



NCO Industry Forum

ISR Working Group

USD(I) DoD POC's: Kevin Meiners
COL Carpenter

NCOIF POC's: John Osterholz, BAE Systems
Kelly Brown, EMSolutions



NCO Industry Forum



NCO Industry Forum



- NCO Industry Forum
 - Jointly Chartered by DoD CIO and AFEI
 - Charter signed on Feb 17, 2005
 - Dr. Linton wells, DoD CIO
 - Hon Jacques Gansler, UMD
 - RADM Ray Witter USN (ret.), Northrop-Grumman
 - Participation open to all with legitimate interest
 - Governance by AFEI Members
 - Chairs of Working Groups
 - Board of Directors
 - Collaborate with DoD on NCO issues
 - Filter out business development

NET-CENTRIC OPERATIONS
INDUSTRY
FORUM



NCO Industry Forum Mission



- Support the migration to an open business model that supports full competition but enables horizontal integration of the resulting capabilities and systems, regardless of who developed or provides the systems.
- Review and comment on industry-wide frameworks which will support horizontal integration of platforms and systems.
- Provide an industry advisory service for the DoD CIO regarding the net centric strategies, programs, acquisitions, implementation, and sustainment.
- Provide industry-wide critiques and analysis in response to government stakeholders.
- Provide a forum for industry discussion and collaboration on evolving enterprise service models.



Net-Centric Operations

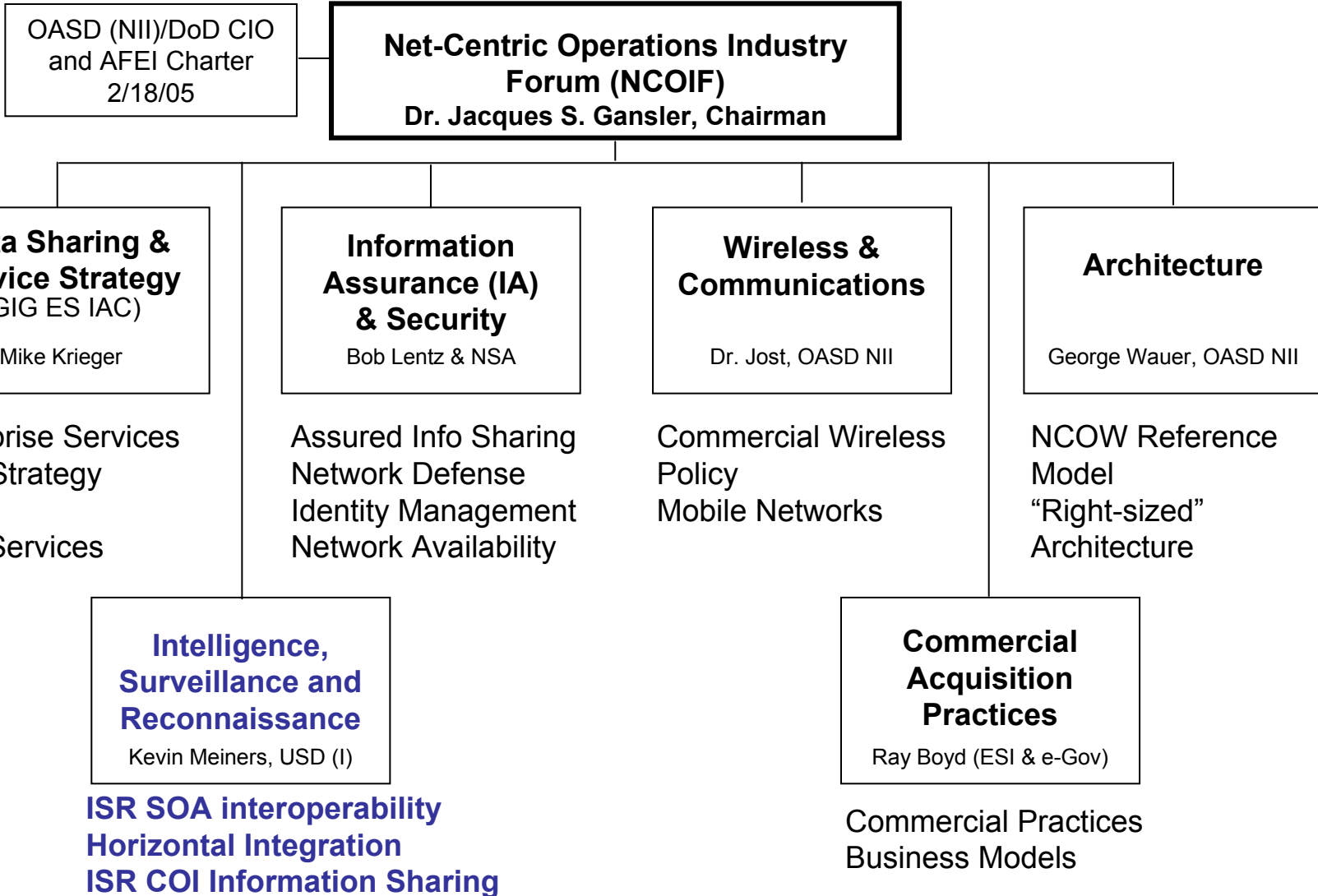


- NCO is massive, complex, and evolving
 - Industry feels the “Winds of Change” – direction?
 - Legacy “Stovepipe” system companies face uncertainties
 - Some companies are focusing on new opportunities
- “New” Balance needed among Commercial Industry, Defense, and IT providers
 - Identity Management
 - Service Oriented Architectures
 - Meta Data Modeling
 - Semantic Web
 - Information Sharing Paradigm



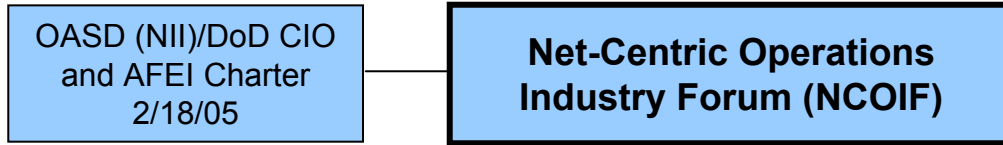
NCO Industry Forum

Working Group Focus Areas





NCO Industry Forum Working Group Leads



Working Groups Proposed by OSD And Accepted By AFEI

Data Sharing & Service Strategy
(GIG ES IAC)
Mike Krieger

Information Management Directorate
DoD POC: Jennifer Schultz OSD(NII)
NCOIF POCs: Greg Gardner, Oracle
Joan Baumstarck, EDS
Rob Fitzgerald, Northrop-Grumman

