

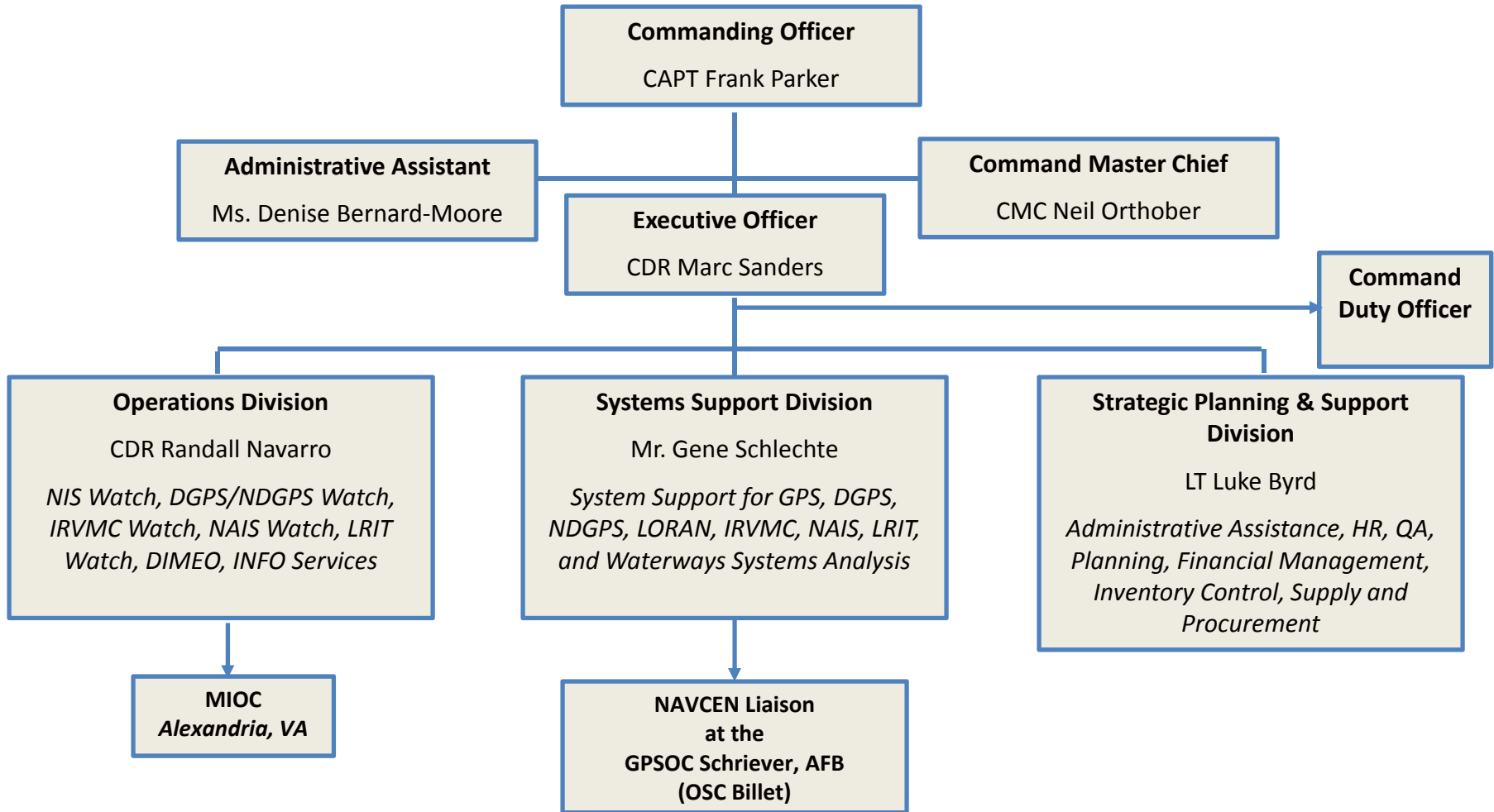
Nationwide Differential GPS System



Presentation Overview

- **NAVCEN Organizational Summary.**
- **Nationwide Differential GPS (DGPS) Overview.**
- **Dept. of Transportation (DOT) Inland DGPS coverage/site status.**
- **DGPS Equipment Upgrades.**
- **DGPS Partnerships**
- **Summary**

Command Overview



Maritime Information Operations Center

24/7 Operation of the following:

