



SPACE-BASED POSITIONING
NAVIGATION & TIMING
NATIONAL COORDINATION OFFICE

GPS Policy, Constellation, and Modernization

European Navigation Conference

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GNSS is Essential to Our Economies



Satellite Operations



Surveying & Mapping



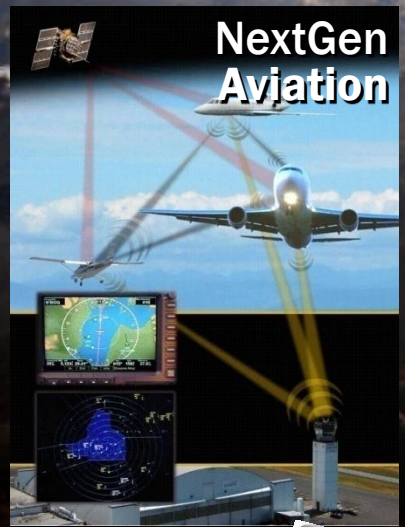
Power Grids



Precision Agriculture



Transit Operations



NextGen Aviation



Trucking & Shipping



Intelligent Vehicles



Telecom



Trucking & Shipping



Personal Navigation



Disease Control



Oil Exploration



Fishing & Boating



U.S. Air Force Receives Award



- The International Astronautical Federation bestowed its 60th Anniversary Award to the U.S. GPS program at a ceremony held October 4, 2011 in Cape Town, South Africa



Awarded for “Benefits to Humanity”



