

**14th ICCRTS
“C2 and Agility”**

**Title of Paper:
Composeable Organizations, Mission Self Discovery and Mission
Self Nomination**

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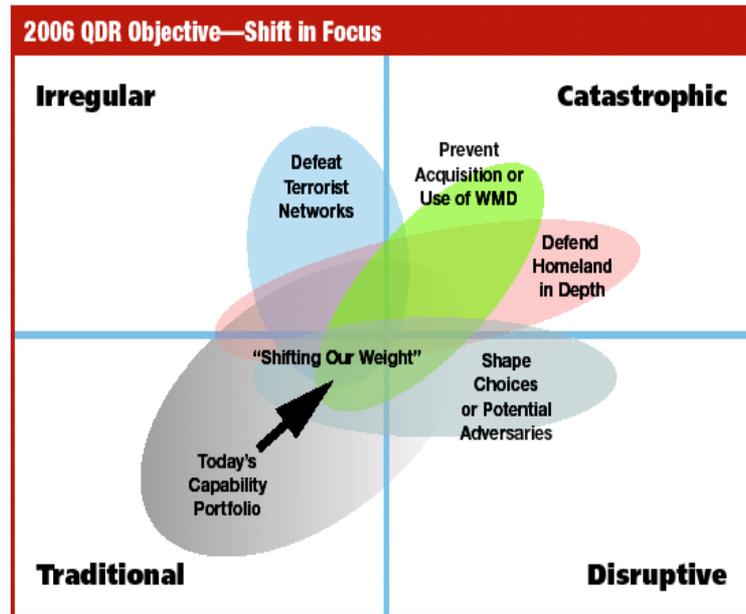
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Abstract

- We are interested in examining whether integrating command and control (C2) concepts with novel organizational constructs will improve C2 agility.
- This paper addresses the C2 issues which arise while attempting to share enterprise assets with diverse organizational ownership.
- Stovepipe federal organizations cannot easily participate in collective assistance activities for a given mission requirement. This is exacerbated by an enterprise lack of awareness of mission requirements.
- There has been serious research on this issue conducted by Williamson. Williamson succinctly stated his premise as follows: we must design new adaptable organizations by attempting to construct and “design workable order-preserving mechanisms for adapting to disturbances in the service of mutual gains”¹, these mechanisms must also avoid contractual incompleteness².
- We believe that these goals can be accomplished by establishing enterprise (cross organization) mission publication mechanisms; supported by composable organizations, mission self discovery and self nomination.

Shift of Military Operational Focus



2006 Quadrennial Defense Review Operational Focus⁴

- The emphasis is shifting from traditional major combat operations to other types of missions such as combating insurgencies and guerilla warfare, protecting the homeland from catastrophic CBRN attack, and responding to disruptive attacks.
- Given these new missions one would obviously need more assets. But one of the fundamental aspects of NCW is that perhaps these assets already exist in non-DoD federal agencies, state governmental agencies or NGO organizations. The question then becomes, how does one exploit these assets?

Introduction

- Much has been written concerning the future of command and control (C2). C2 is the exercise of authority and direction by a commander over assigned and attached forces in the accomplishment of the mission. The spectrum of alternatives advocated, range from the traditional to no C2. This debate has been exacerbated by the following issue.
- There is a desire by many members of the federal enterprise, that in order to be more effective in the war on terror and in operations other than war, that all the resources of the federal enterprise should be available for any mission. Others have expanded this notion to include nongovernmental organizations or so called NGOs.
- A hotly debated question arises immediately: how would one attempt to apply traditional C2 to resources composed of military and non military components? Why would an FBI agent obey the orders of a Coast Guard commander? Why would a Coast Guard commander obey the orders of an FBI agent? If the Red Cross or Doctors without Borders are included from the NGO pool of assets, will they follow the orders of the FBI or Coast Guard? Must the Red Cross or Doctors without Borders follow anyone's orders?
- The authors believe that this question has been a diversion from resolving the fundamental problem of how to share and manage enterprise level resources. This paper addresses the issues which arise while attempting to share enterprise assets with diverse organizational ownership, including a strategy to maintain unity of command and some level of control over operational and tactical situations.

Problem Statement and Hypothesis

- **Problem Statement**

- Stovepipe organizations, combined with an enterprise lack of awareness of mission requirements, impede the ability of federal enterprise organizations and NGOs to respond effectively and share resources which could have been used to provide collective assistance for a given requirement.

