

**Joint EGO-Virgo Computing Committee (JECC) meeting**  
Cascina, 17<sup>th</sup> November 2011

Meeting Minutes

**Presents :**

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*Topics:*

1. Virgo use of computing center resources in 2011 and 2012 forecast (M.A. Bizouard)
2. 2011 EGO contribution to the off-line computing cost
3. Budget request for 2012 and Mid-term future

N.B. Slides and documents presented during this meeting are available at:

<https://workarea.ego-gw.it/ego2/ego/computing/jecc/jecc-meeting-17-nov-2011/>

**1. Virgo use of computing center resources in 2011 and 2012 forecast (Bizouard)**

M.A. reports on the data taken in 2011: two periods in “Astrowatch mode” plus the VSR4 science run in coincidence with GEO, for a total of about 250TB.

As usual, data in Lyon are stored in HPSS via Xrootd and SRB. In Bologna since this year the data have been migrated to GEMSS, another disk-tape mass storage system that substitutes CASTOR.

The storage allocation status at the two centers respect to 2010 is given in Tab 1. and Tab 2.

Due to the stop of the interferometer for the Advanced Virgo installation and commissioning no net increase of storage allocation is requested for 2012.

**Table 1 Storage status at CCIN2P3/Lyon and 2012 request**

Year	HPSS (TiB)	Xrootd cache (TiB) used/available for Virgo	SRB cache (TiB) used/available for all experiments	sps (TiB) used/available for Virgo
2010	457	162/184+124	32/203	3.6/5.4
<b>2011(oct 1<sup>st</sup>)</b>	<b>707</b>	<b>96/308</b>	<b>32/203</b>	<b>4/5.4</b>
<b>Request for 2012</b>	<b>+10</b>	<b>+0</b>	<b>+0</b>	<b>+0</b>

**Table 2 Storage status at CNAF/Bologna and 2012 request**

Year	Gpfs4 (TB) used/available for Virgo	Gpfs3 (TB) used/available for Virgo	GEMSS (TB) used/available for Virgo
2010	261/384	9/16	325
<b>2011(oct 1<sup>st</sup>)</b>	<b>345/384</b>	<b>25/32</b>	<b>754</b>
<b>Request for 2012</b>	<b>-40</b>	<b>+40</b>	<b>+10</b>

Note: due to the need of additional 40TB of users disk space in Bologna it is asked to reserve the corresponding space from Gpfs4 so that no net increase of space is requested.

About the computing usage Tab.3 summarizes the 2011 usage and the requests for 2012:

**Table 3 Computing energy used in 2011 and request for 2012**

Period	CNAF (HS06.day)	CCIN2P3 (HS05.day)
2011 request	434,000	114,000
2011(oct 1 <sup>st</sup> )	695,000	141,000
2011(forecast)	~950,000	160,000
2012 request	434,000	124,000

Note: Virgo foresees that the computing activity in 2012 will be lower than in 2011, see the document “Virgo Computing status and needs for 2012” for details.

## 2. 2011 EGO contribution to the off-line computing cost

	status	2011 Forecast		status	2011		status	2012		status
		cost (k€)			cost (k€)			cost (k€)		
<b>Bologna (Incremental)</b>										
CPU (used energy in KSI2K.day)										
CPU installed power(status is in KSI2K)										
CPU (used energy in HS06.day)		434000			939875			434000		
CPU installed power(status is in HS06)	1240		0	1189		27	2575		0	2575
Disk storage TB-N	368	90	64	483	50	22	418	50	18	418
tape storage (Castor) TB-N	325	200	20	525	429	34	754	120	5	874
<b>Total Bologna cost</b>			<b>84</b>			<b>83</b>			<b>23</b>	
<b>Lyon</b>										
CPU usage (KSI2K.days)										
CPU usage (HS06.days)		114000	3		160000	6		124000	5	
Disk storage TiB (increment)	308	0	0	308	50	15	358	50	15	358
tape storage (HPSS) (TiB increment)	457	200	17	657	250	21	707	10	1	717
<b>Total Lyon cost</b>			<b>20</b>			<b>42</b>			<b>20</b>	
<b>Total cost 2 centers</b>			<b>104</b>			<b>125</b>			<b>43</b>	

It has to be noted that the contribution requested to EGO by the computing centers for 2011 is higher than what foreseen last year (125k€ instead of 105k€), due to the following reasons: the computing energy used by Virgo turns out to be higher than expected; the number of tapes used increments because the periods of data taking have been extended; Lyon has charged a contribution to the substitution of 50TiB of disk storage.

Note that at CNAF about 110TB of tapes more will be used until the end of 2011, even though they will be charged in 2012, but in spite of this the global disk+tapes cost is lower to the expectation because the migration to GEMSS allowed to give back 40TB of disks, sparing 42k€ in favour of the less expensive tapes.

**To sum up, the 2011 EGO contribution to the off-line computing cost will be:**

**CNAF : 83 K€**

**CC-IN2P3 : 42 k€**

### **3. Budget request for 2012 and mid-term future**

For the next years until at least 2015 no science runs will occur, therefore no storage space increase will be requested in the CC's.

In the same way also the computing usage will not increase and no additional computing power should need to be installed at CNAF for Virgo.

Based on requests in table 1, and assuming a substitution of about 50TB in each center for 2012, and adding 110TB tapes for Cnaf, a minimum of **43k€** has to be foreseen in the EGO budget for 2012.

Finally it is observed that the agreement between EGO and CC's was valid until end 2009 and due to the fact that Virgo runs each year, it was tacitly renewed for 2010-2011.

**Now EGO and the Computing Centers put forward the commitment that a new agreement will be conveniently rewritten.**