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Report Documentation Page

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USJFCOM



Joint Fires Integration and Interoperability Team (JFIIT)



Use of DoD Architectural Framework in Support of JFIIT Assessments

*John Anderson, SAIC
Senior Analyst*

Agenda

- JFIIT Background
- Assessment Strategy
- Sample Assessment Execution
- Conclusion

JFIIT Mission

Improve the integration, interoperability, and effectiveness of Joint fires, focused at the tactical level.

- **JFIIT is a subordinate, functional command of U.S. Joint Forces Command**
- **JFIIT mission complements USJFCOM J7/J8/J9 joint fires and combat identification efforts at the operational level**



JFIIT Team

- **Personnel**

- Active uniformed 35
- Reserve component 0
- DOD civilian 6
- Contractors 89

- **Facilities**

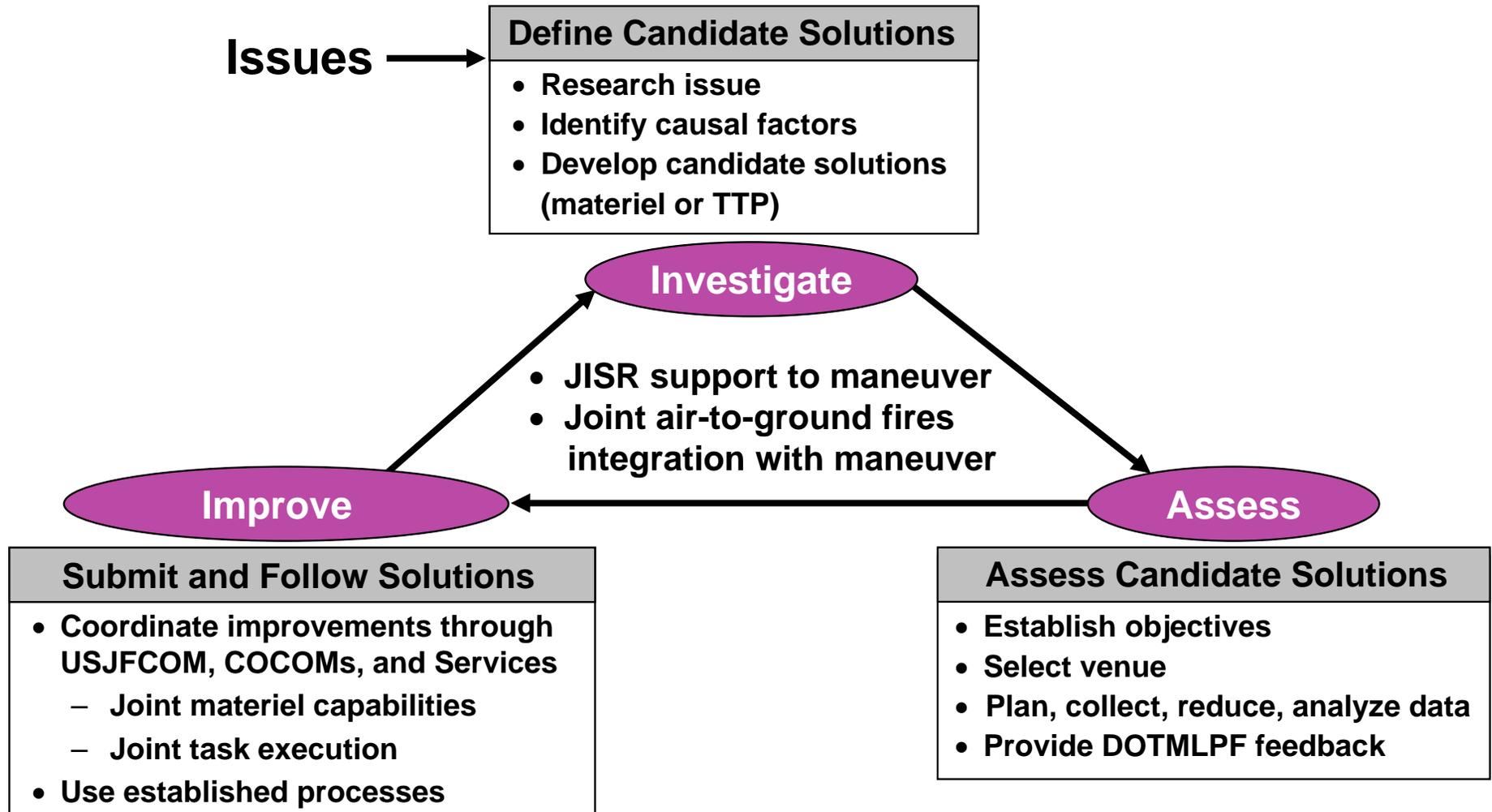
- Eglin AFB, FL
- Fort Irwin, CA

C2 Command and Control
 FIST Fire Support Team
 FO Forward Observer
 FSCC Fire Support Coordination Center
 ISR Intelligence, Surveillance, and
 Reconnaissance
 JFO Joint Fires Observer
 JTAC Joint Terminal Attack Controller
 TACP Tactical Air Control Party

JFIIT Core Strengths

- **Operational Joint fires expertise**
 - Air to ground, ground to ground, air defense
 - Ground maneuver
 - Special operations
 - TACP/FSCC, JTAC/JFO, FO/FIST
 - Electronic warfare
 - Weapon system and data link
 - C2 and ISR
 - Observer/trainer
- **Analytical capabilities**
 - Tactical capability analysis
 - Joint task execution; training assessment
 - Joint interoperability expertise
 - Forte in live field exercise assessments
- **Technical skills**
 - Instrumentation
 - Networking and communications
 - Data collection, management, processing
- **Additional exercise expertise**
 - Scenario planning, range integration, and airspace management

JFIIT Improvement Process



COCOM Combatant Command
 DOTMLPF Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities
 JISR Joint Intelligence, Surveillance, and Reconnaissance
 TTP Tactics, Techniques, and Procedures

JFIIT FY 07 Calendar

Events	1st Quarter			2d Quarter			3rd Quarter			4th Quarter				
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
Terminal Fury	ET 3		CPX											
