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# **Software Issues in FP07** **& *how this relates to SuperB***

**Summary of meeting 09:00 – 16:30 CET**  
**CERN 7<sup>th</sup> December 2007**

**7<sup>th</sup> December 2007**

**Adrian Bevan**

# Aims of this morning's meeting

- First steps toward submitting a proposal.

Workshop December 2007

A one day workshop at CERN is planned for Friday 7.12 9:00-16:30

Participants: The Coordination Group, National Contacts, main resource persons involved in defining the detailed activities.

Main objectives for the meeting of 7/12:

- General presentation describing the project, its background and principal objectives
- Tentative overview of the split between Work packages, and sharing of the budget
- Draft motivation text and objectives for each of the work packages
- Initial discussion of main partners
- Next steps and process towards a complete proposal

The meeting shall be organized in a way to allow the national representatives to provide their input and to identify target areas where labs from their country can provide an essential contribution

- 40 min session discussing the SW activity (F. Wilson + AB connected).
- Areas:
  - GEANT4, FLUKA, Reco SW, Garfield/Magboltz/Heed, Geometry.
- Aim to address common infrastructure issues.
- Deadline to complete proposal is 29<sup>th</sup> Feb '08.

## WP Sub-Projects - GEANT4

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### ↪ Geant4

- ↪ The major package for simulation of detector response to physics events.
- ↪ Support to the detector development teams
- ↪ Pile-up: Develop a pile-up framework to handle events efficiently
  - ↪ E.g. for sLHC we need 400 minimum bias events superimposed for each bunch crossing (every 25 or 50 ns), and dozens of bunch crossings to be considered for example for the ATLAS muon drift tubes which have 700 ns drift time
- ↪ Improve modelling of the passage of low-energy pions
- ↪ Allow for mis-alignment studies with easier handling of over-lapping volumes
- ↪ Interface it to the geometry package

+ shopping list of talks for other simulation frameworks were presented.

# Thoughts from this morning's meeting

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- The rest of Nigel Hessey's presentation can be found at <http://indico.cern.ch/conferenceDisplay.py?confId=24296>
- Some of the issues are clearly sLHC orientated (e.g. pileup).
- There remain common issue for all systems/experiments e.g. generic way to treat the issue of alignment in GEANT4.
- We think that this is an area that we could get involved in that would benefit SuperB (ILC/sLHC etc.)
  - satisfies the criteria of the FP07 call to produce infrastructure: to be a general benefit to the European science community: to involve collaboration between different communities and institutes.
- Other activities, like geometry, are more open ended and might require a significant amount of existing effort to augment any manpower we could get from FP7.

# Next Steps

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- Get feedback from people in this room.
- Contact other interested parties in Europe to start coordinating our part of the proposal for this call.
- Next meeting on Integrated Activities is at CERN 19<sup>th</sup> Dec.
- Scale:
  - 3-4 FTEs over 4 years, augmented by a similar manpower from partners.