

The 3rd

# Asia Tier Center Forum

11-13 October 2017

**A Proposal on the continuity  
of Asian Collaboration**

Sang-Un Ahn  
On the behalf of Organizing Committee

# General Information

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- Asia Tier Center Forum (ATCF) is a 3-day workshop designed to seek a practical solution of common issues in the region
- By its name, it requires presence of tier centers in Asia and envisages an intensive discussion on the selected topics, which makes it unique among others
- This is its 3rd series following two consecutive events:
  - 1st @ KISTI, Daejeon, South Korea (2015)
  - 2nd @ SUT, Nakhon Ratchasima, Thailand (2016)
- Web site: <http://www.atcforum.org>
- Current event's indico page: <https://indico.cern.ch/e/ATCF2017>

# Background

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- ATCF originates from the efforts on sharing Grid activities among Asian ALICE sites as follows:
  - ALICE Analysis Workshop for Asian Communities at Hiroshima (2010)
    - Hiroshima, KISTI, Wuhan (ALICE T2) and Tokyo (ATLAS T2)
  - Asia Forum for ALICE Tiers at KISTI (2013)
    - Hiroshima, KISTI, SUT (ALICE T1 and T2s)
  - Asia-Pacific Grid Workshop at Krabi (2015)
    - Hiroshima, KISTI, LIPI, NECTEC, SUT (ALICE T1 and T2s)
- Through these activities, a demand on improving connectivity among Asian T2s has been growing, particularly an issue on T1-T2s connectivity has arisen
- Although a T1 is mandated by WLCG not only to reach CERN with a high-bandwidth dedicated optical link (LHCOPN) but also to provide a practical solution for T1-T2 traffic (LHCONE), the situation in Asia was complicated in terms of networking

# What sites benefited from ATCF

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- Throughout the series of events, sites have gained useful information about their networks
  - How to tune the network and join LHCONE
  - Local contact person for network support
  - Better knowledge on network picture in the region
- By sharing the status on site management as well as operations, sites could support and help the other sites and find common interests to collaborate together
  - What mostly done in other places; ATCF gives the highest priority to Asian community
- ATCF has provided literally a forum where sites can actively participate in the process of addressing network issues, which makes ATCF unique



# Continuity of ATCF

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- Interconnection among the network providers will definitely not be the end of story
- We together should keep looking into the progress on the LHCONE in Asia and working on the optimization of end-to-end connectivities
  - Unforeseen issues can be arisen in the process
  - Advanced technology that we can use of might be emerged
- In that sense, we could possibly collaborate to develop the distributed computing environment based on the advanced networking in the region
- Practical examples and items to collaborate are open questions to discuss