BCT A-G integration							IPR	IPC	IPR	TFP				
Atlantic Strike	AS IV			IPC		FPC	AS V							
Emerald Warrior		EW 07												
Army NTC	07-01	07-02						07-07	07-08			07-09		
LTP	3/3 ID	4/2 ID	4/3 ID	2/3 ID		3 ACR	3 BCT	11 ACR	3D ACR	1/4 ID	1/25 ID	2/25 ID	1/25 ID	4/4 ID
JNTC accredit./cert.	SOCOM	MSTP	UE 07-1											
JCAS and CID ESCs	JTFEX C3F/NTC-AW1													
JCAS and CID ESCs	WG	WG	ESC	WG		WG	ESC	ESC	WG		WG	WG	ESC	
JCAS and CID ESCs								JCAS Symp.						
ACC JEFX 08				IDR			Spiral 1			MEC		LF IPC		
CCID ACTD		IPC		IPC	Site survey	MPC	IPR & TWG		CO WG		FPC	CO WG	Op demo	
JCAS JMT	Event 1 survey	Event 2		Event 1 StrikeLink tech assessments						Event 3 execution		Event 4 execution		
JCAS JMT	Event 2													
Marine Corps WTI	1-07				MPC	FPC	2-07							
JFCM JT&E supp.						FPC	Risk red.	MAINEX A	MAINEX B					
Other tasks	EW /J-FIRE pub.			JC2CPM	ASOC	ASOC	ASOC							
Other tasks			I/ITSEC		GARS	ROC-V	ROC-V	GARS	GARS	GARS			AF-ICE/JC2	UE 07-2
Other tasks													USAFE JFCOE rev.	
Other tasks													USAFE IQT/MQT rev.	
Other tasks														

Legend:

Deployment Event execution Joint meetings/conf.

Note: Acronyms listed in notes page.

JFIIT Assessment Strategy

- Support breadth, depth and tempo of multiple assessments
- Rely on processes that include reusable assessment plan templates
- Templates incorporate conceptual models which involve
 - Joint Fires related Universal Joint Tasks (UJT)
 - Joint Task Articles (JTA)
 - DoDAF Operational Views (OV) and System Views (SV)
- Use conceptual models to rapidly develop analytical models, assessment CONOPS, and requirements for supporting instrumentation and data collection
- Capture lessons learned from model development and assessment execution
- Provide feedback from lessons learned to enhance JTAs and associated OV/SVs

Joint Fires Related Universal Joint Tasks (UJT)* For JFIIT Assessment Purposes

- TA 3.2.2, Conduct Close Air Support
- TA 3.2.1, Conduct Joint Fire [Support]
- TA 2, Share Intelligence;
- TA 2.0, Develop Intelligence
- TA 3.3, Coordinate Battlespace Maneuver & Integrate With Firepower
- TA 5, Exercise C2
- TA 6.5, Provide for Combat ID
- TA 5.2.1, Establish, Operate and Maintain Baseline Information Exchange

