



CMS Electronics Week

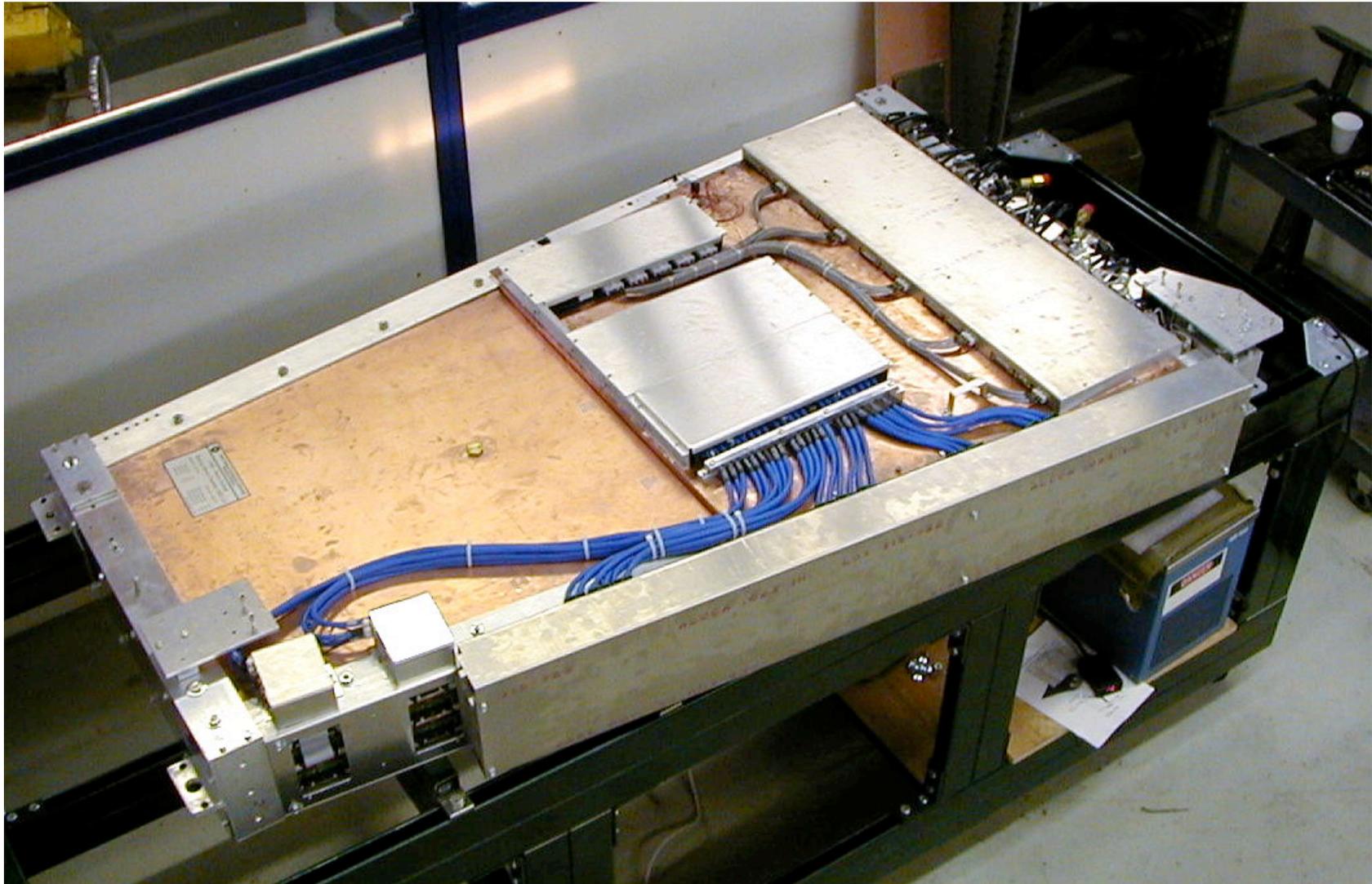
Grounding and Shielding Issues in the EMU

