



# H2020 ICT WP2014

## Post-Consultation Workshop: Cloud Computing, Software and Services

17 April 2013

[Francisco.Medeiros@ec.europa.eu](mailto:Francisco.Medeiros@ec.europa.eu)

**European Commission**

**DG CONNECT**

**Deputy Head of Unit E2**

**Software & Services, Cloud**

# Why a public consultation?

*Si l'on sait exactement ce qu'on va faire, a quoi bon le faire?*

*Pablo Picasso*

# Political support

27 September 2012: COM on "Unleashing the Potential of Cloud Computing in Europe"

+ accompanying Staff Working Document

[http://ec.europa.eu/information\\_society/activities/cloudcomputing/docs/com/com\\_cloud.pdf](http://ec.europa.eu/information_society/activities/cloudcomputing/docs/com/com_cloud.pdf)

# Cloud computing strategy

The strategy for unleashing the potential of cloud computing in Europe outlines actions intended to deliver a **net gain of 2.5 million jobs** and a **boost of €160 billion** to the EU GDP by 2020

The strategy is designed to **stimulate the uptake of cloud computing** across **all** sectors of the economy

# Highlights of the strategy

- Foster **interoperability**, **data portability** and **reversibility** (necessary **standards** to be identified by the end of 2013)
- EU-wide **voluntary certification** schemes for trustworthy provision of cloud-based services
- Address **environmental** challenges (metrics for energy, water consumption and carbon emissions)
- Development of 'safe and fair' **contract terms and conditions**, including Service Level Agreements
- Launch a **European Cloud Partnership** (Member States and industry) to leverage the power of public sector procurement
  
- Make full use of other instruments, **notably through research and development** support under **Horizon 2020** on **long term challenges specific to cloud computing** as well as assisting the migration to cloud-based solutions

# Digital Agenda for Europe

The DAE review adopted on **18 December 2012** identified **seven** key areas for further efforts to stimulate the conditions to create **growth** and **jobs** in Europe:

1. A new and stable broadband regulatory environment
2. New public digital service infrastructures through Connecting Europe Facility loans
3. Launch a Grand Coalition on Digital Skills and Jobs
4. Propose a EU cyber-security strategy and a Directive
5. Update the EU's Copyright Framework
- 6. Accelerate cloud computing through the public sector buying power**
7. Launch a new electronics industrial strategy – an "Airbus of Chips"

<http://ec.europa.eu/digital-agenda/en/news/digital-do-list-new-digital-priorities-2013-2014>

## FP7 ICT Work Programmes

**WP 2007-2008 (Call 1):** Service and Software Architectures, Infrastructures and Engineering: €120 million

**WP 2009-2010 (Call 5):** Internet of Services, Software and Virtualisation: €110 million

**WP 2011-2012 (Call 8):** Cloud Computing, Internet of Services and Advanced Software Engineering: €70.0 million

**WP 2013 (Call 10):** Software Engineering, Services and Cloud Computing: €41.5 million

**Total investment: €341.5 million over 7 years**

**Average = €48.8 million per year**

# FP7 ICT Call 1: target outcomes

Service architectures, platforms, technologies, methods and tools

Services/software engineering approaches

Strategies and technologies enabling mastery of complexity, dependability and behavioural stability

Virtualisation tools, system software, middleware and network-centric operating systems

Coordination and support actions



# FP7 ICT Call 5: target outcomes

## Service architectures and platforms for the Future Internet

- Service front ends
- Open, scalable, dependable service platforms, architectures and specific platform components
- Virtualised infrastructures

## Highly innovative service/software engineering

- Service/software engineering methods and tools (re: automatic support)
- Verification and validation methods and tools (re: large scale systems)
- Methods and tools supporting open source software

## Coordination and support actions

# FP7 ICT Call 8: target outcomes

## Cloud computing

- Management of cloud resources
- Infrastructure virtualisation
- Interoperability, portability, data protection

## Internet of Services

- Service engineering methods and tools
- Integration of real and virtual worlds, Internet of Things
- Management of internet-scale applications

## Advanced software engineering

- Architectures and front ends
- Quality assurance techniques
- OSS development, composition and life cycle management

## Coordination and support actions

## FP7 ICT Call 10: target outcomes

a) Advanced **computing architectures** and **software engineering** for the **cloud** and beyond

- Efficient and secure usage of distributed computing resources
- Advancing cloud architectures and standards

b) Innovative **software and tools for services**

- Self-adaptive Internet-based services
- Widely distributed architectures, large data sets and sensors
- Social, open and collaborative software development

