



Network Centric Operations  
Industry Consortium

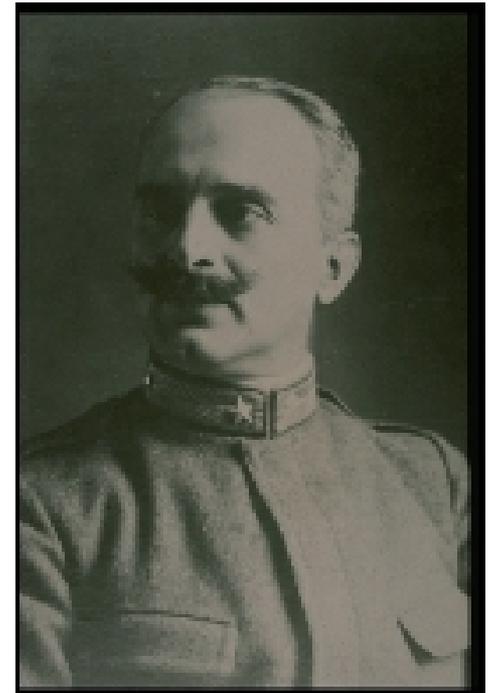
# Network Centric Operations Industry Consortium Overview

February 25, 2005

# Agenda

- Network Centric Operations Mandate
- Why the NCOIC
- NCOIC Vision and Mission
- NCOIC Membership
- NCOIC Value Proposition
- NCOIC Technical Approach
- NCOIC Operations
- Summary

“Victory smiles upon those who anticipate the changes in the character of war, not upon those who wait to adapt themselves after the changes occur.” *Giulio Douhet 1869-1930. Italian Army Air officer known as the father of strategic air power.*





# Mandate

## *Transformation Through NCO is the Goal*

- Joint transformation requires an “intellectual infrastructure” that includes:
  - Enhanced training programs
  - The development of a Network Centric Environment
  - The provision of assured Interoperability
  - Path breaking concept development and experimentation
  - Effective programs to capture and implement lessons learned
  - Common and open interoperability standards
- “Knowledge is both a fundamental principle and instrumental resource in our efforts to secure our borders and people. The Department has made widespread coordination and information sharing the hallmark of our new approach to homeland security.”



Admiral Edmund Giambastiani, Jr. USN  
NATO Supreme Allied Commander-  
Transformation  
Commander, U.S. Joint Forces Command



Tom Ridge  
Secretary, Department of  
Homeland Security

# Why the NCOIC?

## *Industry Leadership to Reduce NCO Time-To-Market*

- A Forum for Subject Matter Experts to Collaborate on NCO Initiatives:
  - Better Understand Customer's NCO Vision, Goals, and Objectives
  - Exchange strategies and proven approaches to enhance system delivery
- An Organization Committed to Establishing Open, Interoperable Systems using Common Best Practices and Systems Engineering Techniques:
  - Facilitates Consistency Across Industry
  - Advocates for Open and Interoperable Systems Design
- Companies Committed to Meeting the Government More Than Half-Way:
  - Understanding Industry's Responsibilities and Acting
  - Addressing the Problem, Taking Initiative, Understanding the Requirement
  - Seeking close collaboration with Government and the rest of industry.

This consortium exists to exchange ideas and produce process and technology deliverables that facilitate force transformation through NCO.

# Consortium Vision

## *Responding to the Need*

- Vision:

***Industry working together with our customers to provide a network centric environment where all classes of information systems interoperate by integrating existing and emerging open standards into a common evolving global framework that employs a common set of principles and processes.***

- Primary tenets of the Consortium's vision:
  - Work to identify and develop a Network Centric environment
  - Provide assured technical interoperability
  - Embrace, enhance, and encourage open standards
  - Establish and educate on common principles and processes

# Consortium Mission

- The Mission of the Consortium is to help accelerate the achievement of increased levels of interoperability within, and amongst, all levels of government of the United States and its allies involved in Joint, Interagency and Multinational (JIM) operations.
- The Consortium will achieve this mission through the creation of an international industry body, whose membership is open to all interested parties sharing a common vision of facilitating Network Centric Operations, and whose efforts are directed in support of the respective members' customers.