S. Lusin

University of Wisconsin

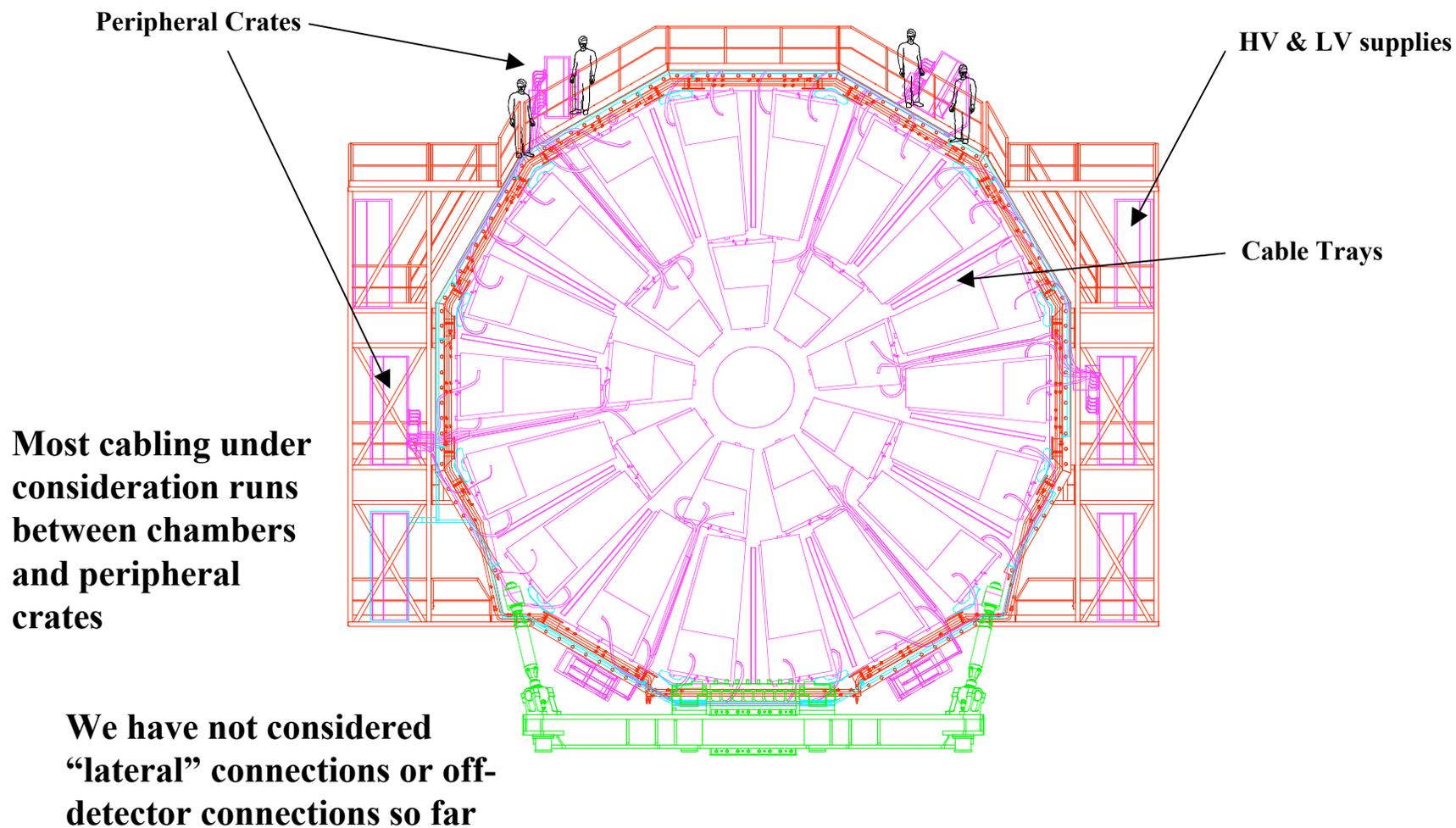


ME 1/2 CSC Prototype





Cable paths- YE2





Summary of EMU Grounding

EMU uses “mesh ground” rather than “single-point ground” strategy

Iron of endcap disks is “earth”

Each chamber is Faraday cage, earthed by short length of wide braided shield

All cables to chambers are shielded

- **Shield-to-Faraday cage connection is generally a jumper option**

Documentation:

- <http://www.phys.ufl.edu/~madorsky/gnd/>



Issues in EMU Grounding

Earthing of EMU disks

- To what?
- What about connections between disks?
- When are these connected? Disconnected? What operations are allowed in “floating” mode?

Grounding & isolation of alignment system?

- Alignment system spans disks
- Has some connections to sensors on barrel
- Has Ethernet connections between disks
- Should EMU alignment system have single power supply?
- Should that apply to barrel alignment system as well?

Controls & monitoring system?

- Has similar “disk-spanning” issues