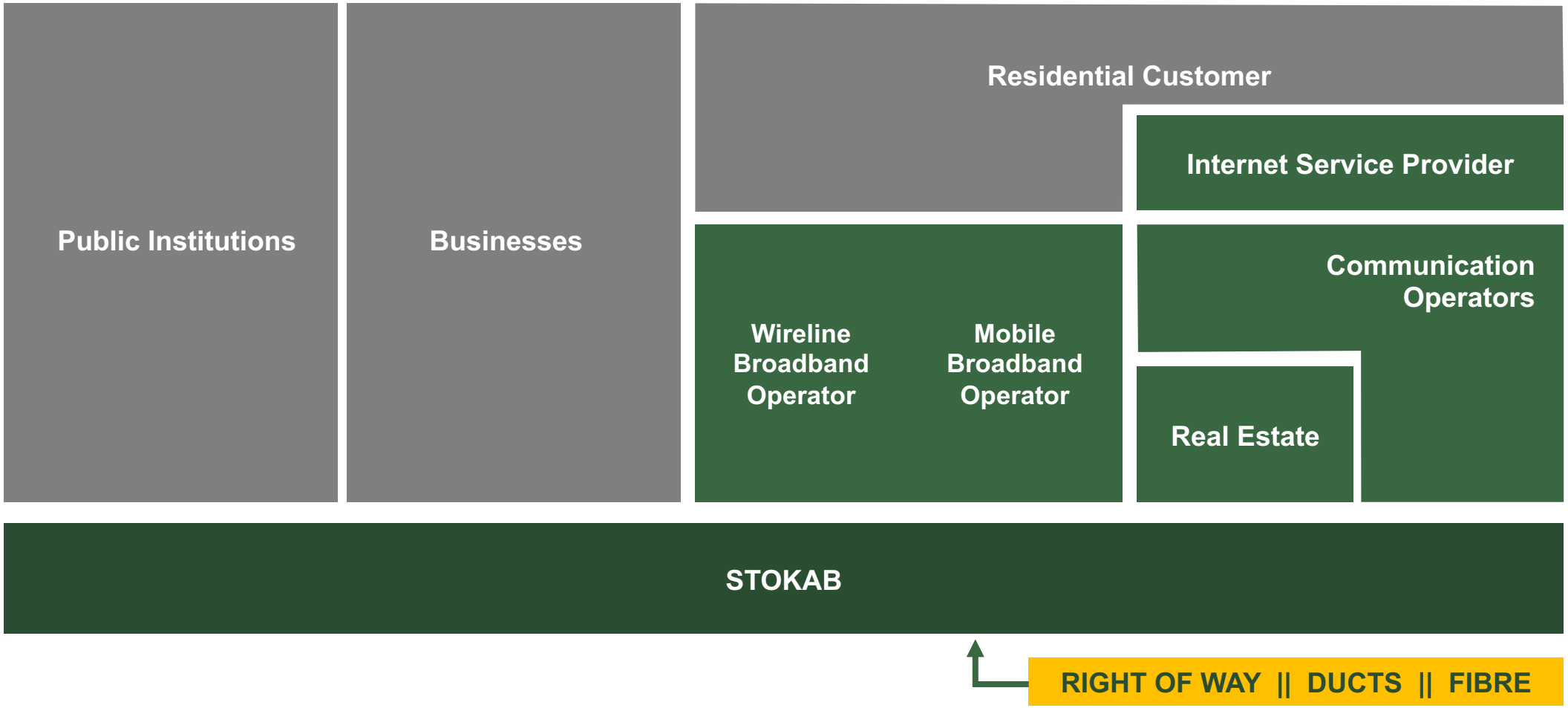
# Stockholms Infrastructure for ICT enables future services from IoT, 5G, Edge datacenters, Edge computing that create the Smart City

