

# IEEE Intercloud Testbed

Engineering Meeting  
10/22/13



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# Agenda

1. Members Roster
2. Press Release and Marketing Launch
3. Members, Subject Matter Experts,  
and Executive Committee
4. IPR Policy
5. Information Web Site
6. Engineering Work

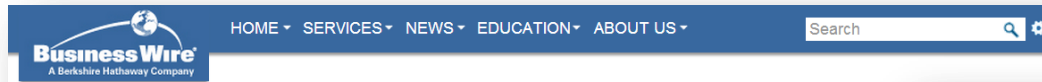
# Founding Members

1. AT&T, Inc. \*
2. Centre for Development of Advanced Computing, India
3. CITIC Telecom International CPC Limited
4. Cloudscaling, Inc
5. ComputeNext
6. Fraunhofer FOKUS Institute for Open Communication Systems
7. Global Inter-Cloud Technology Forum
8. JT Global
9. Juniper Networks, Inc
10. DOCOMO Innovations
11. Orange Group, France Telecom SA
12. Second University of Naples
13. ServiceMesh, Inc
14. Telx Group, Inc
15. The University of Ulster, Coleraine, Northern Ireland
16. The Hong Kong Polytechnic University
17. The University of Melbourne
18. University of Essex UK
19. University of Stavanger
20. Virtustream
21. 6Fusion

\* Note: AT&T has requested to recuse themselves from marketing/promotion activities but they will still otherwise remain a Member



# Press Release/Launch Status



## IEEE Intercloud Testbed Project Announces Founding Members

*Twenty-one global companies and research institutions have joined the IEEE Intercloud Testbed and launched work to develop interoperable, and federated cloud ecosystem*

October 08, 2013 09:00 AM Eastern Daylight Time

PISCATAWAY, N.J. (BUSINESS WIRE) – The IEEE, the world's largest professional organization advancing technology, today announced the formation of the IEEE Intercloud Testbed. The IEEE Intercloud Testbed is developing cloud computing standards to help the cloud become as ubiquitous and as mainstream as the Internet. The IEEE P2302™ Standard for Intercloud Interoperability and Federation is currently under development.

## Mission: Protocols to ease cloud federation

by Barb Darrow OCT. 8, 2013 - 8:43 AM PDT

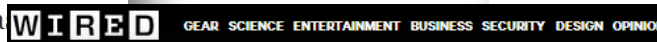
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**SUMMARY:** The IEEE's Intercloud Testbed Project aims to pave the road to true cloud federation and now has 21 members to help. A great goal but one quibble: the big cloud names are MIA.



The newly named founding members of the IEEE Intercloud Testbed are facing a tough problem ahead of them: coming up with protocols to help federate workloads across clouds.



## INNOVATION INSIGHTS

contributor content featured blog cloud

## Will Multiple Clouds Evolve Into the Intercloud?

BY JOE WEINMAN, TELX 10.10.13 11:47 AM

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15  
Share 10  
Pin it



Image: opensourceway/Flickr

A group of interrelated technologies is redefining how we live and work: cloud computing, big data, mobility, and the Internet of Things. The cloud is at the epicenter of all this activity: big data migrates to the cloud to be sliced and diced; today's tablets, smartphones, and phablets rely on the cloud for services and entertainment ranging from social networking and microblogs to streaming video; and the hyperconnected world of smart grids, biosensors and connected vehicles will rely on the cloud to collect data and then turn down thermostats, alert physicians, or avoid collisions.



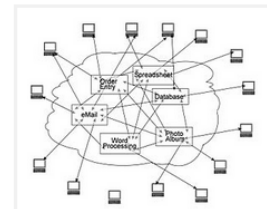
**Joe Weinman**, Contributor  
I focus on the business value of technology.  
+ Follow (10)

