

USASMDC/ARSTRAT's Joint Friendly Force Tracking Mission

— NETWORK OPERATIONS SUCCESS!

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U.S. Army Space and Missile Defense Command/Army Forces Strategic Command's Joint Friendly Force Tracking (J-FFT) mission provides an example of a component activity that has evolved and changed significantly, but still achieved substantial success by closely aligning an organic development capability with implementing a data services approach based on five functional tasks. Our message in this article is threefold: convey the new J-FFT organizational construct within the command; explain the five elements essential to the J-FFT data services mission; and articulate how this expanding and successful J-FFT support mission should be considered Network Operations success. U.S. Strategic Command's Network Operations critical task of Content Management — the availability and timely delivery of information to satisfy mission needs — is the essence of our J-FFT mission.

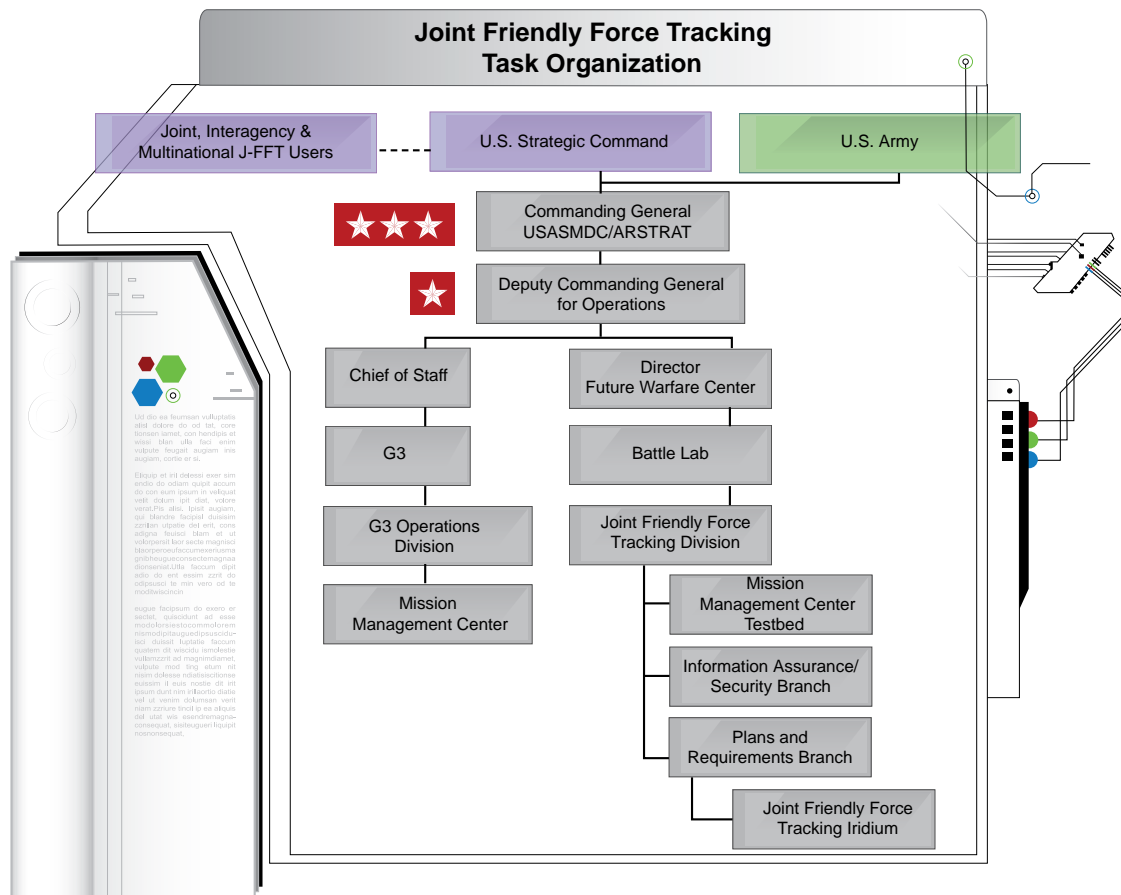
The command's J-FFT Division and Mission Management Center lead the successful planning, development and execution of U.S. Strategic Command's directed task to provide 24-hour, 7-day per week J-FFT data services support to combatant commands, agencies, allies and coalition partners. We trace and attribute our success to carefully established standards and processes implemented by a workforce of technical and operational experts motivated to responsively satisfy the FFT needs of organizations and users. Today, our command is organized to deliver the timely and assured capability development and FFT data services required to satisfy the operational needs of joint, interagency and coalition users to increase Situational Awareness, thus