# The Stokab model – only physical infrastructure provider

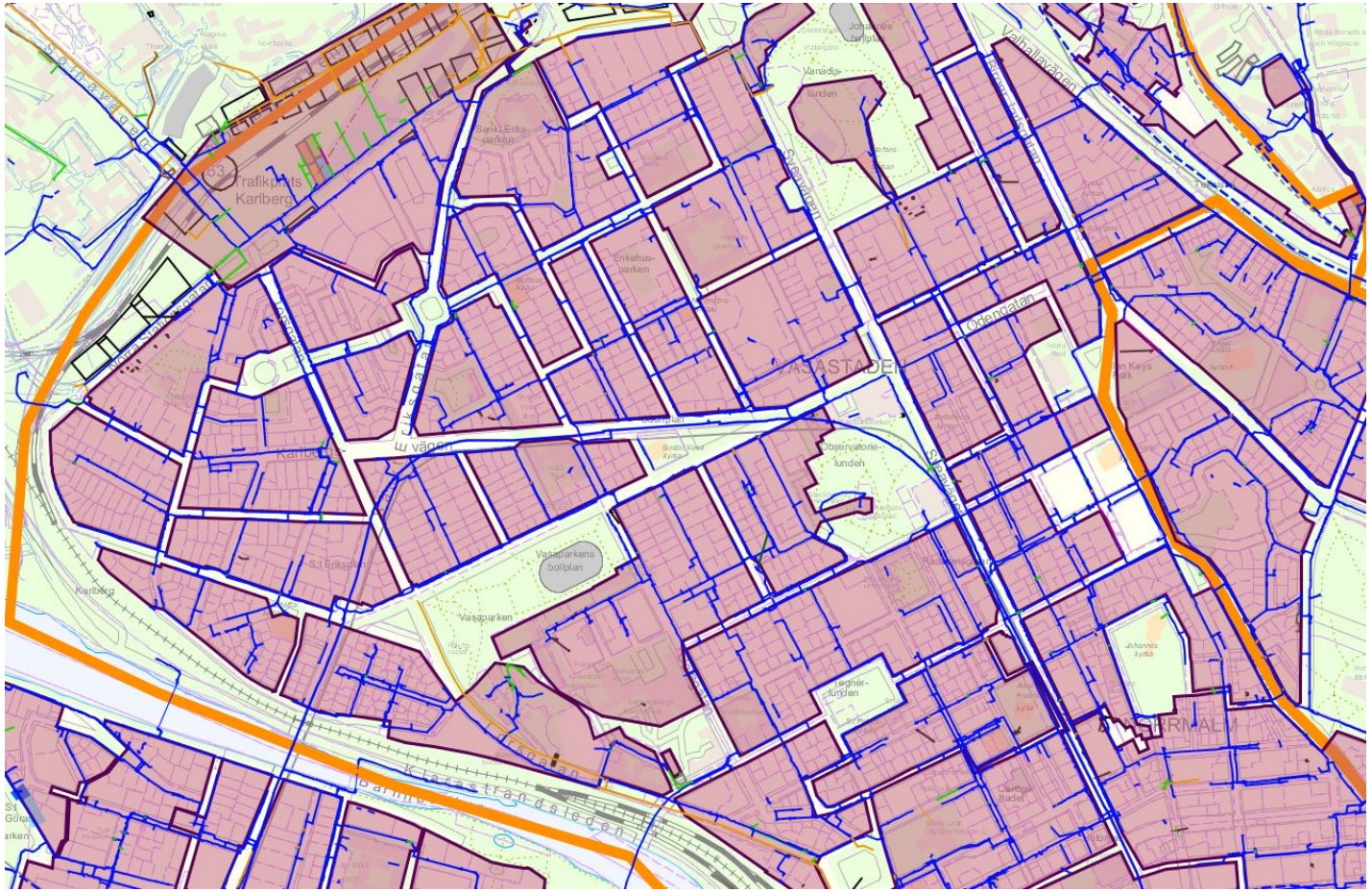


# Stokab’s network

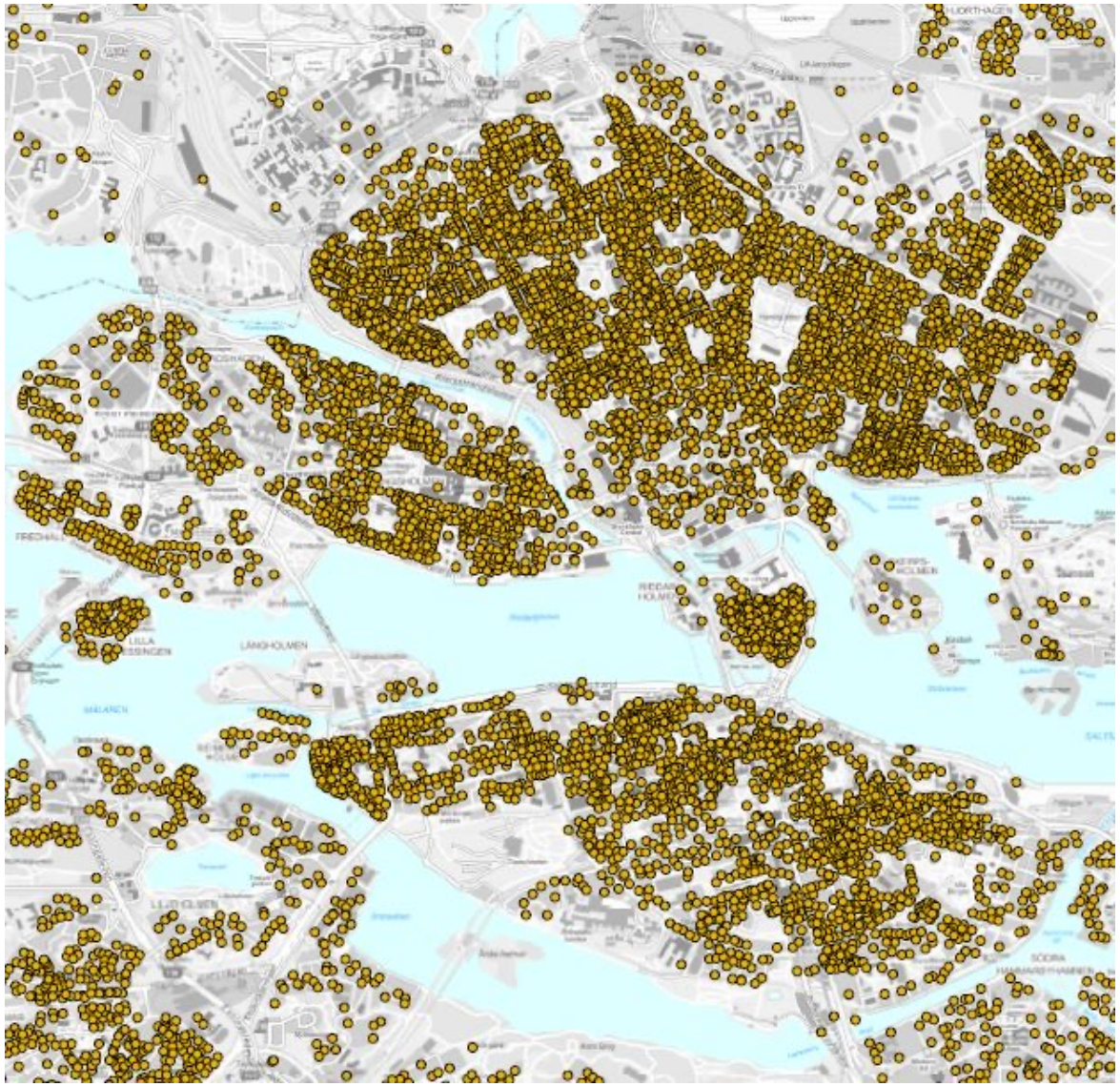
# The Network

- 1,9 million fiber kilometers (48 ways around the equator)
- 10,000 km of fiber Cable
- 3000 km ducts in the ground
- 500 km of seacables
- 350 km in tunnels and railways
- More than 23 000 neutral delivery points (odf`s)
- About 400 000 appartments reachable  (FTTH)
