal.

State Department representatives regularly met with the NCO to plan official U.S. government participation in international events.

The meetings helped focus U.S. interactions with foreign GNSS providers, including Australia, China, India, Japan, Russia and the European Union (EU).

The effort also enhanced relations with multilateral organizations like the International Committee on GNSS (ICG), International Civil Aviation Organization (ICAO) and International Telecommunication Union (ITU).

During 2007, the State Department signed joint statements establishing new cooperative GPS relationships with Australia and India.

U.S. government representatives also held regular consultations and meetings with Japan, Russia and EU about GNSS cooperation.

The U.S. participated in limited operator level discussions with China to coordinate GPS and Compass/Beidou radio frequency plans under the ITU process.

GPS-Galileo Cooperation

The GPS-Galileo cooperation agreement signed in 2004 established four working groups. Several groups met during 2007 to discuss technical and related issues.

In January 2007, the Department of Commerce hosted the first meeting of Working Group B on Trade and Civil Applications, opening a channel for communicating industry concerns about Galileo. The meeting produced a joint statement on future cooperation and initiated an outreach effort intended to improve public understanding of GPS and Galileo as complementary civil systems.

This effort produced a joint fact sheet about GPS and Galileo distributed at the March 2007 Munich Satellite Navigation Summit.

The NCO and State Department continuously worked to improve public perception about EU/U.S. cooperation and compatibility efforts relating to space-based PNT.

In July, the U.S., EU and European Space Agency (ESA) exchanged a series of letters concerning potential discrimination in receiver technology for the Galileo GIOVE-A test satellite. As a result, the EU and ESA acknowledged manufacturers have equal authorization to sell receivers.

GPS-Galileo Signal Agreement

The State Department and European Commission formally exchanged letters documenting agreement to modify the common GPS-Galileo signal to a multiplexed binary offset carrier (MBOC) waveform.

MBOC provides an interoperable signal per the original 2004 GPS-Galileo agreement for global space-based PNT system civil users. The signal also complies with U.S. national security compatibility criteria. A GPS-Galileo working group developed MBOC in early 2006.

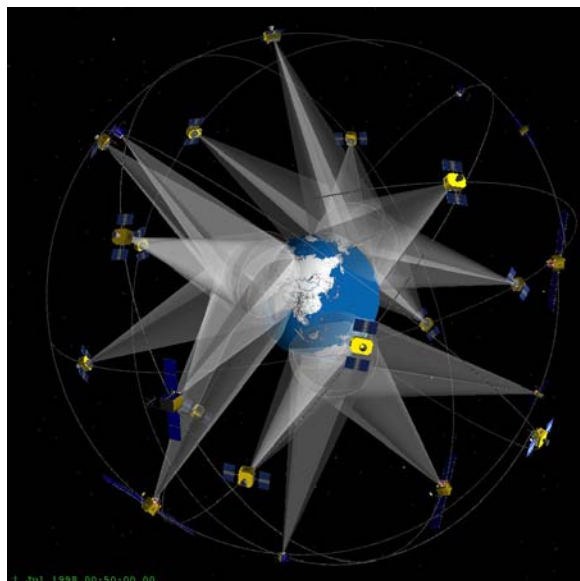
Joint Statement With India

In February 2007, the U.S. and India agreed to a cooperative relationship for using GPS and space-based regional augmentations to the system.

The two governments view civil space-based PNT systems as an area ready for expanded bilateral cooperation.

Cooperation With Japan

During a meeting in May 2007, representatives from both countries discussed items of mutual interest regarding cooperation in the civil use of the GPS and its augmentations.



Consultations are held regularly under the "Joint Statement on Cooperation in the Use of the GPS" issued by both governments in 1998.

ICG Stresses Global Cooperation

The International Committee on Global Navigation Satellite Systems (ICG) and the Providers' Forum met in Bangalore, India in September 2007.

The meeting stressed international cooperation, technology progress, space-based navigation system compatibility and interoperability.