TECH | 10/08/2013 @ 10:24AM | 16,905 views

## What's Next For The Cloud? The Intercloud

+ Comment Now + Follow Comments

Cloud computing products and services from Amazon, Google, Microsoft, and Rackspace as well as companies ranging from AT&T to Salesforce are clearly gaining traction, growing at a 36% CAGR, according to one recent forecast. As cloud computing becomes pervasive, customers will need to determine how various cloud components from various companies will work together to meet business objectives. The IEEE—the world's largest professional association for the advancement of technology—and the one that standardized Ethernet (IEEE 802.3) and Wi-Fi (IEEE 802.11)—has brought together industry and academia to help develop Intercloud standards as part of its Cloud Computing Initiative and has announced an effort intended to test those standards under real-world conditions. (Disclosure: I am the chairman of the IEEE Intercloud Testbed executive committee)



Cloud Computing (Photo credit: Wikipedia)



# Members, Subject Matter Experts, and Executive Committee

1. New Members may continue to join.
  - Please refer to project coordinator for discussions and to process applications.
2. Individual Subject Matter Experts can be members
  - They do not get listed as Members or featured in marketing
  - They contribute as individuals to the project
  - SME's may be nominated by any member, approved by Executive Committee
3. Subject Matter Experts so far
  - Yuri Demchenko, Univ of Amsterdam
  - Deepak Vij, 2302 Chair
  - Krishna Sankar, Tata
4. Executive Committee
  - Joe Weinman (Chair), Senior Vice President, Cloud Services and Strategy, Telx Corporation
  - Henry Chan (Vice Chair), Department of Computing, Hong Kong Polytechnic University
  - Prof. Kun Yang (Secty), Head of NCL Laboratory, University of Essex, UK
  - Mark Davis, Vice President, Dell Software, Dell Corporation
  - Michael Lightner, Professor and Chair, Department of Electrical, Computer, and Energy Engineering, Co-Director, Lab for New Media Strategy and Design, University of Colorado at Boulder
  - Jon Rokne, Professor, Department of Computer Science, University of Calgary

# Approved IPR Policy

- Compliance with IEEE Patent Policy (as posted)
- Software
  - BSD “3 clause” (“BSD New”) license
  - Widely Adopted
  - OSI and FSF approved
  - GNU, Apache, MIT Compatible
  - <http://opensource.org/licenses/BSD-3-Clause>
- Documentation
  - FreeBSD Documentation License
  - Widely Adopted
  - OSI and FSF approved
  - BSD, GNU, Apache, MIT Compatible
  - <http://www.freebsd.org/copyright/freebsd-license.html>





# 2013 Plan

## • Q1-Q3

- Create initial testbed and formal Intercloud Working Group

*We Formally Organized the Testbed project, with Policies and Procedures and other documents, a formal engineering plan, Membership Sign up, collaboration environment, and engineering kick off*

- Promote and facilitate development

*Promotion & recruitment efforts at IEEE, other conferences in US, Europe, Asia, and Middle East. Place several articles. Launch Intercloud Section of IEEE Cloud Website & Information Website.*

- Press release

*Press Release Issuance at end of Q3*

## • In Q4

- Broaden collaboration
- Deliver Specs with Resourced Engineering

*Continued Evangelism at CloudNet 13 in SF November and CloudCom 13 in UK. Members continue to sign up on "Bootstrap Plan" engineering modules and new Member interest continues.*

*Author Working Documents / Identify Technology Sources in each area of Bootstrap Plan.*