Information Assurance (IA) & Security
Bob Lentz & NSA

Information Assurance Directorate
DoD POC: Bob Lentz NII & M Redgrave
IC POC: tbd
NCOIF POC: James Eccleston, NCI;
Steve De Angelis, Enterra Solns

Wireless & Communications
Dr. Jost, OASD NII

Wireless & Comms Policy Directorate
DoD POC: Ron Jost
NCOIF POC: Pat Pollock, BAE
Systems; Jack Harris, Rockwell Collins

Architecture
NCOW RM
George Wauer, OASD NII

Arch & Interoperability Directorate
DoD POC: Jack Zavín
NCOIF POC: Sergio Nirenberg,
SAIC; Greg Wenzel, BAH

ISR
Kevin Miners, USD (I)

Undersecretary of Defense (I)
DoD POC: Kevin Miners
COL Carpenter
NCOIF POC: John Osterholz,
BAE Systems; Kelly Brown,
EM Solutions

Working Group Ground Rules

- Non-proprietary
- Non-programmatic
- Policy Only
- Unclass or Secret only

Commercial Acquisition Practices
Ray Boyd (ESI & e-Gov)

Commercial Policies & Oversight Directorate
DoD POC: Ray Boyd
NCOIF POC: Dave McQueeney, IBM;
Tom Mayhew, Oracle



All Associations and Societies Must Address NCO



- Encourage Proactive Collaboration and Convergence of Association Programs
- Employ Combined Leverage to Accelerate NCO
- NCO Paradigm Demands a Cardinal Rule:
 - “No Stovepipes, No Vacuums, No Rice Bowls!”
- Learn From and Inform Each Other
- Help Industry Understand When to Collaborate and When to Compete
- Present Collaborative Picture to DoD



ISR Community of Interest (COI)



ISR COI Members



- Kevin Meiners - USD(I)
- MajGen Simpson - JFCOM J8
- BGen(S) Warner - JFCOM J6
- BGen Dettmer - JCS J2
- Steve Selwyn IC CIO
- Mike Pflueger - DIA CIO
- Kelly Miller - NSA/UCAO
- Mike Krieger - DOD CIO
- Mr. Decker - USMC-I
- RDML Murrett - Navy N2
- Lynn Schnurr- Army G2
- RDML Hight - Navy N71
- Mr. Dumm - AF XOII
- Ms. Snow - NGA
- CAPT Burkey - STRATCOM
- Larry Burgess - NRO
- Mr. Osterholz - NCOIF



Portfolio Management



- DoD Directive 8115.01, IT
- Portfolio Mgmt, Signed Oct 10, 2005
- IT investments shall be managed as portfolios
- Four Mission Areas
 - Warfighting
 - Business
 - DoD Portion of Intelligence
 - Enterprise Info Environment
- Domains will be Designated within Mission Areas



DODD 8320.2 - Data Sharing in a Net-Centric DOD



- Section 5.5 USD(I) Shall:
 - 5.5.1 Collaborate with ASD(NII/DoD CIO, USD(P), and the IC CIO in developing policies and procedures to protect net-Centric data while enabling data sharing across different security classifications and between DoD, the IC, and multinational partners...
 - 5.5.2 Provide net-Centric data sharing and effectively enable COIs, including adjudicating conflicts in metadata agreements and identifying authoritative sources



What are ISR COI Interests?



- The ability to discover data across the enterprise
 - [Visible]
- The ability to access the data
 - [Accessible]
- The ability to use/exchange the information
 - [Understandable]



ISR COI Working Groups



- Operating Concepts
- Data Strategy
- Enterprise Services
- ISR to Warfighter Utilization
- The 5th Working Group – “Industry Forum”



ISR COI Tasks



- How will the ISR enterprise be employed by Commanders, Decision Makers, Analysts?
- How do producers structure data they will post on the enterprise?
- How do users discover/access data posted on the enterprise?



