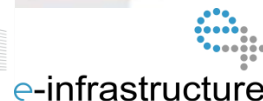




# Helix Nebula- The Science Cloud Second Period Review

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# Review agenda

- ☞ 09:30 – 09:45 Project Overview and Management (WP1)
- 09:45 – 09:55 Q/A
- ☞ 09:55 - 10:10 WP5: HNX & Flagship Deployment
- 10:10 – 10:20 Q/A
- ☞ 10:20 – 10:35 WP6: Inter-operability with e-infrastructures
- 10:35 - 10:45
  
- ☞ 10:45 – 11:00 Coffee Break
  
- ☞ 11:00 - 11:15 WP7: Business Models
- 11:15 – 11:25 Q/A
- ☞ 11:25 - 11:40 WP8: Governance Models
- 11:40– 11:50 Q/A
- ☞ 11:50 - 12:05 WP9: Evaluation, roadmap and development Plan
- 12:05 - 12:15 Q/A
- ☞ 12:15 – 12:30 WP2: Engagement and Dissemination
- 12:30 – 12:40 Q&A
- ☞ 12:40 - 12:55 Summary and Plans for the next period
- 12:55 – 13:05 Q/A
  
- ☞ 13:05 – 13:55 Lunch
  
- ☞ 13:55 – 14:55 Closed session
- ☞ 14:55 – 16:00 Feedback from reviewers

# Project overview and management

- ☞ Objectives
- ☞ Consortium
- ☞ Work Packages
- ☞ Management
- ☞ Deliverables/milestones
- ☞ Financial status
- ☞ Effort consumption

# Objectives

Project objectives re-considered based on:

- The recommendations of the project reviewers after the first project review
- Led to a set of actions agreed at the third General Assembly in Sept. 2013
  
- **Production Platform**
  - Build a production service for the “generic cloud for science “ business model in 2014
  - Co-design higher level services working towards the “Information as a Service” business model that can build on “generic cloud for science”
  - Integrate GEANT as part of the production platform
  
- **Utilisation**
  - Demand-side to further test the readiness of the production platform with the existing flagships during 2014
  - Procurement: CERN, ESA & EMBL will work together to identify acceptable procurement models
  - Understand the needs and constraints of an additional flagship to be deployed in 2014 (PIC Neuroimaging Center in Barcelona)
  
- **Organisation**
  - Governance: revise the NDA to cover the whole of 2014 and prepare a new governance model taking into account the experience of the pilot phase
  - Expand the HN consortium with new users, suppliers and adopters

# The Helix Nebula Initiative as of May 2014



## Strategic Plan

- ▶ Establish multi-tenant, multi-provider cloud infrastructure
- ▶ Identify and adopt policies for trust, security and privacy
- ▶ Create governance structure
- ▶ Define funding schemes



To support the computing capacity needs for the ATLAS experiment



Setting up a new service to simplify analysis of large genomes, for a deeper insight into evolution and biodiversity



To create an Earth Observation platform, focusing on earthquake and volcano research



To improve the speed and quality of research for finding surrogate biomarkers based on brain images