# Introducing the Consortium

## *Current Member Companies*

- Leading international aerospace, defense, IT systems, and professional services firms who have extensive experience with:
  - DoD
  - Intelligence Agencies
  - DHS
  - NATO
  - MoDs
  - International Law Enforcement Community
  - State/Provincial and Local Governments.
- New companies of all sizes, “think tanks” and academic institutions.
- Open:
  - Participation open to all,
  - Fair, equitable, and vendor-neutral processes,
  - Work based on relevant industry open standards and practices.

# NCOIC Members - February 23, 2005

Total Members: 58

Additional Pending Members: 0

Active Inquiries: 60

## Tier 1 Members (23)

- BAE Systems North America
- Boeing
- CACI
- Cisco Systems
- EADS
- EMC
- Factiva
- General Dynamics
- Harris Corporation
- Hewlett-Packard
- IBM
- ITT Industries
- L-3 Communications Integrated Systems
- Lockheed Martin
- Northrop Grumman
- Oracle
- Raytheon
- Rockwell Collins
- Saab
- SAIC
- Sun Microsystems
- Thales
- Themis Computer

## Tier 2 Members (2)

- Alcatel Government Solutions
- Israel Aircraft Industries

## Tier 3 Members (33)

- Aeroenvironment Inc
- Argon ST
- Ball Solutions Group
- Bay Microsystems Inc
- Camber Corporation
- CB Technologies
- Ciena Government Solutions
- Cryptek, Inc
- Engenio Information Technologies
- Ericsson
- Finmeccanica
- Flight Safety International
- Honeywell
- Innerwall
- Innovative Concepts, Inc
- Johns Hopkins U. Applied Physics Lab
- Marconi Communications Federal Inc
- MBL International, Ltd.
- McDonald Bradley, Inc
- Microsoft
- MITRE
- Motorola
- PTC
- Real-Time Innovations, Inc
- RUAG Electronics
- Sikorsky Aircraft
- Smiths Aerospace
- Software Engineering Institute/Carnegie Mellon University
- SPARTA, Inc
- SuprTEK
- Wakelight Technologies, Inc
- West Virginia High Tech. Consortium Foundation
- Wind River Systems

# Consortium Value Proposition

## *Consortium Efforts Will...*

- Increase interoperability within and among systems involved in Joint, Interagency and Multinational operations
- Lower development costs and increase commonality of design in future systems – tailored standards and best practices
- Improve force readiness through more rapid fielding of network centric systems – leverage technical “lessons learned”
- Reduce systems cost and sustainability through re-use and commonality – facilitate ease of integration, upgrade, and support
- Reduce Development Risk by Identifying the common components needed for the network centric environment – Develop them where none exist
- Improve Force Effectiveness through new, more focused development on domain specific capabilities for the Warfighter

# Consortium Technical Approach

## 5 “Parallel” Strategies - Helping our customers to:

- Complete a thorough and rigorous analysis of pertinent government agency architectures
  - Customer Requirements Team
- Develop a secure information management overarching architectural framework / reference model to identify open standards and their patterns of use
  - Architectures and Standards Analyses Team
- Identify the widest possible community of open standards-based product types
  - Building Blocks Team
- Develop a program for education for NCO
  - Education and Outreach Team
- To plan and implement strategies to develop effective collaborative engineering environments
  - Engineering Processes Team

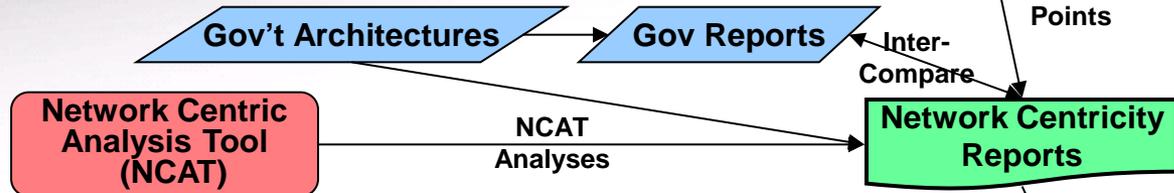
# Technical Activity Inter-relationships (draft)

