

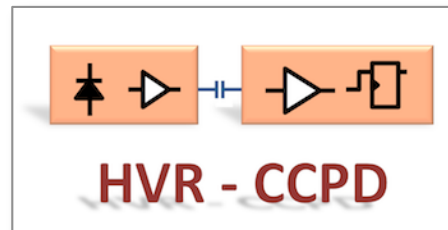
# Introduction & New

HV/HR-CMOS at Genova

Genova L204 & Vidyo

5 December 2014

*G. Darbo – INFN / Genova*





*Indico agenda:*

<https://agenda.infn.it/conferenceDisplay.py?confId=8981>

- *Demonstrators of HV/HR-CMOS technology in ATLAS*
  - Created a Task Force to define specification document (see document linked to indico)
  - Report from TF gives indication on chip size ( $\sim 1 \text{ cm}^2$ ) and common pinout and test procedures
- *Interest and fund ( $\sim 300 \text{ k€}$ ) focusing on 3 process: AMS (350 nm), Lfoundry, X-FAB. A fourth process is collecting additional interest and funds is AMS (180 nm)*
  - Share between processes and institutes:
    - Bonn (LFoundry, XFAB)
    - CERN (XFAB, LFoundry, AMS180)
    - Liverpool (AMS350)
    - Geneva (AMS350)
    - Karlsruhe (AMS350, AMS180)
    - Glasgow/Oxford (LFoundry, XFAB)
    - CPPM/CEA (GlobalFoundry, LFoundry)
    - INFN (STM) + other?
    - SLAC/USCS/LBNL (AMS350, LFoundry)
  - INFN is focusing on STM: for the moment too early to go with a sizable demonstrator.

| Technology   | Prototype designed | Prototype meas'd          | Dem. Design        | Demonstrator Costs                                     | Reticule Size (Full/MLM)      | Dem. Cost Sharing                            | subm. goal                 |
|--------------|--------------------|---------------------------|--------------------|--|-------------------------------|--|----------------------------|
| AMS 350      | ✓ KA               | ✓ KA, CPPM, GVA, CERN     | KA, DESY SLAC/UCSC | 64k€ (6 Wafers) + 2x15 k€ for 3x6 wafers w/different R | Engineering Run Full          | KA, GVA, Liverpool, strips (DESY) SLAC/UCSC  | mar/2015                   |
| AMS 180      | ✓ KA               | ✓ KA, CPPM, GVA, BN, CERN | KA, CPPM ?         | ???  | engineering run Full Reticule | KA, HD, GVA + more ? (paid w/ Mu3e project)  | MPW Feb eng. run fall 2015 |
| GF           | ✓ CPPM             | ✓ CPPM, GVA               | CPPM + ??          | 137 k€ (mask + for 6 wafers )                          | Full reticule                 | CPPM (50%) + ???                             | 3/2015 + 6/2015            |
| ESPROS       | ✓ BN, Prague       | ✓ BN                      |                    | 110 k€ + 5k€/wafer                                     | MLM4                          |  |                            |
| LFoundry     | ✓ BN, CPPM, KA     | wafer back Dec 14         | BN SLAC/LBL CPPM   | 80 k€ (≤ 6 Wafers)                                     | MLM4 -> ??                    | BN, CERN, SLAC/UCSC/LBL, CPPM Oxford/Glasgow | 3/2015                     |
| Tower Jazz   | ✓ BN, IPHC         | started BN                | UK? CERN ?         | >200 k€ (eng.run) ~70-80 k€ (MPW)                      | Engineering Run               |  |                            |
| XFAB         | ✓ BN               | ✓ BN, CERN                | BN                 | 80 k€ (4-6 wafers)                                     | MLM4                          | BN, CERN Oxford, Glasgow                     | 5/2015                     |
| ST-M         |                    |                           | INFN               | 175 kEur + 9 k€/wafer                                  |                               | INFN   |                            |
| Toshiba      | ✓ Bonn, KA         | chips just received back  |                    | 88 k€ (4 wafers)                                       |                               |  |                            |
| IBM 130 (T3) | ✓ LBL              | ✓ LBL                     | LBL?               | like FE-I4   |                               | LBL??  |                            |

 Funded and supported  
 Possibly funded

Ref.N. Wermes

- *Received some (10) test structure: linear/circular transistors to irradiate and characterize:*
  - We would like to irradiate with Gamma (we should investigate with the CERN facility). Mauro Citterio is also looking for irradiation in Pavia.
  - Milano has borrowed a parameter analyser from Massimo Caccia (Como).
  
- *Milano (Hitesh and Valentino): have submitted (are going to submit) a small chip*
  - Chip size  $\sim 1 \text{ mm}^2$ , 22 pads, 9 (?) pixels most of them active
  - Design simple, but made difficult of missing verification tools: parasitic back-annotation, LVS/DRC (not working in Milano and need to run in Agrate – still 20k violations of rules to fix)
  - More information from:  
<https://indico.cern.ch/event/354569/contribution/0/material/slides/0.pdf>
  
- *Design tools in Genova -> see Ettore's talk*

- AIDA-2020 proposal
  - Submitted on 2 Sept. 2014
  - Decision on approval delayed: **expected in Jan 2015**



European Commission - Research - Participants  
Proposal Submission Forms

Horizon 2020

Call: H2020-INFRAIA-2014-2015

Topic: INFRAIA-1-2014-2015

of action: RIA

number: 654168

ronym: AIDA-2020

le of contents

|  | Action |
|--|--------|
|  |        |
|  |        |
|  |        |
|  |        |
|  |        |

proposal using the templates available in the submission system. Some  
ed on the previous steps in the submission wizard.

Page 1 of 125

Last saved 02/09/2014 at 17:46

02/09/2014 12:04:24 CET. Issued by the Participant Portal Submission Service.

