



An Instrumentation Capability for Dynamic Targeting C-038

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JOHNS HOPKINS

U N I V E R S I T Y

Applied Physics Laboratory

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- **The Problem:** There is no efficient means to collect, store, correlate, and retrieve key information items needed to **reconstruct** a time history of activities and events that occur during real-time CAOC operations to answer the question “What happened ?”
 - **The Need:**
 - A means to capture and archive time-stamped information from multiple CAOC operational sources,
 - Algorithms to support correlation of events, and fusion of data
 - A means to visually portray both activities performed and decisions made for both operators and instructors alike.
 - **The Payoff:**
 - Enable experts to **assess what happened** during training and operational sessions,
 - Provide the information required to **improve process shortfalls**, identify training needs, and to highlight the things that are being done right
 - Support **archiving** for future after-action review (AAR)



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Active Initiatives

- CAOC Performance Assessment System (CPAS)
- Data Link Automated Reporting System (DIARS)
- Fast Master Air Attack Plan (FastMAAP)
- Video Imagery Capability Enhancement (VICE)
- Warfighters Edge (WEDGE)

Complete Initiatives

Only in existence eight years, the Command and Control Battlelab (C2B) has excelled at finding innovative ways to improve command and control technology, concepts, doctrine, tactics, techniques and procedures. Activated 1 April, 1997, the Battlelab's mission is to rapidly identify and prove the worth of innovative Command & Control ideas which improve the ability of the United States Air Force to execute its core competencies to support Joint Warfighting.

The C2B is one of seven [Air Force Battlelabs](#) established by the Chief of Staff of the Air Force in 1997 to validate high payoff concepts and initiatives with minimum cost and investment. In February, 1998, the C2B completed the first ever Battlelab initiative, ATO (Air Tasking Order) Visualization and Assessment.

While located at Hurlburt, the C2B frequently worked closely with the 503 Command and Control Wing and its predecessor, the C2 Training and Innovation Group. Recently, the C2B has moved to Langley AFB to work closely with the Air Force Command and Control Intelligence, Surveillance, Reconnaissance Center ([C2CIRISRC](#)) and its new transformation center.

Since its inception, the C2B has completed 27 initiatives, and is currently working on 9 more. Almost all the initiatives have been fielded in their original form or as part of a follow-on initiative. One initiative, Master Air Attack Plan (MAAP) Toolkit, proved very successful in eliminating "yellow sticky" linking of weapons to targets in an Air Operations Center (AOC). Before MAAP Toolkit, a paper wall chart of manually plotted targets was used by the MAAP cell to create mission planning worksheets, which were subsequently typed in the Theater Air Planner application within the Theater Battle Management Core System. MAAP Toolkit automates much of the MAAP process and helps build the air battle plan in a more intuitive and timely manner.

Currently, the C2B is undertaking its most ambitious effort to date, Theater Battle Operations Net-centric Environment ([TBOE](#)). It is designed to take the Air Operations Center's computer suite to new levels of effectiveness and simplicity. Its objectives include creating a single database to provide easy linking and analysis of data across all phases of Air Operations planning and execution processes, developing an open architecture for systems to leverage services and data, modernizing planning and targeting capabilities, and economizing AOC processes, while improving the overall quality of the air campaign plan. This very ambitious undertaking will be a major part of JOPF 2006 and promises to take AOC operations into the 21st century.

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- X1 was developed as a prototype to demonstrate the concept of AOC process instrumentation to support enhanced training.
- X1 was targeting at the TST process as applied at CAOC-N
- Primary data sources were the ADOCS process managers and the chat logs from IWS

CAOC PAS

Demonstrates a prototype "ACMI-like" instrumentation capability for Falconer instructor cadre. Enables near-real-time, end-to-end performance assessment and reconstruction of TST operations to support performance assessment.

CAOC PERFORMANCE ASSESSMENT SYSTEM (CPAS)

- CAOC PAS provides a means to collect and store time-stamped information in near real-time during TST operations.
- Develops and refines filters and algorithms that provide key information items required for Falconer crewmember situational awareness and performance assessment
- Provides an end-user defined, near real-time presentation of time-lined activity information for presentation to individuals and groups during post-mission operations



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BY ORDER OF
SECRETARY OF THE AIR FORCE

