

GÉANT

**Bringing cultures together across continents
through global research and education cooperation**

Dai Davies, DANTE

2010 Euro-Africa e-Infrastructures Conference

9 December 2010

Vital for European Research

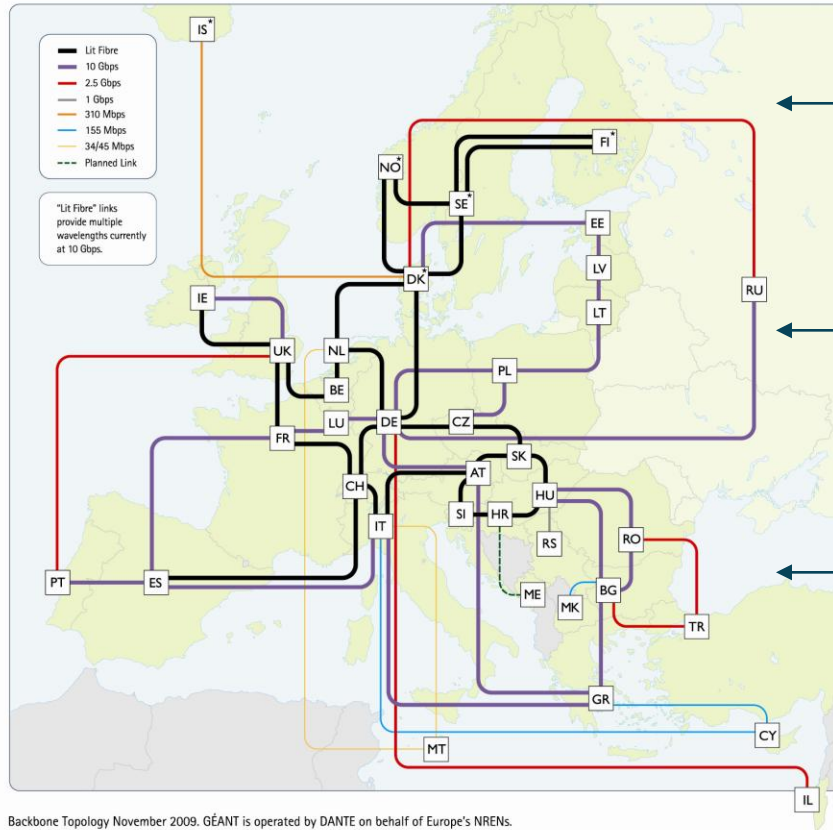


- GÉANT supports researchers and students in a wide variety of work:
 - Medicine and healthcare
 - Particle physics
 - Earth observation
 - Radio astronomy
 - Disaster warning and crisis support
 - Arts and culture

- **“Without GÉANT a significant bulk of pan-European research cooperation would simply not function. GÉANT is a critical infrastructure for many projects*.”**

Source: European Commission (2010): The Role of e-Infrastructures in the Creation of Global Virtual Research Communities.

The pan-European infrastructure



Backbone Topology November 2009. GÉANT is operated by DANTE on behalf of Europe's NRENs.

AT Austria	CZ Czech Republic	FI Finland*	IE Ireland	LU Luxembourg	NL Netherlands	RO Romania	SI Slovenia
BE Belgium	DE Germany	FR France	IL Israel	LV Latvia	NO Norway*	RS Serbia	SK Slovakia
BG Bulgaria	DK Denmark*	GR Greece	IS Iceland*	ME Montenegro	PL Poland	RU Russia	TH Turkey
CH Switzerland	EE Estonia	HR Croatia	IT Italy	MK F.Y.R. Macedonia	PT Portugal	SE Sweden*	UK United Kingdom
CY Cyprus	ES Spain	HU Hungary	LT Lithuania	MT Malta			

*Connections between these countries are part of NORDUnet (the Nordic regional network)