- 200 crossconnects
- +350 nodes (for customers to aggregate their datatrafic)
- More than 30 000 fiber connections rented by customers

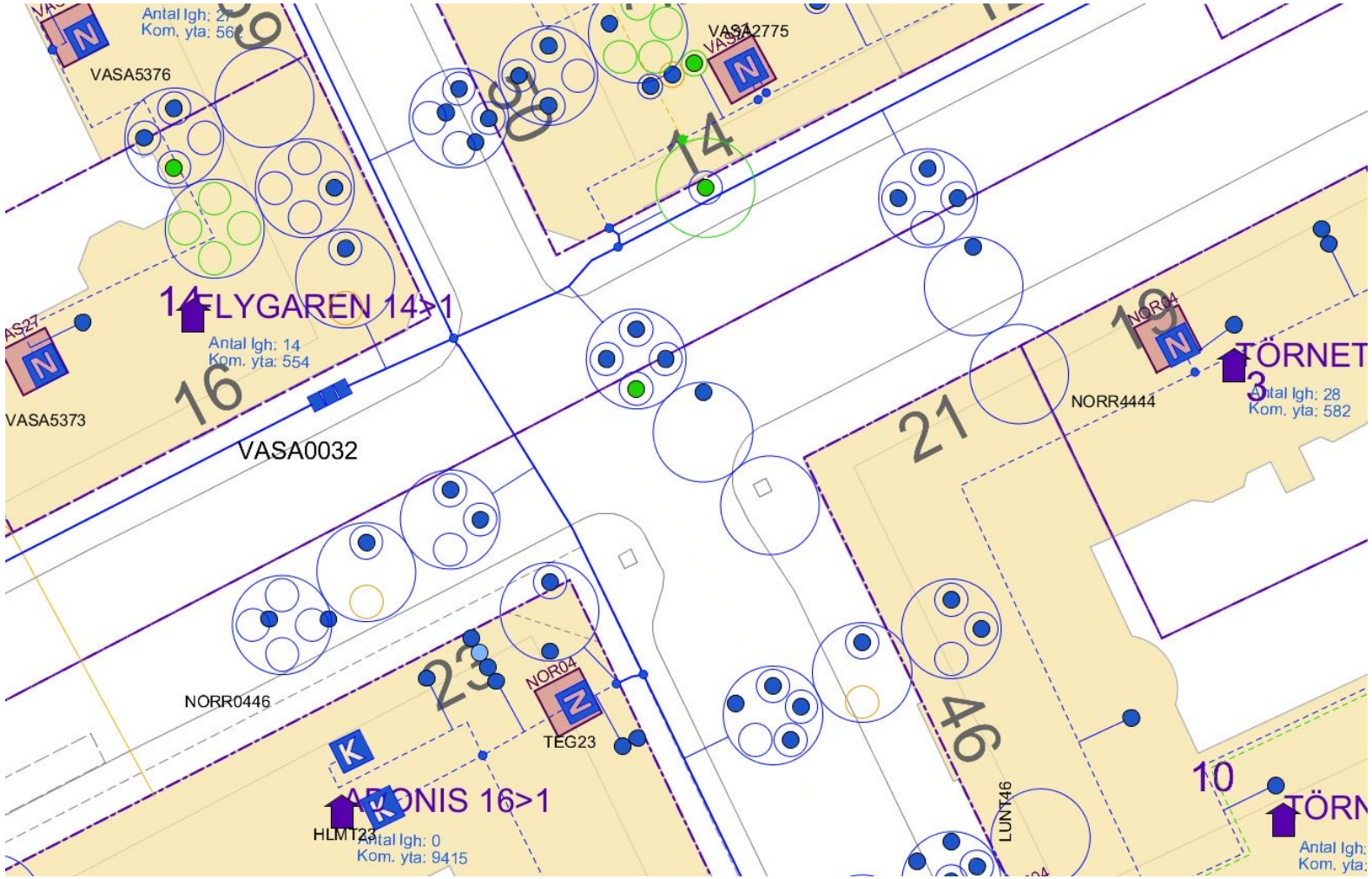
# A blue line is ducts



# Neutral ODF:s in Stockholm



# In Stockholm you walk on glass



# The role of dark fiber going forward

Regardless of the choice of technique for the last meters the fiber is the engine for the system also in the years to come.

