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INTELLIGENCE

SURVEILLANCE

RECONNAISSANCE

ENVIRONMENT

Joint Staff/J28  
Battlespace Awareness  
Functional Capabilities Board

**NDIA**  
*6<sup>th</sup> Annual Disruptive  
Technologies Conference*

Mr. John Neri  
Northrop Grumman/TASC  
Programming & Assessments

**JS/J282**

15 Oct 2009

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# Overview

- **Battlespace Awareness Joint Capability Area**
  - **Intelligence, Surveillance, & Reconnaissance (ISR) capabilities**
  - **Environment capabilities**
- **Capability Drivers**
- **Desired Capability Needs**
- **Questions**



# BA JCA Structure

The ability to understand dispositions and intentions as well as the characteristics and conditions of the **operational environment** that bear on national and military **decision-making**

The ability to conduct activities to meet the intelligence needs of national and military decision-makers.

Battlespace Awareness

The ability to characterize and exploit the meteorological, space and oceanographic information from the subbottom of the earth's oceans up to and including space .

Intelligence, Surveillance, & Reconnaissance

Environment

ISR Planning & Direction

Collection

Collect

Analyze

Processing/ Exploitation

Analysis & Production

Predict

Exploit

ISR Dissemination

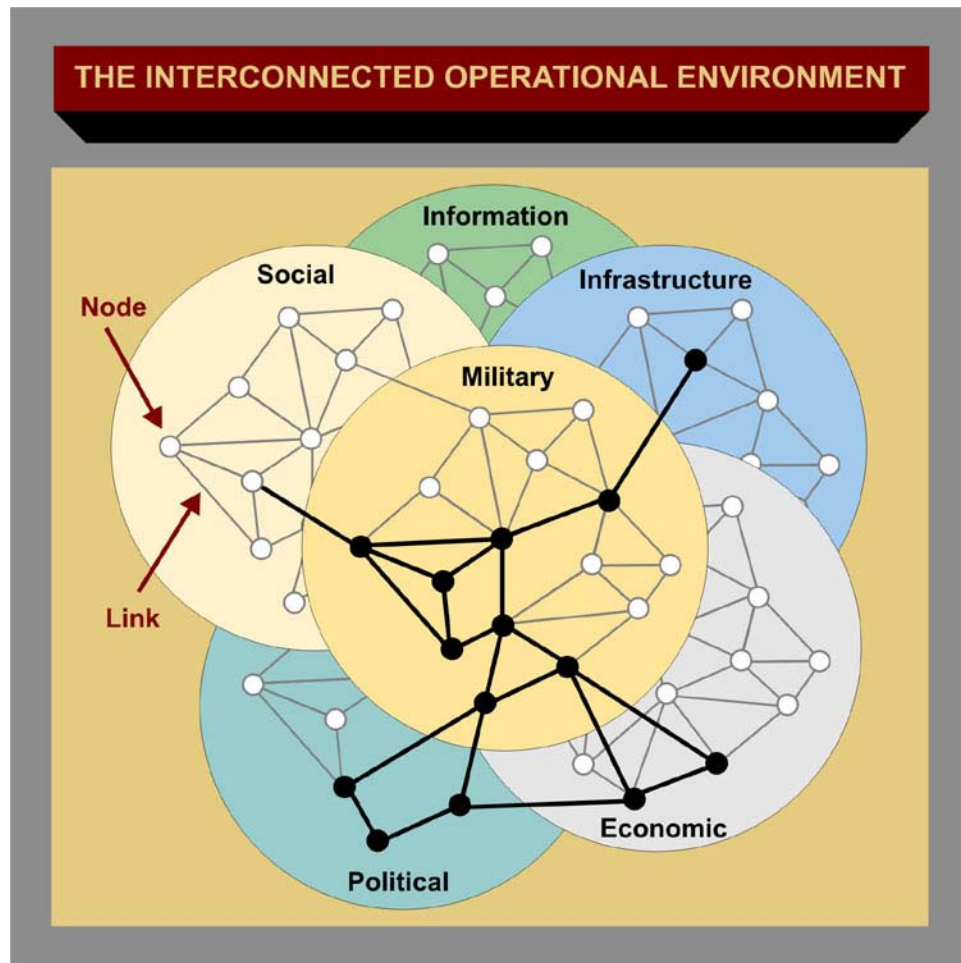


# The Operational Environment

•Our Battlespace Awareness capabilities must collect and analyze all spheres of the **operational environment**.

