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When Interoperability Matters
For the engagement of workload over heterogeneous cloud service providers

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OW2
Open Source
Cloudware
Initiative

- Support for interoperability, portability and reversibility

  - Open Source and Open Standards

    - *OpenStack, OpenNebula, ...*

    - *OCCI, Internet technologies, ...*

- Blue Print for DevOps

  - Models and documents to be shared by developers and operators, customers and vendors

- The 1st Open Source Cloud Broker

  - As defined by Gartner
    - *Cloud Service Intermediation*
    - *Aggregation*
    - *Cloud Service Arbitrage*

  - Compliant with NIST Reference Architecture

Is HTTP the only existing open standard for cloud computing ?
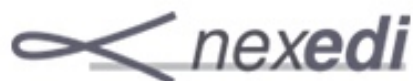
Interoperability between cloud services: to be constructed

Portability between cloud services: much more difficult

- SaaS, IaaS, PaaS, BPaaS, etc. have very different APIs

Significant gaps on SLA and Security

"*De facto*" standards vs. open standards

- No incentive for cloud service providers to let their customers go away: why should they participate to open standards?

- Consumer's pressure may influence their decision

No mature standards for cloud computing *(except HTTP)*

- DMTF OVF / CIMI, OGF OCCI, SNIA CDMI, ... have not (yet) been adopted by cloud providers

- Some standards are OK for IaaS but not for other layers (cf. OASIS TOSCA)

Meanwhile interoperability and portability can be constructed and maintained by Cloud Service Brokers

- *Gartner: "Cloud Interoperability Can be Brokered" by Daryl C. Plummer*

Actually today's cloud computing model is not compliant with the original « *utility* » model

- Electricity system or telephone system

  - *"Public and private clouds offer their end consumers a "pay as you go" model - a powerful shift for computing, towards a utility model like the electricity system, the telephone system, or more recently the Internet. However, unlike those utilities, clouds cannot yet federate and interoperate." IEEE 2011 Annual SRII Global Conference*

Interoperability in « *silos* »

- Specific ecosystems of Cloud Service Providers and Vendors to address targeted markets, aggregated by specific contracts, patents, IPR, etc.