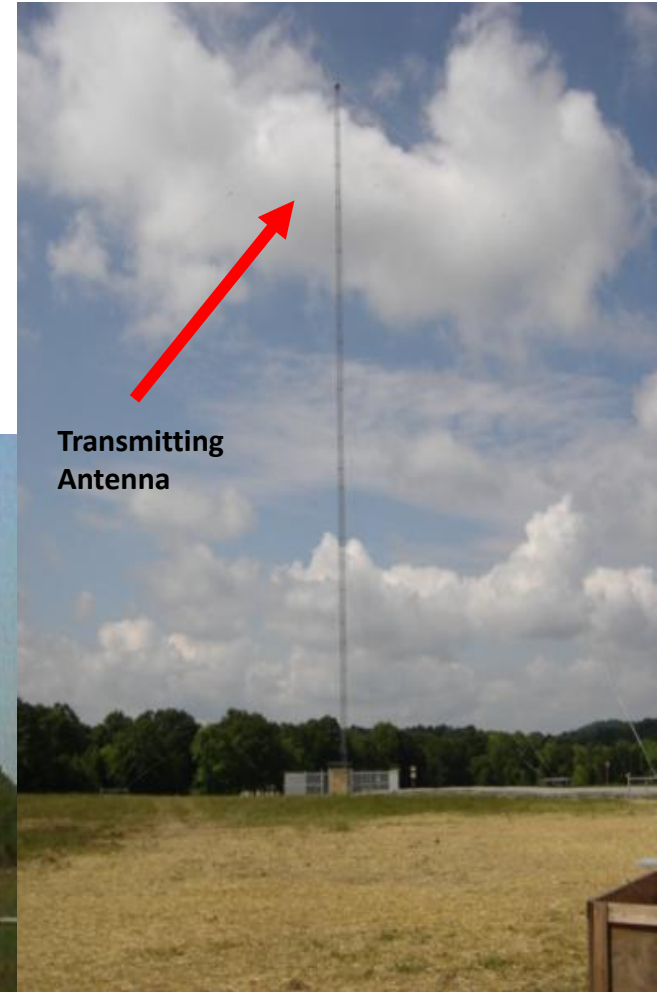
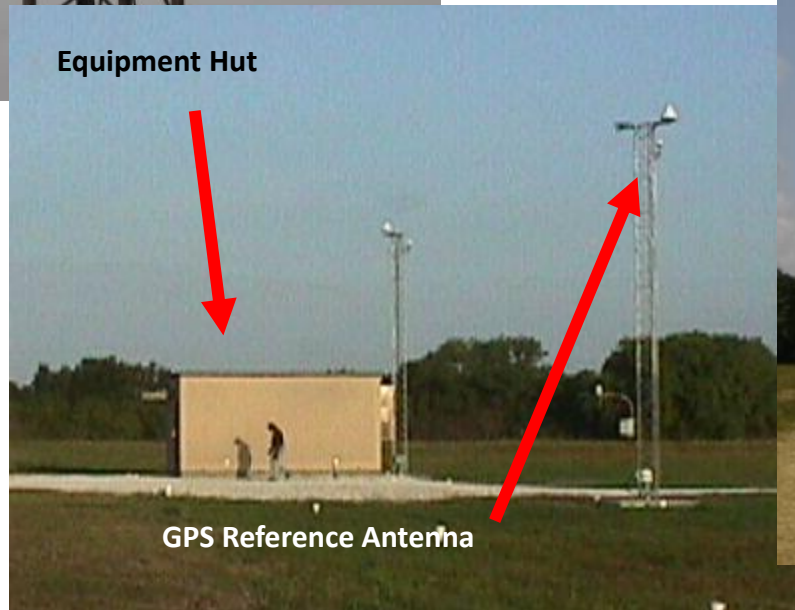
- Web based Information Services.
- Navigation Information Service.
- GPS Civil Interface.
- DGPS Monitor & Control.
- Inland River Vessel Movement Center.
- Nationwide Automatic Information System.



