Request for Records Disposition Authority

Records Schedule Number	DAA-0237-2020-0009
Schedule Status	Approved
Agency or Establishment	Federal Aviation Administration
Record Group / Scheduling Group	Records of the Federal Aviation Administration
Records Schedule applies to	Agency-wide
Schedule Subject	Traffic Resolution Advisory Monitoring System (TRAMS)
Internal agency concurrences will be provided	No

Background Information

The Traffic Alert and Collision Avoidance System (TCAS) is an airborne system developed by the FAA in the 1980's that operates independently from the ground-based Air Traffic Control (ATC) system. TCAS was designed to increase cockpit awareness of proximate aircraft and to serve as the last line of defense for the prevention of mid-air collisions. TCAS involves communication between all aircraft equipped with an appropriate transponder. Each TCAS-equipped aircraft interrogates all other aircraft in a determined range about their position (via 1030 MHz), and all transponder-equipped aircraft reply (via 1090 MHz). Through this constant interrogation and reply, TCAS builds a map of proximate aircraft, incorporating altitude and range. By calculating anticipated future positions, TCAS determines if a potential collision threat exists between itself and another aircraft. If so, a vocalized and displayed warning is issued to the pilots in each TCAS-equipped cockpit. TCAS II, mandated for use in most US commercial aviation aircraft since 1993, issues corrective or preventative Resolution Advisories (RA) providing pilots with instructions to avoid anticipated danger. TCAS II coordinates RAs before issuing commands to pilots so that avoidance instructions do not conflict.

A need has been identified to monitor TCAS operations and performance via capture and analysis of RA-related communications. The TCAS RA Monitoring System (TRAMS) is a new distributed ground-based system that will capture airborne RA communications and related surveillance data and transmit this information daily to a central facility for analysis. The overall goal of TRAMS is to enable analysis of TCAS performance and facilitate changes in the airspace. Specifically, the mission objectives are to:

• Comply with the Safety Management System requirement to monitor new systems introduced into the NAS environment to protect against NAS performance degradation.
• Provide a database of actual Resolution Advisories (RA) and associated surveillance data for post analysis of TCAS operational performance.
• Provide a database of selected surveillance data for future research.

New TRAMS equipment is required to perform TCAS data capture and analysis functions. The TRAMS will leverage existing ground-based ASR-9/Mode-S and surveillance sensors at twenty selected ground stations within the FAA infrastructure to host Remote Site equipment. Each ground station hosting a TRAMS Remote Site will be identically equipped and configured to perform TRAMS monitoring functions. The TRAMS Central Site will be located at the William J. Hughes Technical Center (WJHTC). The Central Site will collect and compile data pulled from Remote Sites, perform initial analysis, and enable the capability for further processing at a third party facility - Massachusetts Institute of Technology / Lincoln Labs (MIT/LL).

Item Count

Number of Total Disposition Items	Number of Permanent Disposition Items	Number of Temporary Disposition Items	Number of Withdrawn Disposition Items
3	0	3	0

GAO Approval

Outline of Records Schedule Items for DAA-0237-2020-0009

Sequence Number	
1	INPUT: TRAMS Remote Site Data Files Disposition Authority Number: DAA-0237-2020-0009-0001
2	MASTER FILES: TRAMS Central Site Files Disposition Authority Number: DAA-0237-2020-0009-0002
3	OUTPUT: TRAMS Files Transferred to MIT/LL Disposition Authority Number: DAA-0237-2020-0009-0003

Records Schedule Items

Sequence Number	
1	**INPUT: TRAMS Remote Site Data Files**

Disposition Authority Number   DAA-0237-2020-0009-0001

All TRAMS Remote Sites are identically equipped and consist of a Linux workstation: Data Recorder. TRAMS Remote Systems receive and record a delayed continuous feed of raw surveillance and TCAS RA data captured from the FAA Ground Station Surveillance Network (ASR-9/Mode S). The surveillance and TCAS RA data stream is captured in 30-minute increments and written to a time-stamped file on the Remote System. These files contain information on aircraft position, consisting of aircraft identifiers, range and bearing (relative to the radar), and altitude. If an aircraft had a TCAS RA, information on the type of RA is also captured. The TRAMS Remote data is filtered by application software, and the processed data is compressed for download to TRAMS Central. Data Files on Remote: Raw data files captured every 30 minutes containing radar, surveillance, and RA communication information.

Final Disposition	Temporary
Item Status	Active
Is this item media neutral?	Yes
Do any of the records covered by this item currently exist in electronic format(s) other than e-mail and word processing?	Yes
Do any of the records covered by this item exist as structured electronic data?	No

Disposition Instruction

Cutoff Instruction	Cutoff and destroy all raw and processed data files older than 45 days.
Retention Period	Destroy 45 days from original data capture date.