- Limited possibilities to interoperate with other silos *(except for B2B)*
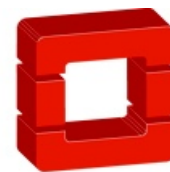
- Extension of the « **vendor lock in** » concept
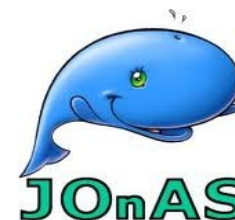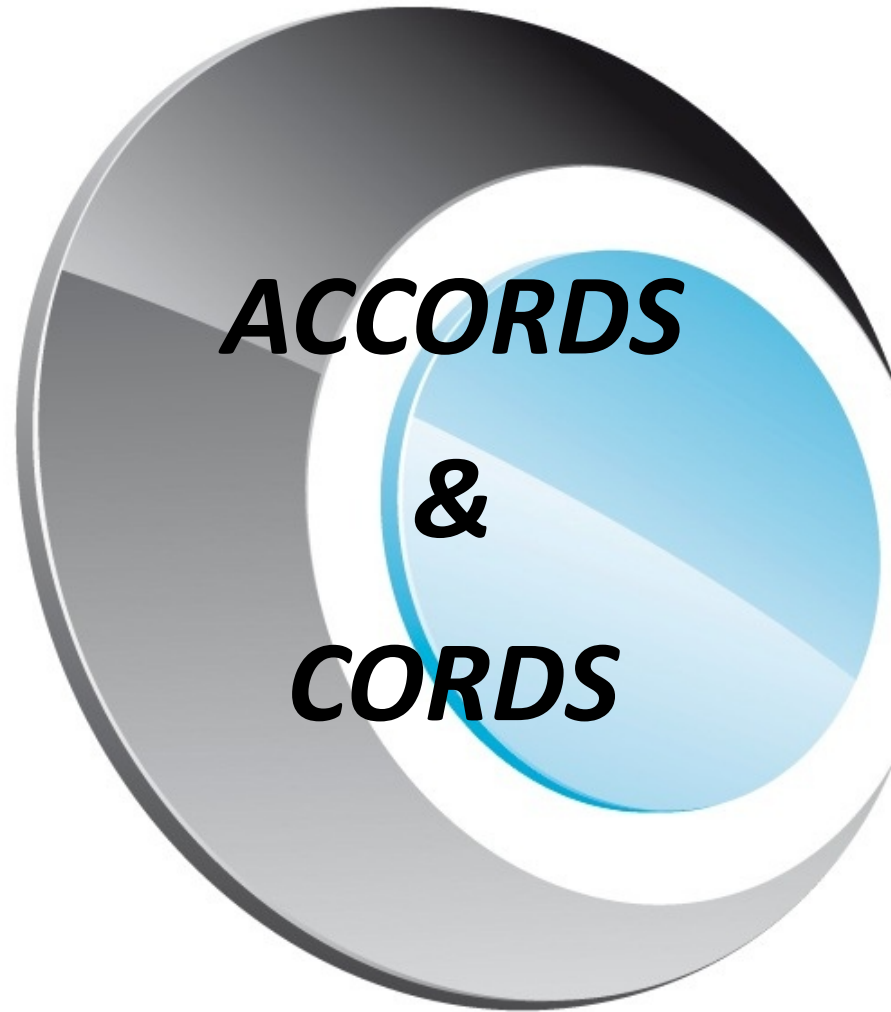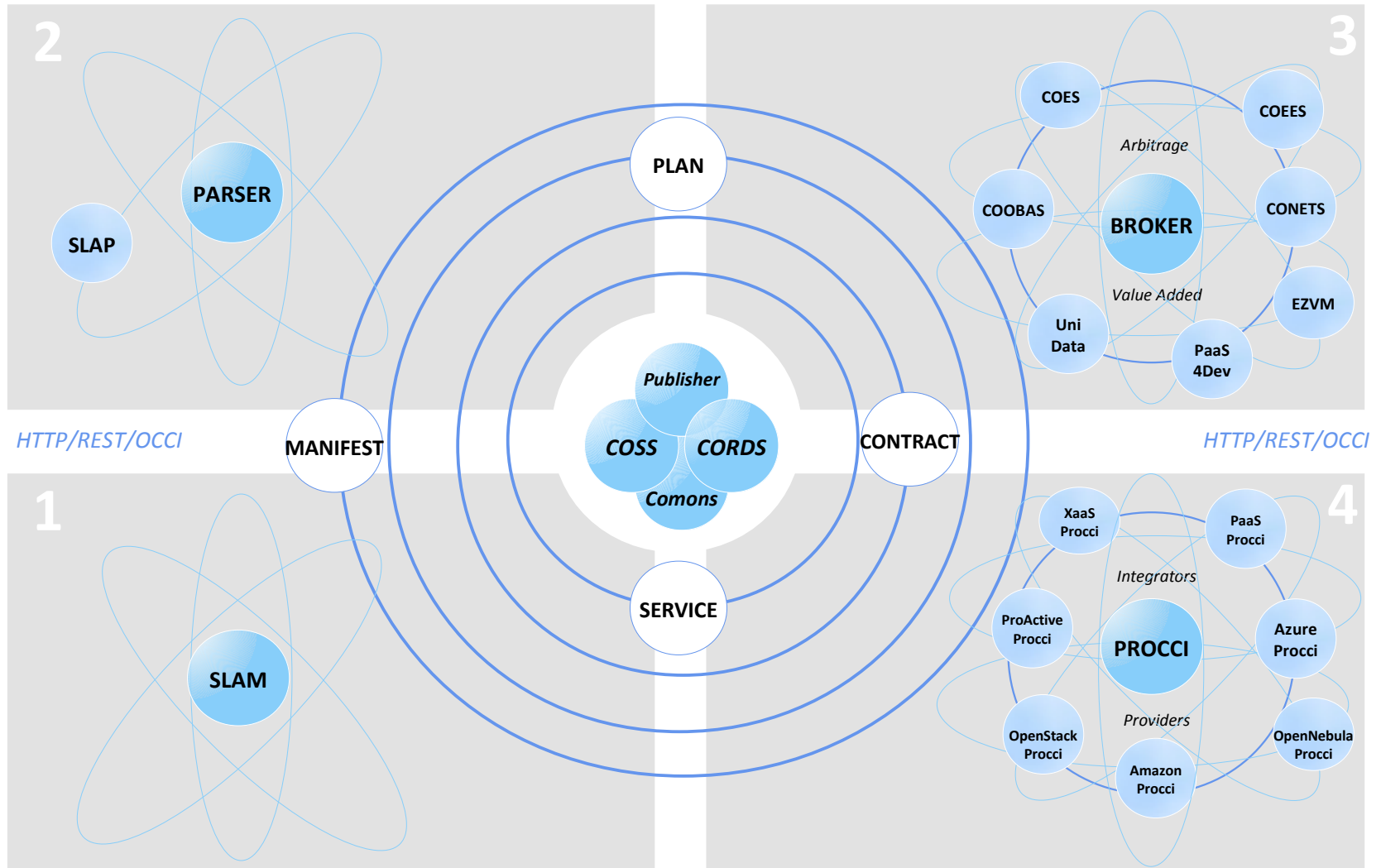
- *CompatibleOne provides an open source cloudware* allowing creation, deployment and management of private, public and hybrid cloud platforms*

