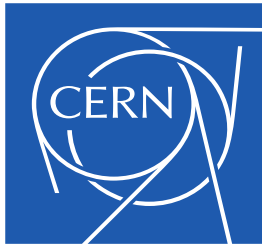


www.cern.ch

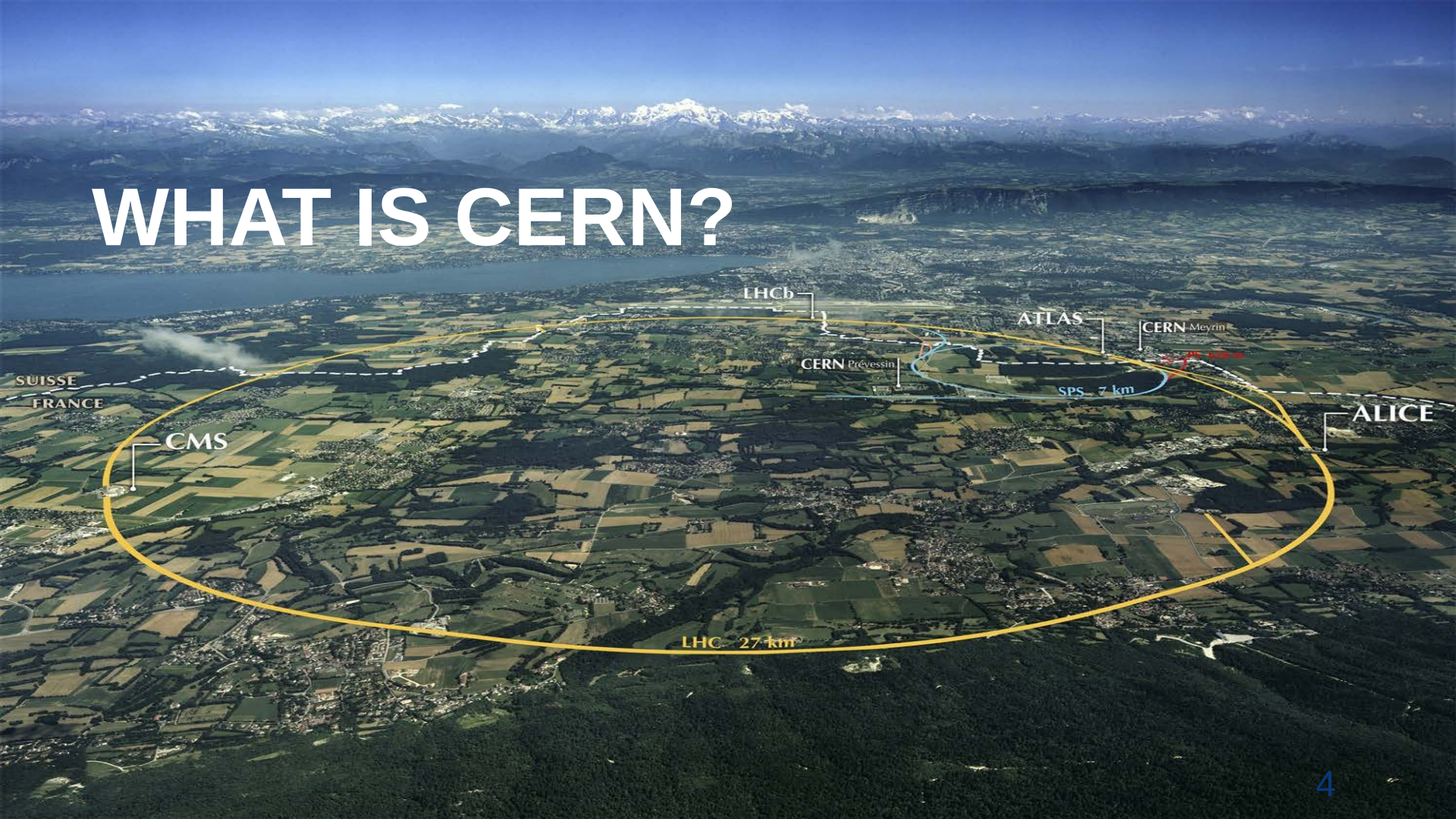
GEANT WebRTC-TF, October 27th 2015 – NORDUnet, Stockholm

Videoconferencing Developments @CERN

Joao Fernandes
CERN IT

- What is CERN?
- Remote Activity at CERN
- Vidyo@CERN: scale and infrastructure
- Future: GEANT & WebRTC

WHAT IS CERN?

