



# Air Support Functionality in AFATDS

By Major Alford J. Williams

*The fire support coordination process is a flexible process that must be kept as simple as possible to produce the desired results. The Joint Force Commander and component commanders synchronize joint fire support operations to place the right attack means on the correct target at the precise time. To achieve synchronization, commanders and staffs must have a thorough knowledge of each service's doctrine, major systems, significant capabilities and limitations and often their TTP [tactics, techniques and procedures].*

Joint Pub 3-09 Doctrine for Joint Fire Support

**E**fficient planning, coordination and execution of air support for US Army forces (ARFOR) ground operations are essential to the success of the ARFOR mission. The battlefield coordination detachment (BCD) is the ARFOR commander's link between the ARFOR ground operations and the joint force air operations commander's (JFACC's) joint air operations center (JAOC). The Army's BCD in the JAOC processes Army requests for tactical air support, monitors and interprets the land battle situation for the JAOC and provides the interface for the exchange of current intelligence and operational data.

The BCD synchronizes air and ground operations for the following seven air missions: air interdiction (AI); air reconnaissance; close air support (CAS); electronic warfare (EW); theater airlift; reconnaissance, intelligence, surveillance and target acquisition (RISTA); Army airspace command and control (A<sup>2</sup>C<sup>2</sup>); and air and missile defense. The BCD achieves this synchronization by integrating Army operational requirements into the ATO development process by way of the advanced Field Artillery tactical data system (AFATDS). AFATDS is fielded from echelons above corps (EAC) down to the firing platoon level.

Internally, the Marine Corps has the same requirement to synchronize air and ground operations. This coordination and synchronization is conducted at the tactical air control center (TACC) at the marine expeditionary force (MEF) level. When the Marine Corps cannot service air support with internal assets, it coordinates support with the JFACC through the Marine air liaison officer (MARLO). Even though the TACC has AFATDS, the link between the TACC and the MARLO is voice, not digital.

This article discusses how AFATDS processes pre-planned and immediate requests for air support for both the Army and Marine Corps. These capabilities are part of AFATDS' Version A98 software currently fielded.

**AFATDS Interface.** During the past year, great advances have been made in the interoperability between AFATDS and the Air Force's theater battle management system (TBMCS), significantly improving our ability to plan and coordinate air support. AFATDS provides important capabilities to coordinate and synchronize air and ground operations.

AFATDS has an air support list (ASL) used to manage the commander's air support requests (ASRs). (See Figure 1.) An ASL is simply a list of ASRs for a unit for a given day that corresponds to a specific ATO. The ASL manages a unit's air requests throughout the ATO development and execution cycle from the time the requirement for air support is identified to the approved missions being flown the current air day.

The ASL supports the seven air missions synchronized by the BCD in addition to medical evacuation (MEDEVAC) and air assault missions. Currently, TBMCS supports the automated processing of AI missions and pre-planned ASRs at the JAOC and CAS mission requests at the air support operations center (ASOC).



**Pre-Planned Requests.** Planning begins with the military-decision making process (MDMP) and higher headquarters planning guidance, which designates the priority of effort for air support. Higher headquarters also provide the unit a maximum number of ASRs it can submit (normally by mission type).

The pre-planned ASR functions in AFATDS allow each unit to develop ASRs and construct an ASL for a specific air day. The ASL is then forwarded to the next higher headquarters in the request chain for fire support processing. The higher headquarters analyzes the subordinate's ASL, conducts fire support processing, resolves conflicts and checks for duplications. Approved subordinate ASLs then are merged for submission to the next higher headquarters. This process is repeated at each echelon until the ASLs reach the ARFOR's BCD.

The request process may begin as low as the maneuver battalion task force, but the consolidation process begins at the maneuver brigade. This processing plan facilitates the submission of pre-planned

ASRs via the ASL from battalion to brigade to division to corps to the ARFOR.

Once higher headquarters has merged its subordinates' ASLs into its ASL, it then reviews the consolidated ASL for correctness and compliance with the higher commander's intent. During the review, the higher headquarters uses the AFATDS sorting function, which helps "stack" (group) similar ASRs together in the ASL. This allows the headquarters to determine which air missions to forward and which, if any, to deny.

The headquarters also uses AFATDS to check for duplications and violations of fire support coordinating measures (FSCM). In the duplication check, AFATDS lists the target numbers (ASR numbers) that are duplicates, based on target locations and the unit's AFATDS "Duplication Guidance." The FSCM check compares each ASR target size and location to the FSCM that will be in effect during the execution of that ASR, as modified by that unit's "Fire Support Buffer Distance Guidance" in AFATDS.

At the BCD, the process is performed one last time on the ASL before being

sent to TBMCS for processing and ATO development.

