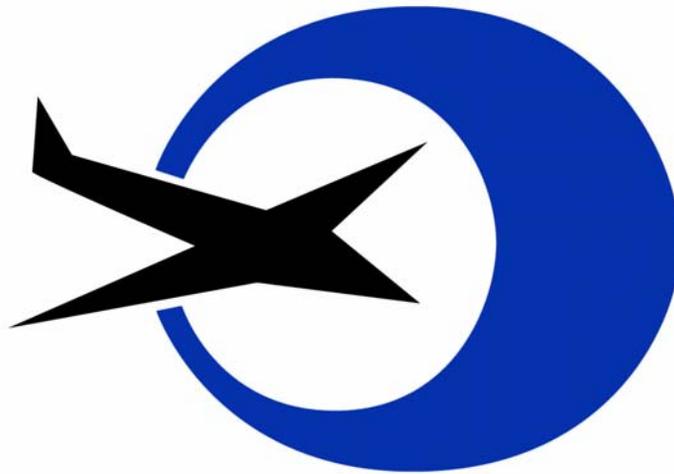




# ***Free Flight Status Report***



***October 2001***



# ***Free Flight Program Status Report***

## ***Introduction***

This status report provides an executive-level assessment of the programs managed within the Free Flight office. It focuses on significant topics reflective of current technical, schedule, cost and financial status.

The technical, schedule and financial data information presented in this report are as of October 31, 2001. Program financial data reflect the FY 2001 appropriation.

This report is designed to meet your needs. I am interested in your comments. Please direct comments to Anthony Willett, Free Flight Chief of Staff, at (202) 220-3300. His fax number is (202) 220-3312.

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John F. Thornton  
Acting Director, Free Flight



# ***Free Flight Program Status Report***

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# *Free Flight Program Status Report*

## *Program Assessment Matrix*

Capability Name	Team Leader	Technical Status	Schedule Status	Financial Status
FREE FLIGHT PHASE 1				
Collaborative Decision Making	Daniel Horton	G	G	G
User Request Evaluation Tool	Tom Spellerberg	G	G	G
Traffic Management Advisor/ CTAS Terminal	Mike Prichard (Acting)	G	G	G

**NOTE: Assessment criteria are discussed in Appendix B-1**



# ***Free Flight Program Status Report Program Overview***

The Free Flight program continues development of new air traffic management functionality. It sustains and enables initiation of a replacement program for existing infrastructure with a system that will allow integration and implementation of this new air traffic management functionality.

Advanced traffic flow functions are being developed to support real-time information exchange essential to furthering the progress toward FAA/industry collaborative decision making and the economics associated with implementing the concept called "Free Flight."

FFP1 is a subset of Free Flight designed to deploy five new core capabilities by the end of 2002. FFP2 builds on the success of FFP1 and will geographically expand deployment of URET and TMA. FFP2 will also address other mature capabilities (CPDLC and CRCT) and has an added research and development component consisting of 9 promising research projects.

Two of Free Flight Phase 1's core capabilities were completed ahead of schedule. The Surface Movement Advisor was completed ahead of schedule in December 1999. Collaborative Decision Making also was completed ahead of schedule on May 3, 2001.