*<https://jdeis.js.mil>

Find the Joint Training frame to the lower left of the page

Click on UJTL Portal

Click on JDEIS UJTL Database Search

*CJCSM 3500.04D, 1 Aug 2005, with Change 1, 15 Sep 2006, Universal Joint Task List (UJTL)

JTAs

- Each UJT is described by a Joint Task Article (JTA) that includes
 - Task description: Critical Elements, Steps
 - Measures
 - Conditions
 - Joint and Service Doctrine references
- Many UJTs are described by Extended JTAs (EJTAs) that include a DoD Architectural Framework
 - Operational Views (OV) – process: operator activities, information exchange
 - System Views (SV) – architecture: system functions, data exchange
- EJTAs can serve as starting points for plans, scenarios, check-lists, metrics, Integrated Data Requirements List (IDRL)

Managed by JFCOM J7/JNTC

Managed by JFCOM J89

<https://jdeis.js.mil>

Find the Joint Training frame to the lower left of the page
Click on UJTL Portal
Click on UJTL Coordination and Staffing
Click on JTA Coordination Page

EJTA (TA) 3.2.2 Conduct Close Air Support

SERVICE COMMAND AND CONTROL NODES

OV-1

OV-2 - [Army](#), [Marine Corps](#), [Air Force](#), [Navy](#), [SOF](#)

OV-3 - [Army](#), [Marine Corps](#), [Air Force](#), [Navy](#)

OV-4 - [Army](#), [Marine Corps](#), [Air Force](#), [Navy](#), [SOF](#)

OV-5

SYSTEMS INTERFACE/COMMUNICATIONS DESCRIPTIONS [SV-1](#), [SV-2A](#), [SV-2B](#)

JTF HQ COMMAND AND CONTROL NODES - [OVs](#)

JTF HQ COMMAND AND CONTROL OPERATIONAL IER MATRIX - [IERs](#)

Definition

To provide support for amphibious and/or land operations by air assets through attacking hostile targets in close proximity to friendly forces.

Background

Although close-air support (CAS) is conducted at the tactical level, it is linked to the operational level through the air apportionment and allocation process. CAS is planned and executed to accomplish military objectives assigned to tactical units or joint task forces. CAS planning focuses on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy in order to achieve combat objectives.

EJTA (TA) 3.2.2 Conduct Close Air Support

CRITICAL ELEMENTS

E1 Operational Planning/Information

E2 Tactical Planning

E3 Tactical Preparation

T1 Ensure maneuver force preparation process includes JCAS in appropriate rehearsals.

T2 Ensure operations center rehearsals include the following:

- a) ROE review.
- b) Fire support coordination measures (FSCM).
- c) Airspace control measures (ACMs).
- d) Type of control and procedures.
- e) Communication plans.
- f) Suppression of enemy air defenses (SEAD).
- g) Target marks/friendly marking.

E4 Communications

E5 Synchronization

E6 Execution

T1 Ensure that when CAS aircraft arrive on station, terminal controllers, other observers, surface fire support, and ACMs are ready and available to implement the ground commander's plan for CAS.

T2 Ensure the timing, sequencing and place of attack are coordinated within the joint force to achieve unity of effort and support the overall maneuver plan.

T3 Ensure sensor-to-shooter information transfer is smooth and timely.

T4 Ensure contacts are correctly identified:

- a) Planners define means and time limits for identification determination.
- b) Establish specific identification matrix and fratricide avoidance procedures.

E7 Battle Damage Assessments

E8 Battle Tracking

- **Steps included with Critical Elements E3 and E6**
- **Others not included for brevity**

EJTA (TA) 3.2.2 Conduct Close Air Support

TASK MEASURES (M)

