

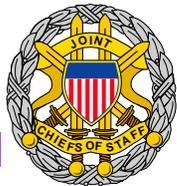
The Command and Control Joint Integrating Concept (C2 JIC)

“Spreading The Word”



Lt Col Nicole Blatt, USAF
US Joint Forces Command, J-9
26 September 2006

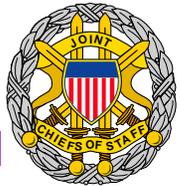
The C2 JIC is online at http://www.dtic.mil/futurejointwarfare/concepts/c2_jic.pdf



The Challenge

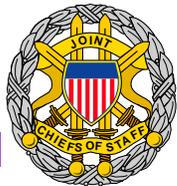
- **Commanders must be able to exercise effective C2 of an interdependent joint force in rapidly changing scenarios involving complex distributed, simultaneous or sequential operations, often with other agencies and nations**
 - Communicate, collaborate and monitor joint/combined operations in a highly decentralized environment.
 - Integrate disparate capabilities into a cohesive force
 - Make decisions in a volatile, uncertain, complex, ambiguous environment
 - Conduct robust collaborative planning under severe time constraints.
 - Rapidly achieve coherent, decisive effects
 - At any time and anywhere in degraded network environments
 - From austere as well as robust fixed sites, from mobile sites (i.e., “on the move”) and in transition between sites.
 - Against irregular, catastrophic, disruptive, and conventional threats
 - Maintain unity of command within a joint/combined force and unity of effort with mission partners

These challenges will require significant enhancement to present C2 capabilities



Spreading the Word

- What is the C2 JIC?
- Fitting Into The Big Picture
- The C2 JIC – The Important Details
- The Next Steps
- Capabilities Based Assessment Status



What is The C2 JIC?

- **Objectives:**

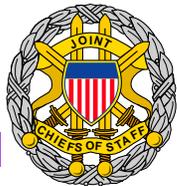
- Promote the development of command and control (C2) capabilities for agile, decisive and integrated force employment in all phases of combat and supporting operations, as required by the *National Military Strategy (NMS) 04*.
- Enable rigorous assessment and analysis of capability gaps and excesses through a Capabilities-Based Assessment (CBA) process

- **Key Considerations:**

- Integrate C2 requirements described in Joint Operating Concepts (JOCs), Joint Functional Concepts (JFCs), and other Joint Integrating Concepts (JICs)
- Follow the Joint Capabilities Integration and Development System (JCIDS) process to facilitate the CBA

- **Status:**

- Approved C2 JIC Version 1.0 on 1 September 2005
- JFCOM/J8 currently performing the CBA (currently conducting the Functional Needs Analysis)



Scope of C2 JIC

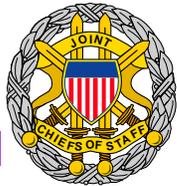
SCOPE	Function	Range of Military Operations	Level of Command
Central and Supporting Ideas	All C2 Functions	All missions*	Operational to Tactical, accommodating strategic guidance
Capabilities, Tasks, and Attributes	All C2 Functions	All missions*	Operational to Tactical, accommodating strategic guidance
Conditions, Standards, and CONOPs	All C2 Functions	Initial phase of an MCO	Combined Task Force

*JICs specifically analyzed

- Joint Forcible Entry Operations
- Joint Undersea Superiority
- Seabasing
- Integrated Air and Missile Defense
- Joint Logistics (Distribution)
- Global Strike

*JOCs specifically analyzed

- Major Combat Operations (MCO)
- Stability Operations (SO)
- Homeland Security (HLS)
- Strategic Deterrence (SD)