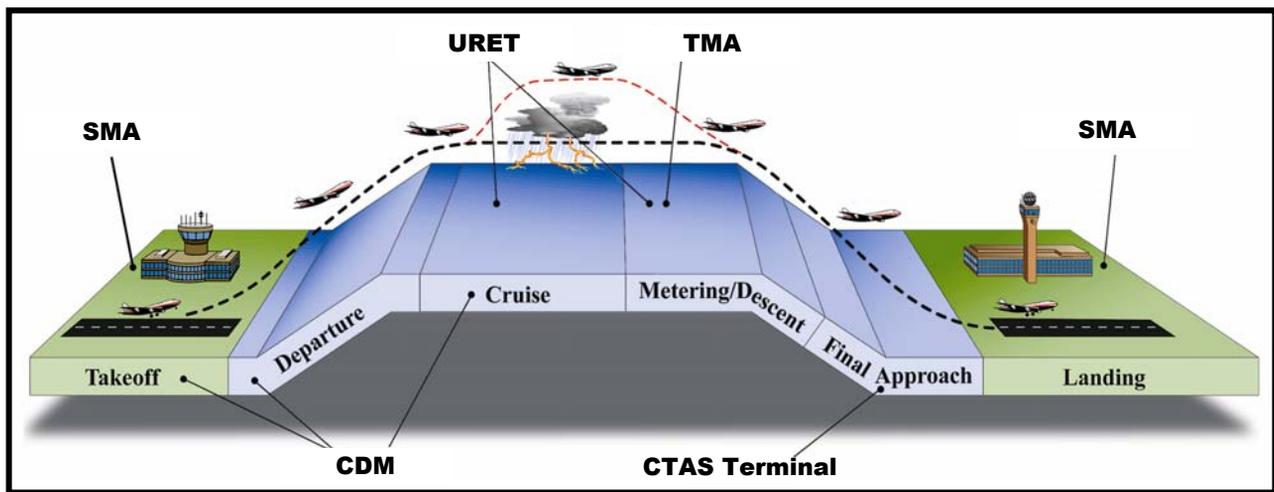
# Capabilities and Associated Flight Domains

- Average time flown from 40 nmi outside departure airport to 40 nmi outside arrival airport

- Flight time from 299 nmi range ring to meter fix
- Arrival delay (difference of planned time of arrival and actual time of arrival)

- Taxi times
- Gate delay

- Taxi times
- Gate delay



- Flight time (100 - 40 nmi from destination airport) during Ground Delay Program
- Average difference of planned time versus actual time (arrival time, departure time)

- Flight time from meter fix to runway threshold



# Collaborative Decision Making

*This element of Free Flight allows FAA traffic flow managers to work in near real-time with the airlines in responding to NAS congestion. These decision-support services will be introduced to the NAS as prototypes so that the FAA and users may test new functions in an operational context and provide feedback on their design and implementation.*

## Technical Status

Current  
Assessment



Previous  
Assessment

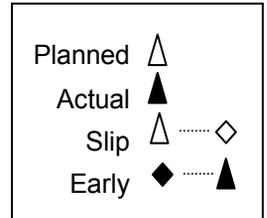
### Significant Accomplishments:

- The Initial Collaborative Routing component of CDM is complete. It enables traffic management specialists at the central Command Center, traffic management coordinators at high altitude centers, and airline operations centers conferencing with a shared view of real-time traffic flow situations. It also provides a way for users to display alternate routing around hazardous weather and airspace in special use.
- The Ground Delay Program Enhanced component of CDM is complete.
- The Runway Visual Range data availability program is complete. Runway Visual Range sensors provide visibility measurements for the touchdown, mid-point, and roll-out points on instrumented runways every two seconds. This information is being provided in a data table every minute to participating users.
- Runway Visual Range data is available from 35 airports to FAA traffic flow managers and CDM participating airlines as of September 30. RVR data from six additional airports will be available when Southern California TRACON completes installation of the TRACON patch panel. Events of September 11 and the associated maintenance moratorium prevented completion of the planned work at Southern California and Washington National TRACONS, now planned for November.
- The Free Flight Phase 1 Collaborative Decision Making Program is complete.