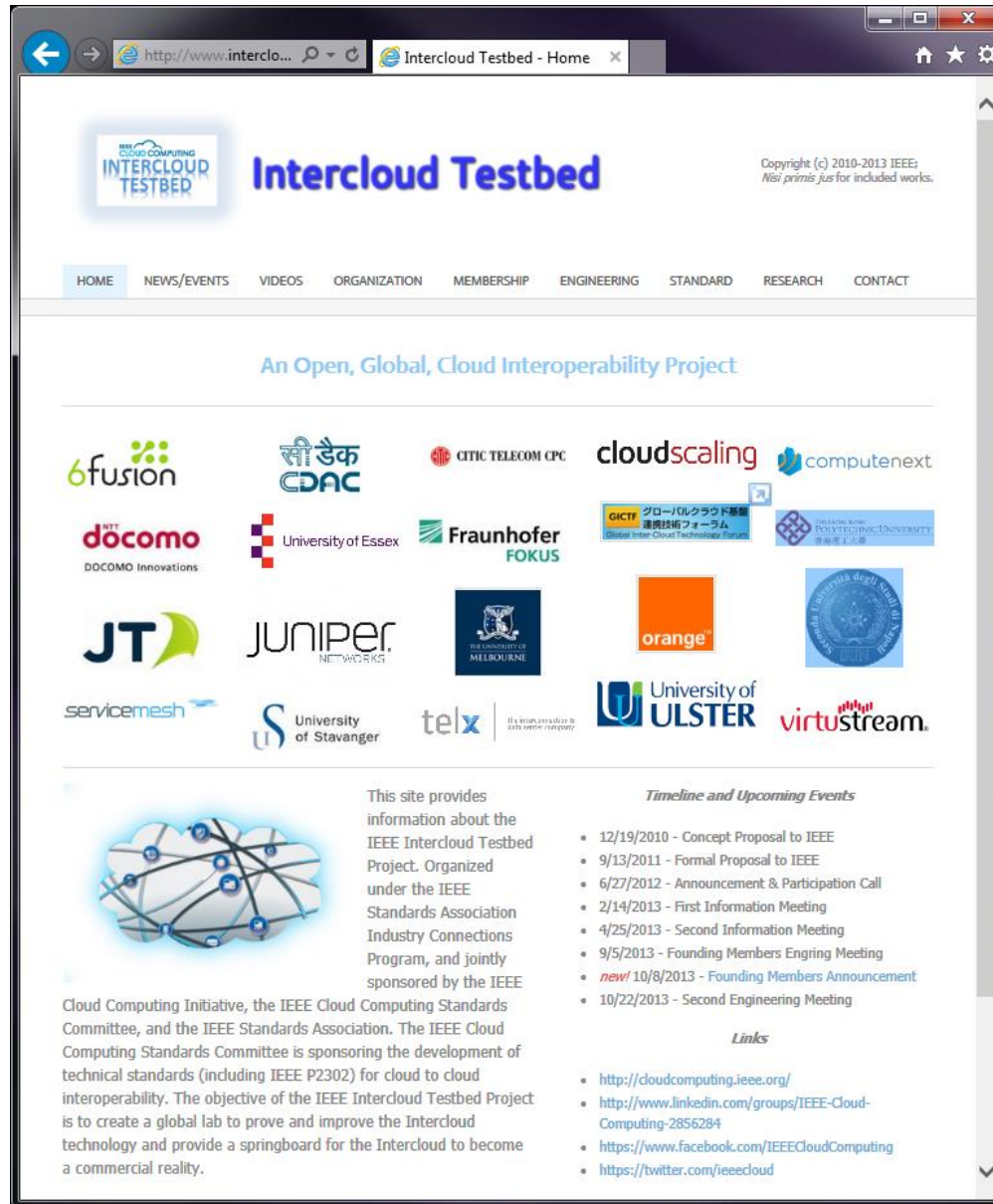


# 2014 Plan

	Q1	Q2	Q3	Q4
<b>Engineering Milestones</b>	Engineering Infrastructure Root Coding	Exchange Coding Replication Code	Reference Systems	Network Expansion
<b>Conferences / Engineering Meetings</b>	PTC14 CloudscapeIV Cloud Expo 14 IC2E14	CCGrid2014 ICC2014 MobileCloud2014 Structure2014	Cloud2014	OpenStack Summit CloudNet2014 CloudCom2014
<b>Sustainability Milestones</b>	Name Space Design	Directory Service Design	Compatibility Spec	As a Service Test
<b>Membership</b>	25	30	40	50+
<b>Standards / Publications</b>	Conference Paper(s) P2302 Liaison NIST, OSI, ETSI, ITU-T Liaison as appropriate			



