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“ISR in a Tactical Environment”

Big Data Analytics and Applications for Defense, Intelligence and Homeland Security Symposium

Day 2: Thursday, 25 April 2013

Tom Conway, Senior Engineer
Office of the US Army, Project Manager, Night Vision/Reconnaissance, Surveillance and Target Acquisition (PM NV/RSTA)
PM NV/RSTA -- MISSION
To define, develop, integrate, acquire, and field preeminent tactical sensors that meet mission requirements

Infrared Sensor Products for the U.S. Army, Air Force, Navy, and Marine Corps

360°, high-resolution, RSTA capability for response options

RSTA systems for manned and unattended air and ground systems

Counter-fire and counter rocket & mortar radars.

Integrated Tactical Sensors for Actionable Information
Insights Into ISR and Force Protection

PM NV/RSTA -- Short History/Evolution of Networked Sensors

- 1998
- 2002
- 2005
- 2008
- 2010
- 2011
- 201X

- 2nd Gen FLIR
- A-KITS
- B-KIT
- Full Motion Video Dissemination
- PTDS
- BETSS-C
- PSDS2
- Netted LRAS3
- 3rd Gen FLIR

PLATFORMS

AIE ‘Big Data’ 25 APR 13
The BETSS-C system shall be capable of interfacing with Intel networks when proper connectivity is available. The BETSS-C system shall be capable of ingesting and sharing data with Battle Command networks when targeting. The BETSS-C system shall be capable of determining location data to augment sensor video and data.

9 JUONS

130 Derived Requirements

537 System Functions

Implementation of networked sensor requirements to functionality:
- Capabilities and Technical Solutions
- Flexibility in a changing environment
- Room for tactical agility
Video / Position Data Integration

- Obtain Data
- Store Data
- Manipulate Data
- Retrieve Data

- Bandwidth
- Sensor control
- Command and control
- Actionable information
- CONOPS/TTP
Sensor Tactical Operations

Lessons Learned from Commercial Broadcasting:

• Bandwidth
• Sensor control
• Command and control
• Actionable information
• CONOPS/TTP

What can the Army learn from NASCAR?
Sensor Interoperability

Radar Imaging Acoustic Biometrics Time/Position Chemical Temperature Etc...

Sensor System View

Mission Area Capabilities

RSTA
- Wide Area Surveillance
- Hostile/Hostage Detection
- Command & Control
- Intelligence, Surveillance, Reconnaissance
- Classification, Evaluation, and Dissemination
- Platform Active Protection Support
- Shared Common Operating Picture

Integrates RSTA/PP/SA

Mission Area Capabilities

Sensor CE Example Problem

Space

Mission Area Capabilities

Army BC Systems

Chemical

RSTA

Widespread Surveillance

Sharing, Managing, and Disseminating Critical Situation Awareness Data/Products at All Echelons and All Networks

- Processing, Exploitation and Dissemination

Sensor CE Example Problem

Challenging!

Share, Manage, and Provide Critical Situation Awareness Data/Products at All Echelons and All Networks

* Processing, Exploitation and Dissemination

Sensor Interoperability

Intel Mission Command Fires Maneuver Maneuver Support Force Protection Sustainment

Intel

Radar Imaging Acoustic Biometrics Time/Position Chemical Temperature Etc...

Sensor System View

Mission Area Capabilities
Networked Sensors: The Good, the Bad and Where are we going?

Enabling Mission Effectiveness (good):

- More efficient use of personnel
- Coordinating Sensors in a *pro-active* way
- Feeding multiple users with sensor products

Impediments to implementing full potential (bad):

- Feeding multiple users with sensor products
- Lack of Infrastructure
- Lack of open architectures and standard interfaces
- Tactics lagging technology
- Traditional military roles and responsibilities

Caution: Still Evolving

Computing Environments:
- Sensor
- Command Post
- Mobile/Hand-Held
- Mounted
- Data Center
- Real Time Safety
Questions?