



# FICOLO DATA CENTER OVERVIEW



# COMPANY OVERVIEW

Ficolo is Finland's first data center company to focus on Colocation and Wholesale Data Center Services.

- Founded in 2011, Data Center operations started in Dec 2011
- Data Center built in to an old underground military facility
- Sole owner of 91.500 sq.ft underground facility
- Providing Carrier neutral, multi tier custom data center solutions
- One of the most cost efficient data centers in Europe – build in security and energy efficiency
- Ficolo values entrepreneurship with a face. The founders and the key personnel are personally responsible for customer projects.

## LOCATION

a cost-effective, secure and optimal underground tunnel

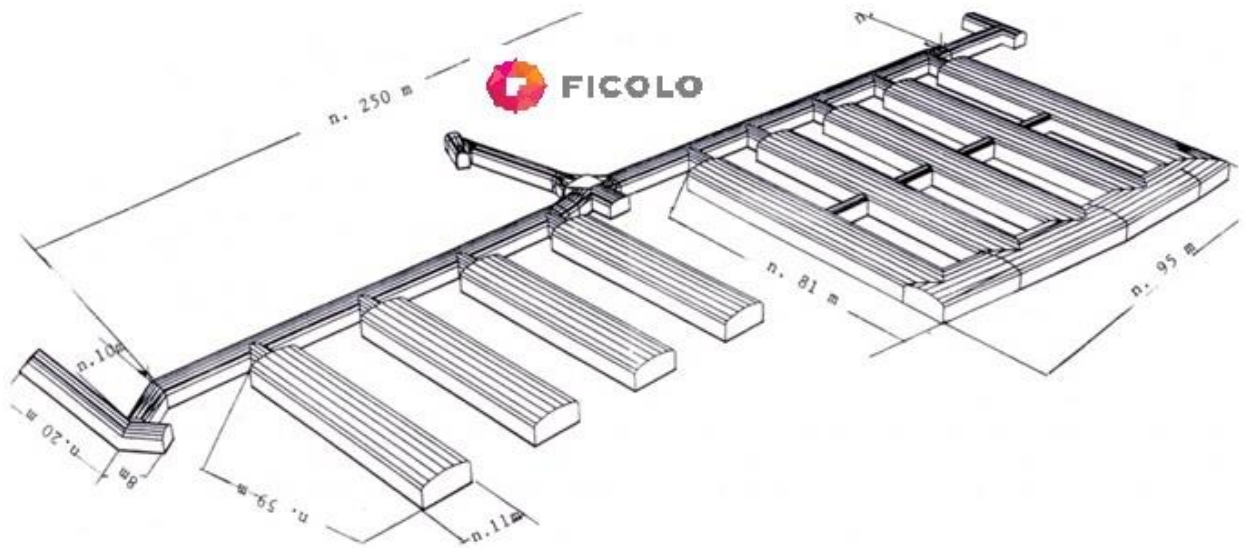
## COLOCATION

a flexible operating model where the extent of collaboration is up to the customer

## FICOLOCATION

our staff and our know-how lead to unparalleled customer service

# DATA CENTER OVERVIEW



## Facility: 91,500 sq.ft facility

- Built for Finnish Military in 1960s
- 5,300 and 8,600 sq.ft tunnel halls
- Above the sea level
- 100% owned by Ficolo

## Power Supply

- >100MW, Wind Energy, (20kV and optional 110 kV)
- Redundant medium voltage ring power distribution
- Redundancy: N+1 and customer specific 2N+1

## Connectivity

- Carrier neutral (4)
- Tier1 Connectivity (Finland and Europe)
- xWDM, Ethernet, MPLS and Internet/VPN

# DATA CENTER INFRASTRUCTURE

## Redundant Power supply

20kV medium power ring network has been implemented to the data center facility. The facility and actual data rooms are separated from each other. Redundancy for 20kV power network has been implemented by diesel generator(s).

