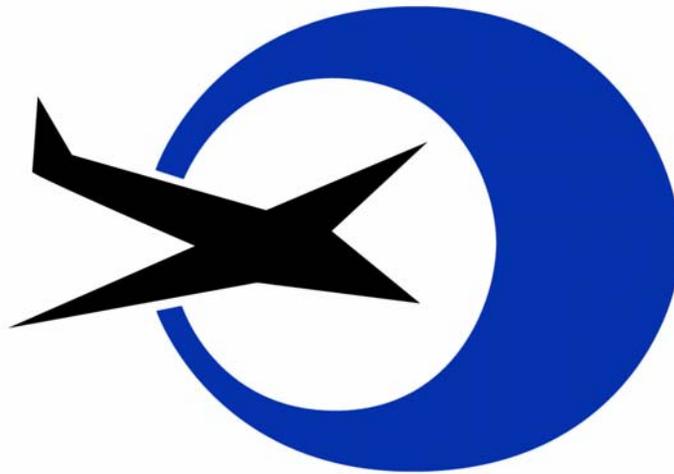




# ***Free Flight Status Report***



***July 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 July 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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Robert S. Voss, 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	James Wetherly	G	G	G
User Request Evaluation Tool	Tom Spellerberg	G	G	G
CTAS – En Route/ CTAS - Terminal	Claire Robinson	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 deploy other mature capabilities (CPDLC 1 & 1A 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.



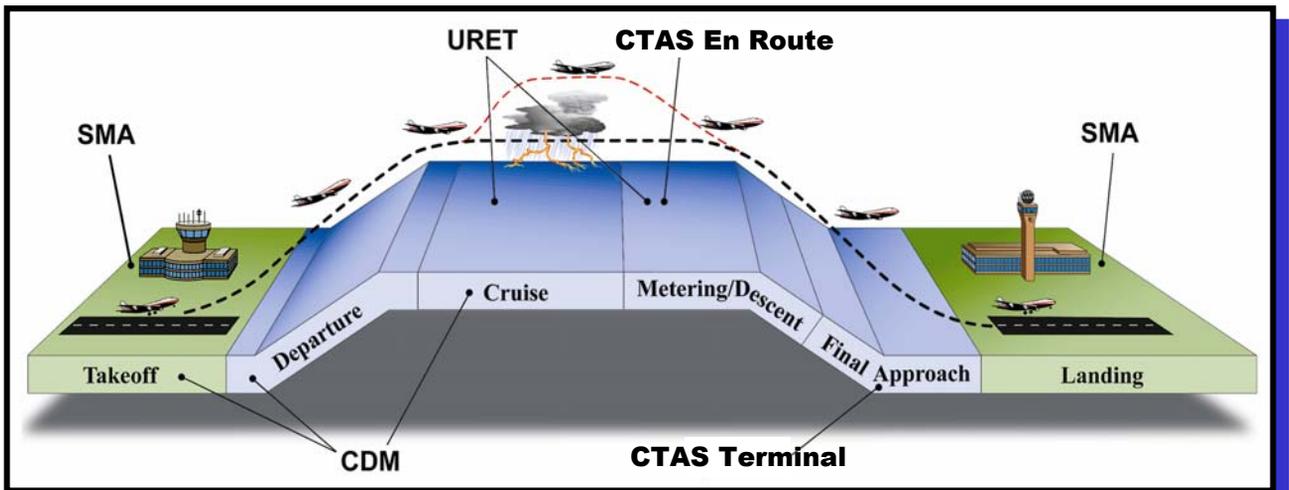
# Capabilities and Associated Flight Domains

- 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

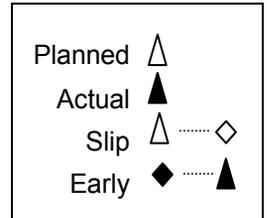
### Significant Accomplishments:

- 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.
- Collaborative Decision Making / Flight Schedule Monitor training was provided to 13 airline participants (7/11).
- 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 July 31. New installations were completed at Chicago TRACON (7/16) and Pittsburgh TRACON (7/25).