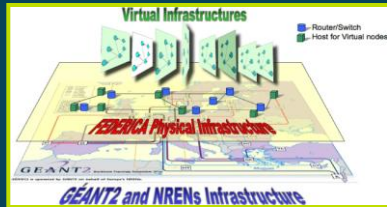
Resilient
Infrastructure

Central
Operations

Common
Governance

Projects using GÉANT

FEDERICA



Point-to-point
1G Ethernet
MPLS tunnels
over IP

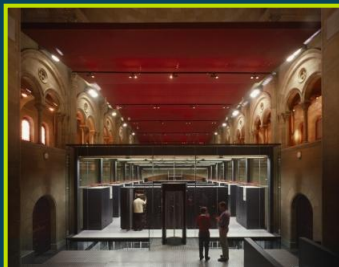
Radio Astronomy eVLBI



Point-to-point
1G Ethernet
circuits to the
telescopes

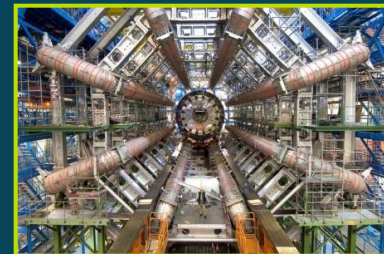
DEISA

European Supercomputing



10G Ethernet
Lambdas all
sites connect
to a 10G
Ethernet switch

Large Hadron Collider Experiments at CERN



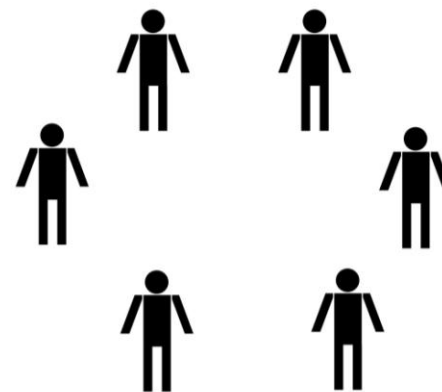
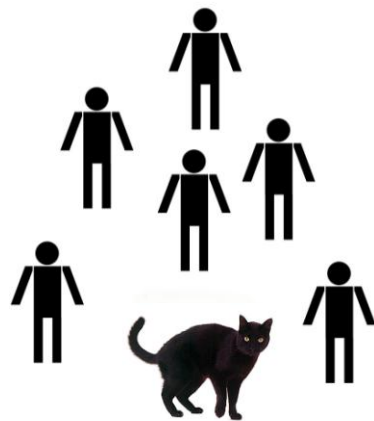
10G Ethernet
Lambdas dual
star + backup
links connects
data centres to
CERN