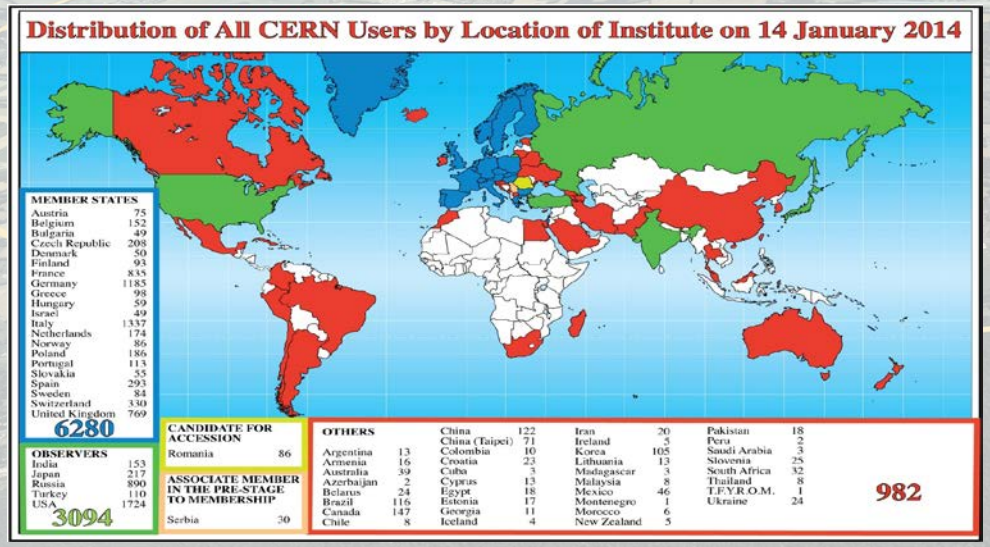

LHCb
ATLAS
CERN Meyrin
CERN Prévessin
SPS 7 km
SUISSE
FRANCE
CMS
ALICE
LHC 27 km

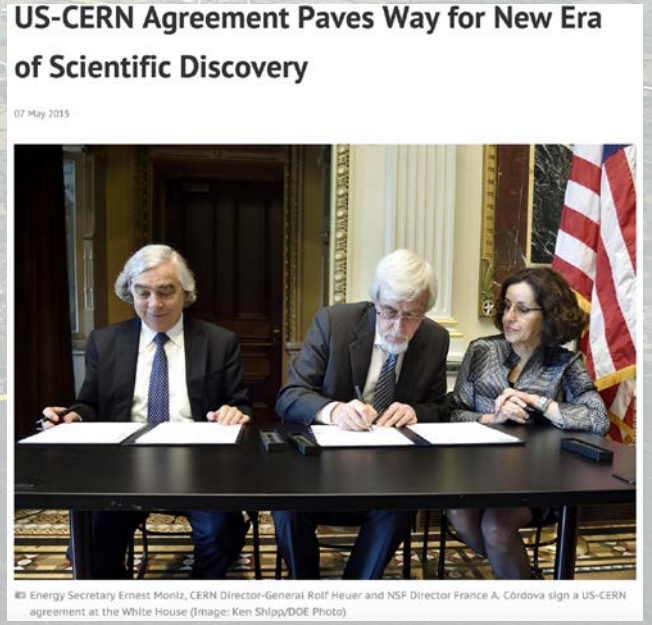
- Research Lab & Service Provider for Research
- Flagship accelerator: the Large Hadron Collider (LHC)
- 7 experiments on the LHC
- Many others out of LHC
  - AMS at ISS

Worldwide Effort

21 Member States

CERN: 2500 staff, 11000 users from 600 Institutes in 87 countries





Desktop Videoconferencing

- Using Desktop VC since 95
  - H323 MCUs have always been « Legacy »! ☺
- Developed own Desktop VC system
  - Built on our requirements
- Change of business model in 2008
- **Contract/Partnership with Vidyo in 2011**
- Jan 2013: end of legacy desktop system support at CERN