Processing pre-planned ASRs is similar for the Marine Corps. (See Figure 2 on Page 22.) The fire support coordination center (FSCC) in the maneuver battalion forwards the ASRs digitally to the regimental FSCC for review and deconfliction with its ASL. The consolidated ASL is then forwarded to the division FSCC and then Marine expeditionary force (MEF) for review and approval before the MEF's consolidated ASL is sent digitally to the TACC. The TACC processes ASRs for all air mission categories and only forwards those ASRs it can't support with Marine assets to the AOC. The TACC interfaces with the MARLO by voice to access support from the AOC.

When the AOC publishes the ATO, AFATDS receives and processes the ATO via its interface with TBMCS at the BCD. AFATDS matches the ASL with the same time window as the ATO and automatically updates the ASRs on its ASL (based on the ASR numbers). After AFATDS at the BCD updates the

ASL Lists in Current Phase 1								
File Target View								
List: ASL EXAMPLE		Plan: Current		Phase: 1				
<input checked="" type="radio"/> Absolute		Start: 201200ZDEC00						
<input type="radio"/> D-Day		End: 211200ZDEC00						
<input checked="" type="radio"/> Current		ASR No	Tgt No	Target Type	Ver 1	Ver 2	Start Time	Air Stat
<input checked="" type="radio"/> SOP Phase 1		1 AAA0000	AA0000	Defile			011200ZDEC01	
<input checked="" type="radio"/> DIV OPORD DEFEND Phase 1		2 AAA0002					011400ZDEC01	
<input checked="" type="radio"/> DIV OPORD DEFEND Phase 2		3 AAA0005					011456ZDEC01	
<input checked="" type="radio"/> 3BDE STRESS PLAN Phase 1		4 AAA0001	AA0001	Hill			011300ZDEC01	
		5 AAA0003					011500ZDEC01	
		6 AAA0006					011344ZDEC01	
		7 AAA0004					011545ZDEC01	

**Legend:** DIV = Division    3BDE = 3d Brigade    OPORD = Operations Order    SOP = Standing Operating Procedures

Figure 1: Air Support List (ASL) in the Advanced FA Tactical Data System (AFATDS)

ASL, AFATDS automatically sends this revised ASL to all the subordinate units whose ASRs were merged into that ASL. The process is the same for changes from the top-down. AFATDS automatically updates any ATO changes to the ASL published by the AOC and disseminates the revised ASL digitally.

After developing the ASL, some of the target data may change, for example when a target's location changes. AFATDS allows the operator to update the target data for pre-planned ASRs. The update occurs on individual ASRs, and each is forwarded for processing.

AFATDS provides other functionality to help the user manage his approved ASRs. For example, the operator can set two alarm clock-type alerts to notify him when higher headquarters requires verification of each mission's validity.

Additionally, when a mission has been flown and TBMCS sends the BCD's AFATDS a mission report (MISREP), AFATDS changes the status of the mission to "Completed" and annotates the results indicated on the ASL. These and other functions help the AFATDS operator track the status of the pre-planned air missions from initial submission through completion.

The operator also can select an approved ASR on an ASL and "Execute" or "Divert" that mission. Either of these actions causes an immediate ASR to be generated and sent to the unit in the immediate ASR routing guidance (using the number of the selected ASR).

**Immediate Requests.** AFATDS allows each echelon to develop immediate ASRs and send them up the chain for approval. (See Figure 3.) The processing for immediate ASRs is different from the process for pre-planned ASRs.

Each unit in the air mission chain monitors the current ASL. As the pre-planned ASL becomes effective, the unit uses AFATDS to manage its immediate missions. There should never be two ASLs with overlapping times.

For immediate ASRs, CAS requests are routed digitally to the ASOC while all other requests are sent to the AOC. Each AFATDS unit establishes a routing path up its chain of command for immediate air requests. This allows the unit to send two copies of the immediate request—one copy destined for the ASOC or AOC and one to remain as an info copy for the higher headquarters as the request rapidly passes through that headquarters to the next higher headquarters.

