



Report on collaboration with Fermilab

*Michael Lamm, Sandor Feher, FNAL
Benoit Curé, CERN*

Plans for the Mu2e conductor

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Common needs LCD & mu2e for conductor development :

Superconducting (SC) magnets with solenoid field up to 4-5 T.
AlNi procurement, extrusion and cold work (CW) of conductor.

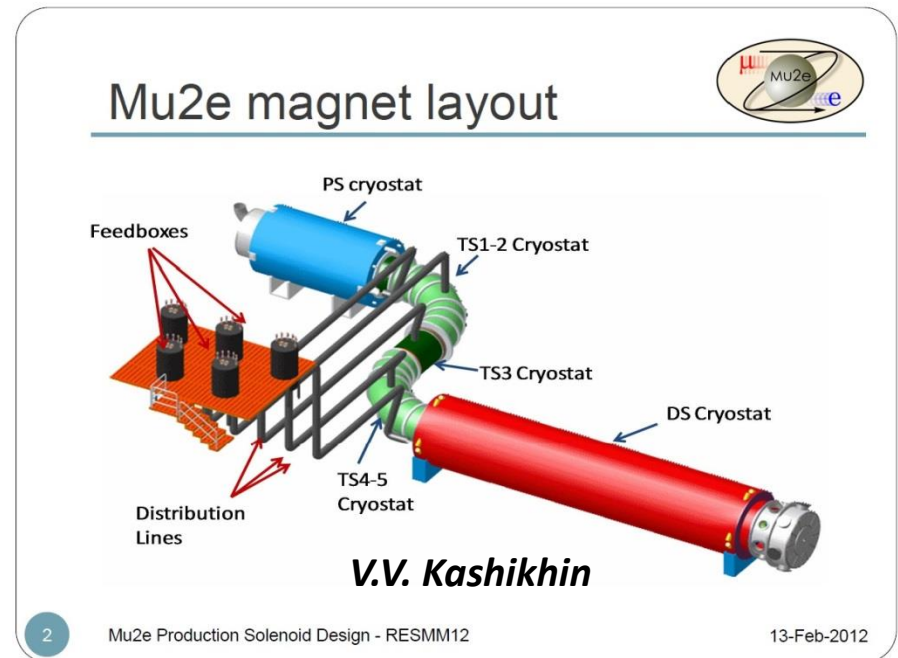
Mu2e pre-industrialization work (project phase 1)

Several conductor types:

- type-1 (AlNi) for the 5-T Production Solenoid (PS).
- type-2 & type-3 (Pure Al) for the Detector Solenoid (DS).
- Transport Solenoid conductor, not in the scope of common activities.

Call for bidders sent to industry by FNAL (worldwide) for DS and PS conductors.

Separate bids requested for DS and PS, with options.





Requests for DS:

Prototype length 200m + one model length for type-2 (DS1) and type-3 (DS2).
CW as an option for a DS length, mostly for dimensional tolerances.
Typical plan: 9 months for completion after order, earlier for proto.
Testing on short samples.

Requests for PS:

Mu2e schedule is less tight compared to DS.
Delay to get AlNi billettes : 6 months.
CW: 1km of dummy with pure Al, then 200m with SC cable and AlNi material.
One AlNi model length ~1000m.

Collaboration extent:

FNAL asked to officially request in writing CERN+CMS to use at Cortaillod:

- The tooling for SC cable (brush+preheating+intrduction) belonging to LCD,
- Pure aluminum belonging to CMS:
DS1 (21 Billet+Cap; 820kg), DS2 (36 B+C; 1410kg), PS(16 B+C; 630kg)
Total is 2860 kg **minimum**. About 1/3 of CMS material.

AlNi: proto + length (18 B+C; 705kg).