(MORE THAN)
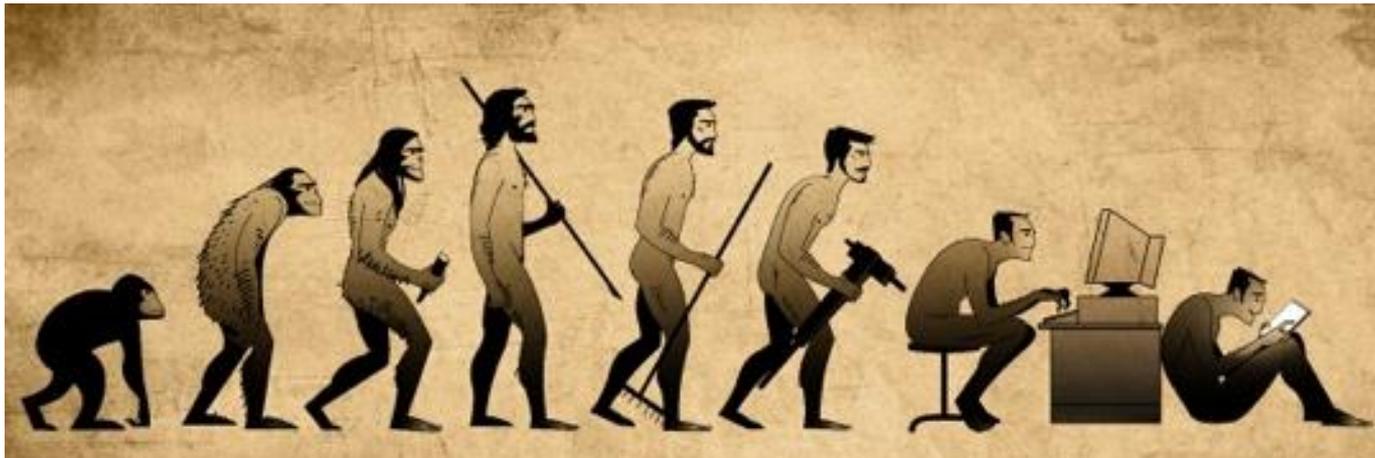# 25 YEARS OF COLLABORATION
BELNET – UNIVERSITY OF LIEGE

BELNET NETWORKING CONFERENCE 2018

Agenda

1. (the dark era) before Belnet
2. Early years
3. Nowadays

past   present   future

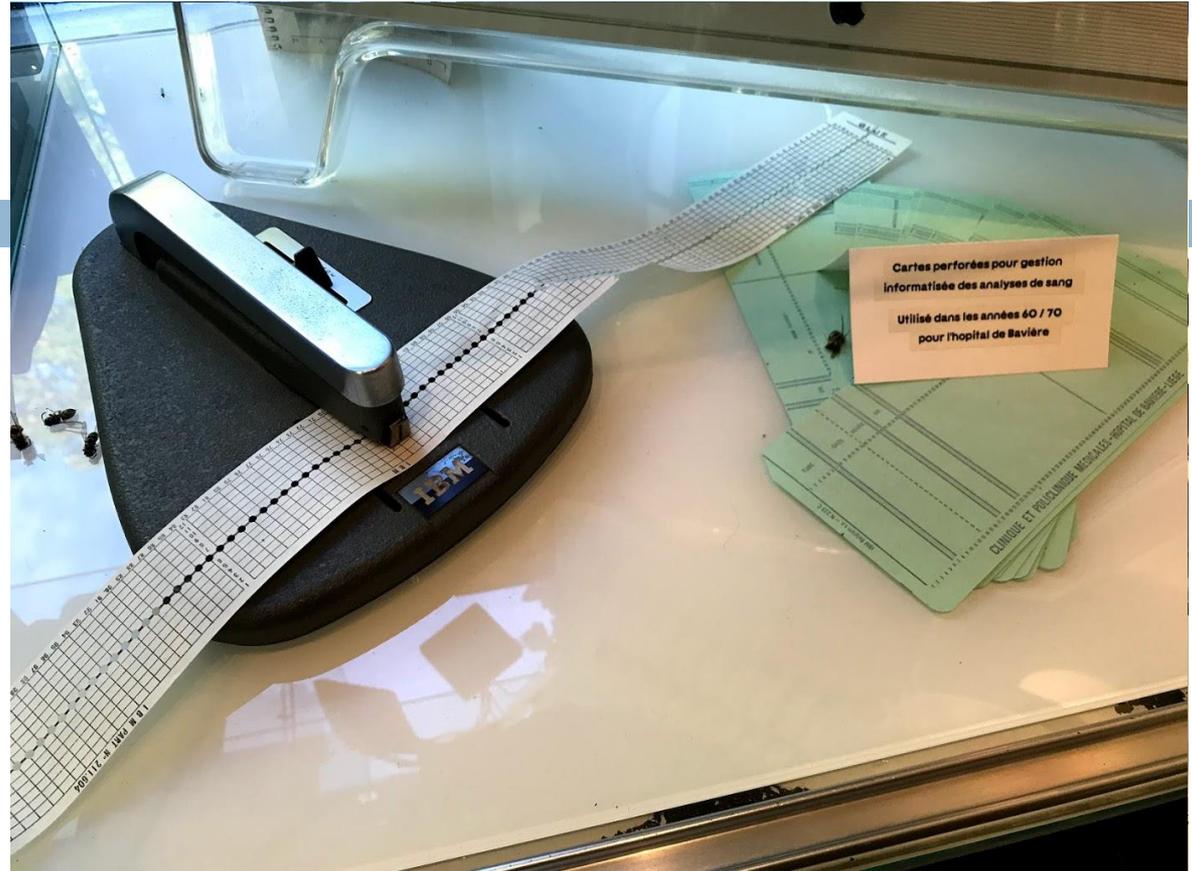# Starting Point : 1817

| 1817 | 1830 | 1960 |

CECTI

- Pre-IT dept.
- Punch card calculators

Cartes perforées pour gestion
