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Improving Air Force Command and Control Through Enhanced Agile Combat Support Planning, Execution, Monitoring, and Control Processes

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Summary

Today's defense environment is particularly challenging for two reasons. First, significant portions of the force are continuously engaged in a variety of operations, ranging from active combat to humanitarian assistance, over wide geographical areas where the needs for force projection are often difficult to predict. Even after operations in Iraq and Afghanistan are concluded, it is likely that the world situation will call for worldwide deployment of U.S. forces to support theater security cooperative efforts (with allies) to shape conditions to avoid contingency operations. Second, there is increasing pressure to operate more efficiently. Although there has always been the need to relate combat support resource requirements to operational objectives, today's environment requires quick combat support actions to tailor deployable support packages and sustainment actions to meet specific operational needs. Furthermore, economic pressures are likely to continue and could result in further reductions in the resources set aside to meet contingency operations. In addition to economic pressures, the inability to perfectly predict resource demands, the need to shift funding from one category to another to meet unanticipated needs, and the occurrence of unanticipated world events that require intervention, among other factors, all contribute to having imbalances between needed ACS resources and those that are available at any given time to simultaneously meet all requirements for contingency and training operations. To best use limited resources in providing combat capability, combat support functional areas must work in an integrated fashion across command and control nodes, predicting combat sup-

port needs and responding rapidly to dynamic operational needs, and must allocate scarce resources to where they are most needed. To be successful, combat support decisionmakers need immediate access to a broad range of information with the ability to access detailed data when needed.

In response to this operational environment, the Air Force has invested substantial resources in transforming its operations and combat support functions so that it can meet the needs of the CCDRs more effectively and efficiently. In the combat support arena, the Air Force launched several initiatives, such as eLog21 and Air Force Smart Operations for the 21st Century (AFSO21).[1] The Air Force has invested hundreds of hours of senior-leader time to set the direction, thousands of hours of staff time, and millions of dollars in specific transformation initiatives. In 2008, senior combat support leaders asked PAF to evaluate how well the initiatives align with the future vision for logistics and to identify any gaps between or among them.

A significant gap identified during the 2008 analysis was the lack of ACS planning, execution, monitoring, and control processes to support Air Force operations.[2] ACS planning, execution, monitoring, and control are often referred to as *ACS C2* within the Air Force.[3] Combat support processes are an integral part of Air Force enterprise and joint command and control capability (see Figure S.1). The Air Force lacks the doctrine, processes, organizations, training, and tools that enable combat support to function both effectively and efficiently in the new operational environment.

This monograph describes ACS process gaps in more detail and recommends implementation strategies to facilitate changes needed to improve Air Force command and control through enhanced ACS plan-

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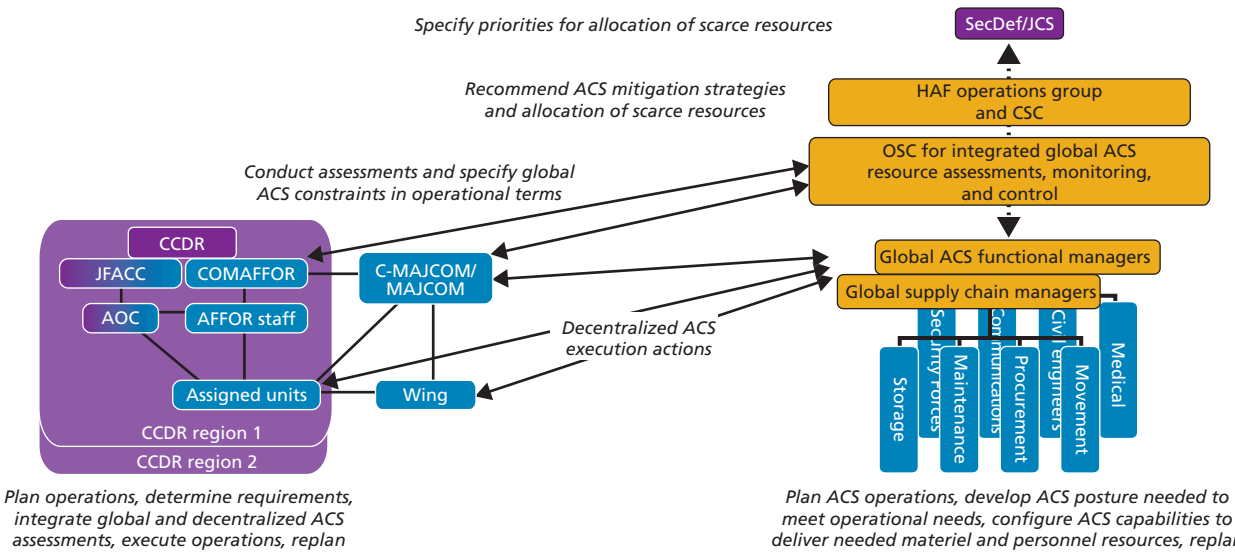
[1] eLog21 is an umbrella program comprising many different logistics and supply chain transformational initiatives with an overall goal to improve availability and reduce costs and provide the warfighter with the support he or she needs when it is needed. AFSO21 initiatives are intended to improve the effectiveness and efficiency of overall Air Force operations.