Additional Information

GAO Approval	Not Required

2	**MASTER FILES: TRAMS Central Site Files**

Disposition Authority Number   DAA-0237-2020-0009-0002

The TRAMS Central Site consists of one or more Linux workstations called the Central System and a commercial GPS-based timeserver. The Central System will contain FAA-developed TRAMS application software. The Central System

monitors the Remote Sites at regular intervals looking for new data files that are ready for download. Central will initiate data downloads when new data files are detected and ready for download on Remote Systems. The files are compressed and downloaded to the Central Site over dedicated digital lines using Secure Copy (SCP) commands. Central Site data analysis will consist of both automated and manual processes via applications installed on the Central System. Application software creates a temporary 30-minute track files from the surveillance and RA data. This file contains second by second radar data containing aircraft position data. At the end of each day a 24-hour track file (*.csb) is created for each site combining all the 30-minute track files for the day. A summary file (*.csu) of the surveillance tracks and RA events that occurred in a 24-hour period for each site is also produced. Another file (*.ops) containing airport statistics, including the number of takeoffs, landings, and total track seconds are tabulated for a 24-hour period for each site. Remote Sites system health and status of the file downloads is displayed on the Central System for maintenance purposes only. Data Files on Central: For each site: Processed 30-minute files with aircraft position information and RA messages that are downloaded from Remotes to Central. Processed 24-hour track files (*.csb) containing tracked data and RA information. Processed summary files (*.csu) for the 24-hour period containing the number of tracks and RAs that occurred during the 24-hour period. Processed operation files (*.ops) containing airport operations statistics information for the 24-hour period.

Final Disposition	Temporary
Item Status	Active
Is this item media neutral?	Yes
Do any of the records covered by this item currently exist in electronic format(s) other than e-mail and word processing?	Yes
Do any of the records covered by this item exist as structured electronic data?	No

Disposition Instruction

Cutoff Instruction	Cutoff and destroy all raw and processed data files older than 45 days.
Retention Period	Destroy all Central processed data files older than 45 days from original data capture date.

Additional Information

GAO Approval	Not Required

3   OUTPUT: TRAMS Files Transferred to MIT/LL

Disposition Authority Number	DAA-0237-2020-0009-0003

The System Administrator or designated Operator transfers collected TRAMS data from the Central System to the authorized offsite processing facility at MIT/LL weekly. The System Administrator burns the processed TRAMS data from all sites to DVD media. The DVD media containing TRAMS data is protected and encrypted at all times to prevent unauthorized access and sent to MIT/LL via US Postal Service or FedEx Service. The DVD encryption password is sent to MIT/LL via e-mail. MIT/LL receives the encrypted DVD TRAMS data from the FAA Technical Center. Further processing of aircraft track files and statistical analysis is performed with the TRAMS data. This processed data is de-identified (sanitized) by removing radar and aircraft identifiers, as well as dates and times. A database is created of actual Resolution Advisories (RA) and associated surveillance data for post analysis of TCAS operational performance. This processed data will baseline current TCAS system performance and be used to compare future changes in the airspace. Data Files Transferred to MIT/LL: Processed 24-hour data files on DVDs containing the weekly collection of TRAMS Data from all twenty Remote Sites. All DVDs and data sent to MIT/LL from the FAA Technical Center are destroyed and deleted after the approved time period has passed, not to exceed 45 days from date of original data capture. The MIT/LL processed data retains value and is maintained to allow for historical analyses of TCAS and trend assessment of the airspace.

Final Disposition	Temporary
Item Status	Active
Is this item media neutral?	Yes
Do any of the records covered by this item currently exist in electronic format(s) other than e-mail and word processing?	No

Disposition Instruction

Cutoff Instruction	Cutoff and destroy all raw and processed data files older than 45 days.
Retention Period	Destroy all TRAMS data files originating from the FAA Technical Center older than 45 days from original data capture date and all DVDs containing TRAMS Data after extracting the files.

Additional Information

GAO Approval	Not Required

Agency Certification

I hereby certify that I am authorized to act for this agency in matters pertaining to the disposition of its records and that the records proposed for disposal in this schedule are not now needed for the business of the agency or will not be needed after the retention periods specified.

Signatory Information

Date	Action	By	Title	Organization
03/26/2020	Certify	Richard Allen	Records manager	FAA - FAA
01/22/2021	Submit for Concurrence	Carly Docca	Archives Specialist	National Archives and Records Administration - ACRA
01/25/2021	Concur	Margaret Hawkins	Director of Records Management Services	National Records Management Program - ACNR Records Management Services
01/25/2021	Concur	Laurence Brewer	Chief Records Officer	National Records and Archives Administration - National Records and Archives Administration
01/27/2021	Approve	David Ferriero	Archivist of the United States	Office of the Archivist - Office of the Archivist