U.S. Policy History

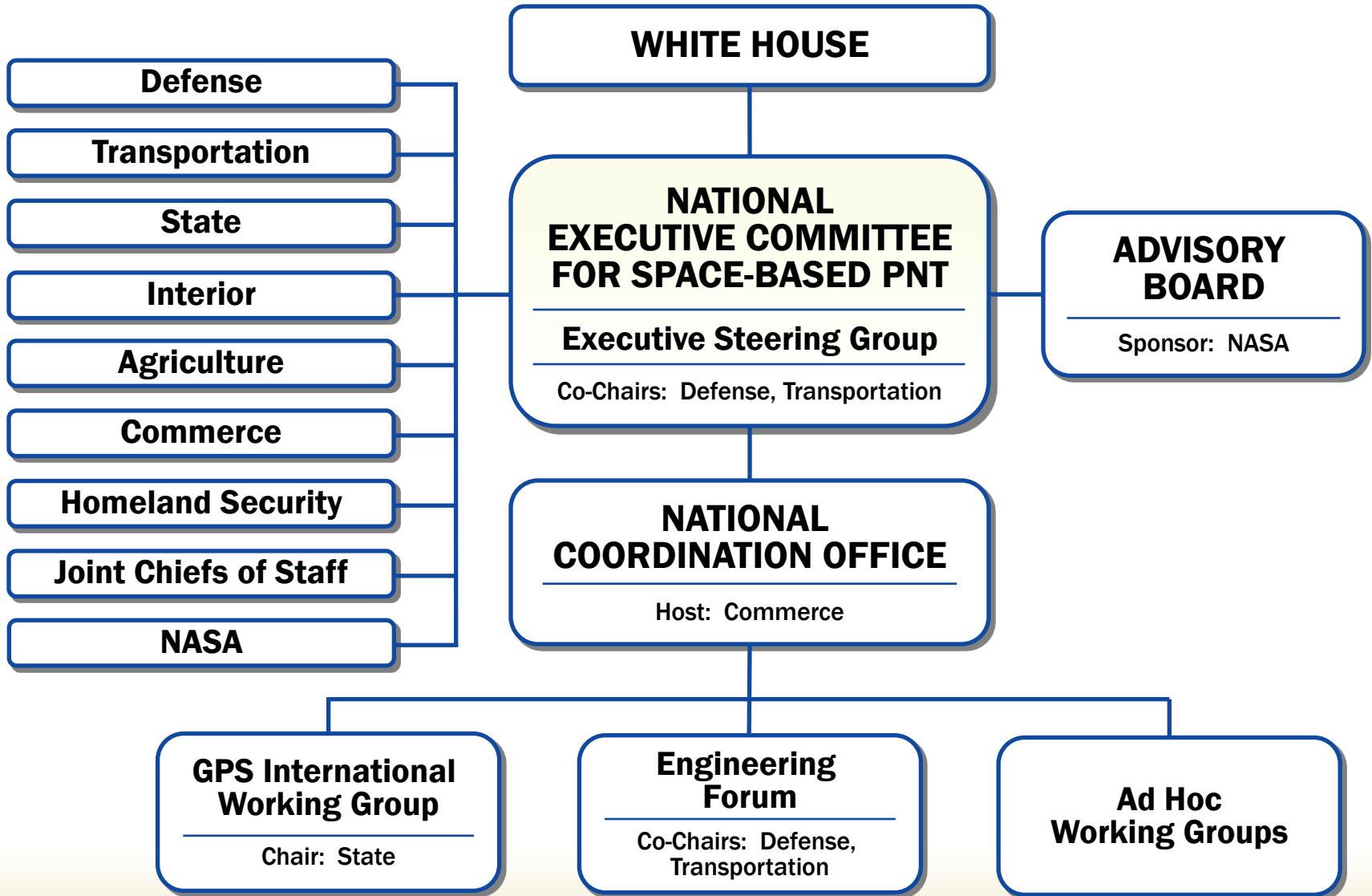


- **1983:** President announces civilian access to GPS
- **1994:** U.S. offers free civil GPS service to International Civil Aviation
- **1996:** First U.S. GPS Policy establishes joint civil/military management
- **1997:** Civil GPS access free of direct user fees codified in U.S. statute
- **2000:** President ends use of *Selective Availability*
- **2004:** President issues U.S. Policy on Space-Based PNT
- **2004:** Agreement signed on GPS-Galileo Cooperation
- **2007:** President announces *Selective Availability* eliminated from future GPS III satellites
- **2010:** New National Space Policy includes specific PNT guidance





U.S. Space-Based PNT Organizational Structure





U.S. National Space Policy



- Provide civil GPS services, free of direct user charges
 - Available on a continuous, worldwide basis
 - Maintain GPS constellation consistent with published performance standards and interface specifications
 - Foreign PNT may be used to augment and strengthen resiliency
- Engage with International GNSS providers
 - Encourage *compatibility* and *interoperability*
 - Promote *transparency* in civil service provision
- Enable market access to industry
- Support international activities to detect and mitigate harmful interference

Space-Based PNT Guideline: Maintain leadership in the service, provision and use of GNSS