NCO Industry Forum

ISR Working Group Update



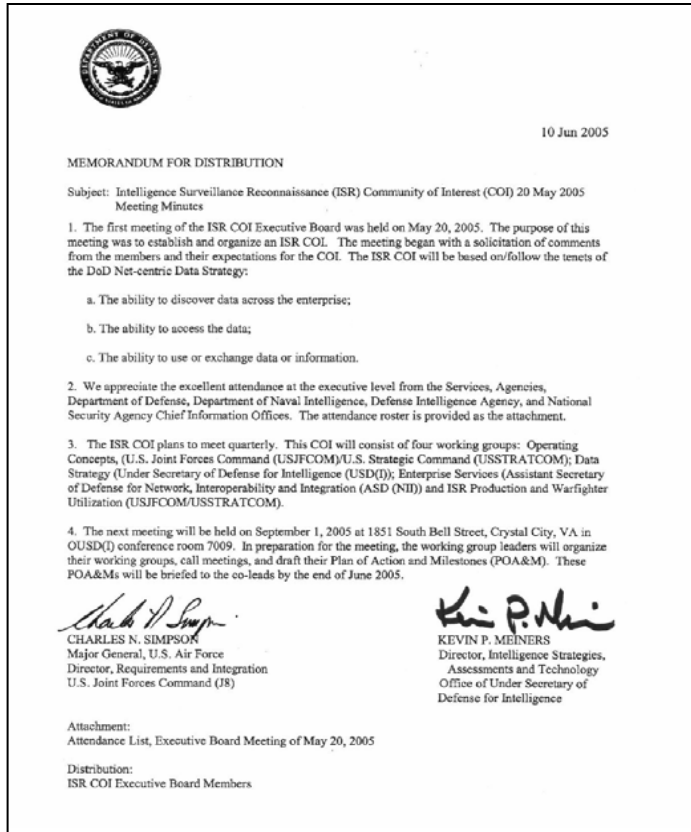
ISR WG Status



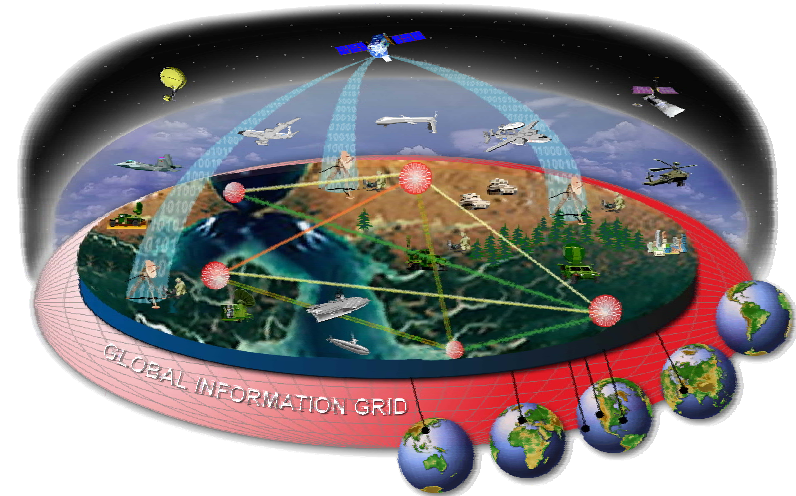
- Held Initial ISR WG Meeting
 - 21 October 2005
 - AFEI Headquarters
- Agenda
 - Welcome – Dave Cheseborough / AFEI
 - Setting The Stage - Kevin Meiners / OUSD(I)
 - The Problem Set - John Osterholz / AFEI – ISR WG Industry Chair
 - Review of ISR WG Scope of Work - All
 - Going Forward/Actions - Kelly Brown



Sponsors' Key Needs



“TO BE”
“Net-Centric”
Common
Ground
Systems



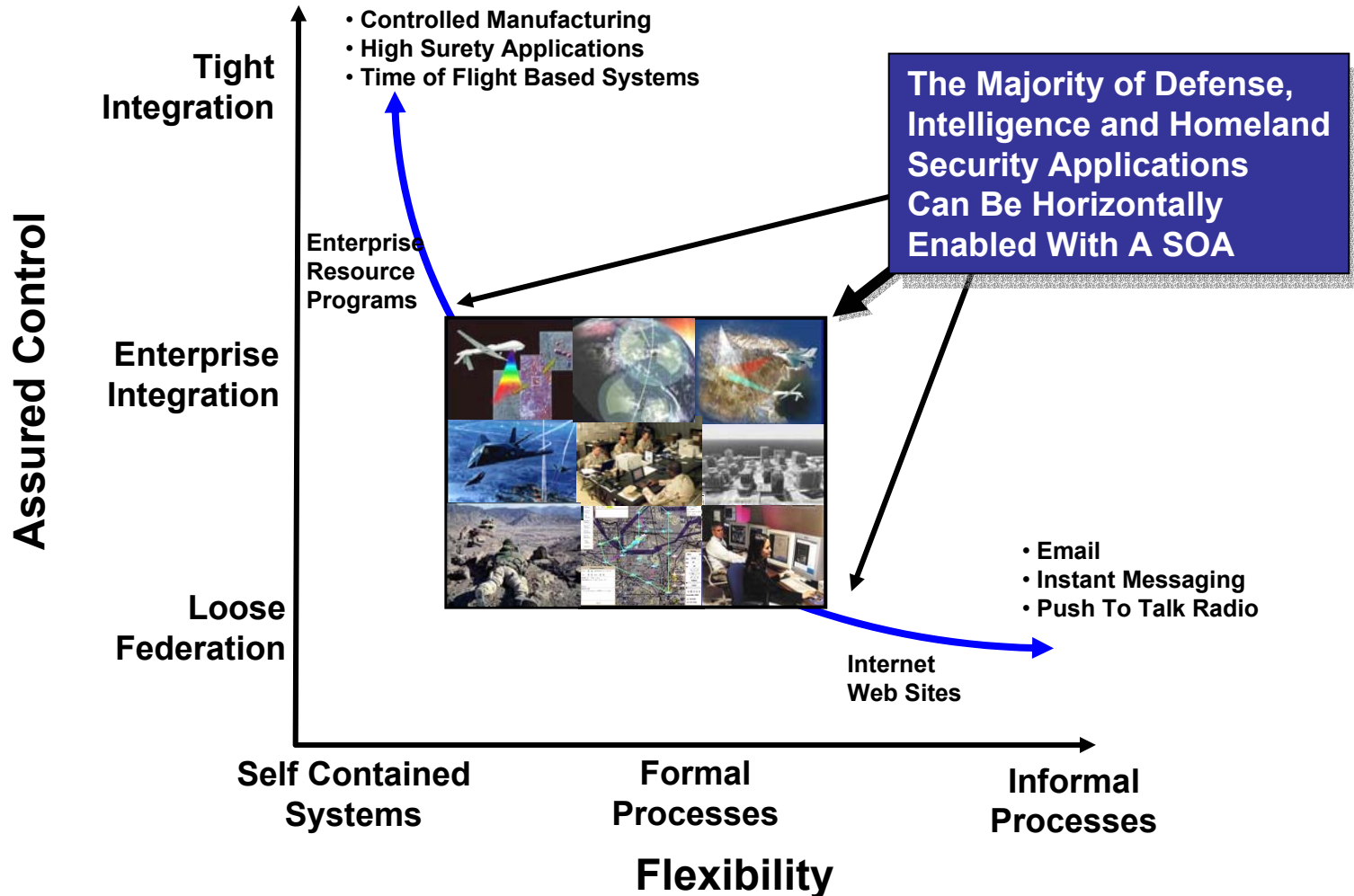
2008 - 2015

NCOIF/ISR WG Chair is the
Industry Representative

← **The Role Of Service Oriented Architecture** →



The Service Oriented Architecture's Promise For DoD





Total Cost Of Ownership Success Stories - Seductive Incentive



ROI in SOA

- ❖ **2x Developer productivity:** shared services should account for > 50% of new application functionality
- ❖ **3x Maintenance productivity:** systems deployed using SOA can be maintained with 75% fewer resources
- ❖ **2x User productivity:** integrated systems (aka portal) can achieve 40% capital cost savings, 30% annual operating cost savings, and more than 60% user satisfaction



National Data Bank

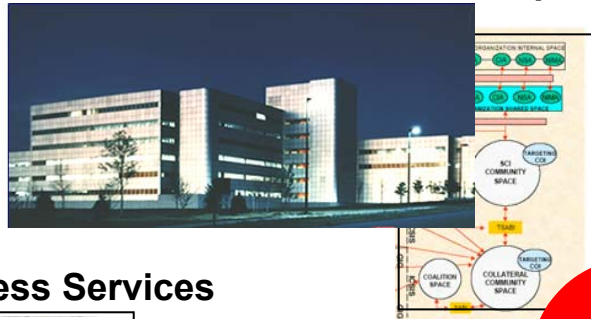
SOA Case Study:
National Data Bank
Smith Suksmith
smith.sucksmith@fns.usda.gov