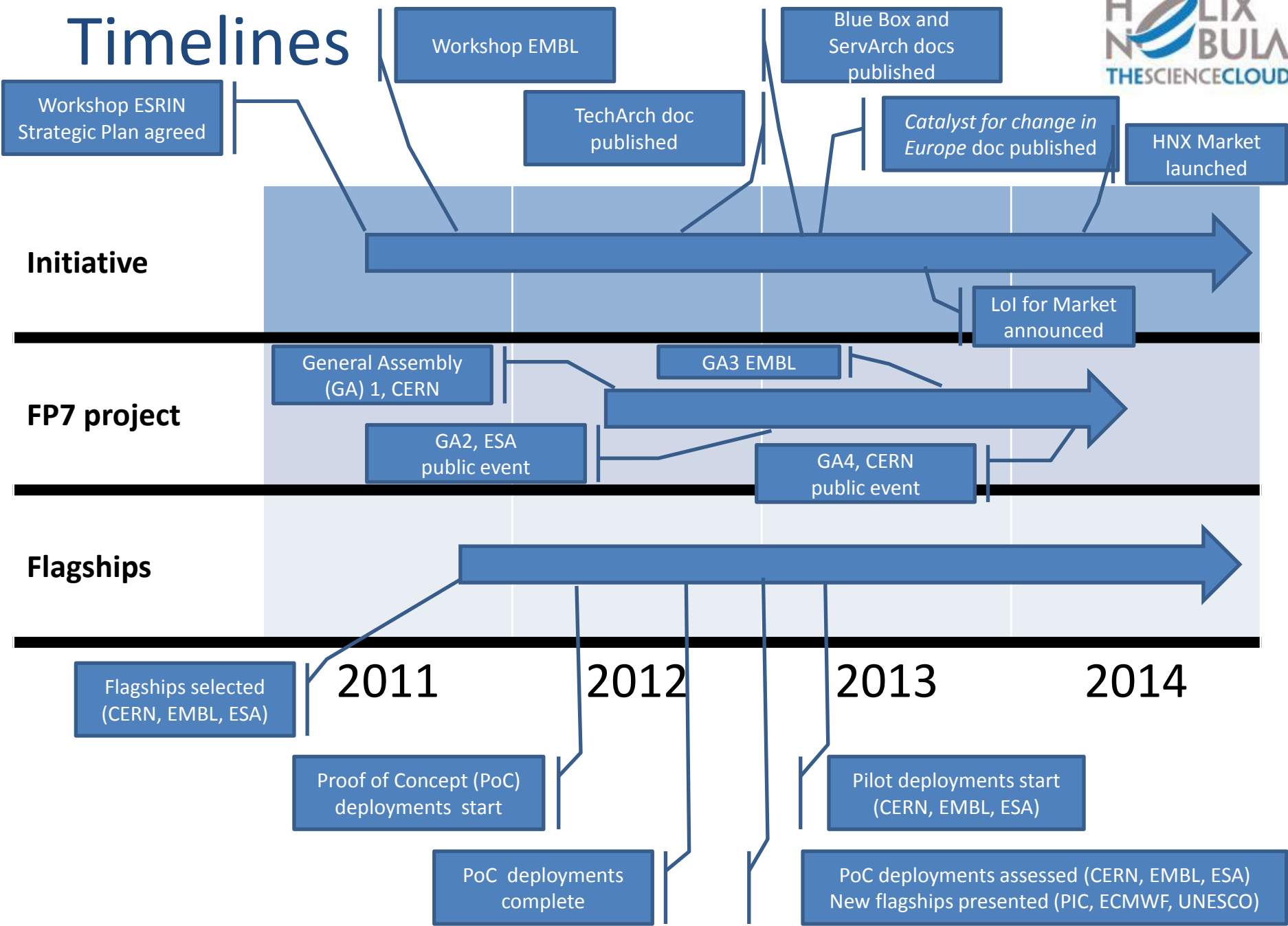
## Suppliers



## Adopters



# Timelines



## Initiative

## FP7 project

## Flagships

2011

2012

2013

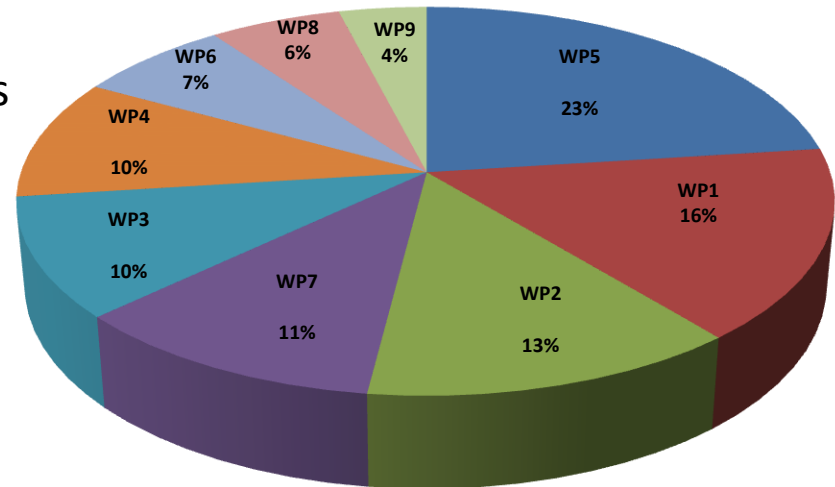
2014

# Work Packages

# Work Packages

- ☞ WP1: Management & Coordination (CERN)
- ☞ WP2: Engagement and Dissemination (Cloud Security Alliance)
- ☞ WP3 (ended in M13): Representation of requirements (CloudSigma)
- ☞ WP4 (ended in M13): Cloud platform & provisioning (Atos)
- ☞ WP5: Flagship Deployment (Logica)
- ☞ WP6: Inter-operability with e-infrastructures (EGI.eu)
- ☞ WP7: Business Models (SAP)
- ☞ WP8: Governance Models (T-Systems)
- ☞ WP9: Evaluation Roadmap and Development Plan (EMBL)