informatisée des analyses de sang

Utilisé dans les années 60 / 70
pour l'hôpital de Bavière

Belgium ▸ 1960 ▸ 1981

CECTI becomes SEGI

- Officially IT Dept.
- IBM mainframe
- Local only network

CECTI ▷ 1981 ▷ 1984

EARN

- *European Academic and Research Network*
- Based on and connected to BITNET (USA)
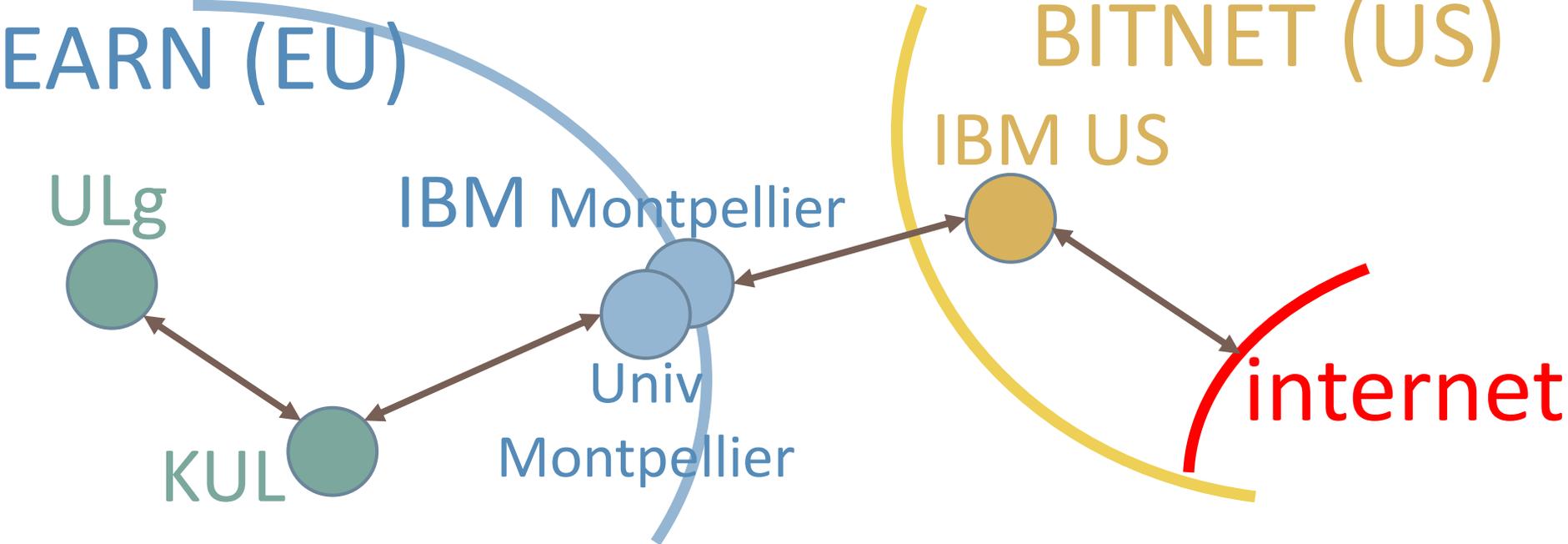- IBM as a sponsor (EARN mostly used to connect their mainframes in ≠ universities)

