

SuperB EMC
1- Alveolar Prototype
2- Support Shell
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Wed. Sept. 9, 2009
EVO

Prototype Module we are late:

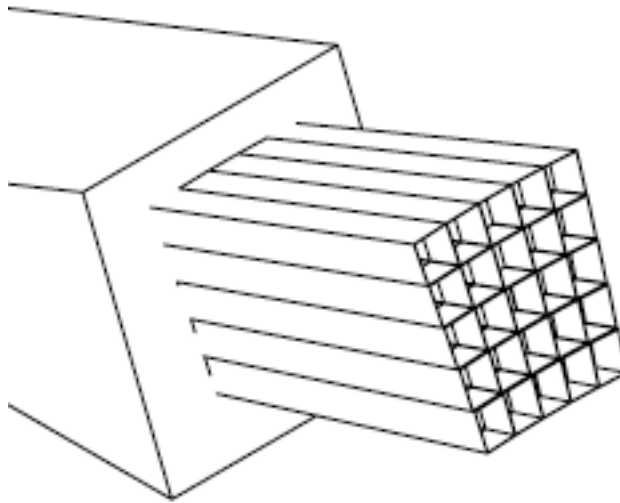
**August vacation
+
impossibility to travel:**

slow start with the 2 consulted companies

Prototype Module

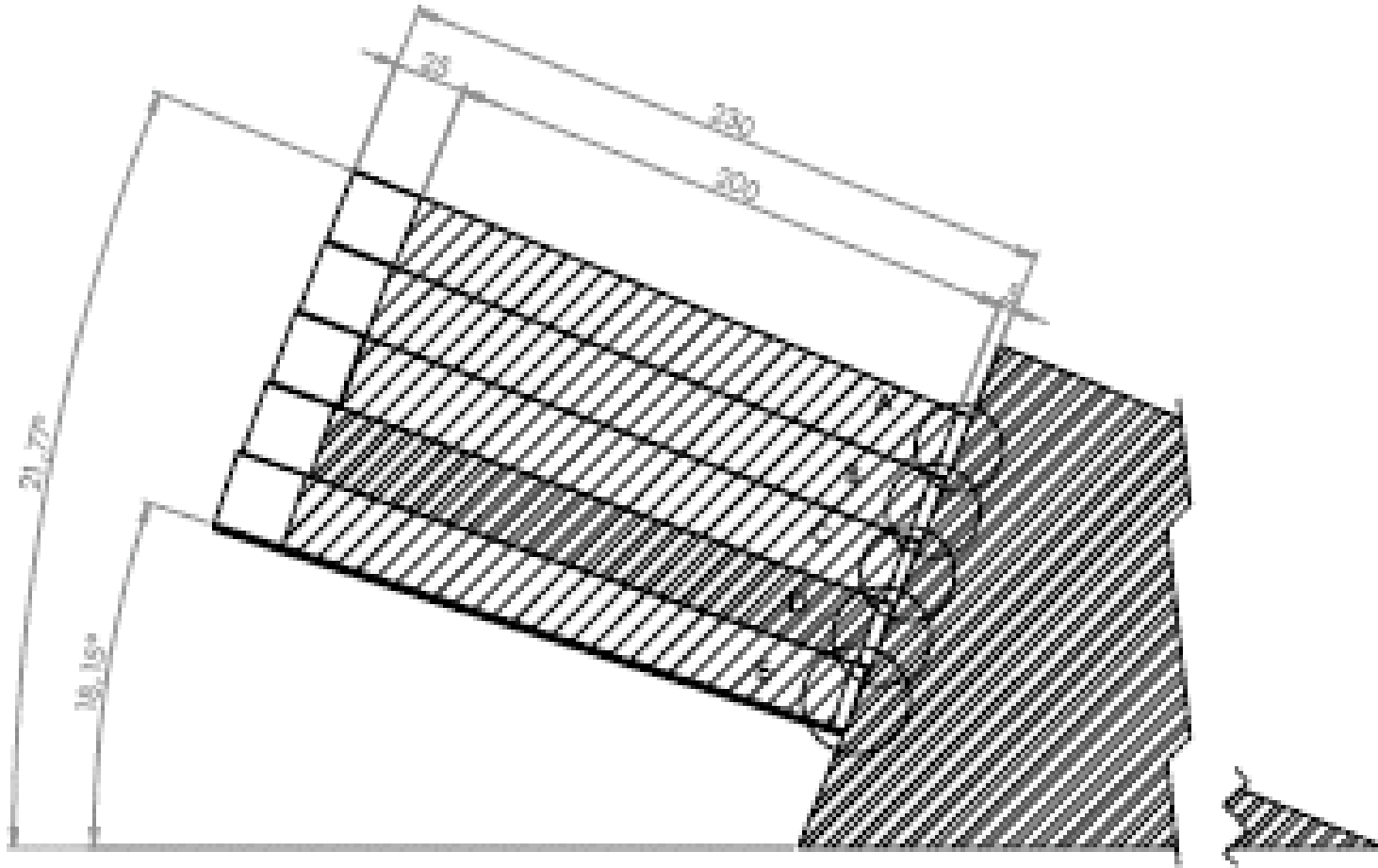
- Urgent need of fully dimensioned dwgs
- **Got drawings from Antonfranco today!**
- Good information material as a start
- I will check validity for production
(dimensions in particular)
- Information will be circulated