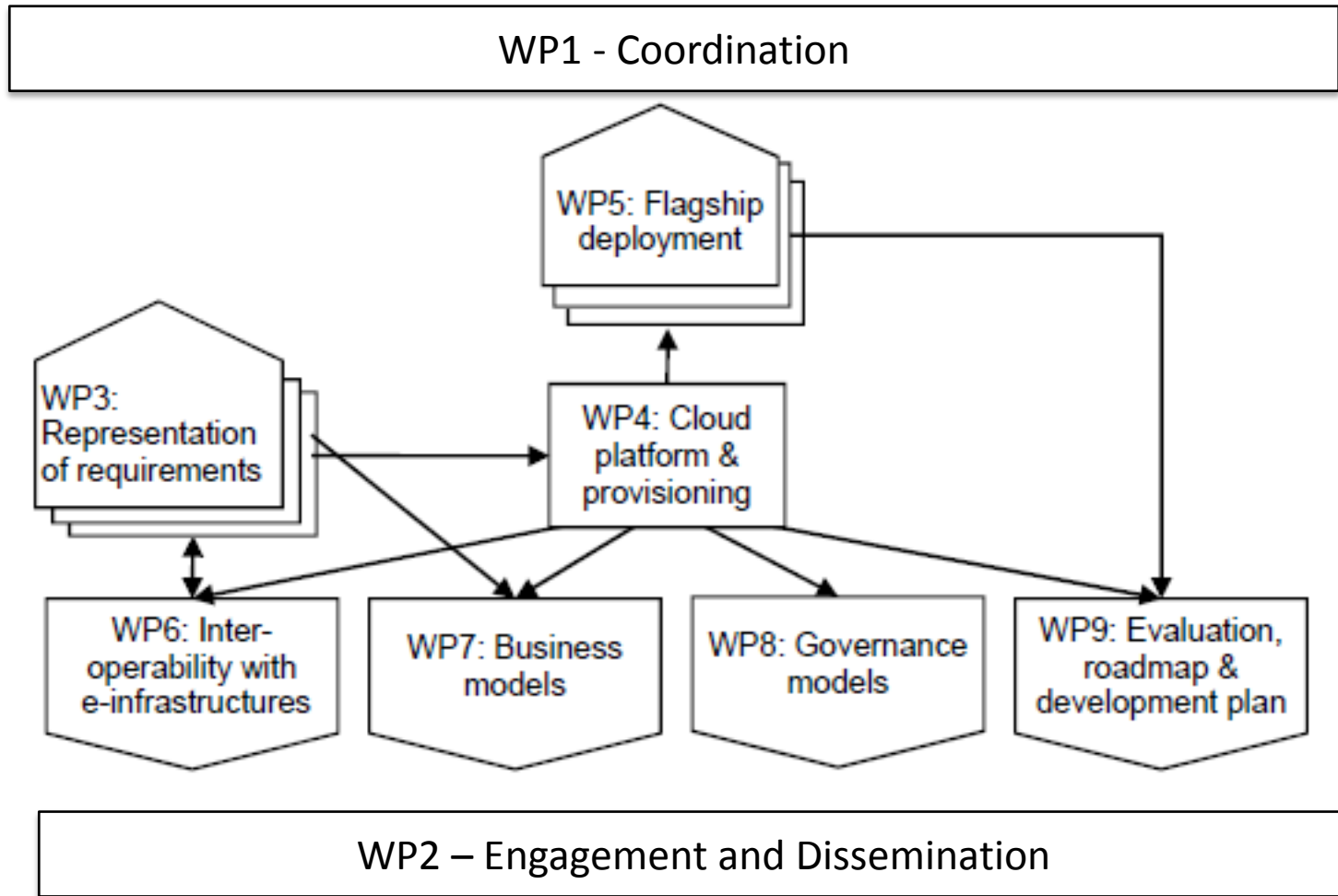
Duration: 2 years  
 Start Date: 01 June 2012  
 EC co-funding: 1.8 Million €  
 Total budget: ~2.9 Million €  
 Total effort: 202 person months



Proportion of effort by work package as foreseen in DoW at the start of the project



# Relationships between work packages



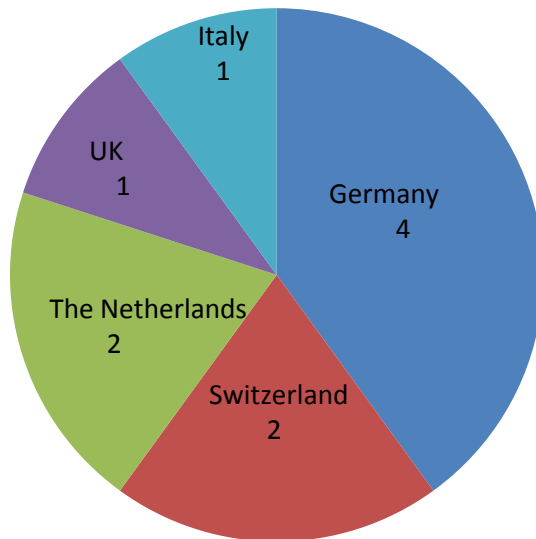
# Consortium

# EC Project Beneficiaries

- 10 beneficiaries within a larger initiative
- The Helix Nebula Initiative has grown from 20 members at the start of the EC project in June 2012 to 41 in the course of 2 years

- The EC project Beneficiaries:

- Suppliers: 7
- Users: 3



- The overall initiative:

- 16 Suppliers
- 12 supply side Adopters
- 4 demand side Adopters
- 9 Users

# Members of the Helix Nebula Consortium



#	Organisation	Role	Entry Date
41	European Organisation for Astronomical Research in the Southern Hemisphere (ESO)	Adopter	May 2014
40	CloudEO	Adopter	April 2014
39	Ultimum Technologies	Supplier	Jan 2014
38	Yandex	Adopter	Jan 2014
37	Memset	Supplier	Jan 2014
36	Port d'Informació Científica (PIC)	User	Sept 2013
35	Indra Sistemas S.A.	Supplier	Sept 2013
34	Visioterra	Supplier	March 2013
33	SWITCH	Supplier	Jan 2013
32	UNESCO	Adopter	Jan 2013
31	CNRS	Adopter	Dec 2012
30	Trinity College, Dublin	Adopter	Dec 2012
29	IFREMER	Adopter	Dec 2012
28	Emergence Tech Ltd	Adopter	Dec 2012
27	ECMWF	Adopter	Dec 2012
26	AW Software und Technologie GmbH (AWST)	Adopter	Nov 2012
25	DANTE	Supplier	Oct 2012
24	Nextworks	Adopter	Sept 2012
23	<b>CNR-IREA</b>	<b>User</b>	<b>Jun 2012</b>
22	CNES	User	Jun 2012
21	DLR	User	Jun 2012

