GEOINT Forward: Evolving Our Peripheral Vision

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NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
Know the Earth... Show the Way... Understand the World

GEOINT Answers Critical Requirements

NGA is the lead federal agency responsible for GEOINT

GEOINT Answers...

- Where am I?
- Where are the natural obstacles?
- Where are the man-made structures?
- How do I navigate them?
- What activities are taking place there?
- Where are my adversaries/enemies?
- What did the area look like before?
- What does the area look like now?
- What might it look like after an event?

GEOINT Anticipates...

- Where something will be
- What may happen next

GEOINT Provides...

- A foundation for decision-making
- An ability to plan and execute
- Information dominance
- Decision superiority

“The geospatial intelligence field... is legendary for its standard of customer support. It is the base foundation for integration.”

– James R. Clapper, Director of National Intelligence

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NGA Has a *Bold* Vision

**Putting the Power of GEOINT in Your Hands**

Provide online, on-demand access to our GEOINT knowledge

Broaden and deepen our analytic expertise to produce new value

“*We will continue to deliver to our varied customer set what they need, when they need it, how they need it. But we have to be thinking about the future. We have to be continually pushing ourselves so that we do remain at the forefront.*”

— Letitia A. Long, Director, NGA

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Massive Data
Speed / Tempo of Change
Complex Adaptive Systems
Uncertainty

“This nation is facing a strategic turning point after a decade of war… As our large scale military campaigns recede, the United States still faces an array of security challenges across the globe”

Leon E. Panetta, SecDef Dec 2012
Emerging Challenges…Coming Attractions?

STOP KONY

FOREVER SPRING?
Quantum Leap in Complexity of Issues

More People, More Mega-Cities, More Competition for Shrinking Resources, and Virtual Global Communities
Re-imagining GEOINT’s Value Proposition

**Bad Actors**

Patterns of life…Find, Fix, Finish

Majority of ISR resources are focused on small percent of population

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**People Who Are Not Bad Yet**

“Understand the environment and people we are trying to protect and persuade”

– General Flynn

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**States/Regions Not Failed Yet**

Strategic National Security Issues

- Cyber Threats
- Natural Resource Competition
- WMD Proliferation
- Energy/Economic Security
- Environmental degradation
- Global Climate Change
- Demographics/Migration/Trafficking
- Human Security--Pandemics

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**Failing States/Regions**

- Somalia / Syria
- Ethnic Violence
- Extreme Weather
- Earthquake / Volcanoes
- Humanitarian Responses
- Food Insecurity
- Water Scarcity
- Haiti

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**States/Regions Not Failed Yet**

- 2.7 billion living on $2/day or less (40%)
- Total world population is 6.786 billion

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**Individual**

- Family
- Clan
- Tribe
- Village
- Province
- City
- Nation
- Region
- Global
Know The Earth... Show The Way... Understand the World

ANTICIPATE

Where something is... Why it’s there... What may happen...

Target-Based ➔ Activity-Based
Evolving GEOINT’s ‘Peripheral Vision’
Explosion of People and Devices Sharing Data

Geospatial and Temporal Content Extraction Challenge

Leveraging Processing Power and Visual Analytics to “See” patterns

Potential of New Interactive Data Products, Services, and User Experiences

Unprecedented Opportunity to Apply GEOINT Methods To All Types of Data
Huge Opportunity for New GEOINT R&D

**DATA:** Ubiquitous and globally pervasive, not always of known pedigree, but consistently geo- and temporal-referenced

**PROCESSING:** Preparing the data to be understood, aggregating and relating all available information at multiple scales

**ANALYTICS:** Understanding the “story” the data is telling you; see the past to forecast the future

- **NTM**
- **Commercial data**
- **Crowd Sourced Data**
- **Cyber data**

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**Driver for new collection strategies**

**Will demand new Tradecraft and Skills**

Explore, interact, make sense of the data

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New Data, Compute Power, & Challenges Driving Evolution of Geospatial Analytics and Tradecraft

21st Century Geospatial Dynamics Fusion

Context and Cueing for analysts, processors, and sensors

Semantic Analytic Intelligence
Human Geography

Activity Based Intelligence
FMV, GMTI, other

Physical Geography
Temporal Intelligence

Spatial Measurement

Geo-enabled time tagged data

Contextual Knowledge
AREAS OF ANALYTIC EXPERTISE
For Knowing the Earth

- Imagery Analysis
- Geospatial Analysis
- Collection Management
- Imagery Science
- Cartography
- Geospatial Data Manager
- Applied Science
- Human Geography
- Maritime Analysis
- Aeronautical Analysis

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Multi-discipline EXPERTISE
For Understanding the World

- Computer Science
- Mathematics/Statistics
- Computational Science
- Social Sciences
- GeoChemistry
- GeoBiology
- Computational Photography
- Computational Humanities
- Cognitive Sciences
New GEOINT R&D Directions

• Human Geography
• Participatory Sensing
• Activity-Based Intelligence
• Computational/Visual Analytics
• Geo-Journalism
• Forecasting

Addressing Human Security & National Security Issues Globally
Unless otherwise noted, all graphics are publicly available on the Internet.
What is GEOINT?

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- Where are the natural and man-made structures? How do I navigate them?
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- What might it look like after an event?
PUTTING the POWER of 
GEOINT 
In YOUR HANDS

Online, On-Demand Access

Broader, Deeper Analytic Expertise