

# iC2

Advancing our Understanding of Command and Control

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“War will remain a clash of wills between thinking adversaries, and it will occur in an environment of uncertainty and rapid change. However, the character of warfare is becoming far less predictable and more complex.”<sup>1</sup> This perspective, pulled straight from the Air Force’s Future Operating Concept (AFFOC), shows a clear recognition that conflicts and contingencies are becoming increasingly dynamic and difficult to navigate. We no longer live in a world of clearly defined domains or adversaries. Technology continues to grow at an accelerated rate, leading to new and unpredictable capabilities. This uncertainty, coupled with a progressively more connected yet complicated world, demands a considerable change in perspective.

To deal with these eventualities, the Air Force, and the U.S. Government as a whole, must be able to operate across all domains, quickly responding within whichever domain, or domains, the situation dictates. This is the foundation of multi-domain operations. Secondly, the current operating environment requires more than just combining capabilities from different domains to produce an effect. It “requires employing capabilities so that they reinforce each other without undue redundancy or overlap,”<sup>2</sup> which is known as cross-domain synergy. Lastly, the Air Force must have the operational agility to quickly move across these domains to adapt to the situation as it develops.

This is especially critical when it comes to Command and Control (C2). One of the Air Force’s core missions, global C2 is the cornerstone to military action. The problem is that the current doctrinal definition of command and control is outdated. Joint Publication (JP) 1-02 defines C2 as “the exercise of authority and direction by a designated commander over assigned forces in the accomplishment of the mission.”<sup>3</sup> This definition reinforces the traditional mindset that views domains as separate and capabilities in terms of what you have direct control over. Further, it neglects the value of synergistic effects and the importance of leveraging pre-established informal relationships to gain access to capabilities that you may need as the situation develops.

In order to break out of this limited perspective and find an answer to effective C2, the Air Force must shift its mindset to one that views the C2 problem holistically and recognizes the value of informal influence relationships across all domains. It must also have a scalable strategy that can shift from the squadron level to the joint, interagency or even coalition level. Just as information and capabilities can no longer be stovepiped, the Air Force’s solution to global Command and Control must also be relevant at the national level. As Pete Blaber explains in *The Mission, the Men, and Me*, “it’s not reality unless it is shared.”<sup>4</sup> With this in mind, the Air Force must reduce Command and Control to its most fundamental level by focusing on its doctrinal definition. Doctrine serves as a reflection of our current perception of the most effective strategy for accomplishing our objectives, shaping how we conduct future action. As the first step in DOTMLPF-P analysis, doctrine provides the appropriate foundation to prime future research efforts focused on personnel and materiel solutions. As a result, the critical first step towards articulating a global and networked Command and Control infrastructure is expanding the doctrinal understanding of C2.

Acknowledging the importance of informal relationships and being able to influence those outside of a Commander’s assigned forces, Command and Control should be transformed into Influenced Command and Control (iC2). Influence in iC2 is the central theme to this expanded idea, which defines C2 as: the exercise of authority, direction, and *influence* by a designated commander over *available forces and across all domains* to accomplish the mission.” Influence, as it applies to

this definition, can be described as the capacity to leverage capabilities outside traditional command structures.

When working to understand how influence can be leveraged within the Air Force's C2 framework, it is valuable to look towards terrorist networks and non-state actors as a model. While the U.S. undoubtedly maintains a significant technological advantage over terrorist organizations' C2 capabilities, it can be argued that these non-state actors maintain an asymmetric advantage over the U.S. in the form of adaptive C2. With this, the RAND Corporation's Brian Jackson provides compelling research that works to classify terrorist organizations based upon their C2 methodology.<sup>5</sup> This research serves as an excellent framework to better understand the Air Force's current C2 model and to identify how the future iC2 model leverages influence as a key component.

At both the inter-service and the national levels, the Air Force exists within a Loosely Coupled Movement. This concept can be defined as an organization that has slight connections at the strategic level; however, at the operational and tactical levels, the components of the organization are operating independently.<sup>6</sup> As a result of the limited tactical or operational connections, independent components of the Loosely Coupled Movement pursue the same, broad strategic objective, but their efforts often operate in parallel and do not work to complement each other. Importantly, a critical disadvantage of the current Air Force C2 model becomes apparent when a Loosely Coupled Movement is forced to respond to a contingency event. In this environment, specific components of the organization are combined into a new hierarchy, or Tightly Coupled Group, in an effort to consolidate the necessary capabilities to achieve a desired effect.<sup>7</sup> While this effort works to improve an organization's ability to effectively respond to an emerging threat, the transition from a Loosely Coupled Movement generates a significant time and quality cost. Further, these costs are exacerbated by the lack of pre-established influence relationships across the Loosely Coupled Movement prior to the contingency event occurring.