SEGI ▷ 1984 ▷ 1987

Internet @ULg

EARN (EU)

BITNET (US)

IBM US

ULg   IBM Montpellier

Univ Montpellier

KUL

internet

EARN   1987   1989

SEGI moves | Information Technology Impulse

- IT dept. moves to new Sart Tilman campus

- Opening, with Belgian Science Policy

- Belspo is asked to co-fund (with IBM) the connectivity of supercalculators
  → creation of a board : the ITI

Internet > 1989 > 1991

UNIX community

- UNIX community has setup its own network based on UUCP, not on IBM protocols

- Used by research dept. in univs and private enterprises

- No internet access

ITI 〉 1991 〉 ~1992

the .ac.be origins

- Private enterprises research dept. willing to connect to EARN/internet
- Not at the same cost as education !
- Split academic and private traffic based on name
  - → + .ac.be for universities
    → + .co(m)(.be) or similar for private sector

UNIX 〉 ~1992 〉 1993

TCP/IP versus X.25

- Subsidies from Europe to fiber main campus
- Two clans : european X.25 vs US TCP/IP
- Trip to MIT → TCP/IP

.ac.be   1993   1993

Belnet is born !

- ☐ Research program within the BelSPo
- ☐ 27 connected institutions, including ULg
- ☐ Network capacity : 64kbps

TCP/IP ▷ 1993 ▷ 1995

Bandwidth, .be, IPv6

- Bandwidth 100Mbps (commercial use)
- DNS
  - .be/.eu/.com/.net provider
  - Secondary servers
- Early IPv6 adventure

1st PoP > 2005 > 2009

More services !

