SuperB Computing

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latest progress

Four activity areas were identified in February '08:

- fast simulation

- Geant4 simulation

- collaborative tools

- development support

Goals set in Feb. 08

Status: OK, not yet, mostly done

	mid-March	mid-April	Elba meeting
Pravda	**User Guide completed**	**evaluate strategy for a possible evolution from Pravda**	**working version of DIRC and IFR output**
Geant-4		**current geometry in GDML; validation**	**realistic SuperB detector included**
Collab. tools		**Invenio, MediaWiki**	**AA integration of various tools**
Development support		**Geant-4 code in Subversion repository**	**Pravda in SVN, RPM distribution system**

Fast simulation
(coord. by M. Rama)

- work has gone **much further** than anticipated

  - release of Pravda MC used guide: OK

  - evolution from Pravda: not only a decision on how to proceed has been taken …

  - … but a new tracking code package (PacTrk) has being actively developed

  - many more people got involved (7 -> 14)

  - main development areas in the past 3 months:

    - new tracking engine

    - response of DIRC, EMC and IFR

    - interface between parts

Fast simulation goals for the meeting

- the group is aiming at:
  - performing a global review of the development status
  - consolidating liaisons with physics groups and planning joint activity
  - planning of June activity in view of code release for general use

- it is really important that the detector people and the physics groups provide their constructive feedback about the functionality that the tool is designed to provide and how

- Monday morning sessions are the right time to contribute your input
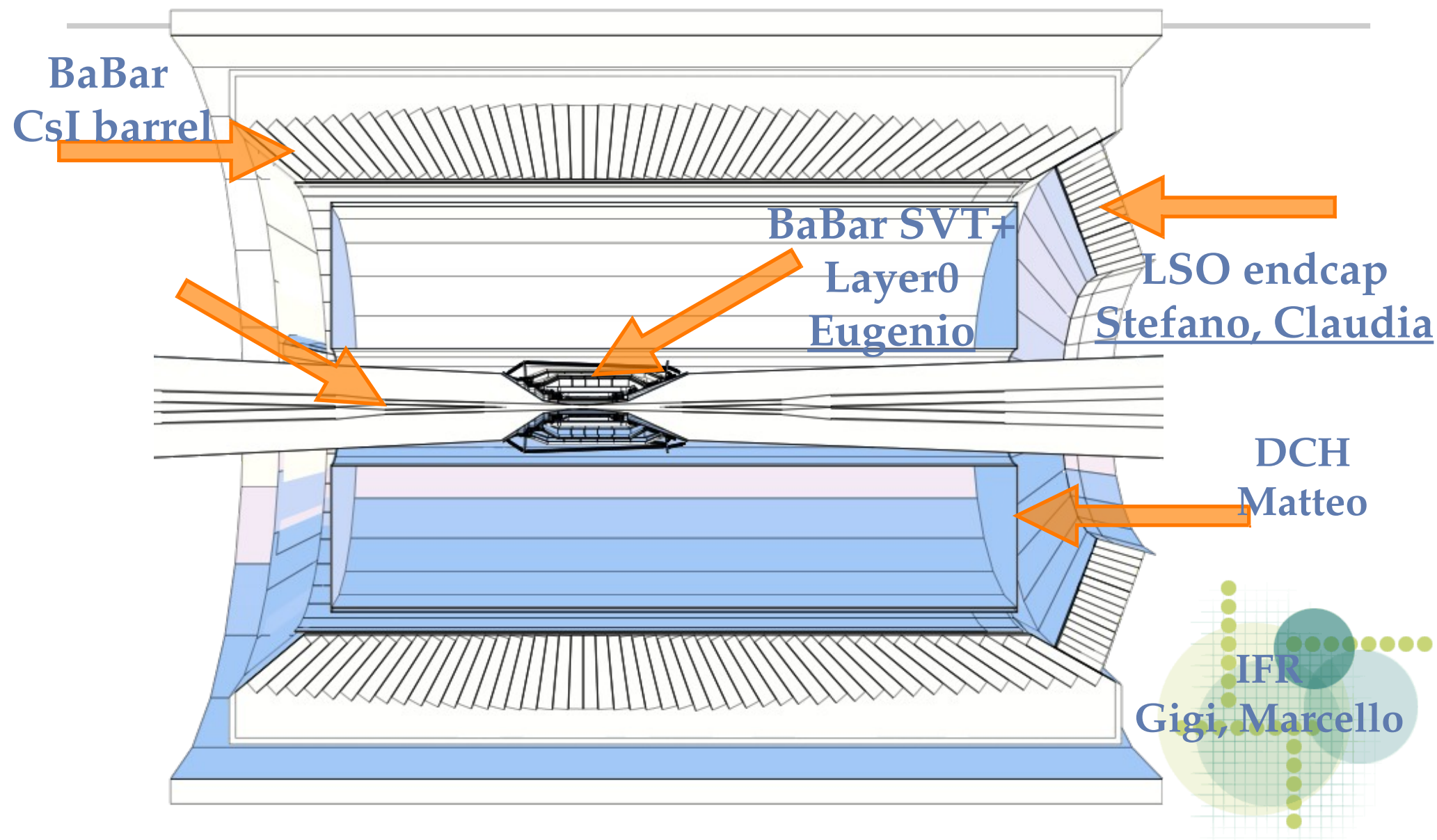
- Documentation is available