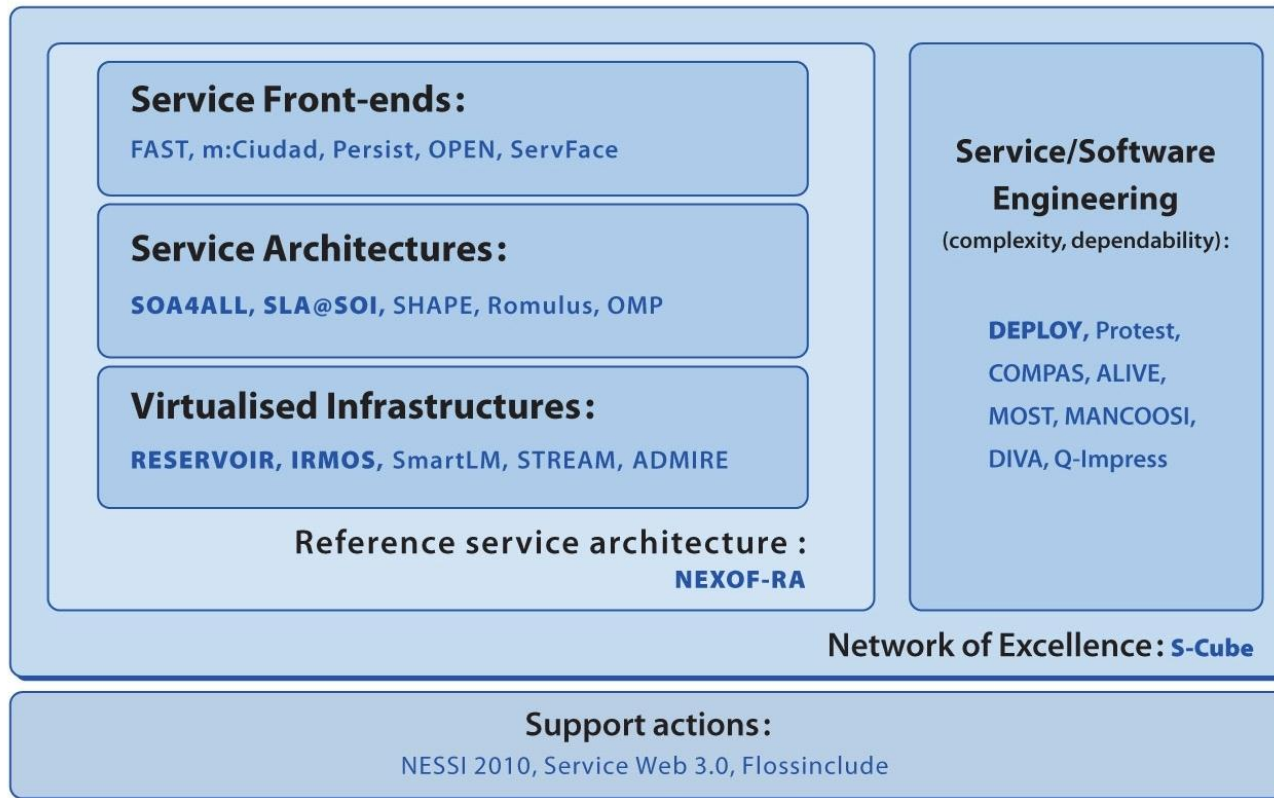
c) Coordination and support actions

# Implementation

	Budget [MEUR]	IP +NoE	STREP	CSA	Total
Call 1	120.0	6+1	18	3	28
Call 5	110.0	7	16	5	28
Call 8	70.0	4	15	3	22
Call 10*	41.5	2	10	4	16