E1	Operational Planning/Information	
E2	Tactical Planning	
E3	Tactical Preparation	
	M1	Did the maneuver force preparation process include JCAS in appropriate rehearsals? Yes
	M2	Did the operation center rehearsals include the following: Yes
		a) ROE review?
		b) FSCMs?
		c) ACM?
		d) Type of control and procedures?
		e) ACAs and other de-confliction methods?
		f) Communication plans?
		g) SEAD?
		h) Target Marks?
		i) Friendly Marking?
E4	Communications	
E5	Synchronization	
E6	Execution	
	M1	Were terminal controllers, other observers, surface fire support, and ACMs ready and available to implement the ground commander's plan for CAS when CAS aircraft arrived on station? Yes
	M2	Were timing, sequencing and place of attack coordinated within the joint force to achieve unity of effort and support the overall maneuver plan? Yes
	M3	Was the sensor-to-shooter information transfer smooth and timely? Yes
	M4	Were contacts correctly identified within allowable means and time limits and were specific identification matrix and fratricide avoidance procedures established? Yes
E7	Battle Damage Assessments	
E8	Battle Tracking	

EJTA (TA) 3.2.2 Conduct Close Air Support

TASK CONDITIONS (C)

Physical Environment

- C 1.1 C 1.1.1 Land Terrain
- C 1.1.1.6 Vegetation
- C 1.1.3.1 Urbanization
- C 1.3 Air
- C 1.3.1 Climate
- C 1.3.1.3 Weather
- C 1.3.1.3.3 Surface Wind Velocity
- C 1.3.2 Visibility
- C 1.3.2.1 Light
- C 1.3.3.2 Chemical Effects
- C 1.3.3.3 Biological Effects
- C 1.3.4 Airspace Availability

Military Environment

- C 2.10.1 State of Conflict
- C 2.10.3 Type of Conflict
- C 2.2.4 Personnel Capability
- C 2.2.4.5 Personnel Experience
- C 2.3.1 Command Arrangements
- C 2.3.1.10 Command Relationships
- C 2.3.1.6 Communications Connectivity
- C 2.6.1 Degree of Dispersion
- C 2.6.5 Target Mobility
- C 2.6.7 Collateral Damage Potential
- C 2.7.2 Air Superiority

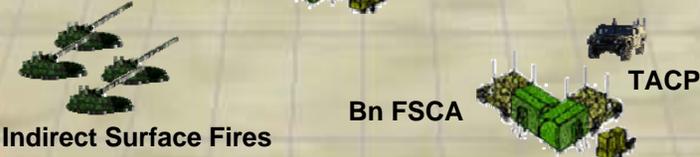
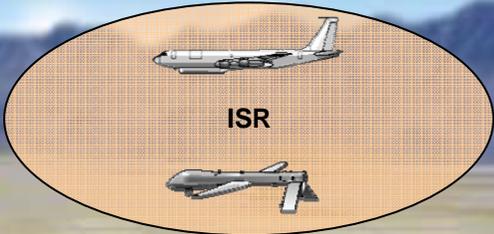
Steps to Enhance EJTA 3.2.2

- Develop/refine related OV/SVs
- Redefine Critical Elements and Steps with stronger links to OV/SVs
- Develop metrics to describe how well Critical Elements/Steps are performed
- Develop Integrated Data Requirements List (IDRL) to support metric calculation and capture related conditions
- Socialize with JFIIT, JFCOM and Joint Staff J7 for eventual posting to JDEIS UJTL portal

TA 3.2.2 OVs

Architectural Framework Status as of 8 May 07		
Product	Product Name	Status
OV-1	High-Level Operational Concept	Final Draft
OV-5	Activity Model	Initial Draft
OV-4	Organizational Relationships Chart	Conceptual w/Examples in Context
OV-6	Activity Sequence and Timing Descriptions	
OV-2	Node Connectivity Description	
OV-3	Information Exchange Matrix	

OV-1 for TA 3.2.2
Conduct Close Air Support



Legend	
ACCA	Air Command and Control Agency
ASCA	Air Support Control Agency
BCT	Brigade Combat Team
Bn	Battalion
CAS	Close Air Support
Div	Division
FAC(A)	Forward Air Control (Airborne)
FSCA	Fire Support Coordination Agency
GLO	Ground Liaison Officer
ISR	Intelligence, Surveillance, Reconnaissance
JFO	Joint Fires Observer
JTAC	Joint Terminal Attack Controller
MEF	Marine Expeditionary Force
RCA	Radar Control Agency
Regt	Regiment
TACP	Tactical Air Control Party
WOC	Wing Operations Center

*TA 3.2.2, Conduct CAS
Building the OV-5*

Nodes	Phases			
	Plan	Prepare	Execute	Assess
JTAC	X	X	X	X
CAS Aircrew	X		X	X
FAC(A)	X		X	X
JFO/Observer	X	X	X	X
TACP	X	X	X	
FSCA	X	X	X	X
ASCA	X		X	
GLO	X			
RCA			X	