•Where can Disruptive Technologies aid in those spheres that the intelligence community has shortfalls?

- Socio-Cultural
- Urban Environment
- Financial
- Cyber





# Process of Interaction

- Intelligence Cycle continues to accelerate as adversary capabilities advance.

- Where can Disruptive Technologies provide our **decision-makers** (White House to the Foxhole) with an advantage?

- Planning/Tasking
- Collection
- Processing
- Analysis
- Dissemination







# Needed Capability - Long Endurance

- Looking for single platform endurance of at least 5 days
- Flexible payload: comm relay, EO/IR, SIGINT, WAPS, and SAR/GMTI or combination
- Persistent Surveillance with real time/near real time data to the warfighter
- Hostile and/or non-hostile airspace





# *Needed Capability - Tunnel Detection*

- **CONUS**

- 100 cross-border tunnels found since 1990
- 59 tunnels in Nogales, AZ alone
- 24 discoveries by Law Enforcement Agencies in CY08



- **OCONUS**

- Detainees Tunneling out of OCONUS Theater Internment Facilities (TIFs)
- Enemy Combatants in AF/PAK region heavily reliant on tunnels



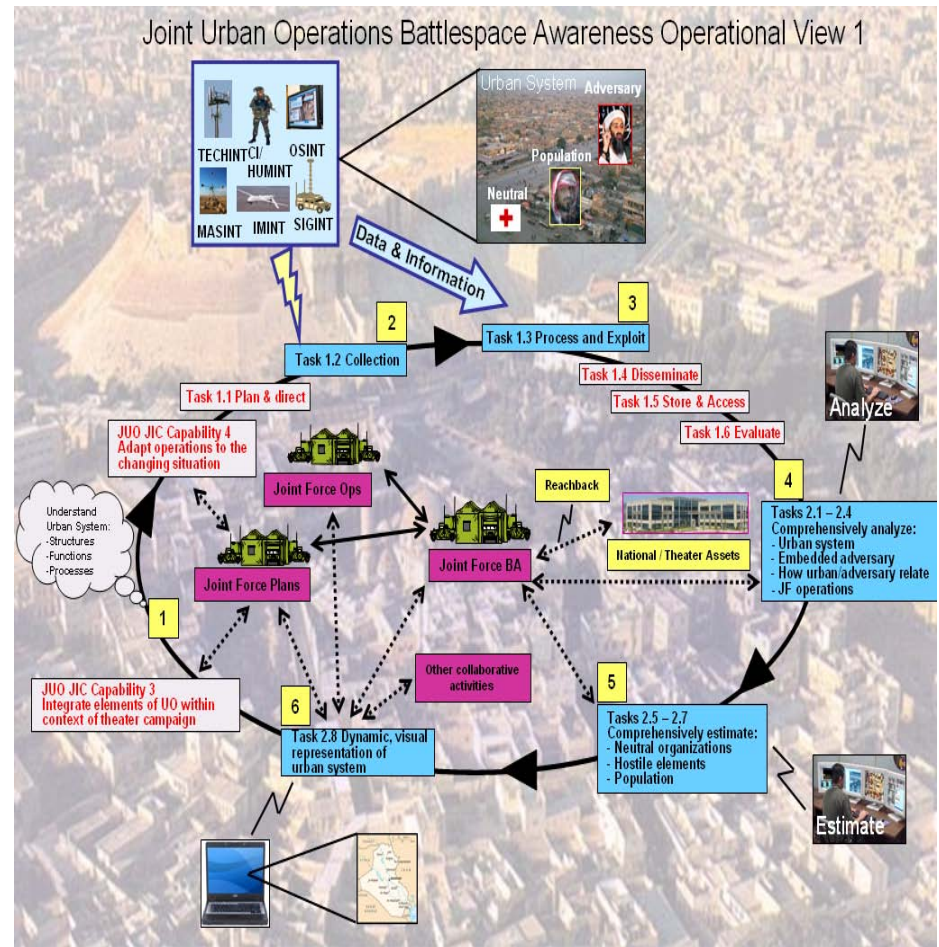




# Needed Capability – Socio-Cultural Data (SCD) Collection & Analysis



- **Strategic level SCD analysis for Phase 0-1 planning**
- **Geo-spatially referencing SCD to be available in AOR, down to tactical level**
- **Work through the security and policy issues surrounding sharing SCD with NGOs, coalition partners, other USG agencies, etc...**