From Perugia today!

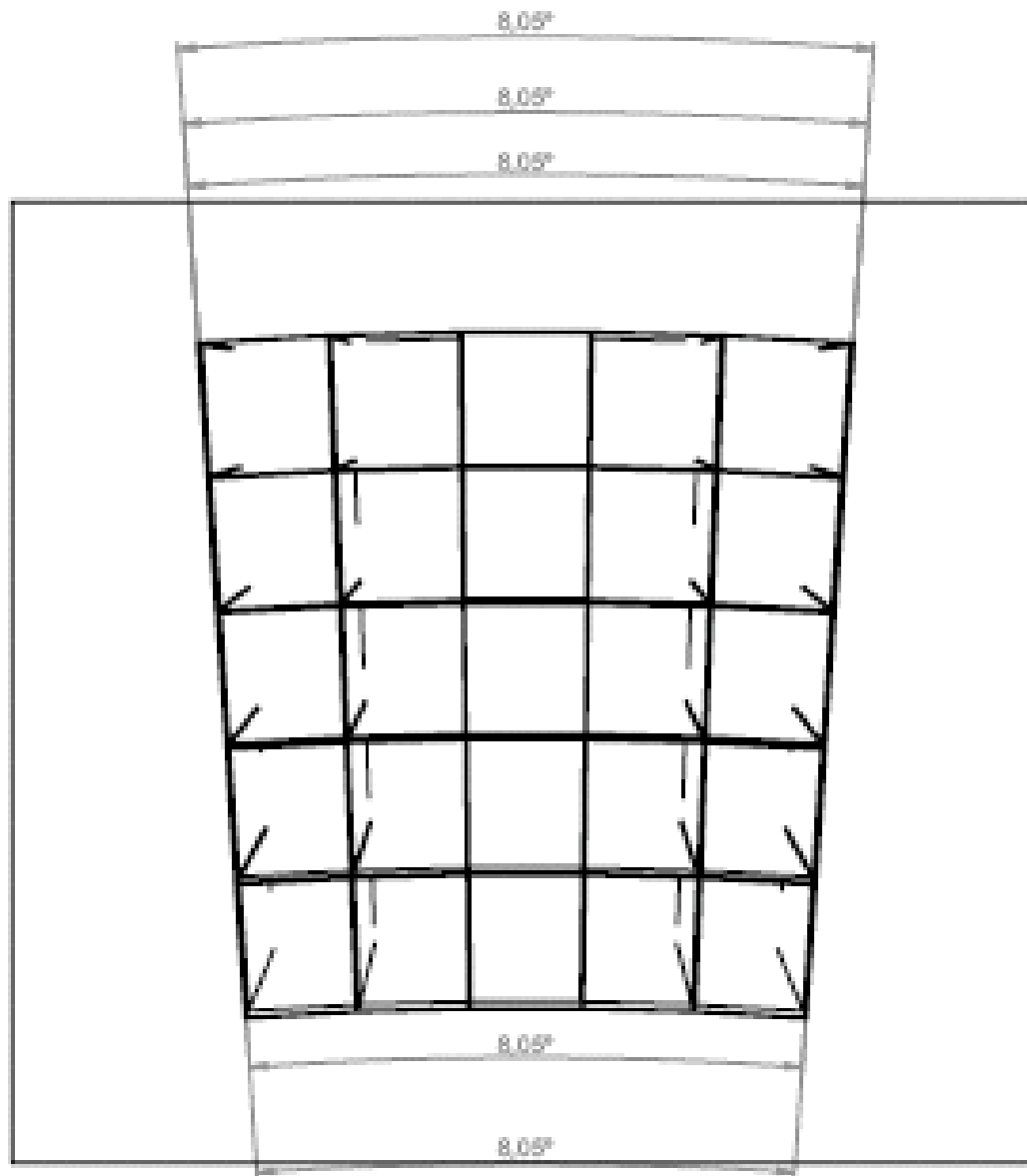


Excerpts from Antonfranco's drawings

From Perugia today!