13 December 2004

**AIR FORCE OPERATIONAL
TACTICS, TECHNIQUES,
AND PROCEDURES**

2-3.2



Air and Space Operations Center



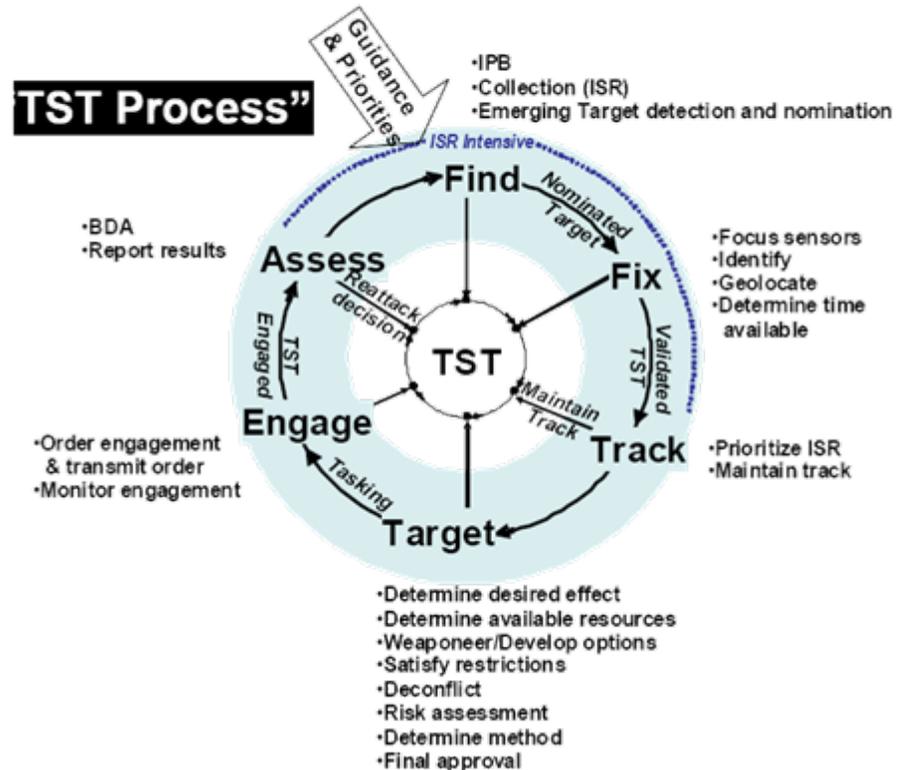
UNCLASSIFIED

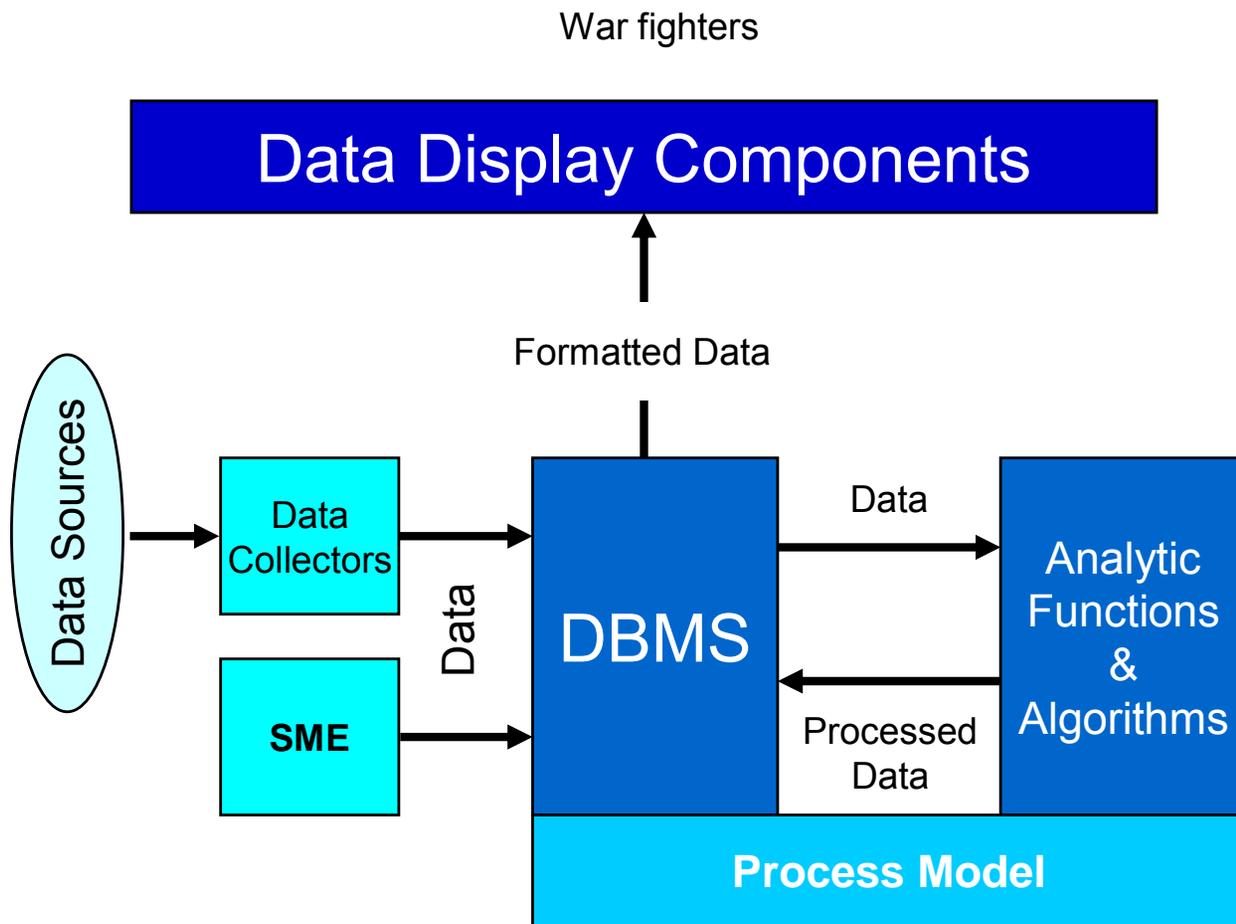
5.3.10.1 Dynamic Targeting Cell (DTC). This team will consist of the expertise and tools to enable the JAOC to direct execution of Time Sensitive Targets, Dynamic Targets, Emerging Targets, Re-roles and Re-targets outside of pre-planned targeting within the ATO ... **One team using a standard set of process and tools enables efficient execution of multiple targets types within the ATO cycle.**

AFOTTP 2-3.2, 13 DECEMBER 2004

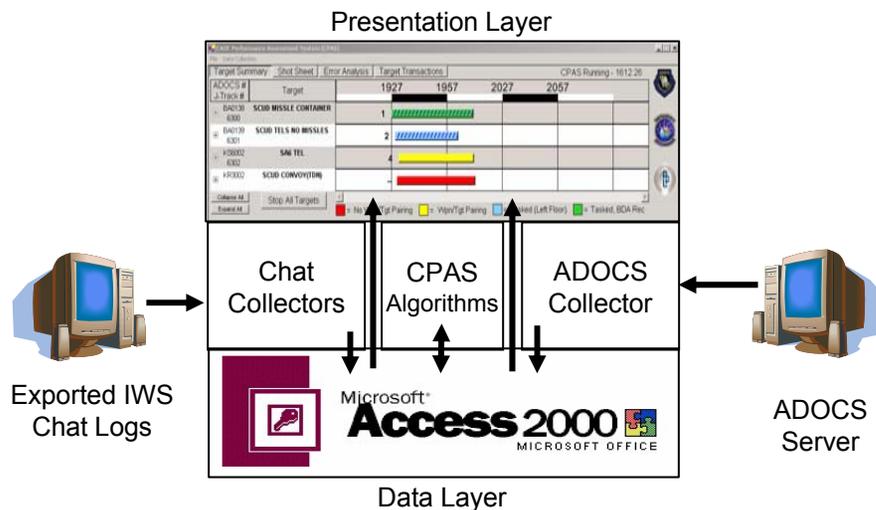
5-41

Figure 5.4 TST Process

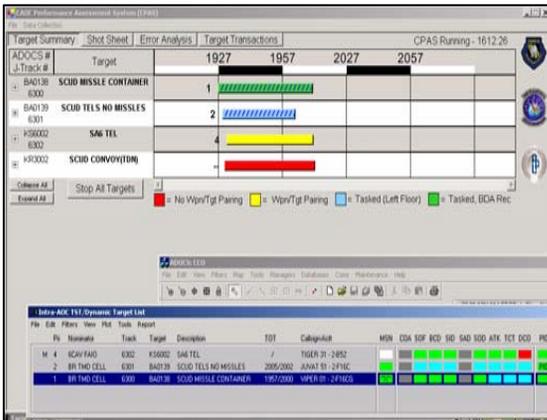




- Developed in Microsoft Visual Studio (IDE) using Microsoft .NET Software Framework
 - 3 logical constructs of software: collectors, algorithms, user interface
 - Built on top of MS Access (DBMS)
- Multiple versions based on data sources and end-users
 - X-1: collects data from ADOCS only. Presentation designed for CAOC-N Instructors (X-1+ adds IWS chat data)



- Maintains Status Monitor of TST missions in near real-time



- Creates and Exports Summary of Target Activity

*Start ID	*End ID	*Target Desc (1)	*Target Desc (2)	*ISS Mode	*Code / COE	*ID	*Task/CS/Phs	*CC Mode	*Ex	*ETOT	*IDA	*Res
	1991	S&W TEL	S&W TEL(TEN)	K50002	1942-0942							
	1929	SCUD CONVOY(TEN)		K50002								
	1927	SCUD MISSILE CONTAINER	SCUD MISSILE CONTAINER	BA0139	1942-0942		1908/1908/1908	01/2-F16				1942
	1929	SCUD TEL NO MISSILES	SCUD TEL NO MISSILES	BA0139	1942-0942		1908/1908/1908	01/2-F16				1904 - 0
	1901	SCUD TEL NO MISSILES	SCUD TEL NO MISSILES	BA0139	1942-0942		1908/1908/1908	01/2-F16				1940 - 0

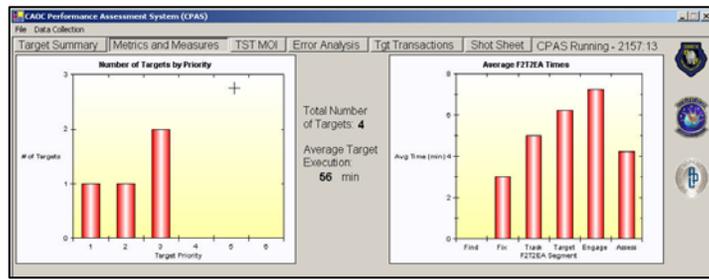
- Summary of Anomalies
- ADOCS "Status Light" Slide Bar
- ADOCS "Remarks" Search Engine

ADOCs #	Target	Procedural	Decision	Assignment	Chat	Total	Notes
K50002	S&W TEL	0	0	0	1	1	
K50002	SCUD CONVOY(TEN)	0	0	0	1	1	
BA0139	SCUD TEL NO MISSILES	0	0	0	1	1	
BA0139	SCUD MISSILE CONTAINER	0	0	0	4	4	