VIDYO@CERN: SCALE AND INFRASTRUCTURE

Service Scale in Numbers

20,257 users

1600 simultaneous connections

168 simultaneous H.323/SIP

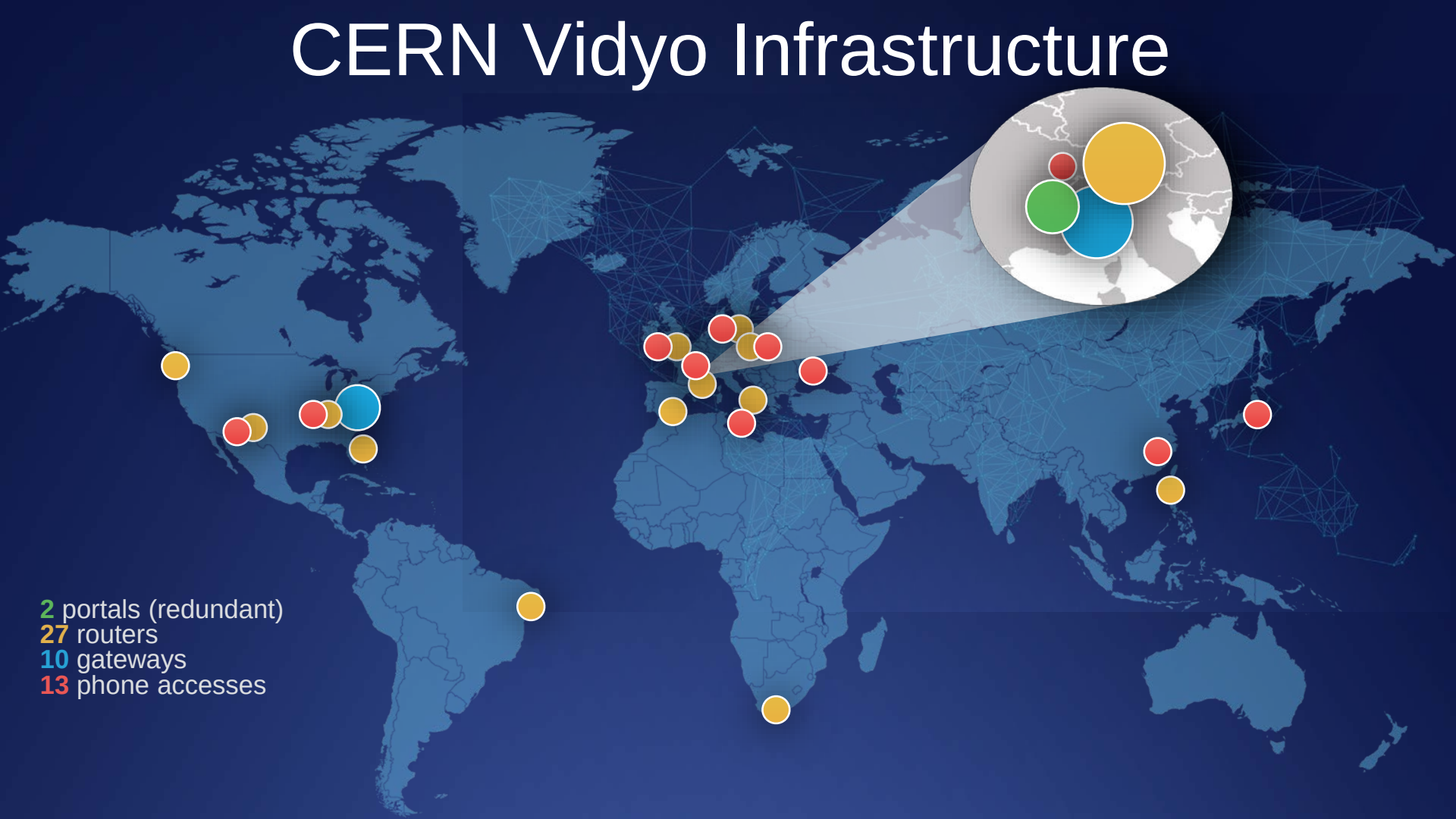
14 phone access points worldwide

3 Vidyo Panoramas

(CERN site)

