



# NAVCANtrac ▶

**Innovative air traffic control for advanced airspace management.**

NAVCANtrac sets new standards for air traffic management safety, capacity, and efficiency. With enhanced processing capabilities, this complete air traffic management and support system automates and integrates flight data between multiple air traffic control facilities, surveillance sources, and external systems.

## **Integrated Situational Displays**

NAVCANtrac features an advanced, easy-to-use graphic display showing a complete picture of flight movements and actions associated with flight progress. Surveillance, weather and flight data are integrated over adaptable multi-layer maps and defined overlays.

The display is highly interactive, providing controllers with options to modify and display electronic flight data, access decision support and safety net tools, and obtain information on map objects such as airports, airways, navaids, restricted areas, and special use airspace.

## **Customizable to Your Environment**

Scalable and feature rich, NAVCANtrac is adaptable to any air traffic control environment. Its full range of advanced functionality makes it suitable for area control centres and terminal operations from national to local levels, and across large geographic areas.

# Product Benefits

## Advanced Processing Capability

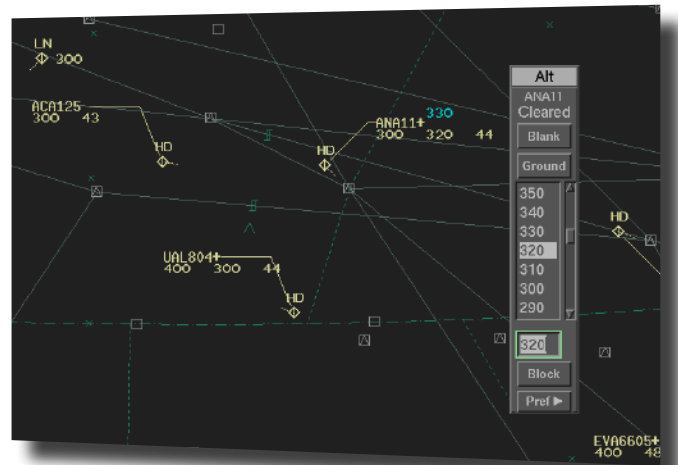
Built on a flexible, scalable and interoperable Open Architecture, NAVCANtrac offers enhanced flight data automation and integration between air traffic control facilities, multiple surveillance sources, and external systems.

The advanced processing capabilities of this modern, data-centric, standards-based platform give NAVCANtrac its reputation for performance and reliability, and provide a foundation for future technology enhancements.

## Powerful Automation

NAVCANtrac automates time-consuming manual tasks such as flight plan generation, routine data communication and sector coordination, so that controllers have more time available to safely and efficiently manage the airspace in their jurisdiction. Controller workload is reduced as the system automatically distributes the flight object information to workstations and external systems to accomplish essential routine coordination.

NAVCANtrac also automates flight data posting, inter-sector and inter-unit coordination, conformance monitoring, conflict prediction, flight data distribution and collaboration with other connected systems.



## Highly Accurate 4D Flight Trajectories

Air traffic management is optimized using NAVCANtrac's highly accurate 4D flight trajectories. Controllers can plan and track flights with lateral, longitudinal and vertical flight positions, as well as target time points. This allows for precise information about the current and future position of every aircraft at any given moment, improving safety as well as flight predictability.

## Quality Training

A complete training system for air traffic management and system support is available with NAVCANtrac. Training configurations with realistic simulations of interfaces and flights are provided for controllers, trainees and operations support.



# Feature Summary

## Flight Data Processing (FDP)

Like all NAVCANatm products, NAVCANtrac is based on a collaborative design and development approach to ensure service delivery requirements are met, and to support operational acceptance by users, stakeholders and regulators.

Using a feature rich, fault tolerant design and a distributed processing deployment model, the powerful NAVCANtrac flight data processor can:

- create, maintain and automatically update flight objects and trajectories from various sources including AFTN/AMHS, web services, ATS coordination messages and operator-created flight plans;
- perform flight plan data and route validation, and offer early detection of aircraft eligibility for designated airspace;
- insert route portions for departure and arrival segments based on runway-dependent adapted routes;
- calculate 4D flight profiles through space and time using the aircraft performance model and the fine-grid 4D wind and temperature model;
- manage flight transitions from flight plan filing and departure, to enroute and arrival;
- support data-link communications and surveillance using direct controller-HMI interaction, and
- reconfigure airspace sectors to respond to rapidly changing traffic scenarios.

## Safety Net Features

NAVCANtrac offers a set of comprehensive site-adaptable and configurable Safety Net features, setting the foundation for enhanced capacity. These tools give controllers the ability to address efficiency issues, with confidence, in an environment of safety assurance.

Safety Net features include:

- **Conflict Prediction (COPR)**, providing alarms and HMI features per sector or grouped sectors.
- **Short Term Conflict Alert (CA)**, providing alerts and warnings to jurisdictional and non-jurisdictional operators, even if the flight is not on the main display.
- **Airspace Warning Feature (AWF)**, using audible and visual alerts to support early prediction of airspace violations.
- **Minimum Safe Altitude Warning (MSAW)**, providing visual and audible warnings of proximity to terrain and displaying safe altitudes.