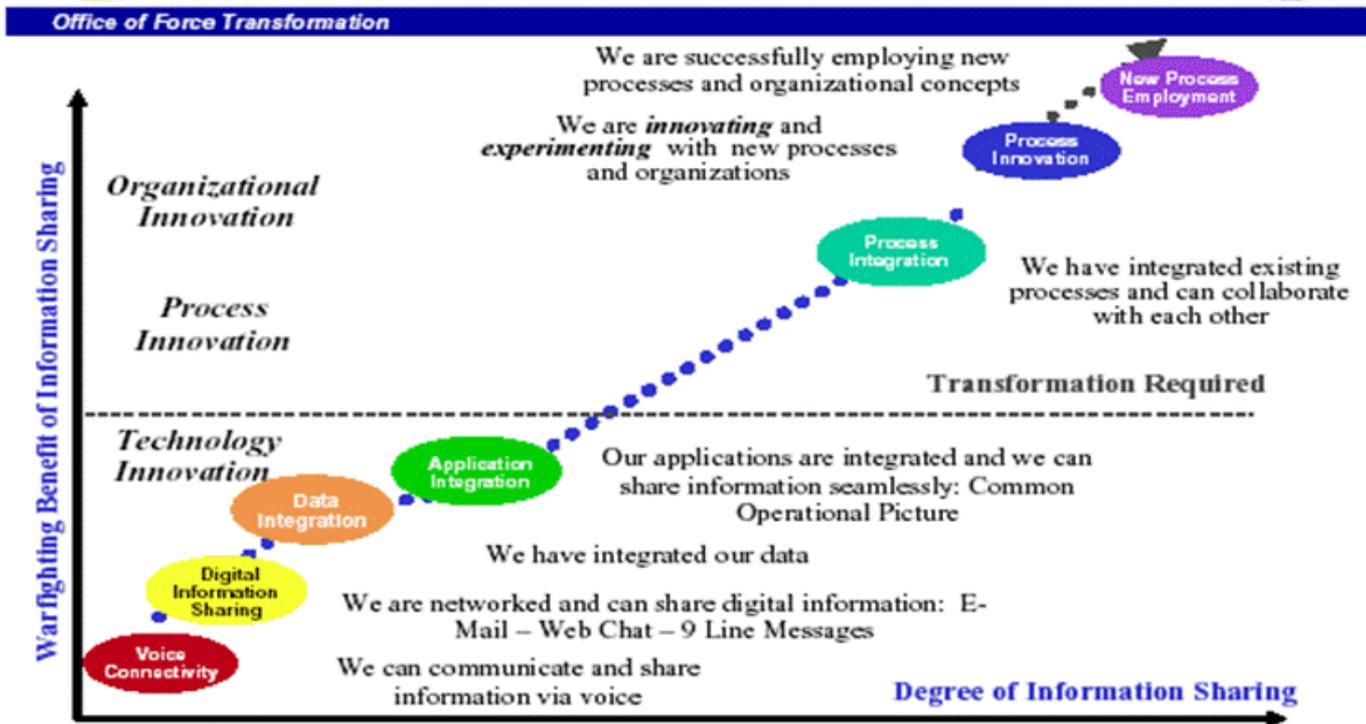
- **Hypothesis to address the problem statement**

- Dynamically Composed Organizations, with enterprise memberships, will provide the enabling mechanism to facilitate greater C2 agility with respect to complex missions requiring assets not necessarily available in the DoD.
- This solution offers the following network centric characteristics:
 - Enterprise mission publication
 - Enterprise wide distributed operational planning
 - Mission self discovery
 - Mission self nomination
- Composeable organizations will improve C2 agility by:
 - Using distributed operational planning in response to posted requests for assistance or posted missions
 - Sharing operational control of enterprise assets
 - Maintaining parental organization tactical control.
 - Improving the quality of operational planning, and still maintaining unity of command.
 - Exposes mission requirements to the entire federal enterprise and participating NGOs and foreign resources