Geant 4 simulation
(coord. by E. Paoloni)

- describe the CDR symplified detector geometry with GDML files
  - OK
- validate against previous geometry-in-the-code version
  - partially achieved
- build a TDR realistic detector from GDML files
  - OK but for DIRC
  - BaBar detector geometry dumped in GDML files is available and can be reused whenever necessary

TDR SuperDet V. 0.0

BaBar
CsI barrel

BaBar SVT+
Layer0
Eugenio

LSO endcap
Stefano, Claudia

DCH
Matteo

IFR
Gigi, Marcello

Current status

- documentation has been produced and made available on the SuperB Wiki

- still some integration work to be done before having a functioning SuperDet V 0.0 detector

  - but a lot more efforts needed to modify the simulation code in order to achieve a more satisfactory integration of the GDML functionality (definitions of volumes with magnetic fields,sensitive detectors, segmentation...)

Goals for this meeting

- Decide how to validate the present simulation

- Design the sub-detectors envelopes to forbid clashes

- Sketch of the requirements/strategies for the digitization of the Geant4 hit and set a timescale for the development

- Review of the procedures to estimate the background impact on the detectors performance and life span

- Find a person in charge of the PID geometry
  - BaBar DIRC GDML description is there but no one has validated it
  - forward endcap detector GDML descriprion is missing

# Message for the detector groups

- a Geant4 SuperB detector model for the TDR is not far from being setup

- basically usable for background studies

- now starting to address the next steps: digitization and, later, reconstruction: these will require longer work and stronger efforts

- having a detailed simulation working will be important for the detector TDR studies

- it is crucial that each subdetector identifies the manpower for supporting the effort

Collaborative tools
(coord. by Alberto Gianoli)