TA 3.2.2, Conduct CAS Building the OV-5

JTAC	
	Activity
Plan	Conduct Planning
Prepare	Conduct Rehearsal
Execute	Coordinate with TACP/TOC/ASCA
	Find/Fix/Track Target
	Coordinate with FAC(A)/CAS Aircrew
	Control CAS
Assess	Conduct BDA

TA 3.2.2, Conduct CAS Building the OV-5

JTAC

	Activity
Plan	Conduct Planning
Prepare	Conduct Rehearsal
Execute	Coordinate with TACP/TOC/ASCA
	Find/Fix/Track Target
	Coordinate with FAC(A)/CAS Aircrew
	Control CAS
Assess	Conduct BDA

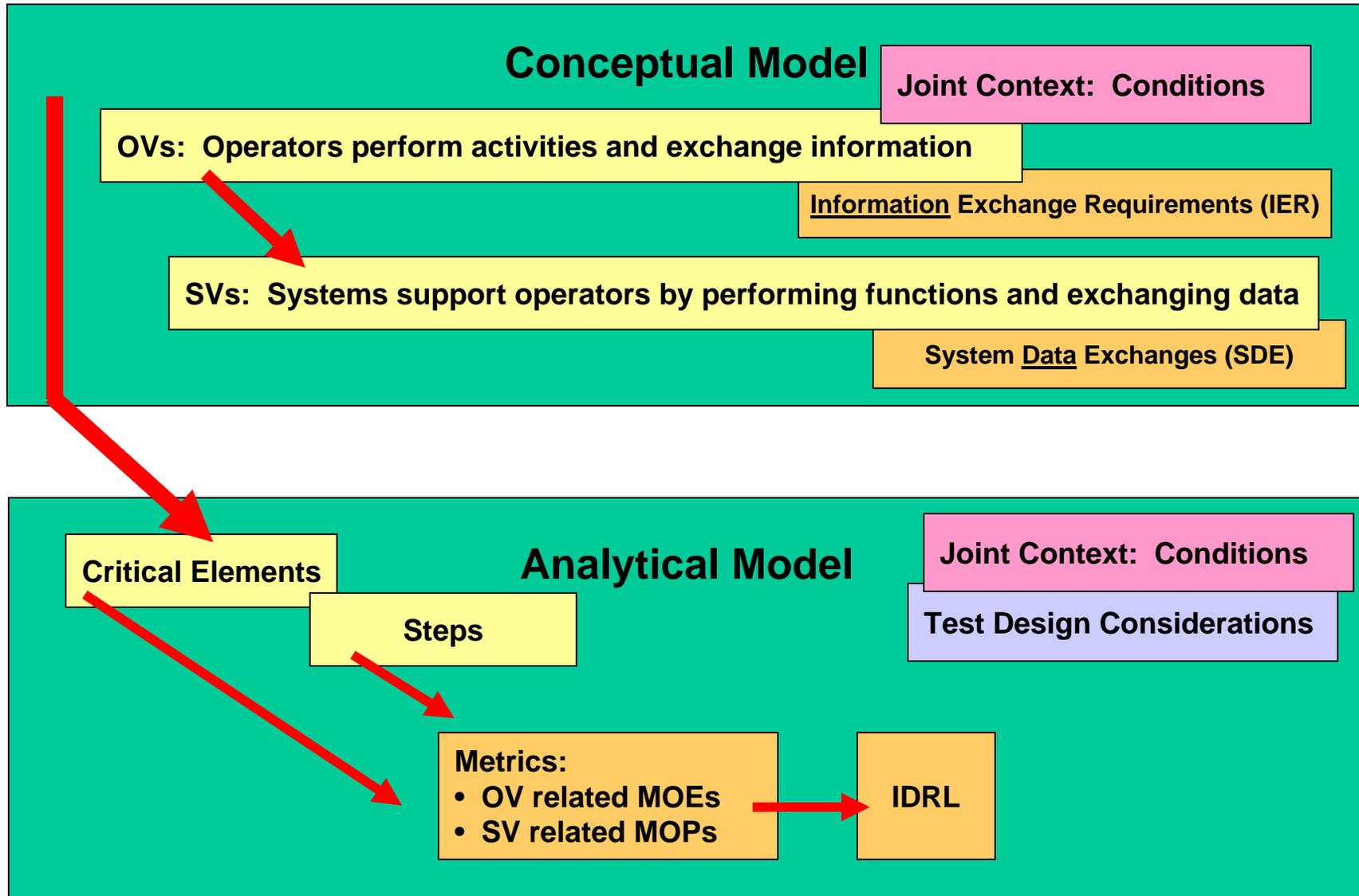
Sub-Activity: Type 2 Control

- JTAC send CAS briefing
- CAS aircrew verify target coordinates correlate expected target area
- CAS aircrew read-back or confirm digitally Line 4 (elev), Line 6 (target location) and any restrictions
- CAS aircrew provide IP INBOUND call
- CAS aircrew provide an IN call indicating maneuvering for a targeting solution
- JTAC provide CLEARED HOT or ABORT