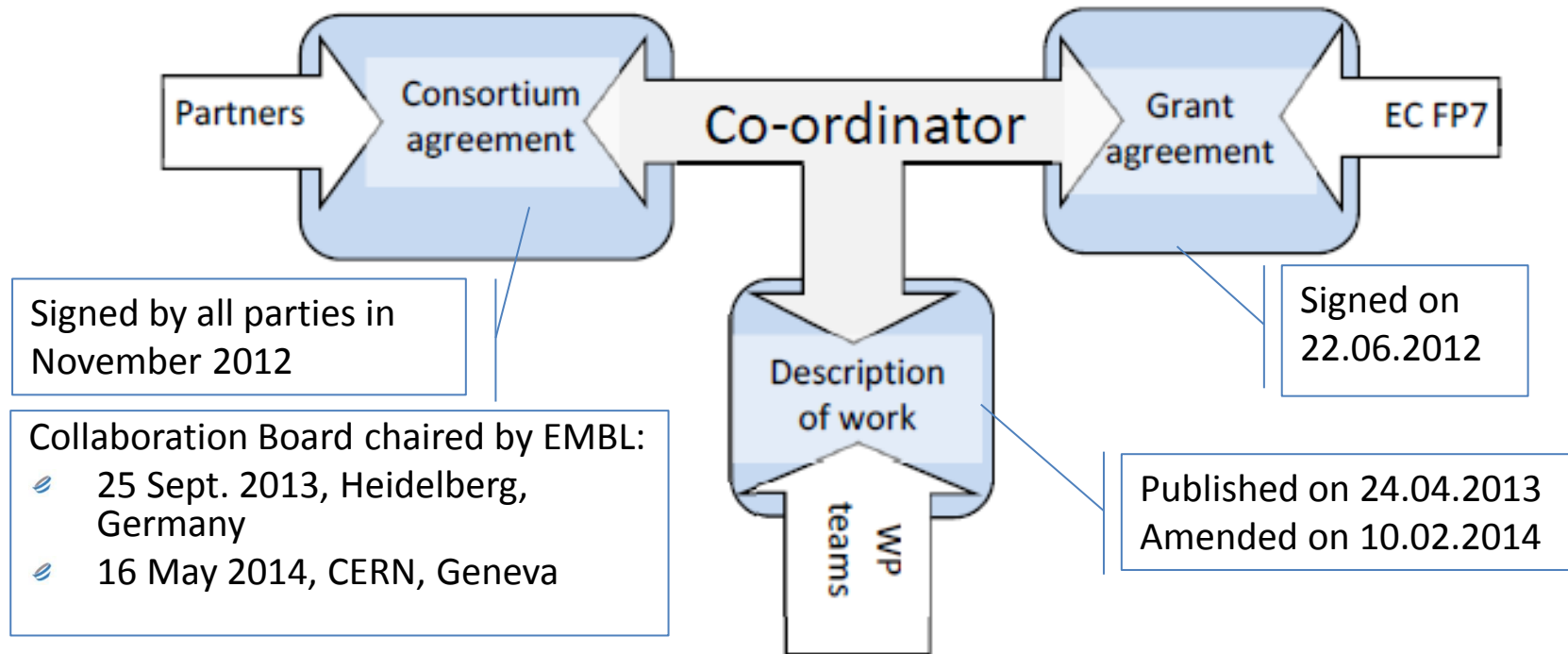
# Members of the Helix Nebula Initiative



#	Organisation	Entry Role	Date
20	Trust IT	Adopter	April 2012
19	CSA EMEA	Supplier	April 2012
18	SAP	Supplier	Feb2012
17	Telefonica	Adopter	Feb2012
16	Interoute	Supplier	Feb 2012
15	Cloudsigma	Supplier	Feb 2012
14	T-Systems	Supplier	Feb 2012
13	EGI.eu	Supplier	Feb 2012
12	Atos	Supplier	Feb 2012
11	Capgemini	Adopter	Feb 2012
10	Universidad Madrid	Adopter	Feb 2012
9	Sixsq	Supplier	Feb 2012
8	The Servers Labs	Supplier	Feb 2012
7	Terradue	Adopter	Feb 2012
6	CGI	Supplier	Feb 2012
5	Thales	Adopter	Feb 2012
4	Orange Business Services	Adopter	Feb 2012
3	ESA	User	Feb 2012
2	EMBL	User	Feb 2012
1	CERN	User	Feb 2012

# Management

# Management Structure



- Weekly management team teleconferences chaired by CERN (40 in period 2):
  - Attended by 3 suppliers (Atos, CloudSigma, T-Systems) + 3 demand side representatives (CERN, EMBL-EBI, ESA) + 1 invited (alternatively CGI or EGI.eu)

# Management Tasks

- ☞ Beneficiaries' cost statements were processed in July 2014
  - ☞ All costs declared in NEF were approved
  - ☞ Interim payments received in October 2013
  
