



Computing longer term planning

outcome of discussions at and after the computing sessions

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Longer term planning for computing



- we have assumed that the timescale of completion of the SuperB Computing TDR may be decoupled from the one of the Detector TDR
- Computing TDR could come:
 - after the completion of the detector TDR
 - but before the bulk of the software development effort gets started
 - so that there is still the possibility of taking invasive design decision
- this maximizes the probability that the Computing TDR eventually represents a meaningful design document

The starting point



- BaBar computing model still represents a good starting point
 - no major software revolution as the one BaBar underwent is at the horizon for SuperB
 - clearly, significant improvements, that can partly be derived from developments for LHC, can be and have to be addressed
 - e.g.,: adopting higher quality external libraries
 - but the basic elements of the model are still valid

The need for optimization



- however, scaling the computing system from BaBar to SuperB is not be straightforward
 - in BaBar brute force injections of unanticipated large amount of CPU and disk resources became necessary once the experiment had started
 - for SuperB, most likely, we will not have such an option at our disposal
- we will have to plan better the level of resources needed by the experiment
- we can and, most likely, we will have to design the computing model with the goal of a most efficient use of resources

Efficient use of resources



– CPU

- Examples:

- writing efficient code
- exploiting the latest processor technology (multi-core processors, etc.)

– storage

- adapting the data organization and the access methods and tools to the intrinsic limitations of the storage devices
 - esp. addressing non-scaling behaviour of device latencies (disk and tapes)
- optimizing the storage policies both locally and geographically

The preparatory phase



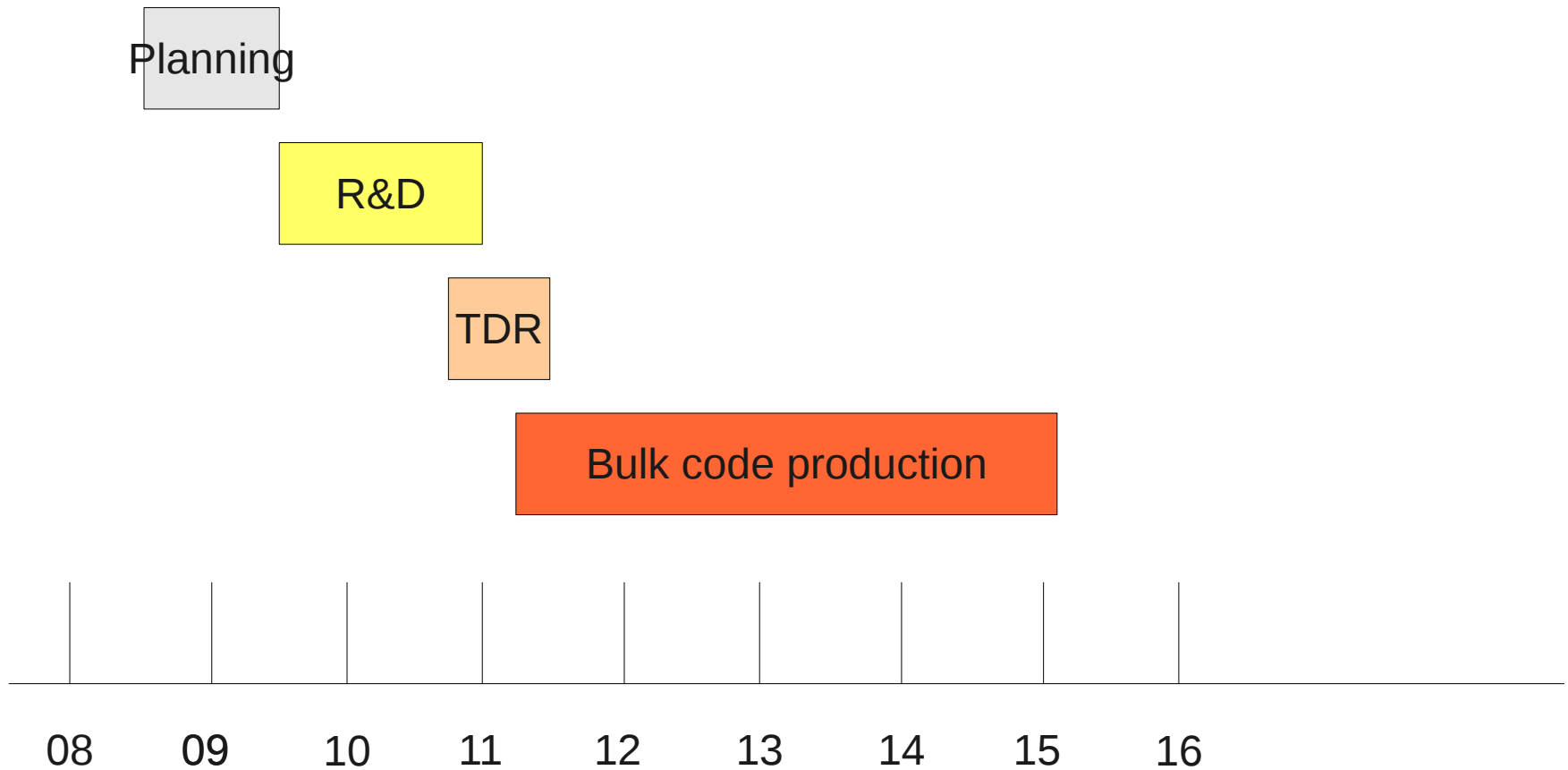
- Addressing the previous issues, devising solutions and establishing evidence that they work at the foreseen scale, cannot take place while most of the code development is ongoing
- it must happen **earlier**
- and, since we are starting from a good base model, it likely doesn't require a long and potentially dispersive global re-design and huge early effort in terms of (precious) technical manpower
- but it does require a **well focused, experienced and committed** team of **computing professionals**

The computing planning group



- we propose to setup a group that, as a first job, in a time scale of ~ 6 to 9 months develop a plan which:
 - identifies the main areas where preparatory work is needed (cases where we know the problems, and we know the solution)
 - compile then a detailed list of tasks to be accomplished with a preliminary
 - identifies the issues that require R&D work (we know the problems, but don't know the solution yet)
 - propose a prioritized list of activities and the relative time scale for completion
 - estimate and characterize the manpower needed and the level of hardware resources that may be required to carry on the R&D work

The main phases



Building the group



- ~ 4-5 people
- experts in BaBar core software and related technologies
- proposed at the next SuperB steering group meeting