The time and quality costs associated with the transition from a Loosely Coupled Movement to a Tightly Coupled Group can be crippling in a highly dynamic, multi-domain conflict. Because pre-established influence relationships are not prevalent, components of a new Tightly Coupled Group may find themselves organizing and working together at the tactical and operational levels for the first time. Therefore, while organizationally, the new C2 element may rapidly integrate, its ability to operate effectively and achieve a desired end-state may take much more time. Further, the newly established Tightly Coupled Group will experience a steep learning curve as components begin to understand new partner capabilities and limitations as well as a new Commander's strategic intent. There are deliberate planning efforts in place that work to minimize these costs by developing Operation Plans (OPLAN); however, these planning processes are limited by an ability to effectively predict future events. Despite these efforts, the ability to predict future contingency events is significantly degraded in complex operating environments.<sup>8</sup> As a result, it must be understood that complex challenges facing C2 networks in multi-domain operations do not yield to improved efficiency or prediction and, instead, depend on an organization's adaptability.<sup>9</sup> In order to improve the adaptability of the current C2 model, the Air Force must move beyond a Loosely Coupled Movement and begin to operate within a Coupled Network.

A Coupled Network is defined by an increased connectivity between independent components at the tactical and operational levels that results in complementary effects as the organization works towards a broad, strategic goal.<sup>10</sup> Importantly, in the iC2 model, increased

connectivity across the organization is established through horizontal, influence relationships with service, joint, interagency, and coalition partners. By pre-establishing influence relationships with components outside a Commander's sphere of control, the time and quality costs incurred when the organization transitions to a Tightly Coupled Group are reduced. This cost reduction reveals the fundamental strength of iC2: by establishing and leveraging influence relationships prior to a contingency event, an organization is able to capitalize on the inverse correlation of influence to time and quality costs. Additionally, by pre-establishing influence relationships and operating as a Coupled Network, an organization is able to expand the potential sensors and effects available to a Commander without necessarily having to leverage a formal tasking process. Finally, the iC2 model works to empower decision makers at the lowest level by breaking down information silos across the Coupled Network.<sup>11</sup> With the iC2 model, individuals and components are able to make tactical decisions that are grounded in an improved understanding of external capabilities and limitations. As a result, warfighters at the tactical level are empowered to make decisions that result in complementary effects across the network rather than ones that solely impact their specific mission or asset. Institutionalizing the iC2 model at the service and the national level is the critical first step in improving the adaptability of Air Force Command and Control. With this in mind, the Air Force must follow the DOTMLPF-P framework and formalize this doctrinal change before pursuing future personnel and materiel solutions.

In order to realize the implementation of iC2 beyond a doctrinal expansion, the Air Force must prioritize personnel and materiel solutions that recognize the importance of influence in Command and Control. With personnel, Liaison Officers (LNO) serve as the key terrain to begin developing a tangible representation of established influence relationships. While the Air Force must increase the total number of LNOs, a deliberate effort must be made to improve their quality by ensuring the most appropriate individual with the correct background is selected for these critical positions. Additionally, the Air Force Weapons School (USAFWS) should serve as the model for developing a new Integration Officer career track. Weapons School graduates have been successful at developing an informal influence network that persists across Squadrons, Groups, and Wings and, as a result, we must look for opportunities to codify these best practices and scale them to the service, joint, and interagency level. Additionally, while training will work to foster an academic understanding of iC2, the Air Force must also work to develop crossflow opportunities that allow Airmen to get hands-on experience with capabilities outside their traditional AFSC. In doing so, the Air Force will begin to develop a cadre of individuals who understand how to leverage complementary effects across a complex operating environment. Beyond personnel, the Air Force must also identify materiel solutions that enable and encourage formal control and informal influence relationships. With this in mind, the Air Force's C2 infrastructure must transition away from a hub-and-spoke model and instead, utilize redundant, point-to-point solutions that are rapidly scalable and are effective in Anti-Access/Area Denial (A2/AD) environments. Finally, the materiel solution must be modular and compatible with joint and interagency partners to ensure that a technological solution is not the limiting factor in establishing vital influence relationships across the network.

The Air Force's continued success in complex operating environments depends on the development of an adaptable C2 infrastructure that is scalable, networked, and global. In order to develop a concept of operation that drives towards a solution to this problem, the Air Force must begin by recognizing the value of influence and expand the doctrinal understanding of Command and Control to iC2.

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