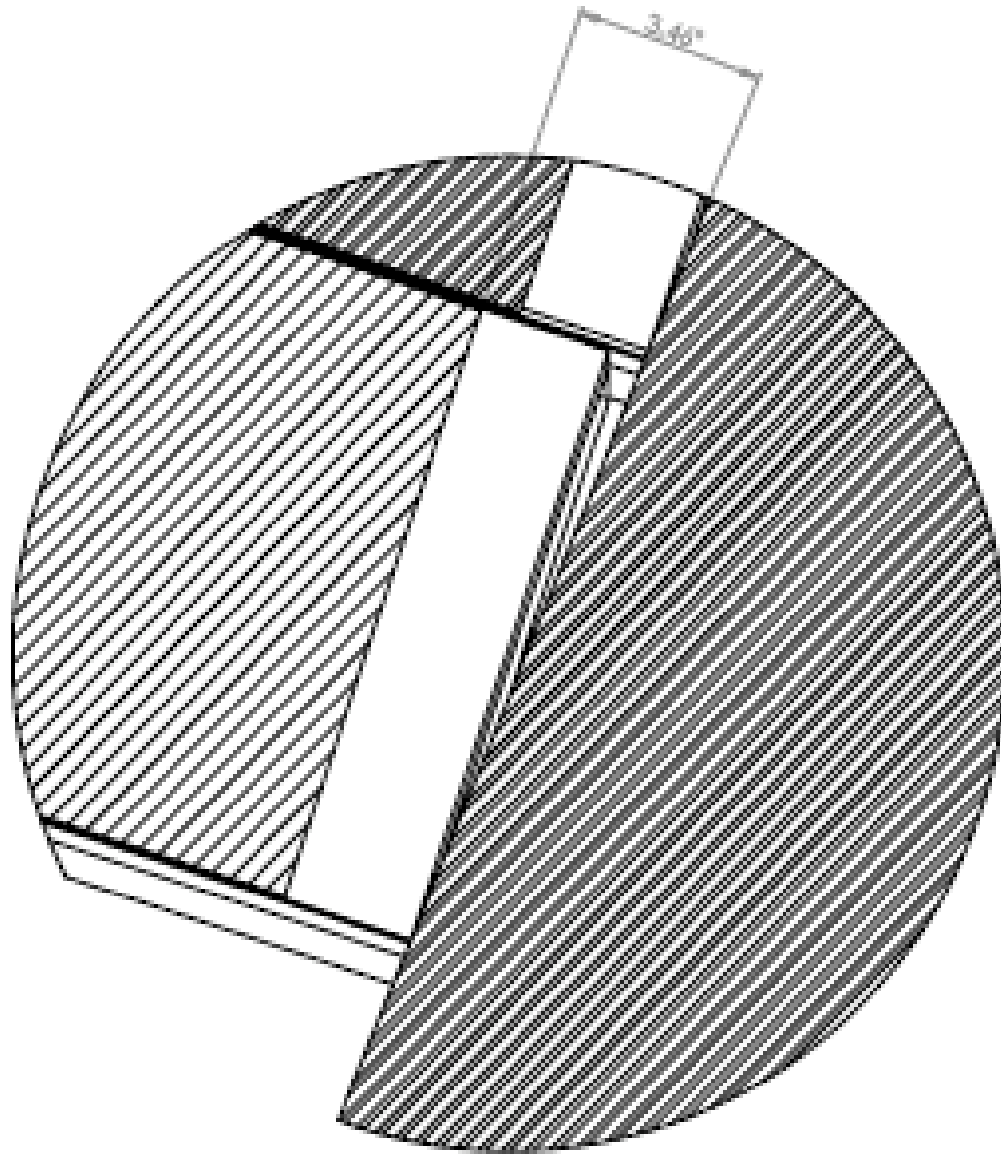


SEZIONE
Excerpts from Antonfranco's drawings



**From
Perugia
today!**

Excerpts from Antonfranco's drawings



From Perugia today!

Excerpts from Antonfranco's drawings

Contact with Companies

MS Composites (France)

- MSC produced the alveolar of CMS ECAL barrel. Contract was by IN2P3, follow-up by École Polytechnique. I had indirect contact as project engineer. Positive experience, especially at solving non-conformity problems.

Contact with Companies

MS Composites (France)

- Management finally assigned a production engineer M.Delarue
- Good understanding of our tech. specification. Asked good questions. Seems interested because there is a full detector to follow. Seems hard to persuade to come to CERN soon. Too bad I cannot go there: we could save time.

Contact with Companies

RIBA (Northern Italy)

- recommended by Corrado Gargiulo as competent company (AMS)
- phone contacts with manager.
Interested. Our tech.spec. has been passed to production engineers.

Contact with Companies

RIBA (Northern Italy)

- Visit confirmed **September 15** to CERN
- Commercial G.Bandini
- Technical S.Marani

Antonfranco's dwgs serendipitous!

I will send a report after this visit

Proto alveolar:

What to discuss upon companies' visits?

- Production of prototype for BT
- Building material composition
- Precision (defined by SuperB)
- **Time**
- Cost

Production method is company's responsibility, even if discussed with us

Full detector structure: to discuss upon companies' visits

- **Shell and complete alveolar**
