



U.S. Coast Guard Command & Control (C2) Modernization

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U.S. Coast Guard, COMDT (CG-761)

Chief of C5I Capabilities

04/08/2024



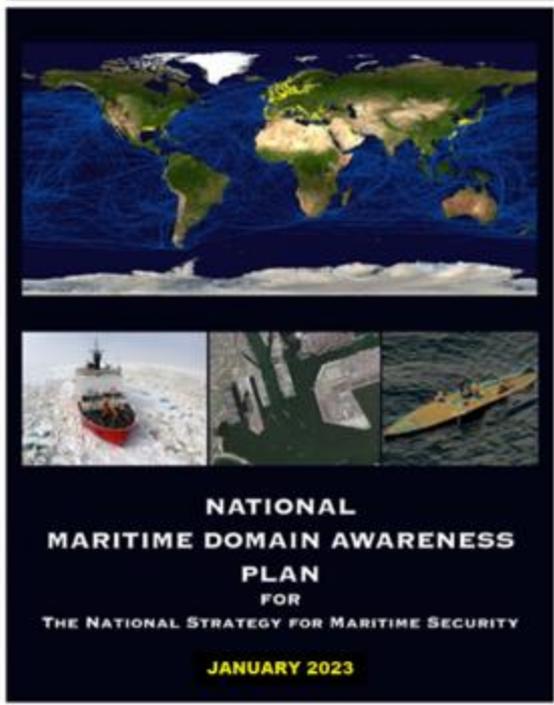
**CG-761 is the
front door for C5I
requirements and
capabilities.**

Command
Control
Communications
Computers
Cyber
Intelligence





National MDA and the USCG



Maritime Domain Awareness (MDA)¹ is the effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment of the United States.

The **Maritime Domain** is all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo, vessels, and other conveyances.

Two Core Principles:

- Unity of Effort
- Foster Information Sharing and Safeguarding

The **USCG is the Executive Agent** for Maritime Domain Awareness oversight, strategic direction, and planning within the Department of Homeland Security².

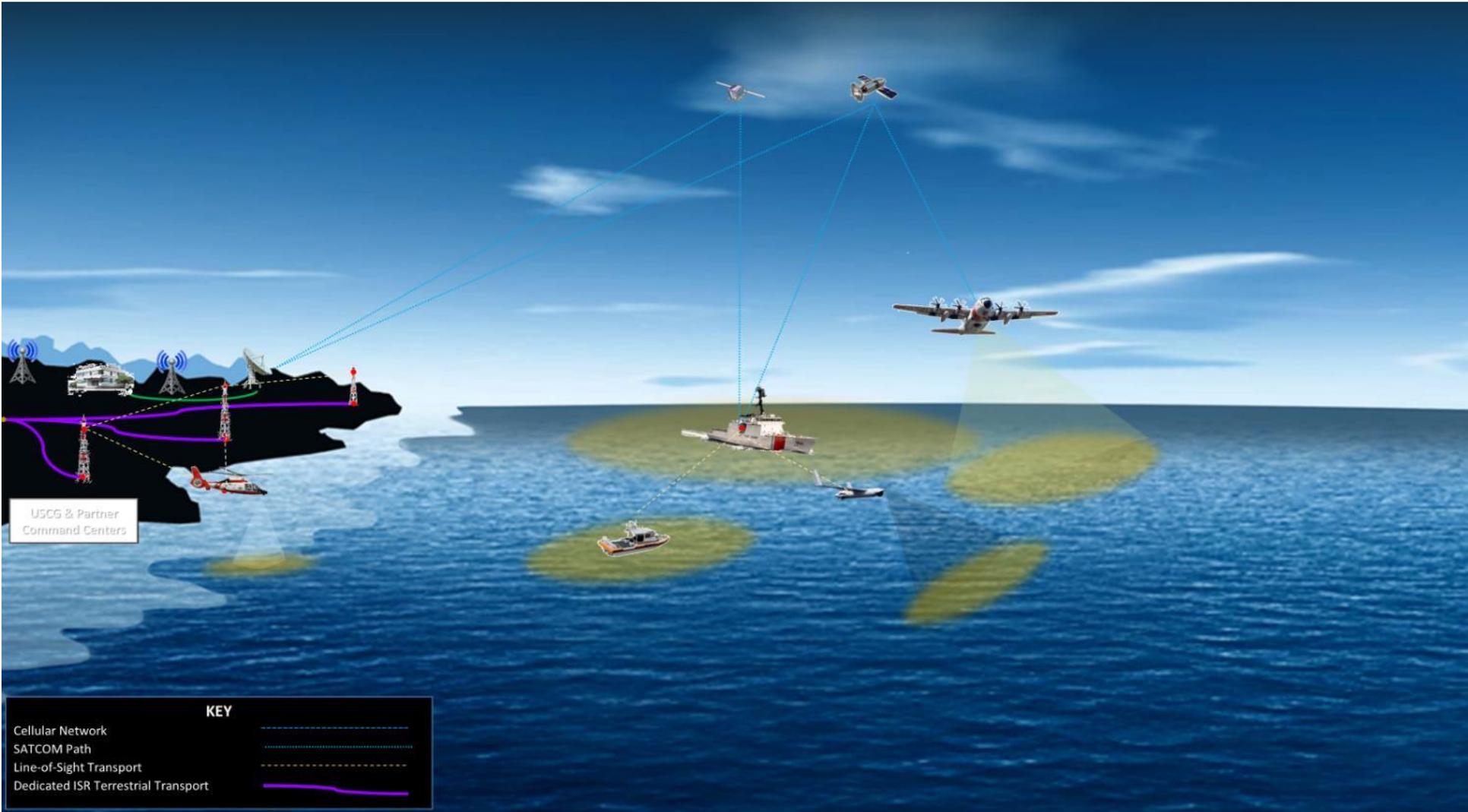
Source:

1. *National Maritime Domain Awareness Plan* [Revision 3 of 2022; original December 2013)
2. *Maritime Domain Awareness (MDA) Executive Agent Designation [April 2008]*





Current State





Challenges



C2 Sensor and System obsolescence.

Bifurcated, disconnected, and stove-piped systems.

Lack C2 data infrastructure and environment to interface C2 data sources and enable data sharing across multi-level security environment to inform MDA decisions.

Inability to have real-time, two-way exchange of strategic, operational, and tactical data and plans to support mission goals and outcomes.

Inability to comprehensively monitor operational domains and ingest inputs from disparate sources, correlate/merge/fuse data, and allow operator interaction with data to output purposeful information.

Inability to visually display, organize, and link underlying data into a usable format for strategic, operational and tactical decision making.





Project Minerva



Sharpen Our Competitive Edge
Unite people, assets, systems, and data in
new ways to design a more agile future force.

Project Minerva was chartered to
“align Coast Guard efforts and... define
the high-level **Next Gen Operational
Data Ecosystem...**”

Deliver “improved **maritime
domain awareness** and **decision
advantage** through **interconnected,
enterprise wide C5I capabilities**”





Project Minerva

Next Generation Command & Control (NextGen C2)

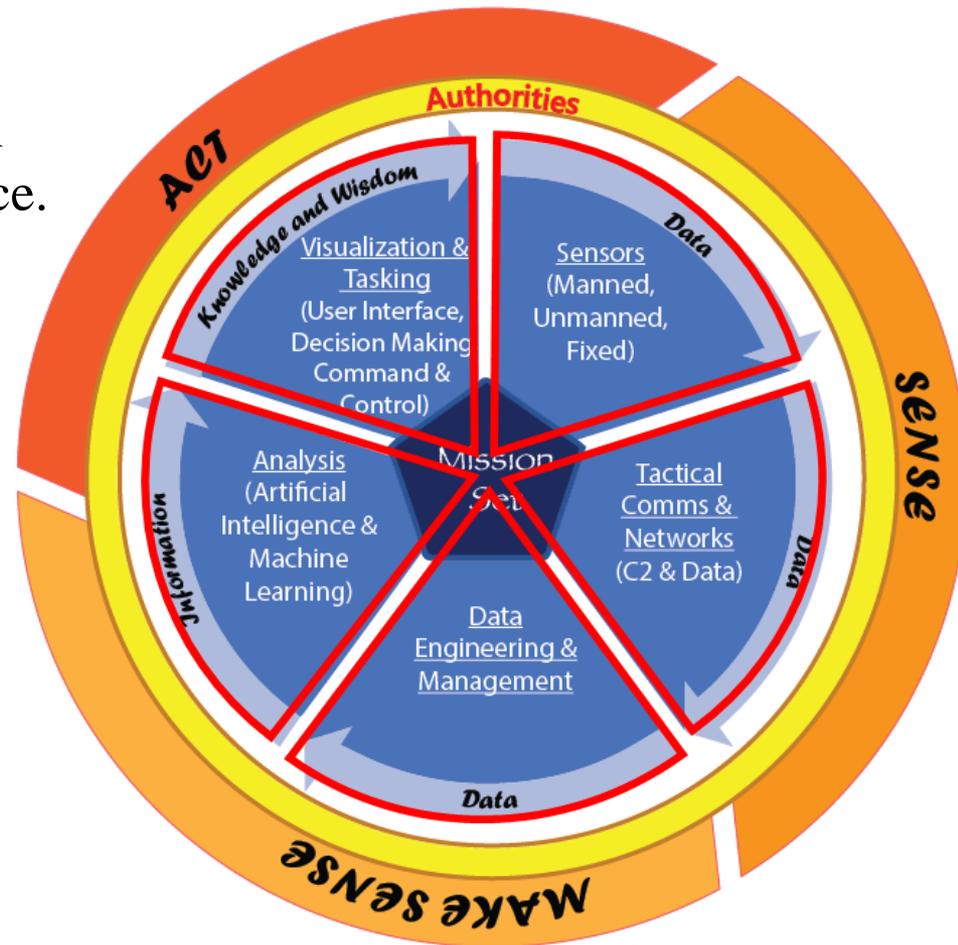


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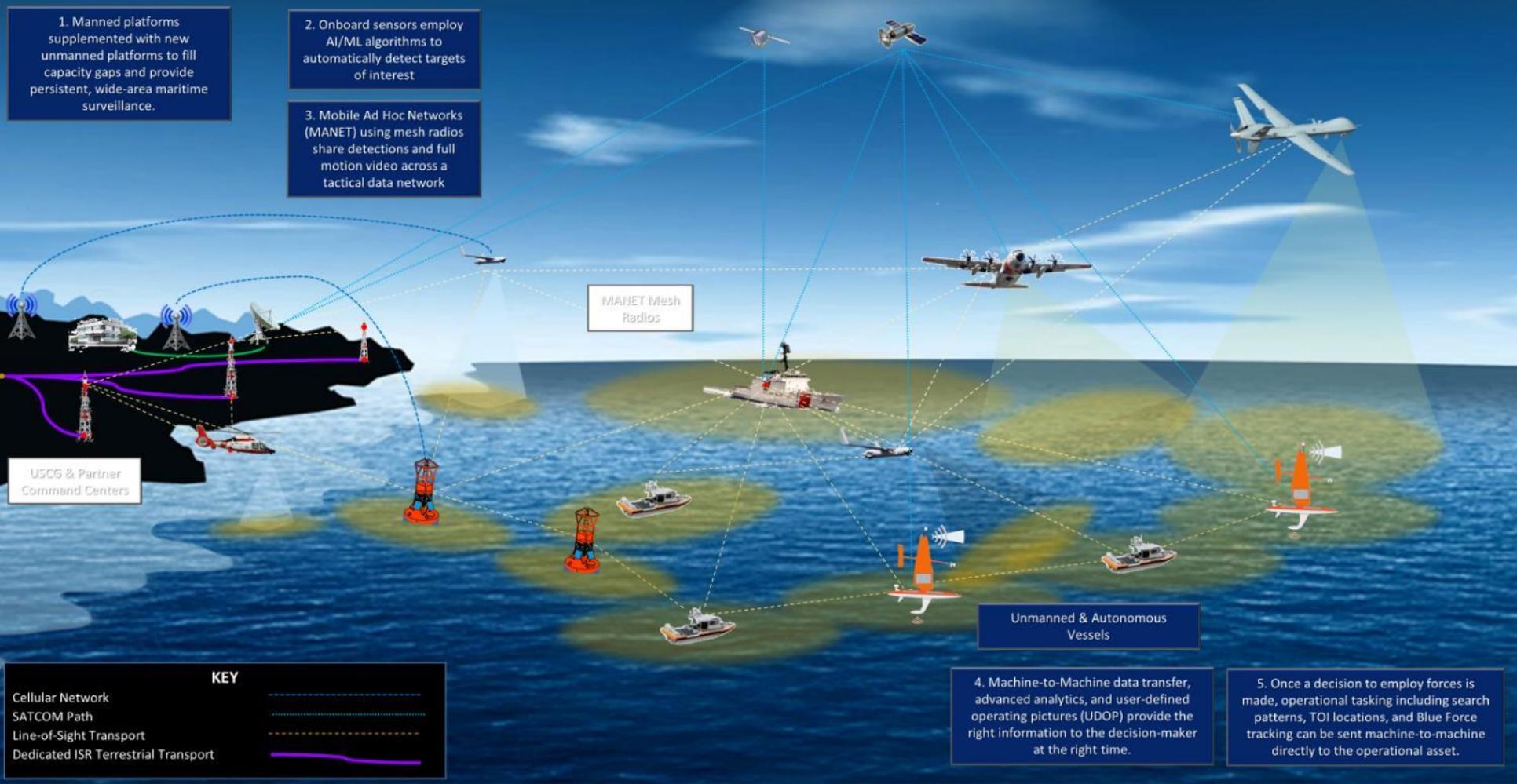
Future State