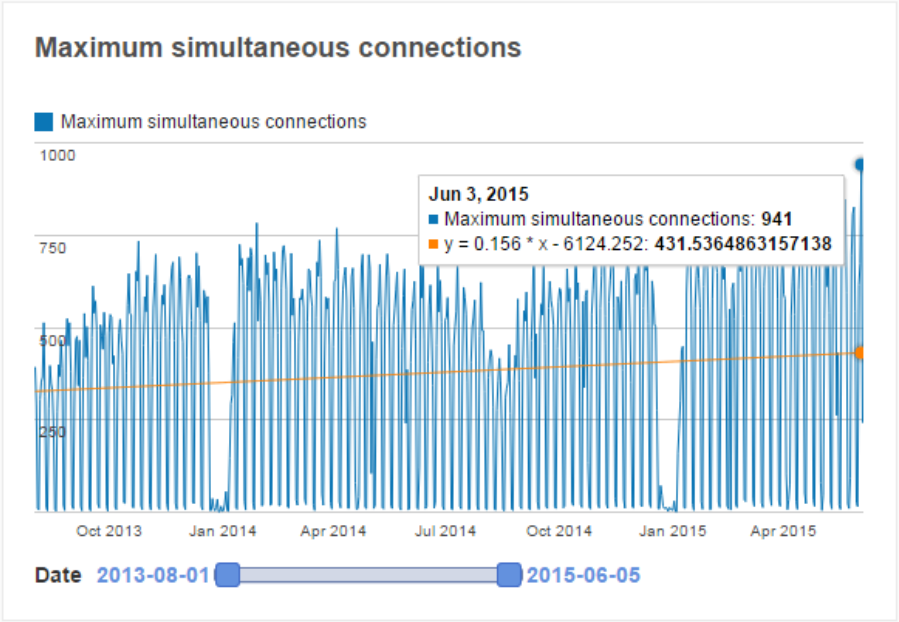
12 simultaneous recordings

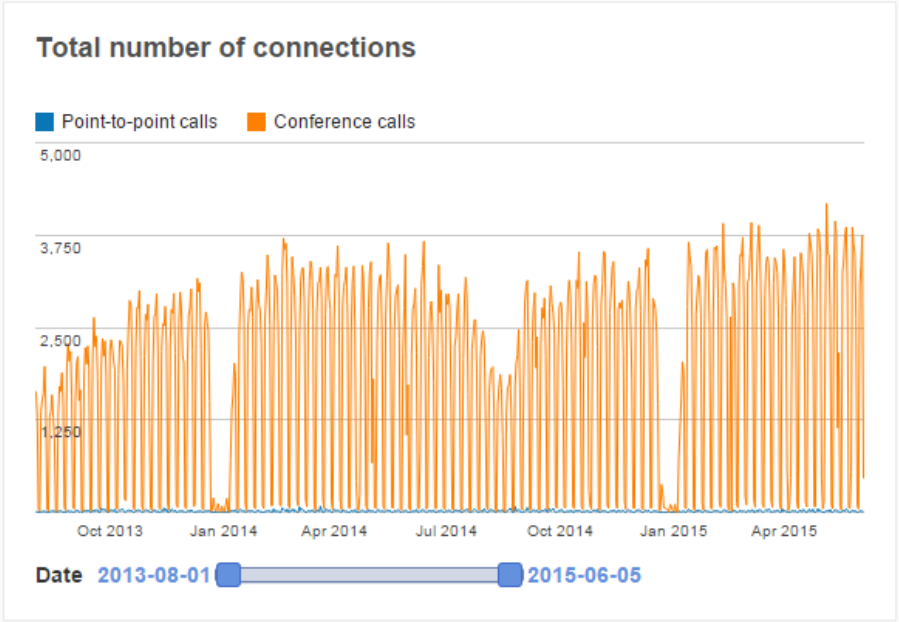
CERN Vidyo Infrastructure



2 portals (redundant)
27 routers
10 gateways
13 phone accesses

Vidyo: Usage Evolution



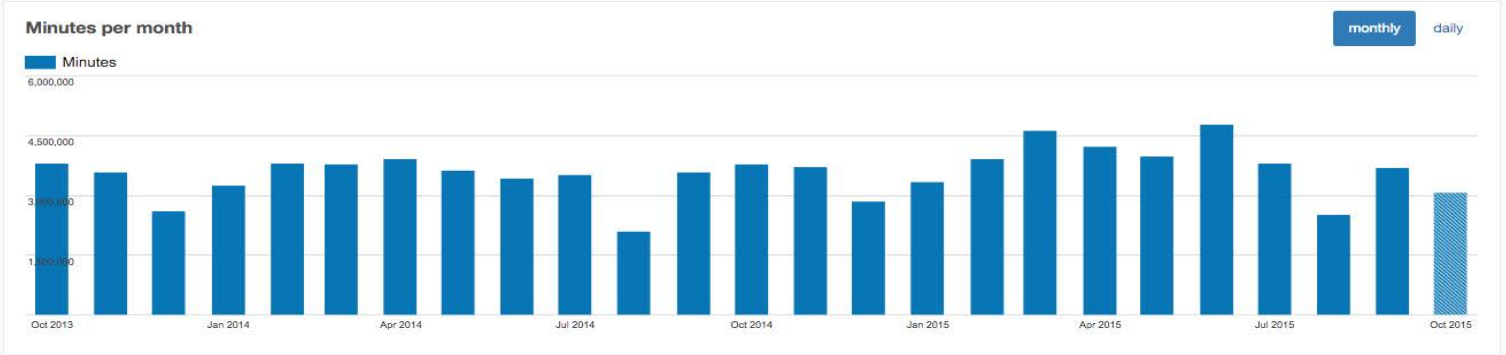


Vidyo: Usage Evolution

Minutes in conferences

MEDIAN **3.7m** PEAK **4.8m**

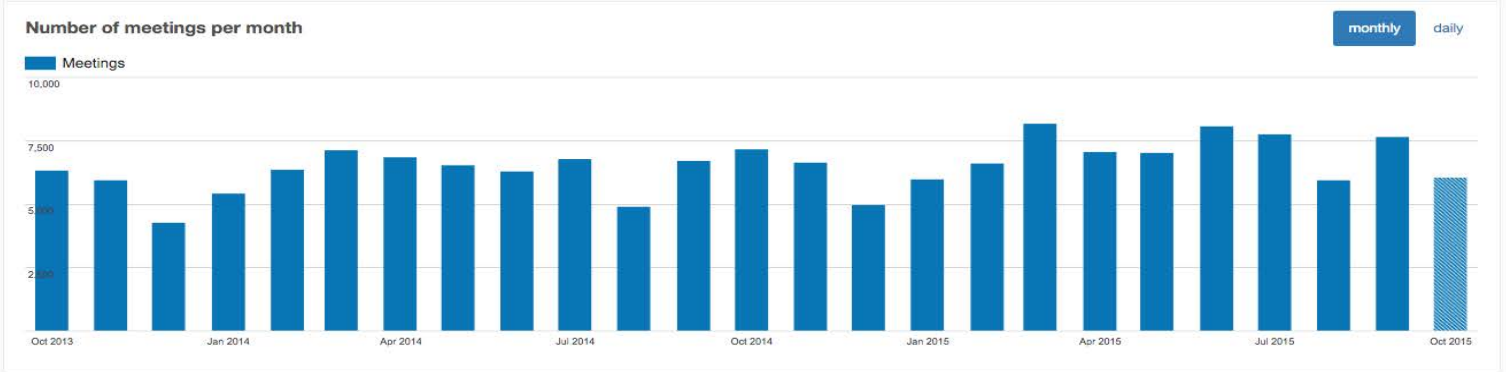
3.7m
minutes in September



Meetings

MEDIAN **6.6k** PEAK **8.2k**

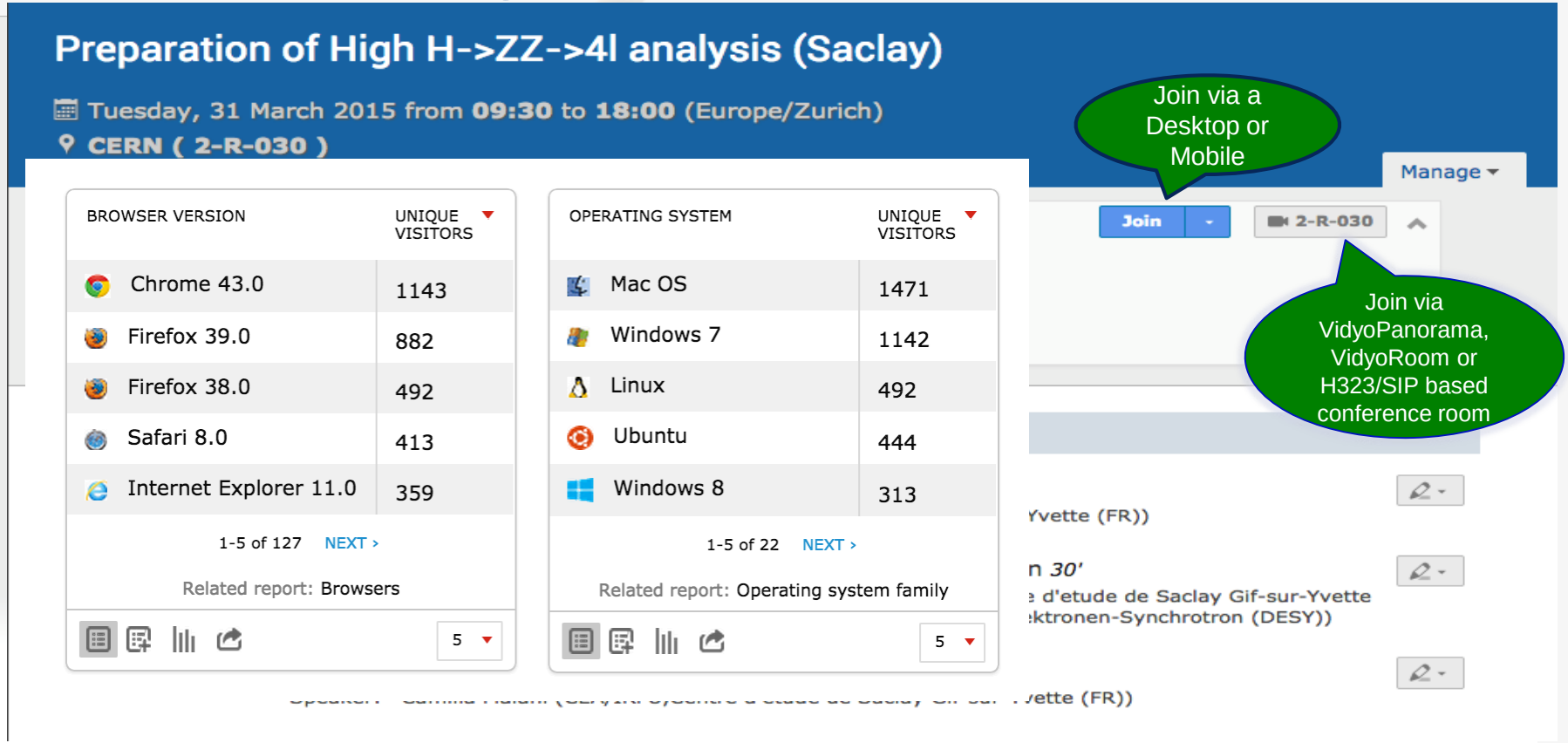
