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# **NORAD and USNORTHCOM FY 18-22 S&T Capabilities of Interest**

**Current as of 11 April 2016  
Mr. Rob Brunner**

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# FY 18-22 Capabilities of Interest

- Detect, Track & ID Air Targets
- Arctic Capabilities
- Threat Info Sharing, Collaboration & Dissemination
- Engage Air Targets
- Maritime Surveillance – Sub-Surface
- Network Resiliency
- Critical Time Management of GPS

- CWMD Preparedness and Response in the Domestic AOR
- Operational Use of Social Media
- Mine/Underwater IED (UWIED) in Homeland
- Maritime Non-Lethal Engagement
- Maritime Surveillance – Surface
- Recovery of USG Personnel in USNC AOR
- Mission Assurance Common Integrative Framework

Air & Missile
Maritime
Land
Cross Cutting

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# FY 18-22 Capabilities of Interest

## Detect, Track, and Identify Air Targets

- Enhanced ability to detect, track and ID multiple air threats
- Enhanced ability to Detect, Track, and ID air targets over the maritime domain



## Joint Engagement Sequence (JES)



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# ***FY 18-22 Capabilities of Interest***

## **Arctic Capabilities**

### **Improve All Domain Awareness and Response:**

- Increased all domain activity across the Arctic due to the reduced extent of seasonal ice, and the amount of Arctic maritime activity is expected to increase significantly in the coming decades
- Maintain and improve existing air, surface, and undersea activity related to C4ISR assets that will enable effective response operations above 65 degrees North
- Infrastructure challenges include limited resources, the Arctic Region's adverse weather, vast distances, and by long durations of darkness



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# FY 18-22 Capabilities of Interest

## Threat Information Sharing, Collaboration and Dissemination in Support of Decision Making

Increased Homeland Defense and Force Protection capabilities for rapid electronic authentication of DOD identity credentials, cross-service interoperability for base access control, access to authoritative DoD and US government identity/biometrics databases, and cross-Service information sharing

Defense Security Enterprise – Operating Activities / Missions				
Physical Security	Personnel Security	Industrial Security	Information Security	Operations Security
Installations	Classified Access	NISPOM	Compromise/Reporting	OPSEC Program
Emergency Planning	Investigations	PERSEC	Markings/Safeguarding	Assessment/Survey
Weapon System Security	Adjudication	Cleared Contractors	Transmission/Transportation	Information Protection
Bulk Petro Protection	Clearances	Protection of DoD equipment	Special Access Programs	Education and Training
Comm System Security	Reporting	International Security	Education and Training	

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# ***FY 18-22 Capabilities of Interest***

## **Engage Air Targets**

Enhanced capabilities to defend North America against advancing weapons technology and delivery platforms

- Enhanced ability to engage air-breathing targets
- Rapid and advanced methods to engage tracks of interest. Innovative methods to decrease the time needed to engage threats improves effectiveness

### **Joint Engagement Sequence (JES)**



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# FY 18-22 Capabilities of Interest

## Maritime Surveillance – Sub Surface

Improved surveillance capability for wide-area maritime comprehensive domain awareness

- S&T efforts are focused on offshoot/novel technologies/capabilities that can improve detection capability in hardware/software/signal processing
- S&T is also supporting and focusing on technology prototypes for assessment in operational environments more quickly



Dark Target Detection/Tracking



Mine/Underwater IED Detection

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# FY 18-22 Capabilities of Interest

## Network Resiliency

Improved Network resiliency in support of and among POTUS, senior leadership, Combatant Commanders, subordinates/ components and C4ISR in general