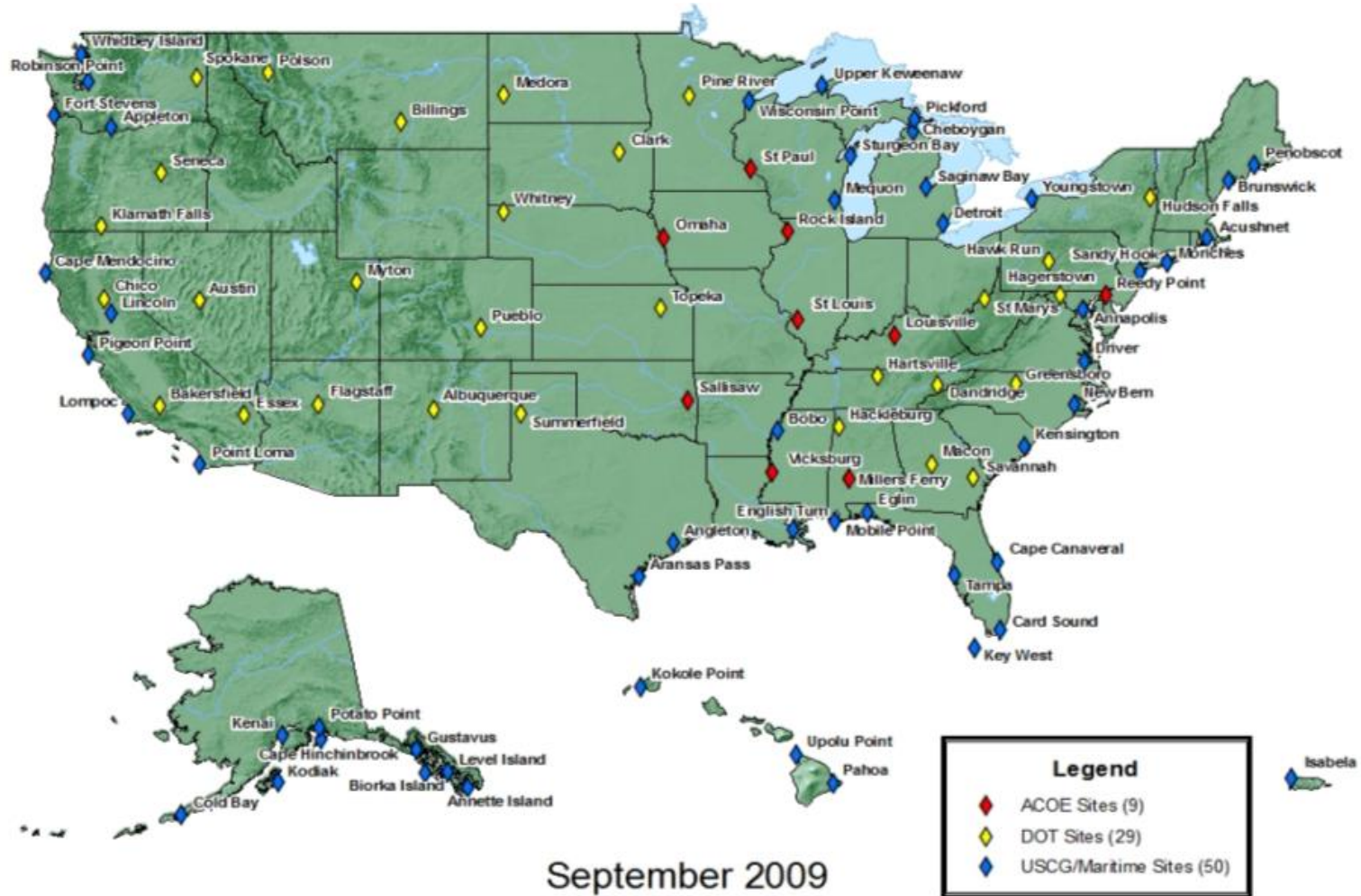
Nationwide Differential GPS

- Satisfies Harbor Entrance & Approach, Inland Waterways & Terrestrial Requirements
- 50 Maritime Broadcast Sites, 9 U.S. Army Corps of Engineer Sites, 29 Nationwide DGPS Sites, 2 Control Centers.
- Maritime DGPS System achieved Full Operational Capability (FOC) on 15 March 1999.
- Nationwide DGPS System is currently working towards Initial Operational Capability (IOC). Seven sites remain to be constructed to achieve single coverage of 99% of the continental United States.
- *Partnership agencies:* USCG, DOT (RITA), NOAA/NGS, USACE