[2] Similar in construct, the Air Force uses the MAPE model when discussing ACS processes.

[3] In the revised copy of AFDD 1, dated November 12, 2010, ACS C2 is identified as a master capability necessary for Air Force enterprise command and control.

Figure S.1
The Agile Combat Support Planning, Execution, Monitoring, and Control Structure Works with and in Support of the Air Force and Joint Command and Control Structure



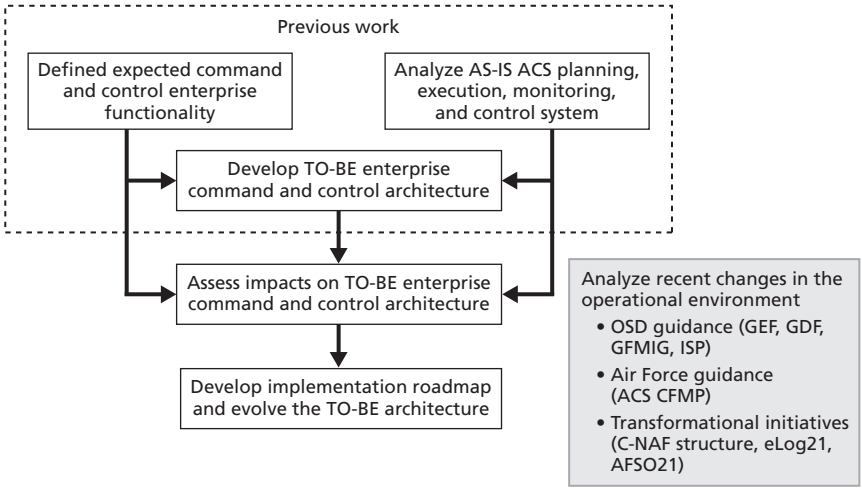
NOTE: This figure depicts a TO-BE vision of Air Force command and control. Joint organizations are shown in purple. Air Force organizations are shown in blue. Gaps where roles and responsibilities have yet to be assigned are shown in orange. This figure is similar to the chart used by the Air Force to describe ACS planning, execution, monitoring, and control processes in Wickman and Battles (2009, slide 3). The difference is that this figure shows the future vision (TO-BE), including the existing organization gaps. HAF = Headquarters Air Force. CSC = combat support center. OSC = operations support center. JFACC = joint force air component commander. COMAFFOR = commander, Air Force forces. C-MAJCOM = component major command. MAJCOM = major command.

RAND *MG1070-S.1*

ning, execution, monitoring, and control processes. We do not suggest a priority or develop costs associated with implementation plans. The research approach used in this analysis is shown in Figure S.2.

In 2002, RAND researchers developed an OA for combat support. The OA describes ACS planning, execution, monitoring, and control tasks and information flows required to accomplish or support military operations (see Leftwich et al., 2002). We began this work by reviewing the earlier-developed OA from 2002 (and updated in 2006) for adequacy in meeting current and evolving future operational needs. We then identified any process changes resulting from OSD guidance, Air Force guidance, or ongoing transformational initiatives. Finally, we identified any remaining gaps in process, doctrine, training, information systems, and tool sets and proposed options for addressing those gaps.

Figure S.2
Research Approach



NOTE: GEF = Guidance for Employment of the Force. GDF = Guidance for Development of the Force. GFMIG = Global Force Management Implementation Guidance. ISP = Integrated Security Posture. CFMP = Core Function Master Plan.

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What Agile Combat Support Planning, Execution, Monitoring, and Control Shortfalls Exist?

