



SPACE-BASED POSITIONING
NAVIGATION & TIMING
NATIONAL COORDINATION OFFICE

Improving GPS.gov

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**Civil GPS Service Interface Committee
Portland, Oregon
September 20, 2011**



- **Central pillar of U.S. GPS outreach campaign**
- **Partnership between NCO and NAVCEN/CGSIC since 2006**
- **Website re-launched in March 2011**
 - Enhanced user interface
 - New content
 - Monthly updates



Homepage for General Public



The screenshot shows the homepage of GPS.gov with several elements highlighted by red boxes:

- Language Selection:** A box highlights the language menu at the top right, which includes English, Español, Français, 中文, and العربية.
- Navigation Menu:** A box highlights the main navigation bar with links for HOME, WHAT'S NEW, SYSTEMS, APPLICATIONS, POLICY & FUNDING, MULTIMEDIA, and SUPPORT.
- Left Sidebar:** A box highlights a vertical menu with links for "For General Public", "For News Media", "For Congress", "For Internationals", and "For Professionals".
- Main Content Area:** A large box highlights the central content area, which includes:
 - A featured article titled "GPS Map Errors" with an image of a GPS device screen.
 - A dropdown menu for "POLICY & FUNDING" with sub-links: U.S. Policy Overview, Federal Agencies, GPS Modernization, International Cooperation, Interference Mitigation, Legislation, Program Funding, and Congressional Materials.
 - A text box asking "Does your GPS device show your house in the wrong place? Does it suggest inappropriate routes? Don't blame the GPS satellites... contact the map makers! We'll tell you how." with a "READ MORE..." link.
- Previous Feature Stories:** A box highlights a section with the title "Previous Feature Stories" and a sub-link "Did You Know? GPS Jamming Is Illegal".
- Video Player:** A box highlights a video player showing a "Delta IV GPS IIF-2 Launch Highl" with a play button and a progress bar.
- Looking for LightSquared Information?:** A box highlights a section with the title "Looking for LightSquared Information?" and text: "If you are seeking official U.S. government information related to the planned LightSquared 4G wireless network and its potential interference to GPS users, you'll find it at our sister site, www.PNT.gov. GO THERE...".
- Right Sidebar:** A box highlights a vertical stack of four featured articles:
 - "GPS User Support" with a satellite network image.
 - "What is GPS?" with a satellite image.
 - "Who Pays For GPS?" with an image of the U.S. Capitol dome.
 - "Other Common Questions" with a blue button.
- Bottom Section:** A box highlights a section titled "Hello, Canada! GPS Adventure Migrating North" with a cartoon character and text: "The traveling GPS Adventures exhibit will close down at the Adventure Science Center in Nashville, Tennessee, on September 5 and reopen at the Ontario Science Centre in".



Chinese Homepage



Welcome to GPS.gov
www.gps.gov/chinese.php

English Español Français 中文 عربي

GPS.GOV

美国政府有关全球定位系统(GPS)及相关事项的官方信息

Search

首页 WHAT'S NEW 系统 GPS的应用 POLICY & FUNDING MULTIMEDIA SUPPORT

For General Public
For News Media
For Congress
For Internationals
For Professionals

全球定位系统 为全世界服务

用下列语种浏览本网站:
English
Español
Français
عربي

ACTIONS:

- Share this page via Facebook, Twitter, etc.
- Get website updates via RSS
- Comment on this page
- Get help and support

全球定位系统 (GPS)

是美国以空间为基地的无线电导航系统, 在全世界范围内为民间用户提供不间断的定位、导航和定时服务, 而且对所有人免费。任何人只要有一个接收机, 这个系统就可以为他提供位置和时间。GPS可在任何气候条件下, 在白天或夜间, 在世界任何一个地方为无限数量的人提供准确的位置和时间信息。

GPS由三部分组成: 围绕地球的卫星; 地面上的监控站; 以及用户拥有的接收机。GPS卫星从空间发射可由接收机收到和识别的信号。每个接收机可以给出三维位置(经度, 纬度和海拔)外加时间。

人们可以从商店里随时买到GPS手持机。配备有这种GPS接收机, 用户就可以精确地知道他们的位置并且很容易找到他们要去的地方, 不论是步行、驾车、飞行或开船。GPS已经成为全世界交通系统的支柱, 为航空、地面交通及航海提供导航。救灾和紧急救援的救生任务也依赖GPS的定位和定时能力。日常的活动比如银行业务、行动电话甚至电力网控制都受益于GPS提供的精确时间。农民、测绘人员、地质学家和不计其

什么是全球定位系统?