\* Under consultation with Member States and Associated Countries

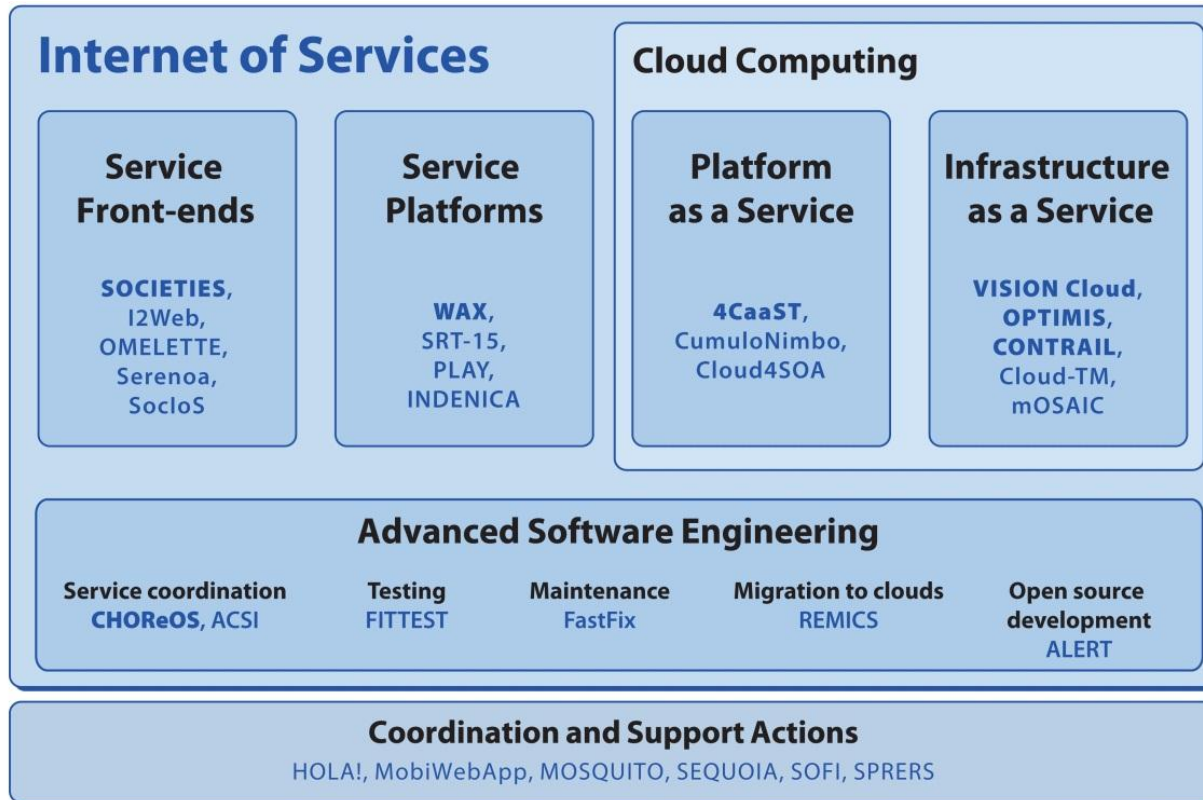
Total EU contribution to funding: €341.5 million  
 78 projects ... plus 16 projects from Call 10  
 Total: 94 projects (average: €3.6 million/project)



\*IP/NoEs in bold

**Call 1: EU contribution = €120 million**

[http://cordis.europa.eu/fp7/ict/ssai/projects-call1\\_en.html](http://cordis.europa.eu/fp7/ict/ssai/projects-call1_en.html)



\* IP/NoEs in bold

**Call 5: EU contribution = €110 million**

<http://cordis.europa.eu/fp7/ict/ssai/docs/2010-3197-call5factsheets-final.pdf>

\*SPRERS is a Call 4 coordination and support action

## Internet of Services

Broker@Cloud  
**COMPOSE**  
CloudScale  
BETaaS

## Cloud Computing

**PaaSage**  
Celar  
LEADS  
BigFoot  
CloudSpaces  
HARNESS  
OpenI

## Advanced Software Engineering

**MODAClouds** **ARTIST** PROWESS U-QASAR MIDAS  
MARKOS RISCOSS OSSMETER

## Coordination and Support Actions

PROSE OCEAN SUCRE

**Call 8: EU contribution = €70 million**

<http://cordis.europa.eu/fp7/ict/ssai/docs/projects/factsheets-call8-brochure.pdf>

# Draft Consultation Paper (1)

**Obj. 1:** Advanced cloud infrastructures and services (resources = 70%)

- Federated cloud networking
- Automated service composition
- Mobile cloud service development environments
- Cloud security
- Cloud infrastructures (virtual/physical)



## Draft Consultation Paper (2)

**Obj. 2:** Innovative **tools and methods** for software development (resources = 30%)

- Tools and methods to manage complexity, system simulation, variability, testing and failure across the software lifecycle
- Flexible and scalable tools for online collaborative software development

## Expected impact

**H2020:** additional focus on innovation; investments on a limited number of politically important areas leading to **growth, jobs and competitiveness**

Need precise descriptions of the expected impact (at each Objective level)

Measurable, quantitative indicators required

What else? ...

# Key Performance Indicators (KPI)

Innovation indicators?

Economic indicators? Which?

Number of patents per project?

Number of peer-reviewed publications?

How does one measure the success of **tools and methods** for software development?

... and success of **cloud infrastructures and services**?

# The process towards H2020

Public Consultation launched on 26 February 2013

42 contributions received by 2<sup>nd</sup> April; 30 speakers invited; 26 presentations on 17 April

Internal DG CONNECT consultation: March – May 2013

First WP draft: summer 2013

Interservices consultation: autumn 2013

Consultation of the EU Member States: autumn 2013

Networking activities during ICT 2013, Vilnius, 6-8 Nov 2013

WP2014 adoption + first H2020 call: by the end of 2013

## Next steps

All contributions are available at the website

All workshop slides will be uploaded to the website

<https://ec.europa.eu/digital-agenda/en/public-consultation-advanced-cloud-infrastructures-and-services>

**Consultation Report**, including outcome of the Workshop will be drafted by 3<sup>rd</sup> May and uploaded by 10 May 2013

Current thinking: **Call 1** of WP2014

Thank you all for your  
contributions and  
presence today!