Cebrowski Model of Force Transformation



Meeting Warfighter Information Needs: Levels of Network-Centricity

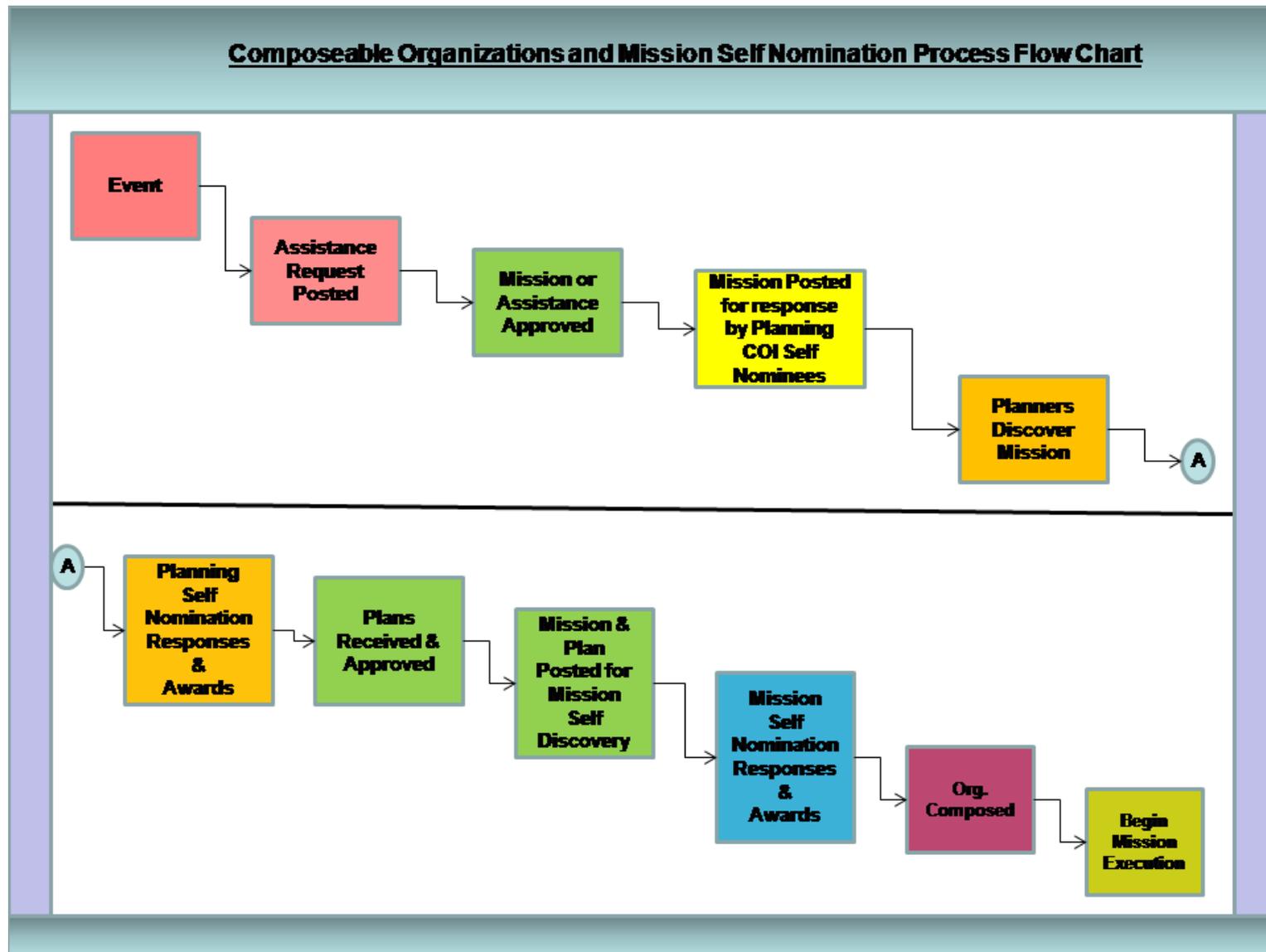


Cebrowski Model of Force Transformation⁵

Cebrowski Model of Force Transformation Continued

- Notice that the highest degree of warfighter benefit derived from information sharing occurs only when organizations and processes can be dynamically improved.
- Admiral Cebrowski was saying that if we can be innovative at the process and organizational levels, we can significantly improve warfighter benefit.
- Our research suggests that we can best innovate at the organizational level by composing new organizations from existing organizations on a temporary basis (the life of a mission).
- Then, create plans and processes relevant to and reflective of the newly formed organizations.
- **Permit tactical C2 of the assets to be maintained by the current asset owners.**
- **Move operational control of the assets to the newly composed organization's leadership of which the asset owners are members of by definition, if their self nominations are selected.**