## Initial Analyses



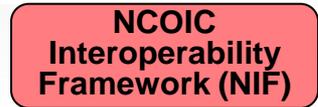
- Common General Understanding
- Initiative Touch Points

## Detailed Analyses & Standards Identification



- Common Detailed Understanding
- Network Centricity Analysis Tool
- Measures of Network Centricity
- Architecture Synergies, Overlaps, Gaps

NCOIC Tools

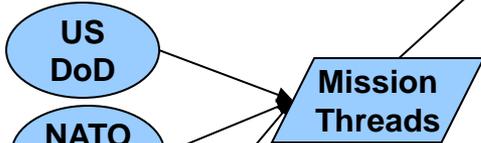


Overlaps, Gaps



- Interoperability Framework
- Agreed Open Standards
- Patterns of Standards

## Initial Strategic Relationship Development



- Quality of Service
- Information Assurance
- Service & Information Interoperability
- ...

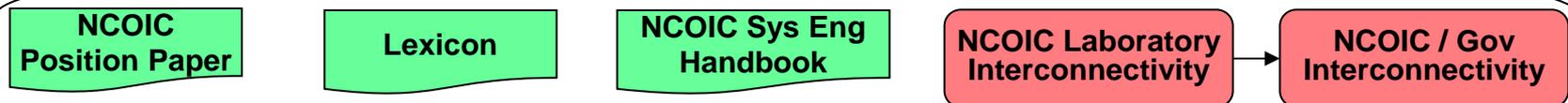
## NCO Education



## Building Block Identification



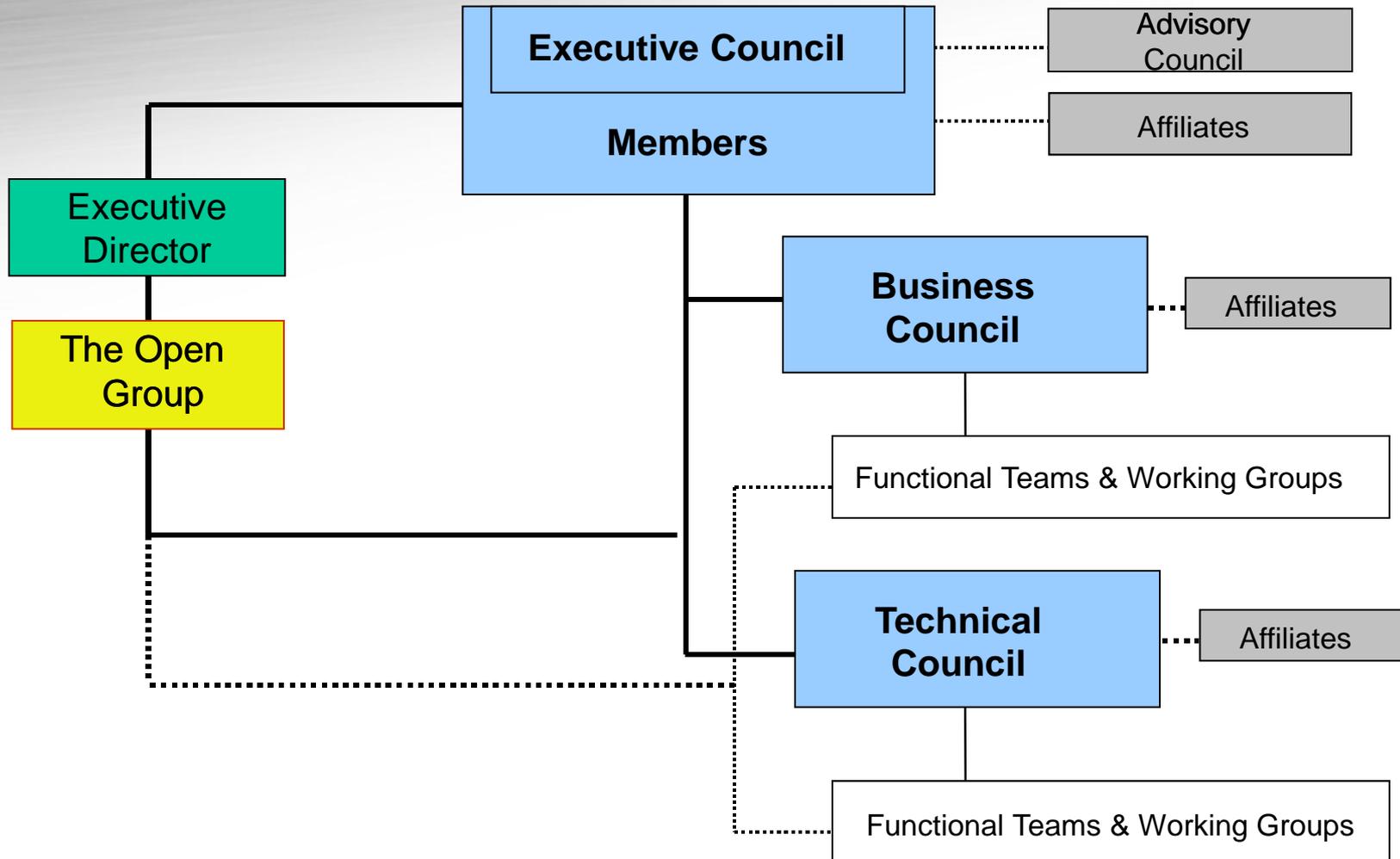
## Supporting Infrastructure Development