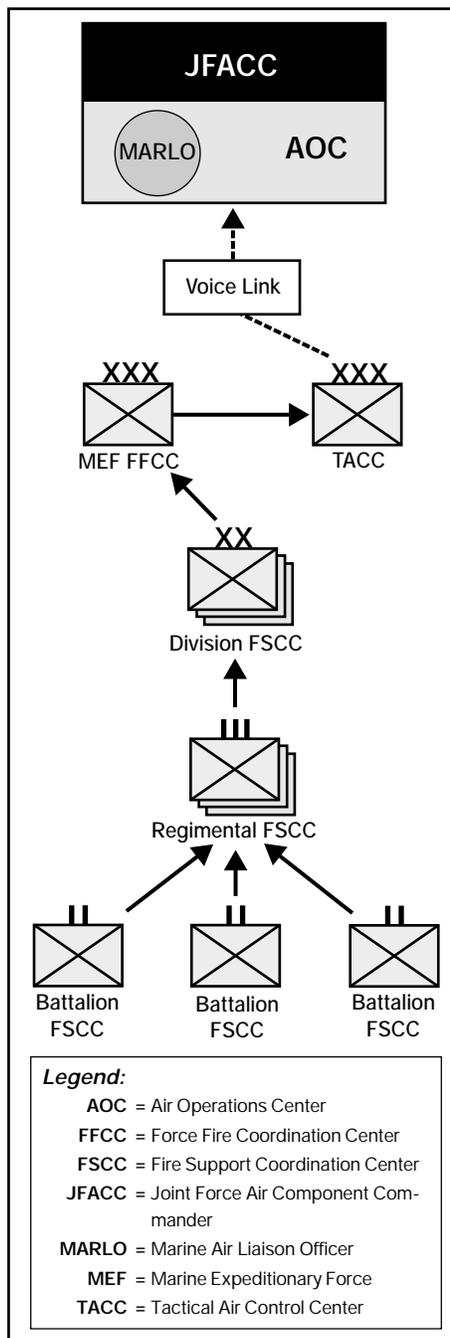


Figure 2: USMC Pre-Planned Air Support Request (ASR) Mission Flow. The battalion FSCCs create and send their ASRs for the air support list (ASL) to regiment, which merges all requests and sends them to higher headquarters, etc. For those air missions that cannot be serviced by Marine Air, the TACC coordinates for air support via a voice link with the MARLO at the JFACC's AOC.

Each higher headquarters receives and reviews its info copy of the ASR as the immediate ASR continues up the chain. If the headquarters finds no problems with the request, then it takes no action, allowing the mission request to proceed. On the other hand, if a higher

headquarters finds a problem with the mission, it can send "Denied." The deny message automatically goes back via the chain of command to the originating unit and forward to the ASOC or AOC.

If a unit receives an immediate request for CAS or AI, AFATDS checks the current ASL to verify if the unit has an approved pre-planned CAS or AI mission with the same ASR number as the immediate request. If there is a match, AFATDS changes the state of the mission to "Execute" and sends the ASR to the AOC or ASOC.

If AFATDS can't match an ASR number with the request, AFATDS looks at approved pre-planned on-call and scheduled missions the unit created. If possible (based on a match of the target type and the "No Earlier Than/No Later Than" time of execution), AFATDS recommends a request to divert one of these missions to service the immediate ASR. When this happens and the operator approves the recommendation, AFATDS changes the mission state of the pre-planned mission to "Divert," associates the new target number and location with the immediate ASR and sends the request to the ASOC.

Again, the process is similar for the Marine Corps, except it sends all immediate requests up the chain (with info copies at each higher headquarters) to the division air support center (DASC) for processing. If the DASC cannot support the immediate ASR, it returns the request to the division for submission to the MEF. At this point, the request follows the route for pre-planned ASRs.

**Air Mission Improvements.** The Training and Doctrine Command System Manager (TSM) Field Artillery Tactical Data Systems (FATDS) at the Field Artillery School, Fort Sill, Oklahoma, and the Program Manager for FATDS (PM FATDS), are working to improve the air functionality in AFATDS. The goal is to minimize the number of keystrokes required to create or initiate an ASR and make AFATDS windows "look and feel" like the commercial software applications used by soldiers and Marines daily. The following air mission processing improvements are being incorporated into either A99-Plus software scheduled for fielding in June 2002 or Version 7 to be fielded in April 2003.

*Reduce the Number of Windows.* Currently when an AFATDS operator wants

to create an ASR, he must enter data on two or more windows and use a "Next" button to navigate from window to window. This format will change to one window with tabs. All the mandatory information will be located on the initial window, or tab, so it will take only one window to create an ASR. Any other information (not mandatory) may be entered on the additional tab(s).

*One Set of Start and Stop Times.* AFATDS' mission start and stop times established in the ASL will be the same mission start and stop times for the ASR. The operator, however, will be able to change these times if he wants time for target execution.

*Updating Data Fields.* AFATDS will have expanded capabilities for ASR data fields. After receiving an ATO, fields of the corresponding ASR automatically will be updated and (or) filled in with the information contained in the ATO. This information will be passed to all units in the air request chain. Additionally, a medium-level alert will be posted to notify the operator he has received an updated ASL as the result of an ATO update.

*Tracking Multiple Missions.* For the first time, AFATDS will be able to track multiple Air Force missions assigned to a single ASR. For example, currently, if an ASR requires 10 missions, AFATDS does not show a mission completed until all 10 missions are flown. The new software will track each mission flown on an ASR.