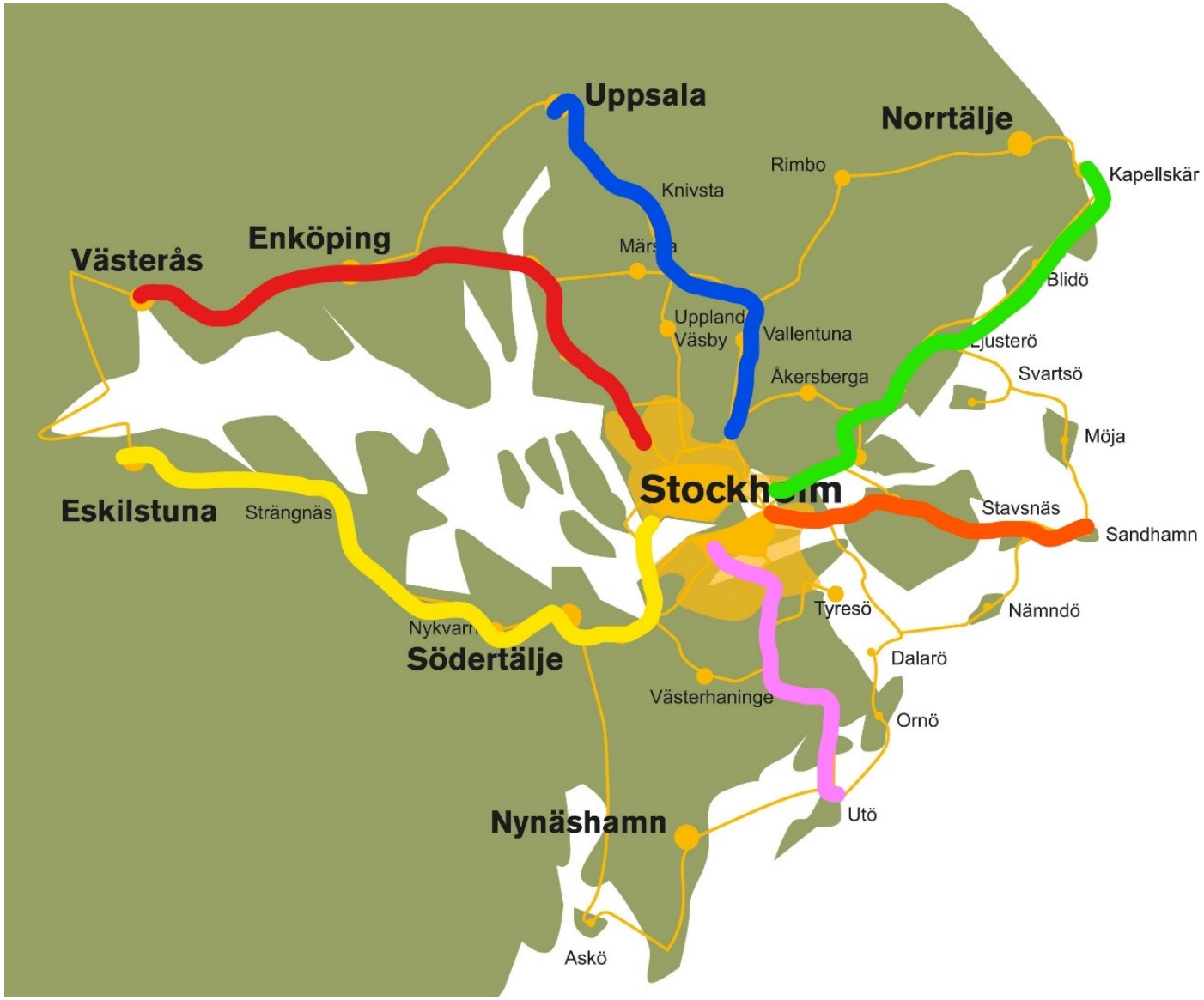
outdoor

indoor

DC to DC

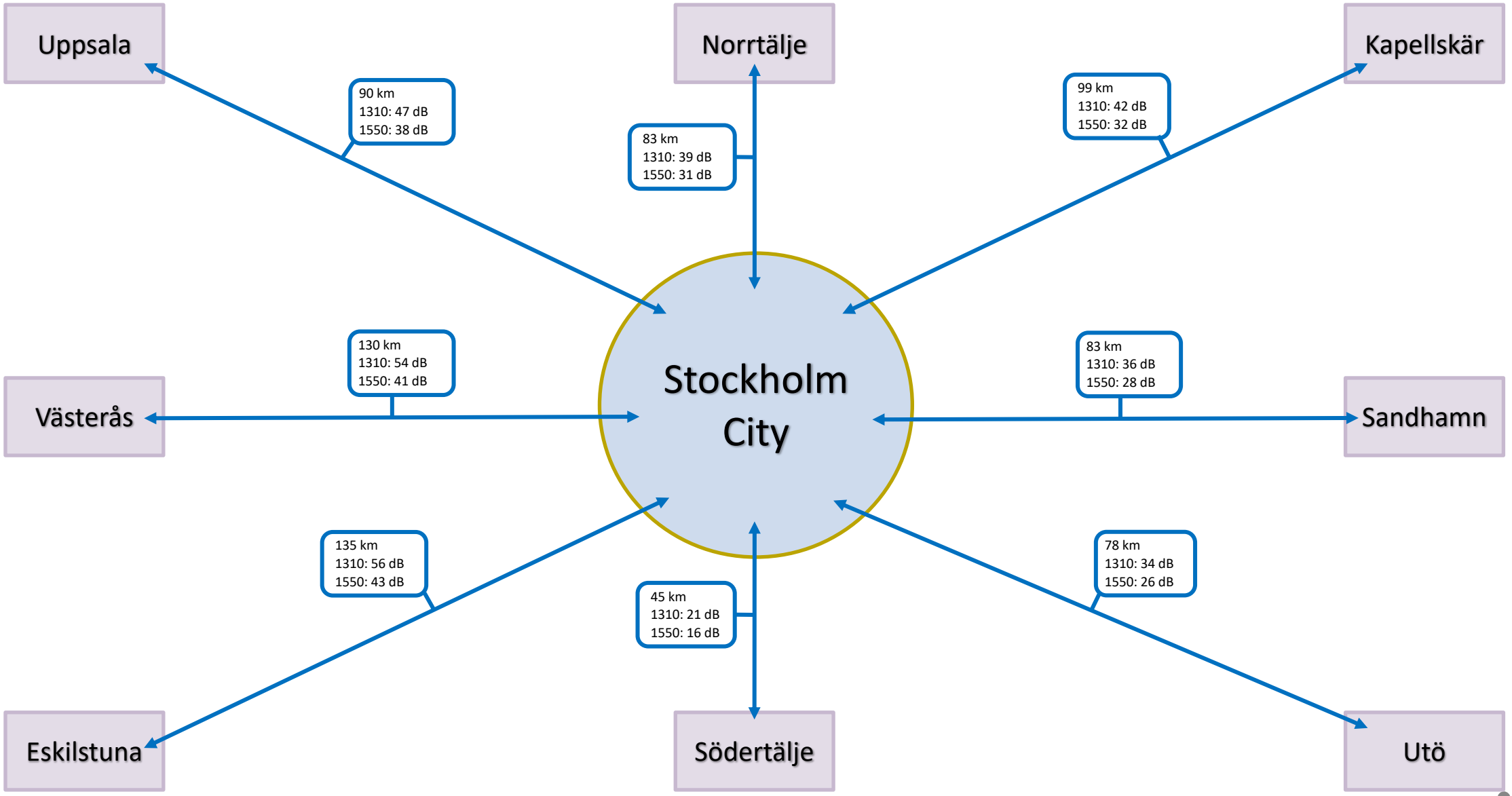
Business to DC

# Connect to/from Stockholm



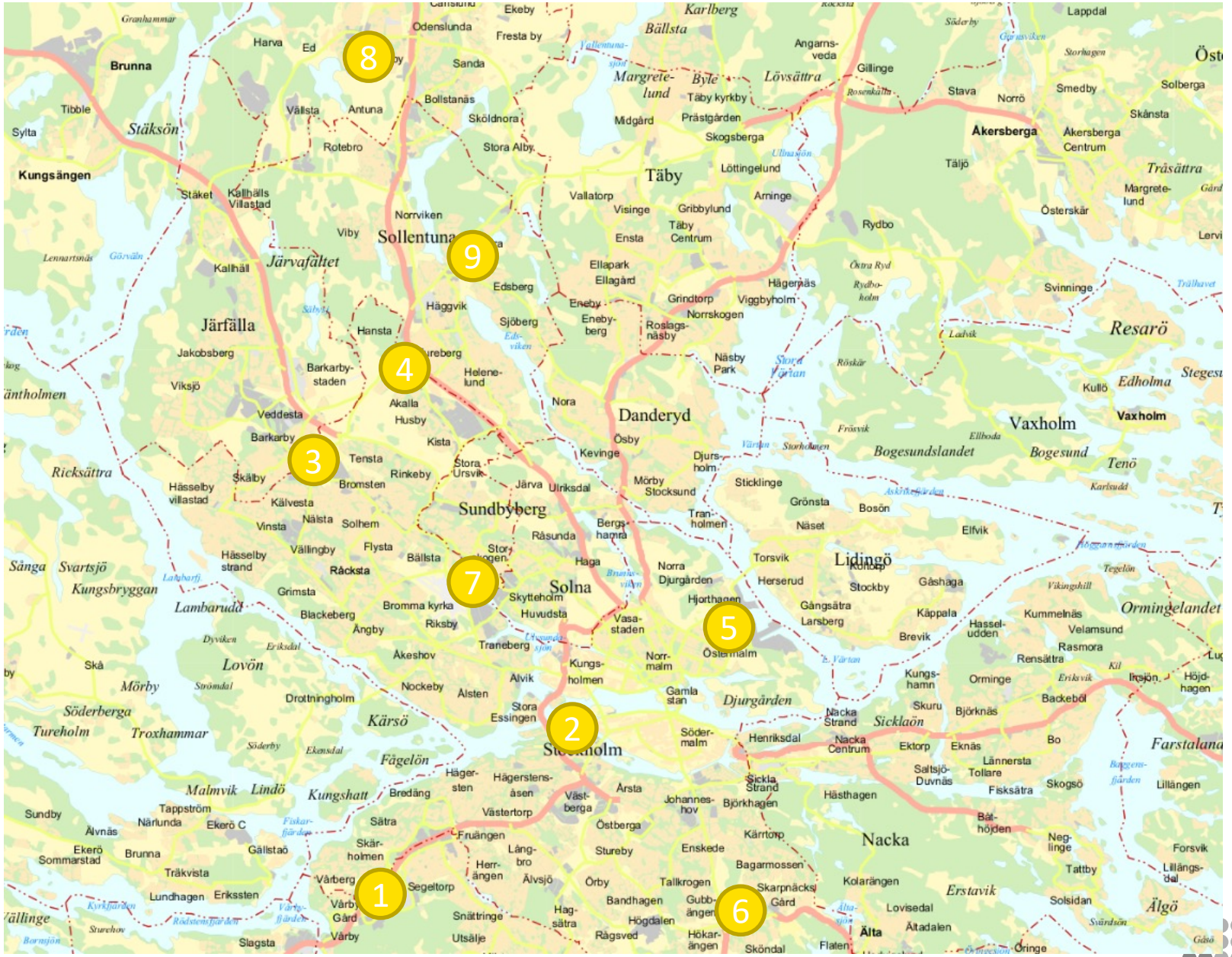

Examples of possible routes to Stockholm using the Stokab Network

To Stockholm there are also cables at least from from Arelion, GlobalConnect, EasternLight, Telenor, Tele2 and Telia.