A significant achievement of the ICG was formally establishing a Providers' Forum of member states operating or planning satellite navigation systems. The forum includes the U.S., China, EU, India, Japan and Russia.

The Providers' Forum agreed on the definition of compatibility as using space-based PNT services separately or together without interfering with each individual GNSS service or signal.

The Forum defined Interoperability as the ability to use the same services together, providing better user capabilities than by relying on only one service or signal.

Participants agreed, at a minimum, all space-based GNSS services and signals must be compatible, and to the maximum extent, interoperable. The agreements apply only to open civil signals transmitted by space-based PNT systems; not military transmissions.

Participants agreed transparency in providing open services is desirable. It requires the open publication and non-discriminatory distribution of signal and system characteristics allowing manufacturers to design and develop GNSS receivers.

The general theme expressed by ICG and Forum participants of progress through cooperation supported the mutually attainable goal of efficient, consistent, accurate, reliable, global civil services, free of direct user fees.

U.S. Hosting Next ICG Meeting

The U.S. hosts the next ICG meeting in Pasadena, Calif., in December 2008. The agenda will include work on procedures to guide the committee and reports from the four ICG working groups.

The working groups are focusing on compatibility and interoperability; enhancement of performance of GNSS services; information distribution; and interaction with U.S. authorities and relevant international organizations.

EXCOM MAJOR ACTIVITIES

Interior Joins EXCOM

The Department of the Interior became a full EXCOM member in December 2007.



As a major national PNT services user, the Interior adds expertise in climate studies, mapping, geological studies, preservation of endangered species, efficient public land and resources management through the use of space-based PNT systems.

Interference Detection & Mitigation

In August, the President approved the Interference Detection and Mitigation (IDM) Plan developed by the Department of Homeland Security (DHS).

The plan provides the framework for organizing and managing cross-governmental activities to prevent, detect, report and mitigate sources of interference to GPS and its augmentations.

DHS is developing implementation guidance, including a timeline for accomplishing necessary plan activities. Cooperation and collaboration among DHS components and other agencies is critical to successful implementation.

Priorities for 2008 include completing implementation strategies, updating GPS timing and vulnerability studies.

National PNT Architecture

In January 2006 the EXCOM directed the NCO to initiate an effort with the DoD's National Security Space Office (NSSO) to develop an overall U.S. PNT architecture. The effort coincided with a study requested by the Assistant Secretary of Defense for Networks and Information Integration for the NSSO to develop a National PNT Architecture. In addition, the Under Secretary of Transportation for Policy tasked the DOT Research and Innovative Technology Administration to co-lead the National PNT Architecture on behalf of the civil community.

The objective is to provide future effective and efficient PNT capabilities in the post-2025 era and an evolutionary path for government provided systems and services.

The national PNT architecture effort developed recommendations intended to maintain long term U.S. PNT global leadership. The NCO compiled EXCOM agencies' comments and forwarded them to the study group.

Space-Based PNT Policy Assessment

In June 2006, the Deputy Secretary of Defense, as EXCOM Co-chair, directed the NCO lead an effort to assess the progress for meeting the goals and objectives of the National Space-Based PNT Policy. The EXCOM accepted the NCO assessment in March 2007.

Five-Year Space-Based PNT Plan

In August, the EXCOM published the National Five-Year Space-Based PNT Plan.



The plan, designed for annual updates, provides the EXCOM with agency budgets enabling a comprehensive view of planned funding for national space-based PNT systems and services. The plan identifies interagency program dependencies based on augmentation systems and services in the core GPS satellite constellation.

FY08 Program/Budget Assessment

The program assessment, required by the EXCOM charter, is an annual review of the adequacy of agency budgets to support the timely delivery of U.S. space-based PNT capabilities and services.

The NCO, focusing on national interests, assessed U.S. national space-based PNT programs, budgets and activities.

The EXCOM reviewed key issues in November. Significant issues included dual source PNT funding for next generation GPS capabilities and support for EXCOM/NCO annual operations.