# Near Term Technical Deliverables

<u>Technical Deliverable (by team)</u>	<u>1st Qrt</u>	<u>2nd Qrt</u>
■ <b>Customer Requirements</b>		
– 9 Major Initiatives Quicklook Report		Apr '05
– Stakeholder / Initiatives Database Structure		Jun '05
■ <b>Architectures and Standards Analysis</b>		
– Lexicon Draft V4.1	Jan '04	
– NCOIC Position Paper V.2.0	Feb '05	
– NCAT Beta Development	Feb '05	
– NCAT Released		Jun '05
– Initial NCOW RM Analysis of US 3 DoD Initiatives		Apr '05
– Final US DoD Tri-service Analysis		May '05
– NCOIC Interoperability Framework (NIF) Initial Draft	Jan '05	
– NCOIC Interoperability Framework (NIF) Released		April '05
– Mobility Analysis Initial Draft	Mar '05	
– Mobility Analysis Released		Jun '05
■ <b>Building Blocks</b>		
– Database designed and ready for population	Mar '05	
■ <b>Education</b>		
– COG / NCOIC Collaborative Roadmap	Feb '05	
■ <b>Engineering Processes</b>		
– NCOIC System Engineering Handbook		Apr '05
– Agreed Approach to Shared Products	Mar '05	
– Lab Interconnectivity Capability Requirements	Mar '05	

# Consortium Operations



# Technical Council

## *Description*

- **Charter:**
  - To lead, manage and coordinate the Technical resources and activities of the Consortium to accomplish the technical work products and deliverables
- **Primary Objectives:**
  - Provide technical Leadership and inter-team coordination
  - Generate the Near and Long term Technical Roadmaps
  - Ensure Teams and Working Groups are appropriate, are effectively staffed, work within their charters, and adhere to deliverable schedules
- **Near Term Actions:**
  - Update technical resource requirements
  - Update technical roadmap and schedule
  - Populate Working Groups and Teams with active members
  - Assist in new member and customer orientations and briefings as required
- **Issues:**
  - Formal NCOIC Access to US Government Documentation - in progress
  - Participation by International members in technical working groups - in progress
  - Technical Participation in Conferences / meetings - in progress