GPS Constellation Status



30 Operational Satellites

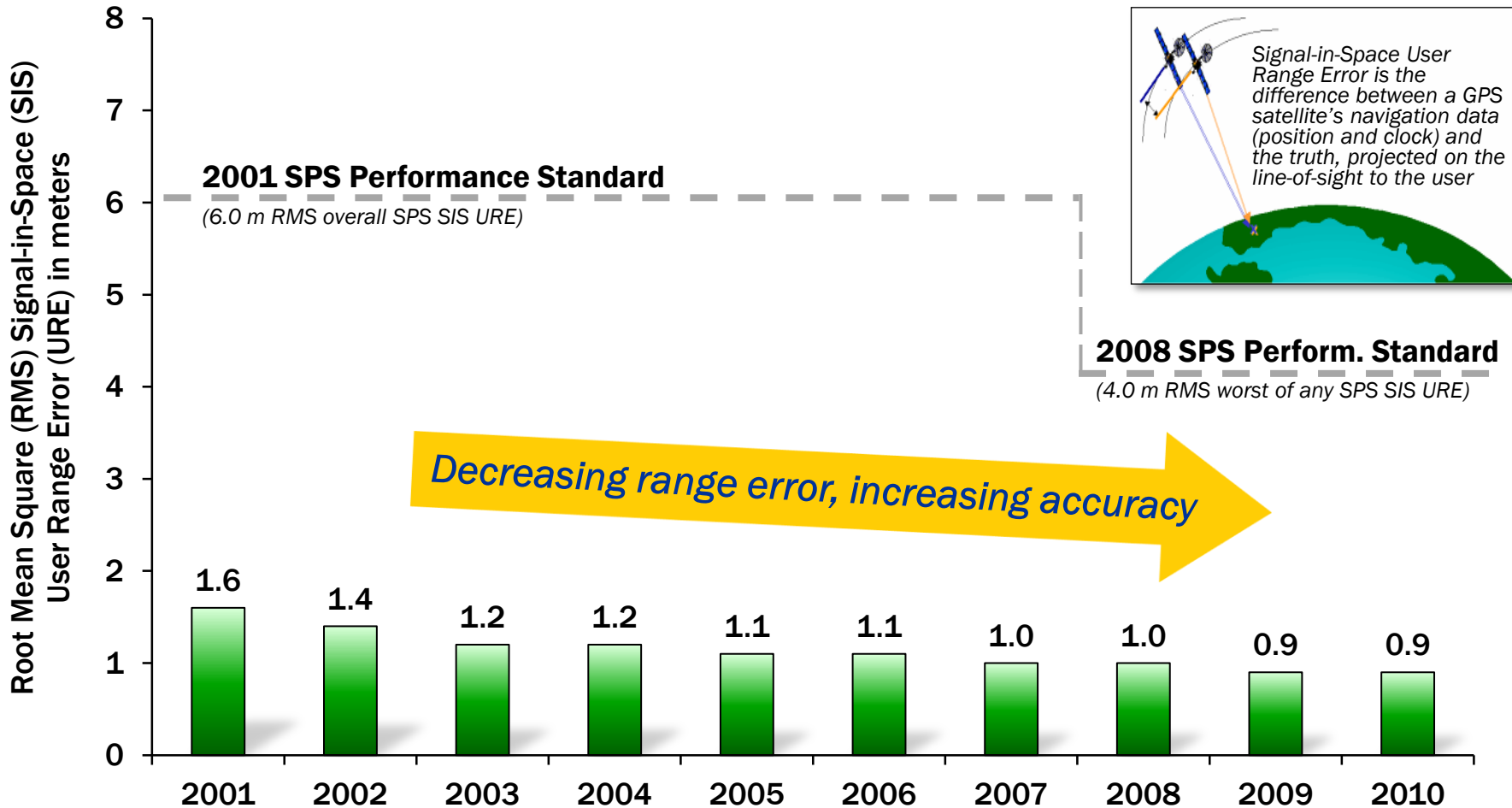
Baseline Constellation: 24 + 3

- 9 Block IIA Satellites
- 12 Block IIR Satellites
- 7 Block IIR-M Satellites
- 2 Block IIF Satellites
 - *IIF-2 healthy as of October 14, 2011*
- Global GPS civil service performance commitment met continuously since December 1993





