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# United States GPS Interference Detection and Mitigation (IDM)

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# Topics of Discussion

- **Governance**
- **Existing/Emerging Threats Assessments**
- **Patriot Watch – A National Capability**
  - **Critical Infrastructure Key Resources**
  - **CONOPS Development**
  - **PNT Incident Portal/Central Data Repository**
  - **National Sensor Capability initiatives**



# Interference Detection & Mitigation (IDM)

- IDENTIFY
  - ANALYZE
    - LOCATE
      - ATTRIBUTE
        - MITIGATE



# Existing and Emerging Threats



Cell Phone



WiFi



GPS



Cell Phone & GPS



## Product Reviews

[WRITE A REVIEW](#)1. **Fantastic service and it really works!** ★★★★★

Posted by Unknown on 29th Jul 2010

Fast delivery no hassles, fantastic

2. **Perfect!** ★★★★★

Posted by Tont VALENTE on 20th May 2010

Ive worked in Japan and for some of the biggest companies in the world included Nike and playstation and K-1, and The Signal JAMMER is a first class company to order from. Better than ebay with customer service and great products to help you in this ever changing world.

3. **It works** ★★★★★

Posted by Unknown on 4th Feb 2010

I plugged it in and it knocked out my Tom Tom and XM Radio.

4. **Great GPS blocker** ★★★★★

Posted by Greg USA on 15th Jan 2010

This gadget is great. Within moments of plugging into my lighter all gps systems were completely blocked, including my trak stik. Great company to do business with...honest with good communication.



# Regulations in the U.S.

**U.S. Federal statutes and regulations generally prohibit the manufacture, importation, sale, advertisement, or shipment of devices, such as jammers, that fail to comply with FCC regulations.**



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# Regulations in the U.S.

## U.S. Federal Statutes – Communications Act

- 47 U.S.C. § 301 Unlicensed (unauthorized) operation prohibited
- 47 U.S.C. § 333 – Interference to authorized communications prohibited
- 47 U.S.C. § 302a(b) Manufacturing, importing, selling, offer for sale, shipment or use of devices which do not comply with regulations are prohibited



# Regulations in the U.S.

## Telecom Agency Rules - FCC

- 47 C.F.R. § 2.803(a) - marketing is prohibited unless devices are authorized and comply with all applicable administrative, technical, labeling and identification requirements.
- 47 C.F.R. § 2.803(e)(4) - marketing is defined as “sale or lease, or offering for sale or lease, including advertising for sale or lease, or importation, shipment, or distribution for the purpose of selling or leasing or offering for sale or lease.”







# PUBLIC NOTICE

Federal Communications Commission  
445 12<sup>th</sup> St., S.W.  
Washington, D.C. 20554

News Media Information 202 / 418-0500  
Internet: <http://www.fcc.gov>  
TTY: 1-888-835-5322

DA 11-250  
February 9, 2011  
Enforcement Advisory No. 2011-04

## FCC ENFORCEMENT ADVISORY

CELL JAMMERS, GPS JAMMERS, and OTHER JAMMING DEVICES

**CONSUMERS BEWARE:** It is Unlawful to Use “Cell Jammers” and Other Equipment that Blocks, Jams, or Interferes with Authorized Radio Communications in the U.S.



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# CIKR Sectors



[Agriculture and Food](#)



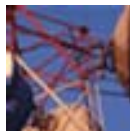
[Banking and Finance](#)



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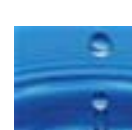
[Nuclear Reactors, Materials and Waste](#)



[Postal and Shipping](#)



