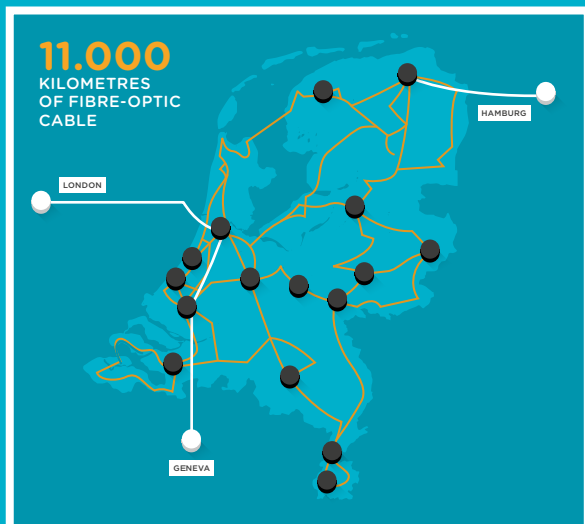


TIMELINE

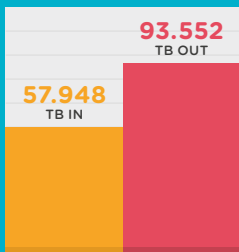
THE SURFNET NETWORK PERIOD: 2000 - 2015

The SURFnet network has been in continuous development since 1988, also between 2000 and 2015. Achievements in this period include the establishment of a fibre-optic network with international connections, as well as efforts to realise a flexible network topology.



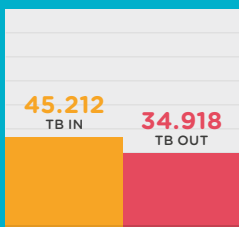
FIBRE-OPTIC INFRASTRUCTURE

SURFnet's fibre-optic network has been expanded with international connections to London, Geneva and Hamburg. The number of kilometres of fibre-optic cable has increased as well: from 6.000 in 2005 to 11.000 in 2015!



IP TRAFFIC OF MEMBER INSTITUTIONS

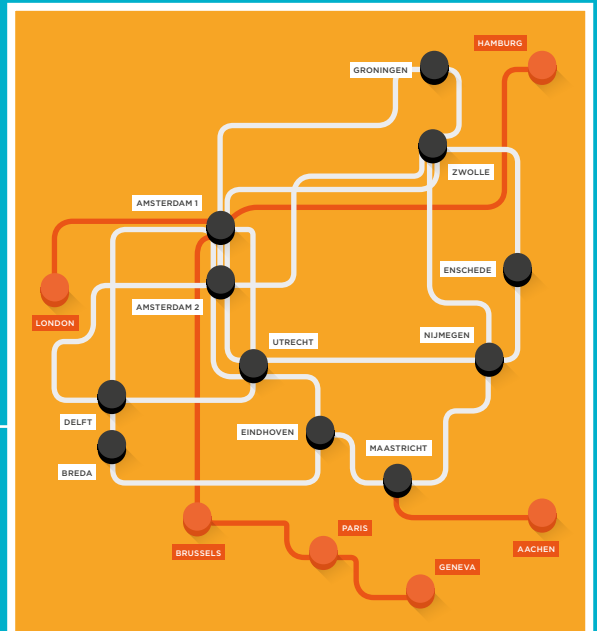
In 2015, the volume of traffic from SURFnet to SURFnet member institutions was greater than the incoming traffic.*



IP TRAFFIC OF MEMBER INSTITUTIONS

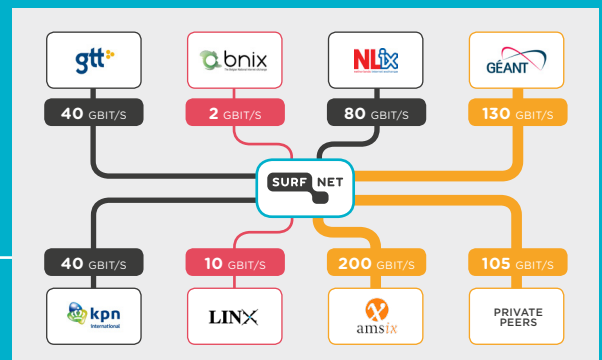
Growth of IP traffic compared to 2005 due to new connections and increased data traffic.*

2015



NETWORK TOPOLOGY

The network has become more flexible compared to 2005: traffic no longer has to flow through a single ring. International connections (cross border fibres) have been realised, along with additional major hubs.

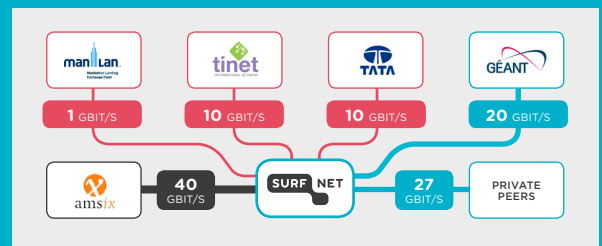


EXTERNAL CONNECTIVITY

There is a great deal of national and international connectivity and there are multiple connections to research networks.