- ☞ At the third general assembly (September 2013):
  - ☞ Work plan updated and the table of content of the deliverables due for period 2 agreed
  - ☞ The project coordinator agreed to distribute the first interim payment
  
- ☞ Resource consumption was reconsidered and the contractual Description of Work amended based on:
  - ☞ Deviations in planned versus consumed effort in P1
  - ☞ The decision made to focus the remaining effort on making the transition from pilot to production
  - ☞ Beneficiaries and the project coordinator decided on budget reallocation and effort transfer collectively

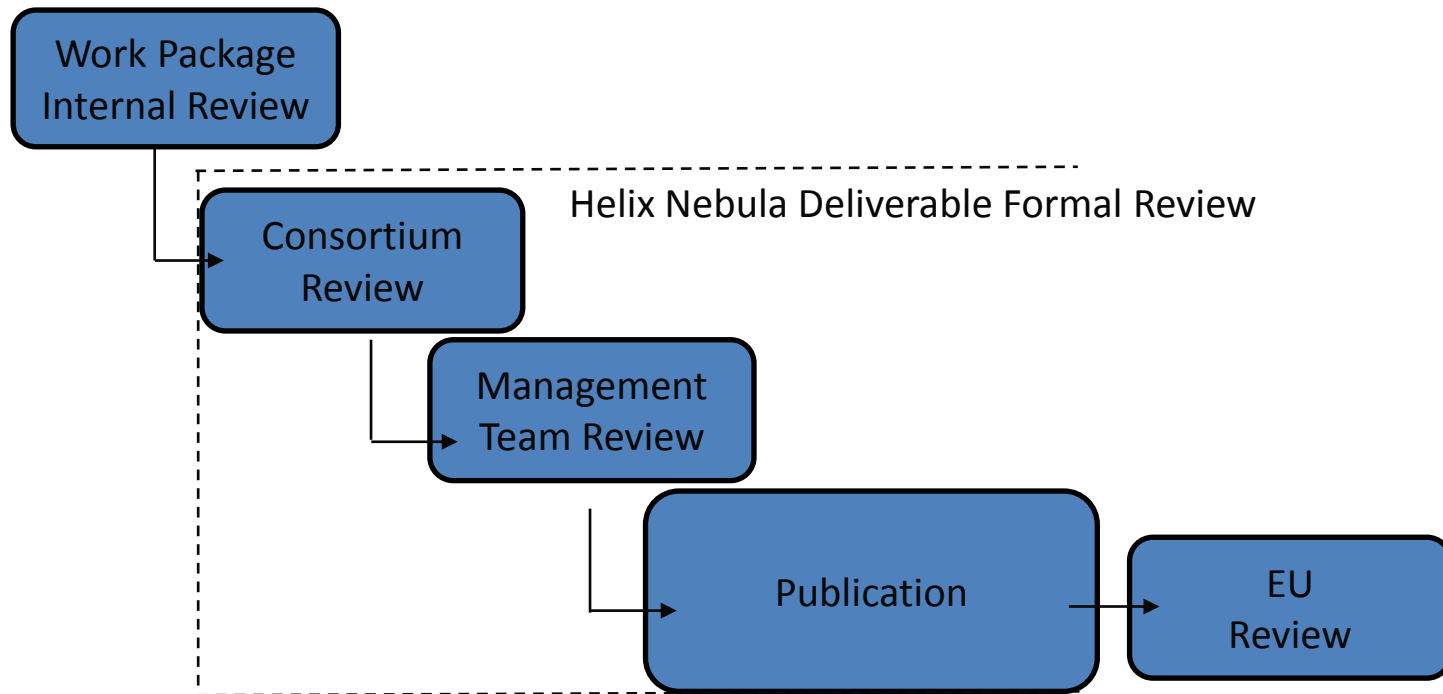


# Plans for the Future

- Members of the Helix Nebula initiative will continue supporting the initiative beyond the end of the EC project. The following commitments have been made:
  - GÉANT offered to support the Helix Nebula production service through to the end of 2014, so as to integrate the HN suppliers into the GÉANT framework; GEANT will also support the HN Supplier-Supplier traffic during the next 6 months and measure its impact on the utilisation of GÉANT.
  - HNX (the Helix Nebula Marketplace) will provide production service support at a discount rate until the end of 2014.
  - Trust-IT will maintain and update the HN website free of charge until the end of 2014
  - EMBL will maintain the alfresco collaboration site until the end of 2014
  - EGI.eu will continue offering the mailman tool, which hosts the 21 email lists, for two more years
  - CERN, ESA & EMBL will continue testing the HNX production environment with their flagship applications
  - ESA will host the next general assembly in November 2014, where the revised governance model is foreseen to be adopted.
  - CERN will maintain the open repository for all Helix Nebula documents on the CERN Doc. System (CDS) for a minimum of 2 years

# Quality Assurance: Review Process

- Review procedure documented as Annex 7 of the Consortium Agreement:
  - All second period deliverables submitted
  - All milestones achieved and documented



