

Oceanic Integration and Interoperability Facility

Location

The Oceanic Integration and Interoperability Facility (OIIF) is located at the FAA William J. Hughes Technical Center (WJHTC), Atlantic City International Airport, New Jersey.

Description of Laboratory

The OIIF supports research, development, evaluation, and training of oceanic concepts and systems integration in a realistic oceanic air traffic control infrastructure.

The OIIF is used to perform early integration and interoperability evaluations of new concepts, subsystems, functions, prototypes, or advanced technologies in the oceanic air traffic environment.

The OIIF is a fully functional, self-sustaining, Advanced Technologies and Oceanic Procedures (ATOP) based facility that is capable of being configured to realistically

represent the environment or scenarios of any operational oceanic air traffic control facility. The facility contains baseline oceanic subsystems with full external interfaces and can be easily modified to support the installation, integration, and evaluation of prototype subsystems and functions.

Characteristics of the OIIF include:

- The flexibility to support multiple National Airspace System (NAS) projects in various stages of development
- A full ATOP Ocean 21 system
- A flexible environment that will accept both hardware and software modifications
- Diverse simulation capabilities
- Interconnectivity to other WJHTC laboratories
- Managed and maintained by a multi-disciplinary team
- A 24-hour day, 7 days per week schedule

Mission

The mission of the OIIF is to foster the exploration and evaluation of air traffic concepts in the Oceanic domain within a prototyping environment and facilitate the integration of cutting-edge air traffic solutions into the existing oceanic environments.

Purpose

The OIIF is dedicated to exploring the issues associated with modernizing the existing NAS oceanic infrastructure. The facility provides engineering, simulation, and laboratory capabilities for the following activities:

- Proof-of-concept studies
- Prototype development
- Early engineering assessment
- Data recording and playback
- System-level integration and verification
- Experimentation/studies
- Scenario development
- Demonstrations
- User evaluations
- Risk assessment studies
- Air traffic and technical operations familiarization
- System development



Figure 1. Oceanic Integration and Interoperability Facility

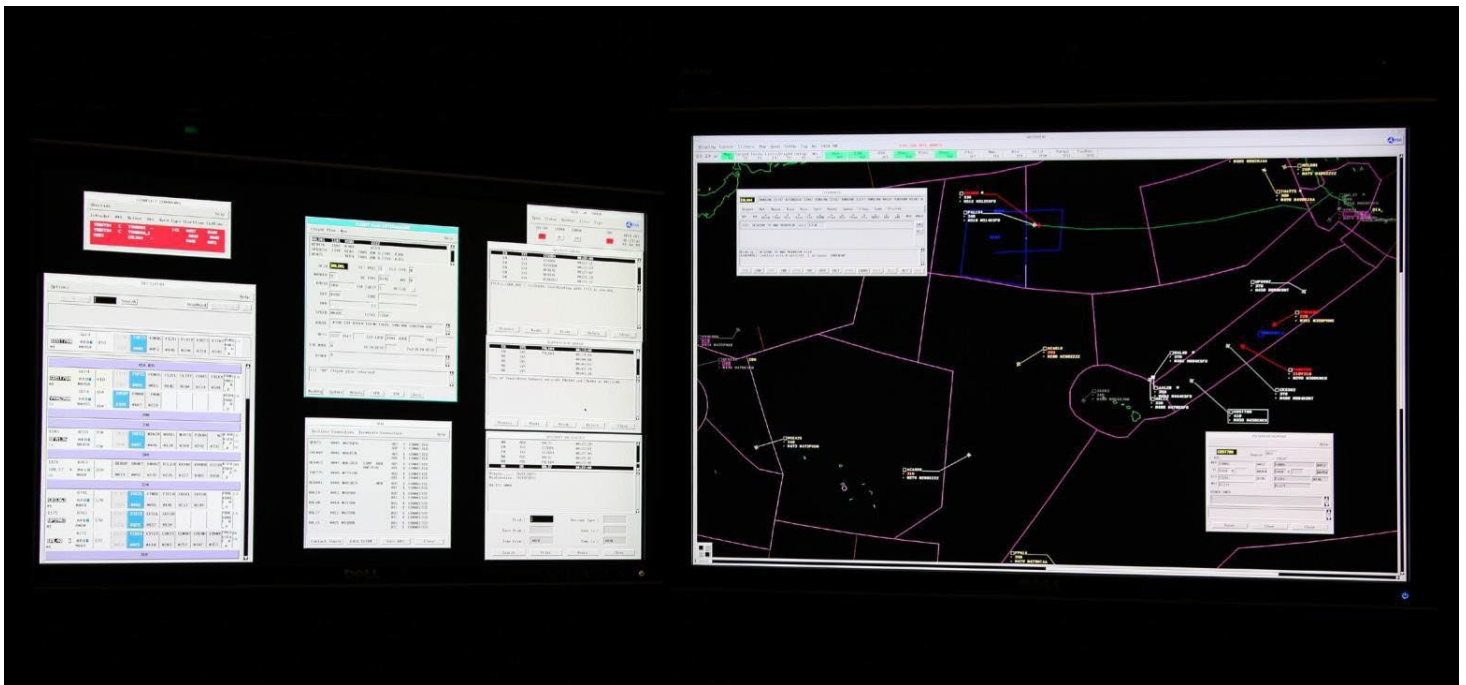


Figure 2. ATOP Display

Facility Capabilities

The OIIF is designed to represent an oceanic ATOP based air route traffic control center (ARTCC) with 12 sectors. It has the capability to conduct stand-alone experiments. It is also interconnected to laboratory facilities located within the WJHTC. This enables both large-scale and inter-domain experimentation.

A fully functional ATOP configuration includes:

- 12 full sectors
- 2 full channels
- 4 monitor and control consoles
- 2 supervisor positions
- 2 flight data repair positions
- 2 pilot positions
- Complete primary and backup channels
- Complete operational support network

External Interfaces both live and simulated include:

- Weather and RADAR Processor Weather Information Network Server
- National Data Interchange Network II
- RADAR
- ADS-B

OIIF lab can be configured as:

- A full dual-channel oceanic ARTCC with redundant ATOP processors
- Two independent oceanic ARTCCs simultaneously on a single channel
- Individual stand-alone workstations splitting channels and utilizing redundant processors

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