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enabling better command and control of forces and lending to fratricide reduction via more readily available precise location of friendly forces.

This article provides background and important details regarding the command’s J-FFT mission; revised joint guidance regarding the mission; the five basic functions that illustrate the FFT data services we provide every day to joint, interagency and coalition partners; and finally the inherent alignment of FFT data services to cyber and network operations.

Background: Evolving, Expanding Mission

U.S. Strategic Command inherited its J-FFT mission after merging with U.S. Space Command in 2002. Prior to this merger, in March 2001, U.S. Space Command had designated Army Space Command as its lead service component for Blue Force Tracking to provide the Department of Defense with Blue Force Tracking exercise support and technical development (we discuss the change from “Blue Force Tracking” to “Friendly Force Tracking” in the next section). U.S. Space Command had demonstrated a capability to track forces using national technical means (NTM) which seemed ideal for Special Operations Forces. This capability promised to provide a beyond line-of-sight, low probability of detection and interception, precise location of Special Operations Forces elements with the Blue Force Tracking data being reliably, securely and discretely disseminated to critical command centers via a data center.

Immediately following the September 2001 attacks, the J3, U.S. Space Command ordered the NTM tracking capability into operational use and activated the Mission Management Center at Schriever Air Force Base, Colo. By January 2002, U.S. Space Command transitioned operational control of the center to U.S. Army Space and Missile Defense Command/Army Forces Strategic Command; the center moved to its current location in Building 3 in October 2002. By the end of 2002, there was a significant expansion of this NTM Blue Force Tracking capability as part of Operation Iraqi Freedom to over 2,500 NTM Blue Force Tracking devices, each supported by the Mission Management Center.

Soon after Operation Iraqi Freedom Phase I, the Army put significant effort in capturing lessons learned and prioritizing problems to resolve for continuing Operation Iraqi Freedom operations. In 2003, the U.S. Army Space and Missile Defense Battle Lab assumed operational management of OSD’s Joint Blue Force Situational Awareness Advanced Concept Technology Demonstration aimed at developing a capability to merge the data from diverse Blue Force Tracking systems in Operation Iraqi Freedom into a Common Operational Picture. OSD assessed this capability as a critical mission gap and after a solution was developed by the Mission Management Center-Test bed, it transitioned to operational status in the center in 2005.

As command and control evolves and more FFT systems are deployed globally, the critical need for FFT data interoperability across security domains and across FFT systems for

joint, interagency, and multinational users increases. In order to address the command's mission expansion, the Commander, USASMDC has designated the Battle Lab as command lead for Blue Force Tracking and the Battle Lab has established the Mission Management Center-Test bed to support capability developments for the MMC and mission partners. Consequently, USASMDC/ARSTRAT's J-FFT responsibilities have matured to include executing: FFT translation and Web-based data services for an expanding set of data consumers; U.S. and NATO data exchange in Afghanistan; and deliberate planning to Operations and Concept Plans for J-FFT activities. Today the command provides data services associated with tens of thousands of Blue Force Tracking devices across Department of Defense, other Departments, other government agencies, and allies.