- **Approach Path Monitoring (APM)**, detecting deviation of aircraft from pre-defined, funnel-shaped approach paths, and alerting ATC.
- **Medium Term Conflict Detection (MTCD)**, offering radar or ADS-B based conflict detection ranging from 5 to 20 minutes.

## Fusion Surveillance Data Processing (SDP)

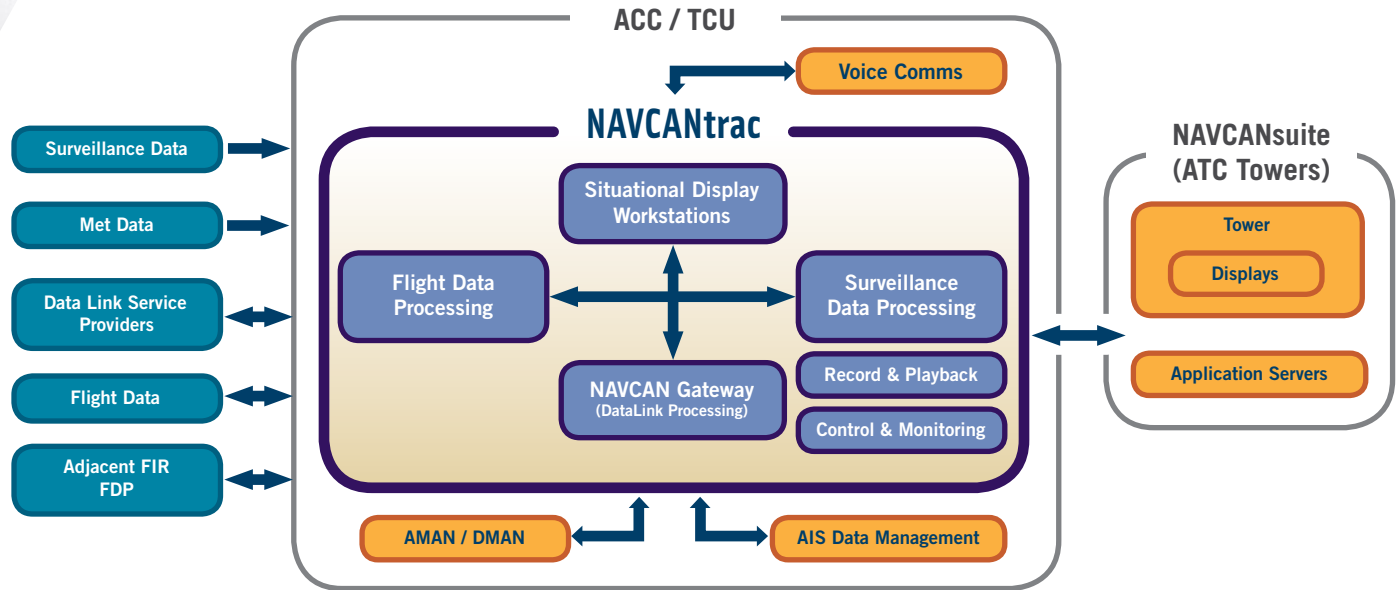
NAVCANtrac makes full use of the latest surveillance fusion technology\*, taking air traffic management capabilities to a new level.

The highly scalable fusion processor seamlessly presents targets generated from a variety of surveillance sources, including traditional radar, ADS-B, multilateration systems, and video surveillance, and offers more precise tracking, as well as improved safety net and support functions.

Some of the many features and functions of the fusion SDP include:

- exceptional tracking performance through Interacting Multiple Model (IMM) Kalman Filters, track history-sensitive model-switching, and measurement fusion technologies;
- seamless merging and transition between air and surface sensors;
- distributed track server traffic fusion and core measurement fusion of statistically independent sensor data;
- quantization-sensitive altitude tracking;
- advanced ADS-B management capabilities including qualification filtering and logging, equipage-sensitive processing, and conformance validation;
- extensive sensor, bias and tracking error analysis, monitoring, reporting, and correction capabilities;
- extensive tracking, quality monitoring, and control;
- composite weather picture generation, and TAF/METAR, custom QNH, and temperature data management;
- customizable adaptation management and distribution, and multiple output streams, and
- outstanding sensor and tracking 4D performance visualization.

\*DFS Phoenix multi-sensor data-fusion system



## External Interfaces

NAVCANtrac can interface with both internal and external systems for greater efficiency. External and internal tools and systems seamlessly integrate into an overall network to meet the demands of any air traffic volume and complexity, or geographic range.

The following interfaces are included:

- Arrival manager
- Departure manager
- Flow management
- Inter-Centre and Inter-Facility
- Integrated Tower System
- AFTN (Aeronautical Fixed Telecommunication Network)
- Weather Offices
- Flight Information Management Systems
- Technical Centres
- Parallel operation with legacy systems for transition
- Billing and Operational Data Warehousing
- Controller Pilot Data Link Communications
- Collaborative Flight Planning Systems (internet filing and updates)
- All supporting NAVCANatm systems

NAVCANtrac is a product of NAVCANatm, a leading line of integrated air traffic management products, applications and services. NAVCANatm products are operationally deployed at over 100 sites worldwide for safe, efficient and cost-effective air traffic management. For more information on NAVCANtrac and other NAVCANatm products visit our website.



[www.NAVCANatm.ca](http://www.NAVCANatm.ca)