

# ITS Upgrade Studies - Working Group 3

## Pixel Detector Design and Implementation

ITS Upgrade Meeting, 29<sup>th</sup> November 2010

L. Musa

- ◉ Tasks
- ◉ Structure
- ◉ Discussion

Study and **Identify** suitable technologies and techniques for the detector implementation. **Define** the detector design and study its feasibility

- sensors, front-end chip, interconnectivity, electrical bus, ladder
- readout chip (WG3  $\leftrightarrow$  WG4)
- power distribution and regulation (WG3  $\leftrightarrow$  WG4)
- on-detector/off-detector communication (WG3  $\leftrightarrow$  WG4)
- off-detector electronics (WG3  $\leftrightarrow$  WG4)

### Coordinate the R&D activities

Some example of ongoing activities or new activities to undertake in the first phase

- techniques for thinning and manipulating sensors silicon wafers (sensors and front-end chip)
- low cost bump bonding, TSV
- characterization of MIMOSA for radiation tolerance
- proof of principle of Le Pix design
- light electrical bus

Prepare the “Pixel Detector Design and Implementation” chapter of the Technical Proposal

## Members (>16)

Bari: V. Altini, V. Lenti

Catania: tbd

CERN: G. Aglieri, C. Cavicchioli, F. Formenti, A. Kluge, M. Morel, R. De Oliveira, P. Riedler, W. Snoeys

Kharkov: tbd

Kosice: M. Krivda, J. Spalek

Rome: F. Meddi

Strasbourg: M. Winter

Torino: G. Mazza, A. Rivetti

**Conveners**: P. Riedler, A. Rivetti

We warmly invite other members of the collaboration to join the ITS Upgrade WG3 to

- work on one or more tasks
- simply participate to the meetings and contribute to the discussions