Meeting ILD Electronics and Cooling

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Purpose of meeting

- Coordination of integration of Ecal services (electronics and cooling) is pending since a while
- Progress on both sides
- Hardware development
  - Cooling loop and heat exchangers at LPSC
  - SL-Board at LAL

-> Morning 1: Understand how to bring these devices together
Which constraints and how to remedy them?

- Design
- Considerations on power and cabling needs for Ecal

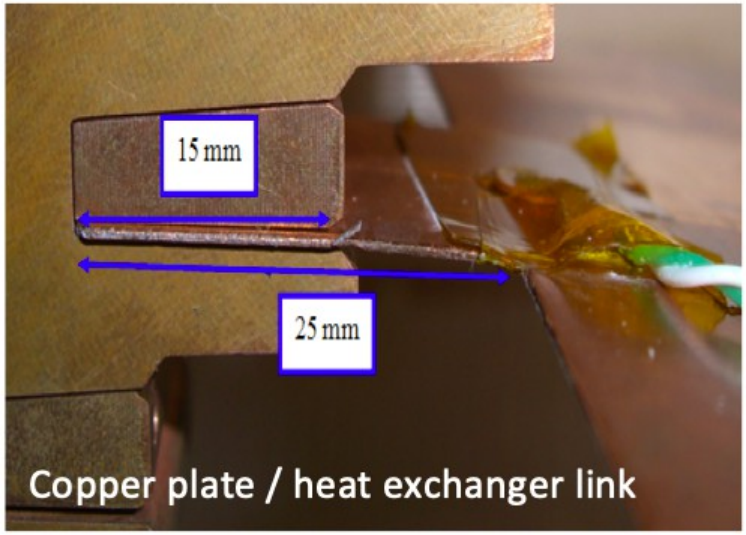
=> Morning 2: Occupation of space between Ecal and Hcal by Electronics Hubs and cooling circuitry

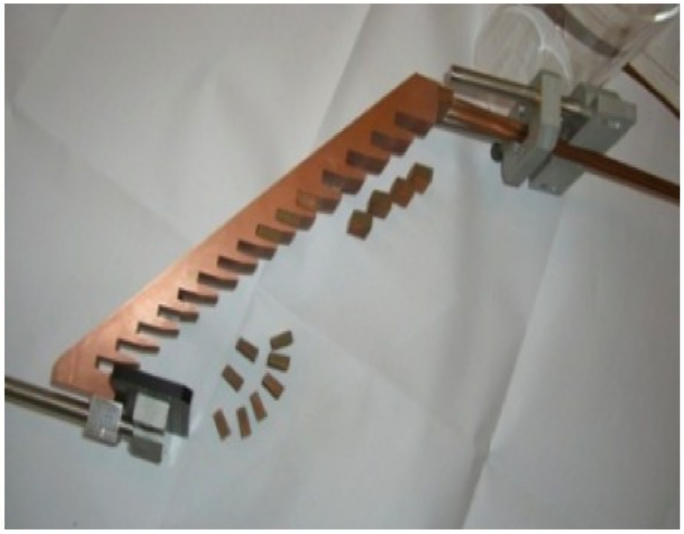
- Technical drawing for cooling system of barrel and endcaps

=> Afternoon 2: Does the cooling system comply with current constraints of ILD in general and the Ecal in particular

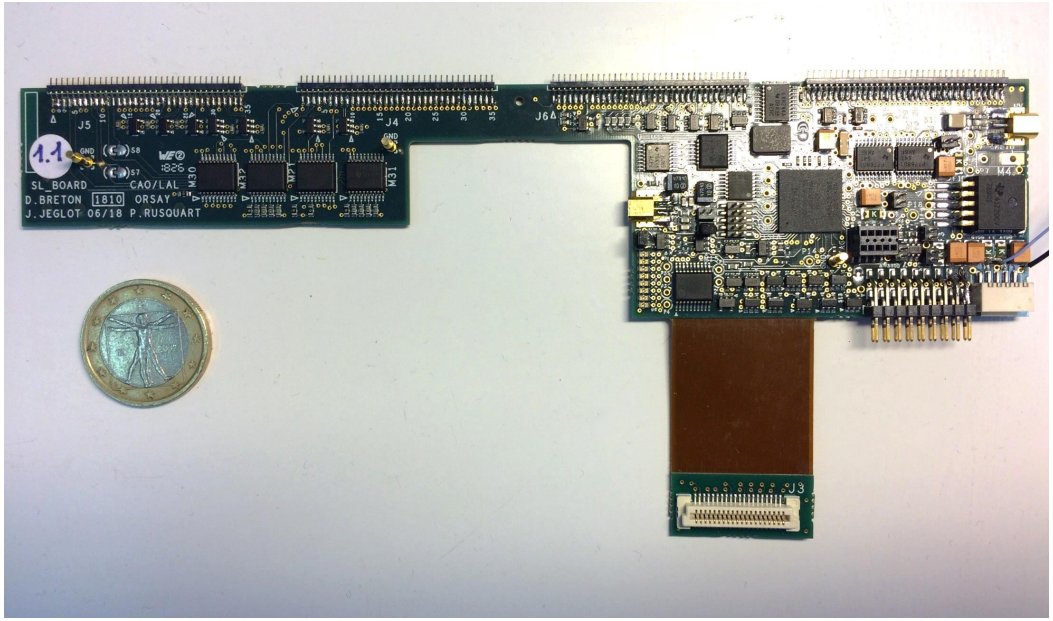
Integration Heat Exchangers and SL-Board

Heat exchanger:





SL-Board:



Heat Exchangers and SL-Board - Comments

- Design of heat exchanger exists since several years
  - Successfully tested with thermal demonstrator already in 2009 and also later
  - within EUDET Module

- SL-Board is recent development within AIDA2020 and first step to compactly Digital readout at the end of an Ecal slab
  - Will be thoroughly tested in 2019 including beam test

- Observations:
  - Heat exchanger design assumes “empty space” along ASU front
  - Though already highly compactified current version of SL-Board extends over entire 18cm
    - Maybe the consequence when dreams face reality
  - What needs to be done to synchronise development?
  - Three options (poor man's view)
    - Redesign of heat exchanger?
    - Further compactification of SL-Board in next development cycle?
    - Integration of services e.g. Buffers and power regulators into last ASU or elsewhere?