Together we make Stockholm a connected hotspot.




**The values of attuniation are teoretical and are based on the highest values allowed in each part of the chain.**

1. DC område Sätra
   GlobalConnect, Conapto DC2 mfl
2. DC område Liljeholmen
   Arelion, CGI
3. DC område Lunda
   Equinix SK3, Verizon
4. DC område Akalla
   Digital Realty, atnorth
5. DC område Gärdet
   GlobalConnect, Conapto DC1 mfl.
6. Equinix SK2
   (Kvastvägen, Sköndal)
7. Equinix SK1
   (Mariehällsvägen, Bromma)
8. STACK EMEA
   (Upplands Väsby)
9. Conapto DC3
   Bäckvägen, Sollentuna



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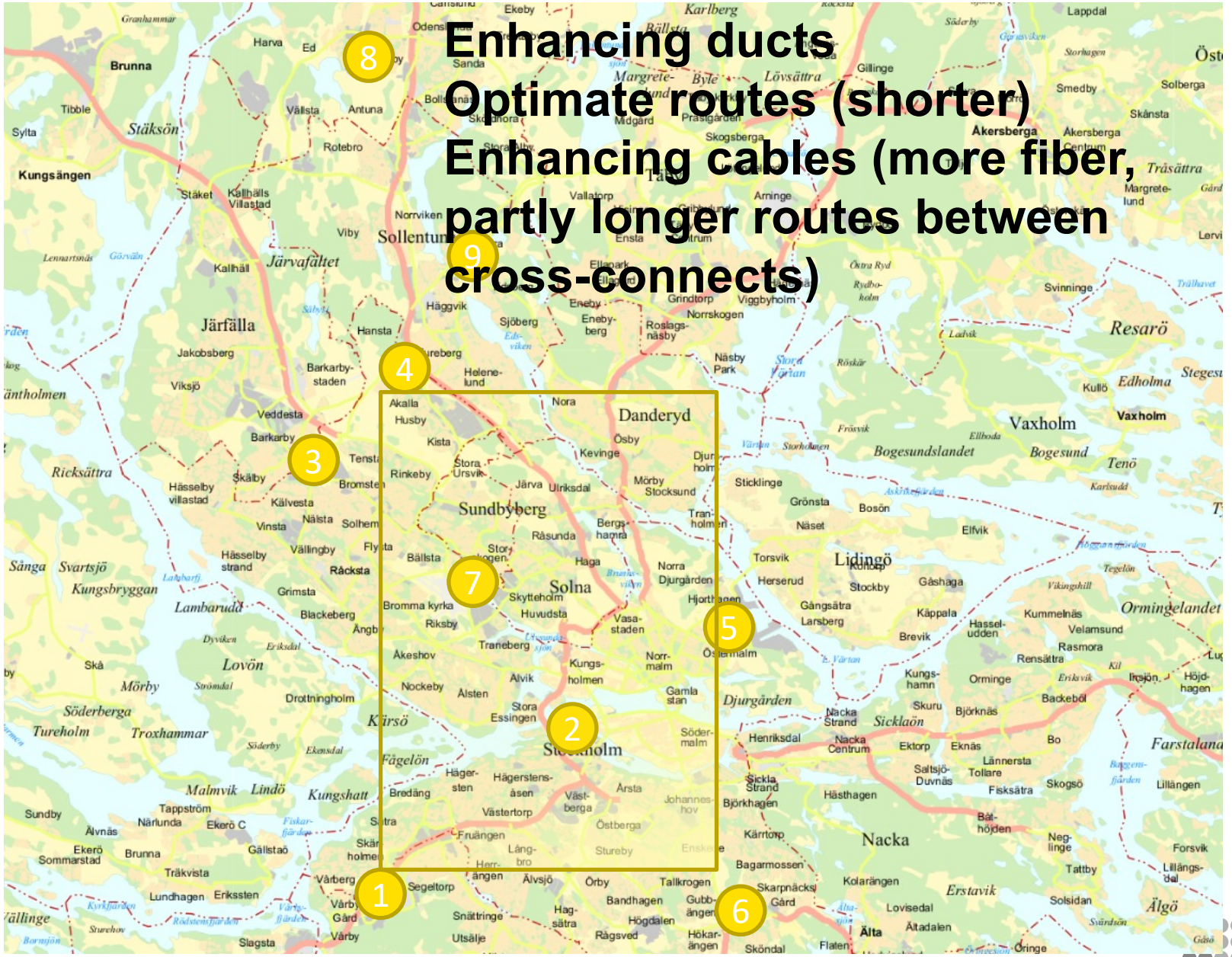
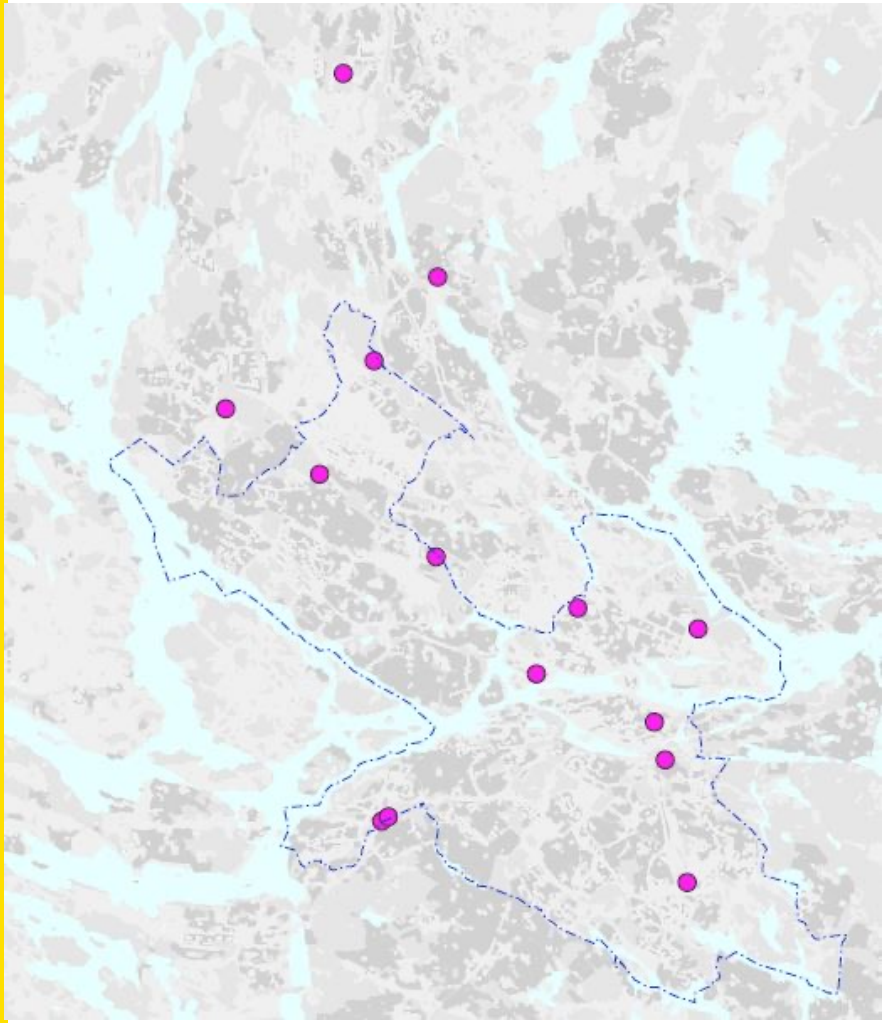