- **CORDS** CompatibleOne Resource Description Schema

- **ACCORDS** Advanced Capabilities for CompatibleOne Resources Distribution Services

- **EZVM** Virtual Machine Interoperability

- **PaaS4DEV** Runtime OSGI

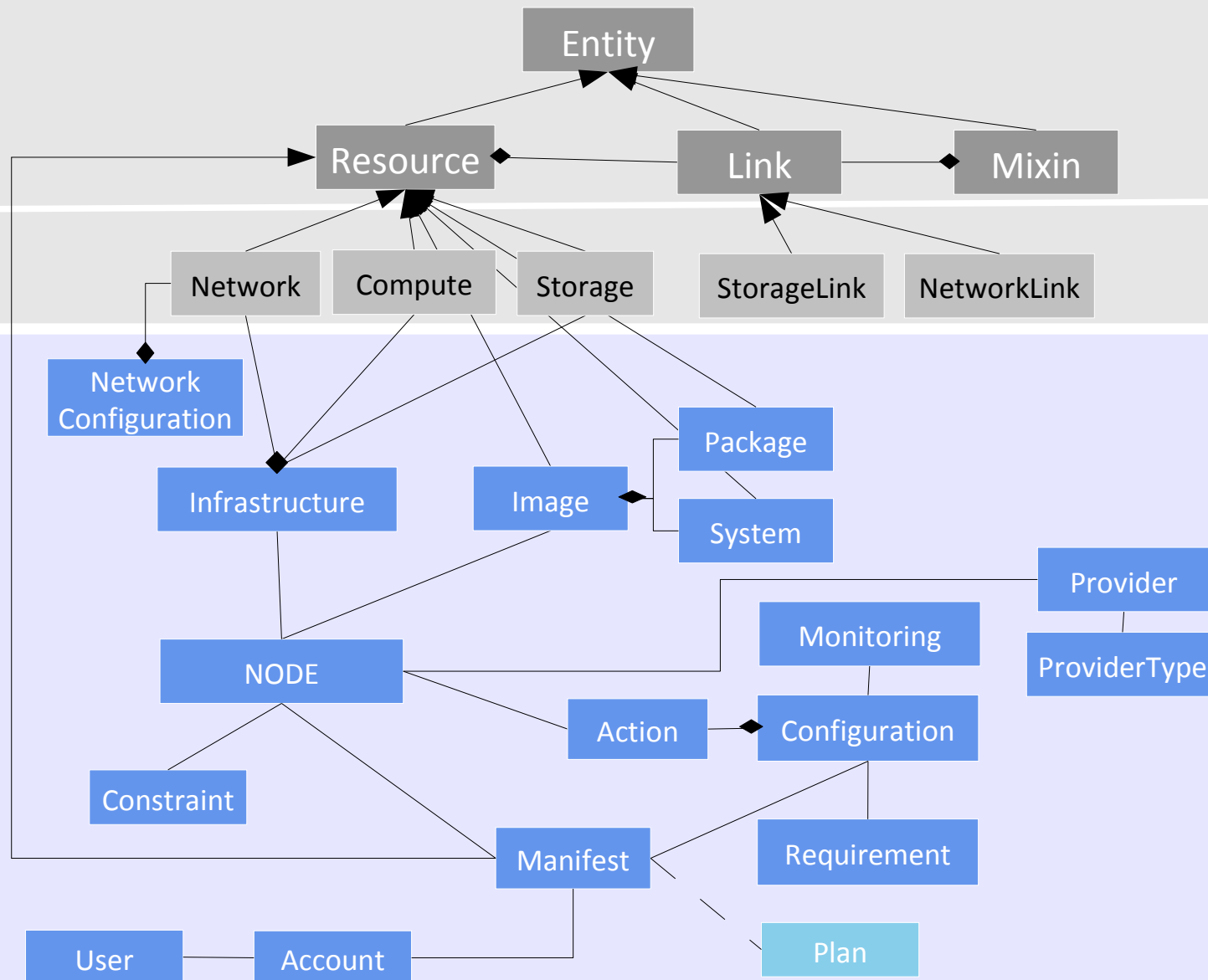- **UNIDATA** Data Interoperability

* cloud computing middleware

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ACCORDS

&

CORDS

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OCCI
Open Cloud Computing Interface

Core

Entity

Resource — Link — Mixin

Infrastructure

Network — Compute — Storage — StorageLink — NetworkLink

CORDS
CompatibleOne Ressource Description Schema

Network Configuration

Infrastructure

Image — Package / System

Provider — ProviderType

Monitoring

NODE — Action — Configuration
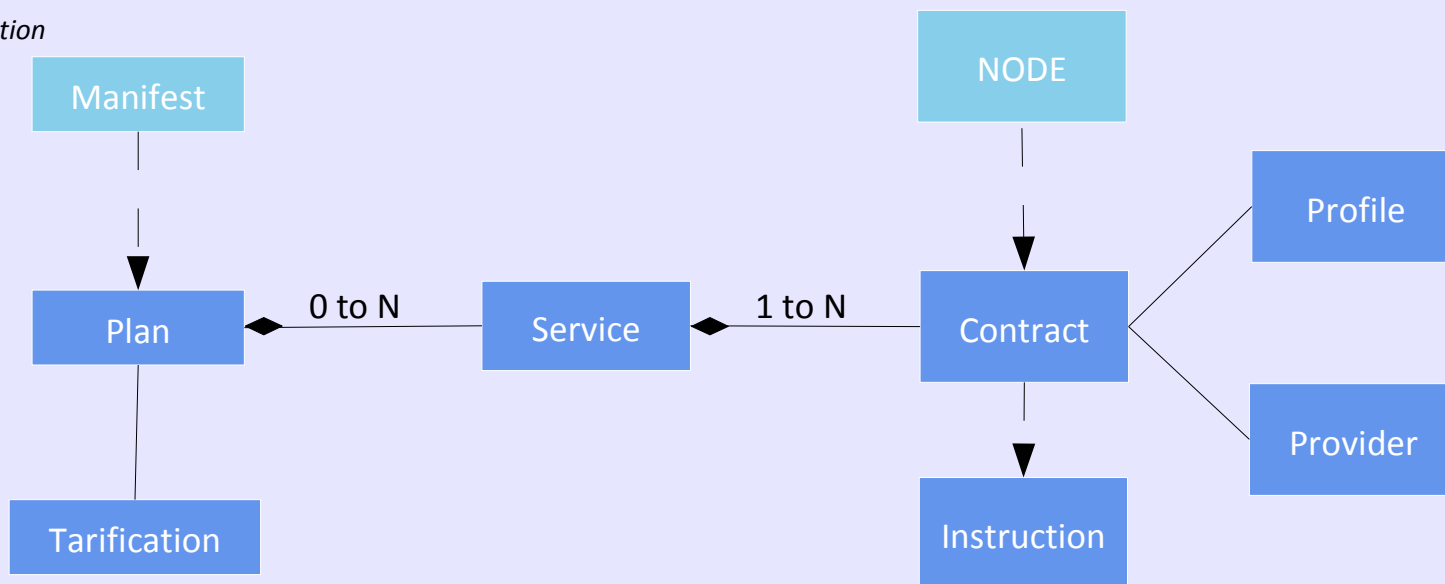
Constraint