*Improved Printing.* The operator will be able to print the "Desired Effects" and "Rationale" fields plus the ASL with latitude-longitude grid coordinates instead of Universal Transverse Mercator (UTM).

*Enhancing ASR Numbering.* Currently, AFATDS uses three alpha characters and four numbers to define the ASR number. Based on input from the field, this format will change to allow up to five alphanumeric characters and three numbers per ASR.

An AFATDS operator will be able to enter any ASR number he desires as long as it meets the new eight-character format; he also will be able to allow the system to auto-generate an ASR number from the ASR numbering block. The operator will be able to establish the auto-generation ASR numbering to assign a prefix to each ASR by mission type or ATO designation based on his commander's guidance. The operator will be able to edit the ASR number.

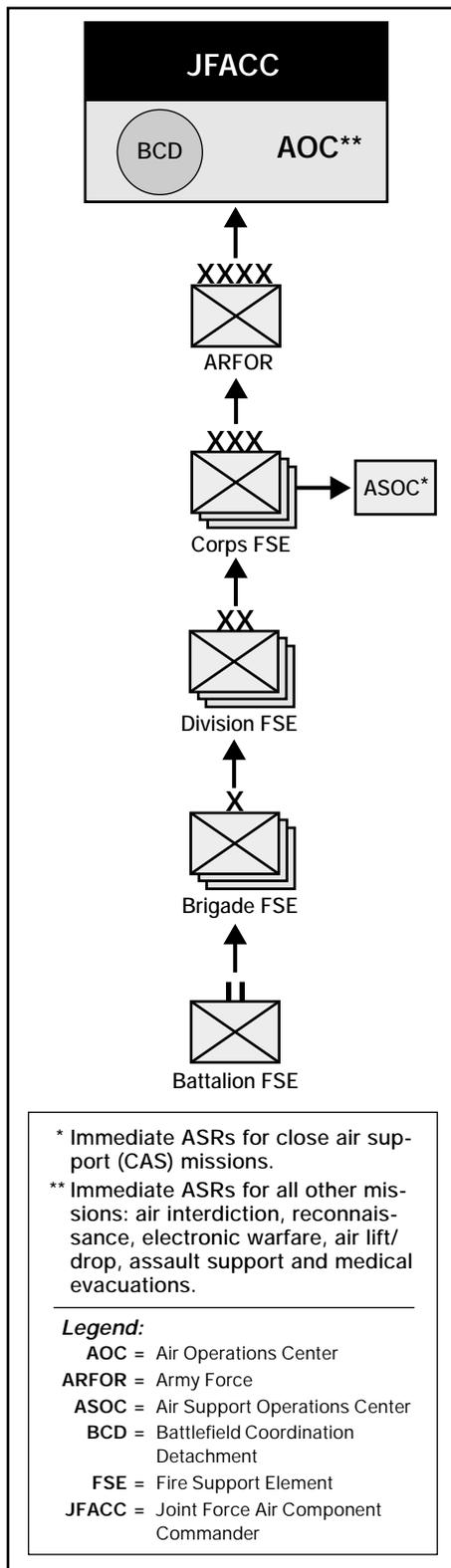


Figure 3: Army Immediate Air Support Request (ASR) Mission Flow. The battalion FSE passes an immediate ASR through the brigade FSE (with an info copy for the brigade FSE), which passes it through to the division (with an info copy to the division), etc. ASRs for CAS missions stop at the ASOC, and ASRs for all other missions go to the BCD.

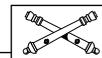
With the implementation of the enhanced numbering system, some unit standing operating procedures (SOPs) will change, but AFATDS won't lose any interoperability with older systems.

**Ideas and Questions On Line.** The geneses of these improvements were comments from users in the field. If you have ideas for improvements, email them to me and include a point of contact with a telephone number and email address: williamsa5@sill.army.mil. My Fax is 580-442-2915 (DSN 639).

You also can share your ideas with other soldiers and Marines via the Army Knowledge Online (AKO) website at [www.us.army.mil](http://www.us.army.mil). You log in as a new user. After registering with AKO, visit the TSM-FATDS discussion forum at [www.workplace.us.army.mil](http://www.workplace.us.army.mil) using your new password. We have set up a discussion forum for everyone interested in sharing ideas or getting questions answered about AFATDS and fire support command and control.

Today, AFATDS software interfaces with the TBMCS to process ASRs for the ATO. With the planned improvements, the software will be even better in the near future.

AFATDS is the fire supporters' digital command and control system for fire mission processing, helping the commander "synchronize joint fire support operations to place the right attack means on the correct target at the precise time" (JP 3-09).



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