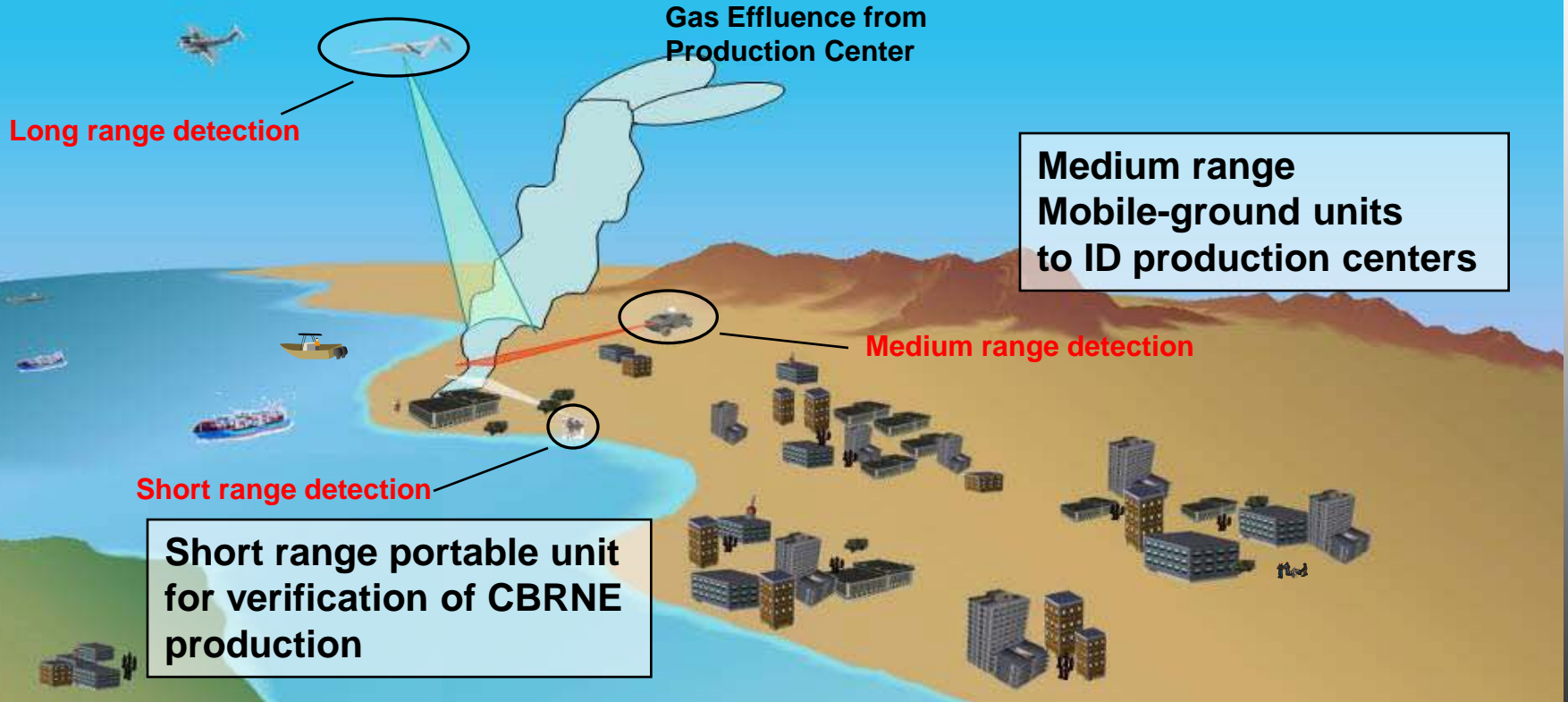


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# *Needed Capability – Stand-off Collection/Analysis of CBRNE signatures*