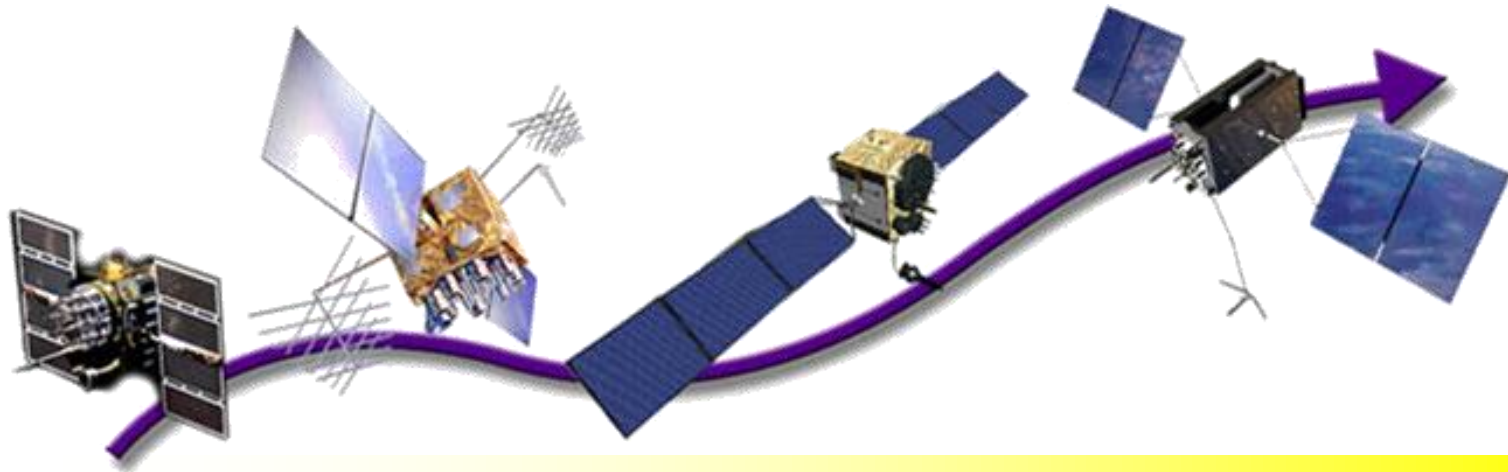
Standard Positioning Service (SPS) Signal-in-Space Performance



System accuracy exceeds published standard



GPS Modernization Program



Increasing System Capabilities ♦ Increasing User Benefit

Block IIA/IIR

Basic GPS

- Standard Service
 - Single frequency (L1)
 - Coarse acquisition (C/A) code navigation
- Precise Service
 - Y-Code (L1Y & L2Y)
 - Y-Code navigation

Block IIR-M, IIF

IIR-M – Basic GPS capability plus

- 2nd civil signal (L2C)
- M-Code (L1M & L2M)

IIF – IIR-M capability plus

- 3rd civil signal (L5)
- 2 Rb + 1 Cs Clocks
- 12 year design life

Block III

- Backward compatibility
- 4th civil signal (L1C)
- 4x better User Range Error than IIF
- Increased availability
- Increased integrity
- 15 year design life



Summary



- **International cooperation is a priority**
 - *Compatibility, Interoperability, Transparency are critical*
 - *U.S. policy permits use of foreign PNT to augment GPS and increase resiliency*
- **GPS continues to meet or exceed our performance commitments to worldwide users**
 - *Performance is better than ever and will continue to improve with planned modernization*

Policy stability and transparency improve industry confidence and investment



For Additional Information...



Welcome to GPS.gov - Windows Internet Explorer

http://gps.gov/

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GPS.gov

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

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For Professionals

GPS Receives Award for Benefits to Humanity

The International Astronautical Federation bestowed its 60th Anniversary Award to the U.S. GPS program at a ceremony held October 4 in Cape Town, South Africa. [READ MORE...](#)

Previous Feature Stories

- Map Errors Explained!
- Did You Know? GPS Jamming Is Illegal

FCC Cracks Down on Sales of GPS Jamming Devices

On September 30, 2011, the FCC issued 20 enforcement actions against online retailers in 12 states for illegally marketing more than 200 uniquely-described models of cell phone jammers, GPS jammers, Wi-Fi jammers, and similar signal jamming devices. [LEARN MORE...](#)

Looking for LightSquared Information?

If you are seeking official U.S. government

GPS User Support

What Can I Do About Map Errors on GPS Devices?

What is GPS?

GPS.gov

National Executive Committee for Space-Based Positioning, Navigation, and Timing - Windows Internet Explorer

http://mendiculus.nos.noaa.gov/

SPACE-BASED POSITIONING NAVIGATION & TIMING

NATIONAL EXECUTIVE COMMITTEE

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- Presentations from APEC Meetings
- Presentation from GPS Partnership Council
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