



# Collaborative Routing Coordination Tools (CRCT)

**C**ollaborative Routing Coordination Tools (CRCT) is an integrated collection of automation functions that traffic flow management can use to monitor traffic flows, develop strategies to alleviate congestion and avoid severe weather, and analyze the impact of proposed strategies. Using CRCT, a traffic manager can visualize the impact of a proposed strategy on sector loading or on individual aircraft. Eventually, the traffic manager will be able to share this information not only with traffic managers from other facilities, but also with airspace users. Thus, CRCT capabilities will help National Airspace System (NAS) stakeholders develop strategies for meeting their respective operating objectives when constraints in the NAS require traffic flow management action.

CRCT was developed by The MITRE Corporation's Center for Advanced Aviation System Development (MITRE/CAASD) as part of its Traffic Flow Management (TFM) Research and Development activities. CRCT currently exists on a research platform where operational concepts and automation functions are developed and evaluated by TFM personnel in their operational facilities and MITRE/CAASD's lab. As a result of these evaluations, needs for capabilities are identified, desired capabilities are refined, and procedures for operational use are developed. When the Federal Aviation Administration (FAA) determines that a capability should be integrated into the TFM, MITRE/CAASD assists the FAA in transferring the technology to the implementation team and, where appropriate, the private sector.

## Features

CRCT was developed to help traffic flow managers and airspace users address current shortfalls. Specifically, CRCT functions are designed to assist with the following:

- Visualizing future traffic flows based on filed flight plan information

- Identifying and analyzing potential TFM situations
- Identifying the flights that are expected to be directly impacted by the situation
- Defining candidate routes (either for traffic flows or specific flights) to alleviate the situation
- Analyzing the impact of a reroute strategy on sector loading for all the sectors across a region
- Enabling traffic flow managers from all facilities and airspace users to gain common situational awareness and information about strategy alternatives
- Facilitating the implementation of reroute strategies

## Future Plans

MITRE/CAASD is currently developing new capabilities that will deliver additional operational benefits when combined with the initial CRCT capabilities; for example, development of capabilities to model Miles-in-Trail restrictions and to assess their impact, in concert with rerouting and ground delays. Research is also being conducted on computer-assisted resolution support to reduce time and workload. The FAA and MITRE/CAASD are preparing for field evaluations of these new features. MITRE/CAASD is also working with the FAA on transferring the technology associated with a desired CRCT capability; for example, flow constrained area application and trajectory modeling algorithms, to the FAA team responsible for integrating the CRCT capability into the traffic flow management system.

## **For more information, contact:**

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