WP11.3
110nm update from INFN/TO

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Networking and ASICs for other WPs

- **Design and production of several UMC110AE "service" ASICS**
- **Multiple MPWs and engineering runs with production ongoing, silicon expected in May and June 2023**

  - **CASTOR**: Analogue readout chip for cryogenic large-area silicon photomultipliers (SiPMs). A total of 1920 chips (each chip reads a 24cm^2 cryogenic SiPM Tile) will be mounted on the VETO detector of the Darkside-20K dark matter experiment at LNGS. The construction is ongoing and the start of operation of Darkside-20K is due to beginning 2026.
  - **FAST3**a/b/c/d/e/f: Analogue Low-Gain Avalanche Diode (LGAD) sensor readout chip prototypes for scientific R&D purposes; analogue and fast trigger outputs.
  - **Microbs**_F0/2/3: Multi-channel particle counter chip for microdosimetry and beam monitoring using LGAD sensors.

Networking and ASICs for other WPs

- **Design and production of several UMC110AE “service” ASICS**
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  - **ALCOR_EIC**: Mixed-signal 32-pixel SiPM readout chip for a dual-radiator Ring-Imaging Cherenkov (dRICH) detector at the future Electron-Ion Collider (EIC).
  - **ALCOR_3D**: Mixed-signal 32-pixel SiPM readout chip for 3D SiPM modules, implements matrix of bump pad openings on top of the 32-pixel matrix;
  - **ALCOR_UFSD**: Mixed-signal 32-pixel Low-Gain Avalanche Diode (LGAD) sensor readout chip.
  - **ALCOR**: prototype version performing test-beams with SiPMs (framework of EIC-NET dRICH) and LN 77K tests with SiPMs mounted on an single ALCOR test board (Astrocent) and on an octo-ALCOR board with 256 channels (INFN-BO).