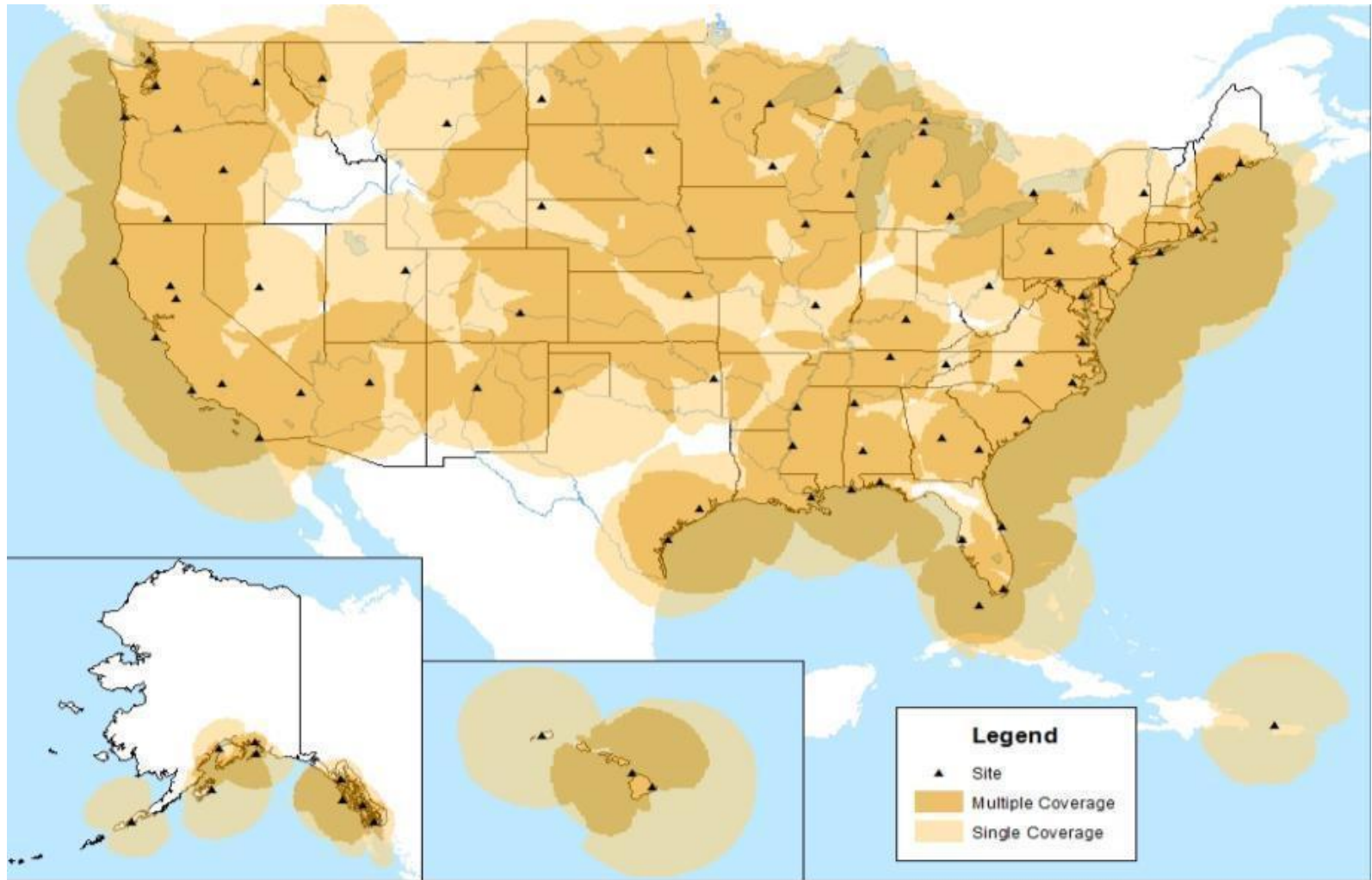
Typical DGPS Site Layout



NDGPS Site Locations



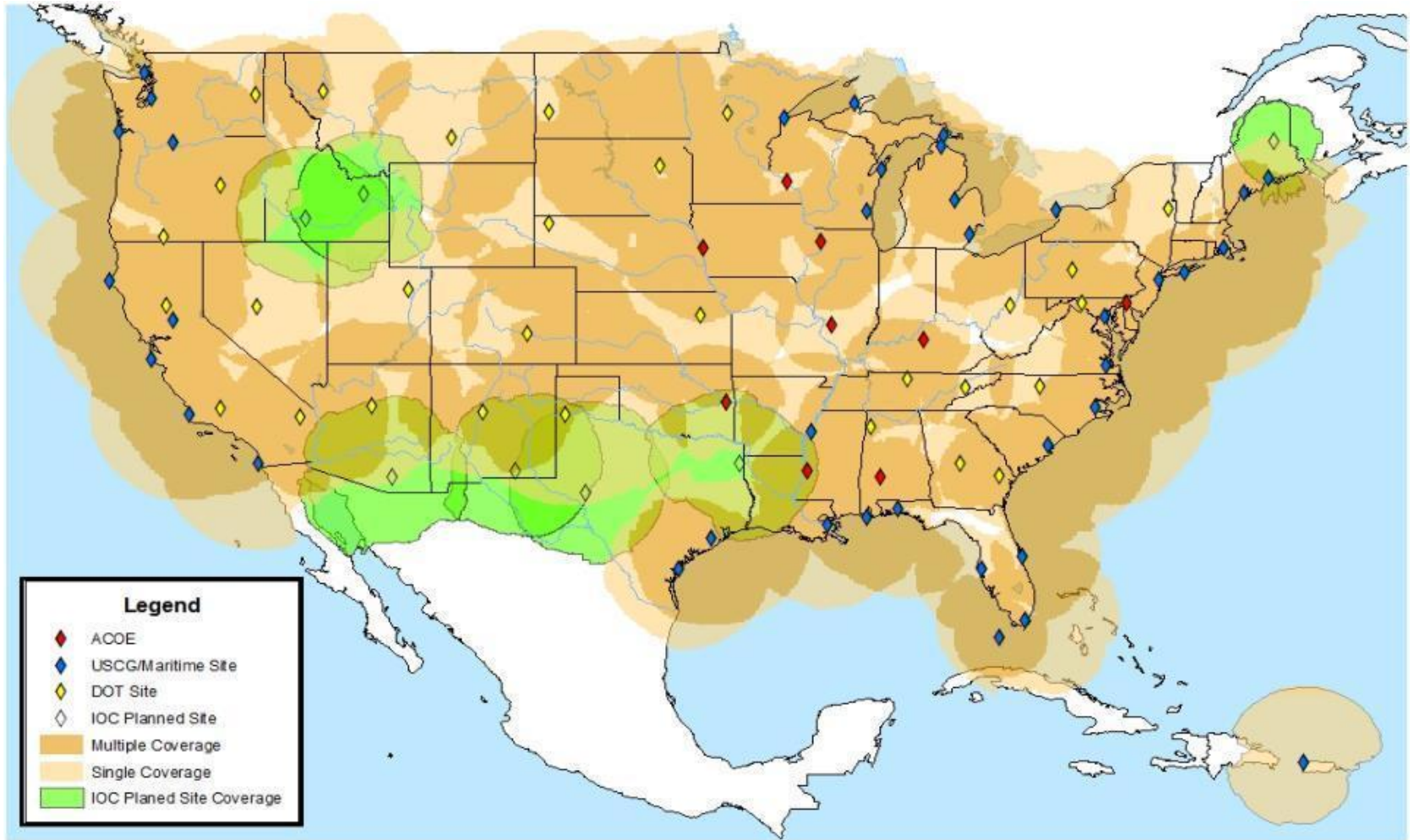
NDGPS Signal Coverage



DOT DGPS Single Coverage Goal

- Initial Operational Capability (IOC) goal is 99% of continental United States with single coverage.
- 7 sites are needed to achieve IOC.
 - **Site Name:** Bliss **Location:** Bliss, Idaho
 - **Site Name:** Tucson **Location:** Tucson, Arizona
 - **Site Name:** Carlsbad **Location:** Carlsbad, New Mexico
 - **Site Name:** Sage Junction **Location:** Sage Junction, Idaho
 - **Site Name:** Marshall **Location:** Marshall, Texas
 - **Site Name:** Big Lake **Location:** Big Lake, Texas
 - **Site Name:** Patten **Location:** Patten, Maine
- All advance preparation work has been either completed or is near completion for the remaining 7 sites.
- Funding is pending.

DOT Inland Coverage IOC Objective



DGPS Recap/Upgrades



- **FC-20**

- FC-20: Upgraded Receivers & Antennas:
L1/L2 (L2C) Geodetic Grade

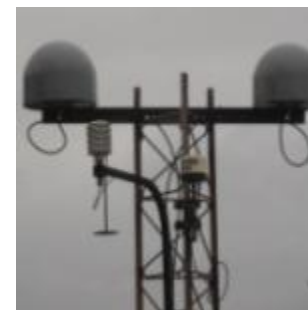
- **EC-03**

- **COTS equipment.**

- Accuracy is observed to be 1-3 meters
- New system architecture is easier and less expensive to upgrade as new technologies become available.
- Ethernet based with remote capability.