Simple Process Overview



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Simple Process Overview Continued

- **Approved requests for assistance will be published to the GIG for discovery by planning communities of interest (COI).**
- **Planning COI members, will self nominate in order to participate in the planning of mission or assistance requests.**
- **The planning adjudicators will select a planning team from the self nominees and authorize planning to commence.**
- **The winning planning team will publish the finished plan for approval.**
- **Approved plans and their corresponding missions will be published for discovery by operational organizations and the owners of assets, forces, and platforms.**
- **Operational asset owners and other subscribing communities of interest who wish to participate through a process of self nomination, will self nominate their assets and forces for the mission.**
- **An operational adjudication team will select the 'winners'. The 'winners' will constitute an operational cell and will be free to form a composed organization and volunteer their assets for edge mission participation.**
- **Once the temporary organization has been formed and the assets are available, the new organization will select a task force commander from among the operational participants and begin mission execution.**

Key Point of This Model

- ***Local tactical control of the nominated assets remains in place***
- ***Organization wide, operational C2 is exercised by the agreed upon or appointed leader of the composed organization.***
- For example, tactical control of Red Cross assets will remain with the Red Cross.
- Tactical control of U.S. Navy assets will remain with the Navy.
- The Louisiana National Guard will remain under tactical command of its own officers. In the case of hurricane Katrina, the Katrina Task Force Commander would retain operational control of all assets.
- It should be noted that while the actual Katrina Task Force Commander was military, in our design for composable organizations, the members of the planning and operational cells could just as well select a FEMA, DHS, or any other experienced leader to exercise operational C2 over the task force but not tactical level control

Benefits

- An increased enterprise understanding of all operational requirements –
 - **Enterprise Wide Requirement Publication**
 - A common, shared, prioritized list of all assistance and mission requests will be available to the entire federal enterprise.
 - More effective allocation of federal resources across the entire list of required tasks
- Improve planning cycle times by rapidly building dynamic, integrated, and coordinated plans that are focused on emerging requirements.
 - **Enterprise wide self nominating planning cells**
 - *Improved organizational shared understanding* of each organization's capabilities, and available resources thus improving and ensuring *economy of force*
- *Enterprise Unity of Command, and Unity of Purpose*
 - ***Composed Organization Maintains Operational Control of Self Nominated Assets***
 - *Enterprise Unity of Effort* through coordination and cooperation toward common objectives, even if the participants are not necessarily part of the same command
- *Improved Flexibility* – The model provides mechanisms which are adaptive and flexible enough to support a rapidly changing operational environment.

Definitions

- **Composed Organizations**

- A temporary organization, comprising units of already existing organizational structures, (DoD, FBI, NYPD, Red Cross, etc.), formed to oversee the proper resolution of a published request for assistance or a published mission. Please note that this requires that a base organizational infrastructure or ‘organizational backplane’ exist which can be used to ‘plug in’ new organizational units and facilitate the newly composed organization. The ‘organizational backplane’ must be maintained as required infrastructure similar to the GIG infrastructure which must be maintained so that the requests for assistance can be published. *In a sense, this is a ‘competency aligned’ temporary organizational construct, based upon the composed mission plan.*

- **Mission publication –**

- The publication of approved missions sent to the GIG for discovery and self nomination in response to an event or incident.
- These missions can be published by any approved DoD authority, other approved federal agency mission publishers (FEMA, DHS, DoS, DoJ, FBI, Treasury, DEA, CIA, NSA, etc.), approved coalition partners (NATO, non-NATO allies, Taiwan, Israel, Korea, Japan, etc.), or approved NGO publishers Les Medicins Sans Frontieres , Turkish Red Crescent, American Red Cross, or the Philippines Red Cross.
- Authority to publish these missions is pre-negotiated with all the relevant players but such authority may be constructed on the fly in case of national emergencies.

Definitions Continued

- ***Mission Self-Nomination*** (MSN): A network enabled capability that permits commanders to volunteer to commit resources, in response to missions and objectives posted on the GIG by their superiors. MSN is the act of proposing one's assigned resources (a platform, a weapon system, etc) as a suitable candidate for allocation to a published and planned (defined) mission.