1. Manned platforms supplemented with new unmanned platforms to fill capacity gaps and provide persistent, wide-area maritime surveillance.

2. Onboard sensors employ AI/ML algorithms to automatically detect targets of interest

3. Mobile Ad Hoc Networks (MANET) using mesh radios share detections and full motion video across a tactical data network

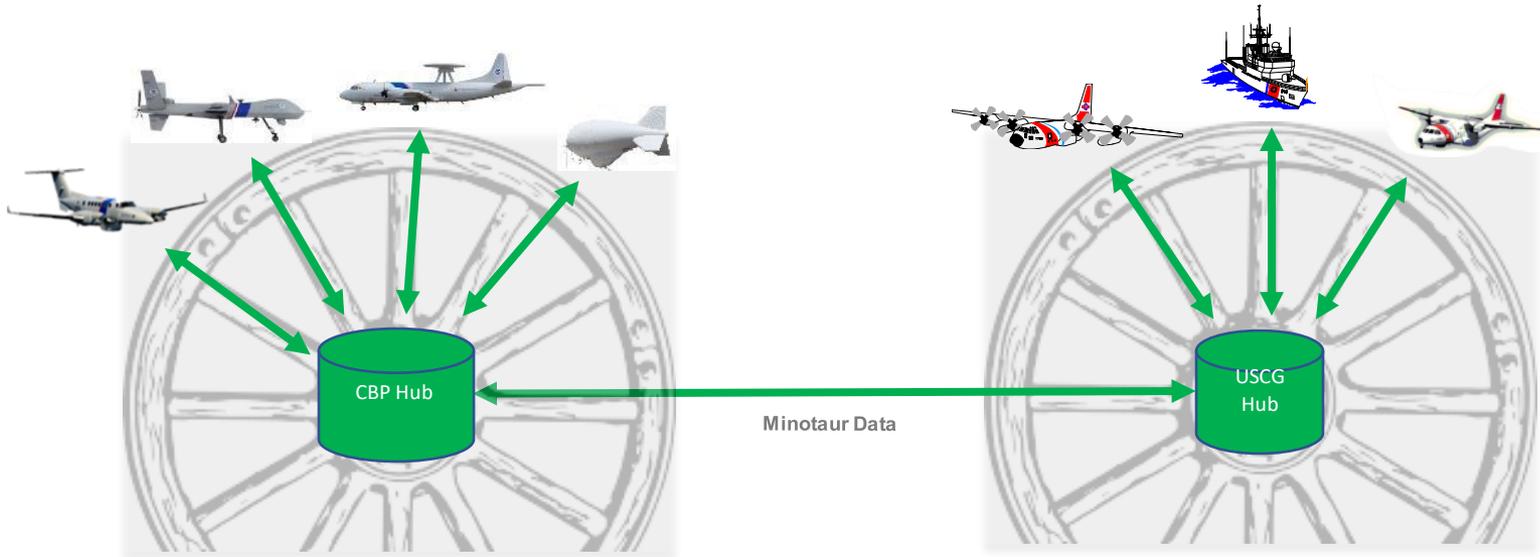


4. Machine-to-Machine data transfer, advanced analytics, and user-defined operating pictures (UDOP) provide the right information to the decision-maker at the right time.

5. Once a decision to employ forces is made, operational tasking including search patterns, TOI locations, and Blue Force tracking can be sent machine-to-machine directly to the operational asset.