# Technical Council

## TECHNICAL COUNCIL

**Chair:** Alan Murdoch (Northrop Grumman)   **Vice Chair:** Mike Curtis (IBM)

### STANDING TEAMS

#### Customer Requirements

**Chair:** Steve Russell (L-3)

**Vice:** Rob Biddlecomb (NGC)

**Exec Sponsor:** TBD

**Working Groups:**

- Stakeholders ID Serialization  
TBD ( )
- Initiative ID & Analysis  
TBD ( )
- Mission Thread/Use Case Analysis  
TBD ( )
- Automation & Analysis Tools  
TBD ( )

#### Building Blocks

**Chair:** Steve Haken (Sun)

**Vice:** James Burke (Lockheed Martin)

**Exec Sponsor:** TBD

**Working Groups:** (To be launched)

- Web Services; Category Definition  
Partner Management

#### Architectures and Standards Analysis

**Chair:** Bob Lawrence (BAE Systems)

**Vice:** Frank Miller (Rockwell)

**Exec Sponsor:** TBD

**Working Groups:**

- Position Paper / Lexicon  
Paul Mangione (Boeing/GBA)
- Open Standards / Patterns  
Mark Bowler (Boeing)
- NCOIC Interop Framework (NIF)  
Frank Miller (Rockwell)
- NCO Analysis Tool (NCAT)  
Fred Mervine (IBM)  
Vish Dixit (Boeing)
- Mobile Networks  
Jim Bound (HP)  
Steve Kobierowski (Boeing)
- Tri-Service Initiatives  
TBD ( )

#### Education and Outreach

**Chair:** John Poladian (HP)

**Vice:** Al Nauda (Raytheon)

**Exec Sponsor:** TBD

**Working Groups:**

- OSD/OFT  
Krishna Sankar (Cisco)
- W2COG  
John Poladian (HP)
- Distance Learning  
TBD ( )

#### Engineering Processes

**Chair:** Tim Wellman (Raytheon)

**Vice:** Ken Cureton (Boeing)

**Exec Sponsor:** TBD

**Working Groups:**

- System Engineering Processes
- Collaboration Processes
- Modeling, Simulation, & Demos

# Business Council

## BUSINESS COUNCIL

Chair: K Mowrey (Boeing)

Vice Chair:

## STANDING TEAMS

### Customer Outreach

Chair: T. Mayhew, Oracle

Vice Chair: Joe Siniscalchi, L-3

### Consortium Infrastructure

Chair: R. Davis, SAIC

### Membership Outreach

Chair: P. Allen, IBM

### Market Strategies

Chair: E. Vogler, Sun

Vice Chair: K. Kondrotis,  
Lockheed Martin

### Communications

Chair: J. Kopec, Raytheon

### Legal

Chair: J. Nimer, Sun

### Export Compliance

Chair: G. Carney, BAE

Vice Chair: D. Burnett, EADS

### Affiliates

Chair: M. Lammers, EADS

# Business Council Objectives

- Provide the right infrastructure in place to support the technical agenda
- Fulfill the NCOIC vision by maintaining a strong open and diverse membership policy and by extending the NCOIC reach internationally
- Remove barriers for international participation in the NCOIC Technical activities
- Ensure the Consortium effort is closely aligned with existing and emerging customer interoperability requirements
- Increase awareness among the international industry and customer base
- Provide guidance and interpretation on all appropriate laws and regulations in order to help ensure the Consortium abides by the highest possible ethical and legal standards

# Key to Consortium Success – The Customer

## *Advisory Council: “Customer In” Approach*

- The Advisory Council represents government agencies and allied member countries in the identification and development of open, consensus-based approaches necessary to support transformation through NCO.
- Advisory Council Chair: Dr. Paul Kaminski, former DoD Undersecretary for Acquisition and Technology.
- The Advisory Council will:
  - Advise Consortium leadership on customer NCO/NCW issues, needs, requirements and direction
  - Provide thought leadership to the Consortium in developing innovative concepts and strategic direction
  - Encourage Consortium participation of NCO/NCW thought leaders, industry, and associated organizations
  - Encourage and leverage openness of communication at all levels of the consortium



