Controlling the Sky
CNS/ATM Solutions

Tern Systems

Product range

All your ATC needs at once

Tern Systems offer a range of software systems and solutions for the ATC industry. We provide system design, integration, installation, training, and turnkey solutions for aviation organizations worldwide.

These include Radar, Surveillance and Flight Data Processing, aeronautical messaging handling systems, as well as ATC training simulation solutions.

Tern Systems is a reliable partner for turn-key solutions serving airports and ATC centres of all sizes. The company has cross-functional skills in all areas needed for successful implementation of ATS projects.

With operational systems in three continents, our systems have been adjusted to meet the needs of our various customers. This has resulted in a line of customisable solutions for the ATM industry, for both run-time and simulation systems.

Our core product line consists of the three key products: TAS, TAMS and TSIM. Our additional systems consist of various support programs for the ATC and ATM sector, many originally developed for our parent company, Isavia Ltd and further adjusted to the needs of our other clients around the world.

Our comprehensive customer support ensures that our systems, are fully operational, providing a high level of safety and performance.

ATC Automation Systems
- Tern ATC System
- Advanced flight data processing
- Surcveillance data processing (ADS-B, ADS-C, Radar)
- FPL2012 Converter

Aeronautical Messaging Systems
- AFTN/CIDIN Switches
- AMHS Switches
- AFTN/Flight Data Terminals

Simulators
- 3D Tower Simulator
- APP/APS Simulator
- ACC/ACS Simulator
- OCA Simulator
- VCSS (Voice Communication System Simulator)

Other systems
- Air Navigation Service Charge System
- Remote Equipment Monitoring and Controlling System (Opsview based)

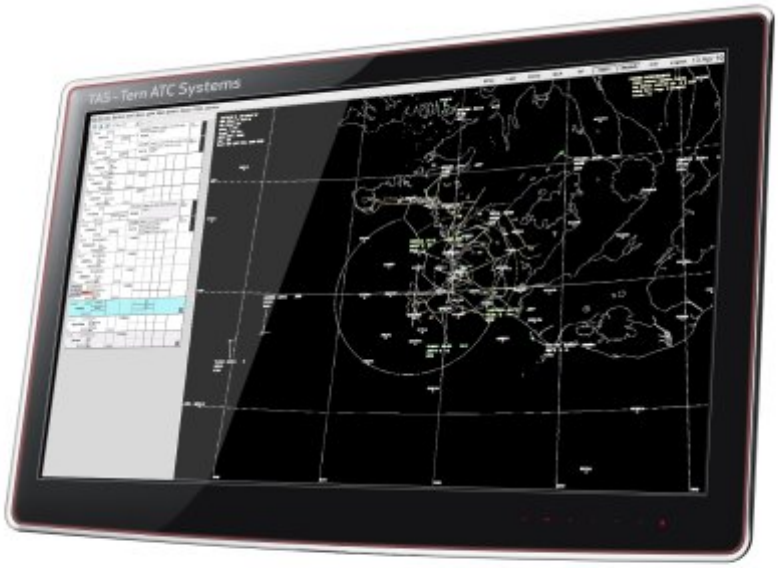
TAS
ATC Automation System

Tern Systems

Tern ATC System

Overview

Tern's ATC System (TAS) is a modular and redundant solution which suits a broad range of air traffic control zones. TAS combines advanced surveillance and flight data processing with an easy to use air traffic controller interface enabling both tactical and strategic control with powerful conflict detection and resolution capabilities. The system may be used in en-route, approach and tower facilities and supports both strip-less operation and use of paper or electronic strips.



The combination of an advanced flight data processor and a powerful surveillance data processor enables TAS to provide controllers with a state of the art environment for controlling aircraft in a safe and efficient manner. The flight data processor maintains flight profiles based on input from various sources such as an AFTN/AMHS connection, dedicated coordination links supporting both OLDI and AIDC, custom data links and controller input. The flight profiles are continuously updated with surveillance data or calculated estimates where surveillance data is not available.

The surveillance data processor provides single source tracking of data from various sources such as primary and secondary radars, ADS-B and multilateration systems along with advanced multi source tracking and fusion.