# Grant Agreement Amendment # 2: 10 Feb 2014

- ☛ The consortium agreed that the priority for period 2 should be the transition from a pilot phase to a production platform. Annex 1 has been modified accordingly, as a consequence.
- ☛ Resources which were not foreseen to be spent in period 2 were redistributed to address the transition tasks. Annex 1 has been modified accordingly, as a consequence.
- ☛ Changes made to the Description of Work of the Helix Nebula – The Science Cloud project:
  - ☛ The description of Deliverables D7.3 and D7.4 have been refined to reflect the transition from “generic cloud services” to “InfoaaS”
  - ☛ The cost calculation for beneficiary 7 (SAP) is based on a valid Certificate on the Methodology, SAPs budget was amended accordingly
  - ☛ The budget for legal advice to the governance work package (WP8) of 13,125 EUR has been transferred to T-Systems, who sub-contracted the task to a third party
  - ☛ To increase the relevance of the project deliverables to the EC policy for cloud computing, CERN has reassigned 5000EUR under WP1 to a subcontractor, who contributed to the roadmap report and updated the strategic plan (D9.1 & D9.2)
  - ☛ The work package 6 provision (13,000 EUR) for workshops including participation of invited experts was partly (7000 EUR) transferred to the EGI.eu travel budget to cover the costs of two additional workshops

# Deliverables – Period 2

Del. no	Name	Lead beneficiary	Nature	Dissem. level	Delivery date from Annex I (proj/month)	Actual / Forecast delivery date	Submitted on
D7.2	Synthesis and Analysis of Overall Business Models	7	SAP	Report	PU	M17	23/10/2013
D7.3	Costing exercise comparing in-house vs. cloud based operation for the CERN flagship use-case and incorporation of qualitative cloud adoption criteria targeting prospect members	7	SAP	Report	PU	M21	20/02/2014
D7.4	Information as a Service – Towards Value Co-Creation	7	SAP	Report	PII	M21	23/02/2014

## Additional reports published by the initiative:

- ☞ The e-Infrastructure Commons Marketplace Position Paper
- ☞ The Helix Nebula Marketplace Catalogue
- ☞ The Engagement Plan

			Security Alliance				
D6.2	Roadmap for the integration and interoperation of commercial cloud with e-Infrastructures	6	EGI.eu	Report	PU	M24	26/05/2014
D9.1	A roadmap of future developments	9	EMBL	Report	PU	M24	30/05/2014
D9.2	Strategic Plan for a Scientific Cloud Computing Infrastructure for Europe: Three years on	9	EMBL	Report	PU	M24	30/05/2014
D5.2	Report on future technical requirements	5	CGI	Report	PU	M24	30/05/2014
D5.4	Final Flagship deployment report	5	CGI	Report	PU	M24	30/05/2014

# Milestones – P2

N°	Name	WP no.	Lead beneficiary	Delivery date from Annex I (proj month)	Achieved Yes/No	Actual / Forecast delivery date
MS12	Security Challenge Performed	5	CGI	M14	YES	M17
MS3	Summary of the third general assembly of the Helix Nebula Initiative	1	CERN	M15	YES	M17
MS17	Overall business models and risk management and evaluation agreed by all partners on supply and demand sides	7	SAP	M15	YES	M17
MS16	Technical workshop (co-located with EGI Technical Forum 2013)	6	EGI.eu	M15	YES	M18
MS4	Summary of the fourth meeting of the general assembly	1	CERN	M23	YES	M24
MS13	Workshop during GA4 to provide input to the final evaluation, assessment and report	5	CGI	M24	YES	M24
MS12	Security Challenge Performed	5	CGI	M14	YES	M17
MS3	Summary of the third general assembly of the Helix Nebula Initiative	1	CERN	M15	YES	M17
MS17	Overall business models and risk management and evaluation agreed by all partners on supply and demand sides	7	SAP	M15	YES	M17
MS16	Technical workshop (co-located with EGI Technical Forum 2013)	6	EGI.eu	M15	YES	M18
MS4	Summary of the fourth meeting of the general assembly	1	CERN	M23	YES	M24
MS13	Workshop during GA4 to provide input to the final evaluation, assessment and report	5	CGI	M24	YES	M24

# Financial Status

# Resources and Funding

- ☞ The Helix Nebula pilot phase rests on financial support from:
  - ☞ Co-funding by the EC focused on:
    - ☞ Coordinating beneficiaries' efforts and animating the initiative
    - ☞ Policy aspects, Communication and Outreach
  - ☞ Demand-side beneficiaries (CERN, CNR, EMBL)
    - ☞ Contribution to the cost of cloud resources consumed and specific developments
      - ☞ CERN: 65K EUR
      - ☞ ESA: 40K EUR + 200 K EUR to run the exploitation platform
      - ☞ EMBL: 60K EUR on computing resources + 12K EUR to develop the EC2 Bridge
    - ☞ Manpower for porting flagships to the infrastructure (WP5, not reported in cost claims)
  - ☞ Supply-side beneficiaries (Atos, CloudSigma, CSA, EGI.eu Logica, SAP, T-Systems)
    - ☞ Development of services and Blue Boxes
    - ☞ Full cost of the operation of the services
  - ☞ Significant contribution from members of the HN initiative (not beneficiaries of the project):
    - ☞ ESA and CNES: manpower for flagship deployment + cost of services consumed
    - ☞ SMEs: SixSq, Terradue, TheServerLabs involved in TechArch and ServArch
    - ☞ Development of services and connection to Blue Boxes by suppliers (Interoute)
    - ☞ Dante & NRENs: Effort to connect supplier data centres to GEANT