Operational Consequences Of Proliferation Can Be Severe



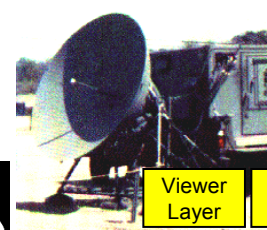
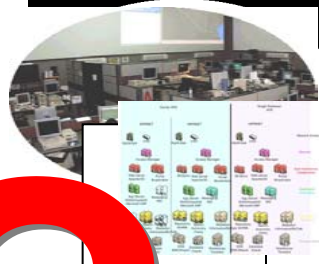
Collateral Information Space



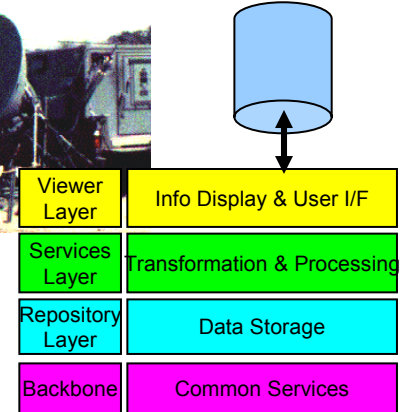
Reachback Analysis Support



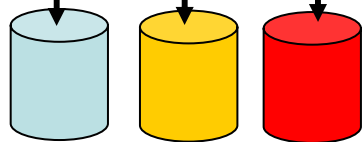
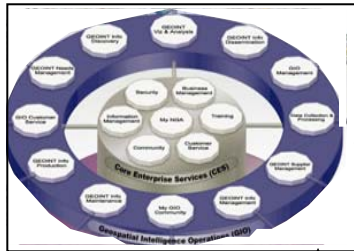
AOC



DCGS

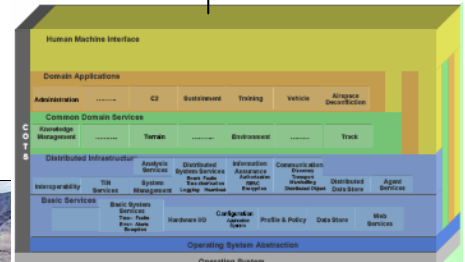
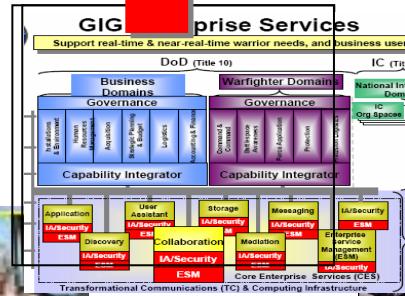


Federated Access Services

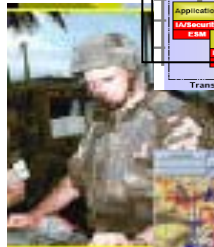


Geospatial Data Holdings

Cross-Domain Information Sharing via SIPRNet



Mission: Direct Action Against A Fleeting And Deceptive Adversary



Task Force Commander



Special Mission Unit



Lack Of SOA Interoperability Will Severely Impact Cross Domain Information Sharing



Interoperability Problems With ...

- **Service Registries**
- **Orchestration Engines**
- **Mediation Engines**
- **Discovery Engines**
- **Security**

Will Lead To ...

- Inability to dynamically register “new” services in the UDDI registry
- Inability to correctly workflow services together
- Inability to correctly transform / translate various data types
- Disparate content discovery by members of a cross COI collaborative group
- Disparate identity management services based on different certificate routes



There Are A Range Of Solutions Available



- Architecture Solutions
- Data Solutions
- System API Solutions
- Policy Solutions

Successful solution will require governance of alternative futures



Alternative Futures - For Service Oriented Architecture Implementation

Community of Interest Perspective

Dominant	Many SOAs Associated with Service & Agency Programs Provide Islands Of Net-Centric Operations	A minimum number of SOAs Exist based on near term needs Of specific Programs of Record Increasing Convergence Is A Long Run objective
Recessive	Net-Centric Operations Is Repudiated and Client Server Architectures are Re-adopted Wholesale	NCES Program of Record Provides Enterprise Level Services For All DOD and IC users
	Recessive	Dominant

Enterprise Integration Perspective



Alternative Futures - For Service Oriented Architecture Implementation

Community of Interest Perspective

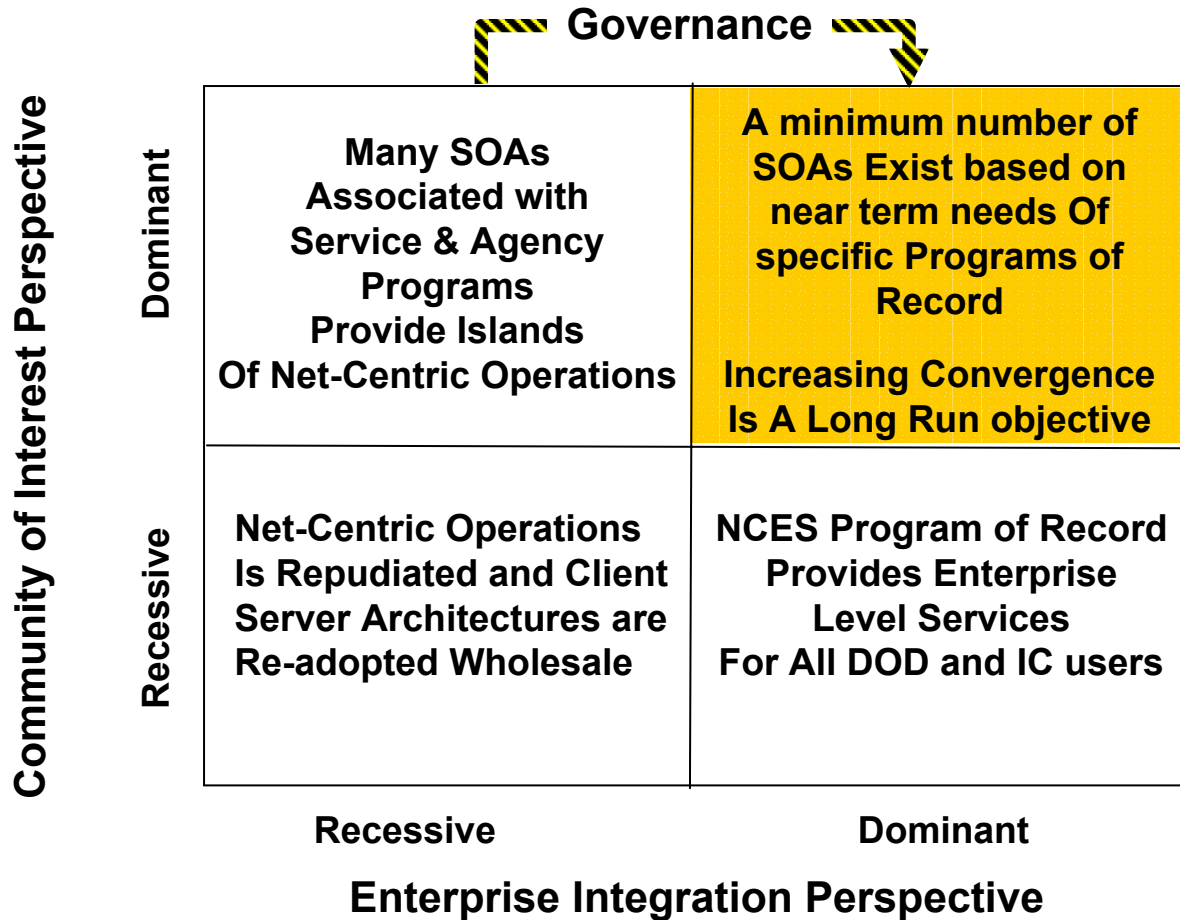
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Enterprise Integration Perspective