2015 Assumptions

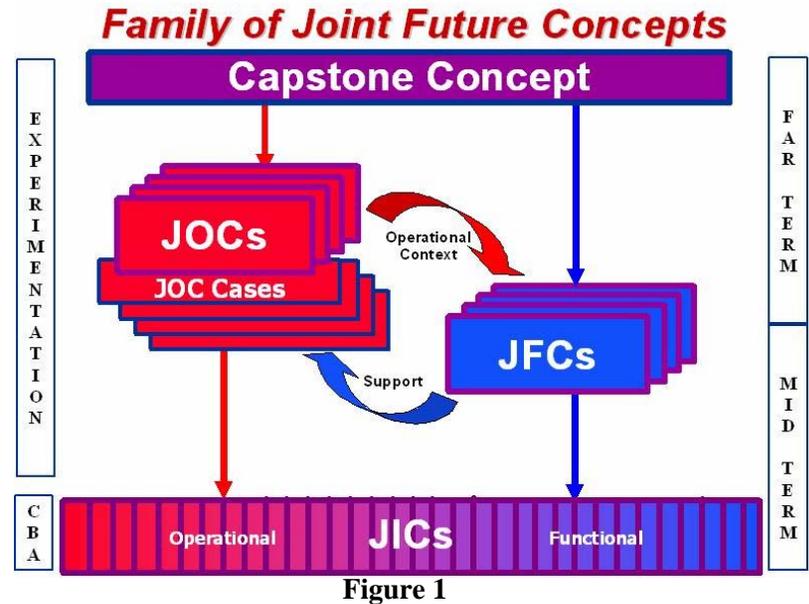
The following assumptions represent the key enablers of the concept:

- **A secure, trusted, global networking infrastructure (evolution of the Global Information Grid [GIG]) will be in place in 2015**
 - Certain non-DoD agencies and allies will have the technology and permissions to be able to access the DoD network
 - Some coalition forces and other non-DoD agencies may only have limited access based on technology and security constraints
- **Core enterprise services (CES) will be provided**
 - Includes data/information discovery, access and storage, information assurance (IA), multiple security domains, messaging and collaboration capabilities
- **Battlespace Awareness (BA) information will be available at all levels of war to enable coherent decision making**
 - From strategic to lowest tactical level
 - Includes terrestrial and space-based sources, “fused” intelligence, geospatial information and information on friendly forces, other actors, the environment and relevant political and diplomatic developments
- ***All may be degraded in some situations***

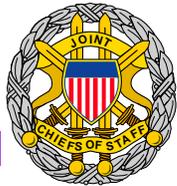


Fitting into the Big Picture

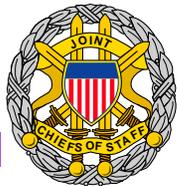
- C2 JIC is part of the Family of Joint Future Concepts (JOpsC)
- All of the Joint Future Concepts feed the Joint Capabilities Integration and Development System (JCIDS)
- Underpins investment decisions leading to the development of new capabilities, both materiel and non-materiel



- **Results of the JCIDS capabilities-based analysis feed:**
 - Defense Acquisition System (DAS)
 - Planning, Programming, Budgeting & Execution System (PPBES)
 - Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities (DOTMLPF) Change Requests

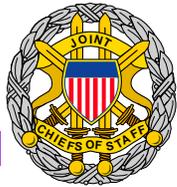


C2 JIC – The Important Details



The Central Idea

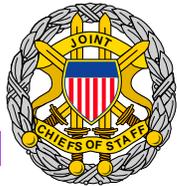
- **Commanders will plan and execute complex regional operations**
 - Drawing upon global resources
 - Considering global consequences
 - Conducted by an interdependent Joint force
 - With mission partners from other commands, agencies, and nations
- **Commanders will employ:**
 - *Collaboration capabilities*
 - *Decentralization of decision authority whenever appropriate*
 - Agile, adaptive C2 structures
 - Horizontal and vertical real-time information sharing
 - Leader-centric presentations of actionable information accessible down to the lowest tactical level
- **This approach will help to achieve:**
 - Improved situational awareness (SA), knowledge, and understanding
 - Rapid and effective planning/decision making and execution
 - Control of the pace and scope of operations
 - Better synchronization of operations and integration of capabilities
 - Enhanced unity of command within the Joint force and unity of effort with mission partners



Eight Capabilities (and 55 Tasks)