- "Drill-down" to **F2T2EA** Details for any Target

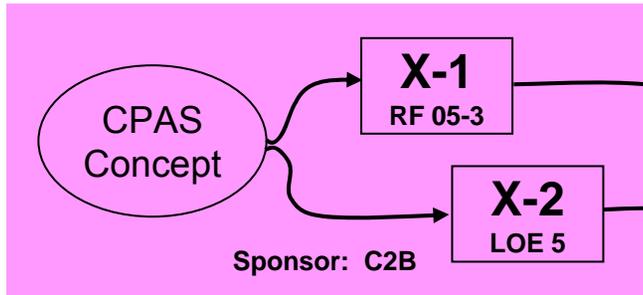
- Calculates TST measures and metrics of interest



- Elementary search engine for IM chat dialogue

The screenshot shows the chat search interface with the following details:

- Event:** PID Green
- Time:** 09/13/2005 14:23
- Duty Position:** CCO
- Chat Log:**
 - 09/13/2005 14:15 SIDO (TST Ops): Working on PID for BA0039
 - 09/13/2005 14:24 SIDO (TST Ops): PID on Target has gone Green
 - 09/13/2005 14:25 TSTCH (TST Ops): Roger
 - 09/13/2005 14:30 ATTACK (TST Ops): Tasking on BA0039 is ready
 - 09/13/2005 14:31 SODO (TST Ops): ATTACK: New SOF position updates requires re-evaluating current tasking on BA0039
 - 09/13/2005 14:35 CCO (CCO): BA0039 has left the floor
 - 09/13/2005 14:35 JFACC (CCO): CCO: Roger on BA0039

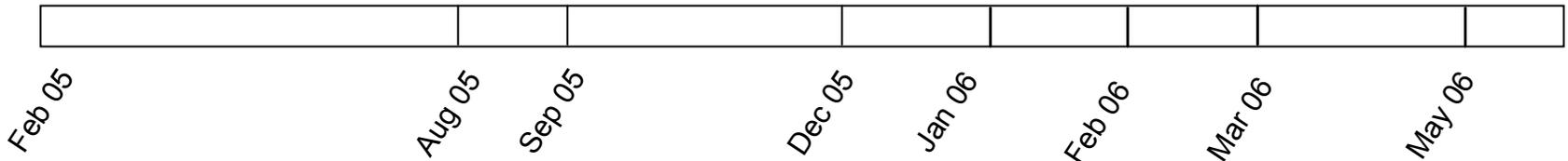


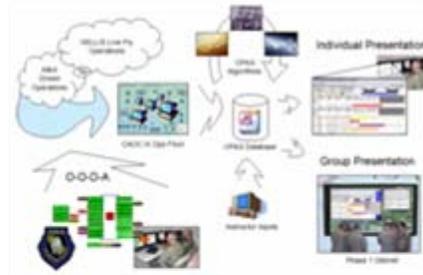
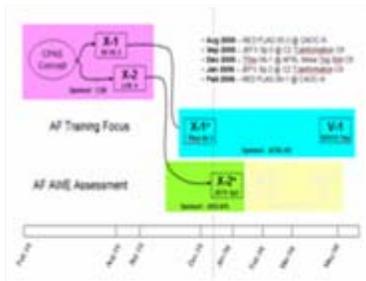
- **Aug 2005** – RED FLAG 05-3 @ CAOC-N
- **Sep 2005** – JEFX Sp 0 @ C2 Transformation Ctr
- **Dec 2005** – TRex 06-1 @ AFRL Mesa Tng Rsh Ctr
- **Jan 2006** – JEFX Sp 2 @ C2 Transformation Ctr
- **Feb 2006** – RED FLAG 06-1 @ CAOC-N
- **May 2006** – JEFX Post Processing @ AFEO

AF Training Focus



AF AWE Assessment





• Calculates Status Number of WFT indicators to view real-time



• Creates and Exports Summary of Target Activity



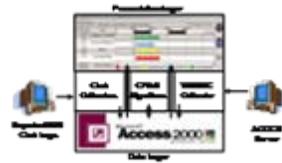
• Summary of Anomalies
• ACCCS "Threat Light" Error Bar
• ACCCS "Remarks" Branch Engine



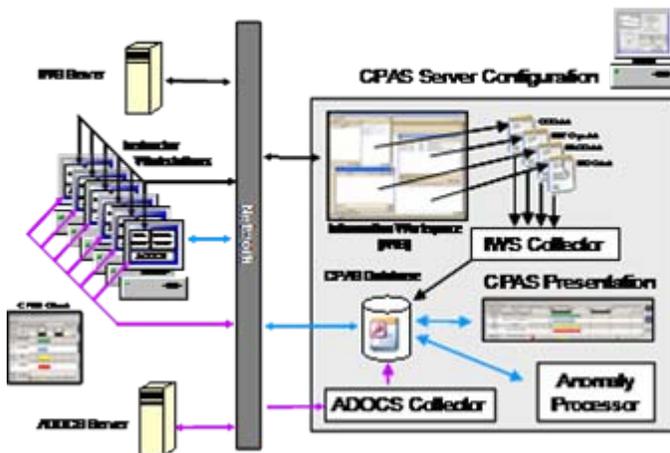
• Calculates TDF accuracy and weights of interest



• Displays search engine for IM chat dialogues



X1



V1

Phase	Anomaly Type	Description
All	Procedural	Incorrect duty position changing block (need link)
All	General	AnyRed Block
All	Procedural	CDE Green and Moving Indicator Checked
Find	Procedural	Data Entered into TDF after target moved to DIL
Fix	Procedural	Target Description Update in DIL
Fix	Procedural	No Priority assigned in DIL before MSN Status = Blue
Fix	Procedural	No Source data before MSN Status = Blue
Fix	Procedural	No JIP assigned before MSN Status = Blue
Fix	Procedural	No Coordinate Accuracy (ADCCS: Testing Accuracy) before MSN Status = Blue
Target	Procedural	(Track Loc Friendly) EMPTY before MSN Status = Blue
Target	Procedural	(Threat Remarks) EMPTY before MSN Status = Blue
Target	Decision	ACC Callign before PID Green in DIL
Target	Decision	AnyRed Block when MSN Status = Blue
Target	Procedural	Any yellow or blue block when MSN Status = Blue
Engage	Decision	MSN Status = Blue before ACC Callign
Engage	Procedural	No ADOT before MSN Reason = Complete
Assess	Procedural	No BDA Status after MSN Reason = Complete

CPAS V1 Database Repository : Database (Access 2000 file format)

Objects	Name	Modified	Created	Type
Tables	Create table in Design view			
Queries	Create table by using wizard			
Forms	Create table by entering data			
Reports	ADOCs	4/22/2006 4:11:20 PM	2/2/2006 11:31:26 AM	Table
Pages	Anomalies	3/29/2006 9:57:06 AM	3/28/2006 9:48:54 AM	Table
Macros	Chat	2/6/2006 2:12:15 PM	2/6/2006 11:31:08 AM	Table
Modules	UserEvent	2/24/2006 12:11:32 PM	2/2/2006 11:29:52 AM	Table
	UserNotes	2/10/2006 3:59:57 PM	2/2/2006 10:49:10 AM	Table
	Users	2/8/2006 11:20:52 AM	2/8/2006 11:20:36 AM	Table
	UserThread	3/8/2006 3:17:51 PM	2/2/2006 11:13:37 AM	Table

Multiple small screenshots showing various data tables and reports within the CPAS V1 Database Repository, including views of 'Tables', 'Queries', and 'Forms'.

