

Management and Service-aware Architectures (MANA) WG Conclusions and Future Plans

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MANA Session Objectives

MANA Scope: *Service-aware Networking Infrastructures for Future Internet*

- Infrastructures :Connectivity-to-network, network-to-network services, network service-to-service computing clouds, and other service-oriented infrastructures.
- Deployment & interoperability & federation
- Control Elements: optimal orchestration of available resources and systems; Interrelation and unification of the communication, storage, content and computation substrata.
- Management systems, including increased levels of self-awareness and self-management

MANA BO Objectives:

- *Review Architectural approaches for FI*

MANA BO Agenda (125 participants)

- *Keynote on Lessons on Internet Developments – Key Challenges by Peter Kirstein*
- *Discussion of the Scenarios, FI architectures from different perspectives , Research Challenges*



MANA Architectural/Platform Focus

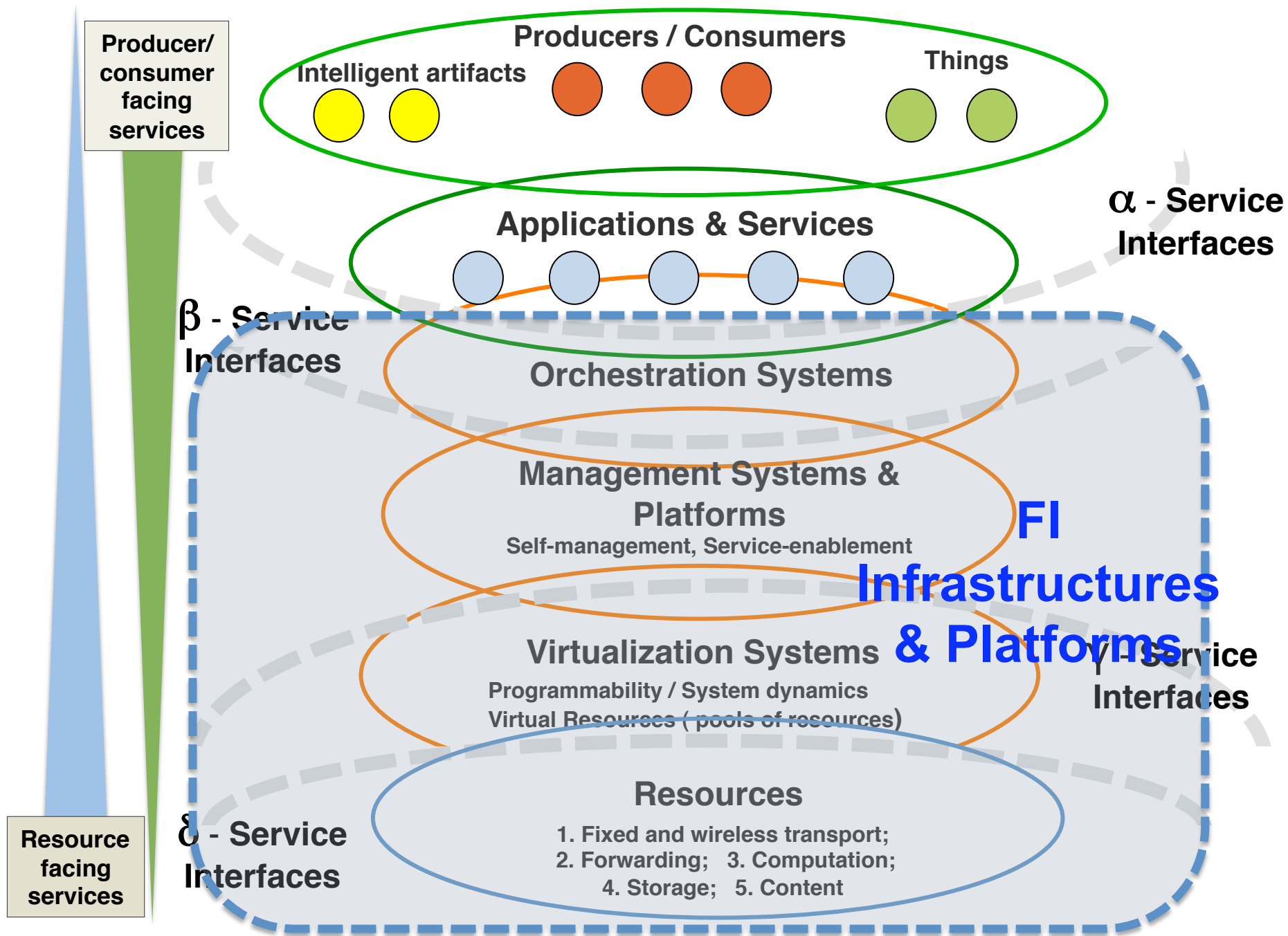
- Deployability; Assume that parties are competitive
- Progressive changes; Parallel Internets;
- Resource pooling
- Information centric infrastructure;
- Balance of power : sender vs. receiver
- Proliferation of services; service-awareness and service enablers; instantiate the “application/ network glue”
- Lack of interworking of silo solutions will slow innovation and development speed
- Different clouds platforms- Virtualisation of Resources and Systems (i.e. Networks, Services, Content, Storage)
- Programmability
- Federation of self-governing systems
- Increased self-manageability levels
- Safety of the critical infrastructure
- Orchestration & Control : system of systems (i.e. system of networking platforms: coordinated service networks)
- Controls of control loops
- Polymorphic Internet (communication-centric, information-centric, resource-centric, content – centric, service/computation- centric, context-centric, storage-centric, ...)
- **Prioritise & Pump-up the research on the the FI infrastructures /platforms**