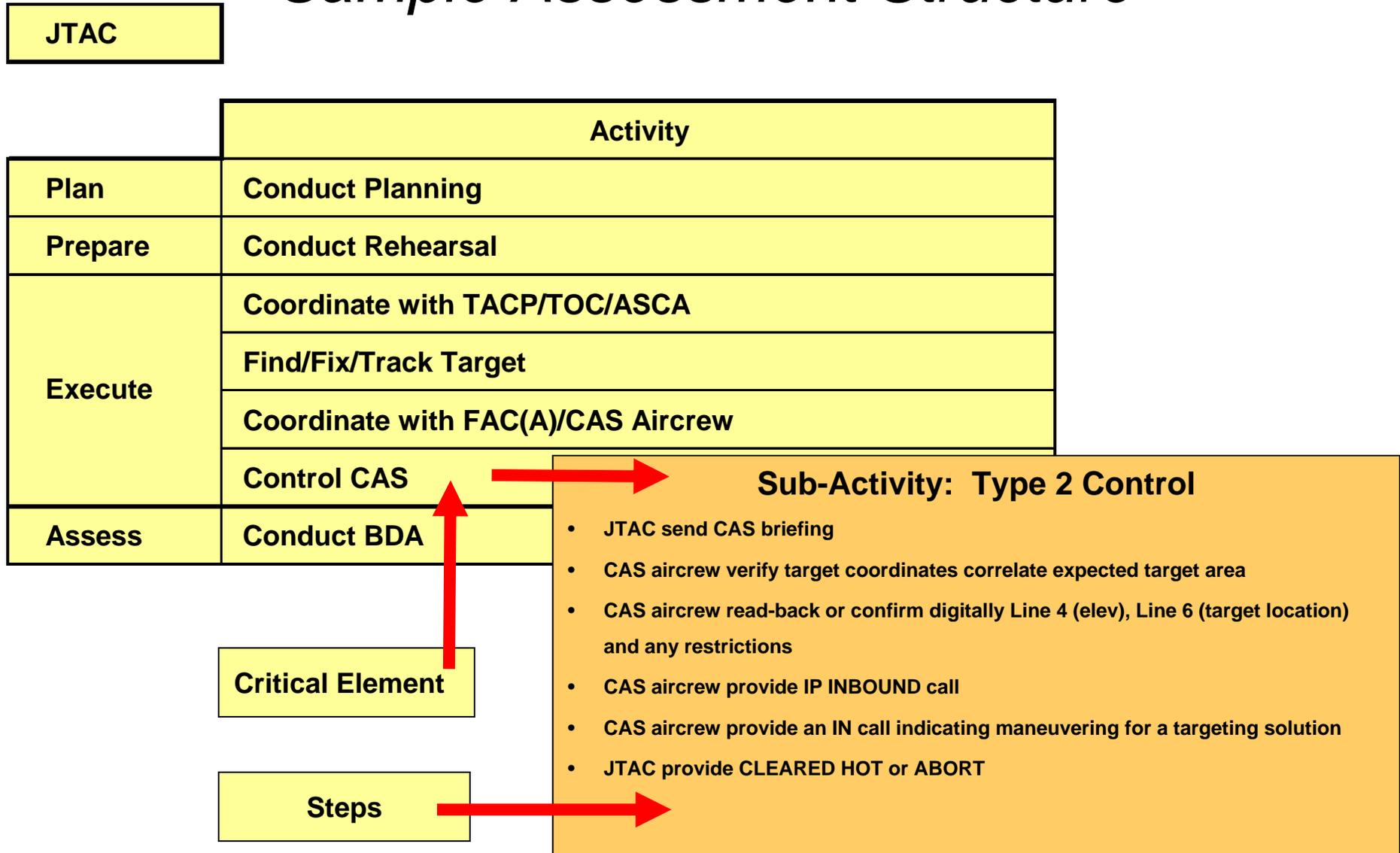
TA 3.2.2 Conduct CAS OV-5

A.0 Conduct CAS	A1 Plan	A1.1 JTAC	A1.1.1 Conduct Planning
		A1.2 CAS Aircrew	A1.2.1 Receive information updates from the GLO regarding supported ground commander intent and related ground missions
		A1.3 FAC(A)	A1.3.1 Conduct Planning
		A1.4 JFO/Observer	A1.4.1 Conduct Planning
		A1.5 TACP	A1.5.1 Conduct Planning
		A1.6 FSCA	A1.6.1 Conduct Planning
		A1.7 ASCA	A1.7.1 Conduct Planning
		A1.8 GLO	A1.8.1 Provide information updates to FAC(A)/CAS Aircrew regarding supported ground commander intent and related ground missions
	A2 Prepare	A2.1 JTAC	A2.1.1 Conduct Rehearsal
		A2.2 JFO/Observer	A2.2.1 Conduct Rehearsal
		A2.3 TACP	A2.3.1 Conduct Rehearsal
		A2.4 FSCA	A2.4.1 Conduct Rehearsal
	A3 Execute	A3.1 JTAC	A3.1.1 Coordinate with TACP/TOC/ASCA
			A3.1.2 Find/Fix/Track Target
			A3.1.3 Coordinate with FAC(A)/CAS Aircrew
			A3.1.4 Control CAS
		A3.2 CAS Aircrew	A3.2.1 Coordinate with WOC/ACCA/ASCA/ACA
			A3.2.2 Coordinate with JTAC
			A3.2.3 Provide CAS
		A3.3 FAC(A)	A3.3.1 Coordinate with TACP/TOC/ASCA
			A3.3.2 Find/Fix/Track Target
			A3.3.3 Coordinate with JTAC/CAS Aircrew
			A3.3.4 Control CAS
		A3.4 JFO/Observer	A3.4.1 Find/Fix/Track Target
			A3.4.2 Coordinate with JTAC/TACP/TOC
		A3.5 TACP	A3.5.1 Coordinate with TOC
			A3.5.2 Coordinate with Other TACP/ASCA
			A3.5.3 Coordinate with JTAC
		A3.6 FSCA	A3.6.1 Integrate CAS with ground mission
		A3.7 ASCA	A3.7.1 Provide procedural control of CAS assets within supported GND CDR AO
			A3.7.2 Process CAS requests
