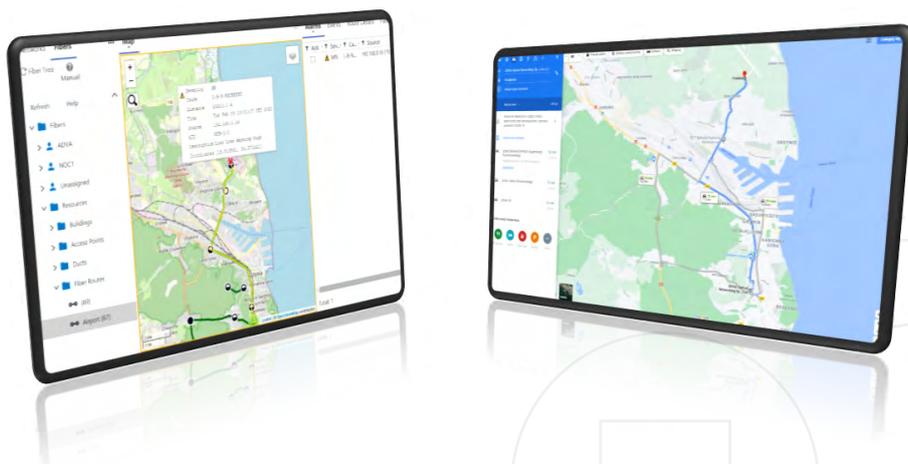


## Ensemble Fiber Director

### Real-time GIS-based solution for fiber network surveillance

Optical fiber is at the core of modern communication systems. Ranging from access solutions all the way to backhaul networks, the fiber plant is the underlying element making communications fast and reliable. All network operators must therefore react quickly and efficiently to any fiber events that jeopardize service continuity. With ADVA's Ensemble Fiber Director solution any such event is notified to the services team in real time and immediate action is initiated to resolve the problem.

The Ensemble Fiber Director is an optional component of the Ensemble Controller suite. The system interacts with our ALM fiber monitoring solution to locate fiber-related issues. Using geographic information system (GIS) tracking, it monitors the fiber infrastructure and precisely pinpoints any faults. Equipped with multiple notification options, the system can quickly alert the responsible parties of any fiber alarms/conditions via email/SMS or third-party alarm management systems. Ensemble Fiber Director also aids in proper documentation of the outside fiber plant including OTDR-to-GIS correlation tools for best-in-class accuracy. There is no better way to monitor and manage outside fiber plant.



### Your benefits

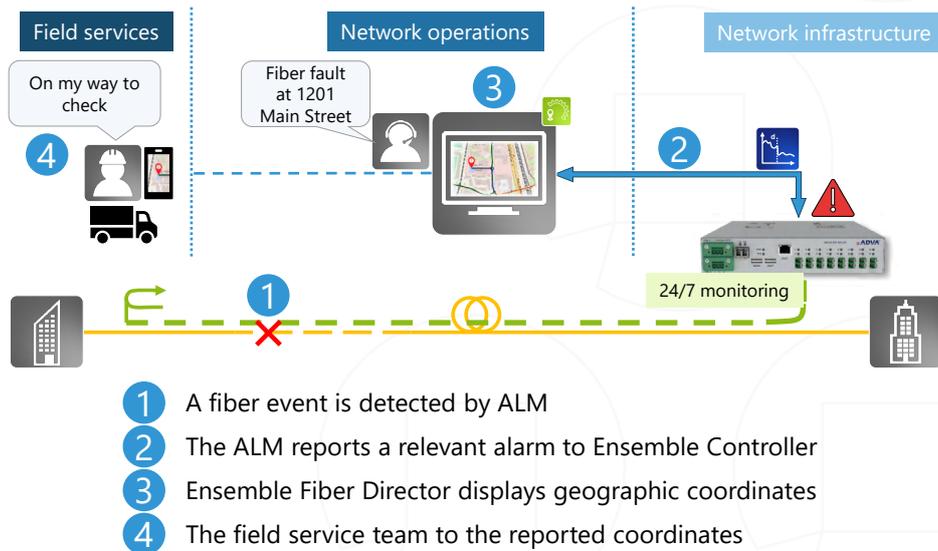
- ✔ **Reliable data sources**  
Extensive correlation tools, route import and overlength documentation capabilities for premium data accuracy
- ✔ **Geographic data**  
Fiber events visible on real-life geographical maps, extensive notification options and Google Maps integration for rapid deployment of repair teams
- ✔ **Ensemble Controller suite**  
Reliable, secure and user-friendly management and surveillance of ADVA FSP and OSA networks with full FCAPS support
- ✔ **Wholesale service management**  
Efficiently monitor routes and resources offered to individual customer services
- ✔ **Planning tools**  
Plan diverse service routes to avoid bottlenecks or single points of failure
- ✔ **Customer impact analysis**  
Route assignment to customers enables proactive notification of faults and restoration activities