Over the years, incremental improvements have been made to ACS planning, execution, monitoring, and control processes, but some issues persist. ACS process shortfalls span the following five major categories:

- *Poor integration of combat support into operational planning.* Operators often do not involve combat support personnel at the outset of the planning process. Rather, an operational plan is often presented to combat support personnel for them to craft a support plan. But this sequential process can result in infeasible plans or plans that must be altered. Earlier involvement would enable combat support personnel to identify key logistical or operating-location constraints that affect the operational outcomes and allow operators to modify plans to accommodate combat support realities. Operating-location support (for example, civil engineering, security forces, medical) is as critical to successful operations as logistical support that affects mission generation (for example, maintenance, fueling, arming). For instance, site surveys need runway, parking, and infrastructure estimates.
- *Inability to configure combat support processes and resource levels, including supply chain activities, to achieve specific operational objectives; ascertain when ACS process performance or allocated resource levels are not adequate to meet operational objectives; and reconfigure the combat support infrastructure rapidly.* Combat support activities need to be assessed continuously against operational objectives and reconfigured as needed to adapt to changing conditions. This does not happen routinely now. When shortfalls occur, it is difficult to determine why, which makes it difficult to resolve problems. Some functional areas have business rules, tools, and systems to assess system performance. Other areas do not have well-defined, standardized, repeatable processes. Experienced personnel might use ad hoc methods to provide their best estimates. In addition, individual functional analyses are not integrated to give an overall view of combat support capability.

- *Lack of enterprisewide resource assessments to determine whether proposed C-NAF courses of action (COAs) are supportable from a global resource perspective.*[4] When developing proposed COAs, C-NAFs currently assume that global resources will be available to accomplish their assigned missions. They lack visibility into worldwide resource availabilities when developing and executing COAs. They also do not have models and tools or assigned personnel who know how to use available models to access the relevant and authoritative data to identify how constraints in global resource availabilities and process performances might affect operational objectives. As a result, C-NAFs do not know whether their COAs are supportable from a global resource perspective and therefore develop and execute COAs and commit forces to operations with unknown risks.
- *Absence of resource allocation arbitration across competing demands.* There are multiple factors that act together to ensure that, at any given time, there will be differences in available resources and those needed to execute operations. Thus, resource shortages will always exist. To proactively manage allocation of scarce resources across competing areas of responsibility (AORs), allocation priorities need to be developed. Most large operations will likely need to divert resources from units not tasked in the contingency of interest to support units that are tasked. When such reallocations occur, the Air Force currently does not assess how they could affect contingency operations in other AORs, including those from which the resources were reallocated.
- In addition, *ACS shortfalls exist in doctrine, training, and information systems and tools.* Overall, there is a lack of Air Force–wide emphasis on command and control for combat support. ACS objectives, functions, organizational responsibilities, and necessary information flows are not well defined in doctrine. Training

[4] The C-NAF is the component-level organization the Air Force uses to provide operational-level command and control in order to achieve desired effects across a full range of military operations as defined in U.S. Air Force (2006a). See Appendix C for more information about Air Force and joint command structures.

opportunities for ACS personnel are also lacking. Exercises and war games do not always accurately address ACS. Training usually focuses on Air Force wing-level skills, not on operational-level skills or how to communicate and operate with other joint services. And, current information and tool shortfalls are consistent with current process shortfalls. The information systems and tool sets that are needed to provide an integrated view of combat support capabilities do not exist today for all functional areas. Some areas have good tools and are able to model combat support capabilities; however, the tools vary across theaters and do not always share information across functional areas.

How Can the Shortfalls Be Eliminated?

We present a vision to address the ACS shortfalls outlined in the previous section. The vision, which has been vetted with Air Force combat support leadership, has three components:

1. *Standardized, repeatable processes to plan, execute, and control combat support activities focused on operationally relevant metrics.* To provide leaders the information they need to make tough trade-off decisions, standardized combat support planning, execution, monitoring, and control processes should be established and defined in doctrine. These processes should draw on capabilities within the Air Force combat support staff (at the C-NAFs and on the Air Staff), global supply chain managers, global ACS functional managers, and a global integration center.
2. *Reliance on the global managers to identify enterprise capabilities and constraints and relay them to C-NAF staffs for use in their contingency planning and execution actions.* There is a need to integrate all the individual supply chain and capability assessments and provide to the C-NAF commander and his or her staff an integrated set of capabilities that can be used in developing COAs to achieve the desired operational effects. Tools are needed for individual functional analyses, as is a method to

integrate individual resources into an overall operational capability, such as mission generation or FOL initial operational capability.

3. *Processes for determining which CCDRs will have priority.* The process using the analysis of global resource shortages (from the first component in this list) to evaluate competing demands and optimize allocation of constrained resources to achieve the desired operational effects should be established and defined in doctrine.