Manifest — Requirement

User — Account

Plan

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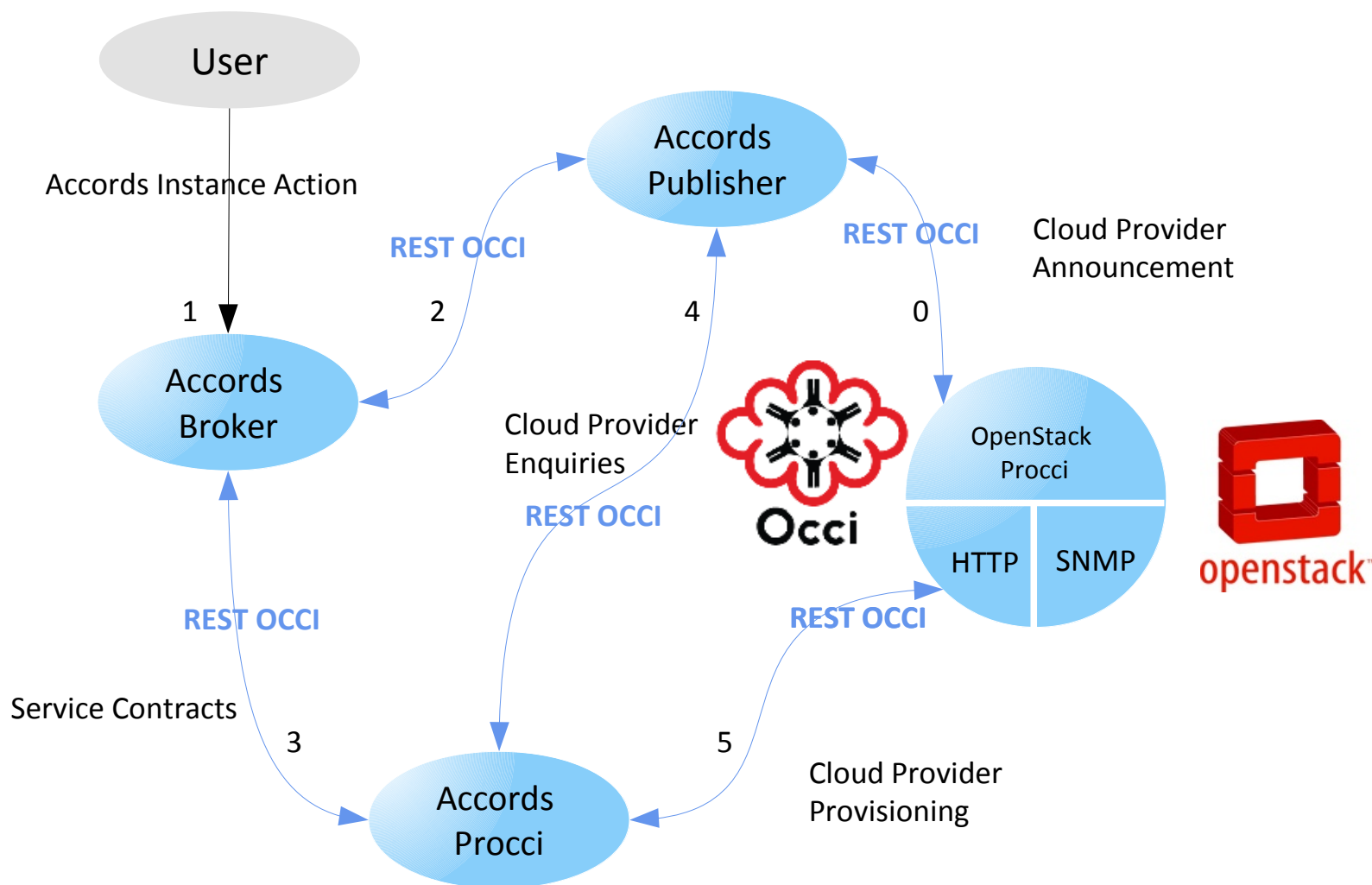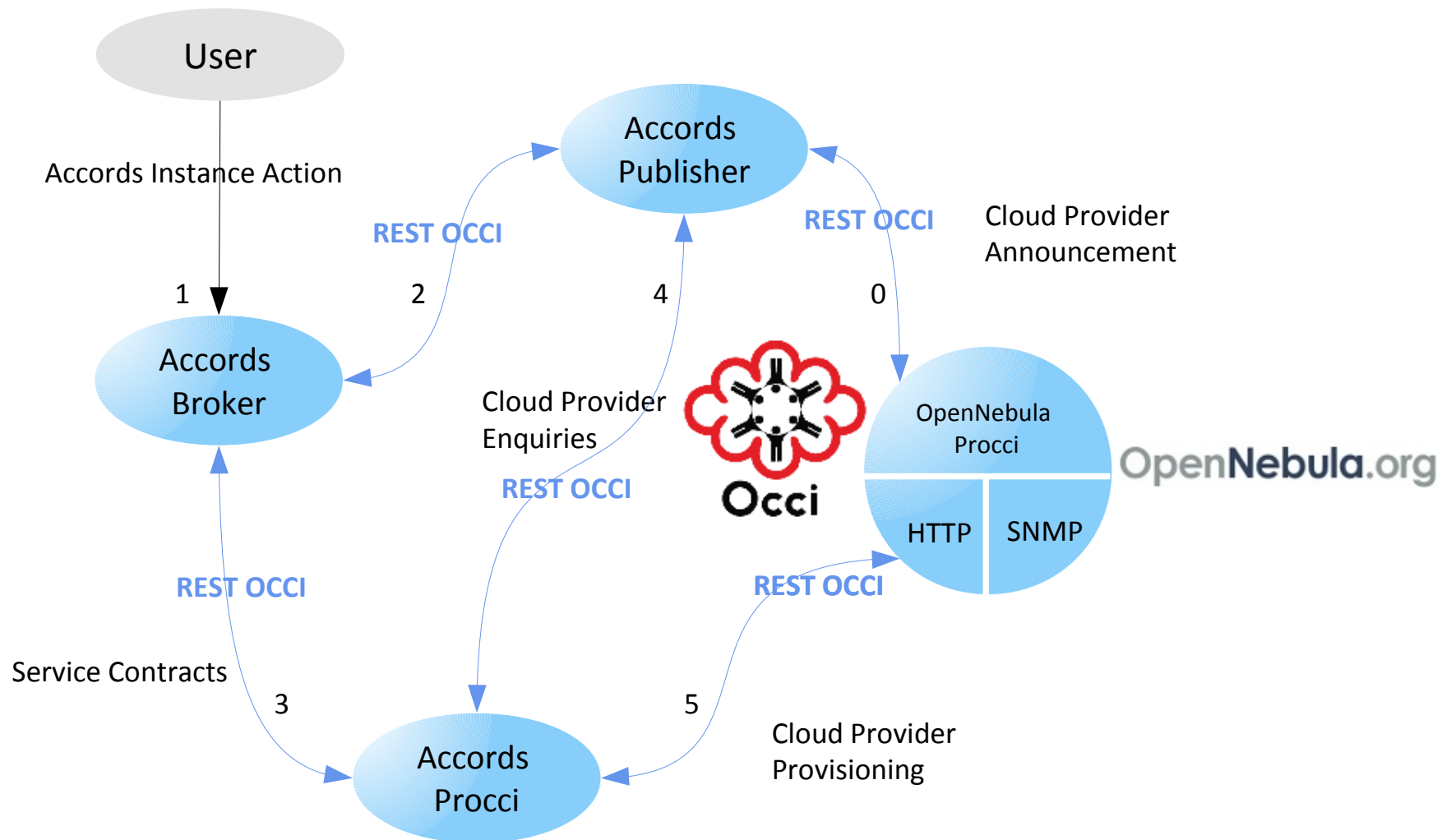
OCCI
Open Cloud Computing Interface