CAOC Performance Assessment System (CPAS) - BA0039

SA 6 TEL - BA0039

CPAS Running - 1607:06

Location: 525X147413295

Return to Event Summary

Relative Time: Display F12/E4 Events

Development	Find	Fix	Track	Target	Engage
1416	1416	1423	1436	1436	1500
1416	1423	1436	1436	1500	1510

CAOC Performance Assessment System (CPAS)

File

Event Summary | Event Sheets | Anomalies | Chat | CPAS Running

ADOCs #	J-Track #	Event	Pri	1415	1445	1515	1515
BA0041	J14454	MLRS ROCKET LAUNCHER	3				
BA0039	J12334	SA 6 TEL	2				
BA0042	J33345	SA 8 TEL	3				
BA0040		SCUD Convoy					
BA0040	J13334	SCUD TEL	1				

Legend: ■ = No Wpn/Tgt Pairing ■ = Wpn/Tgt Pairing ■ =

Notes: [New Note] [Username] [ADOCs #] [Clear] [Add]

Control Panel: [Clear ADOCs Database] [New Records: 0] [Files to Update: 0] [Update Collection Rate: 10 sec]



Chat Search

Chat Rooms: DTG: [10/13/05 17:16:51] Search String (supports boolean AND and OR)

Search Results:

- 10/13 14:15: TST Ops: SIDO Working on PID for BA0039
- 10/13 14:24: TST Ops: SIDO PID on Target has gone Green
- 10/13 14:25: TST Ops: SIDO: RIDER: RIDER
- 10/13 14:30: TST Ops: ATTACK Tapping on BA0039 is ready
- 10/13 14:31: TST Ops: SIDO: ATTACK: New SDF position updates requires reevaluating current taking on BA0039
- 10/13 14:35: CCO: CCO: BA0039 has left the room
- 10/13 14:35: CCO: JFACC: CCO: RIDER on BA0039
- 10/14 12:10: TST Ops: SIDO: TEST
- 10/14 12:20: TST Ops: TSTCH: Testing my connection

CPAS Running - 1737:32

Event Summary	Event Sheets	Anomalies	Chat	CPAS Running
ADOCs #	J-Track #	Event	Pri	1415
BA0041	J14454	MLRS ROCKET LAUNCHER	3	
BA0039	J12334	SA 6 TEL	2	
BA0042	J33345	SA 8 TEL	3	
BA0040		SCUD Convoy		
BA0040	J13334	SCUD TEL	1	

Legend: ■ = No Wpn/Tgt Pairing ■ = Wpn/Tgt Pairing ■ =

Notes: [New Note] [Username] [ADOCs #] [Clear] [Add]

Control Panel: [Clear ADOCs Database] [New Records: 0] [Files to Update: 0] [Update Collection Rate: 10 sec]

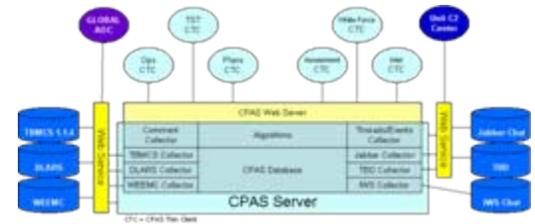
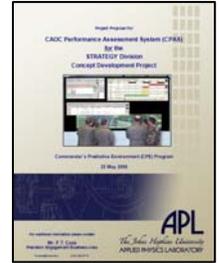
-
- CPAS will enable a transformation in AOC training.
 - Training feedback will no longer be based solely on the perceptions of the instructor and the student.
 - Objectively measured facts will be available from the CPAS data store
 - CPAS is a training-force multiplier.
 - CPAS will provide an automatic collection and compilation of the required data.
 - No longer will instructors be forced to spend valuable training time collecting process data for reconstruction.
 - Instructors will be afforded time to observe and interact and have a more continuous perception of the training environment
 - CPAS is a test and experimentation tool
 - The use of a CPAS instrumentation tool during experiment execution assessment (such as in a JEFX), or during CAOC weapon system operational test and evaluation (OT&E) will reduce work-load on data collectors and enhance the quality of the assessment by providing pedigreed information to the analysts quicker, more complete, and more accurate.

- CPAS Technology Development for the Strategy Division
 - Domain: C2 Research & Development
 - Sponsor: CPE Program (AFRL/IF & AFRL/HE)

- Net-Centric CPAS initiative for JEFX 2008
 - Domain: C2 Experimentation
 - Sponsor: AFC2ISRC (AFEO)

- CPAS V1 to support AOG Unit Training
 - Domain: C2 Operational Training
 - Sponsors: ACC/A3 (DOY) & AFRL/HEA

- CPAS instrumentation for C2 Test & Evaluation
 - Domain: C2 Test & Evaluation
 - Sponsor: TBD



BACKUP SLIDES

ADOCS: SIDO

File Edit View Filters Map Tools Managers Databases Coms Maintenance Help

Local: 22:25 2/23/2006
Zulu: 22:25 2/23/2006

Overlays: \ADOCS\Overlays

Scale: 50
FOV: 80

Targeting Information

Time Received or Entered: 131452SEP2005
JTIDS Track No: J13333A
Type: SCUD
Echelon: F100
Nomination: BR TMD CELL
Grid: BAF1

Mission Information

Mission No: 0029
Package Id: 001
Call Sign: TASTY 11
Aircraft: F15C
Mission Type: F15C
ATO On or NET: 2
ATO Off or NLT: 2
ETTE (hrs):
SCL: DTG: DTG Assigned: ATO Assigned

