

OPScenter™ System Coordination



Reliable data for mission-critical applications

Future-proof coordination and exchange platform

The OPScenter™ SYSTEM COORDINATION (SysCo) components support the exchange of data in highly complex systems within Air Traffic Control, Vessel Traffic Services, and Defense & Security domains. The SYSTEM COORDINATION ensures data consistency, provides data persistence and supports the distribution of data transactions to all connected system components and users.

OPScenter™ SYSTEM COORDINATION is the ideal platform for easy integration of other application components like Sensor Data Processing, Safety Net or Recording & Playback.

The SYSTEM COORDINATION offers an open and extensible framework for so-called data managers that ensure the exchange of special consumer data types.

BARCO

Visibly yours

Advanced system coordination framework

Real-time synchronization of system data



Integration platform

Within an operational system environment, OPSCENTER™ SYSTEM COORDINATION is designed to act as exchange platform for:

- Sensor Data Processing
- System Management
- Safety Net
- Simulation
- Data Management
- Recording & Playback
- Display

It makes sure that each event triggered in the system network is immediately checked, stored and distributed to the related system components.

The OPScenter™ SYSTEM COORDINATION component provides the framework for exchange, persistence and automatic notification of highly dynamic data within an operational system network. It receives, stores and distributes high-level information like traffic data (tracks), planning data (flight plans) and other data to all registered clients. It consists of two main sub-components:

- System Coordination Process (SysCo)
- Message Forwarder

Message Forwarder

The Message Forwarder takes over highly volatile traffic data via LAN interface, filters, preprocesses and distributes the information to the SysCo, to the Display and the Recording and Playback component. This process is completely software-based, which makes it very flexible and easy to adapt to specific requirements.

Radar data distribution

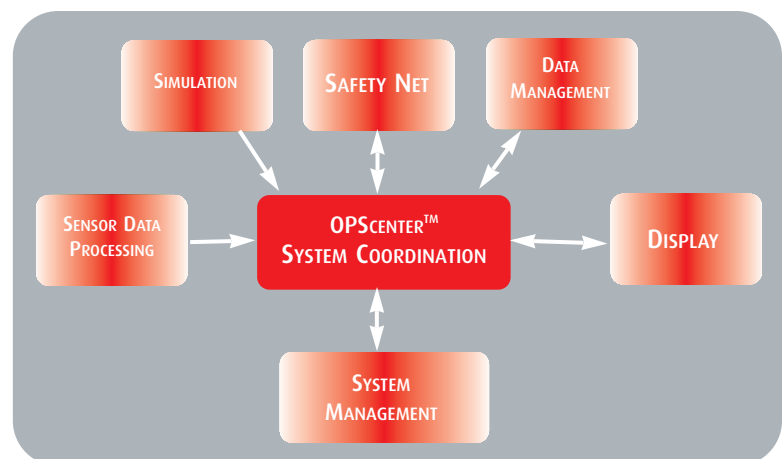
The central Message Forwarder is responsible for receiving data from external systems and distributing them to all connected processes. It provides the switch between the radar sources at the entry point of the operational system. It also checks the messages for corrupted or inconsistent data and drops these messages.

System Coordination Process

The centralized SysCo acts as an object server and allows to integrate different radar data or flight data plan. The SysCo is responsible for Multi Track Correlation and Flight Plan Track Association. It also helps to coordinate received data such as QNH or sectorization within the system.

Always up-to-date

SysCo makes sure that operators get the most up to date information possible. The SysCo component ensures immediate data distribution to all clients and also synchronizes them when returning after a start-over. SysCo also distributes configuration data to the connected displays; this reduces the effort to administer the connected clients.



Data consistency, persistency & distribution

Highest flexibility for component integration and communication

System Manager Framework

The SysCo architecture also supports to plug-in "managers" to provide further data processing functions and/or interface to external systems like:

- Conflict Manager
- Topology Manager
- Flight Plan Manager
- Track Manager
- Configuration Manager

So the SysCo component is a perfect basis for future system upgrades.

Conflict Manager

The Conflict Manager does the administration of the conflicts identified by the Conflict Detection Engine. That includes checking for conflicts against operational rules or maintaining the status of a conflict (acknowledge, suppress, delete). All conflict consumers are provided with a consistent conflict list.

Topology Manager

The Topology Manager does the administration of topology objects like areas, lines, beacons which can be inserted by operators. It provides all connected clients with accurate geographical maps and elements.

Configuration Manager

User profiles that contain the reference set of the operator work stations can be exchanged by using the Configuration Manager. The Configuration Manager can control access management which defines user roles and assigns their rights within the system.

Multiple radar sources

OPSCenter™ SYSTEM COORDINATION has interfaces to multiple radar sources such as local radars or radar networks like ARTAS or MADAP. Data delivered by these sources can be either in ASTERIX, Aircat500 or other custom formats.

Multi track correlation

Tracks delivered by multiple sources are identified and correlated by the SysCo Track Manager. These tracks are represented as one logical track, i.e. operations performed on a track are automatically done for all other sources. The operator can select the different sources online through the display. This function is especially valuable for fall-back systems.



Track-plan association

When receiving traffic objects that have a kind of positive identification like Mode 3A/S or AIS the plan manager can access the planning database, extract the plan for the respective target and associate the plan or parts of it like the call sign to the track. This automatic dependant identification feature is an essential element in the identification process that reduces operator workload and ensures data reliability.

Benefits

- Real-time distribution of highly volatile traffic data
- Reliable exchange of data within the system network
- Easy integration of third party software components
- Future-proof open architecture
- Completely software-based for high flexibility

Specification

Key features

- Administration of highly dynamic data flow in the system to ensure maximum data consistency, redundancy and real-time distribution
- Processes object-oriented data (e.g. flight plans) and highly dynamic data streams (e.g. ASTERIX data)
- Identifies and suppresses corrupted or inconsistent data
- Real-time integration platform
- Integrates multiple radar sources
- Provides radar data distribution
- Multi track correlation
- Track-plan association
- Flexible framework to plug-in additional system functionality including interfaces to external systems
- Integrated with other OPSCENTER™ components like SAFETY NET and DISPLAY
- CORBA-based framework

OPSCENTER™ is a product suite of Barco Orthogon AG, comprising standardized components for operational systems. All SYSTEM COORDINATION components described in this publication are components of OPSCENTER™.

Barco Orthogon AG offers sophisticated software tools and solutions for mission-critical applications in the fields of Air Traffic Control, Vessel Traffic Services and Defense & Security. It maintains offices in Bremen, Stuttgart, Frankfurt (Germany), and a subsidiary in Smithville, New Jersey (USA).

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Technical Specifications are subject to change without prior notice

For more information on our software components, please visit

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