Core

Entity

Resource — Link — Mixin

CORDS
CompatibleOne Ressource Description Schema

Manifest

NODE

Plan — 0 to N — Service — 1 to N — Contract

Profile

Provider

Tarification

Instruction

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User

Accords Instance Action

Accords Publisher

REST OCCI

REST OCCI

Cloud Provider Announcement

1

2

4

0

Accords Broker

Cloud Provider Enquiries

REST OCCI

OpenNebula Procci

OpenNebula.org

Occi

HTTP

SNMP

REST OCCI

REST OCCI

Service Contracts

3

5

Cloud Provider Provisioning

Accords Procci

14

http://www.compatibleone.fr/occi/publisher/CordsReferenceManualV2.02.pdf

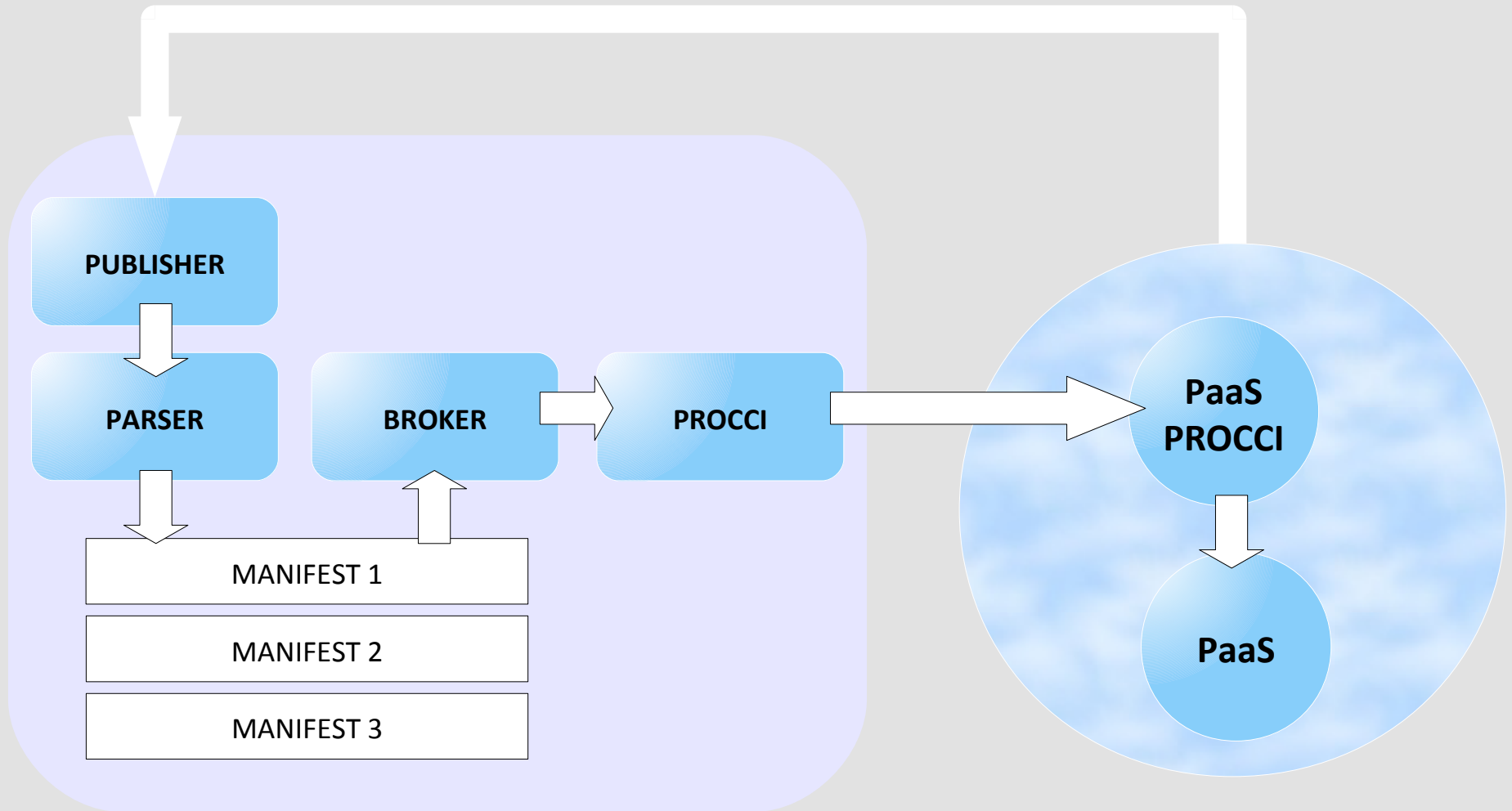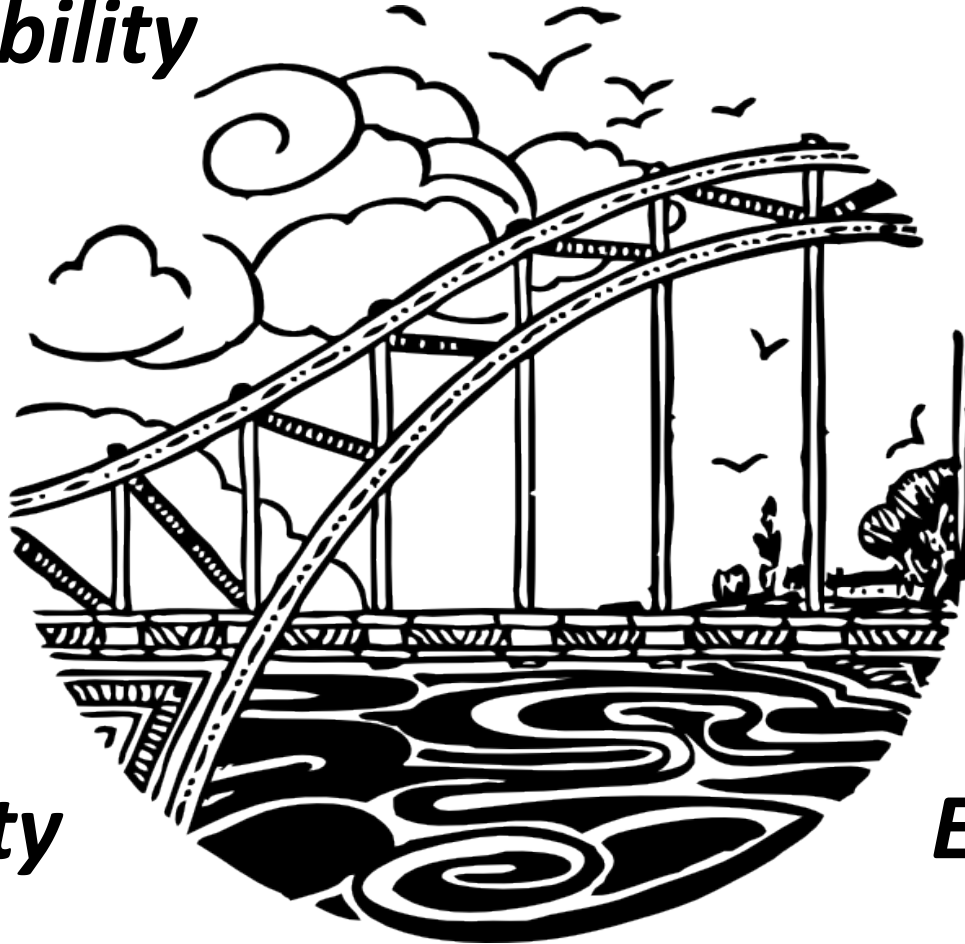# compatibleone