# An example

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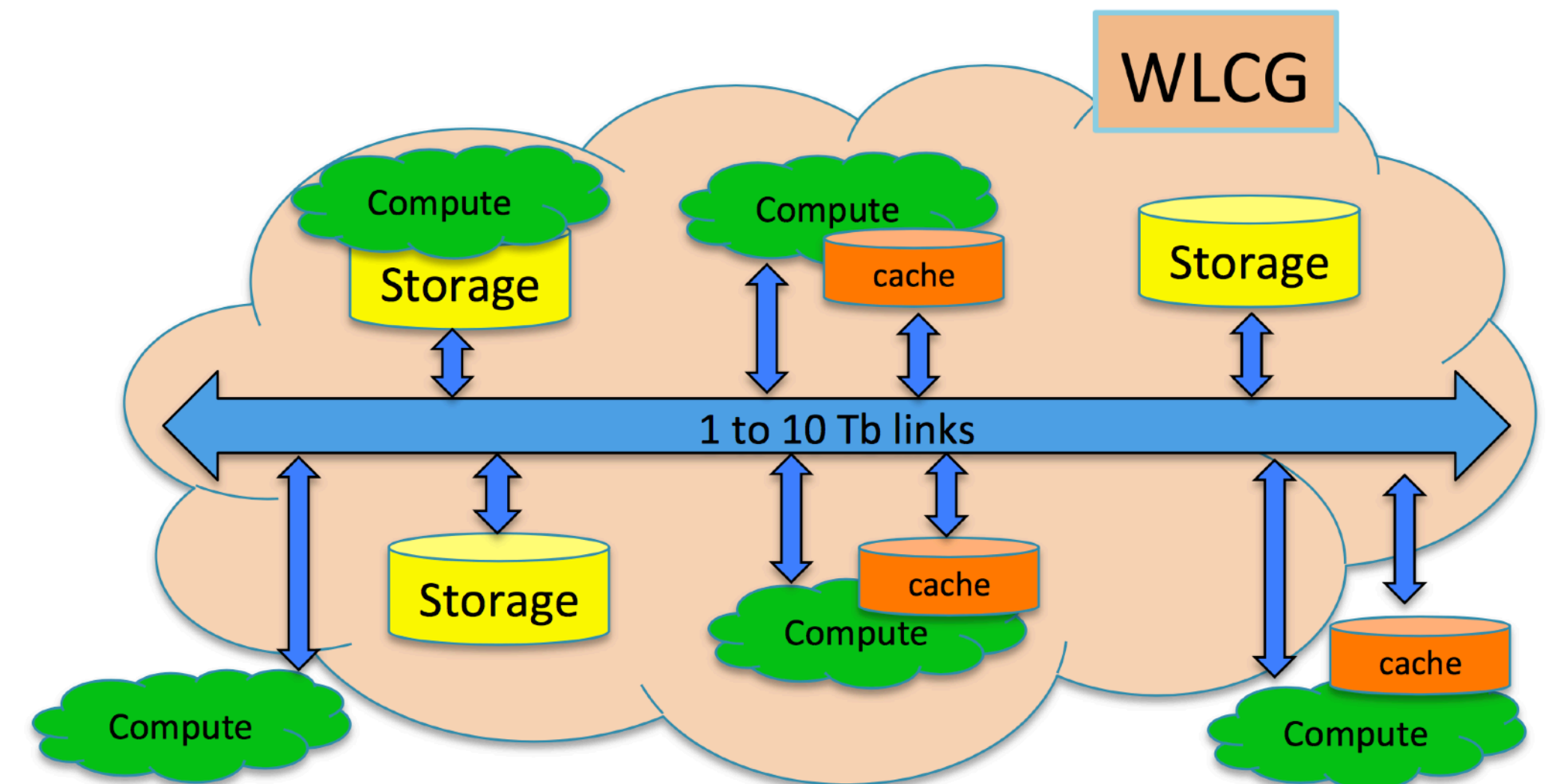
- We have better connectivity towards Europe and US with higher bandwidth which make a tendency of traffic easily gone out of the region
  - On one hand, it is important for T1s to have larger pipeline for raw data transfer
  - On the other hand, T1-T2 and T2-T2 traffics (mostly analysis traffics) should reside in the region after raw reconstruction
    - Competing in Europe or US with other traffics generated from there would not be a good idea
- Tight communications with Experiments as well as LHC research groups in Asia will be mandatory;
  - Datasets preferred by research groups should be within the region, which has to be negotiated with Experiment computing coordination
  - Raw transfer itself should match with the preferences of the Asian community; this should be very well balanced in between the coordination and the demand

# Federating Resources?

- Given that we will have advanced networks in Asia (less RTT and larger Bandwidth), we could be a coherent entity to WLCG as a federated storage or compute resource
- Having a regional federation for each VO would be a good start of: XRootD Regional Redirector
- Crossing VOs should provide a more efficient way of consuming resources

- Constraints:

- Funding agencies would not accept the concept of “Crossing VOs”, which implies that the resources they invested are not allowed to be occupied by others
- Would federating resources really be as much efficient as expected?



# Federated Cloud for Asian Research Community?

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- We could provide a some amount of computing and/or storage resources in an opportunistic way or in a project-based way through call for proposal
  - Like GSDC does recently for Korean Research Community; presumably there seem already a demand on the resources from whom requires computing resources for research, which are not available in his or her domain (not necessarily only in HEP)
- Constraints:
  - Are sites allowed to deploy their resources to non-LHC domain?
  - Are sites afford to spare their resources, which means additional resources or sharing existing resources?
  - Adapting applications to the resources requires manpower for development
- A prototype can be launched with small amount of resources, not implying permanent donation, from volunteering sites
  - Technologies are out there; we may setup a general purpose user environment or focus on a specific use case based on the selected proposal