- Airborne CBRNE detection to locate general vicinity of plume



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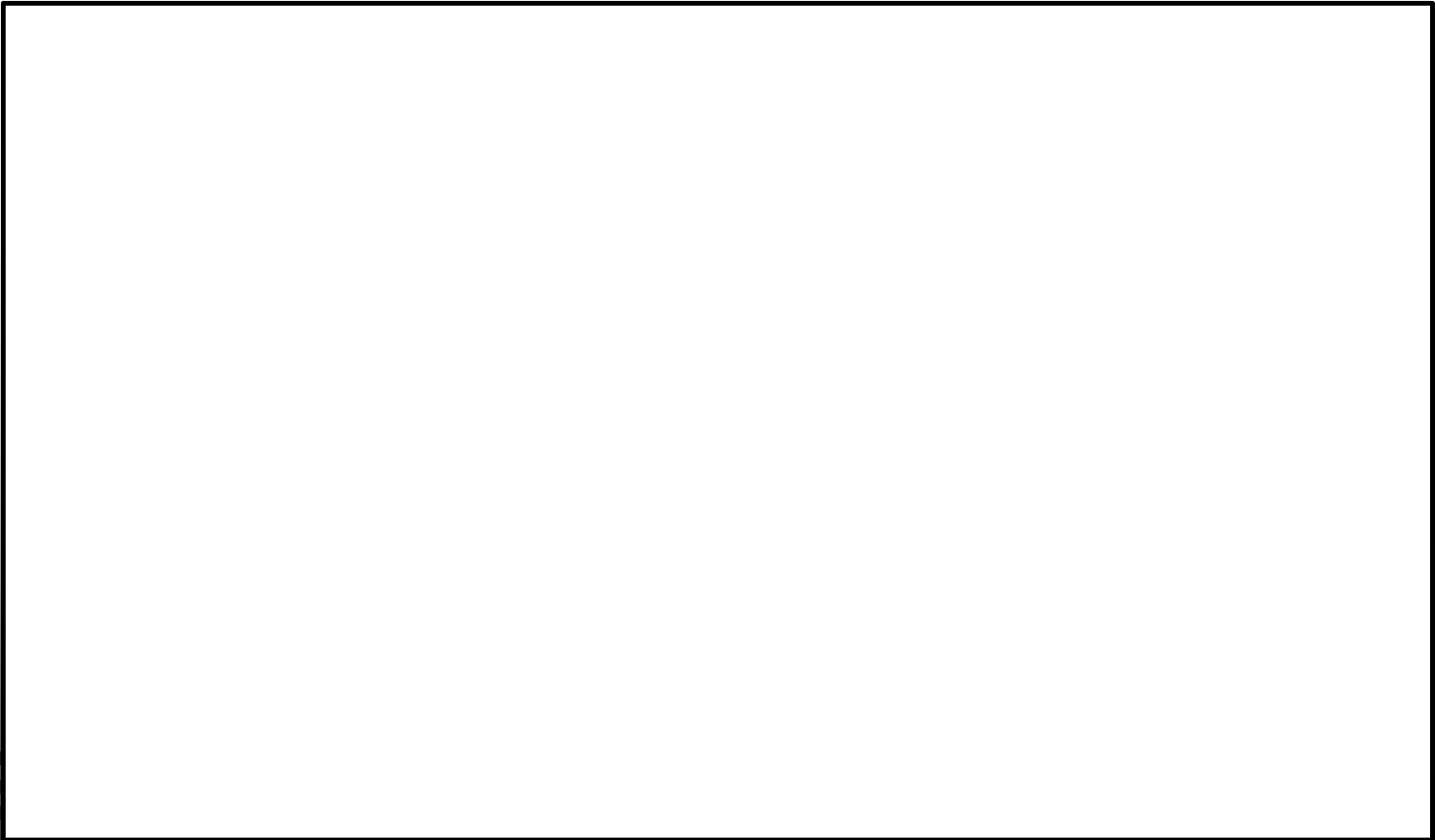
**Questions?**



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# *BACK-UPS*



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## *Collection Sub-tiers (1 of 4)*