 More Likely States Of Nature



Alternative Futures - The Potential For Convergence



Governance: Sharing of services is central to the SOA approach. The ability to rapidly assemble applications or orchestrate processes is based upon the ready availability of some services that can be shared. Sharing of resources, by definition requires governance.

SOA Interoperability Will Be A Metric Of Governance



ISR Working Group Topics



- Cross - SOA Interoperability (what is it, how can it be achieved, how do we know we have it).
- Standards that support improved Horizontal Integration and assured information sharing.
- How to gain advantageous use of industry SOA solutions and best practices without impressing an unenforceable and unaffordable policy environment on existing programs.



ISR Working Group Topics



- Advancing industry's understanding of the specific information sharing requirements inherent within the ISR COI and among operationally related COIs.
- Life cycle support of net-centric capabilities – What is the business model?
- Starting with the current version of the DCGS Integration Backbone (DIB), how do we move forward into NCES?



Thank you



Backup

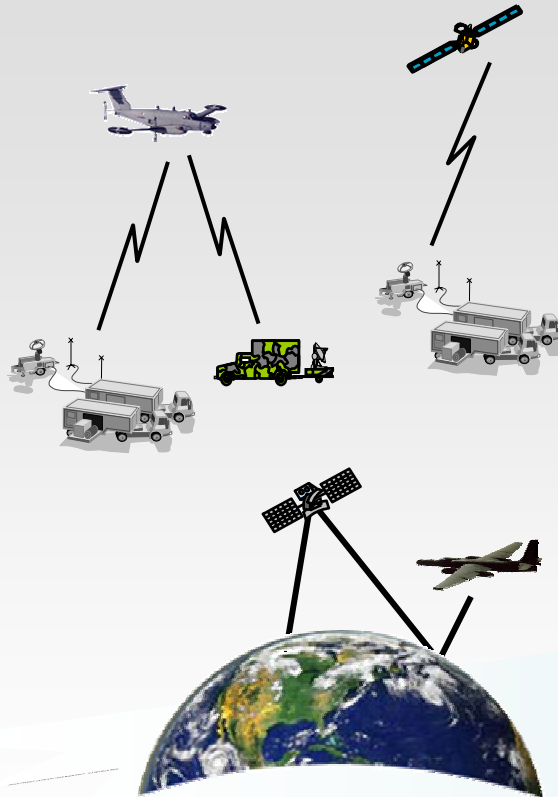




DCGS & The "DIB"

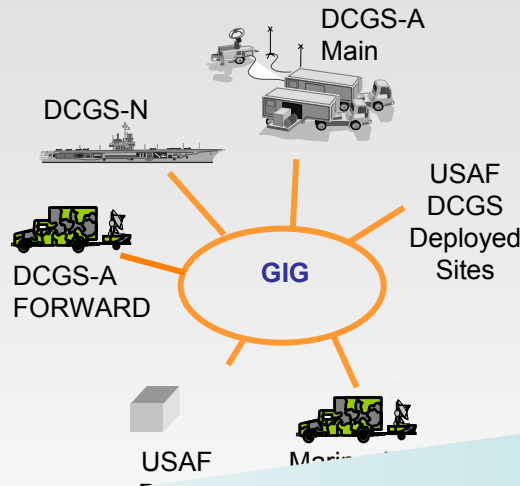
"AS IS"

DCGS History



1990's- 2003

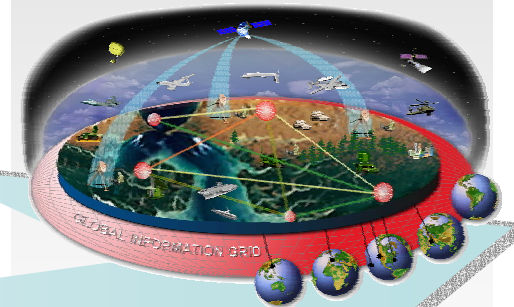
Transition Distributed Common Ground/Surface Systems