- need to progress and/or agree on main design features for a clear baseline
- discuss production solutions to orient the design

...discuss with companies

Connection between main parts:

- metal to sandwich to massive to metal
- Integration of calibration pipework
- Sequence of shell mfg
- Mounting-fixation of alveolar modules
- Acceptance criteria
- Loading tests, dimensional inspection

EM endcap basic parameters

(for next EVO with pictures)

Boundaries

- to agree with other sub-detectors
 - Babar barrel end cone + 5mm no-go zone
 - Front cone incl. 5mm no-go zone
 - Inner cone (some more freedom?)
 - Rear limit (incl. 5mm no-go zone)

Space behind crystals

- APD
- Crystal mechanical fixture
- Front-end readout
- Services, (cooling, thermal regulation, etc.)
- Thick metallic back plate (concept of rear supporting)
- Rear limit flat, conical or combination?

Functions integration

Crystals	cooling for electronics
APD's	xals thermal regulation
VF readout	temp. sensing
calibration	water (dew, leak) detect.
monitoring	radiation monitoring
survey references	etc.

Architecture

- **Front bottom** sandwich housing calibration circuitry and alveolar positioning + mech. fixation (20 to 30mm?)
- **Outer cone** massive CFRP (5 to 10mm?)
- **Inner cone** aluminium (7000 series) or st. steel (316LN) thickness 20 to 30mm

Architecture

- **Rear support**
 - frame or plate (open or closed)
aluminium or st. steel
 - connects inner and outer cone edges
 - integrates supporting points
 - matches Babar original fixation points

Architecture

Solomon's choice:

- Solid doughnut or two halves

Basic parameters (coordinates)