- Cyber stressed
- Electro-Magnetic Pulse (EMP)
- Denied space
- Other events



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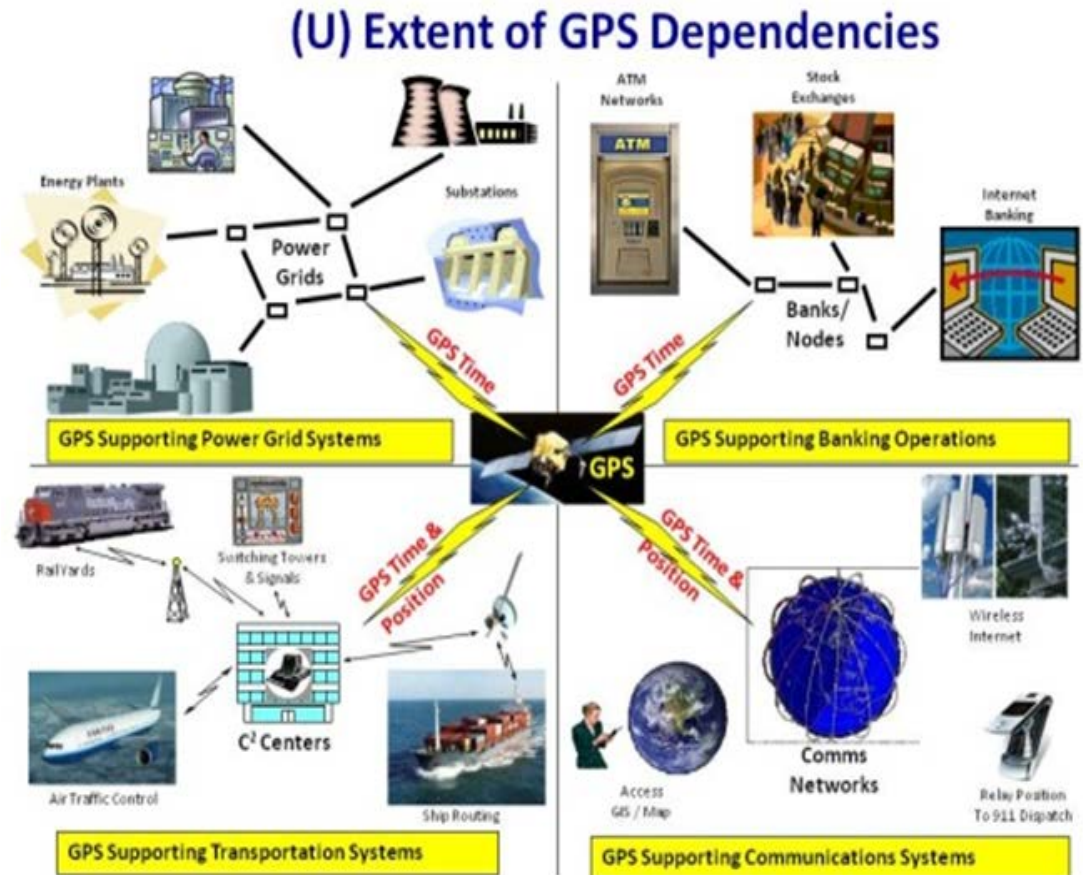


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# FY 18-22 Capabilities of Interest

## Critical Time Management Relative to GPS

- The most widespread method of precise time dissemination is through the GPS
- Improved understanding of reliance on GPS and potential approaches to mitigation



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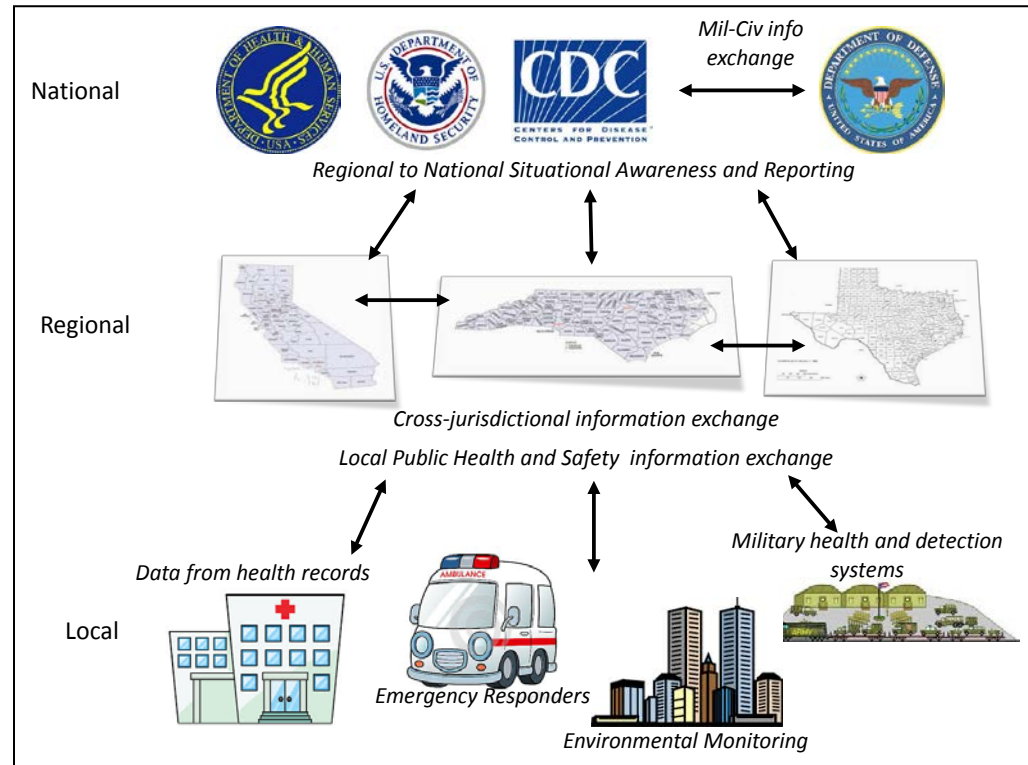
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# FY 18-22 Capabilities of Interest