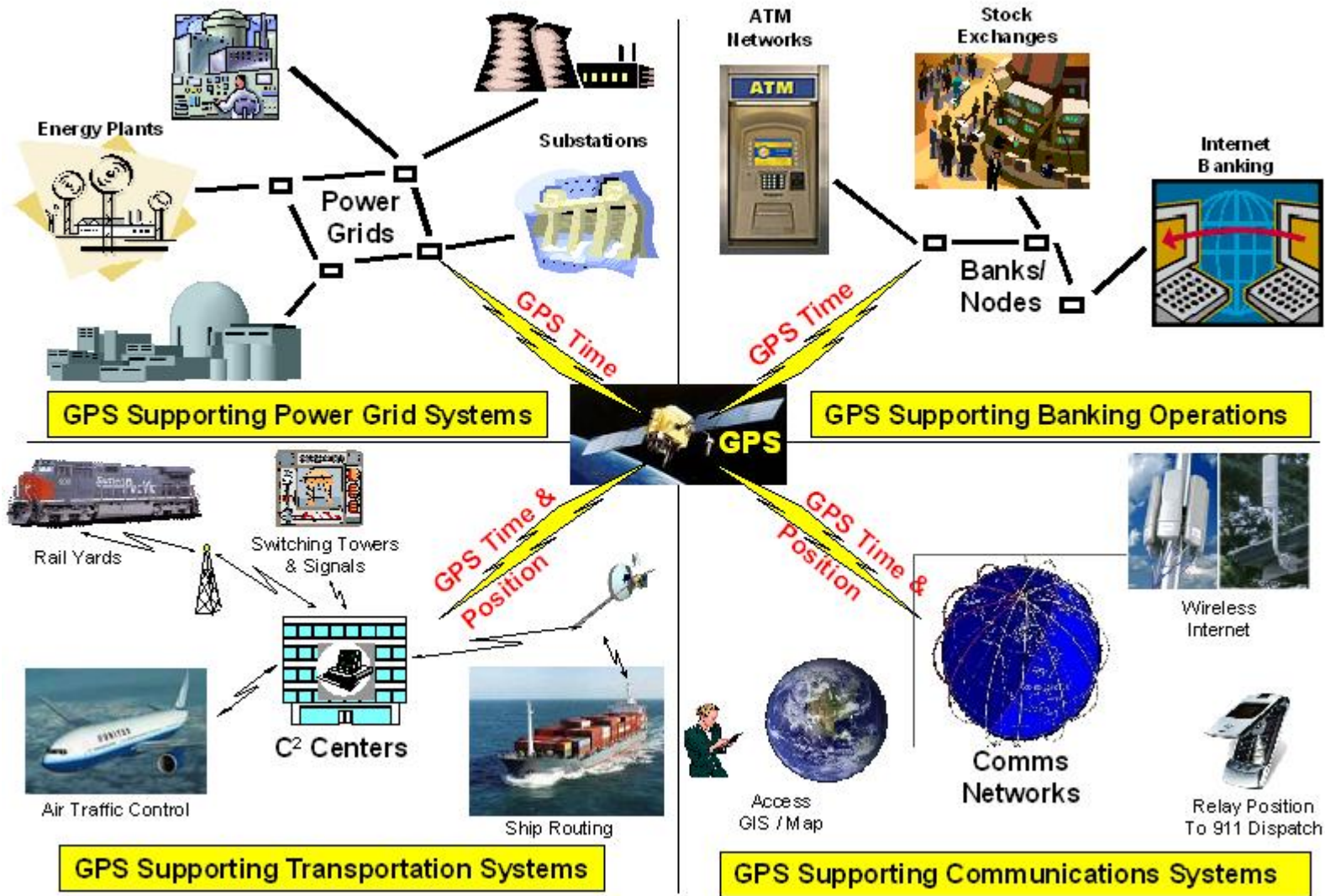
[Transportation Systems](#)



[Water](#)



# Extent of GPS Dependencies



# Patriot Watch System

- **System-of-Systems approach to provide real-time monitoring (preparedness), location & notification (response) of GPS interference for protecting the Nations CIKR Sectors.**
  - Designed with government & commercial hardware
  - Persistent monitoring yields situational awareness
  - Timely response to anomalies
  - Sensor placement based on PNT CIKR Criticality
  - Remains operational when GPS systems is “stressed”
- **Collective Effort by various USG entities**
- **Significant Cost and Risk reduction by taking full advantage of mature, existing systems**





