MARITIME TRACKING

NATURAL DISASTER RESPONSE

MAPPING WIRELESS SPECTRUM USAGE

LOGISTICS MONITORING OF AIRCRAFT AND GROUND TRANSPORTATION

HawkEye360

Presentation to: National Advisory Board,

Space-Based Positioning, Navigation, and Timing

18 May 2016

HawkEye360

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IDENTIFY, LOCATE, ATTRIBUTE…

Radio signals contextualize activity based information for clients.

Technology improvements allow for increased availability, affordability, and agility of commercial space-based solutions driving innovation in activity based information.

HawkEye[360] advances this domain by **delivering commercial space-based radio signal sensing and geolocation analytics** to commercial, federal, and international customers.

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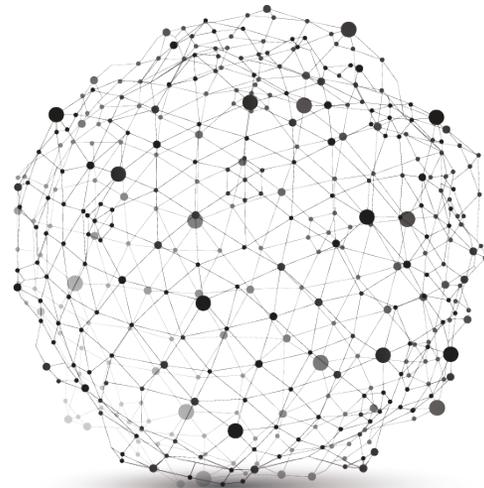
EVOLUTION OF THE SPACE DOMAIN

"A robust and competitive commercial space sector is vital to continued progress in space. The United States is committed to encouraging and facilitating the growth of a U.S. commercial space sector that supports U.S. needs, is globally competitive, and advances U.S. leadership in the generation of new markets and innovation-driven entrepreneurship." – 2010 National Space Policy

► U.S. National Space Policy calls for a **robust** and **competitive** commercial space sector

► **HawkEye360's** business activities support U.S. requirements, increase U.S. **resiliency**, and advance U.S. **leadership** in the commercial space industry

► **HawkEye360** signal-based products and services are the **next, natural progression** for the commercial space market

COMMERCIAL SPACE-BASED CAPABILITIES GAP

▶ Historically, the United States has leveraged space for communications, signals, and imagery solutions

▶ HawkEye^{360} is poised to augment signals processing and analytics for government and commercial users

	Communications	Signals	Imagery
Government to Government	✅	✅	✅
Commercial to Government	✅	🔶	✅
Commercial to Commercial	✅	🔶	✅

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HawkEye360 Solution

▶ HawkEye360 delivers **tailored data & analytics** to federal, commercial, and international clients using **space-based detection and geolocation of RF signals.**

