



CCIN2P3 connectivity NCSA / LSST meeting

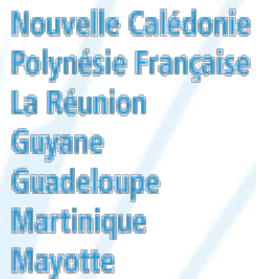
jerome.bernier@in2p3.fr
May 2015



- Generic IP
 - RENATER
 - GEANT
- LHC project
 - LHCOPN
 - LHCONE
- CCIN2P3 LAN
- LSST needs

IN2P3 network

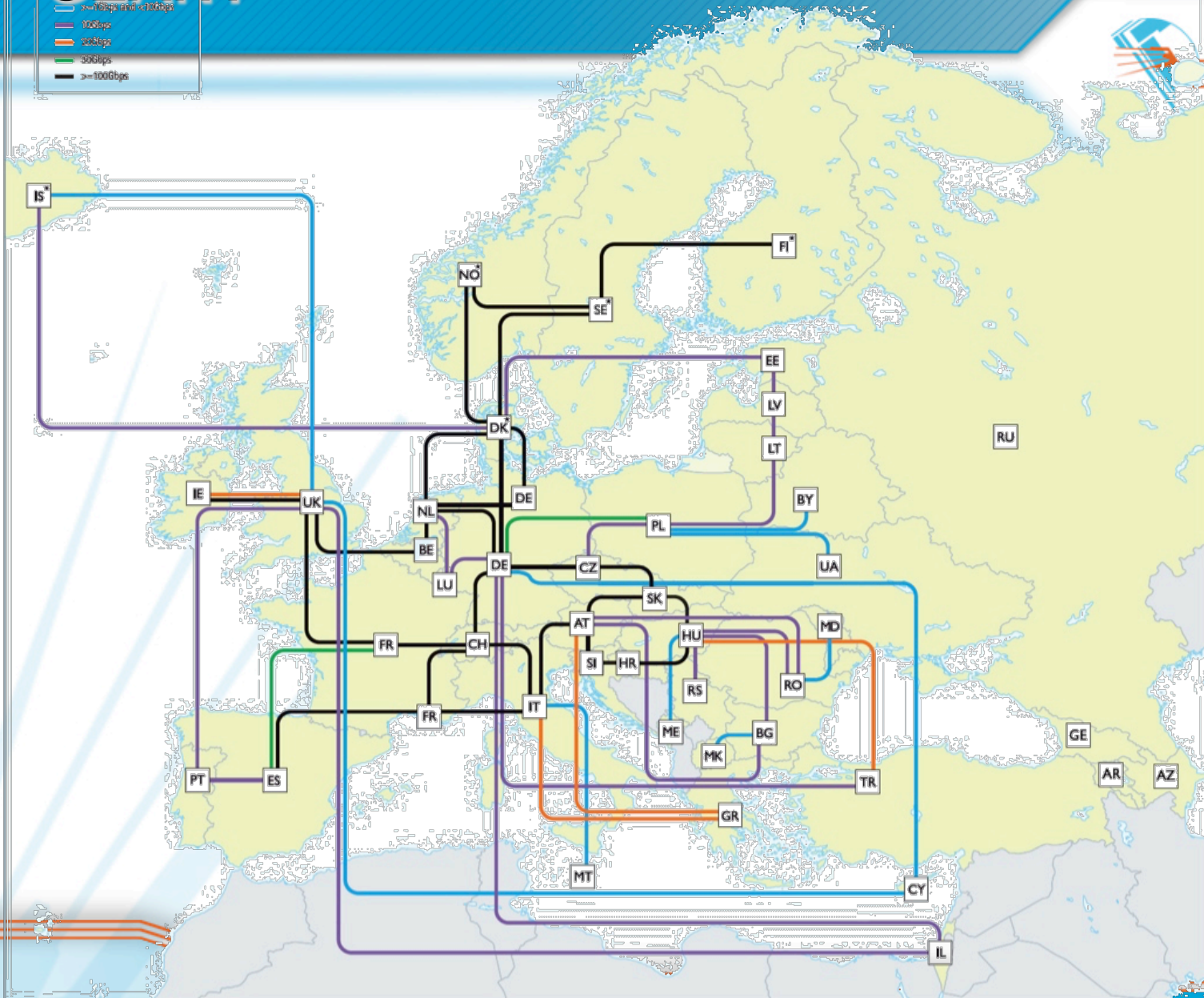




GEANT



CCIN2P3



CCIN2P3

GEANT connectivity as at January 2014. GEANT is operated by DANTE on behalf of Europe's NRENs.

