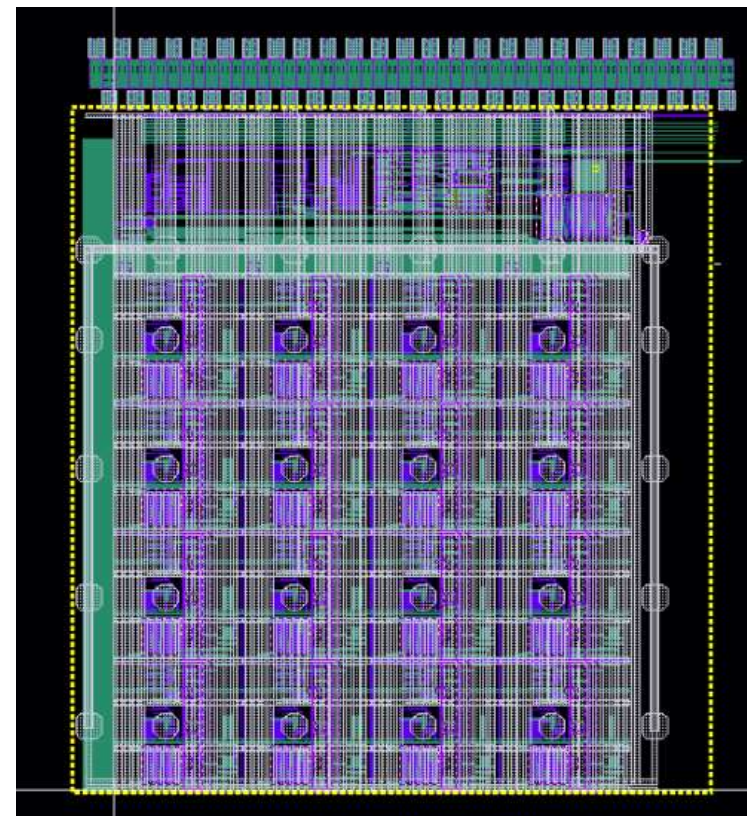


EICROC status and plans
eRD109 monthly meeting
6 feb 2025

F. Bouyjou, S. Conforti, E. Delagnes, JJ Dormard, F. Dulucq, P. Dumas-Zielhman, M. El Berni, S. Extier, M. Firlej, T. Fiutowski,, F. Guilloux, M. Idzik, B.-Y. Ki, A. Laffite, C. de La Taille, O. LeDortz, J. Moron, D. Marchand, C. Munoz, M. Nguyen, N. Seguin-Moreau, L. Serin, A. Shama, K. Swientek, D. Thienpont, A. Verplanck

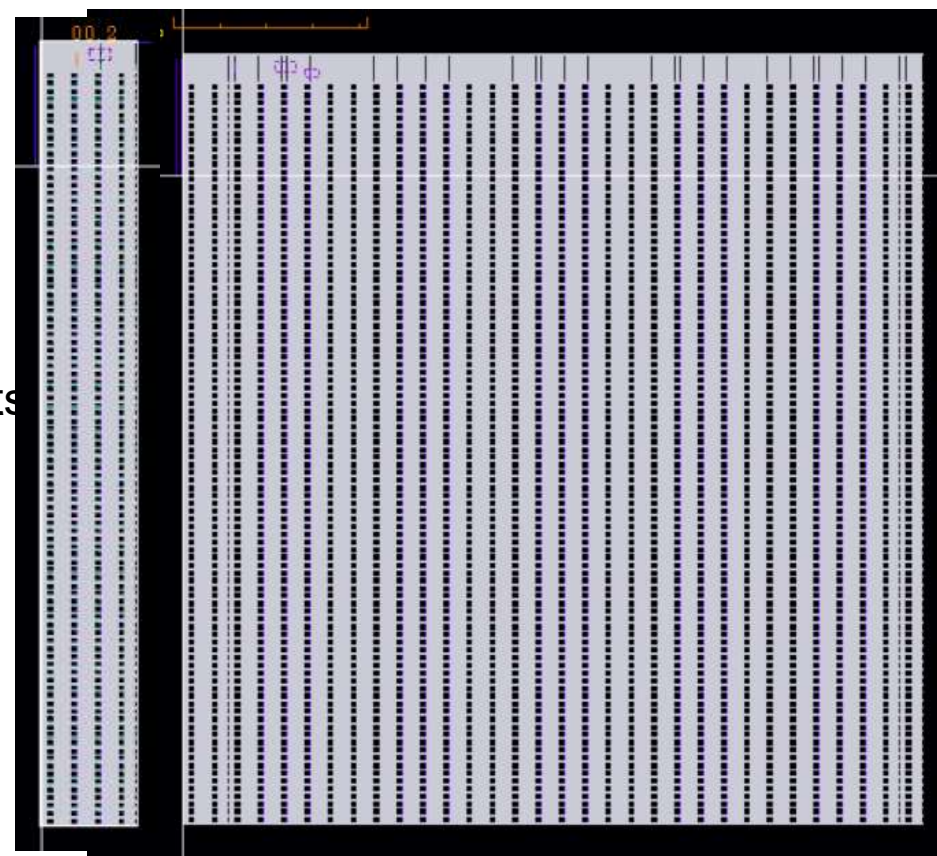
- EICROC0 identical to previous run for reference
- EICROC0A : ready **DRC/LVS OK**
 - Same pinout as EICROC0 => same testboard
 - Unused pads on the right removed
 - Bypassable pixels (by slow control). Clock can be switched off
 - Internal Cdet = 0.5/1pF Cinj = 0.2pF
 - Updated I2C and TDC from CMS
- EICROC0B : pixel still in layout
 - Schematic complete



