
United States Technical Training Institute (USTTI)

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Outline

• DHS Core Missions
• DHS Common Uses of GPS
• DHS Components Unique Uses of GPS
• Summary
Five Core Homeland Security Missions

- Prevent Terrorism and Enhancing Security
- Secure and Manage Our Borders
- Enforce and Administer Our Immigration Laws
- Safeguard and Secure Cyberspace
- Ensure Resilience to Disasters
DHS Common Uses of GPS

• **Timing for Computer Networks**
  – Network Time Protocol (NTP)

• **Communications**
  – Cell Phones, Satellite Comms, Mobile Radios

• **Blue Force/Asset Tracking**
  – USCG, CBP, ICE, FEMA, etc…

• **Natural Disaster/Crisis Management**
  – Hurricanes (Katrina, Rita)
  – Deepwater Horizon
• **Aids to Navigation**
  – Placement of Nav Aids

• **Fisheries**
  – Prevent illegal fishing in prohibited areas

• **Search and Rescue**
  • Global Maritime Distress and Safety System (GMDSS).
  • Rescue 21/SARSAT

• **Automatic Identification System**
  – Maritime Domain Awareness

• **Differential GPS**
Customs & Border Protection

• **Air-Marine Safety of Flight & Navigation**
  – Enhanced Ground Proximity Warning System
  – Electro-Optical/Infra-Red (EO/IR) Sensor turret
  – Area Navigation Systems
  – electronic Automatic Identification System (eAIS)

• **UAV Control**
  – Safety of Flight
Federal Emergency Management Agency (FEMA)

- **Deploy to Disaster Site**
  - Hurricane, Tornado, Fire, etc...

- **Conduct Damage Assessments**
  - GPS with GIS tools provides timely and accurate damage assessments
FEMA Mission

- Support our citizens and first responders

- Ensure that as a nation we work together to build, sustain, and improve our capability

- Prepare for, protect against, respond to, recover from, and mitigate all hazards
Logistics Management Directorate (LMD) Mission

• Effectively plan, manage and sustain national logistics response and recovery operations, in support of domestic emergencies and special events

• Establish national procedures, fostering transparency through collaboration and coordination

• Focus on technology enhancements to expand Region & State level logistics capabilities.
Office of Logistic Systems (LS) Mission

- Manage, maintain, and expand FEMA’s supply chain technology
- Integrate automated logistics solutions, and modernize FEMA’s logistics systems
- Ensure the efficient and effective delivery of critical assets in support of domestic emergencies.
Accomplishing the Mission

Resource Tracking

Constant Visibility
What is a Transponder?

Fully Self-Contained Device that…

- Communicates with a constellation of 48 low Earth orbit (LEO) satellites
- Internal battery and antennas
- Field programmable
- Integrated motion sensor
- Long-life battery pack

SX1 Model
How Does a Transponder Operate?

• The GPS transponder
  – transmits messages to satellites
  – satellites send a return signal to a data collection terminal (Numerex)
  – Information, combined with an integrated software system
  – generates a visual location of the asset which serves as an integral part of the program designated LSCMS.
Summary

• GPS is widely used to carry out DHS Missions
• Most Common applications are
  – Communications
  – Situational Awareness – Blue Force / Asset Tracking
  – Network Timing
• DHS Components also have unique uses of GPS
  – UAV Safety of Flight - CBP
  – Aids to Navigation – USCG
  – Command, Control, Coordination of Natural Disasters - FEMA
QUESTIONS?