Mission (BFT is now FFT): Joint Responsibilities and Command Task Organization

The Joint FFT Mission

In December 2008, the Director of the Joint Staff approved a revised Joint Staff Instruction (CJCSI 3910.01), Friendly Force Tracking Operations Guidance, to provide more detailed and updated guidance for J-FFT operations and support. While most all understand what "Blue" in Blue Force Tracking means, the term "Friendly" in FFT is more consistent with joint doctrine and coalition lexicon. Additionally, many systems are using Blue Force Tracking as systems' names vice accurate capability descriptions. Hence, we have adopted and encourage using this newly directed joint/coalition lexicon. The new CJCSI 3910.01 tasks U.S. Strategic Command with eight critical responsibilities. Through Operations Orders and Strategic Instructions, Commander, U.S. Strategic Command has delegated the execution of these responsibilities and tasks to U.S. Army Space and Missile Defense Command/Army Forces Strategic Command as its Army Service Component Command.

While responsible for the eight U.S. Strategic Command tasks, USASMDC/ARSTRAT's two fundamental tasks are to:

- provide FFT data services on a continuous basis to combatant commands. They will also provide these services to agency, allied, and coalition users when directed, as support for homeland defense, combat, civil and contingency operations.
- provide a combat development capability integrating FFT data into current and planned architectures for use on the appropriate Common Operational Picture. They will also respond to satisfy requirements from combatant commands, agencies and multinational partners.

To accomplish its assigned J-FFT mission, USASMDC/ARSTRAT employs a Mission Management Center (under the G3) and a J-FFT Division with its four supporting branches (under the Future Warfare Center). Under an approved U.S. Strategic Command Operational Order and Concept of Operations these elements execute the specified tasks, but also the myriad of implied tasks necessary to provide day to day support. Close coordination, integration, and unity of effort across command lines and engagement with mission partners are critical to successful mission execution.

Approach: Concentration on Five Basic FFT Data Functions

In order to successfully execute both the development and operational support aspects of the assigned mission, the J-FFT Division's Mission Management Center-Test bed must closely align its combat development capabilities (based on an expert understanding of the mission's five functional tasks) with the eventual implementation of the data services in the operational Mission Management Center. The objective of the data services support is to assure data exchange, integration, and dissemination for J-FFT users. The guiding principle is to make J-FFT data visible, accessible, and understandable and the desired end state is the timely delivery of the right data to the right user in the right format.

While many users and operators often focus on their specific system in explaining an FFT capability, readers should understand that for the FFT mission to work there is much more than just a device transmitting a position report. As reflected in Figure 2 and described below, our command has achieved success by understanding that FFT systems are broken into five basic functions: generate, collect, process, disseminate, and display.

Generate

Typical FFT devices receive position and time information from the Global Positioning System and generate a FFT message that includes, at a minimum, a unique device identification alphanumeric and Global Positioning System data (time, latitude, longitude, altitude). The FFT community typically refers to this data as Precise Location and Identification data. With proper connectivity and accreditation, this data is delivered to the Mission Management Center via the Non-secure Internet Protocol Network (NIPRNET) or Secure Internet Protocol Network (SIPRNET) in the FFT system's native formats¹.

Collect

The Precise Location and Identification data is collected, processed and relayed via a data transport system (e.g. Iridium, EPLRS, aircraft line-of-sight receiver).