- Three PoPs : 2xLiege + 1xArlon
  - Redundancy in Liege
- eduroam since 2007
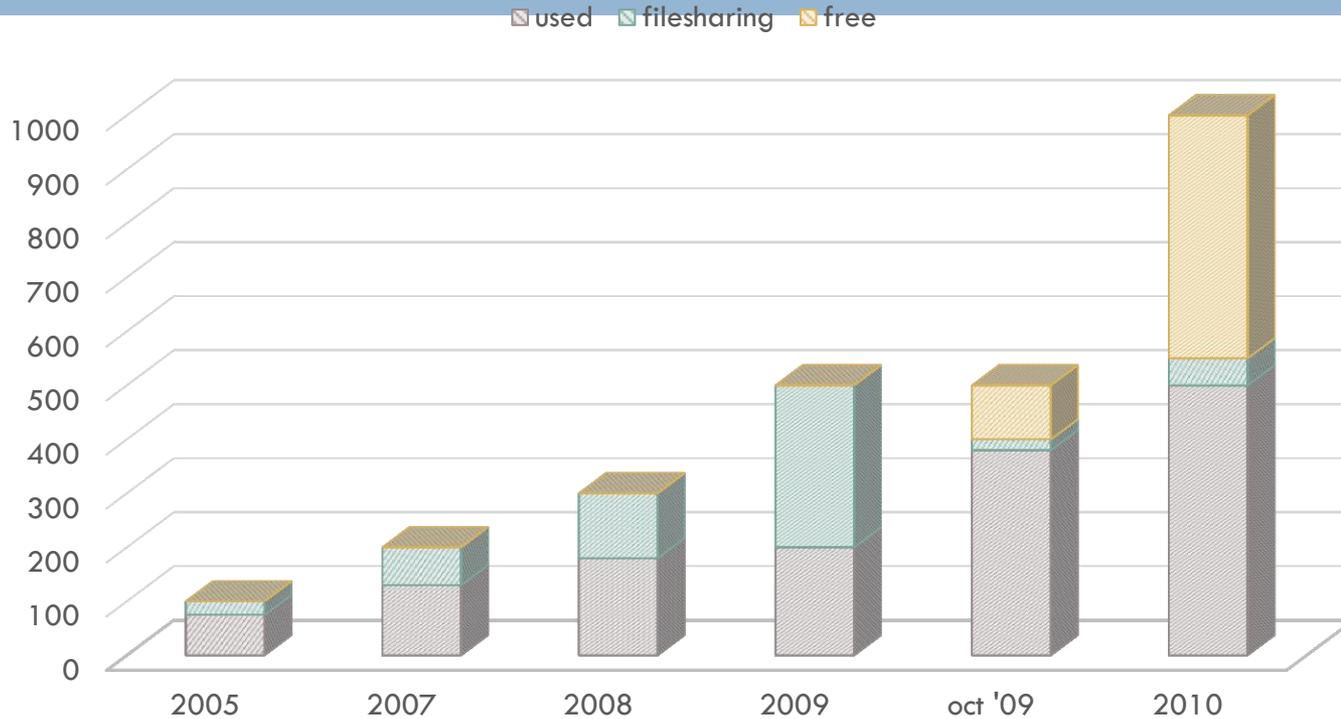- Belnet Leased Lines to Campus Gembloux
- CERT.be collaboration

2005 > 2010 > 2015

More bandwidth!

More of everything

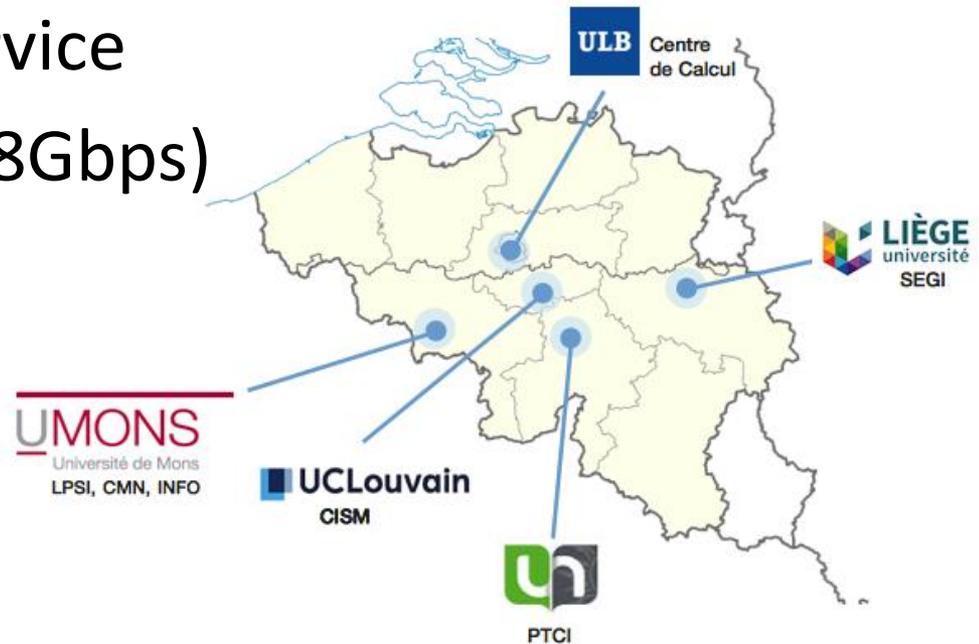- Digital Certificates Service
- Bandwidth : 2Gbps (+8Gbps)
- CÉCI interconnections