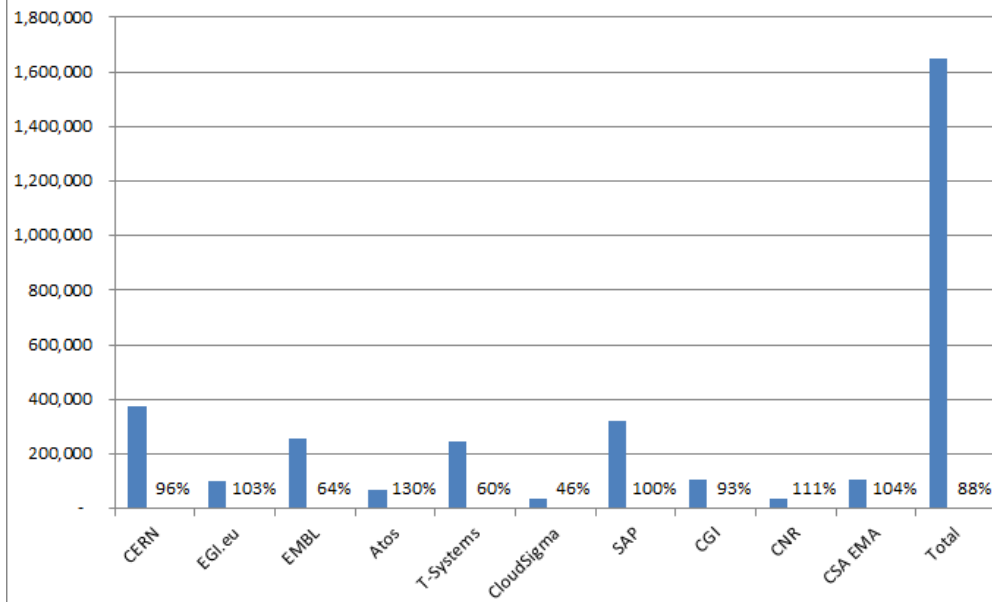
# Provisional Financial Status

- Based on Beneficiaries' provisional Cost Claims for Period 2
- Total Costs: 1'448.331 EUR
  - 88% of total budgeted costs
- Total Requested Contribution: 1'202.114 EUR
  - 75 % of budgeted requested contribution
  - Direct personnel costs are 89 % of total costs
  - Remaining costs are travel, minor subcontracting and overheads



# Total Cost per Beneficiary

Per Beneficiary : P2 Total Cost vs Plan



Beneficiary	P2 Total Costs in EUR		
	Plan	Actual	%
CERN	373,936	359,163	96%
EGI.eu	100,131	102,765	103%
EMBL	255,807	163,892	64%
Atos	69,162	89,666	130%
T-Systems	243,457	146,800	60%
CloudSigma	35,362	16,112	46%
SAP	320,274	321,576	100%
CGI	107,903	100,706	93%
CNR	34,329	38,140	111%
CSA-EMA	105,785	109,511	104%
Total	1,646,146	1,448,331	88%

# Provisional Financial Status

## Over-spending beneficiary

Beneficiary	Budget Consumption – Period 2	Overspent by (EUR)
Atos	130 (%)	20'504

Task of defining the cloud platform and provisioning pushed off in P2. Has required more highly-skilled and experienced staff than we expected

## Most under-spending beneficiaries

Beneficiary	Budget Consumption – Period 2	Under-spent by (k EUR)
T-Systems	146'800	96'657
EMBL	163'892	91'915
CloudSigma	35'352	19'250

The budget for legal advice was used to subcontract a third party, which alleviated the workload

Work completed using effort funded via internal sources  
Project funded effort concentrated on WP5 in P2

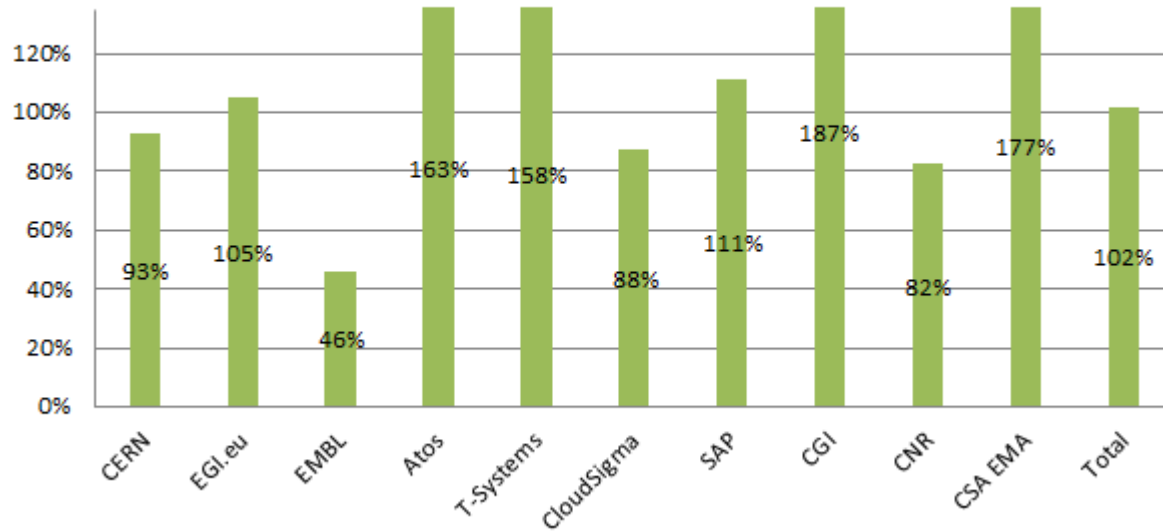
The establishment of an online requirement gathering template required less manpower than originally foreseen