# Education Program for Asian Students

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- Co-organized analysis or computing school would help students in Asia to adapt themselves easily to the Grid environment, also the proposed federated resource/cloud environment, in which basically it is essential to grow people with some expertise and to help them to build up personal network: promoting “Culture”
- Bidding existing education programs in Experiments or at CERN: Physics Master Classes in ALICE, Data Analysis School in CMS, CERN School of Computing

# ATCF Initiative

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- From the beginning of ATCF, the organizers have agreed on the idea that we should work together closely to solve common issues among Asian sites
- Based on this idea, we have worked on drafting a letter of agreement targeting Asian community to comprehend the goals of ATCF as follows:

*"The aim of this forum is 1) (short-term) to discuss on the possible solutions for the improvement of connectivity among Asian Tier sites and their status of domestic network environment and 2) (long-term) to monitor periodically the state-of-art of the established network environment through this forum and to organise a body with a broader agenda embracing not only the network but also common issues that could be arisen among Asian Tier sites."*

- A very first version was drawn by Prof. Oh and the organizers have met twice at HK to discuss and revise the draft
- The current version is done in May 2017
- The purpose of the letter is to promote a membership among Asian sites regardless VOs we support, who agrees with this idea, targeting the formation of a body



# Letter of Agreement

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- Please review the letter of agreement and your comments and suggestions are more than welcome
- And join us!

## - DRAFT 2017/05/24 - Letter of Agreement among members of the ASIA TIER CENTER FORUM

### PREAMBLE

1. Members of the Asia Tier Center Forum (hereafter ATCF), being aware that:
2. As early as in 2010, Prof. Toru Sugitate has addressed the importance of connectivity inside Asian countries, hosting “ALICE Analysis Workshop for Asian Communities.” The conceptual guideline has lead valuable activities and become a base of this forum;
3. In this regard, Prof. Chinorat Kobdaj of SUT has hosted Asia Pacific Grid Workshop in 2015 in effort to visualize the reality of this forum;
4. As the formal platform for the Asian community, Dr. Seo-Young Noh of GSDC, Dr. Latchezar Betev of CERN and Prof. Sunkun Oh of Konkuk University have initiated to organize the first meeting of ATCF and shape this forum into a formality;
5. Have come to the following agreement with regards to the establishment and functioning of ACTF beyond 2016:

### SCOPE OF THE LETTER OF AGREEMENT

6. The purpose of this agreement is to establish arrangements for continuing the activities of ATCF beyond 2016 as a venue for exchange of information and consultations among members.
7. This agreement is not legally binding, however can make recommendations regarding member’s activities.
8. The members undertake to use reasonable efforts to perform and fulfil promptly, actively and on time all necessary actions to realize the purpose of this agreement, always subject to the availability of resources at the members.
9. No member or the Chair of ATCF shall be entitled to create legal obligations for any other member without the latter’s prior consent letter of agreement is not legally binding.
10. It is understood that the members do not make any commitment to undertake obligations other than those set out explicitly in the present agreement.

# ATCF Management Structure

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- Chair - elected among ATCF members, presides over the annual meetings and represents the ATCF
- Member meetings - board or steering committee meeting to work on the agenda and the location for next open meeting
- Open meetings - Asia Tier Center Forum, a place to oversee the status of member sites related to current issues and to discuss short or long-term solutions together with invited experts
- Steering Committee - the organizers for the moment; Chair may appoint SC members among ATCF members from at least three different countries, but they may not exceed more than one third of ATCF members
- Bureau office is operated by KISTI - support to local organization and logistics, compilation and dissemination of any reports, assistance to Chair, and maintenance of website



# ATCF Membership

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- ATCF members are individuals representing Asian sites ~~that have responsibilities for national/international grid and networking~~
- Each site may have two representatives - initial founding members are confirmed of their memberships
- Participation to the ATCF meetings and sharing necessary information among members are the duty of members
- After has this agreement come into force, any site may apply or be invited to nominate a suitable representative as a member of ATCF
  - New membership shall be approved by a consensus of existing ATCF members.
- ATCF membership is voluntary with no dues being requested. As necessary, the costs of participation in ATCF activities will be covered by their own expenses. All members of ATCF participate in the activities with identical rights and standing.