ULB Centre de Calcul

LIÈGE université SEGI

UMONS
Université de Mons
LPSI, CMN, INFO

UCLouvain
CISM

PTCI

2010 ▸ **2015** ▸ **2018**

Even more bandwidth

BANDWIDTH EVOLUTION (MBPS)
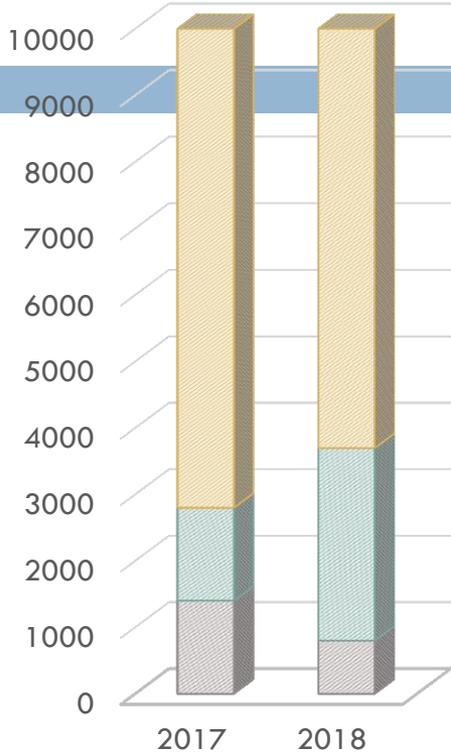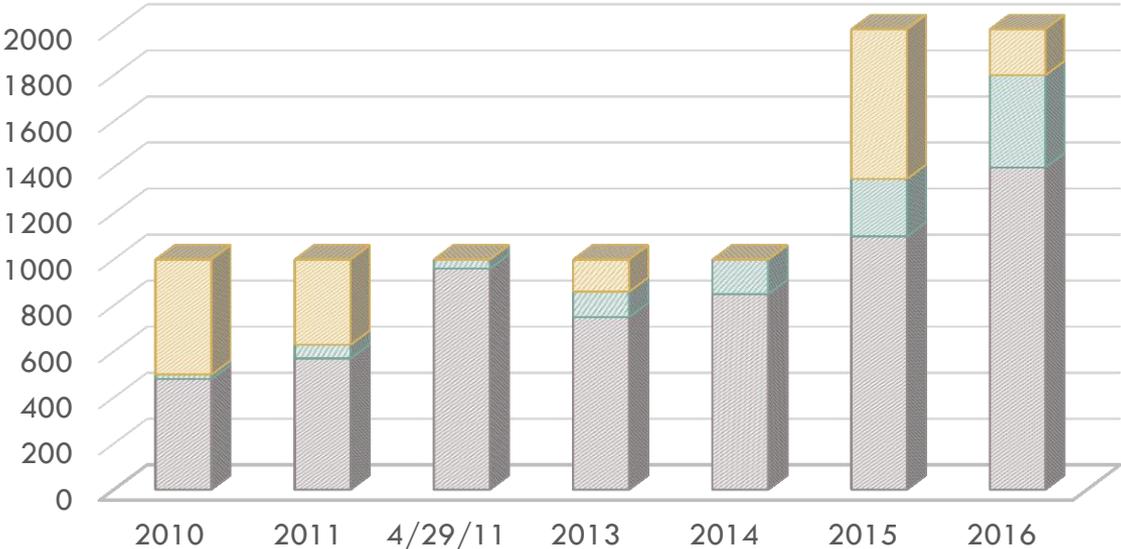
Latest services

- edugain (2016)
- DDoS mitigation (last week)

2018 ▸ 2018 ▸ 2018

As a conclusion...

- High performance
- Cutting edge technology
- ↑ number of services
- Affordabl€
- Human (size)

2018 ➤ 2018 ➤ 2043

Belnet 50th anniversary

- Ready to sign for another 25 years of partnership !

2018   2043

Thank you !