			A3.7.3 Control flow of CAS aircraft in and out of supported GND CDR AO
			A3.7.4 Integrate aircraft operating inside the FSCL using ACM/FSCMs
			A3.7.5 Manage JARN and allocated TAD frequencies
			A3.7.6 Coordinate other mission areas
			A3.7.7 Manage subordinate deployed TACPs
A3.7.8 Assign and direct CAS aircraft, when authorized, to JTACs			
A3.8 RCA	A3.8.1 Provide Routing/Update Information to FAC(A)/CAS Aircrew		
A4 Assess	A4.1 JTAC	A4.4.1 Conduct BDA	
	A4.2 CAS Aircrew	A4.2.1 Conduct BDA	
	A4.3 FAC(A)	A4.3.1 Conduct BDA	
	A4.4 FSCA	A4.4.1 Conduct BDA	

Sample Assessment Structure



Sample Assessment Structure



Sample Assessment Structure

Type 2 Control Steps

- JTAC send CAS briefing
- CAS aircrew verify target coordinates correlate with expected target area
- CAS aircrew read-back or confirm digitally Line 4 (elev), Line 6 (target location) and any restrictions
- CAS aircrew provide IP INBOUND call
- CAS aircrew provide an IN call indicating maneuvering for a targeting solution
- JTAC provide CLEARED HOT or ABORT

Measures of Effectiveness (MOE)

- Percent of controls where the JTAC sent a 9-line
- Average time for CAS aircrew to verify target coordinates
- Percent of controls where the JTAC provided CLEARED HOT
- Percent of controls effectively managed by the JTAC
- ...

Integrated Data Requirements List (IDRL) for Each Control

- Did the JTAC send a 9-line?
- Time that JTAC completed the 9-line
- Time that CAS aircrew verified target coordinates
- Did the JTAC provide CLEARED HOT?
- Did the CAS aircraft engage the correct target?
- ...