Process

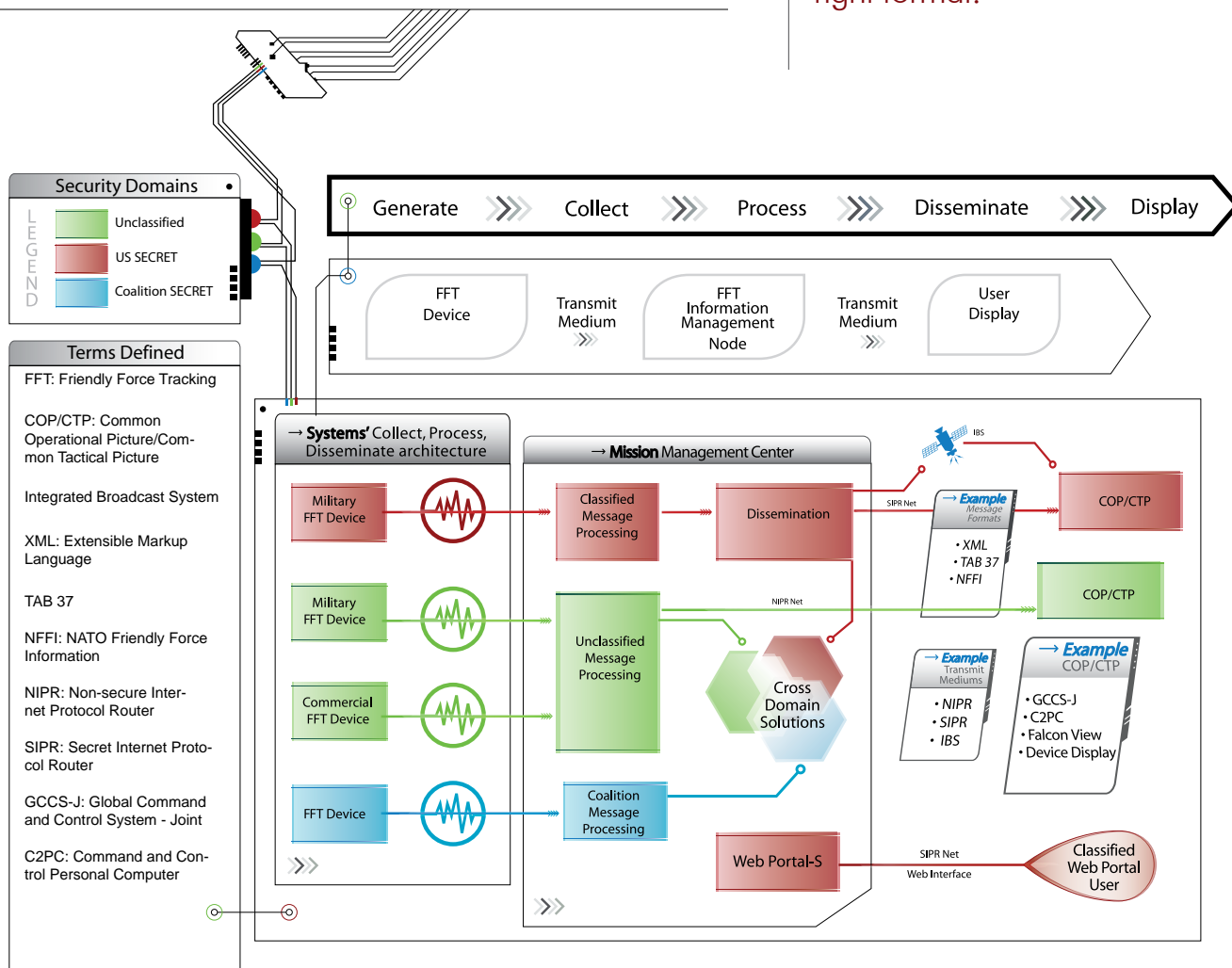
Once received at a J-FFT Information Management Node (in our case, we use the Mission Management Center, though some