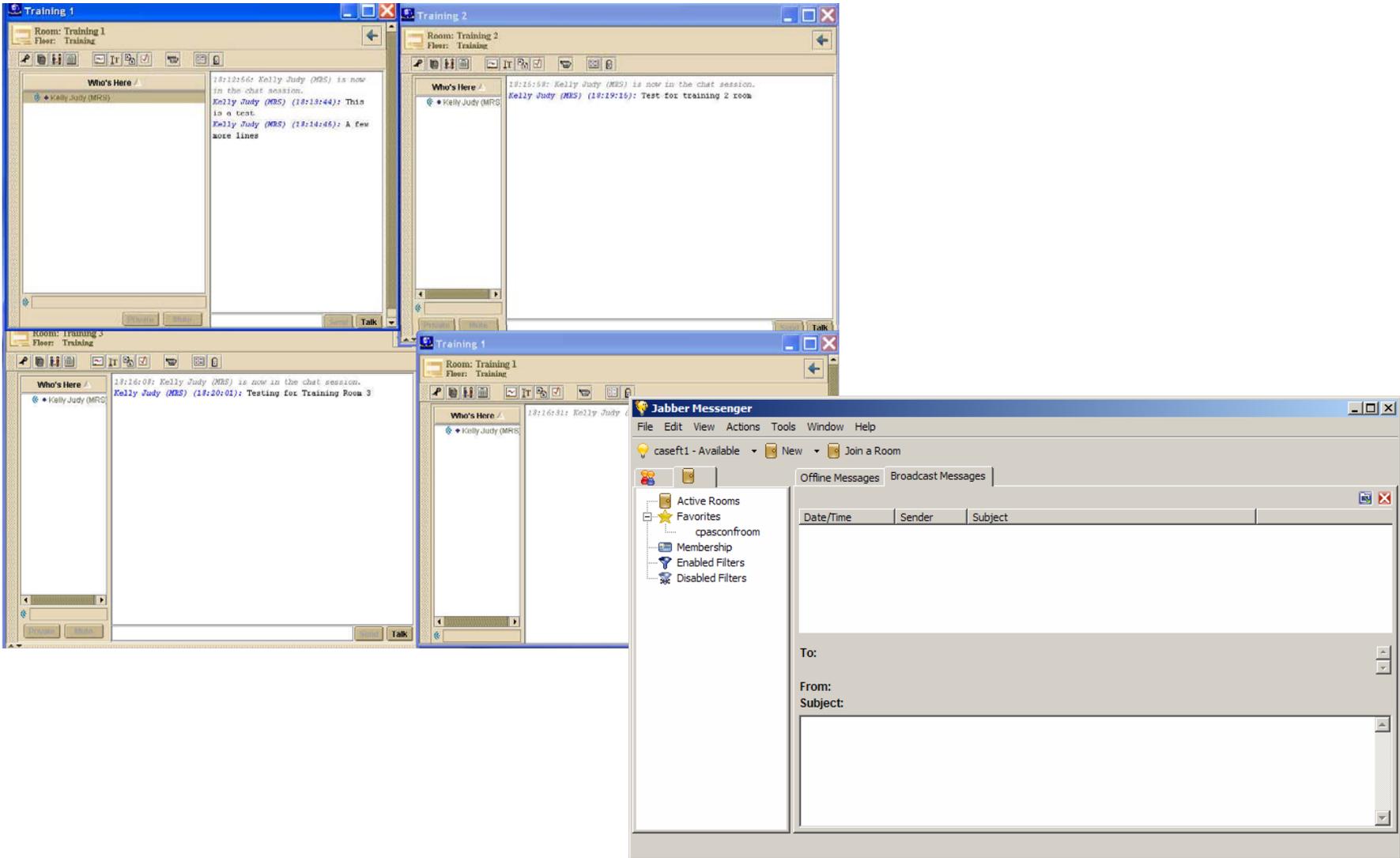
Status

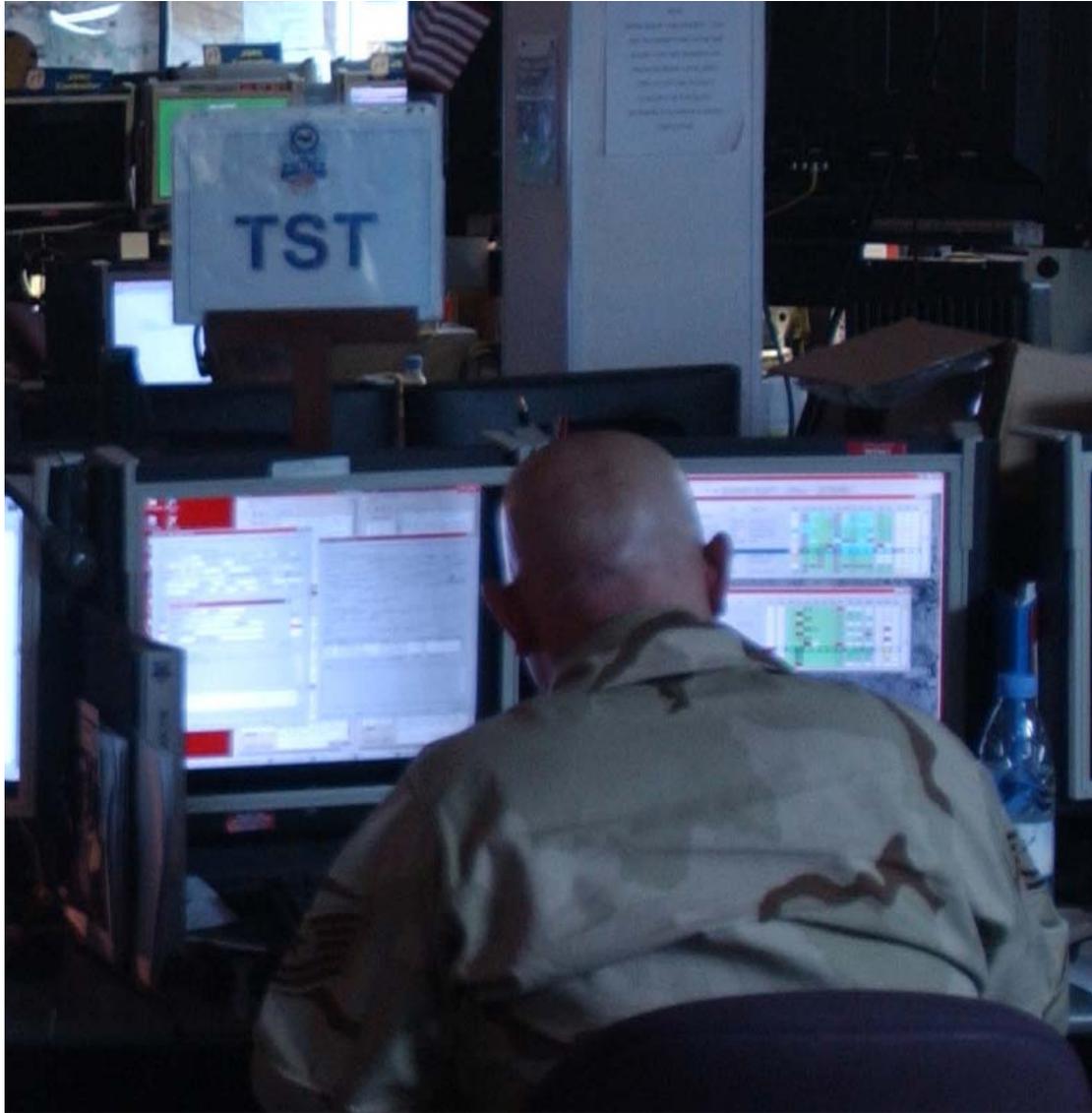
Coordination	Status	Reason or Status
Coalition Forces (COA)	GR	GR
Special Operations Forces (SOF)	GR	GR
Believed Coord. Detachment (BCD)	GR	GR
Senior Intelligence Duty Officer (SIDO)	GR	GR
Senior Air Defense Officer (SADO)	GR	GR
Senior Offensive Duty Officer (SODO)	GR	GR
Attack Coordinator (ATK)	GR	GR
Time Critical Target (TCT)	GR	GR
Director Combat Operations (DCO)	GR	GR
Status	GR	GR
Positive Identification (PID)	GR	GR
Collateral Damage Estimate (CDE)	GR	GR
Mission Status (MSN)	GR	GR

Intra-AOC TST/Dynamic Target List

File Edit Filters View Plot Tools Report

Pri	Nominator	Track	Target	Description	TOT	Callsign-Acft	MSN	COA	SOF	BCD	SID	SAD	SOD	ATK	TCT	DCO	PID	CDE	CM	BDA	CA
3	BR TMD CELL	J33345	BA0042	SA 8 TEL	/	HUNT 01 - F-16C															
M 3	BR TMD CELL	J14454	BA0041	MLRS ROCKET LAUNCHER	/	VIPER 31 - F-16A											PID				
1	BR TMD CELL	J13334	BA0040	SCUD TEL	1455/1453	MONKEY 51 - F/A-18	EXE										PID	CDE			
2	BR TMD CELL	J12334	BA0039	SA 6 TEL	1500/1510	TASTY 11 - F-15E			EXE								PID	CDE			





Intra-AOC TST/Dynamic Target List

File Edit Filters View Plot Tools Report

Pri	Nominator	Track	Target	Description	TOT	Callsign-Acft	MSN	COA	SOF	BCD	SID	SAD	SOD	ATK	TCT	DCO	PID
M 4	6CAV FAID	6302	KS6002	SA6 TEL	/	TIGER 31 - 2-B52											
2	BR TMD CELL	6301	BA0139	SCUD TELS NO MISSLES	2005/2002	JUVAT 51 - 2-F16C											PID
1	BR TMD CELL	6300	BA0138	SCUD MISSILE CONTAINER	1957/2000	VIPER 01 - 2-F16CG	X										

ADOCS

CAOC Performance Assessment System (CPAS)

