Estimate of off-line computing cost

2009 and 2010 CPU and storage numbers are from the Virgo computing needs for 2010 document

2011 CPU and storage numbers are from the Virgo computing needs for 2009 and beyond document (VIR-088A-08)

Note : The billing procedure for CPU is different in Bologna and Lyon.

Unit costs Bologna (Euro): cost calculated as purchase of the needed yearly increment CPU power with substitution after 3 years

Cost of KSI2K	160	90	70	54
KSI2K needed(incremental)	123	616	137	315
KSI2K.day cost	0,44	0,25	0,19	0,15
disk GB cost	1,25	0,96	0,71	0,53
HPSS/Castor GB cost	0,17	0,1	0,088	0,063

	2007		2008		status	2009		status	2010		status	2011		status
Data production (Virgo+LSC) TB			12			190			192			300		
Bologna (*Incremental*)	KSI2K.days	cost (KE)	KSI2K.days	cost (KE)			cost (KE)			cost (KE)			cost (KE)	
CPU (status is in KSI2K)	15000	41	60000	20	164	285000	55	781	320000	10	877	390000	17	**1068**
Disk storage TB			12	15	108	82	79	190	185	131	375	169	90	**544**
tape storage (Castor) TB	120		55	9	55	106	11	161	20	2	181	131	8	**312**
Total cost Bologna		45		44			145			143			115	
Lyon														
CPU usage (KSI2K.days)	22800		240000	60		155000	39		305000	53		545000	67	
Disk storage TB (increment)			125	125	140	44	22	184	245	123	429	169	85	**598**
tape storage (HPSS) (increment)	115		12	2	162	190	14	352	276	20	628	300	22	**928**
Total cost Lyon		58		187			75			196			173	
Total cost 2 centers		103		231			220			339			288	

Unit costs Lyon (Euro) Hypothesis of 30% yearly drop in KSI2K cost, no hypothesis in disk/tapes drop

KSI2K.day cost	0,25	0,25	0,175	0,1225
disk GB cost	1	0,5	0,5	0,5
HPSS/Castor GB cost	0,17	0,074	0,074	0,074

EGO contribution to the cost (k€)	**80**	**120**	**200**
to Bologna	40	40	
to Lyon	40	80	