# Current Composition of Advisory Council

## ■ **Dr. Paul G. Kaminski**

- **LTG Steven W. Boutelle, USA**
- **VADM (USN Ret) Arthur K. Cebrowski**
- **Lt Gen (USAF, Ret) James R. Clapper, Jr.**
- **Mr. Bill Dawson**
- **Dr. Vitalij Garber**
- **Ms. Priscilla E. Guthrie**
- **Lt Gen William T. Hobbins, USAF**
- **Mr. Lee Holcomb**
- **VADM James D. McArthur, Jr., USN**
- **Gen (USAF, Ret) James P. McCarthy**
- **Mr. Arthur L. Money**
- **Maj Gen (ret) Staffan Näsström**
- **Lt Gen Harry D. Raduege, Jr., USAF**
- **LtGen Robert M. Shea, USMC**
- **Maj Gen Ruud van Dam, AF Netherlands**
- **LTG Robert W. Wagner, USA**
- **Dag Willhemsen, NATO**
- **Georges D'hollander, NATO**

## **AC Chairman**

**Army**  
**OFT**  
**NGA**  
**Intelligence Community**  
**OUSD (A, T, &L)**  
**OASD (NII)**  
**Air Force**  
**DHS**  
**Navy**  
**USAFA**  
**At large**  
**Swedish DMA**  
**DISA**  
**JCS**  
**ACT**  
**JFCOM**  
**Agent Directorate General Manager, (NC3A)**  
**Director NHQC3S**

# Affiliates Council

- Established as the “portal” for all non-member organizations who desire to work with or affiliate with the NCOIC
  - Affiliates enhance our ability to achieve our mission by providing access and resources to the NCOIC in carrying out our objectives
- Chaired by Dave Chesebrough, President, Association for Enterprise Integration (AFEI)
- Overall program manager for individual and/or collective affiliates
- Works with the Advisory Council to devise and execute integration strategies for affiliate organizations
- Ensures NCOIC and affiliate organization tasking is commensurate with overall technical and business roadmap



# Management Services – The Open Group

- Role

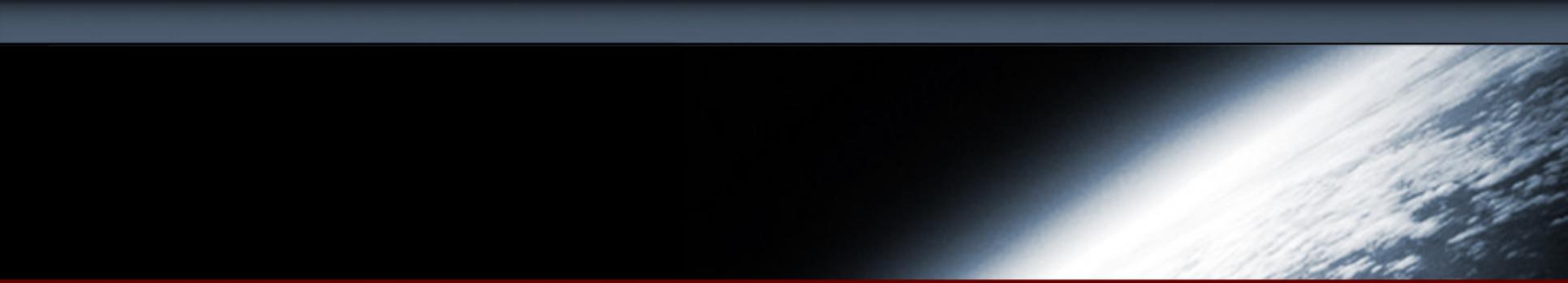
- Ensure that the processes, methods of operation and practices of the Consortium are, and are seen to be, neutral, open and fair

- Key tasks

- Provide the management services, infrastructure and counsel to enable the Consortium to achieve its goals
- Provide a primary point of contact for managing account relationships, on behalf of the consortium, for current, new, and potential members
- Assist in meeting arrangements and facilitation as required by the Council Chairs
- Facilitate the Consortium review and approval process
- Manage the Consortium election process

# Summary

- Industry working together with our customers to achieve interoperability
- Open participation across industry
- Advisory and Affiliates Councils are key contributors
- Network Centric Operations: The Common Vision



**Thank you**