- **Collection** – The ability to obtain required information to satisfy intelligence needs.
  - **Signals Collection** – The ability to gather information based on the interception of electromagnetic impulses, however transmitted.
    - **Communications Signals Collection** – The ability to intercept and derive information from voice and data communications passed by radio, wire, automated info systems/networks, or other electromagnetic means.
    - **Electronic Emissions Signals Collection** – The ability to intercept and derive information from non-communication emitter transmissions.
    - **Foreign Instrumentation Signals Collection** – The ability to intercept data from foreign equipment and control systems.
  - **Computer Network Collection** – The ability to use computer network exploitation (CNE) to gather data from target or adversary automated information systems, networks, and data bases.





## Collection Sub-tiers (2 of 4)

- **Collection** – The ability to obtain required information to satisfy intelligence needs.
  - **Imagery Collection** – The ability to obtain information from the visible and non-visible spectrum based on the likeness or visual presentation of any natural or man-made feature, object, or activity.
    - **Electro-Optical Imagery Collection** – The ability to gather information from a visual presentation derived from the ultraviolet through far infrared electromagnetic spectrum.
    - **Panchromatic Collection** – The ability to obtain a visual presentation from the visible spectrum of any natural or man-made feature, object, or activity.
    - **Infrared Collection** – The ability to obtain a likeness or visual presentation from the Infrared spectrum of any natural or man-made feature, object, or activity.
    - **Ultraviolet Collection** – The ability to obtain a likeness or visual presentation from the ultraviolet spectrum of any natural or man-made feature, object, or activity.
    - **Spectral Collection** – The ability to obtain data from reflected or emitted radiation based on the interaction of radiant energy and various materials, using discrete bands across a wide spectral band width.
    - **Light Detection and Ranging Collection** – The ability to obtain information from a visual presentation produced from emitted timed pulses of light.
  - **RADAR Imagery Collection** – The ability to derive information from a visual presentation produced by recording radar waves from a given object within the radiofrequency spectrum



# Collection Sub-tiers (3 of 4)

- **Collection** – The ability to obtain required information to satisfy intelligence needs.
  - **Measurements and Signatures Collection** – The ability to collect finite metric parameters and distinctive characteristics of phenomena, equipment, or objects.
    - **Electro-Optical Signatures Collection** – The ability to collect information on phenomena that emit, absorb, or reflect electromagnetic energy in the ultraviolet through infrared spectrum.
    - **Radar Measurements and Signatures Collection** – The ability to actively or passively collect energy reflected from an object to derive information on radar cross-sections, spatial measurements, motion and radar reflectance, and absorption characteristics.
    - **Geophysical Measurements and Signatures Collection** – The ability to detect phenomena and gather information transmitted through the earth (ground, water, and atmosphere) and man-made structures including emitted or reflected sounds, pressure waves, vibrations and magnetic field/ionosphere disturbances.
    - **Radio-Frequency Signatures Collection** – The ability to collect information from radiation transmissions and electromagnetic pulses.
    - **Chemical / Biological Materials Measurements and Signatures Collection** – The ability to gather information to aid in the identification and characterization of chemical and biological objects and activities.
    - **Nuclear Radiation Measurements and Signatures Collection** – The ability to obtain information derived from nuclear radiation and other physical phenomena associated with nuclear weapons, reactors, devices, facilities and fissile materials..



## *Collection Sub-tiers (4 of 4)*

- **Collection** – The ability to obtain required information to satisfy intelligence needs.
  - **Human Intelligence, Surveillance and Reconnaissance Collection** – The ability to acquire information from human resources and human reconnaissance assets.
    - **Interrogation** – The ability to procure information by direct or indirect questioning techniques.
    - **Source Operations** – The ability to develop information through the direct or indirect use and elicitation of sources.
    - **Debriefing** – The ability to obtain information through questioning of cooperating human sources.
    - **Ground Reconnaissance** – The ability to use human resources to obtain, by visual observation and other detection methods, information about activities and resources.
    - **Biometrics Collection** – The ability to gather information on an individual based on measurable anatomical, physiological, and behavioral characteristics.
    - **Media Collection** – The ability to obtain information from acquired, seized or open-sourced hardcopy documents and electronic media