Change Approaches

- Parallel Internets; Progressive changes;
- Polymorphic Internet (communication-centric, information-centric, resource-centric, content –centric, service/computation- centric, context-centric)
- Network of networks → system of coordinated service networks (I.e. system for Networking Federated Platforms; System of Systems)
- Virtualization of resources (Networks, Services, Content, Storage)
- Programmability
- Increased self-managebility as the means of controlling the complexity and the lifecycle costs





MANA Plan

- Milestones and Roadmap to help plan and coordinate technology developments
- Proposals for Integrating a set of essential and high impact Research Projects progressing the FI capabilities set / interdisciplinary priorities
- Presentation at the FIA Conference – Stockholm November 2009.

- Mini Conference on Systemic Platforms & Solutions on FI

Proposals for:

- Evolutionary and clean-slate approaches aligned with visions of other cross-domain topics or FP7 projects.
- Engineering multiple MANA system of systems for parallel FIs, which include layered and non-layered approaches to provide the new control infrastructures.
- Mapping existing IP overlays/inlays/underlays into the new control infrastructure.
- Integration, Interoperability, Evaluation, Demonstrations, and Testbeds

Base line - State of the Play – November 09

Priorities

Matching Systems with set of selected Capabilities

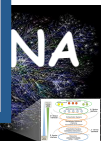
Integrated Packages (platforms):
Capabilities Vs Subsystems Selection /Design

Base line - State of the Play – May 09

MANA Capabilities and Research Challenges (127)

MANA Scenarios

MANA Reference Model



Administrative

- WIKI /MAILING-LIST
 - to register to the MANA Twiki site
http://www.reservoir-fp7.eu/twiki/bin/view/FIA_MANA_Members/WebHome
(for registration please use:
<http://www.reservoir-fp7.eu/twiki/bin/view/TWiki/TWikiRegistration>
once you register please send an email to Alex Galis
<a.galis@ee.ucl.ac.uk> , who will activate your Twiki account)
 - to subscribe to the MANA mail exploder:
<http://mailman.ee.ucl.ac.uk/mailman/listinfo/mana-members>
- TELCOS:
 - Wednesday 11.00 CET – progress MANA proposals



MANA definitions ...

Mana is the name of a food which, according to the Bible, was eaten by the Israelites during their travel in the desert.

In antropology **Mana** has commonly been interpreted as “the stuff of which magic is formed” and as well as the substance on which souls are made.

Mana is the concept of the forces or qualities that resides in people, and inanimate objects – a force existing in the universe.

Four us **Mana** is the core and the infrastructure on which Future Internet is made.