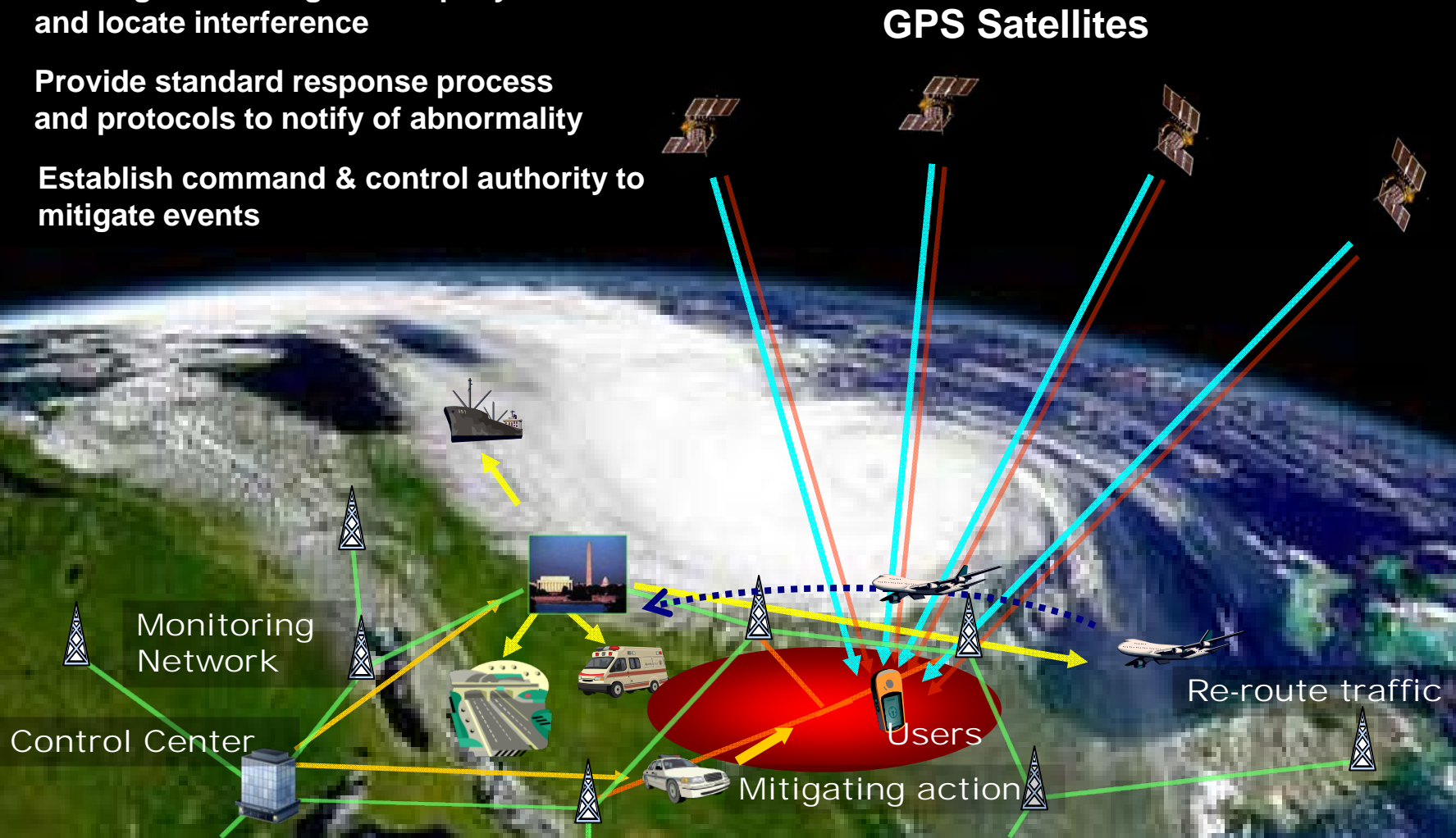
# Patriot Watch - Concept

**National capability to detect & mitigate GPS interference INCONUS, supporting PNT and CIKR resilience**

Leverage technologies to rapidly detect and locate interference

Provide standard response process and protocols to notify of abnormality

Establish command & control authority to mitigate events



## PNTIP Application Login Page



Login Email:

Password:

[Logon to PNTIP](#)

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[Change password?](#)

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Warning: This is a Federal Aviation Administration (FAA) computer system. [1370.79a](#)

This computer system, including all the related equipment, networks and network devices (specifically including Internet access) are provided only for authorized U.S. Government use. FAA computer systems may be monitored for all lawful purposes, to ensure that their use is authorized, for management of the system, to facilitate protection against unauthorized access, and to verify the security of this system.

During monitoring, information may be examined, recorded, copied, and used for authorized purposes. All information, including personal information, placed on or sent over this system may be monitored. Use of this FAA computer, authorized or unauthorized, constitutes consent to monitoring of this system.

Unauthorized use may subject you to criminal prosecution. Evidence of unauthorized use collected during monitoring may be used for administrative, criminal or adverse action. Use of this system constitutes consent to monitoring for these purposes.



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Ticket Information

TIX Opened: 4/5/2006 1445 Name: Cabala Event Start: 10/12/2009 0001 Suspense: 12/31/2009 **898**

TIX Closed: Phone: 2022678584 Event End: **Extend**

Event Information

Ident: ORL Equip: GPS City: ORLANDO St: FL Lead Org: GPSOC

Svc Area: ESA ARTCC: Event Type: GPS TESTING Freq: 1845.23 Private:

User Rcvr: Garmin 196 JSIR: 45-9875432 Related TIX1: NOC1008344 Impact: OTHER Source: Unintentional Emitter

Related TIX2: Sub Source: Welder

Delays: 0.0 Platform: Cost: 1,500.55 Alt.: 20,000 Lat.: 29.431052 Long.: -82.30785

Event Summary

TA# SPC GPS 2004-351 Affected Centers: ZJX AND ZMA Dates: 1 Jan 06 - 31 Dec 06.

Event Notes 4000 chars rem

Due to pre-launch testing of Global Positioning System (GPS) satellites, GPS is unreliable and may be unavailable within a 5nm radius of Cape Canaveral, FL (282814n0803448w) at FL100 and FL 4,000ft AGL.

Authorized dates: 1 Jan 06 - 31 Dec 06.

Event Log

10/30/09@1019(gpssocuser) Sample entry into the EVENT LOG for testing purposes





Home - Positioning, Navigation, & Timing (PNT) - Navigation, & Timing (PNT) - Home - Positioning, Navigation, & Timing (PNT) - Home - Positioning, Navigation, & Timing (PNT) - Home - Positioning, Navigation, & Timing (PNT)

https://government.hsin.gov/sites/GMO/default.aspx

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**HSIN** Position, Navigation and Timing 

Site Settings Membership Advanced Search Help Logout  
Today is Thursday, August 11, 2011

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# PNT

## Positioning, Navigation and Timing

**Announcements**

New Item | Filter

There are currently no active announcements. To add a new announcement, click "Add new announcement" below.