EICROC1s

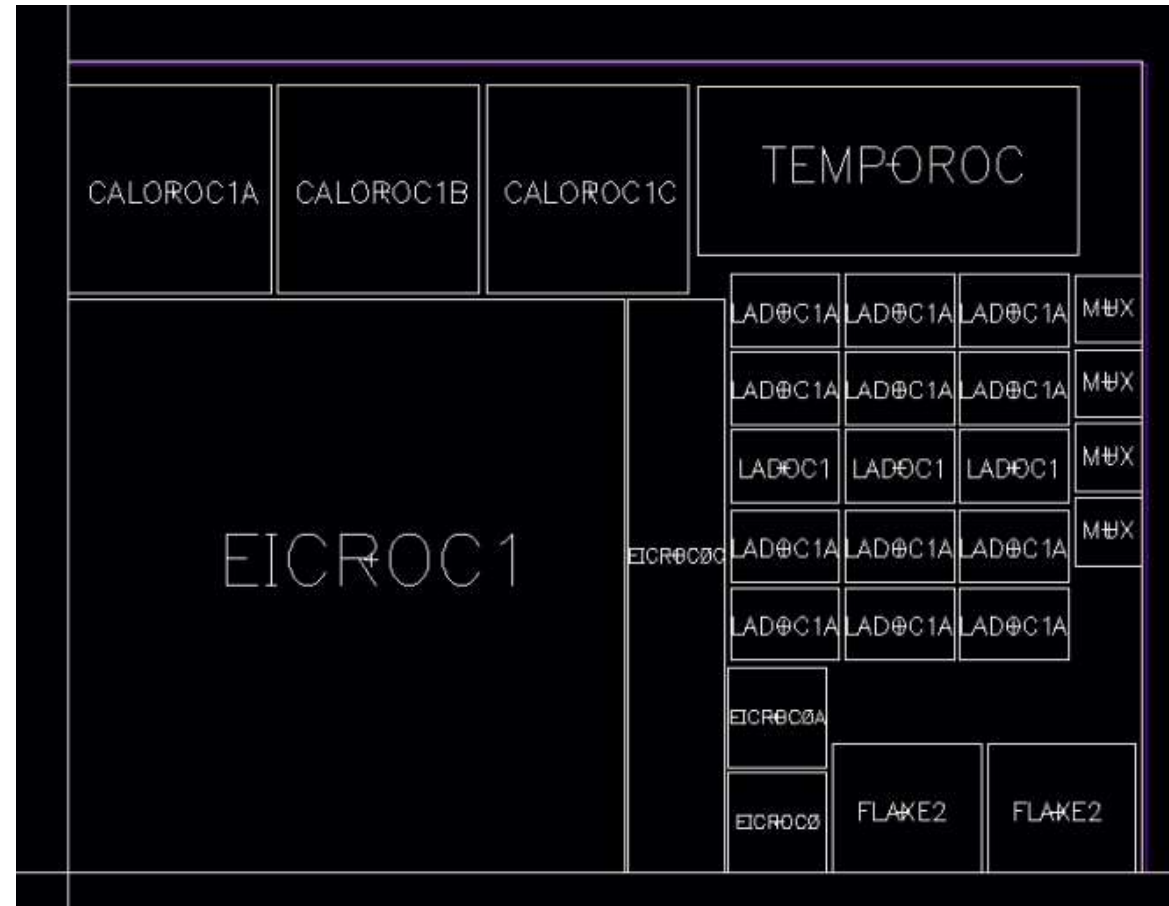
- EICROC1A : 4x32 : ready **DRC/LVS OK**
 - Same pinout as EICROC0 => same testboard
 - Column ADC/TDCs can be swithed off
 - Modifications were needed to read full columns
 - Same column as 32x32, allows detailed tests with small sensor

- EICROC1B : 32x32 : balcony still in layout
 - Readout by groups of 4 columns => 8x40 MHz outputs
 - Same controls as EICROC0 : start_acq/start_readout
 - New : also fast commands inputs (as in HGCROC)
 - Cmd_pulse, start_acq, start_readout
 - New : serialized 320 MHz output