RF Detection/Geolocation Missions

MHz

| 160 | 325 | 750 | 1500 | 3000 | 6000+ |

Cargo Tracking

Cell Tower Mapping

Wireless Mapping

Public Safety

Push-To-Talk Radios

L-Band Sat Comms

Radar Activity

On-Orbit Signal Processing

RF Position & Metadata

Cloud-Based Ground Analytics Platform

Tailored Analytic Reporting

Automated Tip/Cue

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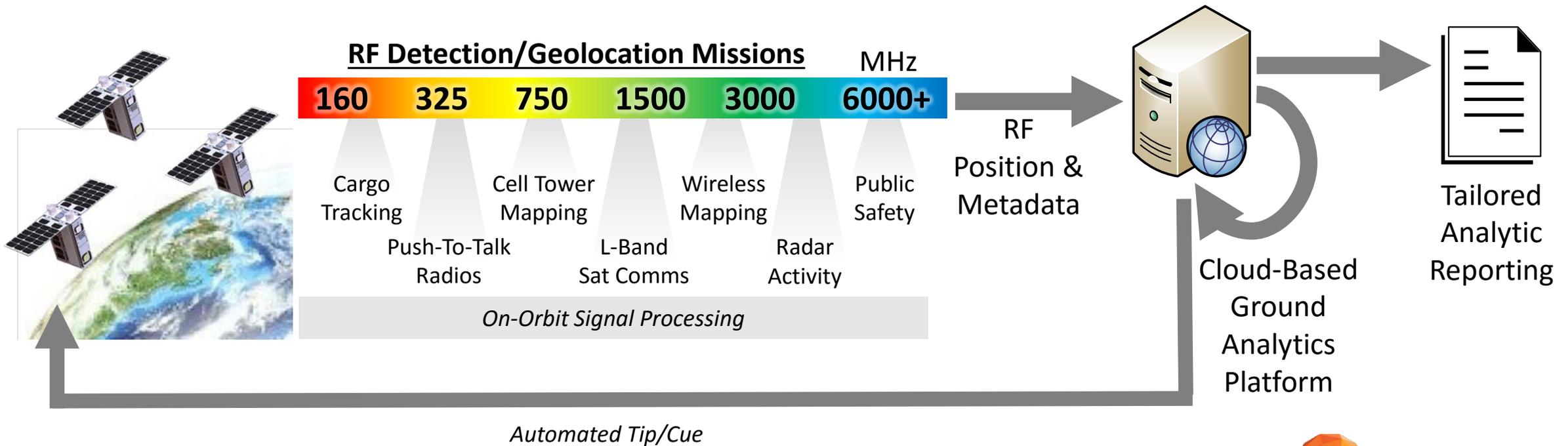
FLEXIBLE SUPPORT

▶ HawkEye³⁶⁰ brings unprecedented opportunities for affordable, on-demand overhead collection

▶ Our spacecraft architecture enables rapid and agile response to emerging targets

▶ Direct contract streamlines tasking, prioritization, and product dissemination

HawkEye³⁶⁰
An Allied Minds Company
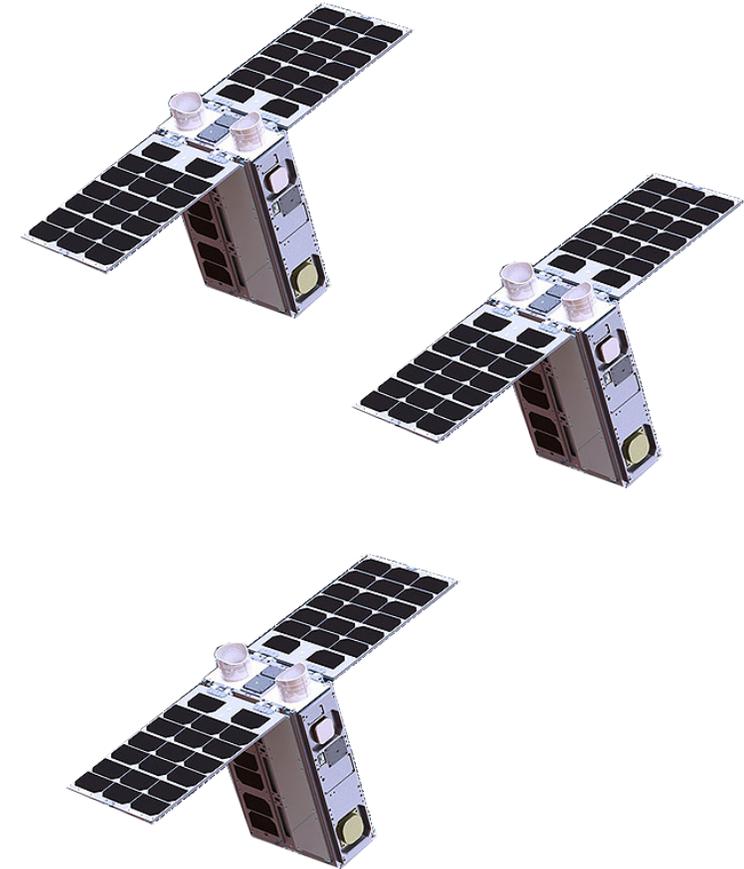
HawkEye360 Products

