

# Mosaic Sync Director

## Timing management and sync assurance

### Benefits

- Fully integrated with Mosaic Network Controller**  
 Reliable, secure and user-friendly management and surveillance of Adtran transport and timing solutions
- Synchronization topology view**  
 IEEE1588 PTP and SyncE map of timing network showing even internal timing architecture of devices; framework for monitoring of multi-vendor boundary clocks
- Syncjack™ monitoring and assurance**  
 Comprehensive PTP health monitoring with Syncjack™ probes and a PTP assurance application
- GNSS assurance**  
 Framework for multi-vendor GNSS monitoring and analysis, including root cause analysis for GNSS failures
- GNSS firewall**  
 Automated optimization and security protection of GNSS
- In-service sync delivery analysis**  
 Continuously monitoring, analyzing and optimizing synchronization topology; identifying and troubleshooting problems; analyzing bottlenecks and preventing timing loops

### Overview

As synchronization becomes more important in many networks, centralized visibility and control of the mission-critical timing environment becomes essential. Our Mosaic Sync Director, in combination with our advanced Syncjack™ technology, constitutes a powerful management platform to ensure perfect synchronization and assure synchronization everywhere in the network (as part of A-PNT).

Mosaic Sync Director is an advanced management platform providing centralized multi-technology control for the distribution and assurance of frequency, phase and time synchronization. Implemented in client-server architecture, Mosaic Sync Director provides the flexibility, scalability and performance required to meet even most stringent requirements in network and application synchronization. Its graphical user interfaces relieve service teams from troublesome and time-consuming management processes. What's more, extended GNSS and PTP synchronization assurance capabilities provide network operators with comprehensive synchronization performance information for transparent monitoring and highly efficient operations. Our Mosaic Sync Director is part of our comprehensive Mosaic Network Controller solution suite.



# MOSAIC SYNC DIRECTOR

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## High-level technical specifications

### General

- Comprehensive fault management, real-time and historical performance measurements, inventory and security management
- Backup and archiving
- High availability
- Northbound interface
- Access to local management tools

### Visualization

- Intuitive point-and-click GUI
- Wizard-based provisioning
- Tree-like display of sync network topology
- Network and sync view on map
- Quick access to all parameters
- View of sync-related alarms and performance data
- Ability to monitor third-party BC via open API and external “collectors” software

### Sync topology view

- End-to-end timing chain on map
- Active clock stream identification
- Display of physical, frequency, and time and phase synchronization flows inside devices (internal timing topology ) and in the network (network timing topology)

### Syncjack™ test framework

- Efficient provisioning of Syncjack™ probes
- Graphical display of PTP standard metrics, MTIE and phase accuracy
- PTP assurance optional extension to Sync Director for real-time and long-term TE/ TIE data collection and analysis by advanced analytics tool for on-demand and online quality measurements (QM) and threshold crossing alerts (TCA)

### Security

- Multi-level password protection and encryption
- External user authentication (RADIUS, TACACS+, LDAP)
- Self-managed user restricted views
- User activity log

### Sync nodes

- SyncE node
- PTP clocks for different PTP profiles
- Management of third-party vendor PTP grandmasters, boundary clocks and GNSS receivers
- Connectivity management of remote PTP slaves, including unmanaged third-party slaves

### GNSS assurance

- Centralized GNSS solution to assure synchronization quality:
  - Geo map GNSS sites and health visualization
  - GNSS data collection from sync devices and external sources (various dashboard views, live and historical)
  - Control of GNSS cyber threats and satellite signal quality
  - “Smart” graphs and reports for GNSS stats presentation and comparison between sites and time intervals
  - Built-in health test – GNSS installation acceptance
  - AI-based predictions of obstructions/jamming/spoofing
  - Root cause analysis for GNSS alarms
  - Ability to monitor the third-party receiver based on user-defined (custom) scripts
- Short term: active monitoring, identification of GNSS installation/blocking issues and fast detection of cyber threats
- Long term: optimized antenna positioning for perfect time synchronization across a transport network

### GNSS firewall

- Utilize AI for automated detection of GNSS vulnerabilities
- Software-based solution, without additional hardware
- Applicable to most vendors’ GNSS receivers

### Streaming telemetry (for SoftSync only)

- Collect high-scale, high-frequency performance monitoring data
- User-configurable – subscription-based data

### Sync topology view

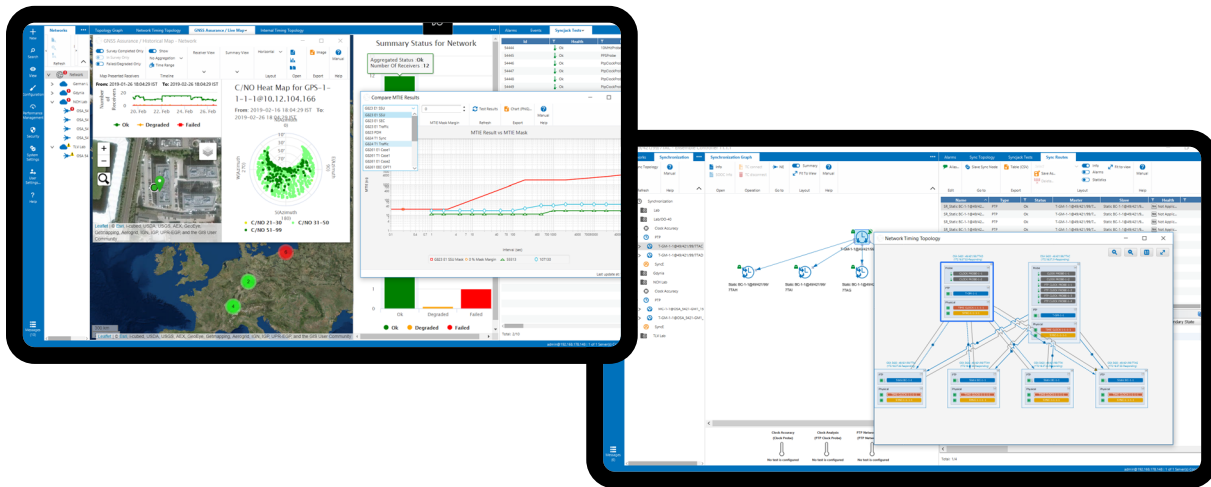
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# Mosaic Network Controller

## Applications in your network

### Advanced management platform for synchronization monitoring and assurance

- Centralized visibility and control of network timing infrastructure
- GNSS assurance and PTP assurance as optional extensions of Mosaic Sync Director for continuous monitoring and improvement of synchronization network performance
- “Timing as a service” to manage precise time, phase and frequency distribution in packet networks
- Accurate phase and frequency information for mission-critical timing environments such as packet-based mobile backhaul, next-generation network technologies (LTE-A, LTE-TDD, 5G RAN networks, etc.), enterprise networks and financial data centers



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