Opérations :
Statut et perspectives

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Statut des opérations

- Présentation à l'International Advisory Committee (26/04)
  - http://indico.in2p3.fr/materialDisplay.py?sessionId=1&materialId=2&confId=6610
- Quelques phrases de l'IAC
  - "The committee was impressed by the progress made by France Grilles in the last year."
  - "Operations have been very successful and are on a good path for the future."
  - "The effort should be rationalized over time, trying to reduce the human investment or tackle new tasks with the same team."

Les perspectives…

- Court/moyen terme
    - Garder des services grilles de qualité
    - Poursuivre sur la lancée de DIRAC et iRODS
    - Cloud : le sujet de demain (au sens propre)
    - Engagement avec les communautés : prochain slot
- A plus long terme
    - Viabilité des opérations

Pour le plus long terme…

- Commentaires de l'International Advisory Committee 2012 :
  - "It is very important to understand the details of effort applied to all tasks that finally deliver the successful Grid"
  - "One particular estimate that would be of value is that of the relative cost of delivering the Grid compared with the cost of delivering a set of independent computing center services at each Grid site, based on the current hardware at each site."

- Recommendation faisant suite à ces commentaires :
  - Work with the sites involved in France Grilles to achieve a transparent and uniform approach to costing all the tasks involved in delivering the Grid.

- Annexes : morceaux choisis de la présentation "opérations" à l'IAC...

The magic formula to successful operations

$$\frac{[e^{\frac{lim_{n\to\infty}\frac{2^{2n}(n!)^2 log7}{(2n)!\sqrt{n}}}{\int_0^\infty e^{-t^2}dt}} - e^{i\sum_{k=0}^\infty \frac{8}{(4k+1)(4k+3)}}]\int_0^\infty \frac{2t}{e^t-1}dt}{[\int_0^\infty \frac{\sqrt{3}dt}{t^6+1}]^2[\int_{-\infty}^\infty e^{-\pi t^2}dt][\int_0^\infty e^{-t}tdt]} = \mathbf{OK}$$

On all sites, Grid operations are tightly intricated with non grid operations

Cost of FG Operations (1) : Effort and manpower

- ## What is needed to play the "Grid Symphony"?

  - ### The orchestra: effort at site level

    - Estimation 30 FTE for site operations (incl. WLCG operations) over the current 18 production sites

  - ### Section leaders and conductor(s): effort at NGI level

| NEEDED EFFORT					
Critical missions		Criticial and important missions		All missions	
h/week	FTE	h/week	FTE	h/week	FTE
186,5	4,91	316,5	8,34	390	10,28

  - 5 FTE for the minimum, 10FTE for the best *(see slide 12)*

Effort and time

- ## Effort needed and spent on "central" tasks
  - ### Tasks at national/NGI level

	NEEDED EFFORT						CURRENT EFFORT	
	Crit.		Crit. + Import.		All			
	h/week	FTE	h/week	FTE	h/week	FTE	h/week	FTE
Technical coordination	45	1,18	71	1,87	88	2,32	41	1,08
Executive Technical committee	11	0,29	22	0,58	23	0,61	13	0,34
Accounting	19	0,5	23	0,61	27	0,71	18	0,47
Monitoring	23	0,61	35	0,92	36	0,95	17,5	0,46
Network	3	0,08	41,5	1,09	42,5	1,12	23	0,61
Certification Authority	36,5	0,96	52	1,37	53,5	1,41	37	0,97
Security	17	0,45	25	0,66	31	0,82	16	0,42
Deployment	2	0,05	11	0,29	41	1,08	38	1
Others	30	0,79	36	0,95	48	1,26	36	0,95
TOTAL	**186,5**	**4,91**	**316,5**	**8,34**	**390**	**10,28**	**239,5**	**6,3**
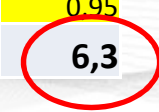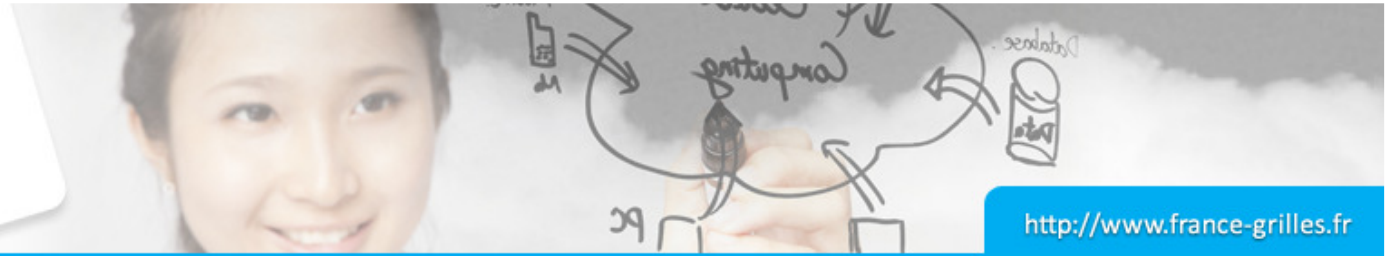
Cost of FG Operations (2) : Other costs

- Infrastructure costs
  - Hardware renewal and/or extension
  - Running grid resources and services (electricity, air conditioning, maintenance costs)

- Operating costs
  - Internal events (logistics and travel costs)
  - International involvement (travel costs , conference registration fees…)

Benefits of FG Operations

- Direct benefits
  - Mutualization and sharing
    - Effort, investment and expertise : the "human Grid"
  - Coordination activities
    - m/w and service deployement, links to and between different projects
  - Central Grid services and functions
    - Monitoring, accounting, Certification Authority, Support
  - Grid security coordination

- Indirect benefits
  - Strategic collaborations (e.g. joint answers to project calls)
  - Visibility

FG Operations : Current funding

- Who cover those costs today?
  - France Grilles - annual TGIR budget
    - 120k€ in 2012 for Operations
    - Hardware investments (e.g. 275k€ in 2012 on cloud infra.)
  - EGI-InSPIRE contribution for SA1 tasks
    - 1034 k€ for SA1 tasks over 4 years
  - Other projects funding source
    - WLCG, local grid projects, collaborations…
  - Sites/partners contributions to:
    - Effort
    - Travel and administrative costs for staff
    - Grid resources and services running costs

Beyond costs and benefits…

- How much of what we do would have to be done anyway, even if France Grilles didn't exist?
  - Probably most of site operations
    - Administration, operational support…
  - Most of high level expertise activities
    - Monitoring, accounting, Certification Authority, Security…

Sustainability questions

- Maintain living infrastructures

  – What happens if we don't have funding for :

    - The 35 needed FTEs?

    - Hardware & services maintenance costs?

- External dependencies

  – What if the tools we use stop being developed or maintained (e.g. EMI m/w, GOCDB, SAM-Nagios)?

  – What if we have to stop providing one of them to the Grid community (e.g. EGI Operations Portal)?

Some mitigation ideas (1)

- Consolidate our estimation of what we do
  - Go deeper in the costs/benefits analysis
  - Replace operations in the global picture

- Assess and clarify our "place in the landscape"
  - Formalize relations between France Grilles and
    - Its production sites
    - Its national partners
    - Its international partners

Some mitigation ideas (2)

- Build sustainability scenarios
  - Start from the hypotheses we can make on future funding, manpower, service availability etc.
  - Try and get ideas to turn each scenario into a form of success
- Get inspiration from elsewhere
  - What can Service Level Management teach us?
  - We are not alone… how are other NGIs doing?
  - Can we learn from the free software world?