File Data Collection

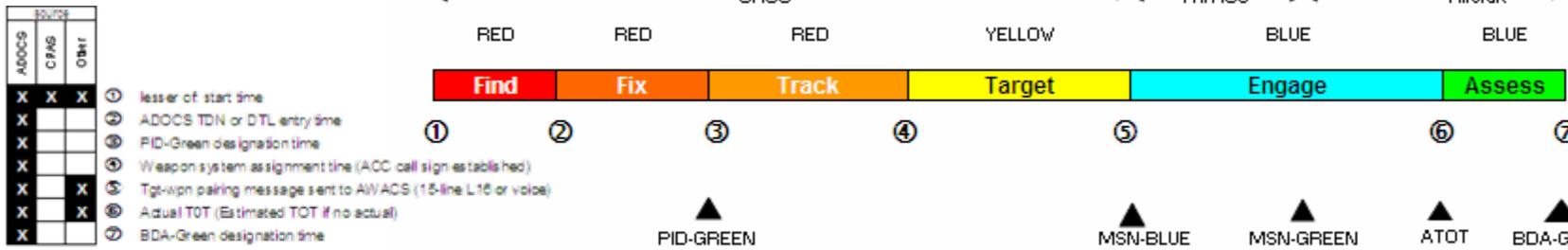
Target Summary | Shot Sheet | Error Analysis | Target Transactions

CPAS Running - 1612:26

ADOCS #	J-Track #	Target	1927	1957	2027	2057
+	BA0138 6300	SCUD MISSILE CONTAINER	1	[Green Bar]		
+	BA0139 6301	SCUD TELS NO MISSLES	2	[Blue Bar]		
+	KS6002 6302	SA6 TEL	4	[Yellow Bar]		
+	KR3002	SCUD CONVOY(TDN)	-	[Red Bar]		

■ = No Wpn/Tgt Pairing
 ■ = Wpn/Tgt Pairing
 ■ = Tasked (Left Floor)
 ■ = Tasked, BDA Rec

CPAS



CAOC Performance Assessment System (CPAS)
 File Data Collection
 BA0138 Shot Sheet Error Analysis Target Transactions CPAS Running - 1547:40

ADOCs # J-Track #	Target	Procedural Error	Decision Error	Anomalous Event	Chat Error	Total	Notes
KS6002 6302	SA6 TEL	1				1	
KR3002	SCUD CONVOY(TDN)					0	
BA0139 6301	SCUD TELS NO MISSLES	1				1	
BA0138 6300	SCUD MISSILE CONTAINERS	4				4	

8/29 1934 - CCO - Turned PID Green when Target moving (Time Moving Set: 1934)

Target: 6301 - BA0139
 Error Category: Procedural
 Select Error Severity: Major
 Assign Severity

ADOCs: CCO
 File Edit View Filters Map Tools Managers Databases Coms Maintenance Help

Target Data Nomination
 File Edit Filters View Plot Tools Report

Cat	Tgt No	Nominator	BE No	D Suffix	Description	Pri	NLT	TD	TM	PID	CDE	CM	MCC	ACC	TF7	SOF	CDR
DT	KS6002	6CAV FAID			SA6 TEL												
EMG	KR3002	3ACR REAR CP			SCUD CONVOY												
HVT	BA0139	BR TMD CELL			SCUD TELS NO MISSL												
IM	BA0138	BR TMD CELL			SCUD MISSILE CONTAI												

Intra-AOC TST/Dynamic Target List
 File Edit Filters View Plot Tools Report

Pri	Nominator	Track	Target	Description	TOT	Callsign-Act	MSN	COA	SOF	BCD	SID	SAD	SOD	ATK	TCT	DCO	PID	CD
M 4	6CAV FAID	6302	KS6002	SA6 TEL	/													
2	BR TMD CELL	6301	BA0139	SCUD TELS NO MISSLES	/	BUICK 41 - 2-F15E											PID	IN
1	BR TMD CELL	6300	BA0138	SCUD MISSILE CONTAINER	/	VIPER 01 - 2-F16CG												

CAOC Performance Assessment System (CPAS)
 File Data Collection

BA0139 | Shot Sheet | Error Analysis | Target Transactions | CPAS Running - 1608:39

SCUD TELS NO MISSILES | ADOCS# BA0139 | J-Track# 6301 | Priority 2 | BE# | Location 370422.15N 1160601.32E | Return to Target Summary

Relative Time | Show Moving

Timeline: 1928 (Find) | 1931 (Fix) | 1934 (Track) | 1955 (Target) | 1958 (Engage) | 2002

Tasks: PID Green, 1st Task, Last Task, MSN Green, ATOT

ADOCS | Chat | Link 16 Messages | Target DMPs | Assets Tasked

DTL Manager Remarks

Enter search string:

Enter search time: hhmm

Search Remarks | Check All | Check None | Clear Remarks

DTL Manager Display

Pri	Nominator	Track	Target	Description	TOT	Callsign-Act	MSN	SDD	SDF	BCD	SID	SAD	SOD	ATK	TCT	DCD	PID	CDE	CM	BDA	CA
2	BR TMO CELL	6301	BA0139	SCUD TELS NO MISSILES	2005/	JUVAT 51 - 2-F16C	█	█	█	█	█	█	█	█	█	█	PID INT				

Time: 2000 | Playback Speed:

Enter Time (0000): Find Time

BA0139 -- 6301 -- SCUD TELS NO MISSILES

ADOCs MSN Status	Initial Times	F2T2EA Durations
█	Start	Find 3 min
TOT Times	Find	Fix 3 min
ETOT 2005	TDN 1928	Track 21 min
ATOT 2002	DTL 1931	Target 3 min
Tasking		Engage 4 min
Current JUVAT 51	1955	Assess 0 min
Past TASTY 11	1954	Total 34 min



Create "Shot Sheet" Summary of Target Activity and Export to Excel Spreadsheet

CAOC Performance Assessment System (CPAS)

File Data Collection

BA0138 Shot Sheet Error Analysis Target Transactions CPAS Running - 1548:38

Edit Mode: Read Only Edit

Print... Export... Generate Presentation

	*Start (Z)	*Find (Z) TDN (Z) DTL (Z)	*Target Desc (1) Taret Desc (2) Target Desc (3)	*ISR Node ADOCs # J-Track #	*Cde / COE Decon(Y/N) PID (Z)	* (Z) Task/CS/Wpn Task 2 Task 3	*C2 Node Tx (Z) Method	*Rx Time Method	*ETOT ATOT	*EDA Res Notes
+		1931 1933	SA6 TEL SA6 TEL(TDN)	KS6002 6302	1943-Cyan- 1943					1940 - S
+		1929	SCUD CONVOY(TDN)	KR3002	--					
+		1927 1930	SCUD MISSILE CONTAINER SCUD MISSILE CONTAINER(TDN)	BA0138 6300	1942-Green- 1933	1938/TGT/VIPER 01/2-F16	1942			
+		1928 1931	SCUD TELS NO MISSLES SCUD TELS NO MISSLES(TDN)	BA0139 6301	1934-Yellow-INT 1934	1941/SMK/BUICK 41/2-F15				1934 - S 1940 - S

	A	B	C	D	E	F	G	H	I	J	K
1											
2	Start (Z)	FIND (Z)	Target Desc (1)	Tgt #	ISR Node	Cde / COE	(Z) Task / Callsign / Wpn	C2 Node	Rx	ETOT	BDA Results
3		TDN (Z)	Target Desc (2)		ADOCs #	Decon (Y/N)	Task 2	Tx (Z)	Time	ATOT	Notes
4		DTL (Z)	Target Desc (3)		J-Track #	PID (Z)	Task 3	Method	Method		
5											
6											
7											
8											
9											
10											