- 1. Exercise Command Leadership (10 tasks)**
- 2. Establish / Adapt Command Structures and Enable Both Global and Regional Collaboration (6 tasks)**
- 3. Develop and Maintain Shared Situational Awareness / Understanding (7 tasks)**
- 4. Communicate Commander's Intent and Guidance (7 tasks)**
- 5. Plan Collaboratively (5 tasks)**
- 6. Synchronize Execution Across All Domains (8 tasks)**
- 7. Monitor Execution, Assess Effects, and Adapt Operations (8 tasks)**
- 8. Leverage Mission Partners (4 tasks)**

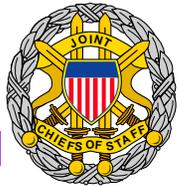
Total = 55 Tasks



Capability 1

Exercise Command Leadership

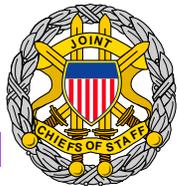
1. Promote adherence to the law of war and accepted behavior norms
2. Establish and promulgate rules of engagement (ROE)
3. Take care of personnel
4. Delegate decision authority
- 5. *Encourage subordinates to exercise initiative consistent with commander's intent***
6. Develop subordinate leaders
- 7. *Establish and cultivate relations with mission partners***
8. Manage risk
- 9. *Manage dissemination of information to the public; align public information dissemination with strategic communications objectives of higher authority***
10. Assess operational readiness.



Capability 2

Establish/Adapt Command Structures Enable Both Global and Regional Collaboration

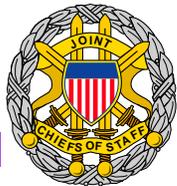
- 1. Organize the staff to align with the conditions of the mission environment, assign roles and establish internal collaborative structures and processes***
2. Establish/refine the joint task force component organization and integrate capabilities
3. Establish/refine command relationships to enable appropriate coordination relationships, including lines of authority and accountability
4. Identify collaboration requirements; establish the collaboration infrastructure requirements
5. Establish/refine collaboration structures and processes across the force, including standing and ad hoc functional cells and communities of interest (COIs)
6. Establish collaboration mechanisms (business rules, systems interface, etc.) with mission partners



Capability 3

Develop and Maintain Shared SA and Understanding

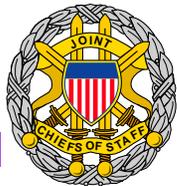
1. ***Access and integrate intelligence information and forecasts***, including information on adversary, neutral, and non-combatant entities of interest; collaboratively assess and share implications
2. ***Employ blue force tracking capability***; provide access and integrate information on location, identity, status, capabilities, and limitations of friendly forces (“Blue Force SA”); collaboratively assess and share implications
3. ***Access and integrate geospatial and environmental information*** and forecasts; collaboratively assess and share implications
4. ***Reachback for subject matter expertise***
5. ***Present tailored, relevant, synthesized, actionable information to promote understanding***
6. ***Collaboratively conduct comparative, multi-discipline assessment of adversary strengths and vulnerabilities versus our own***
7. ***Collaboratively develop and share understanding of regional/local diplomatic, political, economic and cultural factors***



Capability 3

Develop and Maintain Shared SA and Understanding

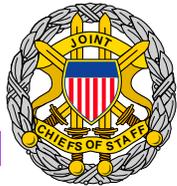
1. Access and integrate intelligence information and forecasts, including information on adversary, neutral, and non-combatant entities of interest; **collaboratively** assess and share implications
2. Employ blue force tracking capability; provide access and integrate information on location, identity, status, capabilities, and limitations of friendly forces (“Blue Force SA”); **collaboratively** assess and share implications
3. Access and integrate geospatial and environmental information and forecasts; **collaboratively** assess and share implications
4. Reachback for subject matter expertise
5. Present tailored, relevant, synthesized, actionable information to promote understanding
6. **Collaboratively** conduct comparative, multi-discipline assessment of adversary strengths and vulnerabilities versus our own
7. **Collaboratively** develop and share understanding of regional/local diplomatic, political, economic and cultural factors