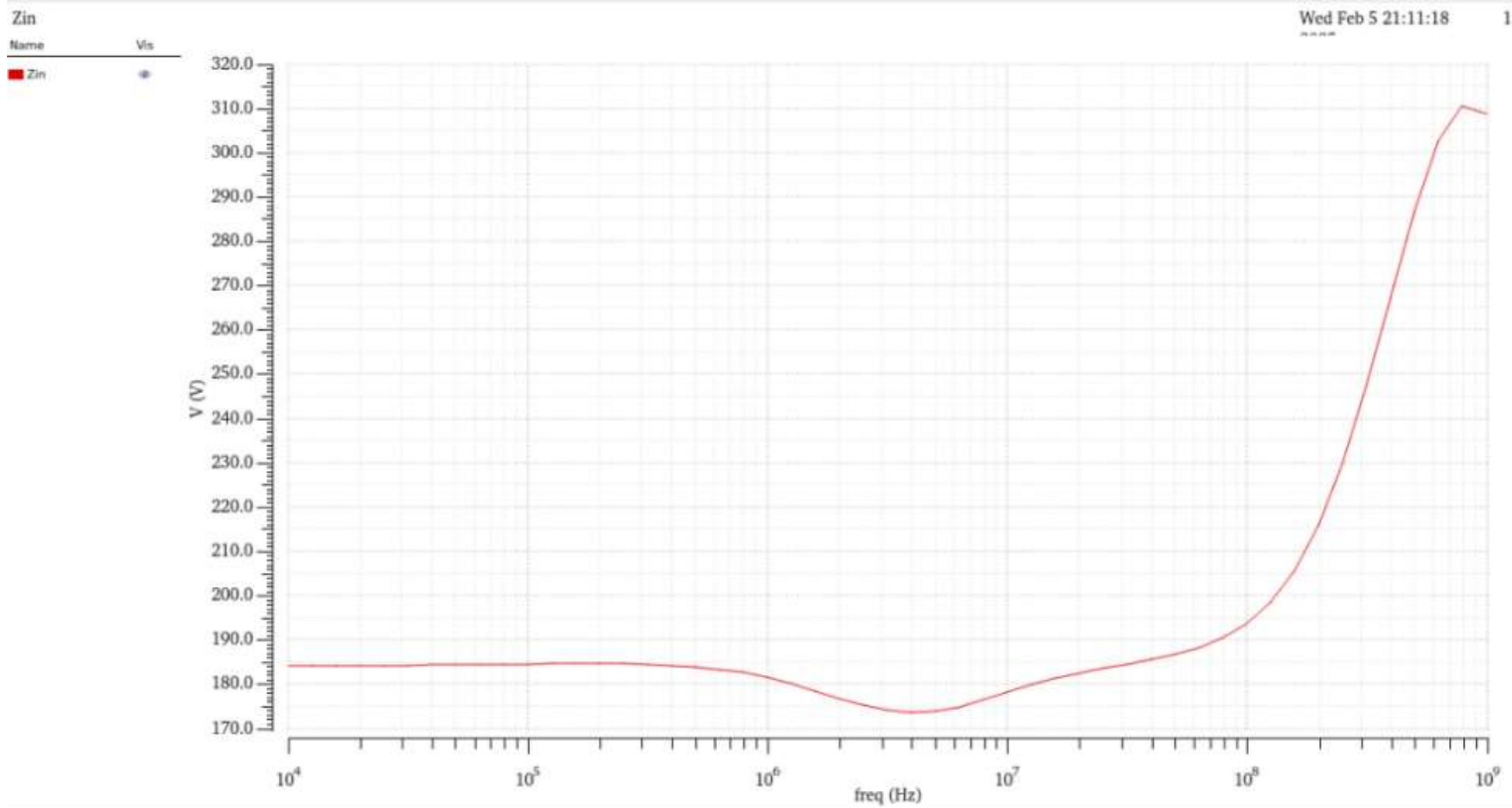


Summary

- Reticle almost full
- EICROC0/A ready B in progress
- EICROC1A/B ready/in progress
- EICROCs ~55% of reticle area
- CALOROC1A/B close to completion (see talk by Frédéric Dulucq)
- Other (non EIC) chips ready
- Submission foreseen beg march



EICROC input impedance



| Chip | date | Techno | size | Analog | Digital | goal |
|-------------|----------|--------|-------|--------------|---------|--------------------------|
| EICROC0 | Jun 2023 | 130n | 4x4 | Conservative | Simple | Study sensor |
| EICROC0A/B | beg 2025 | 130n | 4x4 | Low power | same | Study analog |
| EICROC1 | beg 2025 | 130n | 32x32 | Conservative | Same | Study power distribution |
| EICROC0_65n | end 2025 | 65n | 4x4 | final | Simple | Study analog in 65n |
| EICROC2 | End 2026 | ? | 32x32 | Low power | Final | First final prototype |

| Chip | date | Techno | size | Analog | Digital | goal |
|-----------|----------|--------|-------|--------------|---------|-----------------------|
| CALOROC1A | beg 2025 | 130n | 36ch | Conservative | Final | Study sensor |
| CALOROC1B | beg 2025 | 130n | 36ch | Low noise | final | Study analog |
| CALOROC2 | End 2026 | 130n | 36/72 | final | final | First final prototype |