Main switches and transformers are dedicated for each tunnel hall and protected by modular or 2N UPS Systems.

## Ventilation and cooling

New customized air ventilation has been built into the facility. The ventilation is partially utilized for cooling (direct free cooling) and heat recovery. The AC system controls the temperature and humidity and the amount of the fresh air. Warm air from the data rooms is collected to warm the connecting tunnels in the facility.

The main cooling has been implemented by using Air-cooled water chillers in free-cooling. CRAC units in the data rooms are redundant (N+1). N+1 redundancy is used for free cooling also.

## Racks

Standard 42U or 45U racks are used (600 or 800 wide, 1200 depth). Space for customer's own or storage racks can also be arranged. Additionally burglary system, video surveillance and access control integrated keys and locks can be added to the individual racks.

# DATA CENTER INFRASTRUCTURE

## Water leakage protection

The Data center and data rooms have been isolated from the tunnel (bedrock) by using a gas-tight sheet and steel module structure. The module structure secures the optimal data center conditions. The structure also makes possible to divide rooms into custom data center rooms or custom security rooms.

The tunnel halls have drainage system for the water collection. Automatic pumps has been added as an additional safety measure. .

## Infrastructure Monitoring

Data Center Infrastructure devices have been integrated into Ficolo's NetAdmin monitoring system. Most of the devices can be managed remotely. Ficolo is actively developing its "Data Center Infrastructure Management" solution for advanced integration with other systems.

## Connectivity

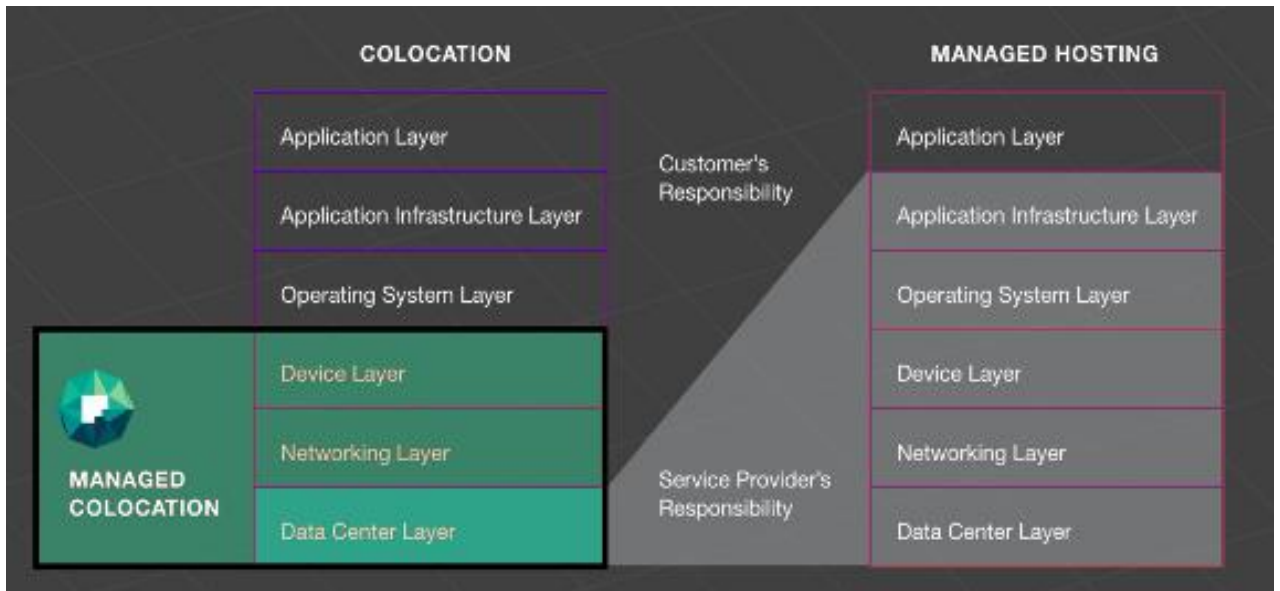
Ficolon is a carrier neutral colocation provider. The fibre connectivity is available from four main carriers in Finland. Currently two carriers have brought their backbone network to the Ficolo's data center. Ficolo uses connections from at least two operators to provide redundant access.