# Expert Groups and Guests

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- Individual experts, spokespersons of projects, members of scientific bodies, or relevant government officers may be invited as expert groups or guests to attend the annual or occasional ATCF meetings for specific agenda. Invitations may be issued by the ATCF members.
- International organizations or individual entities, who have any interest to contribute to ATCF, may attend Asia Tier Center Forum.

# Next Agenda

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- To be decided upon the items we discuss today and coming SC meetings
- We will keep tracking together on the progress of networking improvement through this forum

# Next ATCF

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- TIFR in Mumbai has expressed a positive answer on hosting 4th ATCF next year
  - Special thank to Brij Kishor Jashal
- We will together prepare for a proposal to apply for Asi@connet's call for proposal in order to get fund to support local organization and logistics
- KISTI also has annual budget for ATCF activities, which could match with Asi@connect grants



Thank you

Questions?

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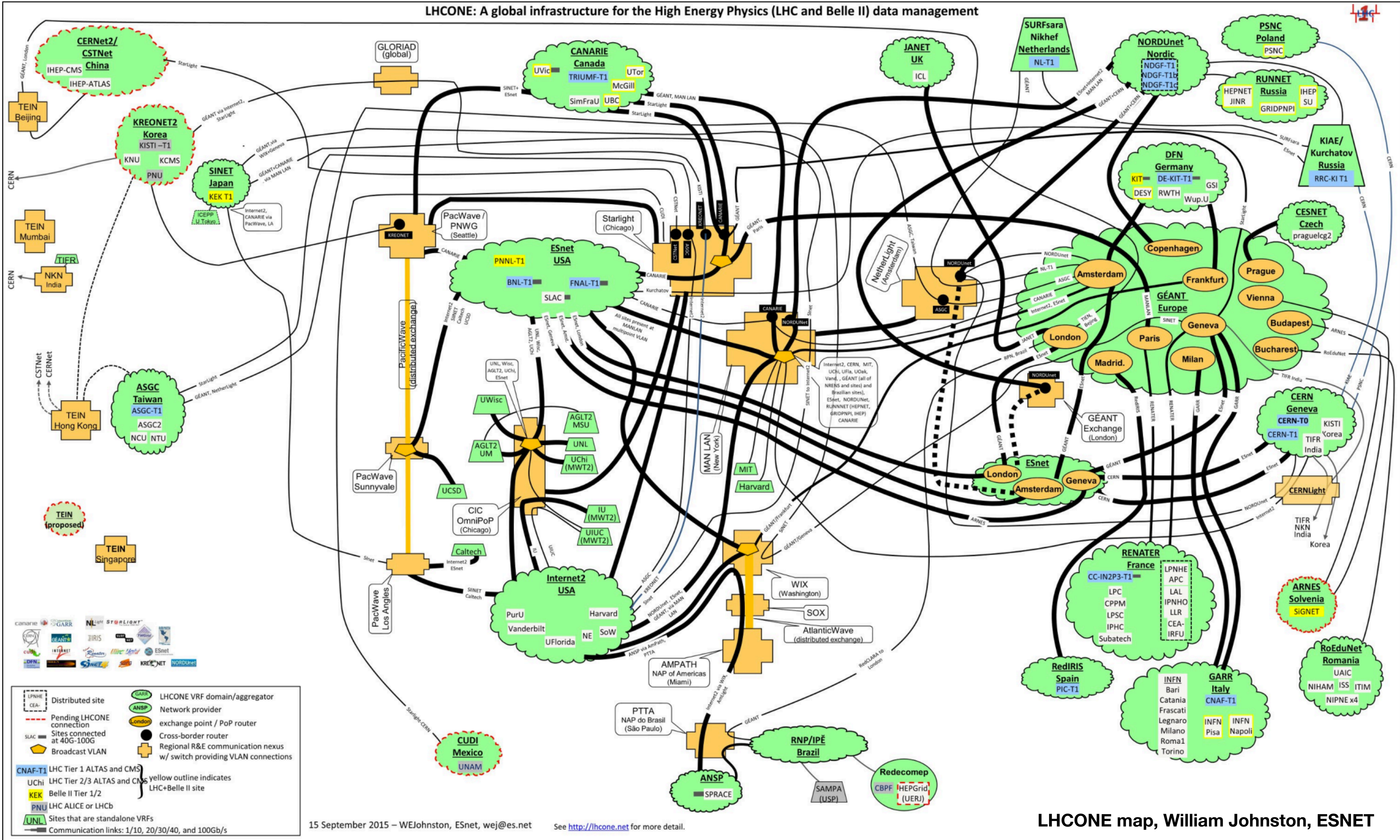
**Wrap-up**