- Correlates milestone events with IM chat dialogue

CAOC Performance Assessment System (CPAS)
File Data Collection
BA0039 Error Analysis Shot Sheet Target Transactions TST MOI Metrics Chat CPAS Running - 1445:04

Select Chat Room: [Dropdown] Select Duty Position: CCO Previous Search [Button]
Select DTG: 09/13/2005 14:23 +/- 15 mins Enter Search Text: [Text] Search [Button]

Event: PID Green
Time: 09/13/2005 14:23
DutyPosition: CCO

- 09/13/2005 14:15 SIDO (TST Ops): Working on PID for BA0039
- 09/13/2005 14:24 SIDO (TST Ops): PID on Target has gone Green
- 09/13/2005 14:25 TSTCH (TST Ops): Roger
- 09/13/2005 14:30 ATTACK (TST Ops): Tasking on BA0039 is ready
- 09/13/2005 14:31 SODO (TST Ops): ATTACK. New SOF position updates requires re-evaluating current tasking on BA0039
- 09/13/2005 14:35 CCO (CCO): BA0039 has left the floor
- 09/13/2005 14:35 JFACC (CCO): CCO: Roger on BA0039

CAOC Performance Assessment System (CPAS)
File Data Collection
BA0039 Error Analysis Shot Sheet Target Transactions TST MOI Metrics Chat CPAS Running - 1443:56

SA 6 TEL
ADOCs# BA0039 J-Track# J12334 Priority 2 BE# Location 52SCH0147613205 Return to Target Summary

Relative Time Show Moving

Timeline: 1416 (Fix) - 1423 (Track) - 1426 (Target) - 1455 (Engage) - 1510 (Assess) - 1518 (Assess)

ADOCs Chat L PID Green Time: 1423 DutyPosition: CCO

DTL Manager Remarks

- Target Data
- Engagement
- Coord
- Package
- Collection
- BDA
- Assess
- Weather
- JTIDS
- TDN

Enter search time: [hh:mm] Search Remarks [Button] Check All [Button] Check None [Button] Clear Remarks [Button]

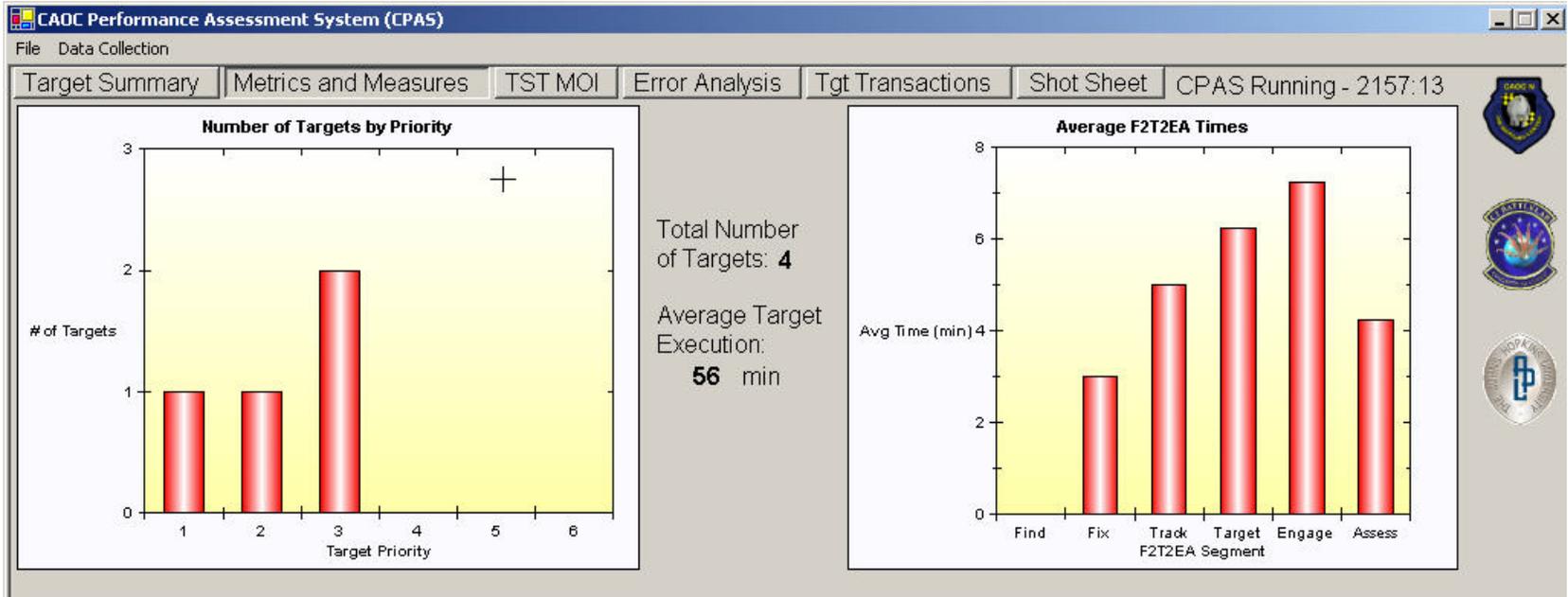
DTL Manager Display

Phi	Nominator	Track	Target	Description	TOT	Calign-Acft	MSN	SOD	SOF	BCD	SID	SAD	SDD	ATK	TCT	DCO	PID	CDE	CM	BDA	CA
2	BR TMD CELL	J12334	BA0039	SA 6 TEL	/	-															

Time: 1416 Playback Speed: [Dropdown]

Enter Time (0000): [Text] Find Time [Button] [Play] [Stop]

- These were measures of interest for CAOC-N instructors at RED FLAG 05-4.2
 - Number of targets prosecuted listed by their priority number
 - Total number of targets prosecuted
 - Average time of target prosecution
 - Average time a target stayed in each kill chain segment