Redundant fibre connections are available into and inside the datacenter. Connectivity redundancy is available until the individual rack level. Redundancy and monitoring has been implemented for all network equipment in Ficolo's data center.

# FICOLO OPERATIONS

## Ficolo Colocation Service Model

Ficolo offers a level of collaboration which the customer can choose



## Ficolo Service Level

Main features of Service Level classification in the table below:

	Standard	Exclusive	Custom
Service Hours	8/5	24/7	24/7
Availability	99.0	99.5	custom
Troubleshooting starts	within 70 min	immediately	custom
Co-creation-, email- or phone support	8/5	24/7	24/7

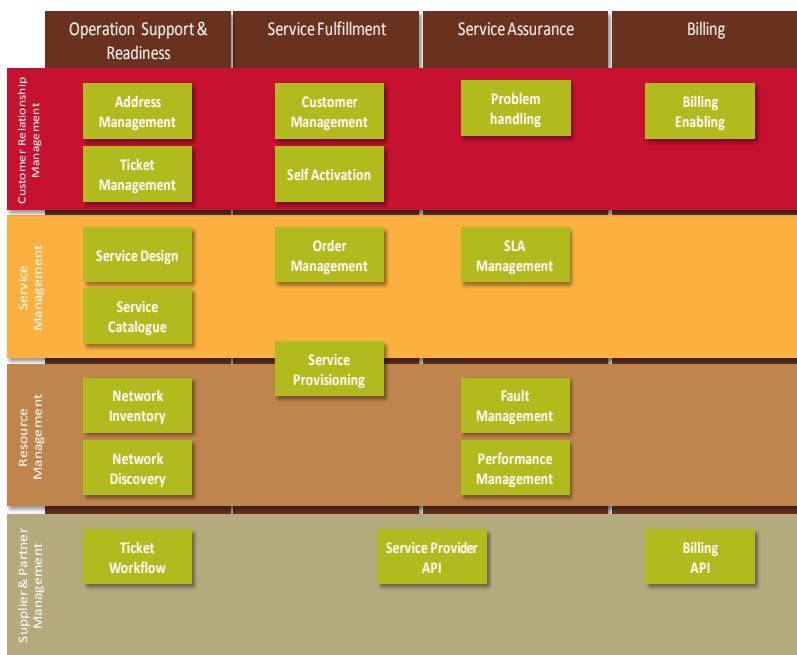
# Service Monitoring, Reporting and Support System

The service and maintenance are carried out around the clock every day of the year. The support and SLA package will be based on the customer solution and requirements. Ficolon Co-Creation Support Forum in online services and support from the dedicated Technical Account Specialist are available. Technical Account Specialist develops the customer's service solution together with customer and Ficolo.

Ficolo Co-Creation Support Forum (will be introduced in phases) offers a modern set of tools for service self-management and communication between customer and Ficolo and Ficolo community. Co-Creation Support includes tools for Online Collaboration and Customer Support. Customer news and technical bulletins will be available in Co-Creation Dashboard. All instructions and wiki articles can be easily found from the service. Co-Creation has been partially built on top of NetAdmin End-to-end operation support solution including tools for example for monitoring, reporting and support services.



End-to-end  
operation  
support



# Operation Centre, 24x7 On Duty Management and Professional Services

Ficolo has 24x7 on call duty arrangements. Ficolo's specialists are available for customer's emergency work when needed.

Possible burglary or fire alarm will be delivered to security service center and to Emergency Response Center. Warnings and alerts will also be delivered to Ficolo's operation center

Remote hands and Eyes services are available. Ficolo can perform all tasks required on site (from basic level technician services to professional services).