



**UF EMU Meeting, 18 Feb 00**

# ***EMU Integration***

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# ALCT Integration

## Proposed two anode cable routing schemes-

- Planar
- Stacked layers, cable channel

## Together with two ALCT connector layouts-

- Echelon
  - Motivated by connector access & strain relief issues
- Inline
  - Simple, analog voltages easily isolated

**ALCT and AFEB designers would prefer Inline layout. This will be the baseline.**

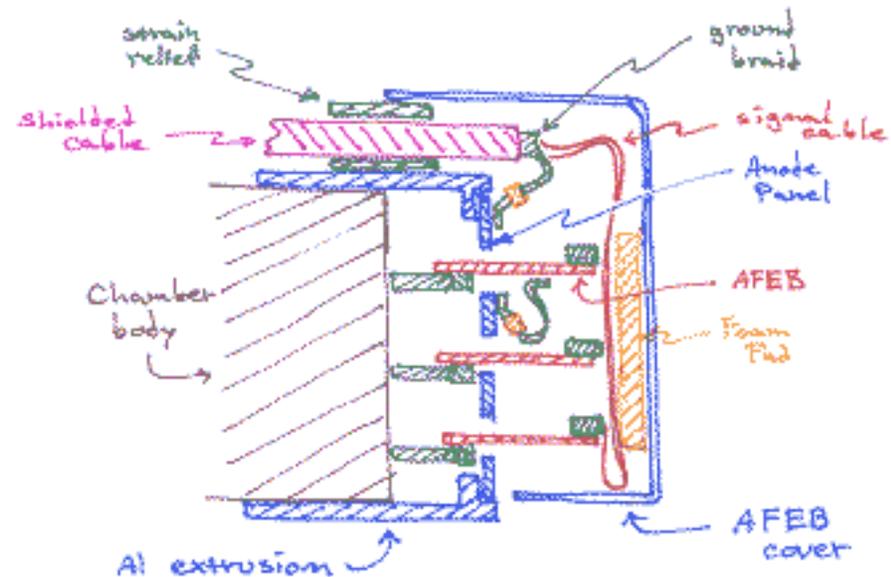
**==> But designers must identify a suitable connector and present the design for approval at integration meeting.**



# AFEB Integration

## AFEB mounting design:

- Addresses the APB connector latch issue
- Incorporates cable strain relief
- Provides for simple cable grounding to anode panel
- Provides for grounding of AFEBs to anode panel
- Ground connections are easily maintainable
- Signal cable inside cover is flexible, flat
- Volume inside cover provides buffer zone for excess cable





# Cooling Tests

**CFEB cooling system is operational. Water is circulating through cooling plate, shimming on bottom plate is being restored.**

**Test of cooling system will involve:**

- **Monitoring chip temperatures as function of coolant temp & flow rate**
- **Heat flow monitoring**
- **Calculation of cooling system efficiency**





# Electrical Integration

## Low Voltage:

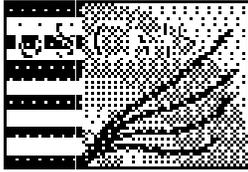
- Vicor DC-DC converters are operational, powering CFEBs in long-term test.
- LV on-chamber cabling is being designed by P. Robl, who would like to standardize a LV pin convention

## Cable routing:

- V. Razmyslovich is compiling list of anode cable lengths for various cable layout schemes.
- PSL is prototyping an anode cable routing scheme utilizing Panduit channel

## Ground connections:

- J. Hoffman has identified suitable ground lugs for chamber-side and CFEB-side cathode cable ground lugs.
- B. Bylsma will engineer ground lugs onto next version of CFEB.



# Mechanical Structure

**Baseline design calls for two rails spanning CSC, which support ALCT and LV distribution board.**

**Prototyping of this system is currently under way at PSL using P2' as model.**

**ALCT stiffener issue needs to be resolved with UCLA.**

**Cooling system to be extended to ALCT & LV distribution board**

- **Chip heights and positions are more uniform than in case of CFEBS**
- **Area to cool is smaller, so system does not need to be as heavy**

**Lightening of cooling system will be investigated**



## Immediate tasks...

- **Test of cooling system**
- **CFEB noise tests with covers installed**
- **Resolve ALCT/CFEB LV connector issues**
- **Modify anode panel**
  - **Need ground lug locations**
  - **Narrower slots**
- **Finish channel-based cable routing prototype**
- **Finalize HV notch positions**
- **Finalize all hole positions in frame**
- **Develop spreadsheet of anode cable lengths**

### Personnel at Lab 7:

- **V. Razmyslovich**
  - In charge of drawings, coordination with PSL, design conflict resolution.
- **S. Gould**
- **D. Nurczyk**
  - TD technicians, part-time.
- **N. Terentyev**
  - DAQ expert
- **N. Bondar**
  - AFEB issues
- **S. Lusin**