TOTAL CAPACITY 607 GBIT/S

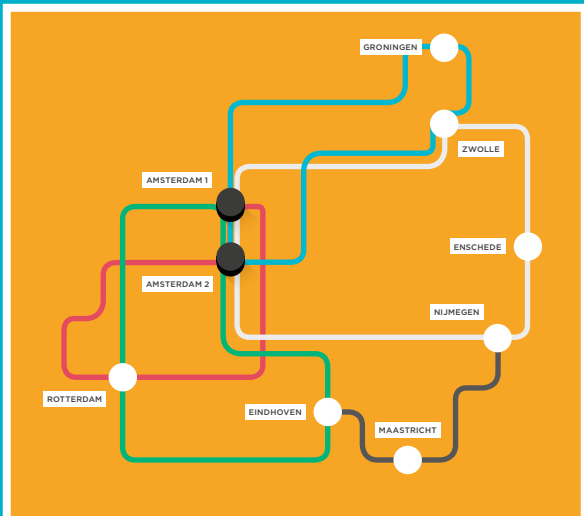
2010



EXTERNAL CONNECTIVITY

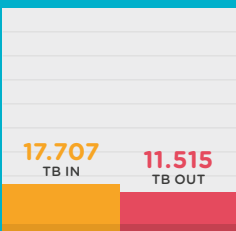
The majority of users have been upgraded to one or more 10 Gbit/s connections.

TOTAL CAPACITY 108 GBIT/S



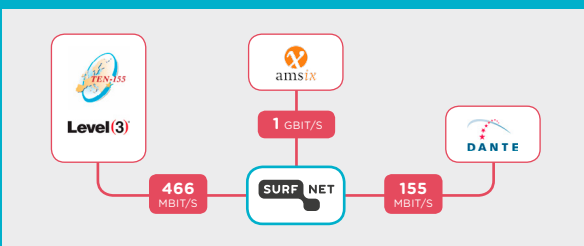
NETWORK TOPOLOGY

Five national rings have been built to conduct traffic to and from institutions. Amsterdam is the most important hub: all traffic passes through this hub.



IP TRAFFIC OF MEMBER INSTITUTIONS

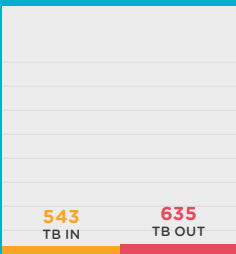
Strong growth in the IP traffic of member institutions from 2000 to 2005. 543 TB in - 17.707 TB in.*



EXTERNAL CONNECTIVITY

3 connections with research networks and commercial partners are in place. The total capacity is 1,6 Gbit/s.

TOTAL CAPACITY 1,6 GBIT/S



IP TRAFFIC OF MEMBER INSTITUTIONS

SURFnet receives 543 TB of incoming IP traffic from SURFnet member institutions. 635 TB goes from SURFnet to the institutions.*

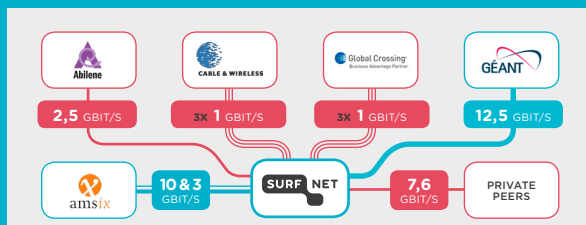
2005



6000
KILOMETRES
OF FIBRE-OPTIC
CABLE

FIBRE-OPTIC INFRASTRUCTURE

SURFnet has established its own fibre-optic infrastructure, with major hubs throughout the Netherlands. City rings are present in the cities listed.

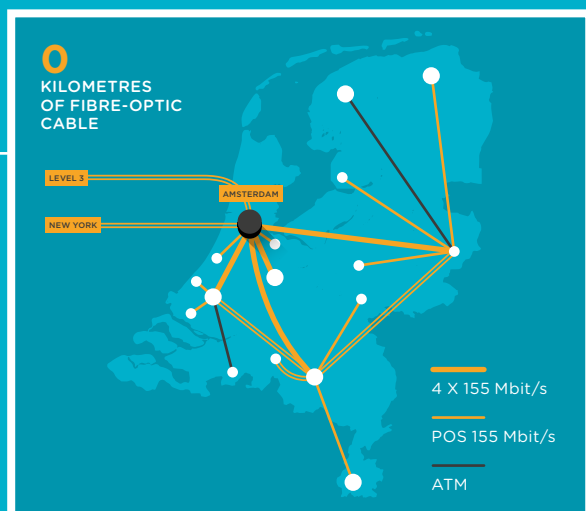


EXTERNAL CONNECTIVITY

Connectivity has been greatly expanded. Between 2000 and 2005 a growth in capacity occurs: from 1,6 Gbit/s to 41,6 Gbit/s.

TOTAL CAPACITY 41,6 GBIT/S

2000



0
KILOMETRES
OF FIBRE-OPTIC
CABLE

FIBRE-OPTIC INFRASTRUCTURE

In 2000, SURFnet did not yet have its own fibre-optic network. It relied on the connections of its partners.

* IP traffic is measured in TeraBytes (TB). TB in is IP from institutions to SURFnet, TB out is IP from SURFnet to institutions.