## Counter-WMD (CWMD) Preparedness and Response in the Domestic AOR

Improved DOD CWMD preparedness and response elements for enhanced and integrated CBRN detection and technical forensics, protection, contamination mitigation and characterization, as well as situational awareness capabilities to mitigate the effects of WMD within USNORTHCOM AOR

Enhanced capabilities to conduct sustained automated mass decontamination operations resulting from complex catastrophes



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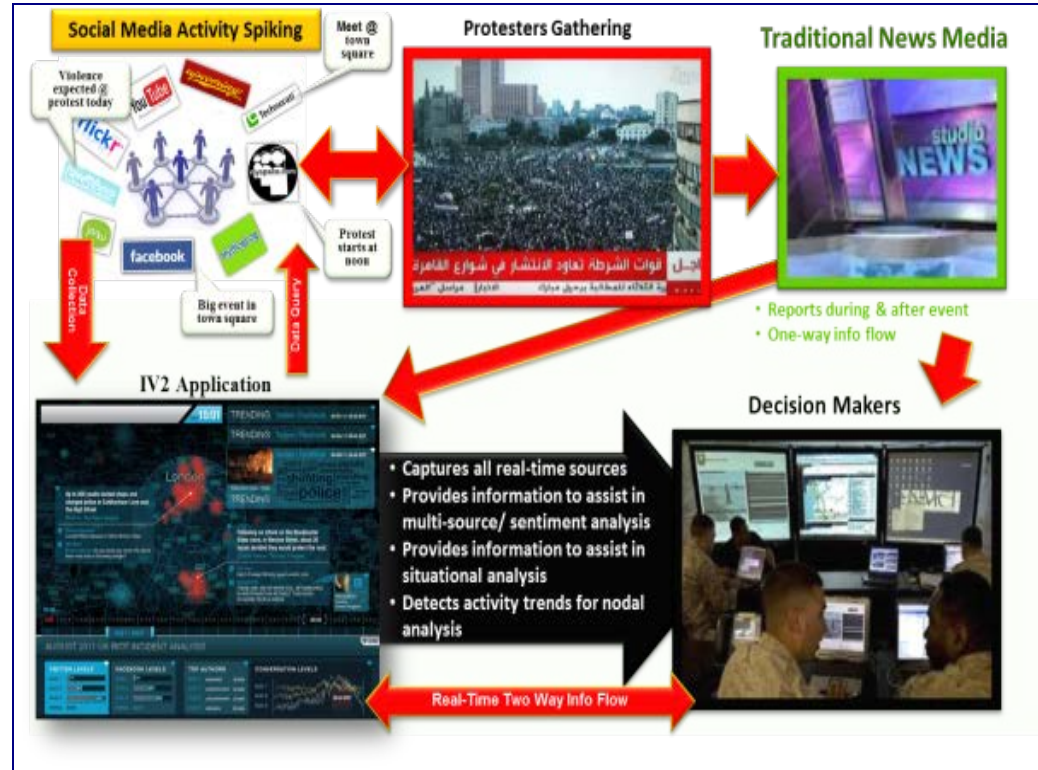
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# FY 18-22 Capabilities of Interest

## Operational Use of Social Media

Ability to effectively leverage open source information across a range of mission efforts to provide a holistic perspective on certain aspects of intelligence collection, production, and dissemination

- DOD is prohibited from using social media in support of operations within the US due to the potential for discovery of US Personally Identifiable Info
- This prohibits DOD from leveraging a valuable info source for situational awareness, whether from direct access or from info gathered from DOD partners



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# ***FY 18-22 Capabilities of Interest***

## **Mine and Underwater Improvised Explosive Device (UWIED) In the Homeland**

Improved capability to rapidly detect and discriminate mine-like objects

- Underwater explosive devices and divers
- Detect, classify, localize UWIEDs in confined, shallow and very shallow US ports, waterways and littorals



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# FY 18-22 Capabilities of Interest

## Maritime Non-lethal Vessel Engagement

Improved non-lethal (effects) capability for the Joint Maritime Force to engage maritime vessels and personnel

- Non-lethal capabilities to minimize adverse human effects and provide non-catastrophic “reversible” material damage
- Capable of disabling large maritime vessels, 300 GW tonnage



## Maritime Surveillance - Surface

Improved wide-area maritime surface surveillance, detection, and warning capabilities to defeat, disable, and/or disrupt threats to North American and US waterways and littorals

- Includes environmental data such as sea state, current, ice prediction in the Arctic and tracking “small boat, go fasts” in the USNORTHCOM AOR



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# ***FY 18-22 Capabilities of Interest***

## **Recovery of USG Personnel in NORTHCOM AOR**

Improved means for geolocation during personnel recovery efforts. Attempted abductions of U.S. persons in the USNORTHCOM AOR while supporting USG activities pose significant risk to personnel safety and operational security

## **Mission Assurance Common Integrative Framework**

Improved ability to support domestic mission critical assets during prolonged energy outages caused by natural, man-made, or technological disasters. Applicable to all-threat and all-hazard operational environments and associated cascading effects

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