# Developments for the future



- Combining the strengths of a cross connected Metro Network of Dark fibre with world class connectivity with express ways for mega volumes to/from/between specific areas are on the way.
- Although we already are connecting the Datacenters and the Metro area with a enormous density of fibres we are constantly looking out for improvement (more entries at site etc)
- Preparing for new (outdoor) accessibility to fiber
- Connecting the street level with direct dark fibre access.

# Using the whole capacity

## Stokab Point to Point


Accessible in the whole network.
More information: Stokab Point to point – Stokab

Pricelist from 250 meter to 20 km in MA
(from 1339 SEK/Month (250 meters) up to 12085 SEK/month (20 km)

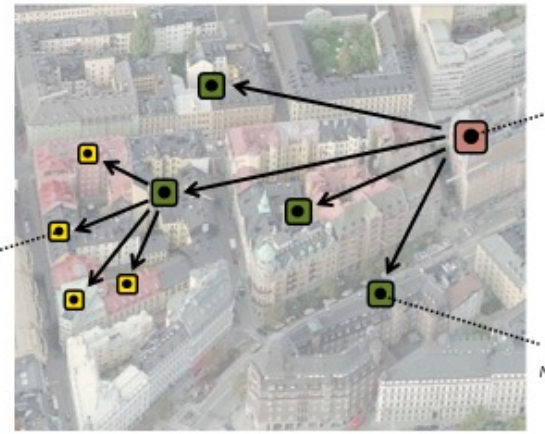
Flatter rate from 20 km to 100 km
(from 12085 SEK/month (20 km) up to 15577 SEK/month (100 km)

By pairs –price from straight distance in the map.