the basic set of tools is available
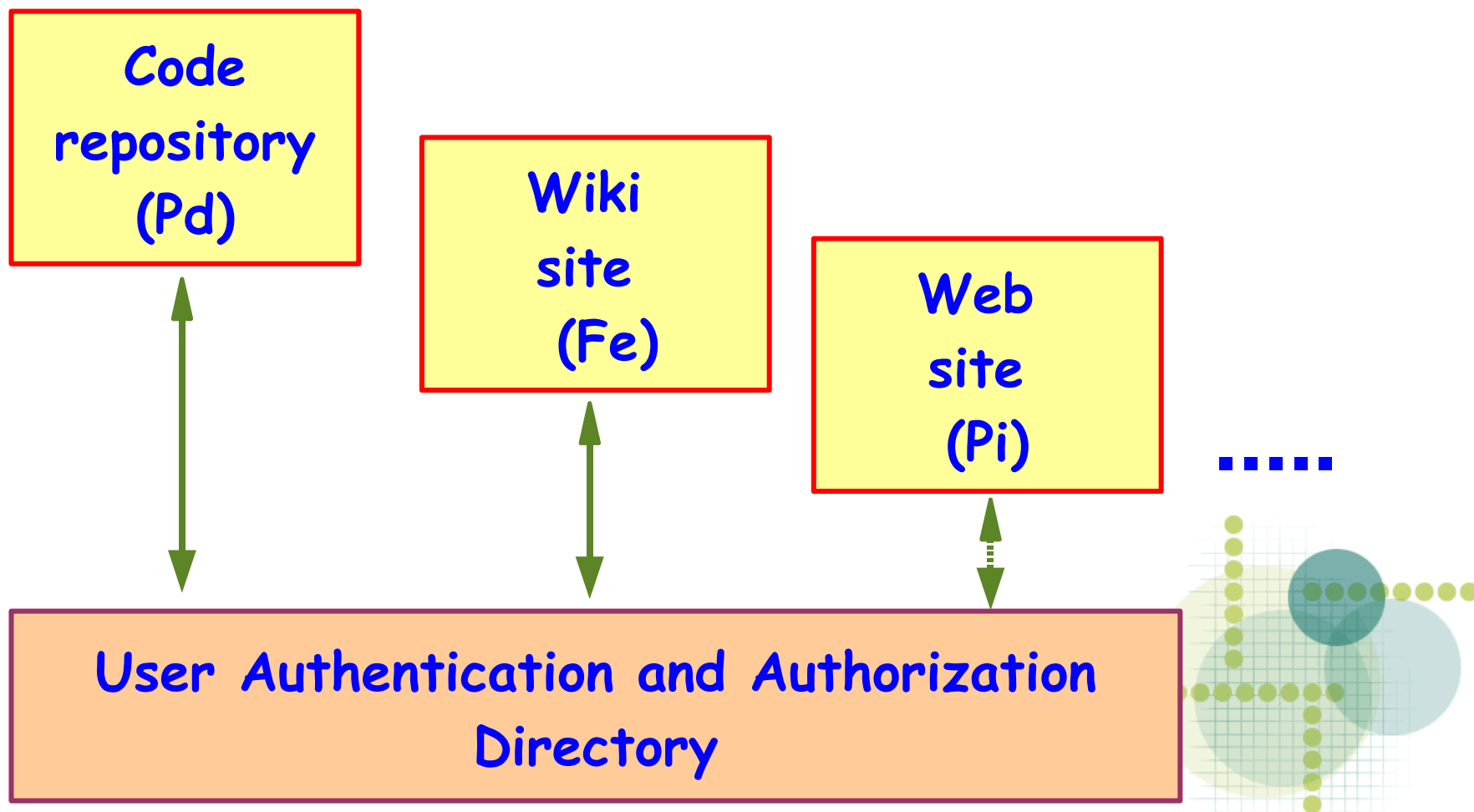
News from February

- LDAP DB is alive
  - a GUI for managing the insertion and updating of user information is being written
    - this will provide delegation of authority

- Wiki site in Ferrara up and running
  - please, try to use it
  - it' s a great tool do keep dynamic documentation up-to-date, organized and accessible to eveybody

- Invenio (archive for internal documents) is available
  - configuration and customization work on the way

Goal for the meeting

- define and implement a hyerarchical structure to organize the content of the Wiki site

- setup the Invenio archive

- define the procedures to manage the central user AA DB

- identify additional needed functionality
  - please let us know

Development support
(Coord. by R. Stroili)

- two Subversion (SVN) repository are currently setup
    - one in LBNL for fast simulation developments
    - one in Padova, now being used for the Geant4 simulation
        - interfaced to the LDAP directory
- policy rules for using SVN have been defined and some experience of real usage has now been collected

Package distribution
(Coord. by R. Stroili)

- repository for RPM packages (yum enabled) has been setup

  - packages available: Geant4, clhep, root, xerces-c e gdml

  - two : SL46 e SL51.

- could now be used for the fast simulation as well

Goals of the meeting

- ## SVN repositories

  - ### decide how to evolve the SVN repositories into a single one

  - ### agree on the general structure

  - ### review the usage rules if necessary

- ## Yum repository

  - ### define the platforms that must be supported

  - ### outline the necessary steps to incorporate the fast simulation

- ## start discussing how to handle the realeas process (clearly more manpower is needed)

Towards the future

- up to now, most attention has been focused on immediate urgent needs

  - with tools required fot the TDR first in the list

- this meeting is a good opportunity to start discussing and addressing longer term issues

- an important one is to understand what can be the goals of an R&D program for SuperB computing

- sacrificing the Sunday rest time, a special session has been organized with two invited talks

Summary

Significant progress since Febraury

- new fast simulation tool under active development

  - will hear about this more soon

- full simulation is being shaped

  - very important to man the effort soon

- computing tools to support collaboration work and software developments are availableo r will be made available soon: use them!

  - soon we will need to setup a core computing team