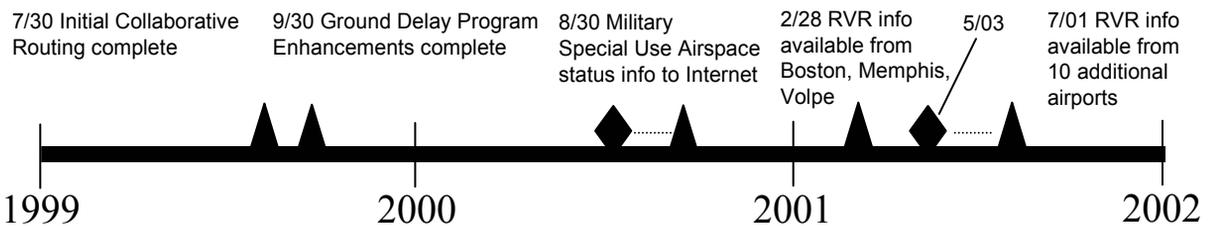


# Collaborative Decision Making Schedule Status

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) controller 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:

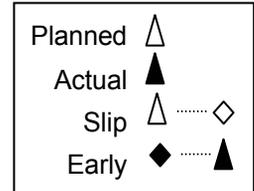
- Site readiness reviews were completed at Washington and Chicago centers. This ensures that the centers are ready to commence the installation process (7/3 and 7/25, respectively).
- Cleveland Center completed site fit up on July 5 and equipment delivery on July 12 in preparation for URET installation.
- URET equipment installation and checkout was completed in Indianapolis on July 16 in preparation for transition to the URET Core Capability Limited Deployment system, which will replace the existing URET prototype system.
- The National Memorandum of Understanding was signed with the National Air Traffic Controllers Association on July 13. It allows continued participation of NATCA and the FAA in user team activities which support development and deployment of the URET Core Capability Limited Deployment system.



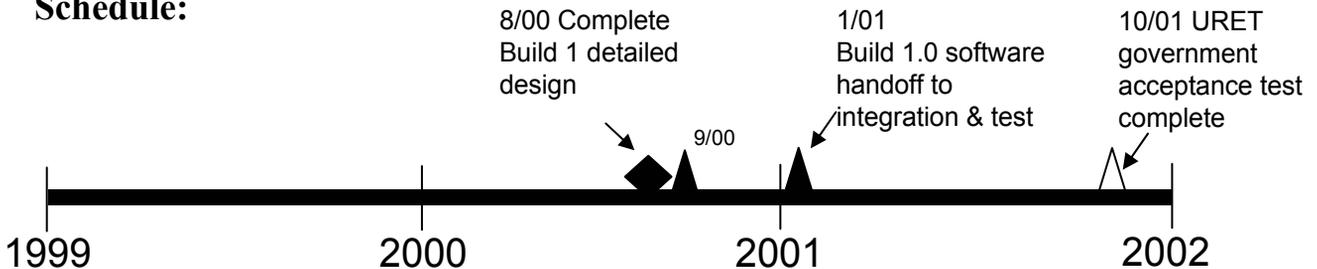
# User Request Evaluation Tool

## 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	October 31, 2001	



# CTAS – En Route / CTAS - Terminal

*CTAS – En Route helps en route/terminal controllers schedule aircraft. The CTAS - Terminal tool recommends runway assignments to controllers. CTAS - Terminal operates in conjunction with CTAS – En Route to provide an integrated traffic management system decision support tool suite. En route and terminal traffic management coordinators will use CTAS – En Route, and terminal radar controllers will use CTAS - Terminal. Because of dependability problems with pFAST a new terminal solution which is more dependable doesn't require digital infrastructure or extensive development/adaptation of pFAST and has been accepted by the controllers*

## Technical Status

Current  
Assessment



Previous  
Assessment

### Significant Accomplishments:

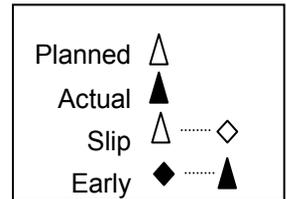
- A Dynamic Simulator was installed for the CTAS – En Route system at Minneapolis Center on July 27. This permits training and testing on a non-interference basis with the operational system.
- Operational use of Spiral 2 commenced at Denver Center on July 9. This is an increase in capability based on the “build a little, test a little” philosophy. Three spirals of capability are planned.
- An increase of 1.5 operations per rush is being realized by CTAS – Terminal at Southern California TRACON for Los Angeles Airport through the use of auxiliary displays at the controller positions and large screen displays at the Traffic Management Unit. This technique is being reviewed as an option for CTAS - Terminal, which is under review for potential change from the tool previously known as pFAST.



