ALCATEL SUBMARINE NETWORKS

ASN End to End Services & Solutions
for Submarine Cable Systems

Included Under Warranty
- Remote Technical Support available 8am/6pm CET
- Dry & Wet Plant Hardware Repair

Optional
- Remote Technical Support 24/7/365
- Dry Hardware Fast & Advanced Replacement
- Full set of Advanced Services

ASN Services objective: ensuring the resilience of undersea critical infrastructure.

ASN SERVICES

Our mission is to provide a full suite of high quality services to customers throughout the complete network life cycle of each submarine cable system. We aim to ensure customer satisfaction for commercial and technical support through the provision of advanced and unique services to efficiently assist, operate and maintain their systems.

OVERVIEW

The ASN Services Team is based in France and provides a full range of services to customers, such as:

- Remote Technical Support (on-site intervention as an option)
  - Dry & Wet Plan Hardware Repair for faulty equipment
    - Wet Plant Spare Testing
      - Land Route Audit & Repair
        - Cable Surveillance Solutions
          - Network Services (NOC, Cyber Security, DCN Management)
            - etc

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Remote Technical Support

Support for problem neutralisation and resolution. ASN provides on-line expertise and related services

Technical Support for Severity 1* issues:	Working Hours (WH)
Technical Support for Severity 2 & 3 issues:	Working Hours (WH)
First Level Support:	Customer's Responsibility
Technical Support for Dry & Wet Plant:	Working Hours (WH)

24/7/365 optional

Working Hours (WH): Monday to Friday, from 08:00 am to 6:00 pm Central European Time (CET), except bank holidays in France.

Dry & Wet Plant Hardware Repair

This service manages the repair of faulty items sent back to ASN and operates during Working Hours (WH). This service includes shipping, duties & taxes, customs clearance from and back to the customers premises. Fast & advanced replacement for dry hardware equipment is optional.

Support for Fault Location (Land & Sea)

In case of Wet Plant and Land Route issues, technical support is provided during Working Hours (WH) to help identify the Fault Location.

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SUPPORT CATEGORIES

Severity 1 (CRITICAL)

A problem that has a serious impact on the performance of the System. All traffic-affecting and loss of supervision problems fall within this category

Severity 2 (MAJOR)

A problem that creates a significant reduction of performance of the System or a non- conformity of the operation & maintenance of the System that requires a prompt reaction.

Severity 3 (MINOR)

All operational problems other than Critical or Major Problems. This will include request for assistance such as questions on "how to do something" or general system information.

First Level Support

(Under customer's responsibility)

First Level Support activities are typically provided by customer's staff located in the **Customer's NOC and terminal stations**. First Level personnel will be expected to have completed the **identification of Problems** and the elimination of simple breakdowns by means of **fault-finding procedures** as described in the product and system manuals prior to the escalation to ASN Second Level Support.

- **Control of the immediate environment** in which the Equipment is located (temperature, dust, hygrometry, etc.)
- Contact ASN technical support team prior to any change or modification to be performed on the System
- **Maintain** an appropriate level of working spares and test Equipment
- During the design life of the system **maintain sufficient technical and service** personnel who have completed training on the System Equipment
- Perform First Level Support actions before contacting ASN.

Second Level Support

(Under ASN's and the customer's responsibility)

The following activities are **performed by the ASN** technical support team with the assistance of on-site and Customer's NOC personnel:

- **Analysis** of the troubleshooting
- **Formulate and recommend** an action plan for problem neutralization and resolution
- **Implementation** of an action plan for problem neutralization and resolution
- Reproduction of the Problem on a **test platform** whenever possible
- **Localising** product issues
- **Providing workarounds** until Problem can be fully resolved.

Escalation to Third Level Support (R&D/lab)

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TARGET TIMES

Turn Around Time (TAT) for repairs

From the date ASN receives the item for repair until the repaired item is ready to be shipped back to the customer.
Repairs may involve the exchange of a faulty item with a replacement item. ASN bears all costs of repair during the Warranty Period including shipping and customs clearance.

Warranty period	End of Warranty - 10 years of operation	10 years - system design life (25 years)
• **Submerged equipment:** 6 months	• **Submerged equipment:** 9 months	• **Submerged equipment:** 12 months
• **Dry plant equipment:** 3 months	• **Dry plant equipment:** 6 months	• **Dry plant equipment:** 9 months
• **Software:** 3 months	• **Software:** See target time to supply below	• **Software:** See target time to supply below
• **Third-party equipment:** 3 months	• **Third-party equipment:** 9 months	• **Third-party equipment:** 12 months

Target Time to Supply (TTS) for new item

From the date ASN receives the order for new item from the customer to the date the items are ready for shipping to the customer.
All new items supplied are subject to agreed commercial terms and conditions.

Warranty period	End of Warranty - 10 years of operation	10 years - system design life (25 years)
• **Cable:** 9 months	• **Cable:** 12 months	• **Cable:** 18 months
• **Submerged equipment:** 12 months	• **Submerged equipment:** 15 months	• **Submerged equipment:** 18 months
• **Dry plant equipment:** 9 months	• **Dry plant equipment:** 12 months	• **Dry plant equipment:** 18 months
• **Software:** 3 months	• **Software:** 9 months	• **Software:** 12 months
• **Third-party equipment:** 6 months	• **Third-party equipment:** 9 months	• **Third-party equipment:** 12 months

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Support Contract Renewal

- At the end of the Warranty Period, customers have the opportunity to renew their Maintenance Contract with ASN Services to benefit Long-Term Support for their system.

- Customers will be contacted prior to the end of the Warranty Period by their ASN Services commercial representative to discuss available options for both Technical Support and Hardware Repairs services.

Advanced Services

ASN has also developed a full range of optional services to provide a complete End to End submarine cable solution, available as soon as the submarine cable system is live. The Services Sales Team is also involved prior to the system implementation for network related services that need to be anticipated, such as NOC, Cyber Security, and DCN.

Global Services Contracts (GSC)

Remote Technical Support
Direct access to experts

Dry Plant Hardware Repair
Including shipping, customs clearance, duties & taxes

Wet Plant Spare Testing
Ensure all spares are ready to use

Land Route Audit & Repair
Audit & on-site interventions for land routes & beach joints

Marine Repair
For undersea faults - depot facilities

Marine Repair Coordination
With extended remote support

Remote Support during Marine Repair
For undersea faults - depot facilities

Live Video Support
For interactive and real-time remote assistance

DAS (Distributed Acoustic Sensing)
Real-time surveillance along cables

Asset Monitoring
Cable protection against external aggression

Next Generation NOC Services
Monitor, Alert, Prevent, Manage, 24/7/365

On Demand Services (ODS)

On-Demand Expertise
Audit, preventive & corrective actions - remote/on-site

Training
On dry & wet equipment, jointing etc

Spare Refilling
Cable, UJ, etc

Network Evolution Guidance
Upgrade/ replacement of equipment, configuration updates, capacity add-on

Cyber Security Services
Network protection against cyber attacks

Recycling
Out of service dry & wet equipment recovery & revaluation

Relocation
Station, equipment, land and submarine cable

DCN Management
Configure, optimize and supervise your submarine network

C-OTDR Service
Tests integrity of the repeatered fiber pairs

If you have any question, please contact us: services@asn.com

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