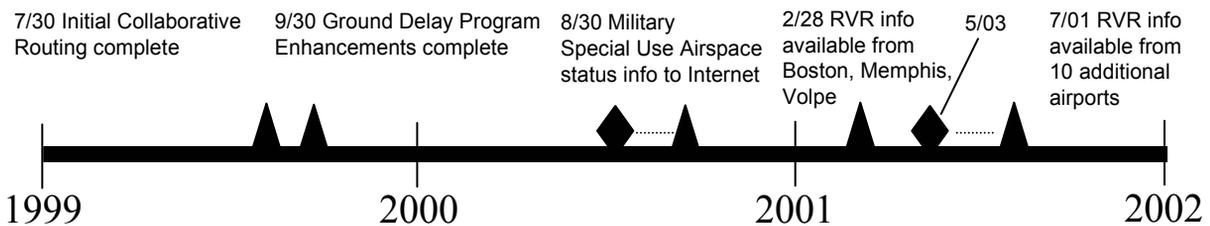


# Collaborative Decision Making Schedule Status

Current Assessment **G** Previous Assessment **G**



## Schedule:



## Near-Term Schedule:

Airport Configuration Data including active runways for approach and departure, types of departures and approaches, and remarks on safety and capacity became available	August 30, 2000	Complete
Runway Visual Range (RVR) operational test and evaluation to be conducted at the FAA Technical Center	January 30, 2001	Complete
RVR Quick Look Report, the preliminary test results from the operational test, became available	February 14, 2001	Complete
RVR information became available to users from Boston and Memphis airports	February 28, 2001	Complete
National Airspace Change Proposal permits additional airports to provide RVR information	April 30, 2001	Complete
RVR information available from 10 additional airports	July 31, 2001 May 03, 2001 (early)	Complete



# User Request Evaluation Tool

*URET is a decision-support tool. URET provides radar assistant (D-side) controllers with a strategic planning aid that predicts aircraft conflict 20 minutes into the future. The tool predicts whether an aircraft will violate minimum separation requirements with another aircraft or airspace. The tool allows the D-side controller to assist the radar controller in eliminating potential conflicts before the situation requires tactical maneuvering. The URET prototype is working at Indianapolis and Memphis air route traffic control centers. URET core capability limited deployment will be implemented at seven sites, including Indianapolis and Memphis.*

## Technical Status

Current  
Assessment



Previous  
Assessment

### Significant Accomplishments:

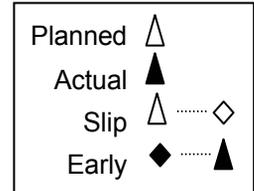
- Atlanta Center hardware installation was completed on October 19 in preparation for URET Initial Daily Use in the spring.
- The Government accepted the URET system at Kansas City Center on October 17.
- URET installation and checkout was completed at Chicago Center on October 29.



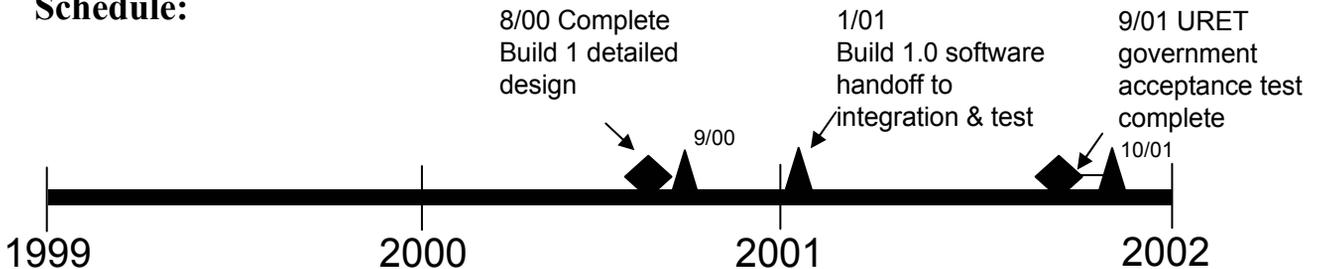
# User Request Evaluation Tool

## Schedule Status

Current Assessment **G** Previous Assessment **G**



### Schedule:



(Build 1.0 will provide all functionality identified by user team of air traffic controllers required for initial daily use.)