Global Outreach

The NCO supported several national and international outreach efforts to distribute information and educate various audiences about U.S. policy and the benefits of space-based PNT.

The site contains public and open source national policy documents and coverage of EXCOM activities.

Other information includes National Space-Based PNT Advisory Board presentations, international cooperation activities, agreements and frequently asked questions.

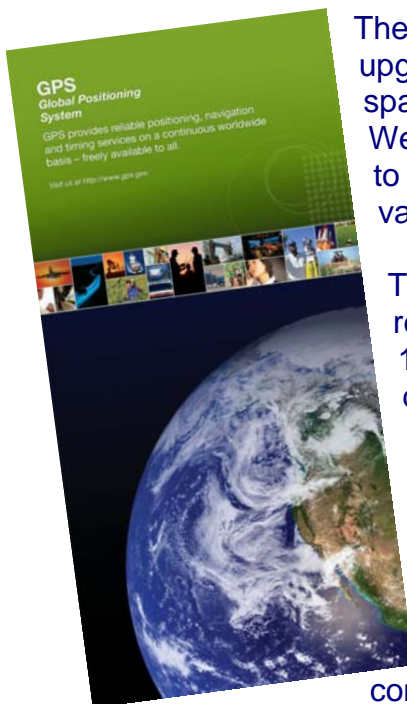
Space-based PNT presentations, made by U.S. government officials at various national and international meetings and conferences, are also available on the site.

During 2007, the NCO formalized the review process for coordinating communications for external parties about U.S. space-based PNT issues. The process improved consistency and accuracy of products and enhanced awareness of space-based PNT activities.



The NCO also updated existing products and created new educational materials for domestic and international audiences.

The Web and printed materials covered the benefits of GPS availability without direct user fees and emphasized international GNSS compatibility and interoperability.



The NCO continuously upgraded the official space-based PNT Web site during 2007 to include a wider variety of information.

The Web site received more than 185,000 visits during 2007. The site recognized both nationally and internationally, is a reliable, easily accessible, convenient, timely,

comprehensive understandable source of information for the media and general public.

The NCO re-printed a comprehensive color brochure and information packet for distribution at national and international conferences, meetings, events and symposiums. The 14-page brochure, produced in English and Spanish, provides factual, authoritative information in concise, easy-to-understand terms and formats.

The NCO also produced supplementary informational hard copy brochures and several fact sheets for use as public and media handouts at various events. Key on line information is available in English, Spanish, French, Chinese and Arabic. The brochure and other materials are available on the Web at: www.gps.gov.

Thousands of national and international information seekers visited the GPS Web site and found material in a familiar language.



Adequate NCO future funding and staffing is the key to accomplishing outreach goals. The NCO is working with EXCOM member agencies and OMB to develop budgets for FY09 and beyond to support efforts to inform the global community about U.S. space-based PNT availability, cooperative activities, accomplishments and modernization.

THE WAY AHEAD...2008 and BEYOND

This past year's efforts focused on establishing and maintaining key EXCOM activities. Actions and operations included: creating the National Space-Based PNT Advisory Board and holding initial public meetings; crucial studies and assessments; well-planned coordination and information sessions; national and international outreach efforts.

During 2008, the NCO will continue closely working with EXCOM agencies to implement the National Space-Based PNT Policy and to add new members, as appropriate.

The NCO is managing a comprehensive transition plan designed to smoothly and transparently transfer EXCOM activities to a new administration during calendar year 2009.

Throughout this process, the NCO will continue to track key national space-based PNT policy decisions and monitor pertinent studies for the senior EXCOM leadership.

Additionally in 2008, representatives from the various EXCOM member agencies will participate in a wide variety of global space-based PNT outreach efforts.

U.S. government representatives will continue to emphasize the message of positive global cooperation and progress through partnership during conferences and similar national and international events.

NCO efforts remain focused on supporting EXCOM agencies and ensuring continued progress toward implementing the goals in the National Space-Based PNT Policy.



**SPACE-BASED POSITIONING
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