# Temporary IEEE Intercloud Testbed Site



The screenshot shows the IEEE Intercloud Testbed website. The browser address bar displays <http://www.intercloudtestbed.org/>. The website header includes the IEEE Cloud Computing Intercloud Testbed logo, the title "Intercloud Testbed", and a copyright notice: "Copyright (c) 2010-2013 IEEE; Nisi primis jus for included works." Below the header is a navigation menu with links: HOME, NEWS/EVENTS, VIDEOS, ORGANIZATION, MEMBERSHIP, ENGINEERING, STANDARD, RESEARCH, and CONTACT. The main content area features the tagline "An Open, Global, Cloud Interoperability Project" and a grid of logos for partner organizations, including 6fusion, CDAC, CITIC TELECOM CPC, cloudscaling, computenext, docomo, University of Essex, Fraunhofer FOKUS, GICTP, Polytechnic University of Valencia, JT, Juniper Networks, The University of Melbourne, orange, and the University of Ulster. Below the logos, there is a section titled "Timeline and Upcoming Events" with a list of dates and events, and a "Links" section with several URLs. A sidebar on the left contains a diagram of a cloud network and text describing the project's goals and sponsors.

Intercloud Testbed

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HOME NEWS/EVENTS VIDEOS ORGANIZATION MEMBERSHIP ENGINEERING STANDARD RESEARCH CONTACT

An Open, Global, Cloud Interoperability Project

6fusion CDAC CITIC TELECOM CPC cloudscaling computenext

docomo University of Essex Fraunhofer FOKUS GICTP Polytechnic University of Valencia

JT Juniper Networks The University of Melbourne orange

servicemesh University of Stavanger telx University of ULSTER virtustream.

This site provides information about the IEEE Intercloud Testbed Project. Organized under the IEEE Standards Association Industry Connections Program, and jointly sponsored by the IEEE Cloud Computing Initiative, the IEEE Cloud Computing Standards Committee, and the IEEE Standards Association. The IEEE Cloud Computing Standards Committee is sponsoring the development of technical standards (including IEEE P2302) for cloud to cloud interoperability. The objective of the IEEE Intercloud Testbed Project is to create a global lab to prove and improve the Intercloud technology and provide a springboard for the Intercloud to become a commercial reality.

Timeline and Upcoming Events

- 12/19/2010 - Concept Proposal to IEEE
- 9/13/2011 - Formal Proposal to IEEE
- 6/27/2012 - Announcement & Participation Call
- 2/14/2013 - First Information Meeting
- 4/25/2013 - Second Information Meeting
- 9/5/2013 - Founding Members Engring Meeting
- new!** 10/8/2013 - Founding Members Announcement
- 10/22/2013 - Second Engineering Meeting