- **NAUTEL Transmitter Replacement**

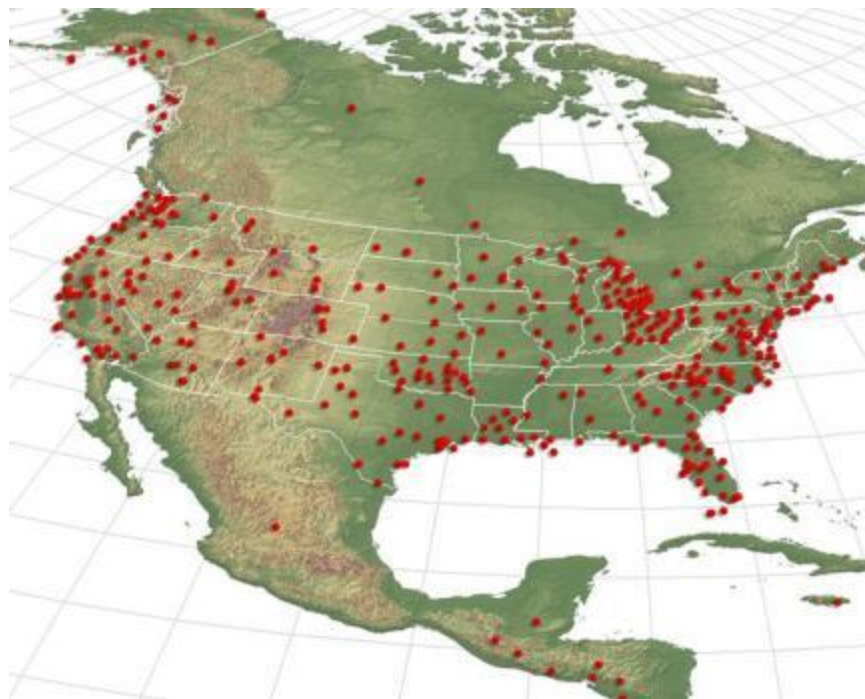
- Southern Avionics Company (SAC) transmitters replaced with new modular NAUTEL Vector D transmitters.
- USCG Maritime DGPS sites currently being upgraded.
- DOT Inland DGPS sites will begin in 2011





Continuously Operating Reference Stations (CORS)

- DGPS Systems forms 15% of CORS.
- Used by surveyors, GIS/LIS professionals, engineers, scientists, etc
- Post-Processing data enables centimeter accuracy.

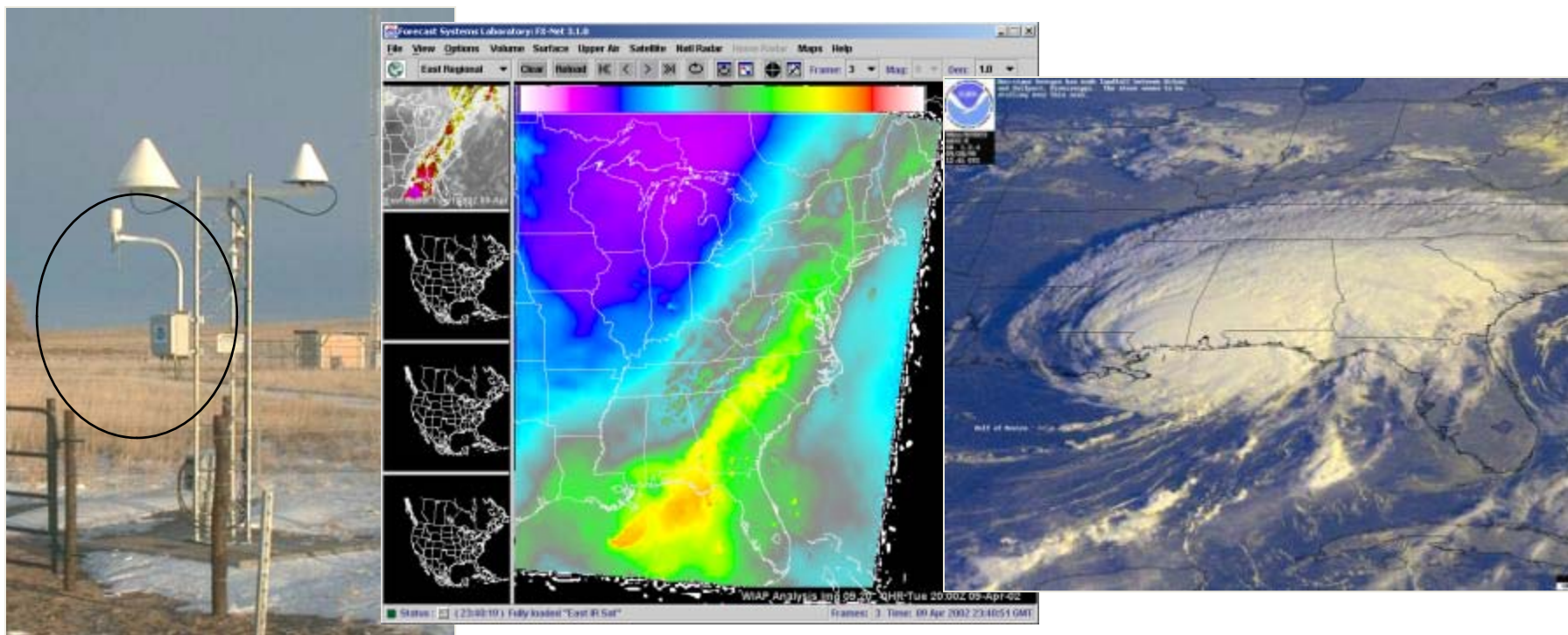




GPS Surface Observing System (GSOS) Network.