### Near-Term Schedule:

Weather and radar processor modification details provided to Lockheed Martin by the FAA to ensure compatibility of URET and the weather system input	November 1, 2000	Complete
Software development completed for Build 1. Build 2 will provide additional capability as an add-on to Build 1	January 5, 2001	Complete
Display System Replacement synchronization software completed (enables URET operation with the display system replacement)	March 23, 2001	Complete
WARP weather information system available at Kansas City	March 28, 2001	Complete (1 month early)
Kansas City installation and checkout completed	April 23, 2001	Complete (5 weeks early)
National Airspace System software (release A5f1.2) available for key site test. Release A5f1.2 is a software improvement that is necessary for URET to operate with the host computer	June 15, 2001	Complete
Kansas City Center Initial Daily Use	*November 30, 2001	
October 2001	*Delayed from 10/31 due to events of 9/11	



# Traffic Management Advisor / CTAS Terminal

*Traffic Management Advisor helps en route and terminal controllers schedule aircraft. The CTAS Terminal tool provides an enhanced situational awareness at the TRACON. CTAS Terminal operates in conjunction with Traffic Management Advisor to provide an integrated traffic management system decision support tool suite. En route and terminal traffic management coordinators will use Traffic Management Advisor, and terminal radar controllers will use CTAS Terminal. Because of dependability problems with pFAST, a new terminal solution which is more dependable and doesn't require digital infrastructure or extensive development/adaptation of pFAST, is necessary.*

## Technical Status

Current Assessment   Previous Assessment

### Significant Accomplishments:

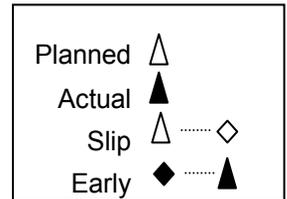
- All seven of the seven scheduled Traffic Management Advisor systems are now in daily use status.
- A Traffic Management Advisor Training Team meeting was held on October 5.
- The new CTAS Terminal Operations Concept and Requirements document was finalized on October 15.
- Four flat panel monitors were installed in the Southern California TRACON CTAS Terminal installation on October 24.



