

Elisa Ethernet Hub and Spoke Service

Elisa Ethernet Hub and Spoke is a modern and cost effective service for implementing multiple point-to-point transmission channels using Ethernet technology. The hub and spoke model means that several spoke sites are connected to a single hub site in a star like topology. Each spoke connection is associated with a separate virtual connection at the hub site. The Ethernet virtual private connections generated for the customer between spokes and the hub are isolated from each other, so traffic within each virtual private connection is secured. Elisa Ethernet Hub and Spoke service is available with multiple connection speeds nationwide in Finland and in selected International destinations.

Content of the service

Ethernet Hub and Spoke solution is composed of one hub and multiple spokes which both are referred as subscriptions. The subscriptions are delivered to Customer sites, and one logical channel (EVC, Ethernet Virtual Connection) is created from each spoke site to the hub site. Each EVC has a point-to-point topology, meaning that spokes can not send traffic directly to each other.

The content of Ethernet Hub Subscription is the following:

- Port on Elisa's Provider Edge Router, with 1 Gbit/s, 10 Gbit/s or 100 Gbit/s speed, depending on the service which has been subscribed
- Elisa SLA Basic Service Level
- Termination of the EVC which originate from the separately ordered spoke subscriptions. Each spoke subscription is associated with an individual EVC at the hub subscription

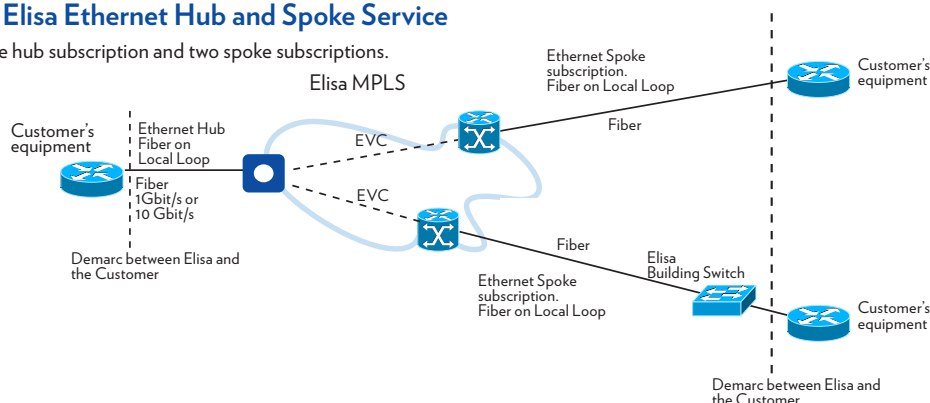
The content of the Ethernet Spoke Subscription is the following.

- Connection through available technology (selected by Elisa) from Elisa's backbone network to customer location. The handover interface of the is single mode fiber in the building distribution centre depends on the capacity and the length of the access fiber:
 - Maximum 1 Gbit/s capacities 1000Base-BX10-D, therefore CPE needs the 1000Base-BX10-U interface
 - Maximum 1 Gbit/s capacities and when the access fiber length exceeds 10 km, the handover interface is 1000Base-LX
 - 2 – 10 Gbit/s capacities 10GBase-BX10-D, therefore CPE needs the 10GBase-BX10-U interface.
 - 2 – 10 Gbit/s capacities and when the access fiber length exceeds 10 km, the handover interface is 10GBASE-ER
- Port on Elisa's Provider Edge Router, with agreed port speed
- One EVC towards the hub subscription which the Customer has earlier separately ordered
- Elisa SLA Basic Service Level

Service can be complemented with various additional features and/or services, as described later in this document. The service is technically based on Elisa's domestic and international Multiprotocol Label Switching (MPLS) network. In the Elisa's MPLS-network, the redundancy of the core network equipment are secured either at the device level - power supply, control/processor card - or with duplicated devices. Backbone fiber connections between equipment are diversified. Logical resiliency is based on the use of different protocols and mechanisms to ensure quick re-routing in case of failure.

Reference model for Elisa Ethernet Hub and Spoke Service

Example which consists of one hub subscription and two spoke subscriptions.



The handover interface is confirmed in the delivery confirmation/notification of completion.

Elisa Ethernet Spoke

One-time charge Spoke	
Delivery charge	€690
Modification to connection, no installation by an engineer	€210
Additional engineer visit (Minimum pricing is 2h)	€98/h

Monthly charge	
Capacity 2M	€75
Capacity 5M	€120
Capacity 10M	€165
Capacity 20M	€178
Capacity 50M	€203
Capacity 100M	€245
Capacity 200M	€256
Capacity 500M	€289
Capacity 1G	€345
Capacity 2G	€390
Capacity 5G	€490
Capacity 10G	€615

Spokes will be terminated to the hub that is situated in the same Elisa's SMP region. If customer's hub is situated in different Elisa's SMP region than the spoke, connection will be priced case-by-case. Prices apply to the connections to Elisa's existing network. Ethernet Hub prices are available at the Elisa NNI Services price list.

The final availability will turn out in connection of an availability enquiry or an order. Prices apply to the connections to Elisa's existing network. If, after the conclusion of the agreement, the content or service solution of the agreement is changed or cancelled upon the request of the Customer, Elisa has the right to separately invoice the additional costs and work resulting from the change. This price list is valid from 13 October 2021. The prices quoted are exclusive of VAT. Taxes and any other official charges valid at any given time will be added to final prices. The prices quoted here do not include indoor network in properties. Elisa's General Terms for Operator products will be applied to the agreement.

Market areas according to Traficom's regulation

Elisa's SMP areas market 4							
Area 12							
Espoo	Hausjärvi	Helsinki	Inkoo	Järvenpää	Karkkila	Kerava	Kirkkonummi
Loppi	Nurmijärvi	Riihimäki	Sipoo	Siuntio	Tuusula	Vantaa	Vihti
Area 56							
Kotka							
Area 61							
Lempäälä	Nokia	Orivesi	Pirkkala	Tampere	Vesilahti	Ylöjärvi	
Area 3							
Alavieska	Haapavesi	Halsua	Kalajoki	Kannus	Kokkola	Kruunupyö	Lestijärvi
Merijärvi	Nivala	Oulainen	Pyhäjoki	Raahe	Reisjärvi	Sievi	Siikajoki
Toholampi	Ylivieska						
Area 18							
Haapajärvi	Hankasalmi	Joutsa	Kannonkoski	Karstula	Keuruu	Kinnula	Kivijärvi
Konnevesi	Kyyjärvi	Kärsämäki	Laukaa	Multia	Pihtipudas	Pyhäjärvi	Pyhäntä
Saarijärvi	Siikalatva	Soini	Toivakka	Uurainen	Äänekoski		
Area 32							
Ilmajoki	Isojoki	Karjajoki	Kauhajoki	Kurikka	Laihia	Mustasaari	Teuva
Vaasa	Vöyri						
Area 33							
Ilomantsi	Joensuu	Kontiolahti	Liperi	Outokumpu	Polvijärvi	Rääkkylä	
Area 34							
Isokyrö	Kauhava	Kuortane	Lapua	Seinäjoki			
Area 37							
Juuka	Lieksa	Nurmes	Valtimo				
Area 65							
Luumäki							
Area 70							
Muurame							
Area 74							
Oripää	Pöytyä						
Area 75							
Paimio	Sauvo						
Area 81							
Raisio							
Area 86							
Suonenjoki							