Capability 4

Communicate Commander's Intent and Guidance

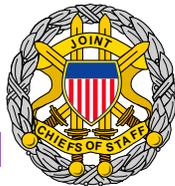
1. Receive strategic mission and guidance
2. Collaboratively conduct mission analysis
3. ***Create, shape, and synchronize guidance with mission partners' concerns in mind; align agendas to the extent practical***
4. Promulgate initial commander's intent and guidance, including operational objectives, to subordinate echelons and staff and ensure it is understood
5. Periodically (as required) update commander's intent and guidance and ensure it is understood
6. Direct action through mission-type orders to subordinate echelons
7. Delegate authority for mission planning and execution to subordinate commanders as appropriate with clear bounds



Capability 5

Plan Collaboratively

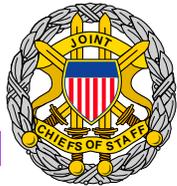
1. **Form collaborative planning teams across components, missions, functions, and geographies and with mission partners**
2. **Collaboratively** develop, analyze, and select the COAs, branches and sequels.
3. **Collaboratively** develop joint/coalition campaign plan, including the synchronization matrix
4. **Collaboratively** develop operational plans across the full ROMO, employing all appropriate joint capability areas:
 - Joint Air Operations
 - Joint Space Operations
 - Joint Land Operations
 - Joint Maritime/Littoral Operations
 - Joint Spec Ops & Irregular Operations
 - Joint Information Operations
 - Joint Access and Access Denial
 - Joint Protection
 - Joint Logistics
 - Joint Net-Centric Operations
 - Joint Battlespace Awareness
 - Defense Support to U.S. Civil Authorities
 - Joint Force Generation
 - Joint Force Management
 - Joint Homeland Defense
 - Joint Global Deterrence
 - Joint Shaping
 - Joint Stability Operations
 - Joint Interagency/IGO/NGO Coordination
 - Joint Public Affairs Operations
5. Assess effectiveness of plans and prepare for execution



Capability 6

Synchronize Execution Across All Domains

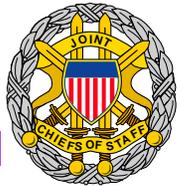
1. Communicate and disseminate plans and orders to all echelons and to mission partners
2. **Authorize and enable execution and self-synchronization of subordinate forces as appropriate**
3. **Synchronize/self-synchronize operations** within and among physical and functional domains across the full ROMO employing all appropriate joint capability areas:
 - Joint Air Operations
 - Joint Space Operations
 - Joint Land Operations
 - Joint Maritime/Littoral Operations
 - Joint Spec Ops & Irregular Operations
 - Joint Information Operations
 - Joint Access and Access Denial
 - Joint Protection
 - Joint Logistics
 - Joint Net-Centric Operations
 - Joint Battlespace Awareness
 - Defense Support to U.S. Civil Authorities
 - Joint Force Generation
 - Joint Force Management
 - Joint Homeland Defense
 - Joint Global Deterrence
 - Joint Shaping
 - Joint Stability Operations
 - Joint Interagency/IGO/NGO Coordination
 - Joint Public Affairs Operations
4. **Synchronize operations with DOD agencies and coalition members**
5. **Coordinate operations with non-DOD national agencies and international organizations**
6. Synchronize execution between/across phases
7. Synchronize mission handover during operation
8. Validate targets prior to attack (combat identification)



Capability 7

Monitor Execution, Assess Effects, and Adapt Operations

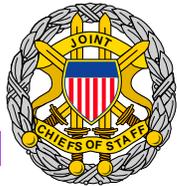
1. Monitor tactical operations; assimilate information; assess compliance with commander's guidance and intent, including ROE; intervene in subordinate actions as needed
2. Track, shift, reconfigure (i.e. control) forces, equipment, sustainment, and support, even en route
- 3. Collaboratively assess achievement of planned effects**
- 4. Collaboratively identify and assess implications of unintended effects**
- 5. Collaboratively, rapidly re-plan and synchronize operations to adapt to changing situation**
6. Adapt operations to changing situations through initiative and self-synchronization when practical
7. Respond to emerging requests for support from subordinate commands and mission partners
8. Determine when desired objective, end-state or phase points have been reached