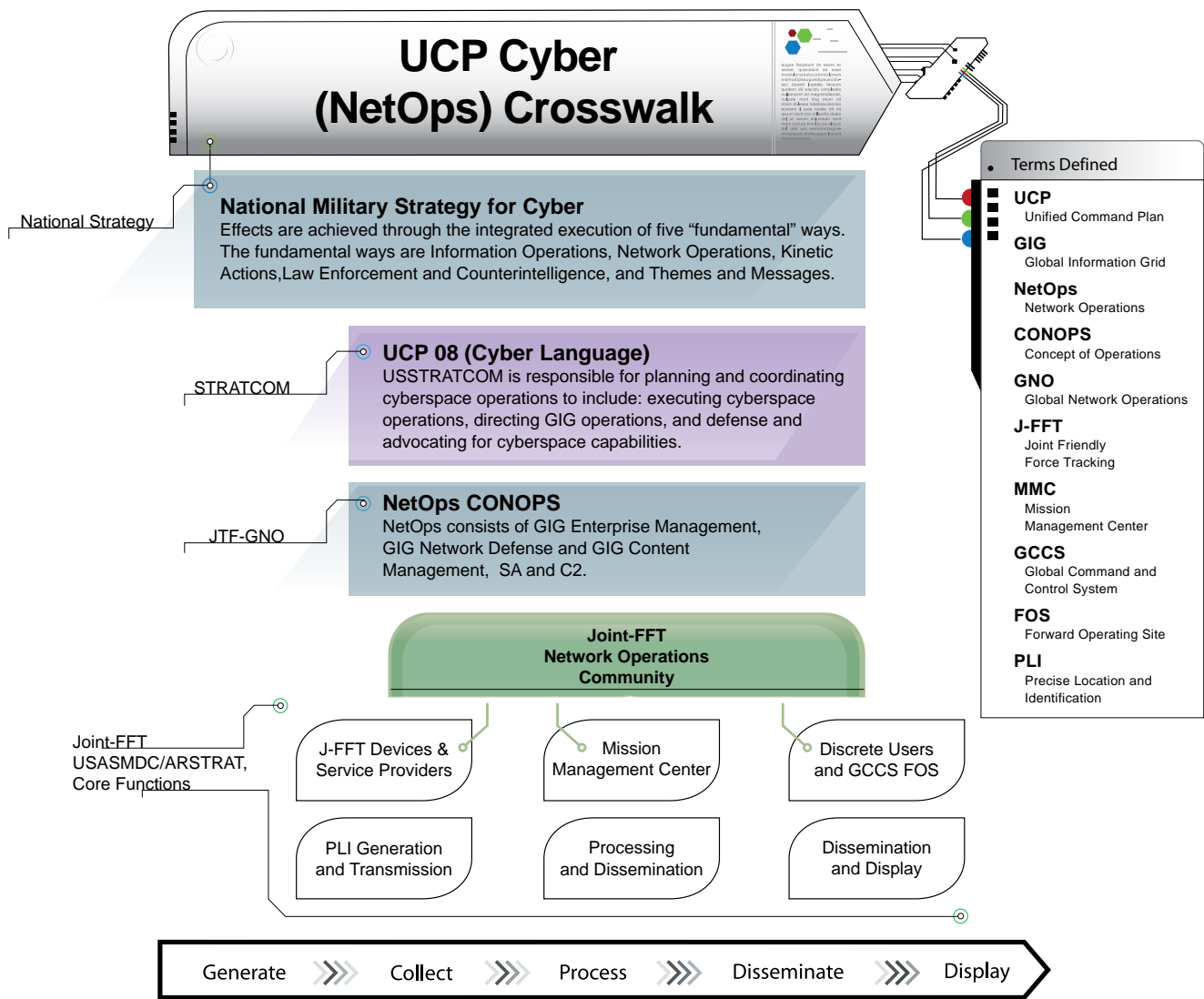
systems maintain independent “stovepipe” processes), additional data, known as association data, can be added to the Precise Location and Identification to create a known entity/object/track. Association data adds clarity to the device position report by further identifying the friendly entity. Adding this data can turn a “blue dot” for a friendly position report into more meaningful information like unit or platform identity. Users interface directly with Mission Management Center staff to provide the appropriate data to be associated with the transmissions from their devices. Once the FFT data arrives at the Mission Management Center, the information management process to get the “right data, to the right user, in the right format” begins. In many instances, this requires a translation of the FFT data into an Extensible Markup Language format and moving the data between classification domains. The Mission Management Center accomplishes this task via an approved Cross Domain Solution specifically designed for J-FFT data. With proper Data Owner Guidance the Mission Management Center can move unclassified FFT Precise Location and Identification data from the NIPRNET to SIPRNET and vice versa.