Interoperability *Portability*

Reversibility *Extensibility*

by Construction

Governance
Policy
Management

Releases dates

- October 2011
- March 2012
- July 2012
- November 2012
- December 2012 (final)

some are talking about it

we are working on it

Continuation plan to be announced H2 2012

Next Steps

- *Integration of Subsequent Components / Modules*
- *Monitoring*
- *Security*
- *Accountancy*
- *Smart Provisioning*
- *Future Use Cases*
- *Extensions for use of PaaS Services (Elasticity, Scalability, Storage)*
- *Cloud Automation*
- *Provision of HPC resources and 3D visualisation*

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- All documentation on www.compatibleone.org
- Code base on Gitorious
  git://gitorious.ow2.org/ow2-compatibleone/accords-platform.git

- Jira at OW2.org *http://jira.ow2.org/browse/COMPATIBLEONE*
- Mailing list for contributors compatible-dev_contrib@ow2.org

- **SNIA Cloud PlugFest *Dusseldorf***

  - 28 February – 1er March 2012

  - http://snia.org/cloud/cloudplugfest

- **OW2 OSCi CompatibleOne 3rd Workshop**

  - 29th March 2012

- **SYS CON Cloud Expo *Santa Clara, CA***

  - 5-8 November 2012

  - http://www.compatibleone.org/bin/view/Events/OW2+OSCI+CompatibleOne+3rd+Workshop

- **Hands On January 2012**

  - ***EasiClouds, CloudPort, Magellan, OpenCloudware, Sirocco***

- **Next *Hands On Session* early June 2012**

Other presence on workshops & conferences OpenStack, ETSI, SIENA, NIST, Solutions Linux, OWF, etc.

Let's Work **Together!**

Promoting freedom in the cloud

http://compatibleone.org/

➢**Contribute**
➢**Share**
➢**Spread the word**