**All beneficiaries have contributed to the project**

# Effort Consumption

# Total Effort by Beneficiary

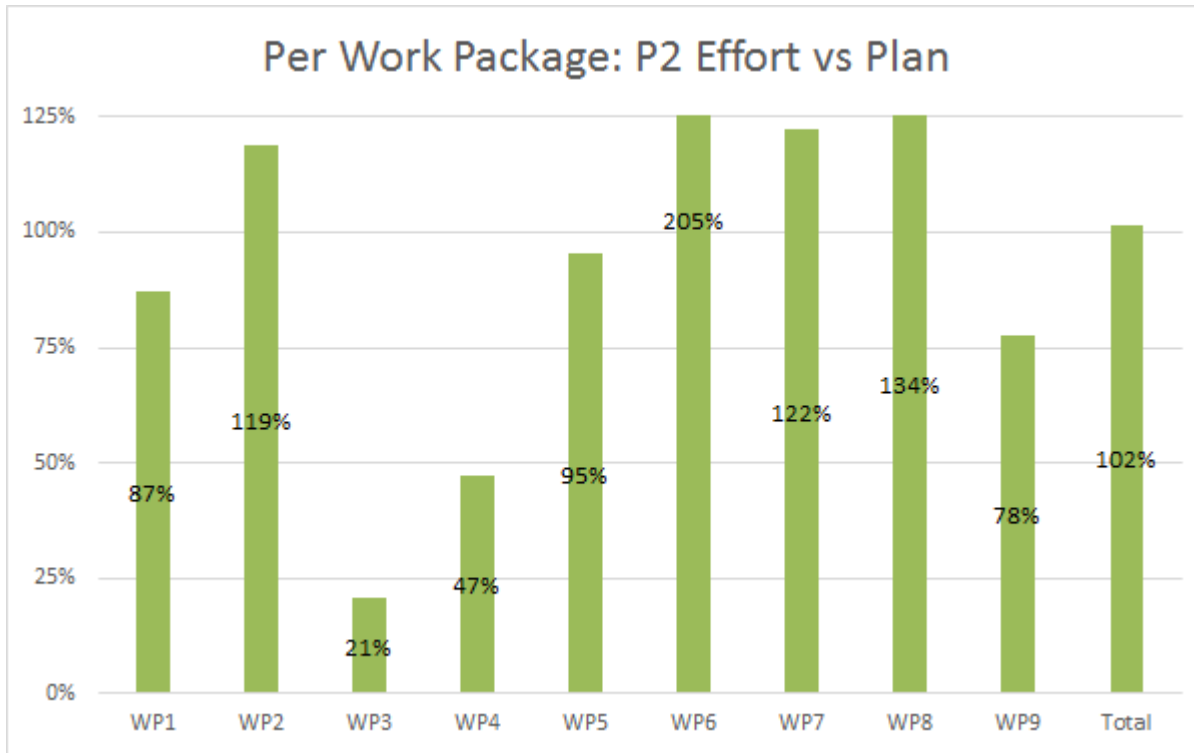
Per Beneficiary: P2 Effort vs Plan



Beneficiary	P2 Effort in PM		
	P2 Plan	P2 Actual	%
CERN	26.5	24.6	93%
EGI.eu	11.0	11.6	105%
EMBL	23.0	10.5	46%
Atos	3.2	5.2	163%
T-Systems	6.6	10.4	158%
CloudSigma	1.6	1.4	88%
SAP	18.0	20.1	111%
CGI	6.0	11.2	187%
CNR	6.8	5.6	82%
CSA EMA	5.0	8.9	177%
Total	107.7	109.5	102%

**Transition from pilot deployment to production took longer than expected**

# Total Effort by Activity



Work Package	P2 Effort in PM		
	P2 Plan	P2 Actual	%
WP1	18.7	16.3	87%
WP2	12.3	14.6	119%
WP3	5.3	1.1	21%
WP4	4.4	2.1	47%
WP5	31.0	29.6	95%
WP6	4.9	10.1	205%
WP7	16.5	20.2	122%
WP8	7.6	10.2	134%
WP9	7.0	5.4	78%
Total	107.7	109.5	102%

# Summary

- The Helix Nebula has fully completed its second year of work
- All beneficiaries have been active and have justified their costs
- Suitable structures have been put in place to manage the foreground of the project within the context of the larger Helix Nebula initiative in the future
  - The members of the larger Helix Nebula initiative have contributed significant resources to achieving the objectives