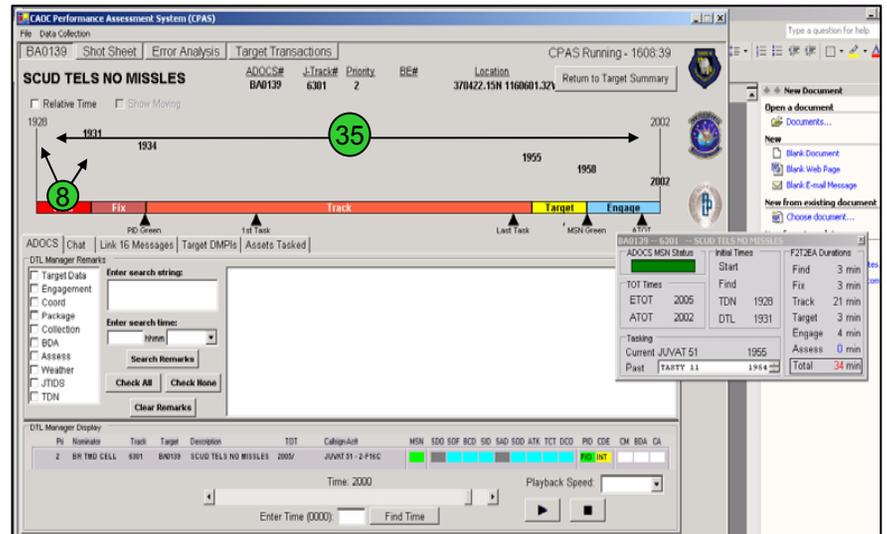
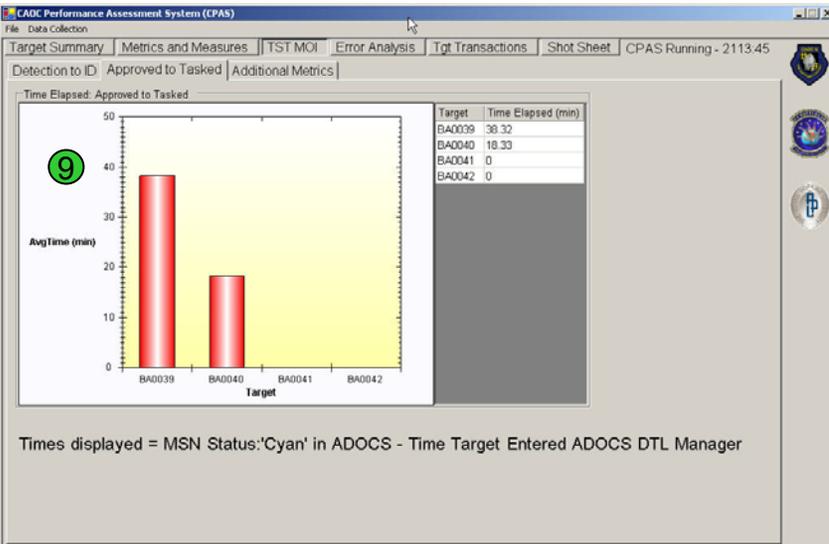
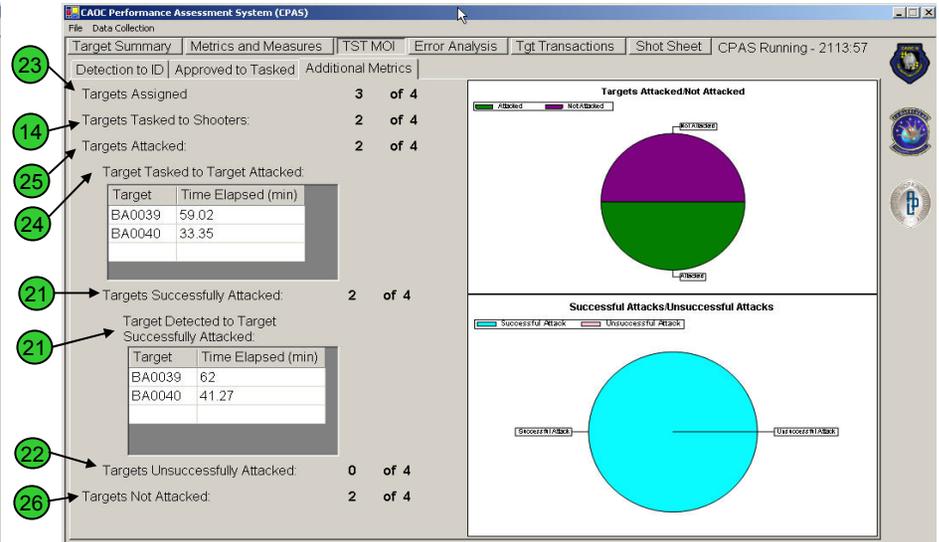
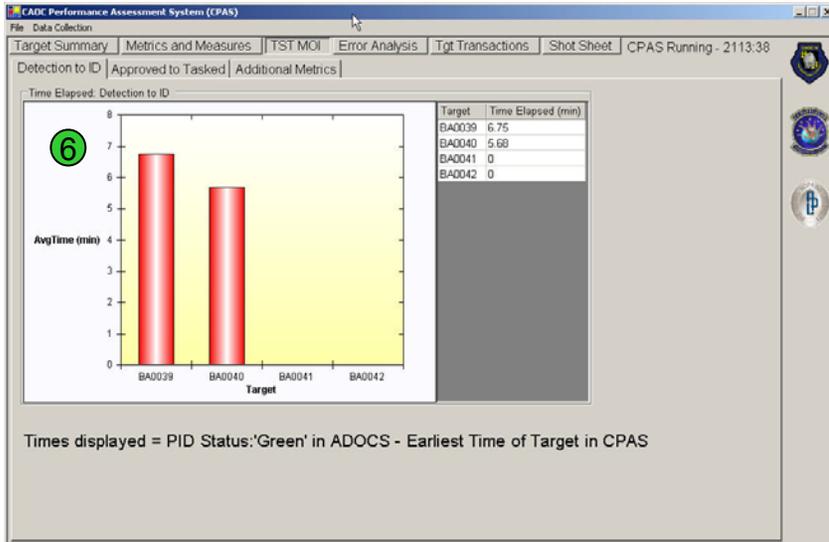




TST Measure of Interest	
1	Detected entities correctly identified (%)
2	Detected entities incorrectly identified (%)
3	Detected entities reported without sufficient ID (%)
4	Source of detection and ID (entity name or node)
5	Source of ID error (entity name or node)
6	Detection to to ID (elapsed time)
7	ID to target nominated (elapsed time)
8	Target nominated to target approved (elapsed time)
9	Target approved to weapon tasked (elapsed time)
10	Positional accuracy of reported targets coordinates (TLE)
11	ISR reported targets on Track Data Nominator (quantity)
12	ISR reported targets on ITM-Dynamic Target List (quantity)
13	Completeness of ISR reported targets (%)
14	Targets tasked to shooters (quantity)
15	Targets tasked to shooters via data link (quantity)
16	Targets tasked to shooters via voice (quantity)
17	Targets tasked to shooters via both data link voice (quantity)
18	Target location provided verbally to shooters via coordinates or bullseye (quantity)
19	Target location provided verbally to shooters via talk-on from geographical features (quantity)
20	Target location provided via digital cueing-e.g., track number and SPOI (quantity)
21	Targets successfully attacked (quantity)
22	Targets unsuccessfully attacked (quantity)
23	Targets assigned (quantity)
24	Time from target tasked to target attacked (quantity)
25	Targets attacked (quantity)
26	Targets not attacked (quantity)
27	Time form target detected to target successfully attacked (elapsed time)
28	Unsuccessful Attacks: Attacked wrong enemy target (quantity)
29	Unsuccessful Attacks: Attacked friendly (quantity)
30	Unsuccessful Attacks: Other (quantity and characterization)
31	Cause of unsuccessful attacks: C2 error (quantity)
32	Cause of unsuccessful attacks: Aircrew error (quantity)
33	Cause of unsuccessful attacks: Environmental (quantity)
34	Cause of unsuccessful attacks: Other (quantity)
35	Timeliness of DT processing (time) ?

CPAS X-1 can calculate 34% of these measures of interest

- Green – can do now (12)
- Yellow – could do (7)
- White – harder to do - need additional collectors (15)
- Red – can't do (1)



<ol style="list-style-type: none"> White Force (instructors) provide initial intel input on possible target to TST cell Target is nominated as a potential TST and target info is entered into ADOCS TDN manager. Intel develops and refines targeting data. 	<h3>Find Fix</h3>
<ol style="list-style-type: none"> Target is classified as a TST by TST Chief and target info in TDN is moved into ADOCS DTL manager. Targeting data is developed for target folder by Intel cell and TST Targeting Duty Officer (TDO) Positive target ID is accomplished by the Intel cell Attack Coordinator searches ATO for available weapon platforms to be tasked to engage TST, ensures collateral damage estimate (CDE) complete and develops mission plan with TDO. Mission "package" is provided to TST cell chief for review of ROE. CCO or SODO approves tasking order Tasking order (<u>15-line text msg</u>) is drafted by C2DO and transmitted by GTC via Link-16 or voice to airborne controller (AWACS) 	<h3>Track Target</h3>
<ol style="list-style-type: none"> AWACS acknowledges receipt and passes info to weapon platform who accepts or rejects tasking. Acknowledgment is provided to C2DO with estimated TOT from the weapon platform Target is attacked 	<h3>Engage</h3>
<ol style="list-style-type: none"> Weapon platform provides MISREP to AWACS from fighter with actual TOT and BDA (if available). Target kill chain is complete 	<h3>Assess</h3>