**RSS Feeds**

**Public releases at PNT.gov**

- Presentation from FGCS Meeting
- News Release: Executive Branch Position on LightSquared Issue
- NTIA Letter to FCC on LightSquared Interference Concerns
- NPEF Report on LightSquared Interference to GPS
- Request for Public Comments on LightSquared Issue

**Inside GNSS News**

- New Video Contest Seeks Short Clips of Topcon Products In Use
- GPS Interference Test Results May Not Slow FCC Decision on LightSquared Deal
- FAA Estimates \$70+ Billion in Costs, Nearly 800 Deaths, Due to LightSquared Interference to GPS
- China Announces Successful Compass/BeiDou-2 Satellite Launch
- NovAtel Launches Business Card-Sized OEM 615 GNSS Receiver

**Inside GNSS Events**

- China Satellite Conference 2011
- Berlin GNSS Symposium 2011
- SIRGAS 2011
- 2011 East Coast Seminars: NavtechGPS
- ESA International Summer School on Navigation Satellite Systems 2011

last update on: 8/11/2011 2:19:33 PM

**Assistance**

For assistance with your account, please contact the HSIN Help Desk at 1-866-430-0162 or HSIN.Helpdesk@dhs.gov.

**Search**

This site

**Useful Links**

- USCG Navigation Center
- United States Naval Observatory (USNO)
- OneView
- FAA National Satellite Test Bed Monitor GPS/WAAS performance.
- NCO Internal Library User name & password Required.
- IDN Meeting Page View upcoming Conferences/Meetings
- IDCT Page Information Dissemination Coordination Team - Members Only
- PNT Incident Portal Page Available - Link to Portal Not Available Yet
- PNT LE Sensing Data Restricted Page - Authorized Personnel Only

Add new link

**My Communities**

**Federal**

- Deepwater Horizon MC252
- Emergency Management
- Federal Operations
- Geospatial Information System
- HSIN Government Home
- Position, Navigation & Timing (PNT)

More...

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Home - Information Dissemination Coordination Team (IDCT) - Windows Internet Explorer

https://government.hsin.gov/sites/GMO/IDCT/default.aspx

File Edit View Favorites Tools Help Convert Select

McAfee

Home - Information Dissemination ...

Up to Positioning, Navigation, & Timing (PNT)

Information Dissemination Coordination Team (IDCT)

**Home**

This site

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**Documents**

Shared Documents

**Announcements**

There are currently no active announcements. To add a new announcement, click "Add new announcement" below.

Add new announcement

**Events**

Title	Location	Begin	End
There are no items to show in this view of the "Events" list. To create a new item, click "New item" above.			

Previous

Add new event

**Shared Documents**

Type	Name	Modified By
Document	IDCT and Ops Summit Action Items_AUG 2011_Rev 2 (FOUO)	Michael Bergman
Document	2008 IDM Implementation Strategy (Signed)	Samuel Coker
Document	2007 DHS_PNT IDM Plan Final WH Version w memo	Samuel Coker
Document	PIRT Charter signed (2008)	Samuel Coker
Document	EMI Common Checklist V3	Samuel Coker
Document	Memorandums Of Agreement (MOA)	Samuel Coker
Document	Presentations from 1-2 June 2011 IDCT	Samuel Coker

Add new document

**Links**

- NAVCEM Webpage
- FAA Contact Webpage
- GPSOC Homepage
- FCC Contact List
- INWC IDCT Wiki

Add new link

Done

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**OneView** Geospatial Information Infrastructure (GII)

Road Aerial Bird's eye Streetside | Labels

Layers Query Conus Find

Scale 1:27580566

58.5371, -51.2092 4.00

1000 Miles



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**OneView** Geospatial Information Infrastructure (GII)

Road Aerial Bird's eye Streetside Labels

Layers Query Conus Find

Scale 1:27382

40.6973, -74.1577 14.00

1 Miles

Field	Value
CALLSIGN	WQTV897
OBJECTID	567457
LICENSEE	Port Authority of New York and New
LOCNUM	3
LAT_DMS	40,41,52
LATDIR	N
LON_DMS	74,9,28
LONDIR	W
LOCADD	Pole 14, N. side of guard post I, New
LOCCITY	Newark
LOCCOUNTY	ESSEX
LOCSTATE	NJ
NEPA	N
OZONE	

Map Layers

- Land Mobile Commercial Service
- Land Mobile Private Service

NJ, United States



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# QUESTIONS?

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202-447-3731