Definitions Continued

- ***Mission Self Discovery (MSD):***
 - A network enabled capability that permits commanders to find missions and objectives posted on the GIG by their superiors. The set of these participants constitutes membership in an operational cell dedicated to responding to these missions. A particular operational cell, assembled only for a particular mission, will retain tactical control of its volunteered assets but grant operational control of its assets to the composed organizational task force commander. After successful mission completion, operational control of the volunteered assets will be returned to the original organization.
 - Please note that missions posted for discovery on the GIG are for the consumption of COI subscribers. This is structurally different from the following:
 - It does not mean that after a mission has been assigned to an asset, that the asset “discovers” other missions while he is active on the current mission and then publishes the new missions himself, causing delays in response time. For example, if a helicopter has been assigned to perform search and rescue operations during Katrina, each new victim on a roof top is not a publishable new mission. The helicopter pilot does not have to publish the fact that another victim has been located as a new mission. Normal operations for search and rescue should already cover these events. Only authorized assistance request publishers can publish a new mission for discovery.
 - For JOINT targeting, it only means target selections from the published target list, not finding new targets of opportunity. E.g., an F/18 may be assigned to blow a bridge and use his weapons against this primary target, but after engaging the target, if other targets appear they will not be published as missions to the GIG to be discovered, but they will be engaged if opportunity permits by the F/18