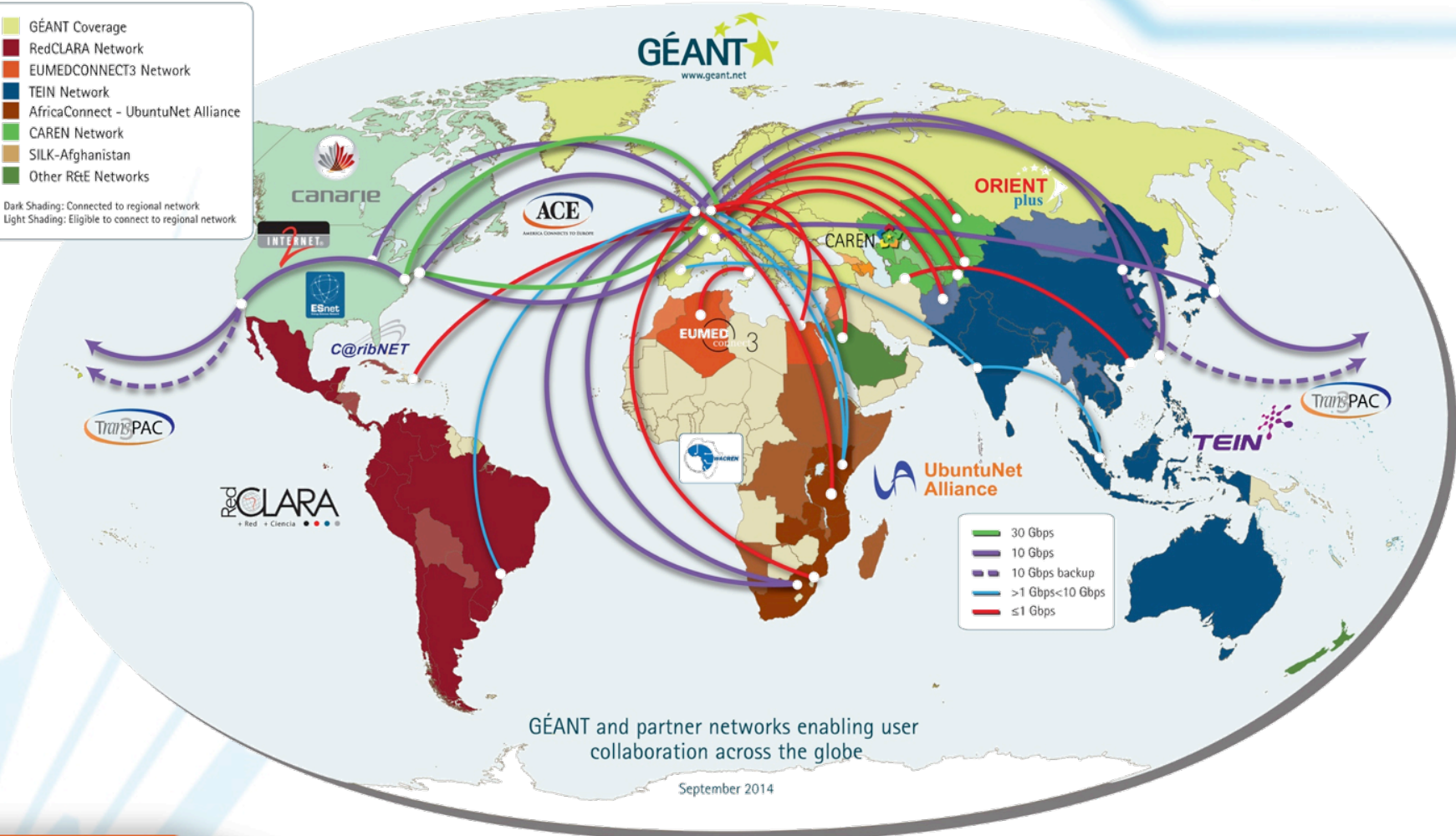
May 2015

GEANT connectivity

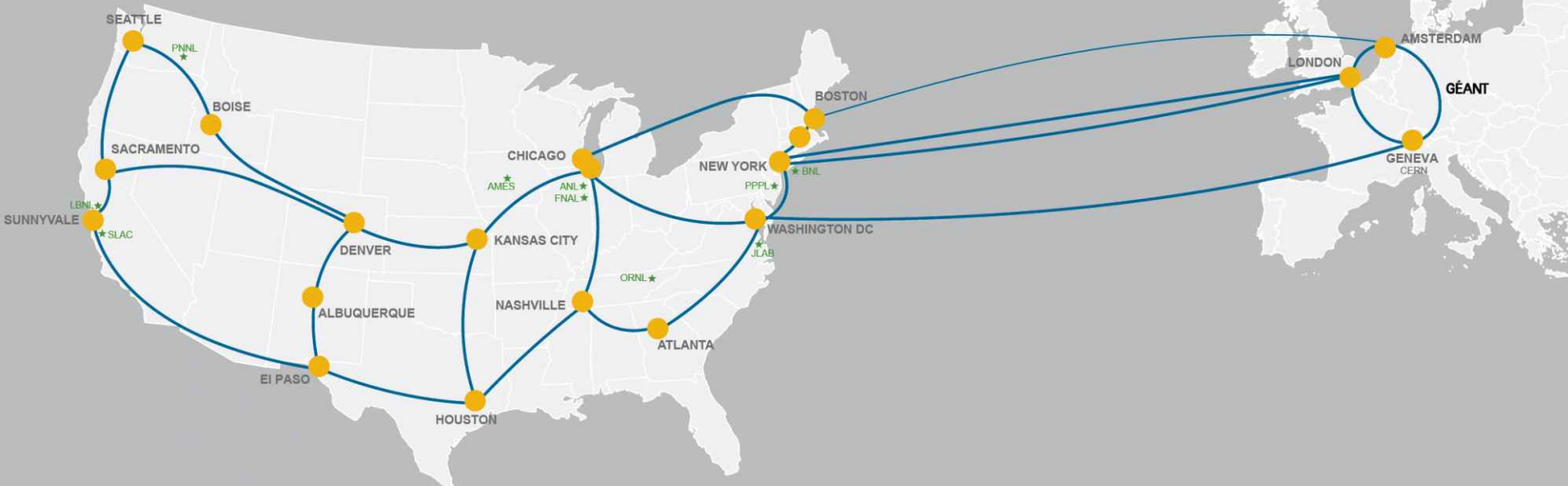
At the Heart of Global Research and Education Networking



- GEANT Coverage
 - RedCLARA Network
 - EUMEDCONNECT3 Network
 - TEIN Network
 - AfricaConnect - UbuntuNet Alliance
 - CAREN Network
 - SILK-Afghanistan
 - Other R&E Networks
- Dark Shading: Connected to regional network
Light Shading: Eligible to connect to regional network