NOAA's Forecast Systems Lab

- NOAA also uses data from our DGPS sites to continuously measure the water vapor in the atmosphere.
- Greatly improves short term weather forecasts.



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NAVIGATION CENTER

The Navigation Center of Excellence

U.S. Department of Homeland Security

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Primary Mission Areas:

- Global Positioning System
- Differential GPS
- Nationwide DGPS
- LORAN C
- Inland River Vessel Movement Center
- Civil GPS Service Interface Committee
- Automatic Identification System
- Electronic Navigation & Charting
- Maritime Telecommunications

Services & Reporting:

- Receive Free LNM Updates
- Receive Free GPS Status Messages
- Receive NANU Updates
- Join CGSIC (free)
- Report an ATON Discrepancy or Outage
- Report a GPS Problem
- Report a DGPS Problem
- Report an AIS Problem
- Report a LORAN Problem
- Contact Us

January 15, 2008

NAVIGATION CENTER POINTS OF INTEREST



Current Operational / Safety Information

- Consolidated Nav Info
- DGPS Site Status
- GPS Ops Advisories & NANUs
- GPS Almanacs
- GPS Interference Notices
- Local Notice to Mariners
- Light List and Corrections
- Navigation Rules
- Navigation Regulations
- Navigation Safety Alerts



Maritime Information

- USCG "Homeport" Website
- Vessel Traffic Services
- Global Maritime Distress and Safety System
- CG Nat'l Distress System
- Digital Selective Calling
- Vessel Traffic Services
- VHF Channels & Freqs
- MF & HF Channels
- Nav Pubs and Documents
- Radio Watch Requirements
- Marine Safety Information Broadcasts
- Ports and Waterways Safety System



More About NAVCEN

- Mission Statement
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News and Notices:

- The 2007 Light Lists have been published and are available for download in PDF.
- The final agenda and presentations for the 47th CGSIC meeting (24, 25 Sept) are now available (PDF, 95K).
- Please read Coast Guard Marine Safety Alert 2-07 (PDF, 85K) regarding marine radios and AIS equipment.
- The Department of Transportation (Research and Innovative Technology Administration) and the U.S. Coast Guard request your comments regarding need to continue to operate the inland component of the Nationwide Differential Global Positioning System (NDGPS) Program. Please read our introductory page and the notice and submit your comments to the Docket Management Website. Use docket number 28836.
- The U.S. Air Force has released a media announcement concerning the transition from the legacy GPS Master Control Station (MSC) to a new GPS ground segment control system called "Architecture Evolution Plan" (AEP). You may read it here.
- You may view previous news items here.

DGPS Problem Online Worksheet

UNCLASSIFIED

Address <http://www.navcen.uscg.gov/dgps/dgpsuserinput.htm>

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Differential GPS (DGPS)

- DGPS Site Status Info
- Canadian DGPS Status Info
- U.S. DGPS Coverage Plots
- Report a DGPS Problem
- Frequently Asked Questions
- Reference Information

Primary Mission Areas:

- Global Positioning System
- Differential GPS
- Nationwide DGPS
- LORAN C
- Inland River Vessel Movement Center
- Long Range Identification and Tracking
- Civil GPS Service Interface Committee
- Automatic Identification System
- Electronic Navigation & Charting
- Maritime Telecommunications

Maritime Information:

- USCG "Homeport" Website
- Vessel Traffic Services
- Global Maritime Distress and Safety

DGPS REPORT-A-PROBLEM WORKSHEET

The Navigation Center appreciates your reports regarding service degradations, outages, or other incidents or anomalies. Please answer the questions below. Some fields are required for submission, but all personal data will be kept private and will only be used to contact you in the event that we need more information or if clarification is required. Please be as complete as possible when reporting an incident. Thank you!