Disseminate

Once the J-FFT data is in its proper/directed security domain and has its association data attached, the Mission Management Center will disseminate the correlated Precise Location and Identification and association data (J-FFT data) to the right user in the format specified in the user’s Data Owner Guidance.

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Display

Users at the tactical, operational, or strategic levels use command and control display systems such as Global Command and Control System-Joint, Command and Control Personal Computer, or other tactical systems, e.g. Force XXI Battle Command Brigade and Below terminals and Falcon View to present the data. These details are coordinated in the planning phase.

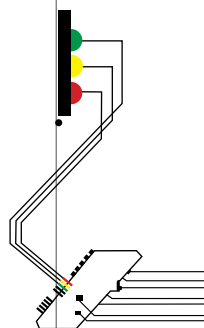
While the core of the Mission Management Center’s mission involves the Precise Location and Identification portion of the FFT transmission, many FFT systems also include a 3-digit brevity code for status. For these systems, getting that data to the right user is equally important. Of critical significance is the Mission Management Center’s responsibilities related to those NTM systems and certain Iridium FFT systems that can transmit a “911” or emergency message. For this critical message, the Mission Management Center has an enduring responsibility

to the Warfighter to maintain a state of constant vigilance and to execute prescribed emergency notification procedures pre-coordinated with the tactical user.

It’s also important to understand that FFT data is part of, and exchanged with, a larger body of operational information. It is a critical Department of Defense objective that FFT systems must be integrated with Combat Identification systems, as mutually-supporting capabilities, whose common goal is the unambiguous characterization of forces within the operational environment. While FFT and Combat Identification is not the same thing, their support to military operations is inextricably linked; each employs user association data devices or displays to exchange entity disposition, characterization, and identity information. The attendant capabilities, systems, and processes must be developed to provide interoperable and integrated entity data that are exchanged within the overall SA enterprise.



The National Strategy for Cyber describes NetOps as a fundamental way to achieve cyber effects. The Joint CONOPS for Global Information Grid Network Operations (approved by Commander, U.S. Strategic Command) provides clear descriptions of the commands Network Operations mission which include the processes and personnel for collecting, processing, storing, disseminating and managing information on demand to warfighters.



The J-FFT Division is engaged in several development efforts to provide U.S. FFT data to Combat Identification capabilities within the air domain and to make U.S. and coalition FFT data available to each other.


Alignment to the UCP Cyber and Network Operations Missions

Our J-FFT Division mission analysis concluded the FFT mission, while in many cases enabled by capabilities, is most accurately aligned with U.S. Strategic Command's cyber operations and Global Information Grid/Network Operations Unified Command Plan missions, specifically, planning, coordinating and executing cyberspace operations and directing Global Information Grid operations.

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consistent with the Global Information Grid characterization and the Network Operations framework that U.S. Strategic Command employs (Space Situational Awareness, Command and Control, and Global Information Grid Enterprise/Network/Content Management).

Summary: Integrated Teamwork Key to Mission Success

The Command's J-FFT capabilities provide substantial, and in some cases irreplaceable, Warfighter support. Nonetheless, our capabilities are only part of the larger enterprise of Situational Awareness, Command and Control and fratricide prevention. We will continue to execute U.S. Strategic Command assigned tasks day-to-day, represent U.S. Strategic Command in a variety of FFT-Combat Identification forums, work closely with U.S. Joint Forces Command and OSD to define and develop new capabilities meeting critical gaps, and transition these into the Mission Management Center's J-FFT data service capability set. Keeping our focus on those things that are operational needs and not just "good ideas" will keep our command in a respected position of support provider. Maintaining our approach of closely integrated teams across the command structure for development and operational implementation will remain our key to responsive, functional, and meaningful Warfighter support. 

Footnotes

¹ Connectivity to commercial networks is possible, but difficult to accredit and requires approved VPN processes.