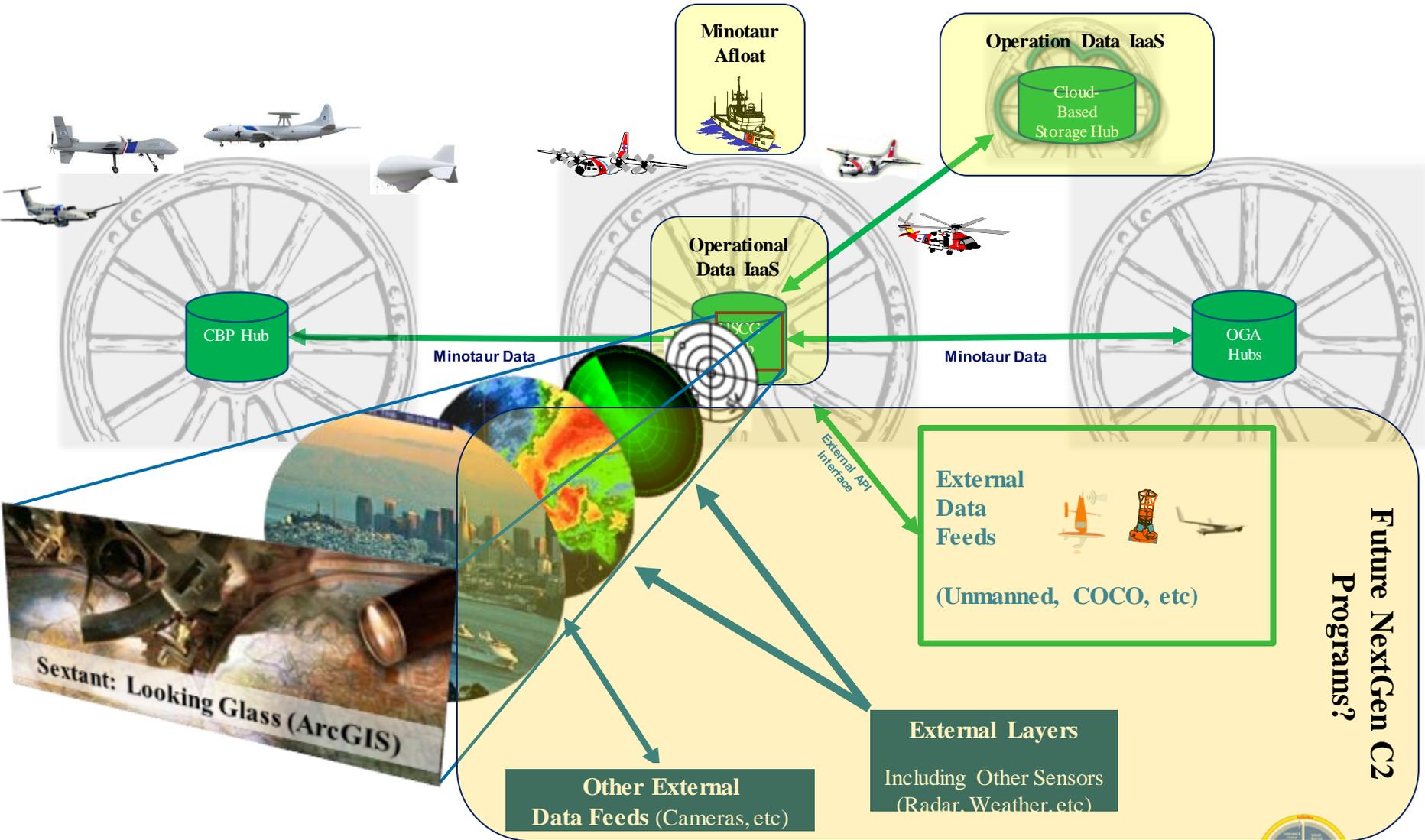


Minotaur





Future Architecture & Implementation





Visualization & Tasking: Sextant



2024 Sea Air Space Expo | COMDT (CG-761) | CAPT C. Hernaez | APR 2024
Unclassified





Sextant: Looking Glass COP



USCG Looking Glass

COP Operations Manager Vessel Management Command Status Board Help

Zoom to

NAIS Vessels: EBROBORG



Joseph K. Kubala
MarineTraffic.com

Vessel Flag	NL
Mmsi	245952000
Speed	11.6Kts
Course	248T

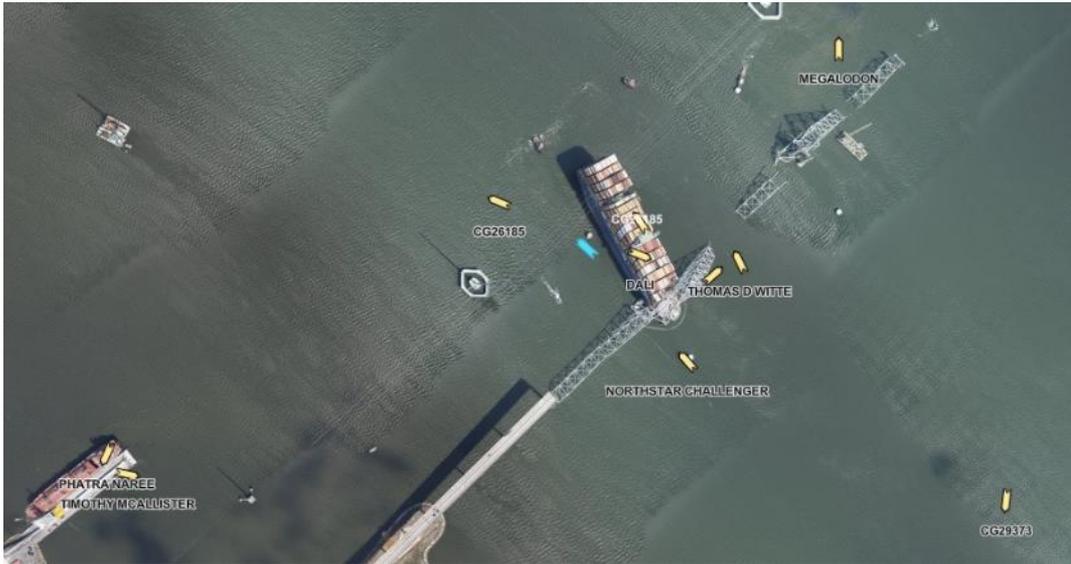
45°11.783' 92°47.450'

Fayette GIS, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS, NMHC, JTWC, Esri | National Weather Service | National Oceanic and Atmosph... Powered by Esri





Visualization: Sextant



Rapid development of geographic imagery for emergency response

Picture

