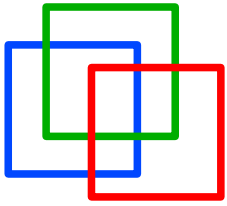


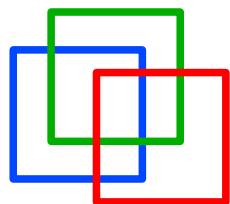
Computing summary

M. Morandin - INFN/PD
for the Computing group



Next steps

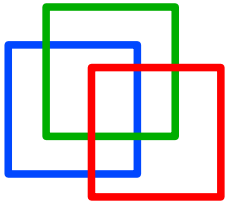
- Future productions
 - the production environment: resources and tool
 - plans for Full Simulation
 - plans for Fast Simulation
- Work on the computing model



Resource scaling...

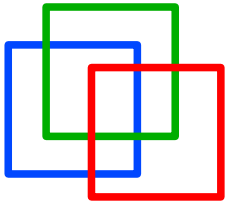
- February Production cores usage has been consistent with expectations
- More sites will be involved in the summer production
- Possibility to gain a factor of 2 in terms of cores availability

			Next Prod	Feb Prod
	min	max	$2(\text{min}+\text{max})/3$	
CNAF	200	700	367	367
Pisa	200	400	267	267
Legnaro	100	300	167	167
Napoli	200	400	267	
Padova	0	200	67	
Bari	100	200	133	
Ferrara	50	50	50	
Catania	100	300	167	
Perugia	100	100	100	
Torino	100	300	167	
Cagliari	100	300	167	
QMUL	150	350	217	217
RALT2	50	100	67	67
RALT1	300	600	400	
Manchester				
Edinburgh				
IN2P3	300	600	400	400
GRIF	100	200	133	133
SLAC	200	1000	467	100
Caltech	100	300	167	
McGill	60	60	60	
UVIC	100	300	167	
			3994	1717



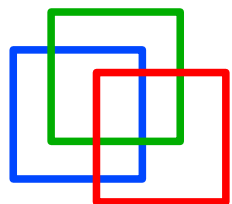
...up to the ceiling

- one could also envisage to run for **longer periods** (one month instead of 10 days)
 - but this requires **setting up an operation team** (1 person x 2 shifts/day)
 - in addition to the production support team
 - no free lunch any more, be prepared!
 - and **further improvements** of the production system
- we could gain an overall factor of up to $(2 \times 3) = 6$
 - i.e., a total capacity of $\sim 10^{10}$ fast sim ev. (1 nb x 10 ab^{-1})
 - like the ones recently produced (w/o mach. bkg)
 - but much less if you add bkg (now x2 in CPU time), or more analysis to be performed ...



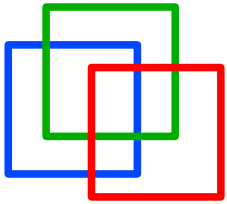
lessons learnt

- but then we are really at the limit of the capacity we can exploit “parasitically”
 - **no way** we do production at the \sim few ab^{-1} level with all mach. bkg included, all analysis, all geometries...
 - we **will have to be smarter**...
 - and we have to plan **intermediate smaller scale production** to let the people adjust their analysis if new elements (like mach. bkg) are introduced
- with the caveat that we may not get the same level of available resources when **LHC is running**...
 - at CNAF we may have to ask for **a specific allocation of CPU time for SuperB**, to be sure that we have resources available when we need them
 - 2000 cores-months for the rest of 2010



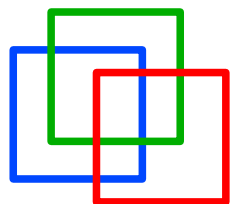
Improvements of the production tools

- During the next intensive production, the operation team will need a **more friendly user interface**
- To achieve this goal the **following tasks** should be accomplished:
 - development of a **more automatic submission cycle procedure**
 - optimization of the current tools in order to **improve the reliability** and to produce a **site-independent version**
 - **tighter integration in the grid infrastructure** (authorization, monitoring, accounting ticketing, service availability...)
- We will have to balance the development efforts w.r.t. to the lifetime of the current tools:
 - in parallel we will have to shape and then to implement the final model