GPS的应用

Images and Multimedia



Arabic Homepage



Welcome to GPS.gov x +
www.gps.gov/arabic.php

English Español Français 中文 عربي

Search

معلومات رسمية من الحكومة الأمريكية عن نظام التموضع العالمي، وموضوعات ذات صلة بهذا النظام

GPS.GOV

SUPPORT MULTIMEDIA POLICY & FUNDING تطبيقات النظام نظم WHAT'S NEW الصفحة الرئيسية

**نظام التموضع العالمي
يخدم العالم**

For General Public
For News Media
For Congress
For Internationals
For Professionals

ما هو نظام التموضع العالمي؟
تطبيقات النظام
Images and Multimedia

نظام التموضع العالمي هو نظام أمريكي للملاحة اللاسلكية يتخذ من الفضاء قاعدة له، وهو نظام يوفر لجميع مستخدمي المدنيين في جميع أنحاء العالم على نحو مستمر ودون انقطاع خدمات مجانية لتحديد الموقع وتحديد الوقت والملاحة، إذ باستطاعة أي شخص لديه جهاز استقبال لنظام التموضع العالمي أن يحصل على معلومات تحدد له الموقع والتوقيت، حيث يوفر هذا النظام لعدد غير محدد من الأشخاص معلومات دقيقة عن الموقع والوقت، ويوفر النظام هذه المعلومات ليلاً ونهاراً في أي مكان من العالم وبغض النظر عن الظروف الجوية.

اطلع على هذا الموقع باللغتين:
English
Español
Français
中文

ACTIONS:
Share this page via Facebook, Twitter, etc.
Get website updates via RSS
Comment on this page
Get help and support

يتكون نظام التموضع العالمي من ثلاث أجزاء: الأقمار الصناعية التي تدور حول الأرض، ومحطات السيطرة والربط القائمة على الأرض، وأجهزة استقبال يملكها مستخدمو نظام التموضع العالمي، وهي الأجهزة التي تتلقى الإشارات التي تنبئها من الفضاء الأقمار الصناعية التابعة للنظام وتتعرف عليها، ومن ثم تعرضها على المستخدم في صورة مجسمة تقدم له معلومات ثلاثية الأبعاد (خط العرض وخط الطول والارتفاع) عن الموقع وعن الوقت.

باستطاعة الأفراد شراء أجهزة يدوية صغيرة لاستقبال المعلومات من نظام التموضع العالمي، فهي معرضة للتبليغ في المتاجر، وباستطاعة من يحصل على مثل هذا الجهاز تحديد موقعه بدقة وتحديد خط سيارته بسهولة إلى الموقع الذي يريد التوجه إليه، وذلك سواء كان يسير على قدميه أو يقود



Multimedia



The screenshot shows a web browser window with the URL www.gps.gov/multimedia/. The page features the GPS.gov logo and the tagline "Official U.S. Government information about the Global Positioning System (GPS) and related topics". A navigation menu includes links for HOME, WHAT'S NEW, SYSTEMS, APPLICATIONS, POLICY & FUNDING, MULTIMEDIA (highlighted), and SUPPORT. The main content area is titled "Multimedia" and contains five interactive tiles: "Video Messages" (a man in a military uniform), "Launch Videos" (a rocket launch), "Image Library" (a satellite in orbit), "Exhibits" (a cartoon character with a globe), and "Handouts" (a collection of brochures). On the left, an "ACTIONS:" sidebar offers options to share the page, get RSS updates, comment, and get help. A footer section includes the Space-Based Positioning, Navigation, and Timing logo, a copyright notice dated July 5, 2011, and a disclaimer about the website's development and hosting.



