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# OCTOPUS: a R&D program towards a vertex detector for the future e+e- collider

The OCTOPUS project is a part of the CMOS working group of the solid state Detector Research and Development (DRD3). It involves 13 European institutes motivated by the R&D of fine-pitch pixel sensors, implemented in the TPSCo65 process to target key requirements of a vertex detector at a future lepton collider:

1. sensors thickness down to 50 micron;
2. fine pitch offering 3 um spatial resolution;
3. controlled power consumption below ~50mW/cm^2;
4. bandwidth of the order of 100 MHz/cm^2;
5. time resolution down to 5 ns as required by some of the future lepton collider proposals.

The project foresees an R&D program to develop a CMOS pixel sensor prototype (with the development of a fully adapted read-out architecture based on asynchronous read-out) in 3 steps, including simulations to optimize the sensing node, DAQ developments based on the CARIBOU system and tests of the prototypes to validate the performances.
We will present the organization and the status of the project, including the ongoing sensor development, simulations and test plans.

## Session

Sensors

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