Often to/from/between Datacenters and businesses. Only product for Full Redundancy

## Structure FTTx

**Property node**
The interface between Property owner and Stokab

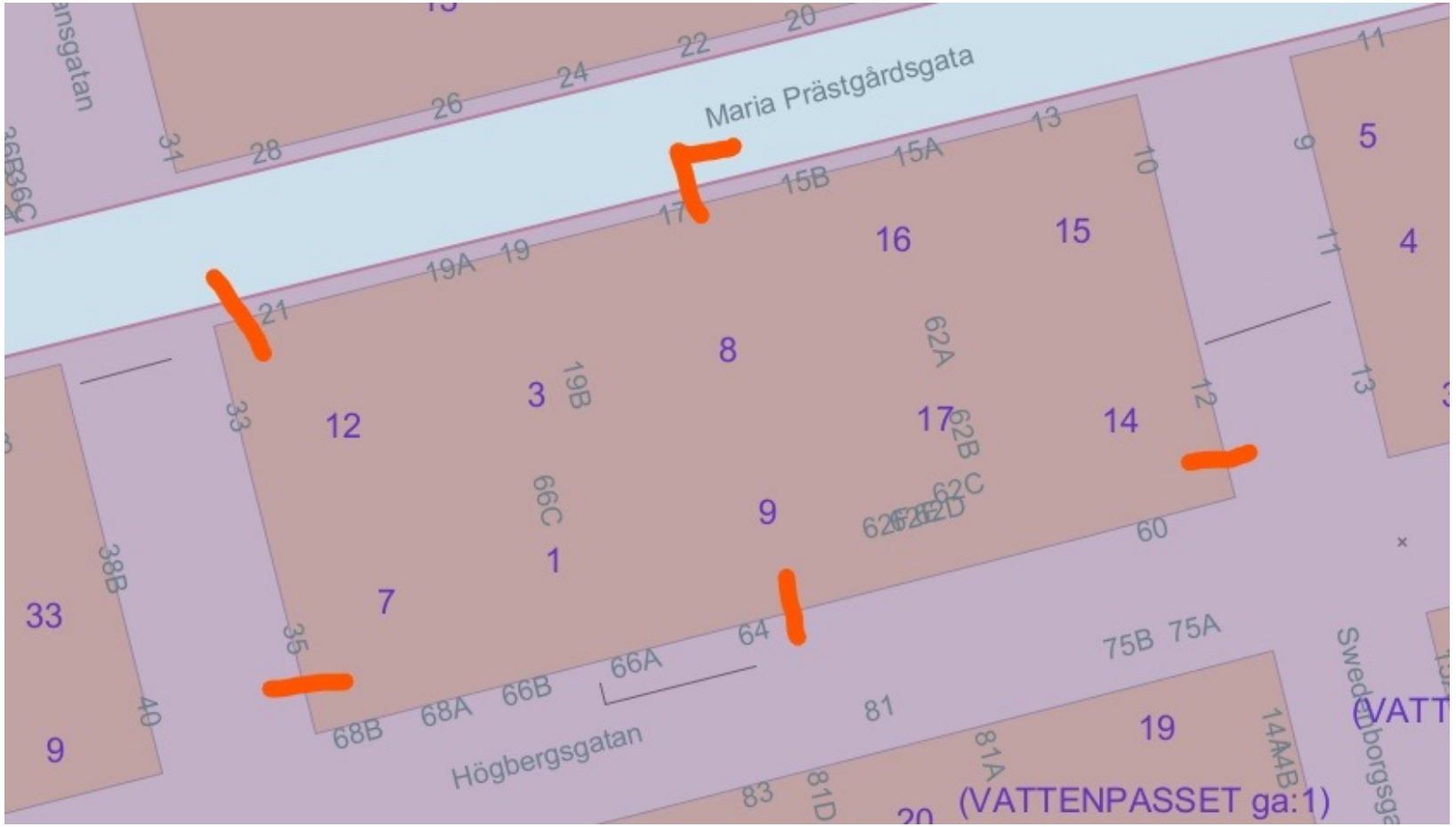


**Area node**
*Areanode ex Kungsholmen*

**Access node**
*Node point for a block*

Togheter with property owners enhance the documentation of existing Network to enable fully redundant fibers to as many properties as possible inside of existing Network and find the most effective routes to build new routes with the same purpose.

# A residential block in the City



# Emergancy nodes – capacity of ”Areanode”


# Capacity for weeks of withholding the existing network

- Diesel stations
- Mobile power plants
- Around the area of Mälaren

**From the Ericsson blog:**

## Optical Fiber´s Role in the Digital Revolution

“One way of creating new value is to use it for new types of communication, for example quantum communication. We launched the first quantum link in Sweden in 2018 together with Stokab and the Royal Institute of Technology (KTH), where we used single-photon qubits to transmit information between two endpoints. The link consists of around 20 km of single mode fiber linking the Nanophotonics lab at KTH and Ericsson headquarters in Kista.”

Optical Fiber's Role in the Digital Revolution - Ericsson

# A part of the future already in progress

Enabling the 4th industrial revolution and beyond- High-speed connectivity in the shape of 5G is taking us to Gbit/s capacity and latencies down to 1ms that are required for technologies such as robotics, virtual reality, automation, and AI. Also, as we move deeper into 5G and cloud-native networks, mobile edge computing allows for distributed AI and real time autonomous decision-making. **However, the amount of bandwidth needed in the air interface to satisfy all these use cases is directly proportional to the amount of fibre available and the network connectivity. And what happens when fibre does not only transport bits of information but also quantum bits?**

***Gemma Vall Llosera***

Senior specialist and Head of Innovation for AI & automation at Ericsson AB

STOKAB

# European Quantum Communication Infrastructure

Now also with European Quantum Communication Infrastructure (EuroQCI)
-projects including KTH, Chalmers, Ericsson, Linköping University, Stockholm University
–using the dark fiber infrastructure for their development and research.

# ☺ Stokab 30 years 2024 ☺

# Thank you for your time and interrest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