Modernization Information



The screenshot shows the GPS.gov website with the following content:

- Header:** GPS.gov logo and tagline: "Official U.S. Government information about the Global Positioning System (GPS) and related topics". A search bar is located to the right.
- Navigation Menu:** HOME, WHAT'S NEW, SYSTEMS (highlighted), APPLICATIONS, POLICY & FUNDING, MULTIMEDIA, SUPPORT.
- Breadcrumbs:** Home » Systems » GPS » GPS Modernization
- Left Sidebar:**
 - SYSTEMS:**
 - GPS Overview
 - Space Segment
 - Accuracy
 - Modernization** (highlighted)
 - New Civil Signals
 - Augmentation Systems
 - Technical Documentation
 - ACTIONS:**
 - Share this page via Facebook, Twitter, etc.
 - Get website updates via RSS
 - Comment on this page
 - Get help and support
- Main Content Area:**
 - Image:** An illustration of several GPS satellites in orbit, connected by a blue curved line, with the text "GPS Modernization" below it.
 - Text:** "It is the policy of the United States to maintain U.S. leadership in the service, provision, and use of satellite navigation systems. The U.S. government has additional policy goals to meet growing demands by improving the performance of GPS services, and to remain competitive with international satellite navigation systems. [LEARN MORE...](#) →"
 - Text:** "The GPS modernization program is an ongoing, multibillion-dollar effort to upgrade the GPS space and control segments with new features to improve GPS performance. These features include new civilian and military signals."
 - Image:** A blue-bordered box containing a green bar chart with the text "LEARN ABOUT THE NEW CIVIL SIGNALS..." below it.
 - Text:** "In addition to the specific new features noted above, GPS modernization is introducing modern technologies throughout the space and control segments that will enhance overall performance. For example, legacy computers and communications systems are being replaced with a network-centric"



Performance Information



GPS.gov: GPS Accuracy

www.gps.gov/systems/gps/performance/accuracy/

GPS.gov Official U.S. Government information about the Global Positioning System (GPS) and related topics

HOME WHAT'S NEW **SYSTEMS** APPLICATIONS POLICY & FUNDING MULTIMEDIA SUPPORT

Home » Systems » GPS » Performance » Accuracy

SYSTEMS:

- GPS Overview
- Space Segment
- Accuracy**
- Modernization
- Augmentation Systems
- Technical Documentation

ACTIONS:

- Share this page via Facebook, Twitter, etc.
- Get website updates via RSS
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GPS Accuracy

The U.S. government is committed to providing GPS to the civilian community at the performance levels specified in the GPS Standard Positioning Service (SPS) Performance Standard. For example, the GPS signal in space will provide a "worst case" pseudorange accuracy of 7.8 meters at a 95% confidence level. [VIEW DOCUMENT...](#)



What is GPS?

The actual accuracy users attain depends on factors outside the government's control, including atmospheric effects and receiver quality. Real-world data collected by the FAA show that some high-quality GPS SPS receivers currently provide better than 3 meter horizontal accuracy. [VIEW DATA AT FAA.GOV...](#)

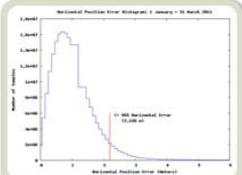
Higher accuracy is available today by using GPS in combination with augmentation systems. These enable real-time positioning to within a few centimeters, and post-mission measurements at the millimeter level. [LEARN MORE...](#)

The U.S. government is committed to modernizing the GPS constellation to enable higher civilian accuracy without augmentations. The first of

What About Selective Availability (SA)?

During the 1990s, GPS employed a feature called Selective Availability that degraded civilian accuracy on a global basis. In May 2000, at the direction of President Bill Clinton, the United States ended its use of Selective Availability to make GPS more responsive to civil and commercial users worldwide.

The United States does not intend to ever implement SA again and is committed to preventing hostile use of GPS through regional denial of service, minimizing the impact to



FAA data collected in early 2011 shows that the horizontal accuracy of GPS SPS is often within -1 m (click to zoom)



Air Force data shows increasing GPS signal-in-space accuracy from 2001 to 2010 (click to zoom)



Homepage for Congress



GPS.gov **Beta** Official U.S. Government information about the Global Positioning System (GPS) and related topics

HOME WHAT'S NEW SYSTEMS APPLICATIONS POLICY & FUNDING MULTIMEDIA SUPPORT

For General Public
For News Media
For Congress
For Internationals
For Professionals

FISCAL YEAR 2012 BUDGET OF THE U.S. GOVERNMENT

We've identified every line item in the President's FY 2012 budget request related to GPS satellites and augmentations, including programs at the Air Force, FAA, and RITA. It's all right here on one page. [VIEW NOW...](#)