7.7k
meetings in September



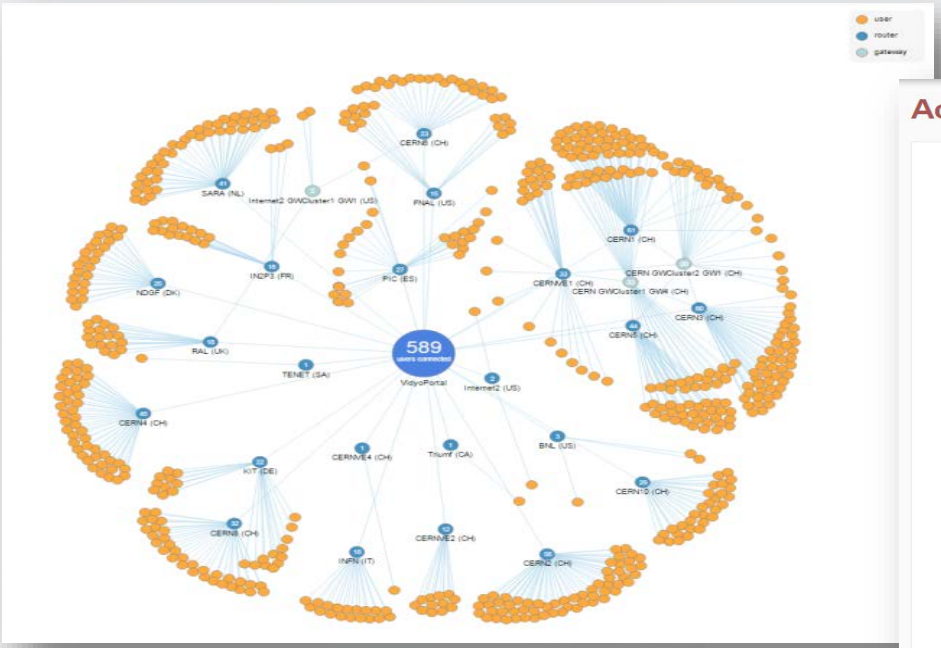
Current Peaks

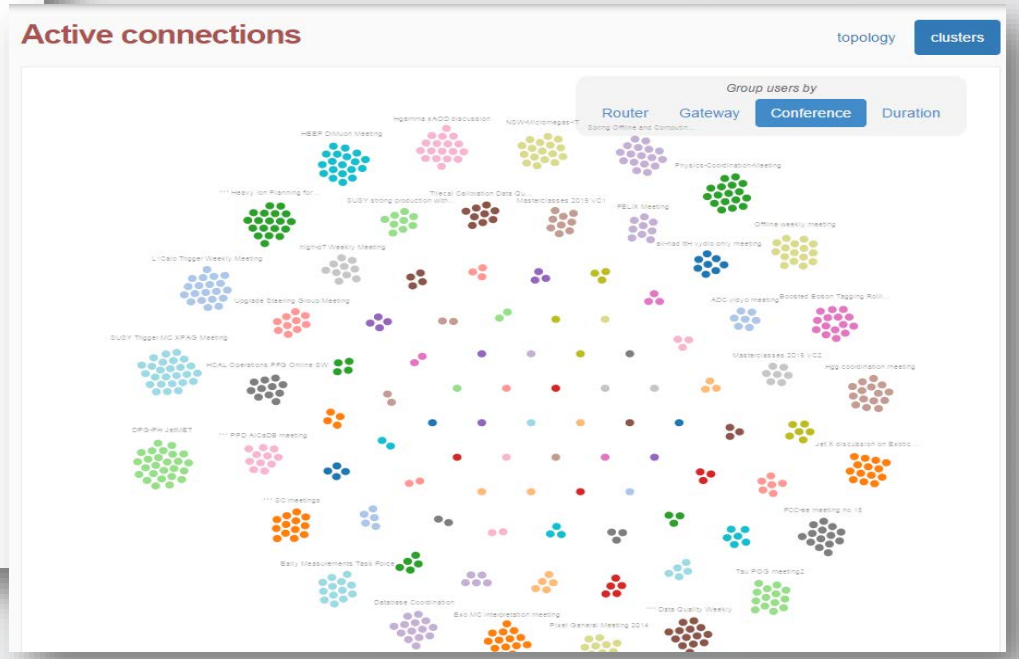
- 941 simultaneous connections
- 252 people in one meeting
- 8124 Meetings/month
- 60000+ clients installed
  - mobile and desktop
- 50 Million minutes/Year

Indico Integration



Reporting & Monitoring





- CERN Development
  - Live Dashboards for users and managers

Available at: http://avc-dashboard.web.cern.ch/Vidyo

FUTURE

What's Next?