Full sim

- Full sim developments:
 - now it's the right (and likely last) opportunity to consider important general improvements to the Full Sim tool for the TDR studies
 - look at Andrea's questions at the joint session yesterday Full sim production:
 - the plan is a to run production w/ statistics of $O(1\text{ M})$ events;
 - such productions can be run at CNAF, but it will also run on the Grid in a few weeks;
 - bkg frames produced for Fast Sim would be sufficient also for the summer, but may have to be redone if we change the machine background conditions;

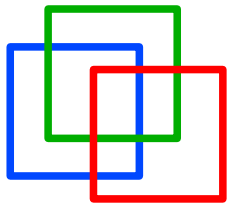


Fast sim developments

- the February production has shown that additional work will be needed
- the priorities of the work depend to a large extent on the goals of the next productions
- some questions David proposed have now answers

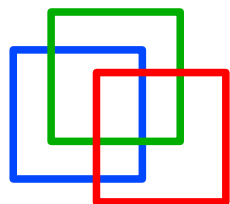
Questions

- What analyses are needed in Summer
 - ‘final’ production for TDR
- What statistics are needed?
- What FastSim improvements are required?
- What backgrounds do we need?
- Can we make analyses more robust against backgrounds
 - multiple Emiss variables with different thresholds?
- Can we make analyses more performant?
 - tighter input lists, fewer modes?



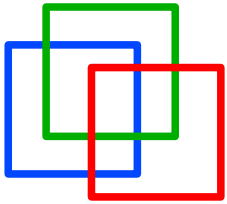
Summer production

- at the Tech. Board yesterday we decided that the next (summer '10) large Fast Sim production will be focused **mainly to Detector geometry studies**
 - more general studies to systematically **assess SuperB performance** for the TDR will be addressed later
 - given that the goal is not to obtain the best possible performance estimate but to compare detector geometries (FPID, BEMC), it will be possible to **perform more aggressive optimizations of the CPU usage**
- the plan is to:
 - freeze the fast sym developments by the time of the Elba meeting (end of May)
 - run the production in June/July, so that the results are available well before the September meeting



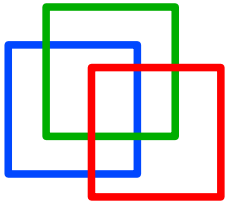
SuperB R&D Comp. Workshop

- as shown by Armando, it has been a **pretty successful meeting**
 - very good organization (thanks to our Ferrara friends)
 - large participation both nationally (with people from various Italian Tier1/Tier2 sites) and internationally
- we succeeded to keep the WS **focused on the SuperB perspective**
 - the goal was not to discuss the SuperB computing model but the **key issues that we need to address in the R&D phase**
- we verified there is **genuine interest** around in SuperB Computing and specifically in the R&D program
- now we have to **exploit it at best**



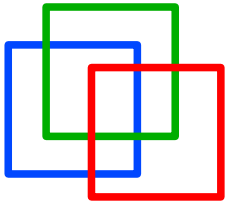
future steps

- next step is to consolidate the outcome of the discussions **into an R&D plan** that will set the basis of the SuperB computing model
- we will try to exploit all possible collaborations, but for the R&D plan to succeed we will need:
 - SuperB approval
 - to start setting up a group of comp. professionals fully dedicated to SuperB
- the plan is to finalize the **first draft of proposed activities by Easter** and the final document by end of April
- the Elba meeting could be the right moment to present it and approve it
 - it will be complemented by the plan for supporting production activities for the rest of the TDR period



The outreach Web site

- a new site specifically targeted to
 - external people that are interested in SuperB for professional reasons (governmental offices, press, etc.)
 - general public
- the structure has been created
 - same underline technology (Joomla CMS) as the current one
- a group of volunteers has been setup to provide and/or coordinate the inclusion of appropriate content
 - G. Simi (general coord. + detector), A. Bevan (Physics), D. Hitlin (SuperB project), G. Mazzitelli (machine), ...
- help will be needed from the Detector, Machine, Physics and Comp. groups



Conclusions

- we are not just “holding on”
- the capability of successfully exploiting the large amount of computing resources that are now available has been demonstrated
- we are moving to the next phase, i.e. the preliminary studies that will lead to the definition of the SuperB computing model and the Computing TDR (end of 2011)
- and it's clear that the computing group can grow with additional collaborators
- BUT...