2005

"TO BE" "Net-Centric" Common Ground Systems

- **DIB**
- **DCGS-N**
- **DCGS-AF Blk 20**



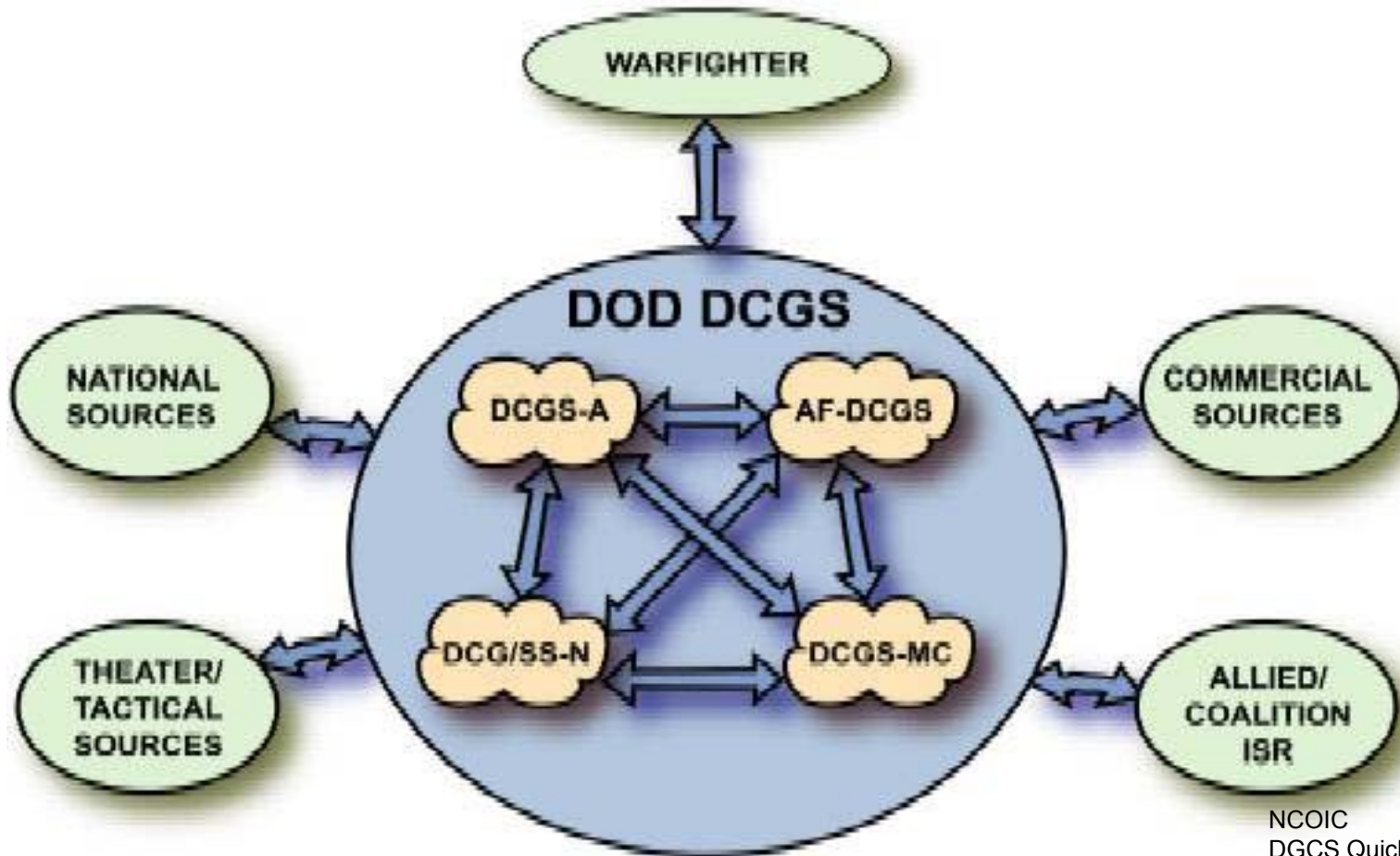
2008 - 2015

DCGS Roadmap

DCGS elements are integrated differently within each service; The DIB currently represents the major ISR integrating mechanism for supporting Joint interoperability



DCGS & The "DIB"



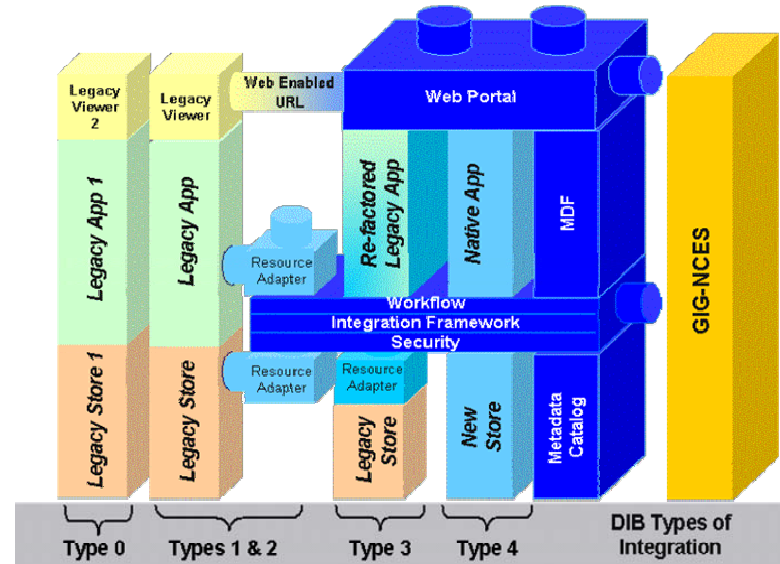
NCOIC
DCGS Quick Look
March 2005



DIB Specifics

The initial version of the DIB has been delivered.

Viewer Layer	Info Display & User I/F
Services Layer	Transformation & Processing
Repository Layer	Data Storage
Backbone	Common Services



NCOIC
DGCS Quick Look
March 2005

What services are missing?

What technical issues have come from integrating the DIB?

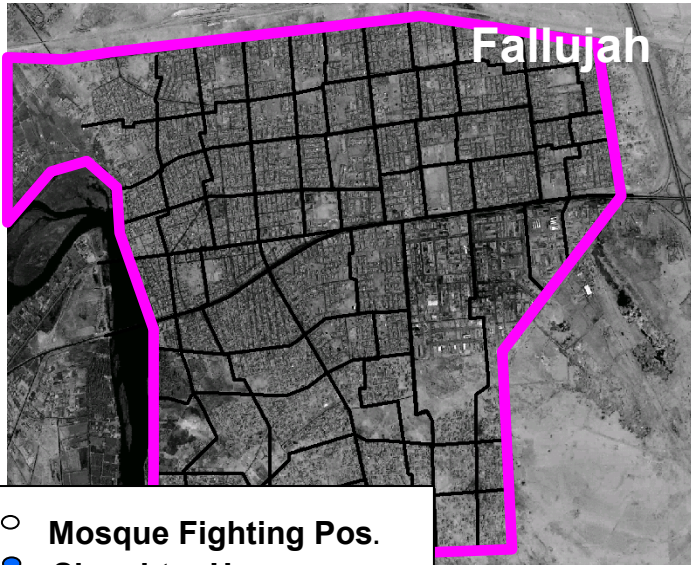
Is the DIB “sufficiently open?”