Hawkins Point Aux Ch - 1 Apr

- Port Lateral
- Starboard Lateral
- Green
- Red
- Temp
- Discontinue

SAFETY ZONE

AIS (Spire)

- Emergency Response
- Search and Rescue
- Military Ops
- Low Performance

Wind Speed **10.6 mph**

Water Temp **52 °F**

Temperature **48 °F**



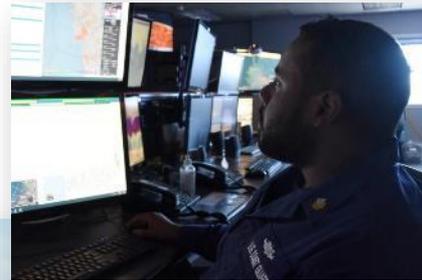


Shoreside Capabilities



Recapitalization and modernization efforts underway to enhance C5I and Sensor capabilities:

- Persistent Wide Area Maritime Surveillance (PWAMS)
- Nationwide Automatic Identification Service (NAIS)
- Maritime Public and Tactical Comms (i.e. R21, VDES)
- Vessel Traffic Service (VTS)



VTS Locations



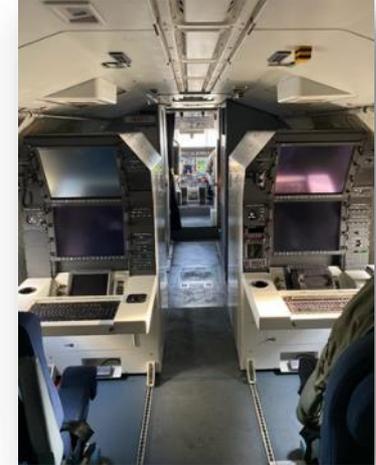


Platform Capabilities



Recapitalization and modernization efforts underway to enhance C5I and Sensor capabilities:

- Fixed Wing
- Helicopters
- Cutters
- Patrol Boats
- Small Boats
- Unmanned

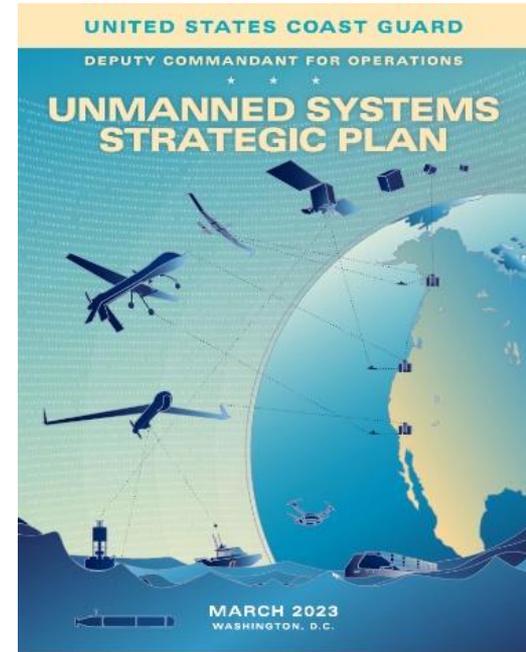




VISION STATEMENT:

The Coast Guard effectively employs, defends against, and regulates unmanned systems in a complex maritime environment advancing maritime safety, security, and prosperity for the American public.

- Unmanned Systems Strategic Plan:



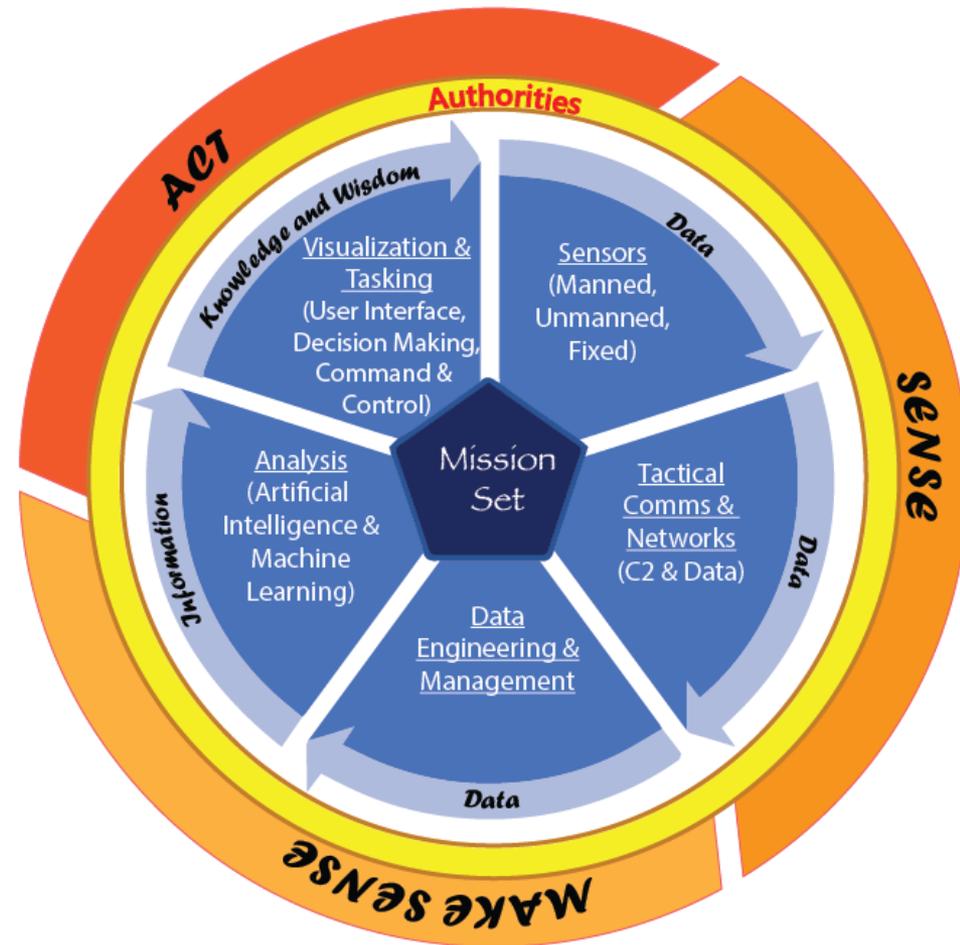


Project Minerva



The Goal is to deliver:

- The right information,
- To the right user,
- At the right classification,
- At the right time,
- Via the right route,
- For the right reason,
- On the right device.





Questions



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