To achieve the ACS vision defined here and close the gaps identified in this analysis, a range of improvements is needed (these recommendations are also summarized in Table S.1). Some are short-term solutions with little implementation cost. Other improvements will take time, resources, planning, and programming.

Table S.1
Steps to Improve Agile Combat Support Planning, Execution, Monitoring, and Control

Goal	Action Needed to Achieve the Goal
Enhance processes	Focus ACS planning, execution, monitoring, and control processes on operational outcomes; identify and separate supply, demand, and integrator processes; include closed-loop feedback and control
Expand doctrine	Delineate roles of ACS nodes, including logistics, operational, and installation staff; Air Force commanders; MAJCOMs; the Air Force Global Logistics Support Center (AFGLSC); and others
Refine training and expand education	Educate Air Force staff officers in ACS planning and staff responsibilities and strategies-to-tasks methodology; assign some promotable "supply-side" officers to "demand-side" organizations and vice versa
Implement systems and tools	Identify critical ACS communications and information-system capabilities needed to assess, monitor, and inform allocation decisions, and update as necessary
Strengthen organizations and instructions	Assign supply, demand, and integrator processes to organizations and functions; modify instructions and other documents to support ACS assessment and control functions

First, ACS supply, demand, and integrator roles need to be clearly defined in doctrine, including what information flows, in what format, and to whom.[5] This could lead to better integration between combat support and operations. In addition, developing a closed-loop planning and execution process, acting within operational decision timelines, with established control parameters against which to track actual combat support performance could aid in making ACS processes more proactive rather than reactive to changing operational requirements.[6] This too could lead to better coordination, timeliness, and accuracy of combat support planning and added value of ACS to the operational community.

The absence of well-defined supply, demand, and integrator processes, delineated in policy, contributes to a shortfall in training. Many ACS personnel do not understand how to apply the nonmarket, resource-constrained strategies-to-tasks and closed-loop frameworks to maximize efficiency and effectiveness.[7] More training and expanded educational opportunities are needed on relating combat support options to the CCDR's campaign plan to achieve joint operational effects.

Decision-support tools and job-performance aids should complement formal courses and exercises. Existing Air Force systems and prototype tools can be leveraged to provide enhanced information and data for ACS planners; however, new tools might need to be developed to provide an integrated view of combat support resource allocations and process performance. Properly integrated information could greatly reduce the risk of operational failure and the need to revise plans midstream, allow a faster transition to operations and better-informed decisions, and facilitate adjustments when necessary.

And finally, global management and control of combat support capabilities could facilitate resource allocation assessments across competing CCDRs to inform tough capability trade-off decisions. These assessments should be used to inform program objective memorandum

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5 See Chapter Four for discussion of supply, demand, and integrator functions.

6 See Chapter Four for discussion of closed-loop systems.

7 See Appendix A for discussion of the strategies-to-tasks decision framework.

and other budgeting and program decisions. However, with global management comes some risk of single-point failure. Methods to provide continuity of operations (COOP) and to minimize network vulnerabilities need to be developed.

In this analysis, we define processes that are not currently assigned to an organization (shown in orange in Figure S.1). Combat support resource assessment and allocation management could be assigned to permanent organizational nodes dedicated to resource monitoring, prioritization, and reallocation. Additionally, having a standing integration function for combat support resource management could facilitate the incorporation of relevant data into capability assessments and raise the visibility of these assessments in the eyes of the operational community. Air Force senior leadership needs to decide how ACS planning, execution, monitoring, and control nodes might be best organized to carry out their command and control functions. Regardless of the organizational structure adopted, the roles and responsibilities of each ACS organizational node, as well as their interaction with joint combat support nodes, should be clearly defined and documented in Air Force doctrine and guidance, including information needed, processes, and information produced at each node.

Although Air Force transformational initiatives (both operational and in combat support) have moved the Air Force forward in achieving the ACS contingency planning, execution, monitoring, and control TO-BE vision, much remains to be done. This monograph highlights the top-level process, doctrine, policy, training, and organizational changes that need to take place. Using this high-level document, PAF worked with the Air Force to perform a comprehensive review of all the combat support functional capabilities, as identified in the ACS CFMP, and updated the enterprise command and control OA. A follow-on publication updates the details found in the 2002/2006 enterprise command and control OA to reflect the current operational environment. That work focuses on nodal roles and responsibilities. Another follow-on publication provides an incremental approach of how enhanced ACS processes can be incorporated within the Air Force command and control enterprise.