- Extension to All Research Domains (Q4 2015)
  - Tripartite partnership CERN/GEANT/Vidyo
  - Leveraging CERN's worldwide infrastructure for R&E
    - CERN's Vidyo IaaS
- WebRTC client development (Q4 2015)
- « Intelligent » Infrastructure Virtualisation (2016)
  - Automatic setup of infrastructure following tresholds of usage
  - Openstack based
  - Phase 1: between CERN and Wigner (Hungary) to cover EU

GEANT-CERN-Vidyo Partnership

- Successful Experience across the High Energy Physics community
- International footprint
- Approach from several R&E Organizations, mostly out of HEP with the question:

“How can I use your Vidyo or Indico for my Community in a secured, dedicated and customized way?”

CERN Tenant

Tenant 1

Tenant 2

Tenant N

CERN Vidyo Portal

Federated Authentication

indico

Community 1

Community 2

Community N

GÉANT PROJECT

Organization 1

Organization 2

Organization N

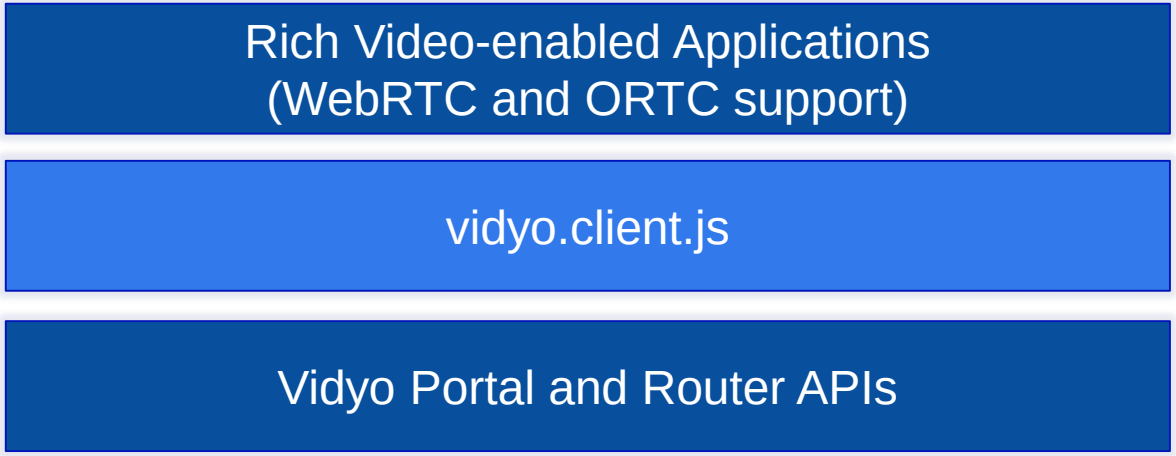
Where are we now?

