



ANNEX 3-52 AIRSPACE CONTROL

CROSS-DOMAIN INTEGRATION

Last Updated: 21 July 2014

“[Airpower](#) produces synergistic effects.” The Air Force leverages asset capabilities from multiple domains to create this effect. As the focal point for air operations, the Air Force’s [air operations center](#) (AOC) integrates air, [space](#), and [cyberspace](#) capabilities into airspace operations. The airspace control plan (ACP), produced within the AOC, is a product of that integration and [satellite communications](#). Space capabilities resident within the AOC enable the communication necessary to develop and disseminate the ACP to the joint force.

[Airspace control](#) relies heavily on space based capabilities. Space based systems provide the positioning, navigation, and timing airspace users. Coordination measures can become marginalized if airspace users cannot establish their position. The controlling agencies and their systems should be capable of locating, identifying, tracking, and communicating with airspace users within their area of control. As users travel across our mountains, oceans and deserts these capabilities diminish. In these cases, the benefits space brings to airspace control increase in proportion to the relative isolation of the airspace.

The capabilities inherent within the [cyberspace domain](#) enable the AOC’s coordination process. The integration of the cyberspace domain into airspace control is intuitive. The networked systems and constantly updated information on display are made possible because of this integration. Airspace control’s impact upon the cyberspace domain is not as obvious. Airspace control creates effects within cyberspace because the assets using the airspace are free to execute their mission. For example, the kinetic destruction of a cell tower can create some of the same effects as a malicious virus. Both can limit a network’s capability to transmit information between users. Likewise,

Operation DESERT STORM brought space capabilities to the forefront of airspace control. The precise navigation made possible by the recent deployment of GPS satellites enabled kill boxes and their more refined keypads. These fire support coordination measures and their associated airspace coordination measures would not have been possible without first integrating space capabilities into airspace control’s operations. The coordination process establishing these procedures deconflicted a combat-intense airspace while simultaneously reducing the chances of fratricide.

the purposeful jamming of specific frequencies can temporarily disable the triggering system on explosives intended for US forces.

Airspace control also plays a large part within the maritime domain. The Navy controls the airspace around its battle groups. Aircraft carriers, while offering a platform to project national power also simultaneously control and defend the airspace around the battle group. While defending the battle group, airborne assets allow supported assets the freedom to conduct operations. The battle group's success depends on being able to control who enters and exits their airspace, where those users interact, and when those interactions take place. The fact these activities are a normal part of daily operations does not diminish their importance.

The most obvious domain integrated into airspace control is the land domain. Whether planning surveillance orbits, establishing air-refueling tracks, executing [kill box](#) procedures, or protecting remote special operations teams, airspace control impacts land domain operations. Operations IRAQI FREEDOM and ENDURING FREEDOM highlight the synergistic effect of airspace deconfliction with respect to UAS and other airspace users on the land domain. Identification of UAS orbits as a priority and allocating airspace control organizations and resources against that problem allowed controlling agencies to deconflict multiple airspace users. The increased margins of safety allowed unmanned aerial system (UAS) platforms expanded target development and the subsequent capture or elimination of high value targets in theater.

Airspace management and control procedures enhance effective airspace operations in support of joint force commander's (JFC) objectives. All joint air and space force components have legitimate mission requirements for airspace that should be integrated, coordinated, and deconflicted within the airspace control system. Airspace control is required to prevent fratricide and unintended engagements against civil and neutral aircraft, enhance air defense operations, facilitate fire support, and maximize the effectiveness of operations conducted from and through the air to accomplish the JFC's mission objectives. Airspace planning should be integrated into the joint air operation planning process as early as possible.