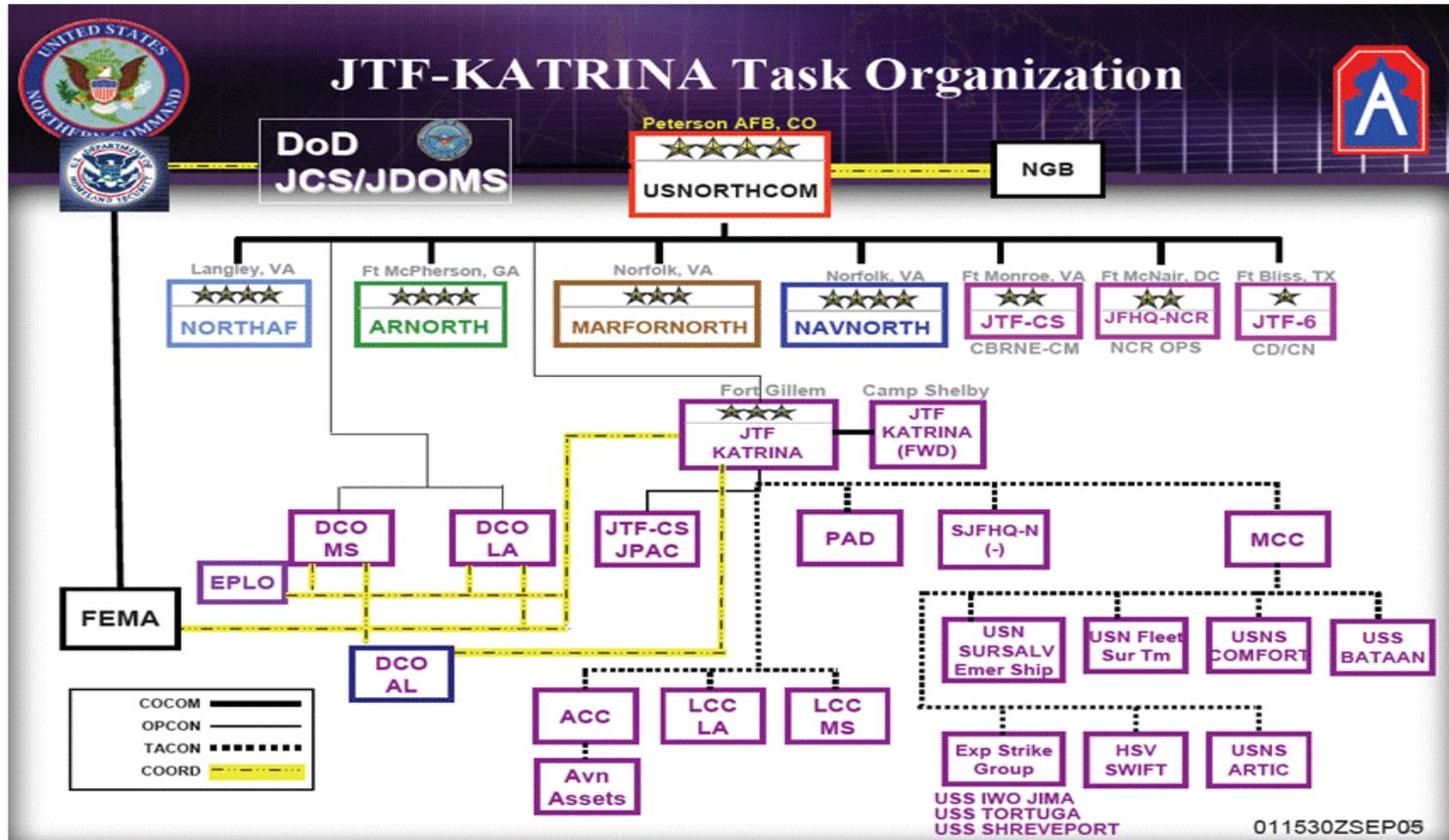
Definitions Continued

- **Adjudicator** – the adjudicators consist of subject matter experts residing in task specific distributed cells who will perform the following functions:
 - ***Mission request approval or assistance request approval adjudication cell.*** These teams of adjudicators will decide which requests for missions or assistance will be formally published to the GIG. They will use a formal set of criteria in deciding the merits of each request. This adjudication cell will consist of members of the NCA, senior staff membership from state and local governments, and NGOs.
 - ***Planning adjudication cell.*** These teams will be comprised of subject matter experts capable of evaluating the planning needs of a particular mission and assessing the planning team self nominees as they respond. This cell must be constructed with sufficient diversity to support the selection of the detailed planners who will actually develop a plan for the selected mission.
 - ***Asset selection and Organizational Composition cell.*** This cell will perform the critical tasks of selecting the ‘winning’ self nominated assets and composing an appropriate organization to manage the operational direction of the ‘winning’ self nominated assets. This cell must maintain operational C2 of the diverse composed organization, select a task force commander, and still permit tactical control of assets to be maintained by the asset providers, based upon the plan

Frequently Asked Questions

- ***Do we really need an adjudicator?*** Yes, adjudicators must make decisions among the players, perform air and surface asset deconfliction, and resolve potential disputes among the composed organization's players.
- ***What happens if everyone comes?*** If all possible assets are nominated but not required, then the adjudicators select the best possible mix of resources and decline the self nominations of the excess volunteers based upon the plan.
- ***What happens if no one self nominates?*** The published missions are tantamount to orders. Someone must nominate themselves for the missions or someone will be ordered to perform the mission, but only in the case of the U.S. federal agencies. State and local governments and NGOs will not be ordered to participate. If the mission is not a serious mission or objective it should not be posted on the GIG. If no one volunteers or an insufficient mix of assets occurs, then the adjudicators will refer the assistance request or mission to the DoD for traditional mission preparation.
- ***Who issues the traditional C2 orders if no one comes?*** The NCA will order the Joint Chiefs of Staff to plan the mission as if it were the military only.

