HERD – SCD meeting

Mechanics status

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CAD modifications



CAD mods

- Release of a new CAD version. Files*:
 - SCD model
 - SCD_in_HERD new SCD version inside HERD 07/22 version
 - Fan-out box top
 - Fan-out box side
- Description of the changes
- Very preliminary thermal scheme

*Path: Mechanics - File - HERD documents (infn.it)

Note: purple text refers to what was discussed in the meeting

CAD modifications

Top side-out electronics

- Box and boards design
- Fan-out front-end mismatch
- Gap between PCBs (connector space)
- Cabling

Side fan-out electronics

Changes

- Reduced feet dimensions
- Enlarged box
- Electronics sketch







Side fan-out electronics Box and boards

A.D. 1308



Side fan-out electronics Box and boards



Side fan-out electronics Box and boards



Side fan-out electronics Box and boards Box to SCD frame connection 0 **Electronics to box connections** 0 ه د ۰ ٥ 9 9 . \mathbf{O} \bigcirc O

Side fan-out electronics Fan-out – front-end mismatch



Side fan-out electronics Fan-out – front-end mismatch



Side fan-out electronics Gap between same plane* boards



*plane:mechanical plane 15

Side fan-out electronics Gap between different planes boards



Side fan-out electronics Gap between boards

Options in case the space is not sufficient:

- Different connector (no d-sub) with lower profile
- Exotic PCB configuration
- Perform a 180° rotation of one of the planes
- Electronics on three sides (no zig-zag)
- Reduce mechanical plane thickness
- Other?

Side fan-out electronics Cabling: front-end – fan-out cable



Side fan-out electronics Cabling: cables routing



CAD modifications

Top fan-out electronics

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Side fan-out electronics Fan-out – front-end mismatch



Side fan-out electronics Fan-out – front-end mismatch



Side fan-out electronics Gap between same plane* boards Present design



Side fan-out electronics Gap between different planes boards Present design



Side fan-out electronics Gap between different planes boards With inversion







Side fan-out electronics Gap between different planes boards With inversion







Side fan-out electronics Cabling: cables routing



CAD modifications

Columns' size change to allow debris shield installation

Columns Reshape to accommodate the debris shield



Thermal pipes routing (very preliminary)

Very preliminary thermal pipes routing

Very preliminary thermal pipes routing



Considerations:

Columns used to route top thermal pipes.

- Columns are stand-alone component with pipes extensions Pipes tracks can be created on fan
- Pipes tracks can be created on fanout lids
- Front-end fan-out box thermally connected

Thanks for the attention