Stories of Interest to Capitol Hill

LightSquared Interference to GPS

- Sept 8 Hearing of House Science Committee
- June 23 Hearing of House Transportation & Infrastructure Committee
- Proposed Legislation
- Background Information

Downloadable Newsletters

Late July | View All

Program Funding

- President's GPS Budget Request for FY 2012
- GPS Funding in the Final FY 2011 Funding Act
- Background Paper on Civil GPS Funding

Reports to Congress

- 2010 Federal Radionavigation Plan
- NDGPS Recapitalization Plan (June 2010)
- GAO Report on GPS (May 2009)

Air Force Successfully Launches Second GPS IIF Satellite into Orbit

(July 29) On July 16, a Delta IV rocket successfully launched the GPS IIF-2 satellite into orbit from Cape Canaveral, Florida. It is the second of twelve GPS Block IIF satellites being built by Boeing to support GPS modernization. The IIF-2 satellite adds a third civilian GPS signal for increased reliability and accuracy, especially for NextGen and other transportation safety applications. GPS IIF is also essential to constellation sustainment, as many current GPS satellites have greatly exceeded their design life spans. [LEARN MORE...](#)

CJS Approves Bill Addresses LightSquared-GPS Interference

(July 29) House appropriators included report language in the FY 2012 Commerce, Justice, and Science Appropriations Act (H.R. 2596) directing the National Telecommunications and



Homepage for Professionals – You!



GPS.gov: Professionals Home | x

www.gps.gov/pros/

GPS.gov Beta Official U.S. Government information about the Global Positioning System (GPS) and related topics

HOME WHAT'S NEW SYSTEMS APPLICATIONS POLICY & FUNDING MULTIMEDIA SUPPORT

For General Public
For News Media
For Congress
For Internationals
For Professionals

Welcome GPS Experts, Developers, and Professional Users

This page is designed to help you find the latest technical data and other detailed information on GPS.gov.

This is still a work in progress, and we welcome your ideas on how to make it more useful.

SEND COMMENTS... →

Get Involved!

As a professional GPS user, your livelihood depends on the government's continued funding, operation, maintenance, sustainment, and modernization of the Global Positioning System.

If it is in your interest to follow and participate in these processes to make sure the government meets your needs, there are a few ways to do that.

Civil GPS Service Interface Committee (CGSIC)
The CGSIC meets annually and is open to anyone interested in civil GPS issues. Information from CGSIC members and meetings is provided to U.S. GPS authorities for consideration in GPS policy development and GPS service operation. [LEARN MORE... →](#)

Interface Control Working Group (ICWG)
The ICWG serves as a forum to develop and provide technical GPS interface requirements, as well as focus on

Next ICWG Meeting
September 13-15, 2011
SAIC Facility
El Segundo, California
[LEARN MORE... →](#)

Next CGSIC Meeting
September 19-20, 2011
Oregon Conference Center
Portland, Oregon
[LEARN MORE... →](#)

Technical Documentation

- Interface Specifications
 - IS-GPS-200
 - IS-GPS-205

GPS User Support

President's GPS Budget Request for FY 2012

U.S. Policy on GPS

Looking for



Technical Documentation



The screenshot shows a web browser window with the URL www.gps.gov/technical/. The page features the GPS.gov logo and the tagline "Official U.S. Government information about the Global Positioning System (GPS) and related topics". A navigation menu includes links for HOME, WHAT'S NEW, SYSTEMS, APPLICATIONS, POLICY & FUNDING, MULTIMEDIA, and SUPPORT. The main content area is titled "Technical Documentation" and contains the following text:

It is the official policy of the U.S. government to provide open, free access to the information necessary to develop and build equipment to use the civil services of GPS and its augmentations. [LEARN MORE... →](#)

This section of the website provides easy access to all of the relevant technical documentation. Some links on this page lead to content in the Portable Document Format (PDF) and may require you to install PDF software. [GET SOFTWARE... →](#)

The page is organized into four main sections, each with a blue header:

- INTERFACE CONTROL DOCUMENTS**: These documents provide detailed information on the civil GPS signals and codes broadcast at the L1, L2, and L5 frequencies. Enter to access current versions of the GPS Interface Specifications, as well as information about ongoing efforts to update the documents through the Interface Control Working Group (ICWG). [VIEW... →](#)
- PERFORMANCE STANDARDS & SPECIFICATIONS**: These documents specify the levels of technical performance that users can expect from GPS and related systems. Enter to access current and past versions of the performance standards for the civil GPS service (SPS), military GPS service (PPS), Wide Area Augmentation System (WAAS), and U.S. GPS monitoring capabilities. [VIEW... →](#)
- FEDERAL RADIONAVIGATION PLAN**: The Federal Radionavigation Plan (FRP) is the official source of radionavigation policy and planning for the federal government. It covers both terrestrial and space-based, common-use, federally operated radionavigation systems, including GPS and GPS augmentations. This link opens a PDF of the 2010 FRP at the U.S. Coast
- SEMI-CODELESS/CODELESS GPS ACCESS COMMITMENTS**: These documents describe U.S. government commitments to support semi-codeless/codeless civilian access to the current P(Y) signals and the transition to the modernized L2C and L5 signals. Enter to access the 2008 Federal Register notice on semi-

A left sidebar contains a "SUPPORT:" section with links for GPS User Support, Frequently Asked Questions, Civil GPS Service Interface Committee, and a highlighted "Technical documentation" link. Below this is a list of categories: Interface Control Documents, Performance Standards & Specifications, Federal Radionavigation Plan, Codeless/Semi-Codeless GPS Access Commitments, About This Website, and Website Feedback. At the bottom of the sidebar is an "ACTIONS:" section with social media sharing options (Facebook, Twitter, etc.) and an RSS feed link.



ICWG Meeting Information



The screenshot shows a web browser window with the URL www.gps.gov/technical/icwg/meetings/2011/09/13/. The page header includes the GPS.gov logo and the tagline "Official U.S. Government information about the Global Positioning System (GPS) and related topics". A navigation menu contains links for HOME, WHAT'S NEW, SYSTEMS, APPLICATIONS, POLICY & FUNDING, MULTIMEDIA, and SUPPORT. The breadcrumb trail reads: Home » Technical Documentation » Interface Control Documents » Public ICWG Meetings » September 13-15, 2011.

ICWG MEETINGS:

- Sep 13-15, 2011
- Apr 28, 2011
- Mar 10, 2010
- Feb 12, 2010
- Oct 5, 2009
- Oct 1, 2009
- Sep 29, 2009
- Nov 19, 2008
- Nov 18, 2008

ACTIONS:

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Public ICWG Meeting

September 13-15, 2011

Meeting Announcement (Updated)
Meeting Announcement (Original)

This official public notice in the Federal Register provides information on discussion topics, instructions for registration and comment submission, and points of contact. The updated version provides the meeting location and dial-in information.

Relevant Interface Documents:

- IS-GPS-200E
- IS-GPS-705A
- IS-GPS-800A

Some links on this page lead to content in the Portable Document Format (PDF) and may require you to install PDF software. [GET SOFTWARE...](#)

Meeting Presentation (Updated August 2011)

August 2011 Version of Documents Under Review:

The GPS Directorate has updated the proposed change packages and will accept public comments on them either before or during the public ICWG event in September.

- Public Document Management (GPS III terminology and SSV group delay)
- Pseudorandom Noise (PRN) Expansion
- User Range Accuracy (URA) Definition
- Almanac Intervals
- Pseudorange Parameters
- Technical Note 36



Future Improvements



- More frequent updates
- Merge PNT.gov → GPS.gov
- Constellation status
- Tutorials
- Applications database
 - Migrate data from NASA
 - Leverage CGSIC presentations?
- Professionals homepage
 - Conference presentations
 - Reference documents/links
 - **What would make it more useful to you?**



Please Send Comments & Suggestions



The screenshot shows the 'GPS.gov: Professionals Home' page. The browser address bar displays 'www.gps.gov/pros/'. The page content includes a sidebar with 'Technical Documentation' (listing Interface Specifications, Performance Standards, Federal Radionavigation Plan, and Semi-Codeless/Codeless GPS Access Commitments), a main content area with sections for 'Interface Control Working Group (ICWG)', 'National Space-Based PNT Systems Engineering Forum (NPEF)', and 'National Space-Based PNT Advisory Board', and a right-hand sidebar for 'U.S. Policy on GPS' and 'Looking for LightSquared Information?'. A red rectangular box highlights the 'Comment on this page' link in the sidebar. The footer contains a copyright notice and a logo for the National Coordination Office for Space-Based Positioning, Navigation, and Timing.