GEANT - ESNET



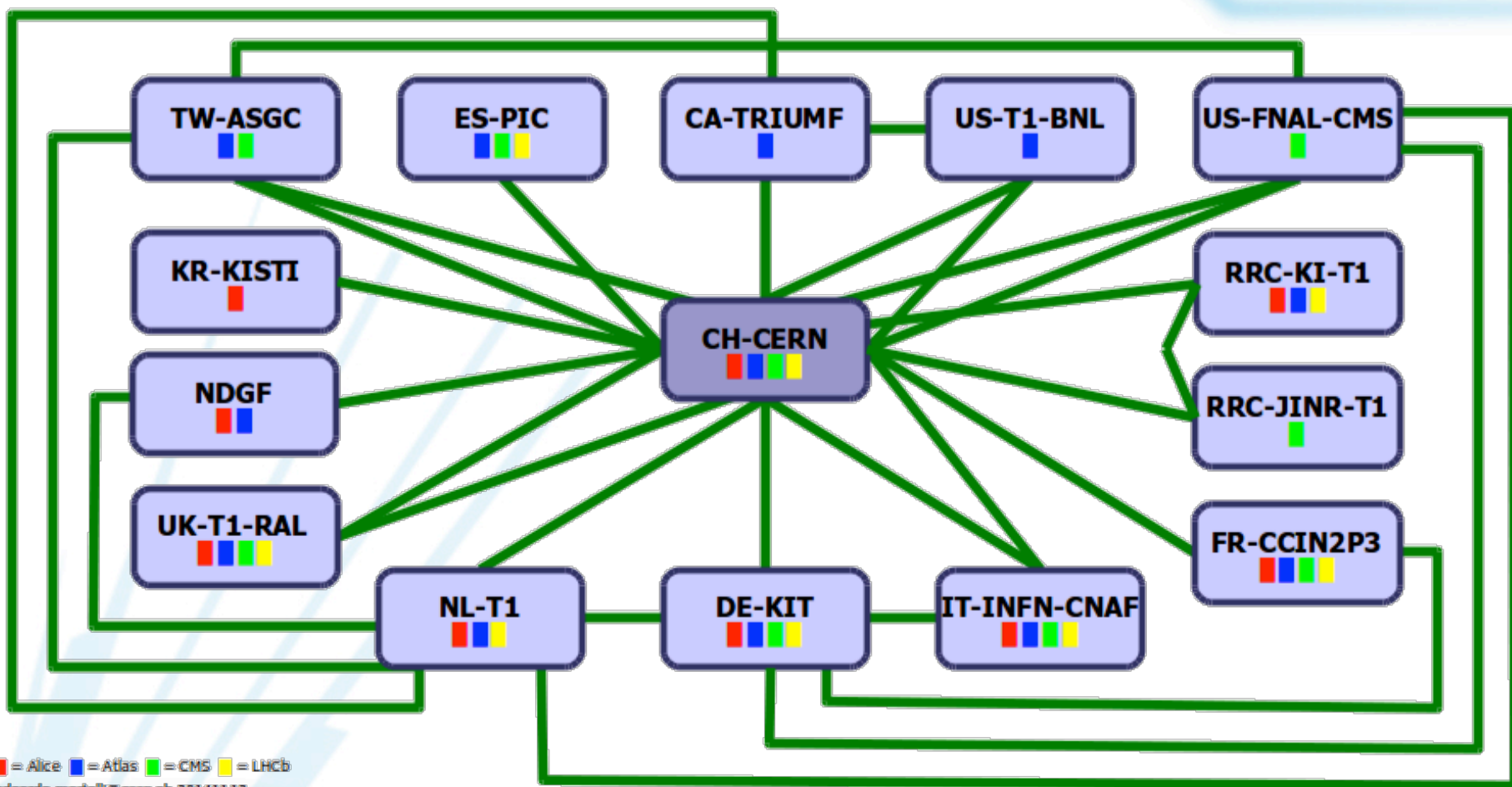
ESnet
ENERGY SCIENCES NETWORK

★ Department of Energy Office of Science National Labs

Ames Ames Laboratory (Ames, IA)
ANL Argonne National Laboratory (Argonne, IL)
BNL Brookhaven National Laboratory (Upton, NY)
FNAL Fermi National Accelerator Laboratory (Batavia, IL)
JLAB Thomas Jefferson National Accelerator Facility (Newport News, VA)

LBNL Lawrence Berkeley National Laboratory (Berkeley, CA)
ORNL Oak Ridge National Laboratory (Oak Ridge, TN)
PNNL Pacific Northwest National Laboratory (Richland, WA)
PPPL Princeton Plasma Physics Laboratory (Princeton, NJ)
SLAC SLAC National Accelerator Laboratory (Menlo Park, CA)

LHCOPN





- LHCOPN T0-T1 cloud 2005
- LHCONE T1-T2-T3 private network 2011
 - L3VPN
 - security
 - flexibility
 - evolutivity