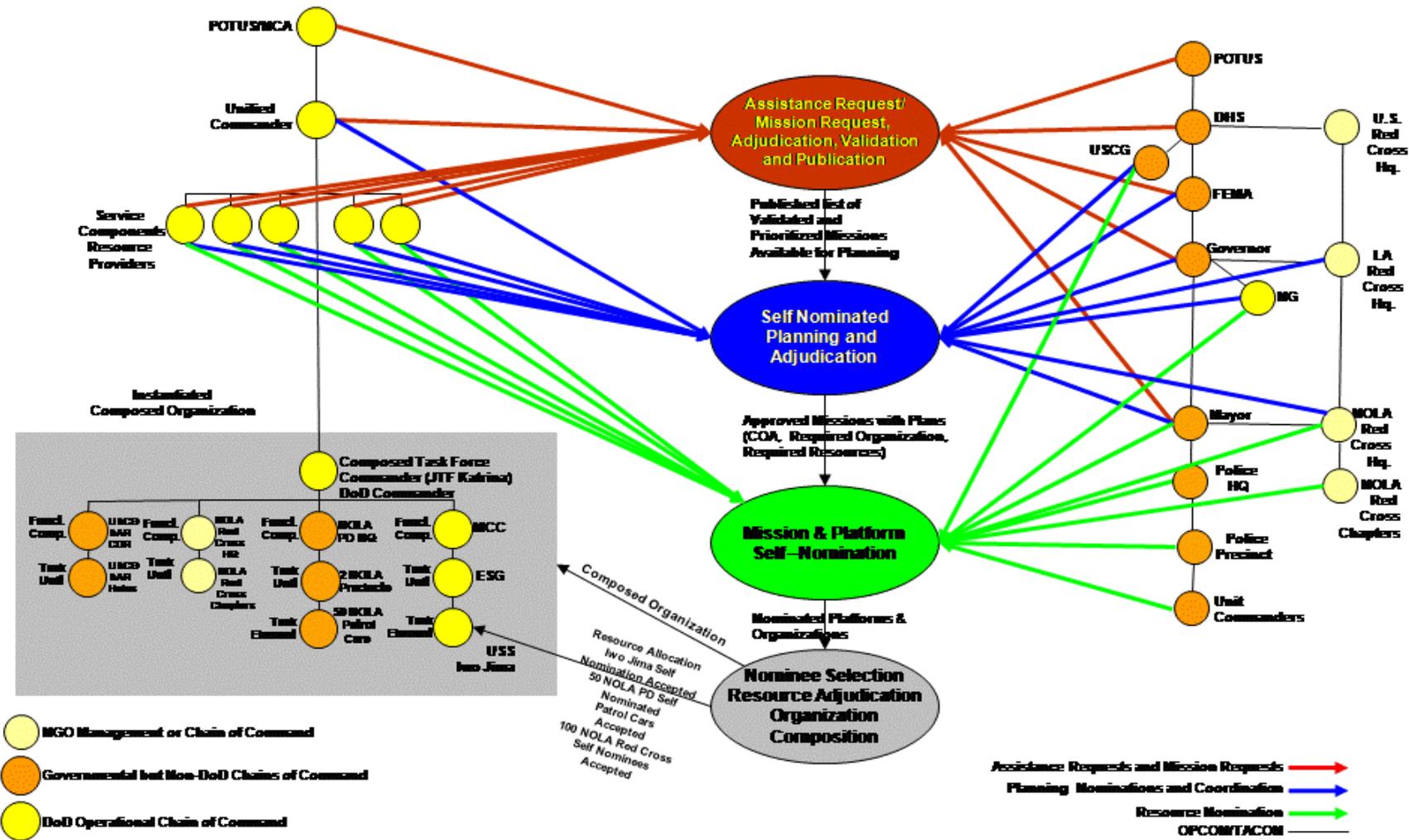
We Already Do Some of This⁷



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Future Composed Organization Example

Katrina Notional Composed Organizations Using Self Nominated Planners and Mission Participants



Composed Organization—Mission Specific—All self nominated resources will be under the Operational C2 of the JTF Commander agreed upon by the adjudicators. Tactical C2 will remain with the volunteers

Future Research

- Tactical Decision Aids that assist adjudicators in evaluating composed plans, and associated nominated resources required to support the plan. These TDAs must include extensive modeling and simulation capabilities.
- Rules of Engagement research which will focus on the development of rules of engagement packaged to support the diverse membership of composed organizations.
- Maturity models to guide a phased implementation of these concepts:
 - Composeable Organization Maturity Model
 - Distributed Operational Planning Maturity Model
 - COI GIG services Maturity Model to support distributed collaboration and self nomination
 - Composed organization exercises and simulation maturity model

Summary

- This paper has attempted to describe an approach to command and control which will permit access to governmental enterprise assets and NGO assets.
- Novel organizational constructs were proposed to improve C2 agility. This paper addressed the issues which arise while attempting to share enterprise assets with diverse organizational ownership. We examined a strategy to maintain unity of command and some level of control over operational and tactical situations. The recommended approach is based upon the following concepts:
 - Distributed operational planning in response to posted requests for assistance or posted missions
 - Mission self discovery and mission self nomination
 - Composing organizations on the fly
 - Moving asset operational decisions further to the edge by transferring operational control of the assets to the commander of the composed organizations such that unity of command, unity of effort, unity of purpose, and economy of force can be maintained.
 - Keeping tactical control of the self nominated assets with the parent organization.
- We believe that we have begun to address the concerns raised by Williamson regarding organizations, while wishing to improve, must “design workable order-preserving mechanisms for adapting to disturbances in the service of mutual gains”

References

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