The Real World – Demanding Immediate Changes In How ISR Operations Are Conducted



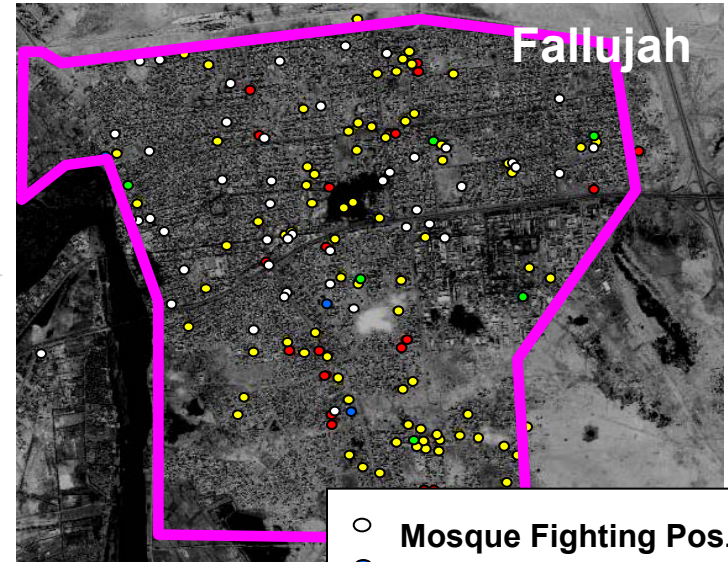
1 September 2004



- Mosque Fighting Pos.
 - Slaughter Houses
 - Weapons Caches
 - Sniper Locations
 - IED Factories
- ?



20 November 2004



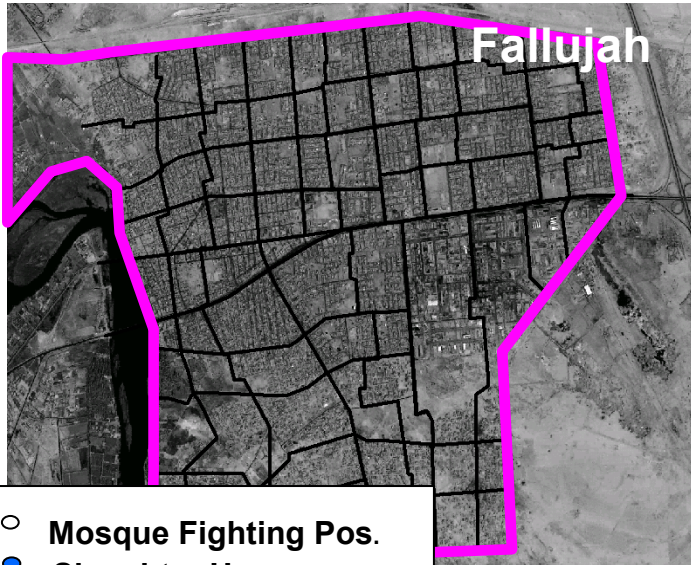
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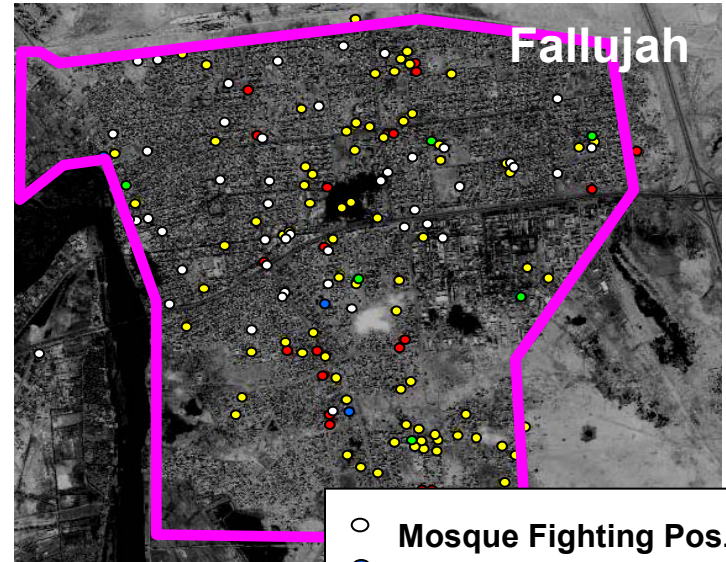


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- 50 Days
- 275 Wounded
- 38 Killed



20 November 2004



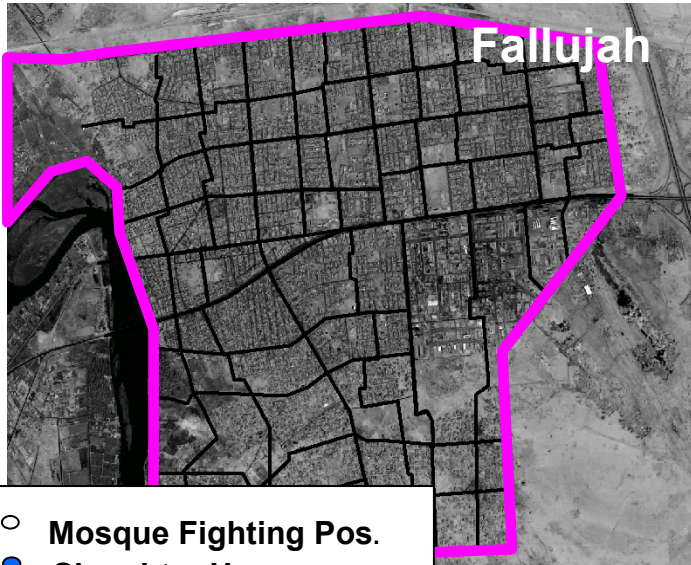
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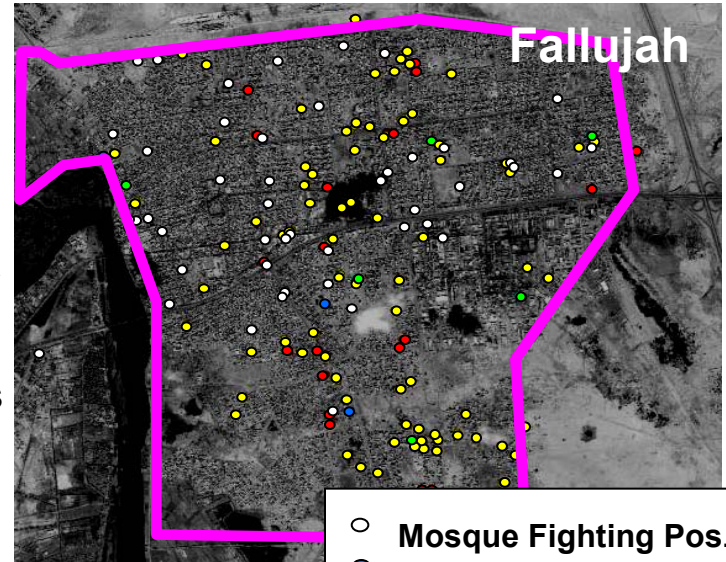
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- Lack of
- Persistent Sensors
 - ISR Management.
 - Decision Support
 - RBG Visualization