# High-level specifications

<p><b>Value-add</b></p> <ul style="list-style-type: none"> <li>• GIS application integrated with Ensemble Controller</li> <li>• Industry-standard WFS API for third-party data source integration</li> <li>• Data import functions for most popular geographic files (SHP, KMZ/KML, WGS84)</li> </ul>	<p><b>Operational advantages</b></p> <ul style="list-style-type: none"> <li>• Customer route association for impact analysis</li> <li>• Simplified troubleshooting based on accurate geographic locations</li> <li>• Custom cable layout configuration for easy fiber identification</li> </ul>	<p><b>Network documentation</b></p> <ul style="list-style-type: none"> <li>• Easy localization of outside fiber plant elements with geographic coordinates</li> <li>• Automatic population of the address database</li> <li>• Data search features for convenient OSP management</li> </ul>
<p><b>Data accuracy</b></p> <ul style="list-style-type: none"> <li>• Extensive length correction tools for slack cables, helix factor and vertical sag</li> <li>• Data correlation between ALM units and Ensemble Fiber Director</li> <li>• Scaling to tens of thousands of components</li> </ul>	<p><b>Notification options</b></p> <ul style="list-style-type: none"> <li>• Proven ENC alarm engine with alarm filtering and flood suppression</li> <li>• SMTP client capability for email and SMS notifications</li> <li>• Integration with Google Maps for immediate routing for field service teams</li> </ul>	<p><b>Visualization</b></p> <ul style="list-style-type: none"> <li>• Support for public (Google Maps, OpenStreetMaps, etc) or private tile servers</li> <li>• Wide variety of reports for performance and fault analysis</li> <li>• Layer filtering options</li> </ul>

## Applications in your network

- Advanced fiber plant monitoring, assurance, and visualization
- Centralized visibility of entire fiber plant infrastructure
- Real-time, real-world situational awareness
- Proactive notification of fiber faults with precise geographical fault location
- Faster fault recovery



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Product specifications are subject to change without notice or obligation.



### Server requirements – GIS Server

Parameter	Specification	Units
RAM	16	GB
CPU	2.2	GHz
Hard disk space	110	GB
System architecture	64-bit	
Supported OS (*)	CentOS/RHEL	

(\*) Ensemble Fiber Director server runs as a Docker container

### Client requirements – EFD Editor

Parameter	Specification	Units
RAM	8	GB
CPU	2.5	GHz
Hard disk space	10	GB
System architecture	64-bit	
Supported OS	Windows 10	

### Communication protocols

Interface	Protocols
ALM communication	SNMP, REST, FTP
ENC Communication	HTTP, HTTPS, WFS API
3 <sup>rd</sup> party systems	WFS API

### Geographic file support

File format	Support
Shape (SHP)	Supported natively
KMZ/KML	Supported natively
Other WGS-84 compliant formats (**)	Supported after conversion

(\*\*) Any standard file format can be easily converted to SHP files for import

### Ordering information

#### Software licenses:

Product code	Product name	Product description
1091008940	ENC/EFD	Ensemble Fiber Director license: Serves for geographical management of fibers in connection with ALM devices  <i>NOTE: A current ENC license is required to operate the software</i>
1091008941	ENC/EFD/Editor	Ensemble Fiber Editor Application license for one client

#### ALM connection licenses:

Product code	Product name	Product description
1091009401	ENC/EFD/CL/M	Ensemble Fiber Director connection license for one ALM16 unit
1091009402	ENC/EFD/CL/L	Ensemble Fiber Director connection license for one ALM64 unit

Upgrade licenses available as well, contact ADVA for more information