# CTAS – En Route / CTAS - Terminal Schedule Status

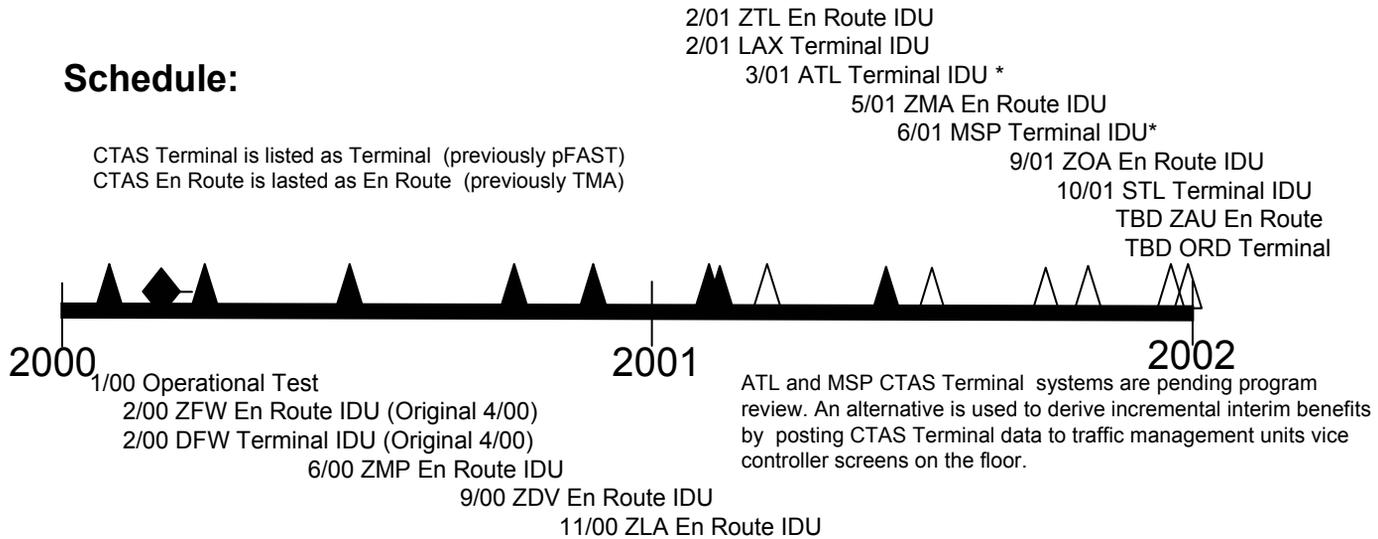
Current Assessment **G**

Previous Assessment **G**



## Schedule:

CTAS Terminal is listed as Terminal (previously pFAST)  
CTAS En Route is listed as En Route (previously TMA)



## Near-Term Schedule:

En Route achieved initial daily use at Los Angeles Center	November 21, 2000	Complete
En Route achieved "planned capability achieved" status at Minneapolis Center	December 20, 2000	Complete
En Route 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	
En Route training for extended controller cadre at Miami Center	March 22, 2001	Complete
En Route achieves IDU at Miami Center	May 23, 2001	Complete
En Route achieves IDU at Oakland Center	September 3, 2001	



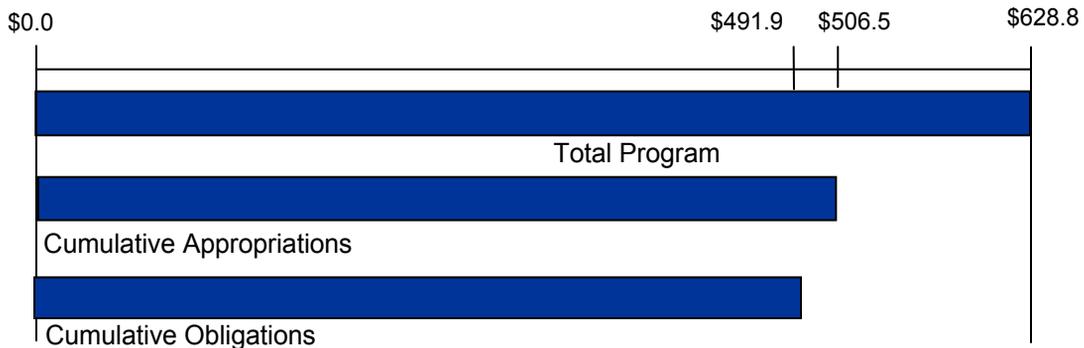
# Free Flight Phase 1 Program Financial Status As of 07/31/01

Current Assessment G      Previous Assessment G

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:	\$335.8
Fiscal Year ('01) Obligations:	\$156.1
Unobligated Appropriations:	\$ 14.6

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