



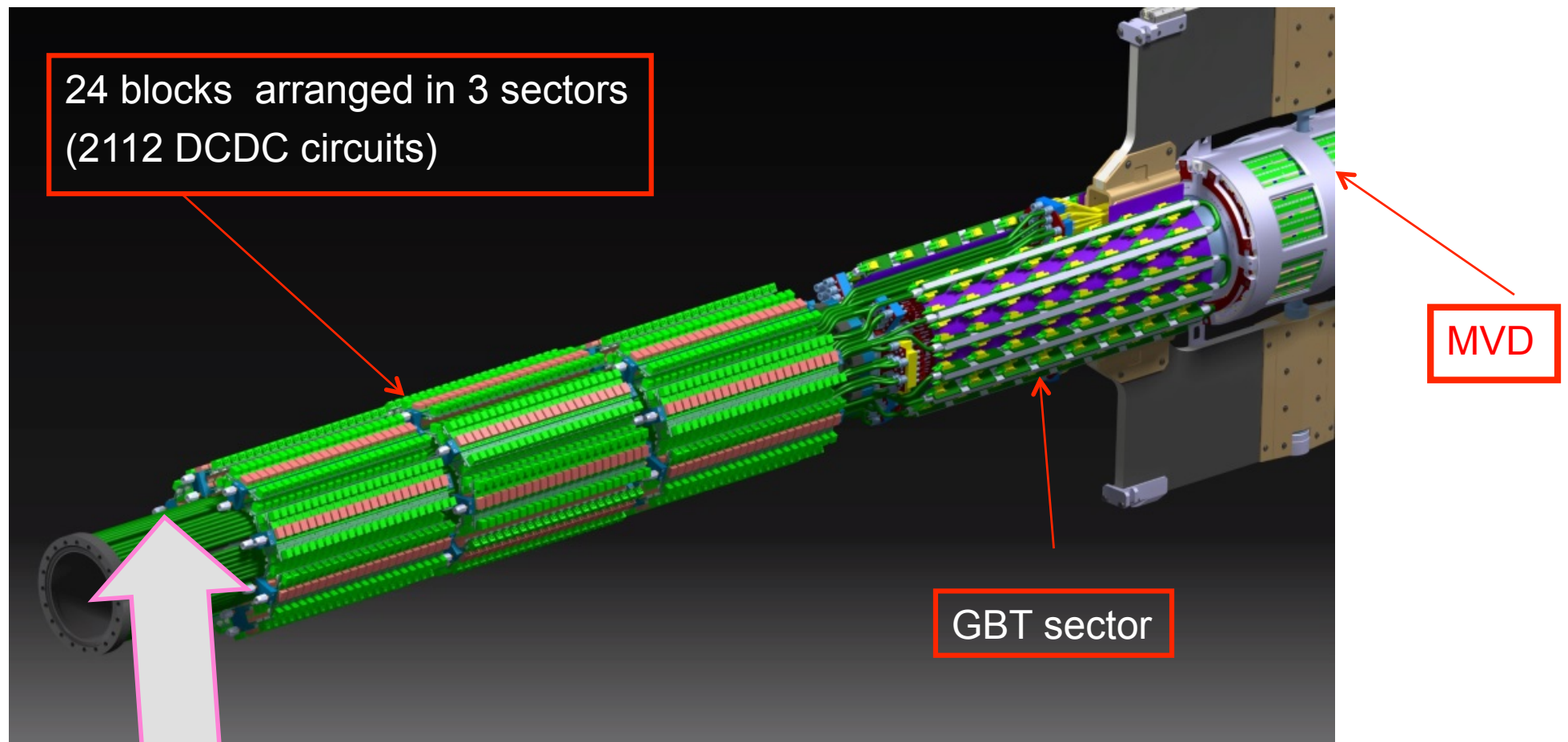
# MVD Mechanics Update

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# Cables for the MVD

- Report from the MVD mechanics meeting on July 13<sup>th</sup> – 14<sup>th</sup> in Torino
- A few new things: cabling and cooling tests in Jülich