Privacy Information: The privacy of our customers has always been of the utmost importance to the Navigation Center. We have a long history of protecting your privacy and our concern for your privacy is no different in the electronic age. Our Internet privacy policy is:

- You do not have to give us personal information to visit our site.
- We will collect personally identifiable information (name, email address, telephone number) only if specifically and knowingly provided by you.
- Information is collected for informational purposes only and NAVCEN personnel sometimes will contact individuals for further information.
- We do not give, sell or transfer any personal information to third party.

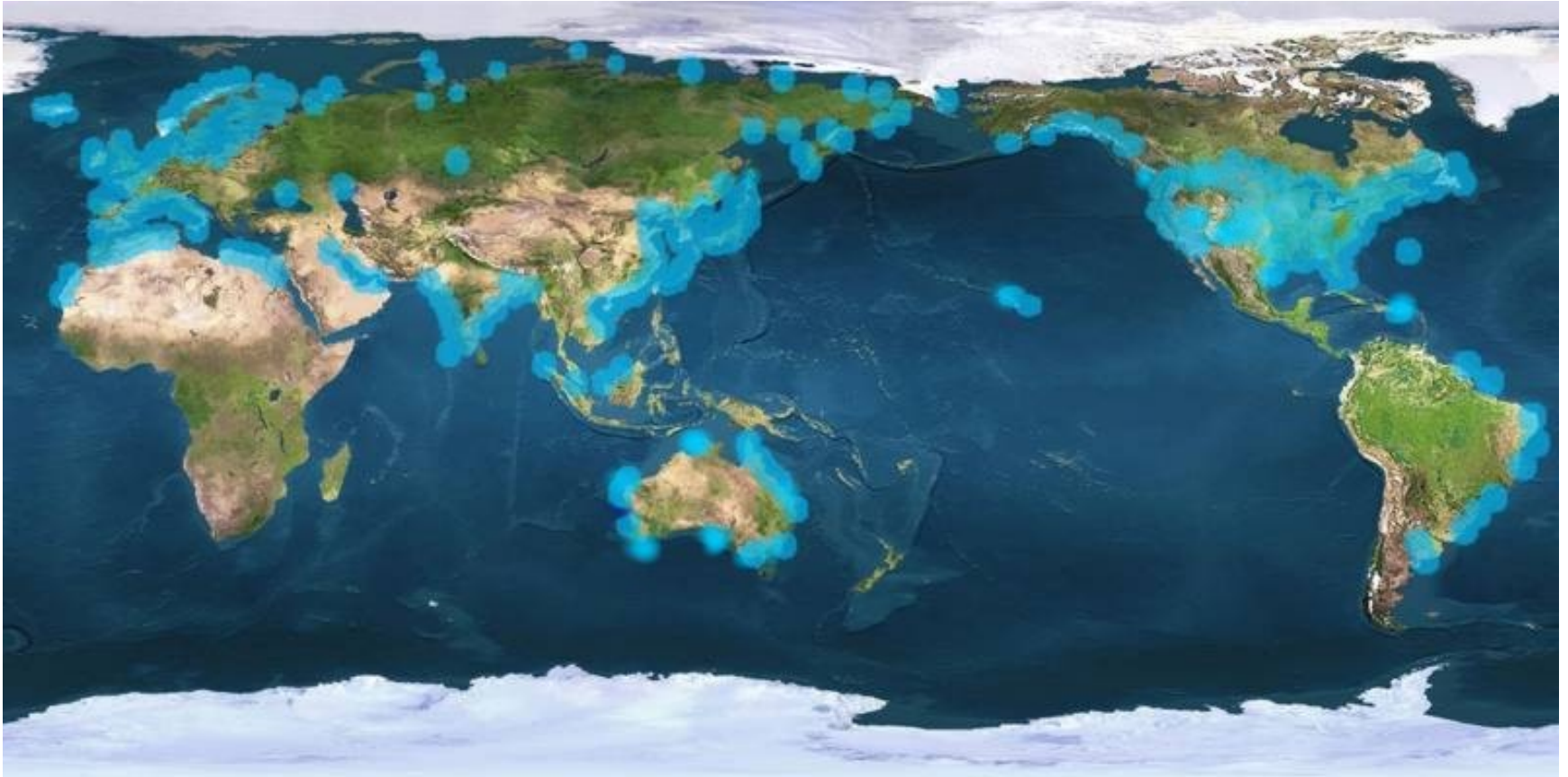
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* Your Name:	<input type="text"/>
* Email Address:	<input type="text"/>
* Telephone number: (use 10 digits only, i.e. 70331 35900)	<input type="text"/>

Continue →

Trusted sites

Worldwide DGPS Coverage



LT Christian Hernaez

Christian.J.Hernaez@uscg.mil

703-313-5850



**Homeland
Security**