# Traffic Management Advisor / CTAS Terminal Schedule Status

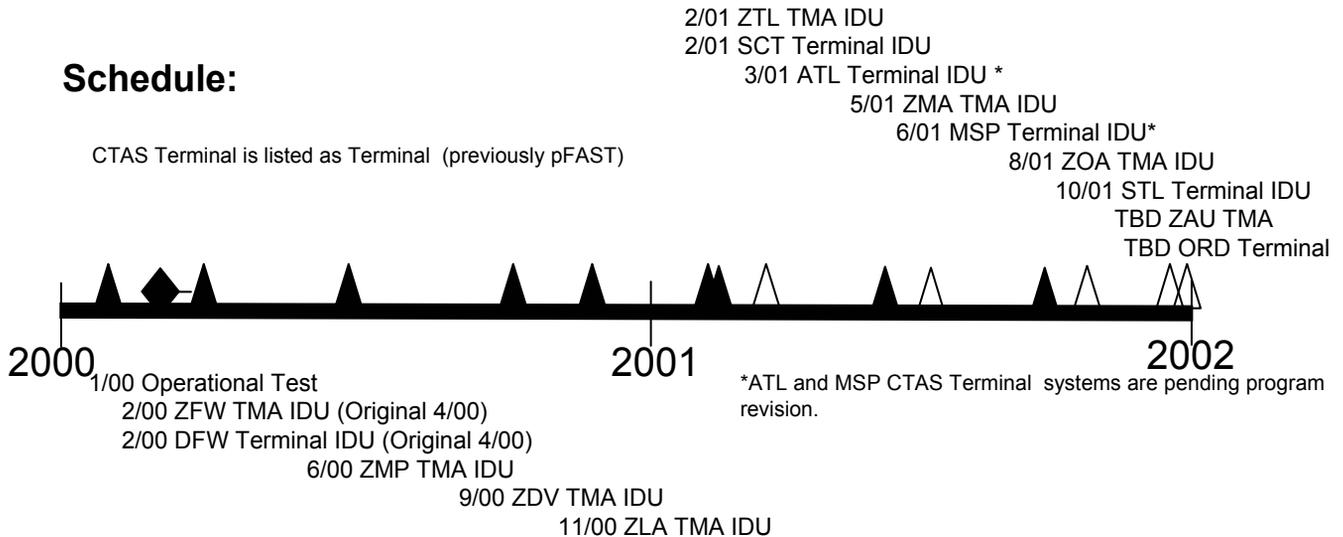
Current Assessment **G**

Previous Assessment **G**



## Schedule:

CTAS Terminal is listed as Terminal (previously pFAST)



## Near-Term Schedule:

Traffic Management Advisor achieved initial daily use at Los Angeles Center	November 21, 2000	Complete
TMA achieved "planned capability achieved" status at Minneapolis Center	December 20, 2000	Complete
TMA began facility shadow testing at Miami Center (the last test before beginning IDU)	January 16, 2001	Complete
Terminal began IDU at Southern California TRACON	February 9, 2001	Complete
Terminal begins IDU at Atlanta TRACON (A80)	On Hold	
TMA training for extended controller cadre at Miami Center	March 22, 2001	Complete
TMA achieves IDU at Miami Center	May 23, 2001	Complete
TMA achieves IDU at Oakland Center	August 29, 2001 (5 days early)	Complete



# Free Flight Phase 1 Program Financial Status As of 10/31/01

Current Assessment

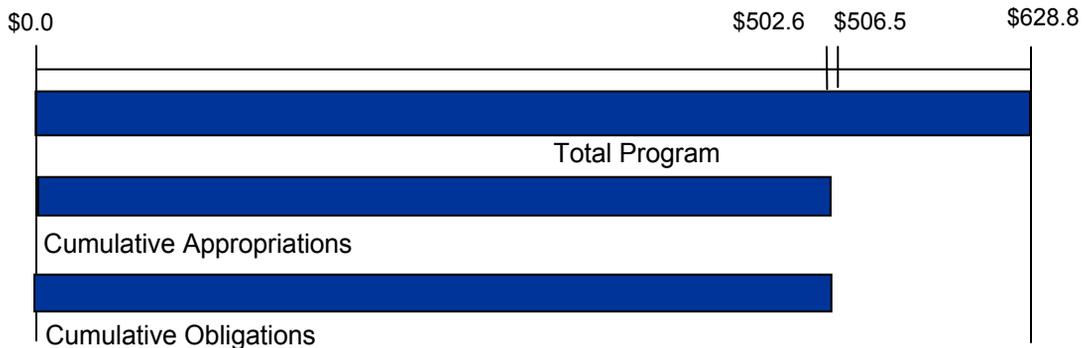


Previous Assessment

### F&E Funding

Program: (FY 98-FY 02)	\$628.8
Prior Year Net Appropriations:	\$337.5
Fiscal Year ('01) Appropriations:	\$169.0
Prior Year Obligations:	\$336.3
Fiscal Year ('01) Obligations:	\$166.3
Unobligated Appropriations:	\$ 3.9

### Funding Profile: (\$M) (F&E)



### Contract Cost Status:

- Satisfactory

### Program Funding:

- The \$628.8M Free Flight Phase 1 five year (FY 98 – 02) total is the program baseline presented to the JRC on 4/7/99.
- 0.22% was rescinded from the FY 01 appropriation.
- For FY01, \$0.5M originally allocated to the FFP1 CDM Program was provided to DSP (not part of the FFP1 Baseline) as a result of Conference Report language.



# APPENDICES



# ***Status Report Definitions***

## **Technical Status:**

***Significant Accomplishments:*** Significant technical tasks completed since the last report.

***Concerns and Ongoing Actions:*** Outstanding technical concerns, which must be resolved to assure successful accomplishment of technical project objectives and the actions being taken to resolve them, and discussion of other technical activities.