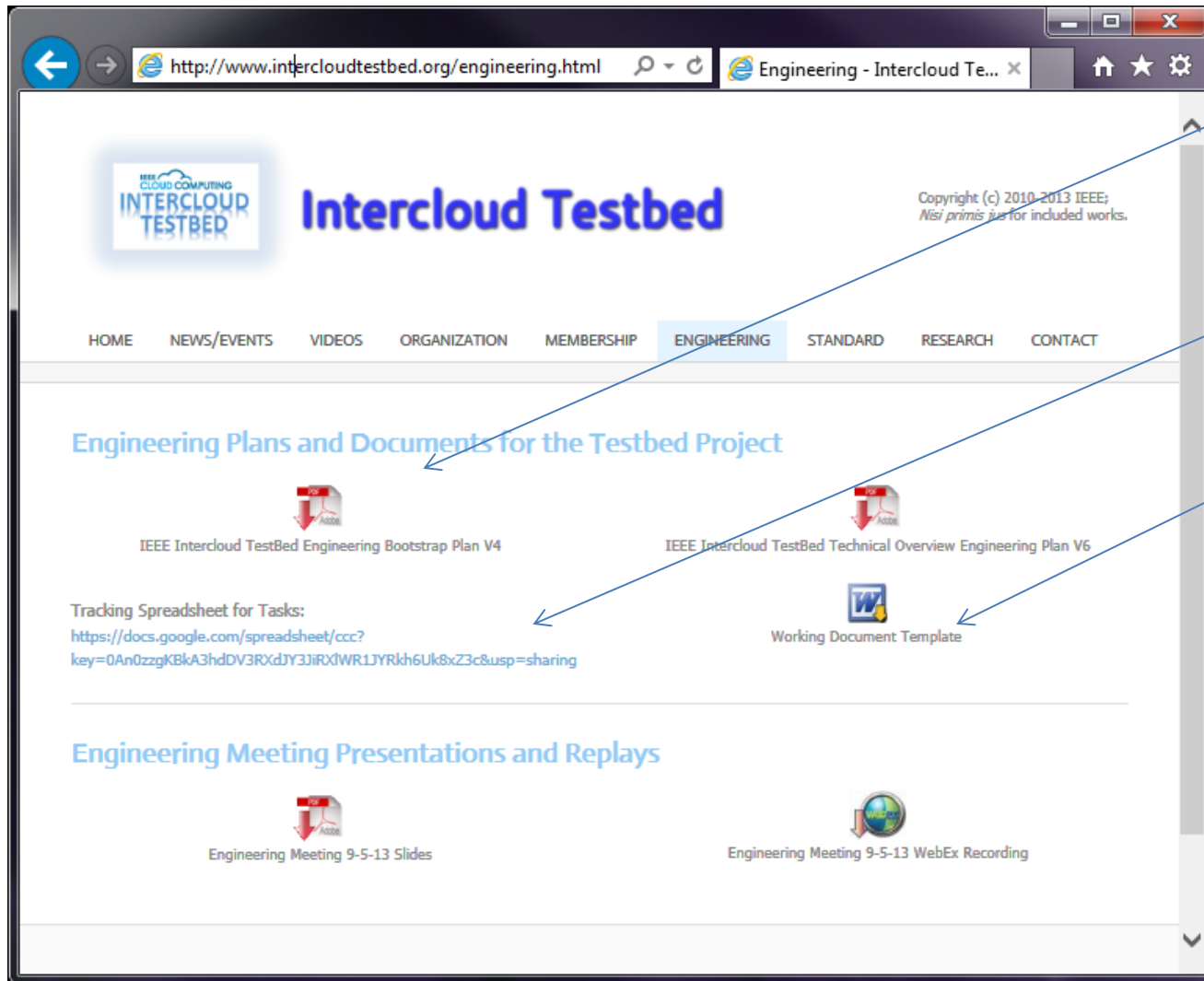
Links

- <http://cloudcomputing.ieee.org/>
- <http://www.linkedin.com/groups/IEEE-Cloud-Computing-2856284>
- <https://www.facebook.com/IEEECloudComputing>
- <https://twitter.com/ieeeccloud>