20 November 2004



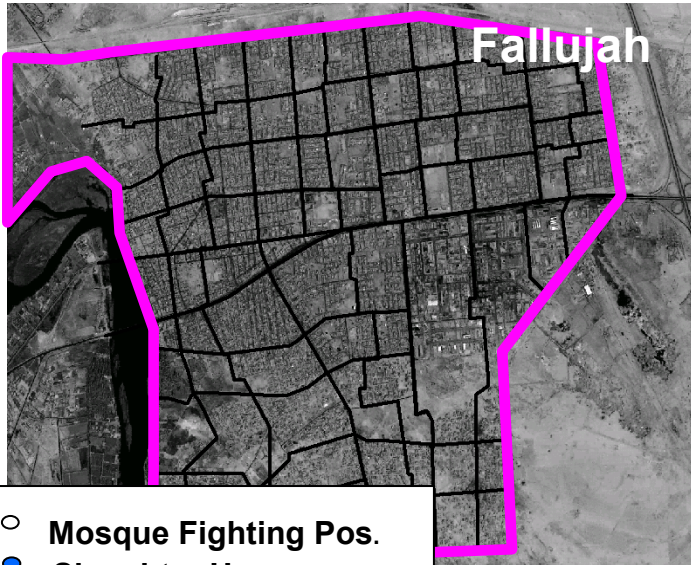
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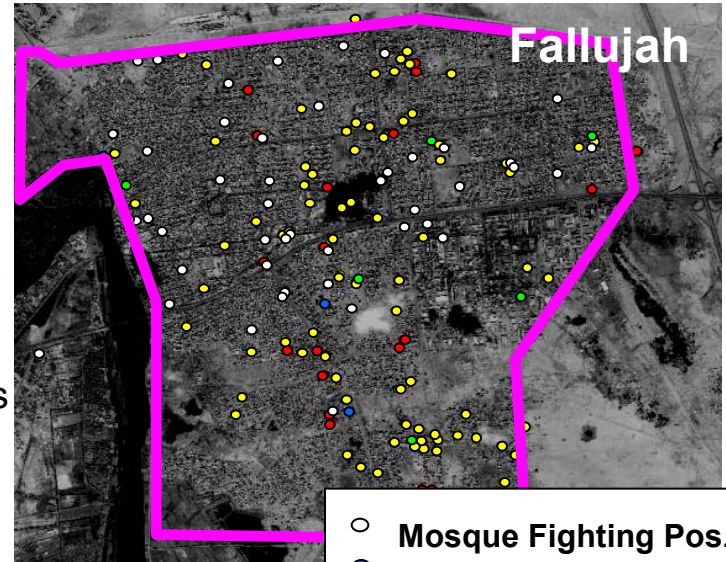
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20 November 2004



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Non Traditional ISR

“Instead of sticking it out and supporting the Marines [and] soldiers in the day with the best **ISR** [intelligence, surveillance and reconnaissance] and air strike platform, they leave the area,” said one Army officer. “As a result, our troops fighting in very complex and difficult terrain are left to less efficient and less agile air platforms.”



A New Intelligence Paradigm Drives Horizontal Integration



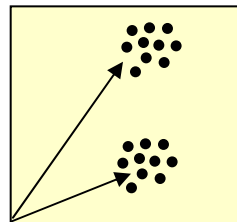
Underlying Basis

THEN

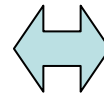
Target as Order
(Hierarchy; *complicated* yet predictable behavior)

Paradigm

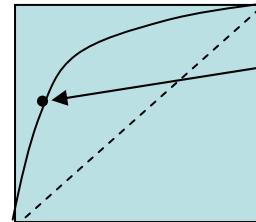
Observation Space



Attributes



Performance Space



ROC – Detection of the known

Approach

• **“Detect the entities – Infer relationships”**

- **Detect**
- **Classify**
- **Estimate**





A New Intelligence Paradigm Drives Horizontal Integration



Underlying Basis

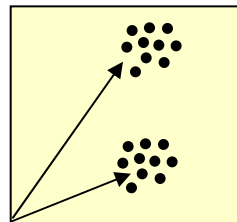
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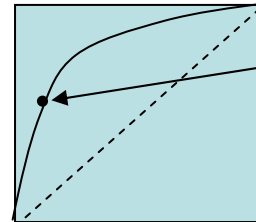
Observation Space



Attributes



Performance Space



ROC – Detection
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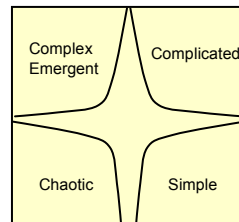
•“**Detect the entities –
Infer relationships”**

- Detect
- Classify
- Estimate

NOW

Target as Disorder
(Network;
irreducible,
complex emergent
behavior)

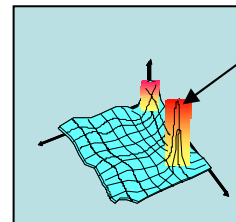
Observation Space



Behaviors



Performance Space



Simulation – Anticipation
of the unknown

•“**Detect the relationships –
infer the entities”**

- Model
- Simulate
- Explore

“There is a tendency in our planning to confuse the unfamiliar with the improbable... The danger is not that we shall read the signals and indicators with too little skill; the danger is in a poverty of expectations -- a routine obsession with a few dangers that may be familiar rather than likely.” --Thomas Schelling, Forward to: *Pearl Harbor: Decision and Warning* (1962)