Features:

- Modular and scalable
- Integrated Surveillance and Flight Data Processing
- Tactical and strategic control
- Conflict detection and resolution
- Variety of datalink solutions
- Positional recording and playback
- Automatic billing

Safety net functions includes:

- Short Term Conflict Alert (STCA)
- Minimum Safe Altitude Warning (MSAW)
- Danger Area Infringement Warning (DAIW)
- Approach Path Monitoring (APM)
- Cleared Level Adherence Monitoring (CLAM)
- Route Adherence Monitoring (RAM)
- Missed Position Report (MPR)
- Actual Time Over Monitoring (ATOM)

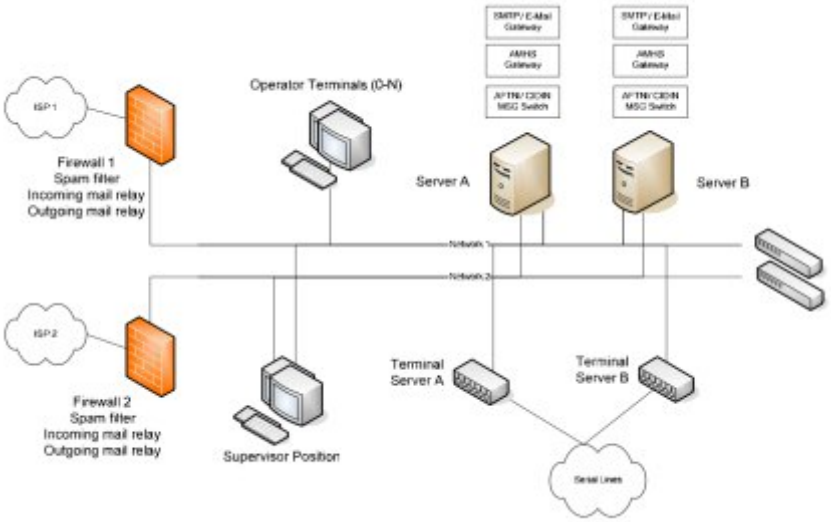
TAMS
ATS Message System

Tern Systems

Tern ATS Message System

Overview

TAMS is a complete suite of products for handling and processing aeronautical messages. The product suite ranges from a simple AFTN Gateway to an advanced full functionality ATS message switching system, in addition to end user terminals. It supports all ATS communication protocols including AFTN, CIDIN and AMHS. The solution is a highly scalable switch for store and forward switching of aeronautical messages in ATS operations. The core of TAMS is redundant switching software, specially designed for high availability and maintainability.



The TAMS-Switch provides ATS message switching functionality using AFTN, CIDIN, AMHS and SMTP (email) protocols. The core message switch module is protocol independent and switches any message, allowing for seamless integration of AFTN, CIDIN, AMHS and SMTP.

The TAMS-Gateway has simple AFTN routing capabilities, designed for small AFTN operators that have a single AFTN line which is shared by few devices or consoles. The gateway is suitable for autonomous operation requiring only occasional maintenance.

The system uses COTS hardware components and operating systems with high reliability and excellent maintainability resulting from Tern Systems years of system development in the ATC world.

Message Switch Features:

- Full replication
- Designed for fault tolerance operations
- Replicated message storage
- Message priority handling
- Support for CIDIN, AMHS and Email

Message Gateway Features:

- Store and forward AFTN message routing
- AFTN over Serial or TCP/IP
- Interfaces either Rs232 or Ethernet
- Routing based on various message attributes
- Fully ICAO Annex 10 compliant
- IA-2 / ITA5 and internal conversion
- Automatic alternate routing
- Permanent channel diversions
- Optional GPS signal time synchronization

TSIM
ATC Simulator Training

Tern Systems

Tern Simulators

Overview

Tern Systems' ATC Simulator (TSIM) provides a realistic training environment for the training of air traffic controllers. The Training simulators modular design makes it a scalable and cost efficient turn key training solution, suitable for all types of ATC training. TSIM is the perfect training solution for Ground, Tower, Approach and En-route ATC training.

APP/ACC/OCA Radar Simulator
The radar simulator is suitable for all types of radar based ATC training. Various surveillance display types are available as well as Flight Data Processing Displays (FDP) and Airport Information Displays (AIS) that can be configured and added to the setup.

3D Tower Simulator
The 3D tower simulator can be used as a standalone simulator or in an integrated environment where students being trained for tower, approach and area control can participate in the same exercise for realistic coordination and communication. It can be configured to run on a single PC or as a fully functional 360° training facility and everywhere in between.

A Supervisor's interface controls the setup of the exercises and can add realism to the scenario such as emergency situations, changes in weather, generate accidents and hardware related incidents.

Features:

- Simulation of multiple radars of various performance capabilities.
- Powerful route creation and editing tools
- Support for radar procedures, including direct to fix, resume own navigation, fly arc, fly track, fly radial, intercept radial etc.
- Simulation record and playback with pause and resume functionality.
- User definable conflict alert parameters.
- Full Datalink connectivity for automatic or manual ADS-CPDLC comunication between aircraft and ATCOs
- Fully featured highly scalable multi-channel VCSS system.
- COTS hardware maximises return on investment.
- Student versions for classroom integration in academic environment.