Capability 8

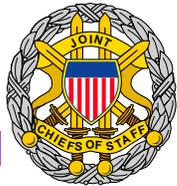
Leverage Mission Partners

1. Communicate mission objectives and support needs
2. *Coordinate with mission partners to gain actionable commitment*
3. Provide support as feasible and appropriate
4. *Understand situation-specific negotiating power*



Twenty Attributes

- Accessibility
- Accuracy
- Agility
- Coherence
- Cohesion
- Completeness
- Flexibility
- Foresight
- Innovation
- Interoperability
- Morale
- Operational Trust
- Relevance
- Responsiveness
- Robustness
- Security
- Speed
- Suitability
- Timeliness
- Understanding

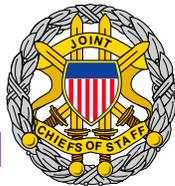


Task, Attributes, & Standards Example

Capability #3: Develop and Maintain Shared Situational Awareness / Understanding

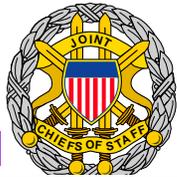
Task 3.2: Employ blue force tracking capability, provide access and integrate information on location, identity, status, capabilities, and limitations, of friendly forces (“Blue Force Situational Awareness”), collaboratively assess and share implications

Attribute	2010 Standard	2020 Standard
Accuracy Timeliness Completeness Accessibility Security	<p>Accuracy—Blue forces location conforms to truth, within the acceptable error required by the operational to tactical warfighter (Blue Force SA criteria).</p> <p>Timeliness--Mission capability information is available in time to conduct the task/mission at hand 90% of the instances.</p> <p>Completeness—Mission capability information is available on 90% of the forces.</p> <p>Accessibility— Tactical through operational level forces can access and use blue force situational awareness.</p> <p>Security-- No compromise of information that impairs current operational effectiveness. No compromise of classified information</p>	<p>Accuracy— Blue forces location conforms to truth, within the acceptable error required by the operational to tactical warfighter (Blue Force SA criteria).</p> <p>Timeliness--Mission capability information is available in time to conduct the task/mission at hand 95% of the instances.</p> <p>Completeness—Mission capability information is available on 99.9% of the forces.</p> <p>Accessibility — Tactical through operational level forces and authorized mission partners can access and use blue force situational awareness.</p> <p>Security-- No compromise of information that impairs current operational effectiveness. No compromise of classified information.</p>



The Next Steps

- **Get the Word Out – *That’s why I am here!***
- **Experiment, Evaluate, Validate**
 - Embed C2 JIC Evaluation Hypotheses within Experimentation
 - Hypo 1) If we assess our performance against the C2 JIC task standards, then we will be able to determine which areas need the most improvement. (Evaluate)
 - Hypo 2) If we assess the importance of the C2 JIC task accomplishment compared to actual events, then we will learn which areas of the JIC are with or without merit. (*Validate*)
- **Operationalize the Concept**
 - Capabilities Based Assessment (CBA)
 - Functional Area Analysis (FAA)
 - Functional Needs Analysis (FNA)
 - Functional Solutions Analysis (FSA)
 - Define Solutions Across DOTMLPF
 - Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities

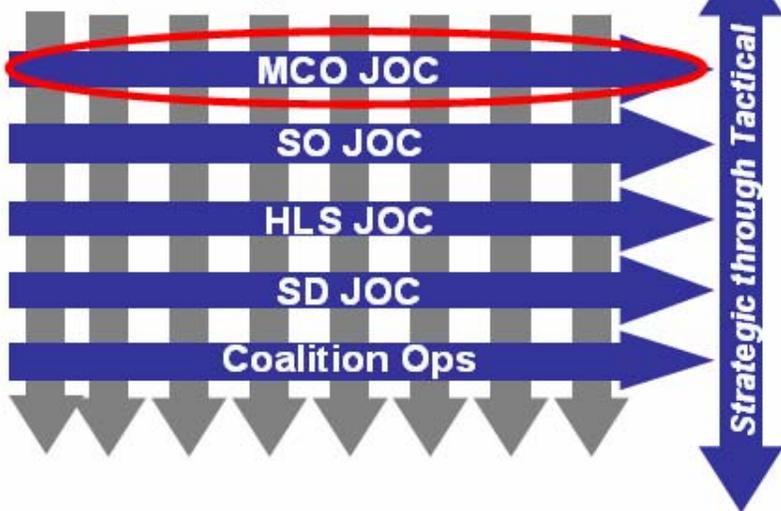


Capabilities Based Assessment Methodology

C2 Functional Capabilities

- Exercise Cmd Ldrship
- Command Structures
- Situational Awareness
- CDR Guidance
- Collaborative Planning
- Synchronize Execution
- Monitor Execution
- Mission Partners

Joint Operational Capabilities



Derive Guidance for Analysis from CONOPS/JIC/ JBMC2 Roadmap

Decompose Capabilities

Develop Activity Models

Assessment/Prioritization of Capabilities

Identify Gaps & Robust Capability

Assess Risk & Prioritize Gaps

Write Joint Capabilities Document

Joint Capability Document (JCD)

Functional Area Analysis – “What needs to be done?”

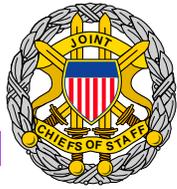
- Identify/cross-walk/decompose capabilities
- Initiate development of “activity models”
 - Map capabilities to activity models
 - Link attributes, measures and thresholds to appropriate elements
 - Evaluate ability of architecture to meet thresholds – qualitative and quantitative

Functional Needs Analysis – “How well do we perform?”

- Determine architecture performance for key mission threads
- Identify sources of gaps and relative contributions to capability

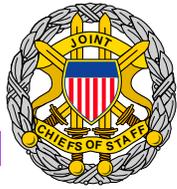
Qualitative and Quantitative Assessments

FSA's completed by COCOMs, Services or Agencies



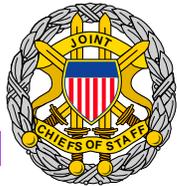
CBA Results Highlights -- Capability Gaps Post-Functional Needs Analysis

- Need for improved collaborative planning tools for decision makers
 - Risk – Continued inability to effectively plan and operate with mission partners
- Lack of ability to perform timely and accurate mission analysis with coalition partners
 - Risk – Selected courses of action ineffective or inappropriate for achieving desired objectives
- Need for timely, accurate, and relevant information
 - Risk – Time-late and inaccurate, input into decision-making process potentially resulting in missed operational opportunities and increased risk to personnel
- Need for better access to timely and understandable information and improved system interoperability across all domains
 - Risk – Inability to leverage and operate with mission partners
- Lack of a common, standard lexicon among mission partners (both inter-agencies, and allied/coalition members)
 - Risk – Inability to leverage and operate with mission partners
- Lack of ability for Commander to provide accurate and timely intent
 - Risk – Time-late and inaccurate input into decision-making process potentially resulting in missed operational opportunities



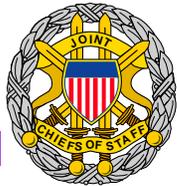
Recommendations for CBA Functional Solutions Analyses

- Efforts in the “Plan Collaboratively” capability will yield the greatest utility
- Follow-on Functional Solutions Analyses are recommended in the study areas of:
 - Collaboration
 - Situational Awareness
 - Operational Trust



Summary

- *Command and Control is about people accomplishing a mission*
- *Top Themes:*
 - *Collaboration – let's make it effective*
 - *Decentralization – when it is appropriate*
- *Read the C2 Joint Integrating Concept*
 - The C2 JIC is online at:
http://www.dtic.mil/futurejointwarfare/concepts/c2_jic.pdf
 - Or just Google “C2 JIC”



Questions?