## **Schedule Status:**

***Major Milestone Accomplishment:*** Listing of the Level I and Level II milestones completed during the past reporting period. (Sixty managed milestones have been established. Level I = 10 most significant. Level II = remaining 50 managed milestones.)

***Concerns and Ongoing Actions:*** Discussion of current and potential schedule impacts resulting from schedule slippage and the actions taken to develop work-arounds or recovery plans, and other schedule related activities.

## **Financial Status:**

***Contract Cost Status:*** Assessment of cost performance status as to the executability of the program within approved resources.

***Program Funding:*** Assessment of the overall adequacy and availability of programmed and budgeted funds.

***Concerns and Ongoing Actions:*** Discussion of current or potential impacts to the cost baseline or estimates to complete, arising from contractor performance and the actions being taken to mitigate them; impacts of funding shortfalls, reductions, or non-availability due to Congressional or DOT decisions and the actions being taken to resolve or mitigate them; and other financial related activities.



# Assessment Criteria

## Technical Status:

**Red:** Technical problems will cause the system-level performance to fall below the defined *threshold* value established for any *critical* parameter in the operational requirements documents (ORD).

**Yellow:** Technical problems will cause the system-level performance to fall below the defined threshold *objective* value for any *critical* parameter in the ORD.

**Green:** No technical problems exist causing system-level performance to fall below defined *objective* performance values established for all *critical* parameters in the ORD.

## Schedule Status:

<b>Red:</b>	Level I Milestone	(next 6 months)	>	15 working days late
		(6-12 months)	>	30 working days late
		(beyond 12 mo.)	>	60 working days late

<b>Yellow:</b>	Level I Milestone	(next 6 months)	>	6 working days late
		Level II Milestone	(next 6 months)	>
	Level II Milestone	(6-12 months)	>	30 working days late
		(beyond 12 mo.)	>	60 working days late

**Green:** Level I and II Milestones are on schedule within the criteria listed above.

## Financial Status:

**Red:** Total approved program is insufficient to cover the full scope of the project development and implementation, or Government's projection of contractor's estimate-at-completion *will* exceed contractor's total allocated budget.

**Yellow:** Current year project needs do not match available project dollars and may require current year reprogramming, or Government's projection of Contractor's estimate-at-completion *may* exceed contractor's total allocated budget.

**Green:** Funding authorizations meet the program requirements, and contractor's total allocated budget is adequate to meet project requirements.



# *Acronyms and Abbreviations*

A80	Atlanta TRACON	pFAST	Passive Final Approach Spacing Tool
ATL	Hartsfield Atlanta International Airport	RVR	Runway Visual Range
CDM	Collaborative Decision Making	SCT	Southern California TRACON
CPDLC	Controller-Pilot Data Link Communications	SMA	Surface Movement Advisor
CRCT	Collaborative Routing Coordination Tool	STL	Lambert/St. Louis International Airport
DFW	Dallas Fort Worth	TBD	To be determined
DOT	Department of Transportation	TMA	Traffic Management Advisor
DSP	Departure Sequencing Program	TRACON	Terminal Radar Approach Control
F&E	Facilities and Engineering	URET	User Request Evaluation Tool
FFP1	Free Flight Phase One	WARP	Weather and Radar Processor
FFP2	Free Flight Phase Two	ZAU	Chicago ARTCC
FY	Fiscal Year	ZDV	Denver ARTCC
IDU	Initial Daily Use	ZFW	Fort Worth ARTCC
JRC	Joint Resources Council	ZLA	Los Angeles ARTCC
MSP	Minneapolis-St. Paul TRACON	ZMA	Miami ARTCC
NAS	National Airspace System	ZMP	Minneapolis ARTCC
ORD	Chicago O'Hare International Airport	ZOA	Oakland ARTCC
PCA	Planned Capability Achieved	ZTL	Atlanta ARTCC