- Financial model defined
- Legal model defined
- Setting signing date
- 2 Pilot Tenants:
  - SWITCH and GEANT
  - 3 International collaborations based at FNAL (US) testing under the CERN Tenant
- Several conversations ongoing
- Next Steps: Sign the agreement and make a Press Release ☺

WebRTC – Objectives

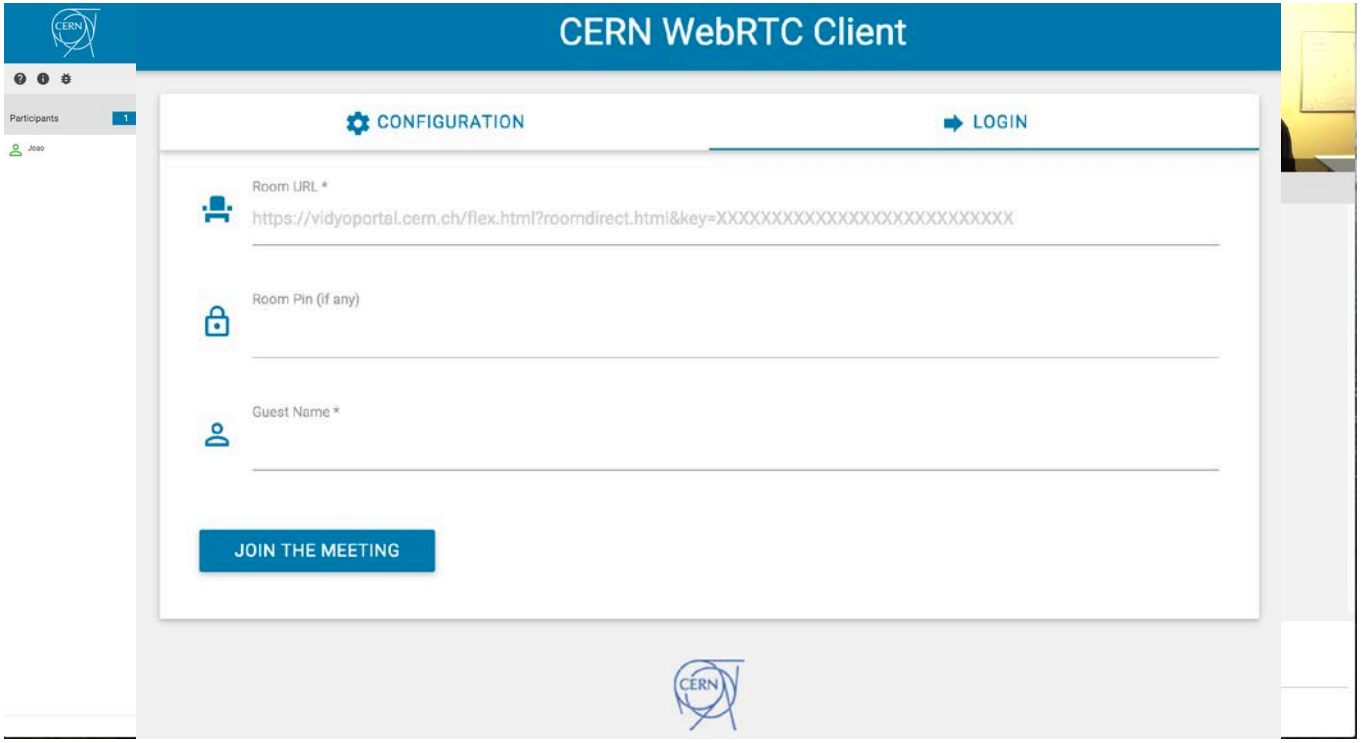
- Build the Knowledge
- Collect feedback
  - Highly “Web oriented” community
- Contribute as standard and evolves
- Belief that WebRTC will turn collaboration vendor agnostic
  - And provide interesting possibilities to develop Open Source code

WebRTC - Vidyo Stack



- Developers meetings
  - Swisscom, Vidyo, CERN
- Indentification of common use cases
- Definition of common strategies
- Prioritize features

CERN WebRTC client 0.1



Roadmap

- WebRTC Server 3.3 (Now) and 3.4
  - Support of VP9
  - Support of Microsoft Edge (ORTC)
  - Support of end user registration
- WebRTC API Next Generation (2016)
  - Release together with Next Gen client (*Neo)* and infrastructure (*Trinity*)
  - Native WebRTC support across all elements of the infrastructure

To Conclude…

- Ensure a worldwide service
  - That works, but without “vendor locking”
  - Following stardards, helping to shape the emerging ones
  - Adding inteligence, scalability, interoperability
    - Both at application and infrastructure level
    - Providing Open Source development opportunities

Thank You!
Questions?

CERN