▶ **Full Analytic Reports**

- *Market tailored, data analytics delivered as a service*

▶ **Subscriptions and Licenses**

- *Real-time data feeds on recurring basis*

▶ **Receiver Time**

- *Lease receiver time to augment existing capabilities*

▶ **Real-Time Imagery Cueing**

- *Maximize EO capabilities via precision geolocation*

▶ **Diverse Information Fusion**

- *Addresses multi-faceted challenges using imagery and open source data*
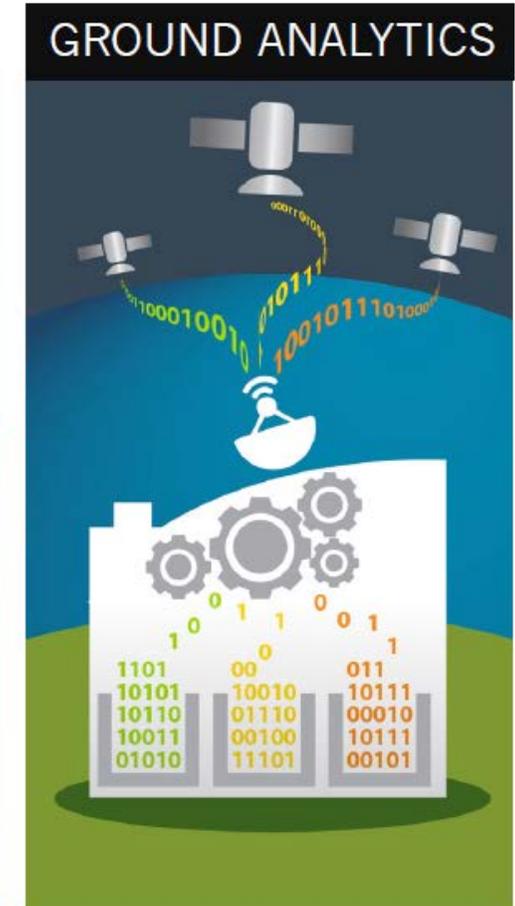
HawkEye³⁶⁰ Key Milestones

▶ September 2015: HawkEye³⁶⁰ Incorporated

▶ March 2016: Spacecraft RFI Released
  - 9 responses

▶ May 2016: Spacecraft Vendor Selected

▶ June-July 2016: Ground Demonstration

▶ July-Aug 2016: Airborne Demonstration

▶ 3Q2017: Pathfinder Launch

Use Case: RF Signals Interference Identification & Location

▶ <u>Problem:</u> Wireless signals in wide-use for communication are increasingly experiencing RF interference which reduces the quality of their data links and processing capabilities.

▶ <u>Solution:</u> HawkEye^{360} provides comprehensive geospatial & spectrum knowledge for interference detection/avoidance and coverage assessments.
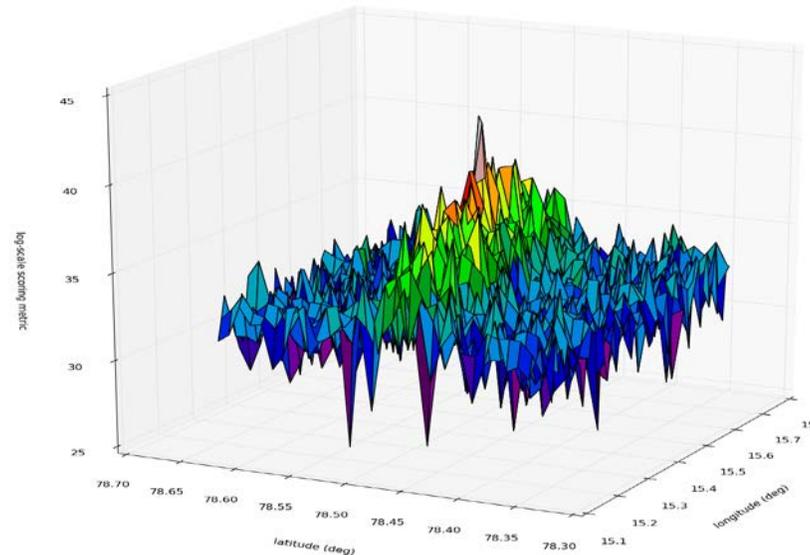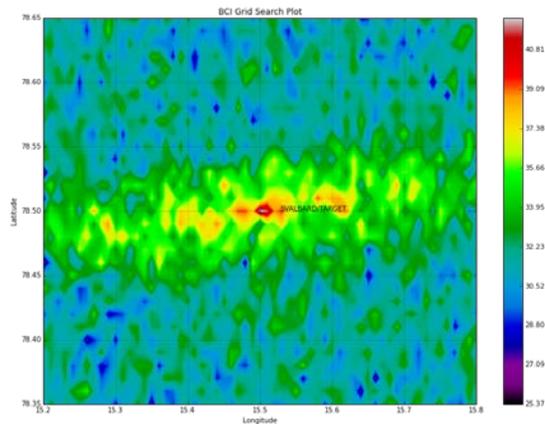
Use Case: Maritime Domain Awareness ConOp