<http://www.intercloudtestbed.org/>



# Engineering Work



Bootstrap Plan

Planning Spreadsheet

Working Document Template

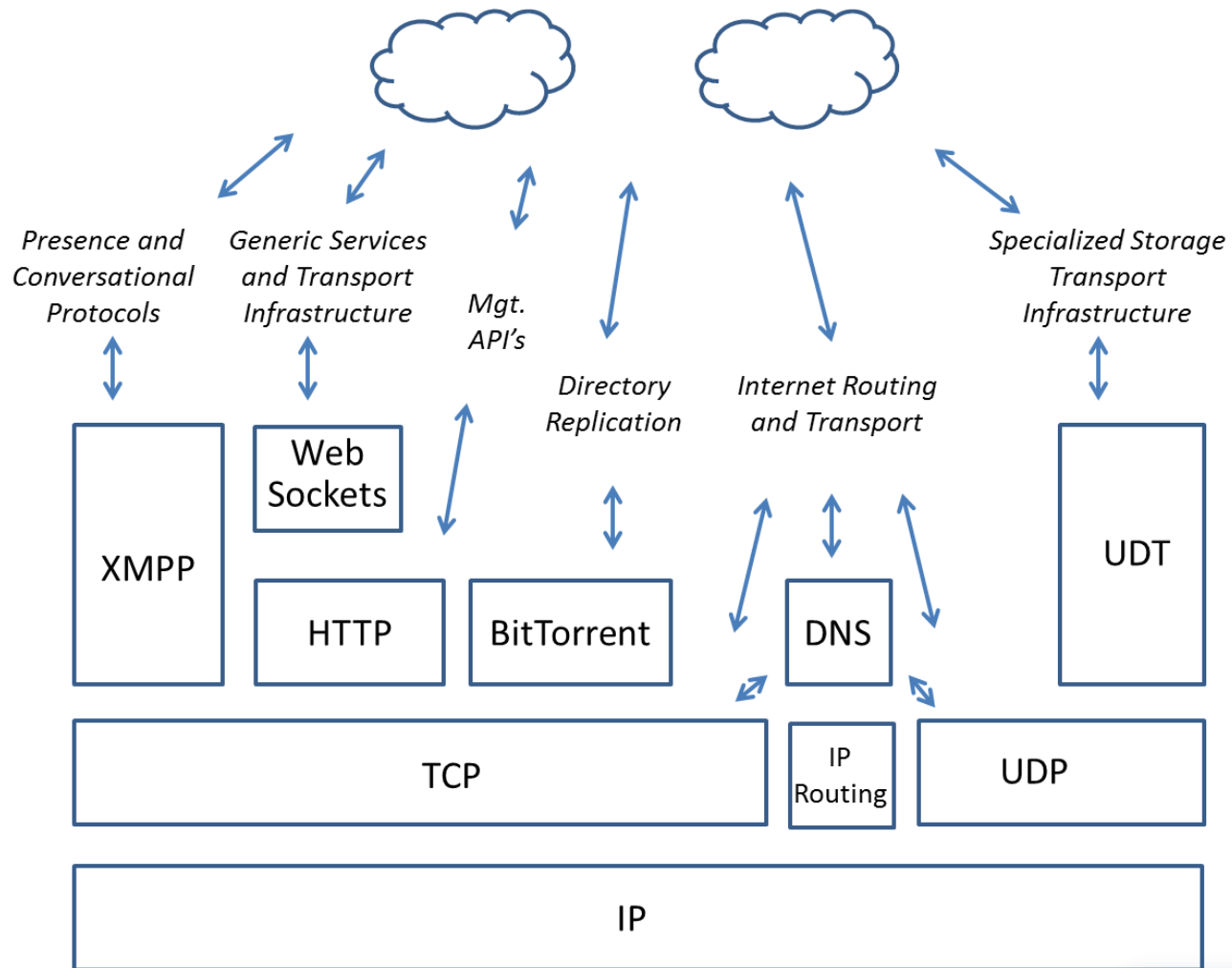


# Testbed Main Bootstrap Plan Timeline

1. Finish the Master Design sessions
2. Chunk the Work-areas.
3. Recruit and Identify Resources to lead Work-areas.
4. Spec and Provision the Neutral Reference Root and Exchange locations.
5. Identify Local Labs
6. Do initial work per Work-area.
7. Stand up a First Root and some Protocol Test Jigs.
8. Stand up a First Exchange and have it talk to First Root.
9. Stand up Cloud to Exchange Functionality.
10. Member Cloud Join and Federate for use case.



# Protocols



# Testbed Main Bootstrap Plan Subject Areas

- 1) Completion of Master Technical Design Work
- 2) Collaboration, Source Code, Specs, Internal and Public Site(s)
- 3) Reference Root(s) Infrastructure, Physical and Networks
- 4) Reference Exchange(s) Infrastructure, Physical and Networks
- 5) Overall (Naming Part) Development and Policy/Procedures and Governance
- 6) Overall (Conversational Part) Development
- 7) Overall (Transport Part) Development
- 8) Overall (Trust/Identity Part) Development
- 9) Overall (Protocol/API Part) Development
- 10) Overall Root (Semantic Directory Part) Development
- 11) Overall Root (Audit Part) Development
- 12) Overall Root and Exchange (Deployment/Replication Part) Development
- 13) Reference Root (Integration of above services) Integration/Development
- 14) Overall Exchange (Solver/Arbitrage Part) Development
- 15) Reference Exchange (Integration of above services) Development
- 16) Portable Gateway (per Cloud OS flavor) Development
- 17) Use Case of IaaS Federation and Base Ontology, Implementation
- 18) Use Case of PaaS Federation and/or Specific Engine (ex, transcoding)