The Service Culture



R&D

User



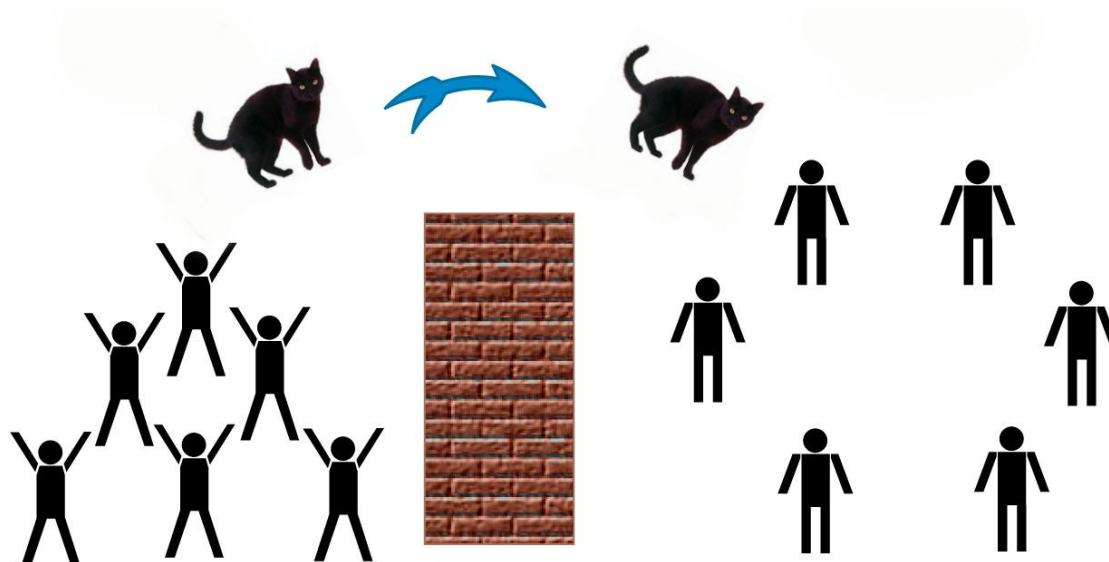
The transition to service: before

The Service Culture



R&D

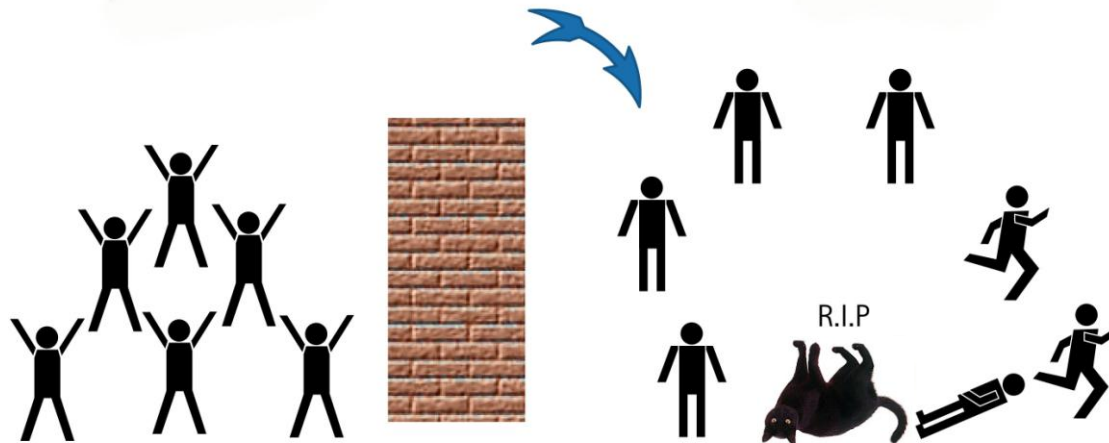
User



The transition to service: during

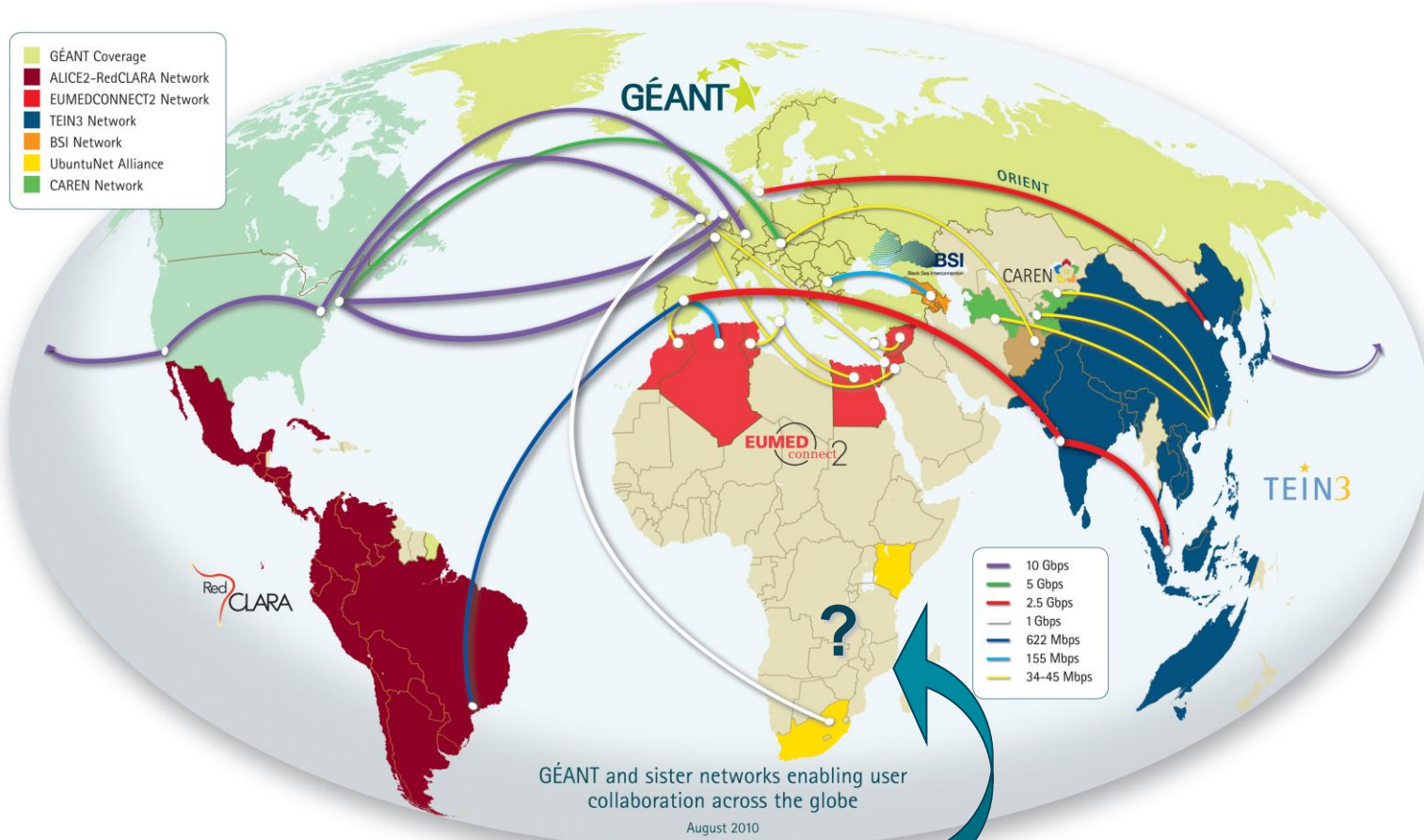
R&D

User



The transition to service: after

GÉANT – Global Picture



Watch this space...!!