LHCONE France



LHCONE

10G λ dédiée

MPLS-TE 10G
partagé

LHCOPN

10G λ dédiée

Backup optique



GÉANT



May 2015

Jussieu

LPNHE

APC

Orsay

LAL

IPNHO

LLR

CEA-IRFU

Paris1

Lyon1

Clermont

Genève

Kehl

CPPM

LPSC

IPHC

Subatech

LPC Clermont

CCIN2P3

CCIN2P3

GRIF - Distributed T2

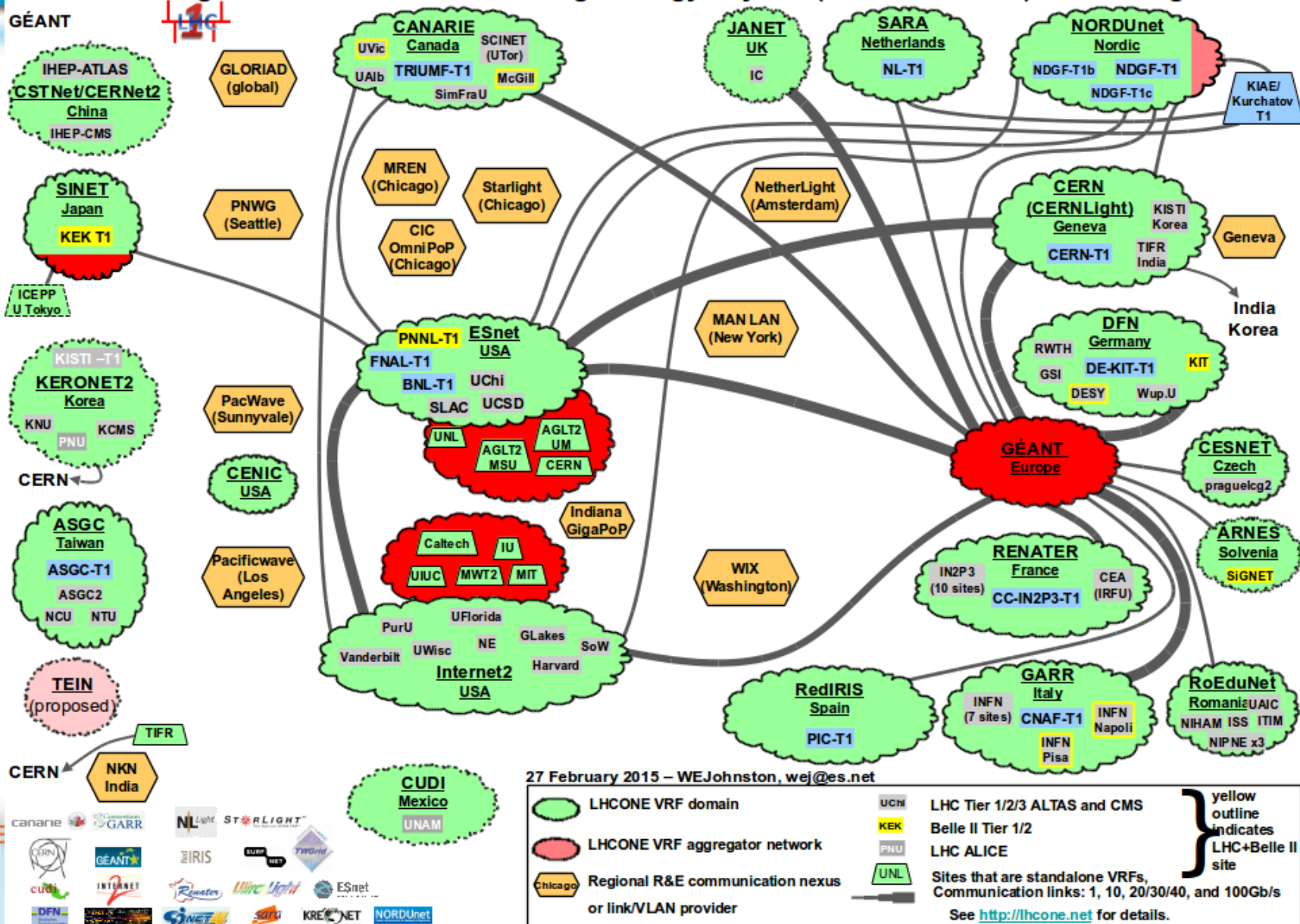
Others T2

T1

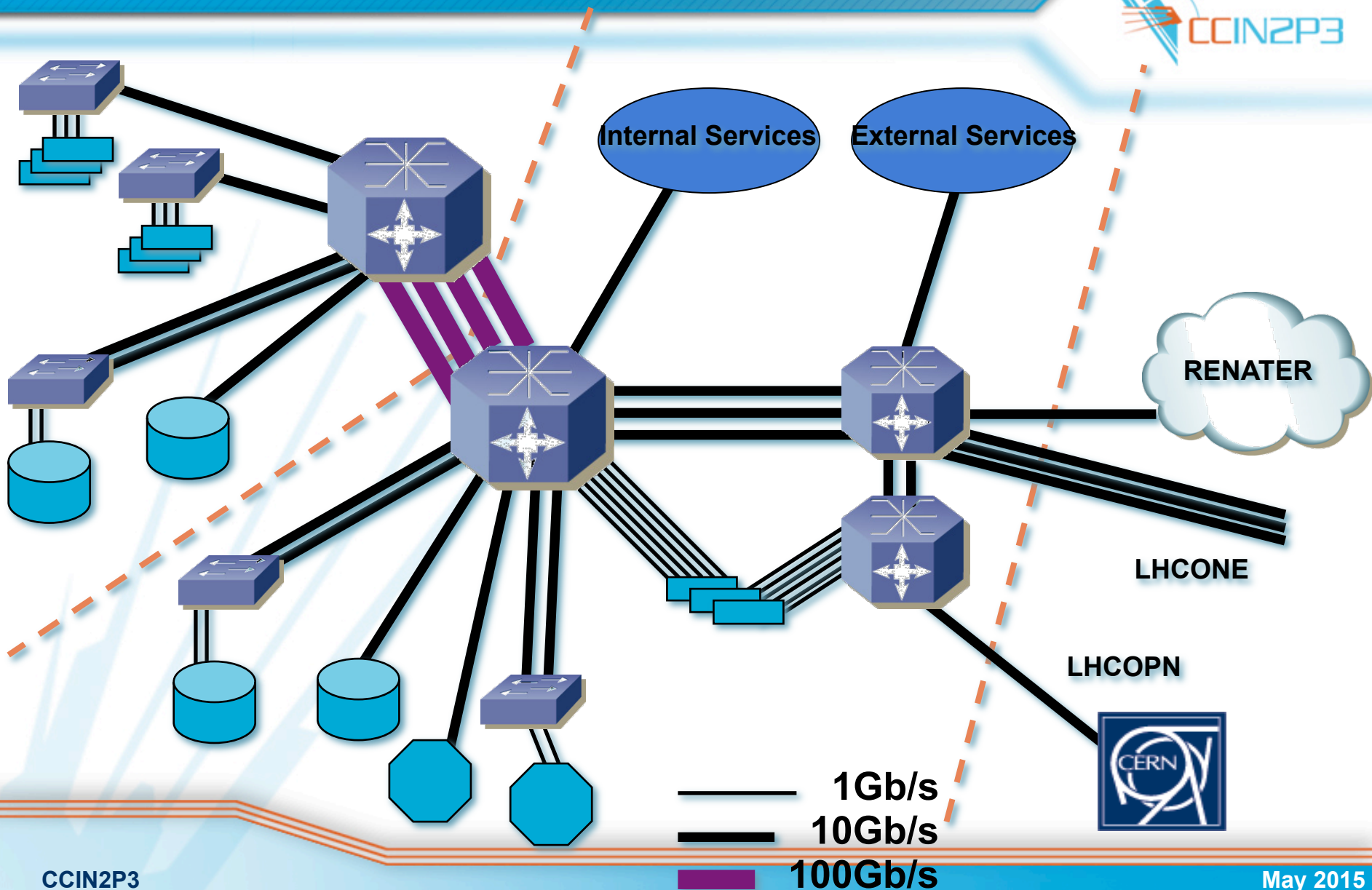
LHCONE

LHCONE: A global infrastructure for the High Energy Physics (LHC and Belle II) data management

N2P3



LAN CCIN2P3 June



▶ Preparing LSST needs



- RENATER 6
 - 100Gb/s lambda starting end 2015
- Use LHCONE network ?
 - like BELLE II or Auger experiments

ESNET report from last LHCONE meeting Cambridge February 2015

<https://indico.cern.ch/event/342059/>



ESnet Services across the Atlantic

- LHCONE Services
- ESnet will be turning up services to some US Universities providing the ability for them to transit HEP traffic across ESnet:

Next Steps for ESnet

Adding more US Universities

- US Atlas and US CMS have provided a prioritized list
- Will start working 3-4 in parallel
- Up next:
 - University of Chicago, University of Illinois, Indiana University, University of Nebraska Lincoln

