



network And data services

iDirect services on third party capacity for extended coverage

Telenor Satellite's iDirect services are supported from our ground operations at Nittedal, located near Oslo in Norway.

Telenor Satellite offers a wide range of iDirect solutions, utilising third party capacity on the Telstar and Eutelsat fleet, for extended coverage throughout Europe, Africa and the Caribbean.

Supported from our ground operations at Nittedal, Telenor Satellite is operating one of its 11 metre hubs to provide VSAT services on our dedicated iDirect hub. Suitable for use with antennas as small as 60cm, Telenor Satellite's iDirect solutions deliver unparalleled quality without the need for investment in teleport infrastructure or commitment to long term satellite capacity.

Telenor Satellite's iDirect VNO (Virtual Network Operator) solutions provide several levels of flexibility and cost benefits to suit your specific requirements:

Hardware VNO

The hardware VNO service model is ideal for VNO's wishing to expand their network and increase capacity throughout Europe and the Middle East. This service model provides full, unrestricted access to your own dedicated hardware resources, enabling you to manage the entire network, allowing re-configuring of outbound and inbound carriers to match the requirements of your end users.

Soft VNO

The soft VNO service model is an ideal solution for resellers of individual shared services who need more control and visibility of their VSAT network without the need for investment in hardware. As a soft VNO, you can access the VNO portal to manage your dedicated capacity on Telenor Satellite's shared hardware platform.

Managed service

The managed service model is for new or existing resellers who want to grow their business without the need for the commitment of dedicated bandwidth pool or to have the resources and skills to manage an iDirect VNO platform. This service model is scalable and offers an easy transition to the VNO services as business grows and demands from customers increase. The managed service is controlled by Telenor Satellite's engineers and is a perfect solution for resellers who have limited time and resources. The network bandwidth is shared with other terminals and you can choose from a set of available bandwidth profiles and a fixed contention ratio. By applying a fair access policy Telenor Satellite ensures that we never overcontend our networks. A typical service example could range from 512 kbps/128 kbps up to 4Mbps/1 Mbp.

key

- CNO** - Customer network observer
(iDirect iMonitor, monitoring license)
- NMS** - Network management system
- PP** - Protocol Processor

Service element at a glance

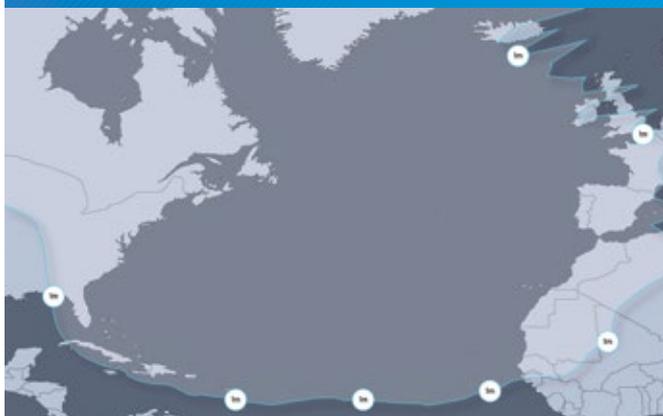
Service	Line cards	NMS and PP servers	VNO software license	CNO monitoring license	Bandwidth resources
Hardware VNO	Dedicated or can be the property of the customer*	Dedicated	Yes	No	Dedicated
Soft VNO	Shared or dedicated	Shared	Yes	No	Dedicated
Managed services	Shared	Shared	No	Yes	Shared

*Note: Line cards may be the property of the customer as long as it is compatible with Telenor Satellite's other infrastructure.

indirect THIRD-PARTY extended coverage



EUROPEAN COVERAGE
T11N



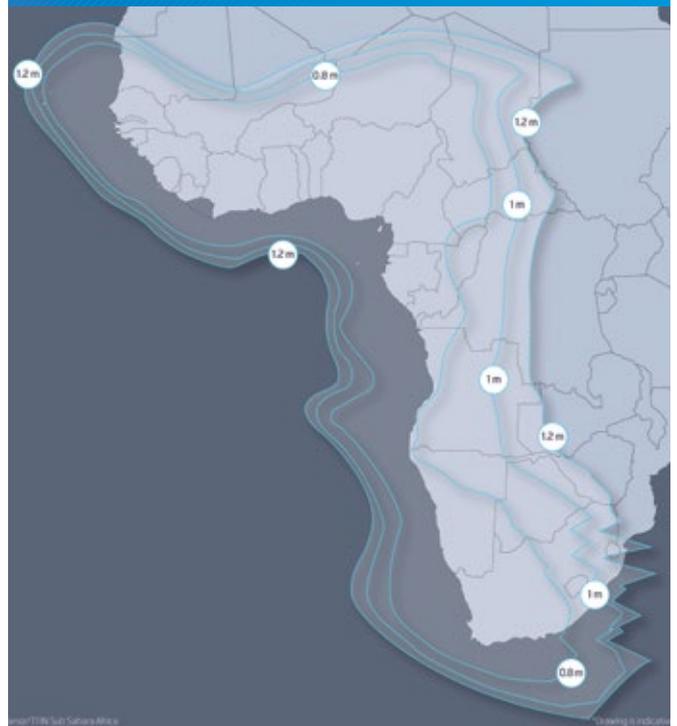
ATLANTIC COVERAGE
T14 R coverage



CARIBBEAN COVERAGE
Telstar T11N



PAN-EUROPEAN COVERAGE
Eutelsat E36B



AFRICAN COVERAGE
Telstar T11N