Sample Assessment Structure

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- JTAC send CAS briefing
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Measures of Effectiveness (MOE)

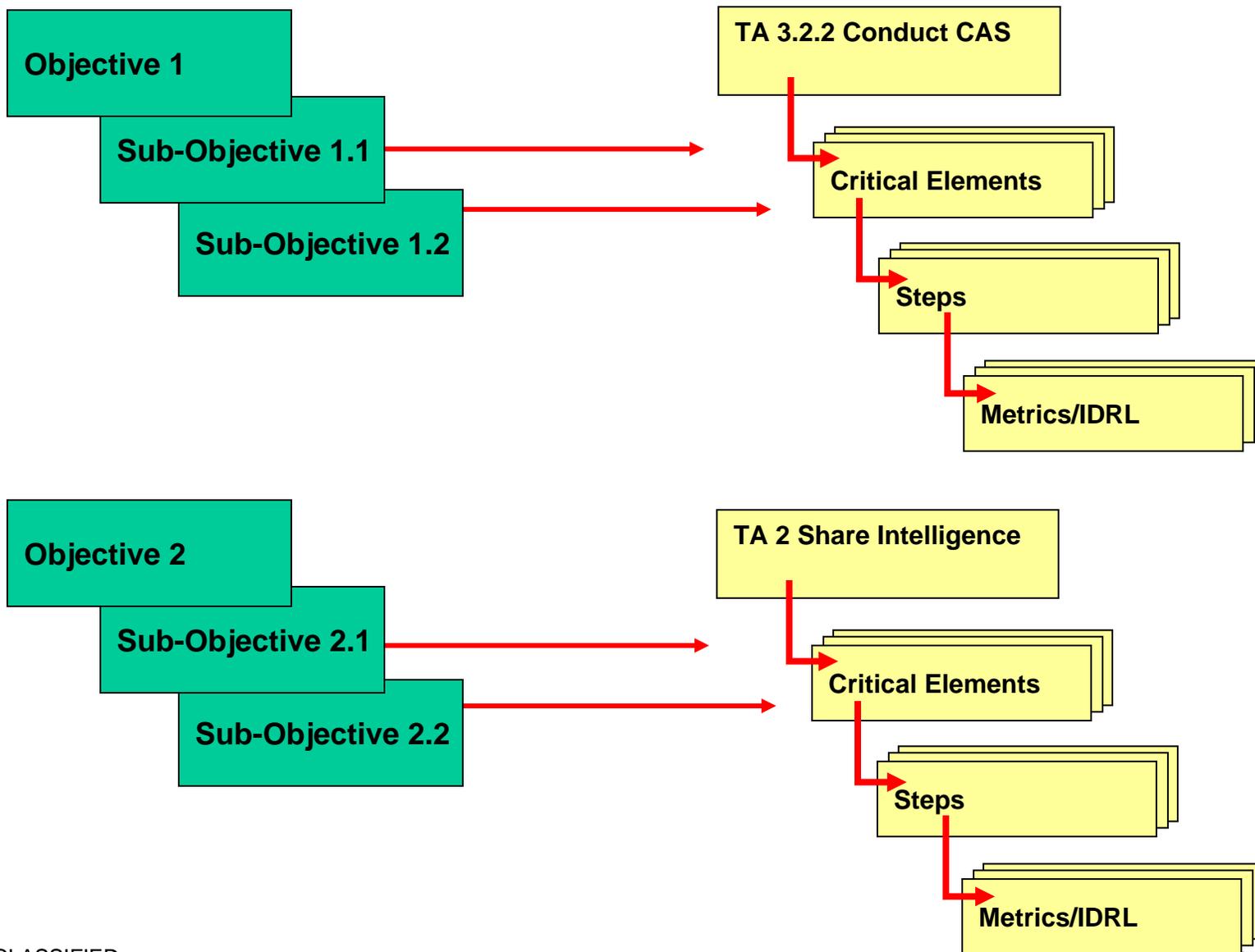
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- ...

Conceptual Model, Metrics and IDRL can grow iteratively with input/feedback from exercises, lessons learned, etc.

Notional Assessment Against Multiple UJT



Conclusion

- The use of conceptual models that involve UJTs amplified with JTAs and DoDAF OV/SVs provide a powerful tool for development of reusable assessment plan templates
- Should have recognition by DoD C/S/A
- JFIIT way-ahead: focus on enhancing all joint fires related UJTs with JTA/OV/SVs

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