The C2 JIC is online at:

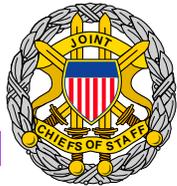
http://www.dtic.mil/futurejointwarfare/concepts/c2_jic.pdf

LtCol Nicole Blatt

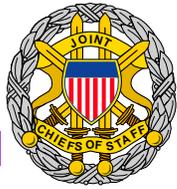
LtCol Steele Macfarlane

Mr. Jack Myers

US Joint Forces Command, J-9



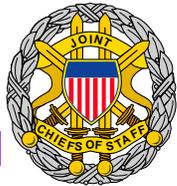
Back-up Slides



Relationship of C2 JIC Assumptions to NCOE JIC Technical Area Capabilities

- **A secure, trusted, global computer networking infrastructure (evolution of the Global Information Grid [GIG]) will be in place in 2015**
 - NCOE #T1: Ability to create/produce information
 - NCOE #T3: Ability to establish an information environment
- **Core enterprise services (CES) will be provided**
 - NCOE #T4: Ability to process data and information
 - NCOE #T5: Ability to find useful information
 - NCOE #T6: Ability to validate/assure
- **Battlespace Awareness (BA) information will be available at all levels of war to enable coherent decision making**
 - NCOE #T2: Ability to store, share, and exchange data/information
- **All may be degraded in some situations**
 - NCOE #T7: Ability to defend systems and networks
 - NCOE #T8: Ability to optimize network functions and resources

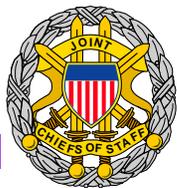
NCOE is the key enabler of C2



Relationship of C2 JIC Capabilities to NCOE Knowledge Area Capabilities

1. **Exercise Command Leadership**
 - NCOE #K5: Ability to continuously develop skills in a networked environment
2. **Establish / Adapt Command Structures and Enable Both Global and Regional Collaboration**
 - NCOE #K1: Ability to establish appropriate organizational relationships
 - NCOE #K2: Ability to collaborate
3. **Develop and Maintain Shared Situational Awareness / Understanding**
 - NCOE #K4: Ability to share situational understanding
5. **Plan Collaboratively**
 - NCOE #K3: Ability to provide adaptive, distribute, cooperative, and collaborative decision-making and planning
8. **Leverage Mission Partners**
 - NCOE #K6: Ability to share knowledge with groups/individuals not physically connected to the networked environment

C2 is the biggest customer of NCOE



Task, Attributes, & Standards Example

Capability #7: Monitor execution, assess effects and adapt operations

Task 7.1: Monitor tactical operations; assimilate information; assess compliance with commander’s guidance and intent, including ROE; intervene in subordinate actions as needed.

Attribute	2010 Standard	2020 Standard
<p>Understanding Foresight Suitability Agility</p>	<p>Understanding— The commander / controller understands combined assimilated information well enough to be able to determine when actions are complying or not complying with the plan, guidance, intent, and ROE.</p> <p>Foresight -- Deviations from the plan or noncompliance are accurately predicted, 70% of the time.</p> <p>Suitability -- Commander correctly assessed the need to intervene (did when he should have, didn't when he shouldn't have, did when he shouldn't have, didn't when he should have).</p> <p>Agility—Forces and assets quickly modify operations to facilitate direction change without detracting from the primary mission.</p>	<p>Understanding— The commander / controller understands combined assimilated information well enough to be able to determine when actions are complying or not complying with the plan, guidance, intent, and ROE.</p> <p>Foresight -- Deviations from the plan or noncompliance are accurately predicted, 80% of the time.</p> <p>Suitability -- Commander correctly assessed the need to intervene (did when he should have, didn't when he shouldn't have, did when he shouldn't have, didn't when he should have).</p> <p>Agility—Forces and assets quickly modify operations to facilitate direction change without detracting from the primary mission.</p>