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# LHCONE Map

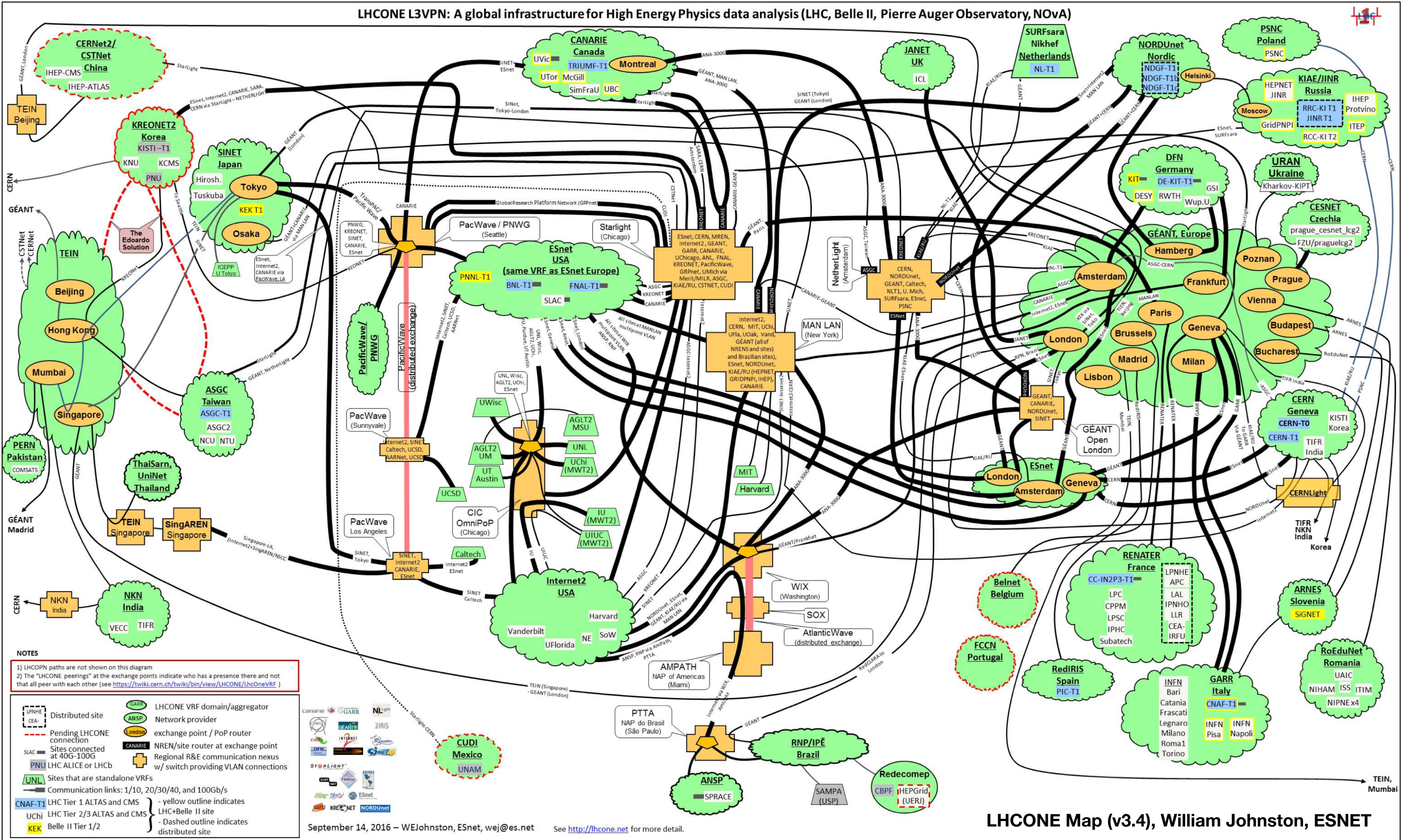
## As of 15 September 2015





# A year later...

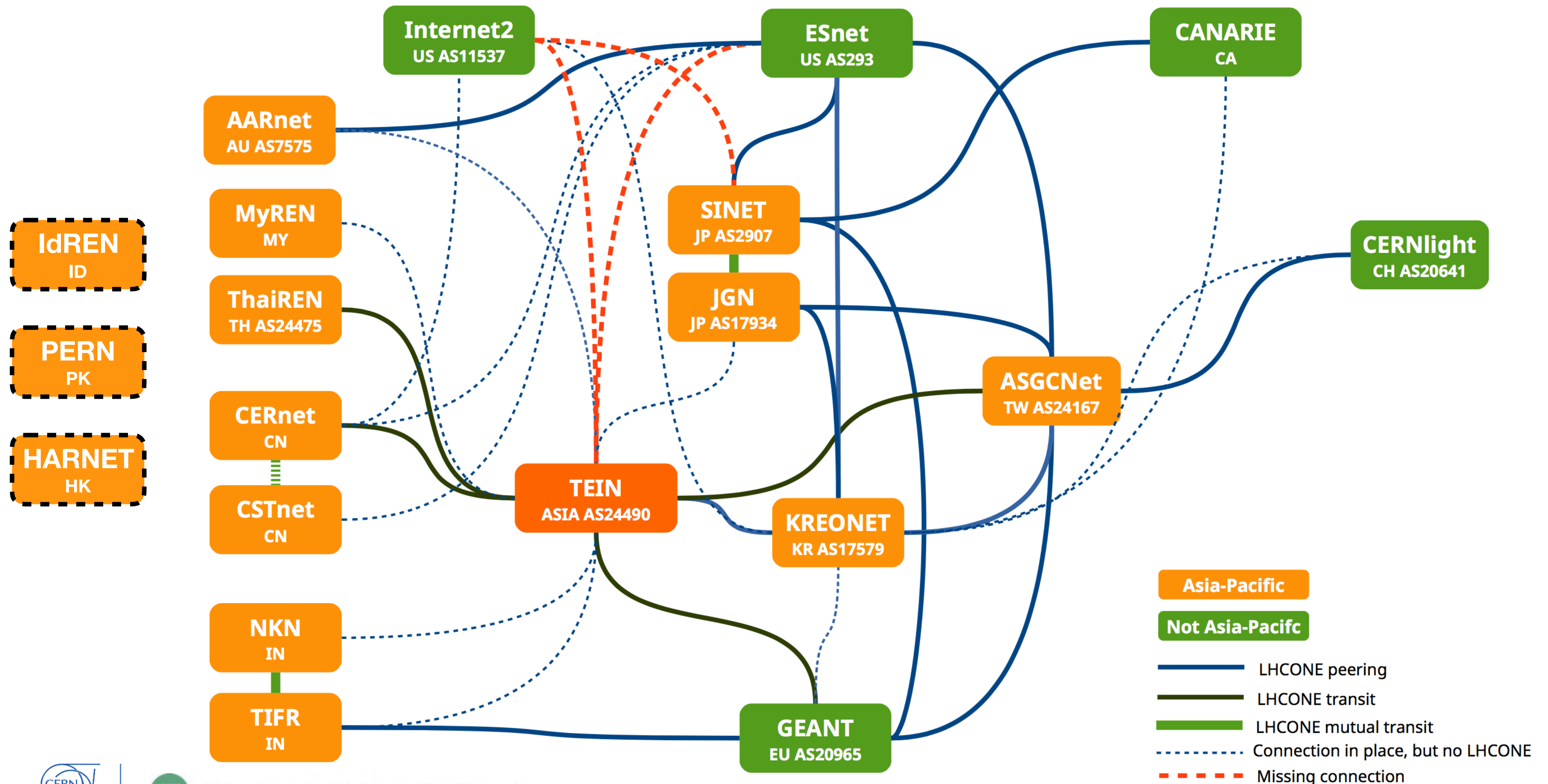
As of 14 September 2016





# Asia-Pacific VRFs

Edoardo Martelli, CERN @ 3rd ATCF



# Well done!

Edoardo Martelli, CERN @ 3rd ATCF

LHCONE situation in Asia has very much improved.

Kudos to everyone who has worked for this achievement!

It should be called “the ATCF solution”

**Thanks to network experts for their efforts and supports**

**Thank you all Asian friends for your participation and contributions**