► HawkEye^{360} has developed a ConOp to counter illicit maritime activity, including an Operations Center (for Open Source Integration, Analysis, Cueing and Watch), signal collection satellites, imagery satellites, and law enforcement interdiction.
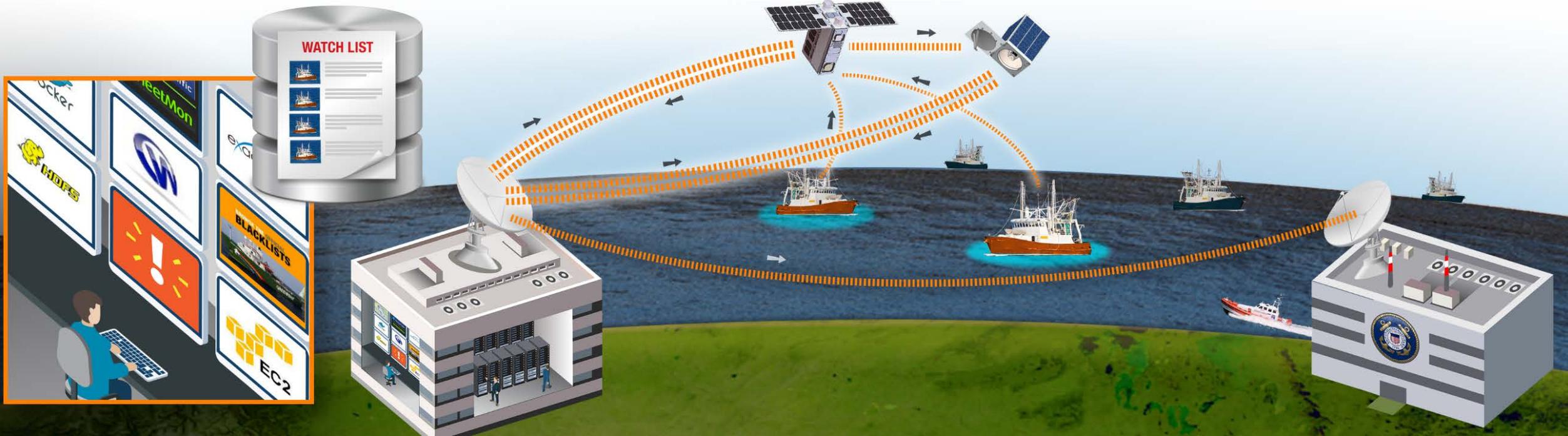
GOOD STEWARDS

► HawkEye^{360} is mindful of our potential impact on OPSEC and Privacy

► We will actively manage what we collect

► We do not collect the signals' internal information

► Data is encrypted end-to-end and uses our proprietary algorithms to generate useful information

► We are actively working with Interagency members and Congress to provide insight into our operations

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HawkEye360 Path Forward

► Privately funded to advance activity, innovation, and growth in commercial, space-based RF mapping and analytics

► Demonstrate we are a trusted steward and industry trailblazer

► Develop an open collaboration with U.S. Department of Defense and Intelligence Community

► Work with policy makers to advance a policy and regulatory framework supportive of emerging commercial space missions