# MVD services – old design



- Space for intermediate connectors
- Space for cooling manifolds

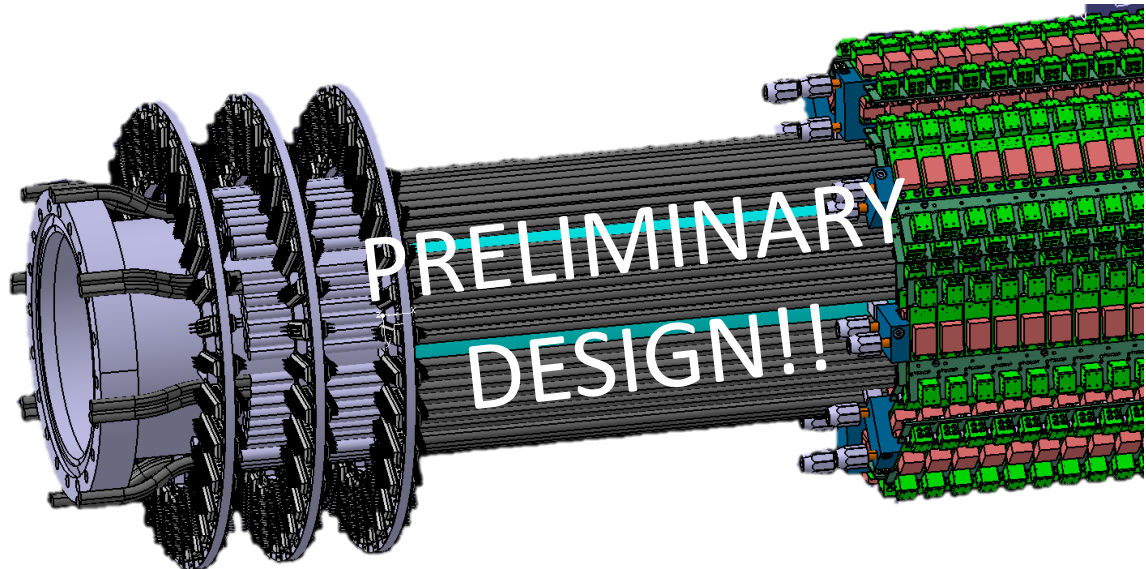
Shift backward of the pump  
20 cm already requested  
? answer

# Open points

- Design and FEM analysis of central tracker (STT+MVD) support done without MVD services (80-90 kg hanging around the beampipe). Further analysis/variations certainly needed.
- Material budget and coverage simulations of MVD must be updated, e.g. to check whether the use of metallic connectors for the strip staves is acceptable.
- Pixel disks supported by the strip disks, but how? To be solved.

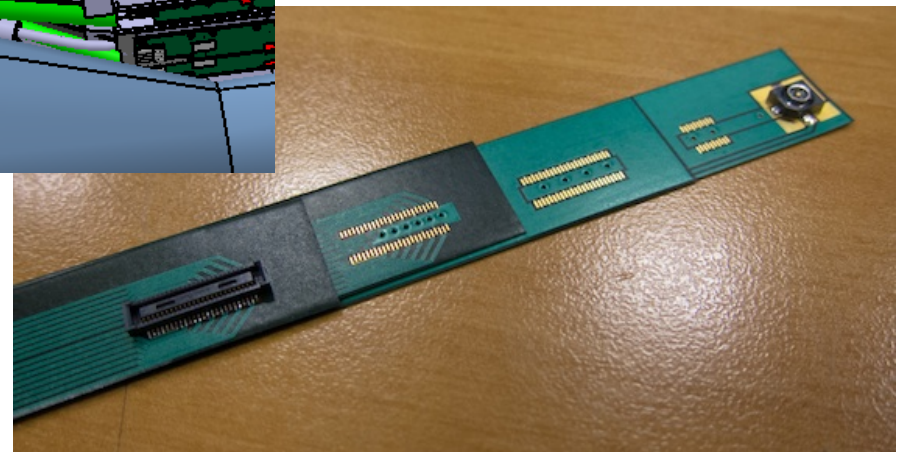
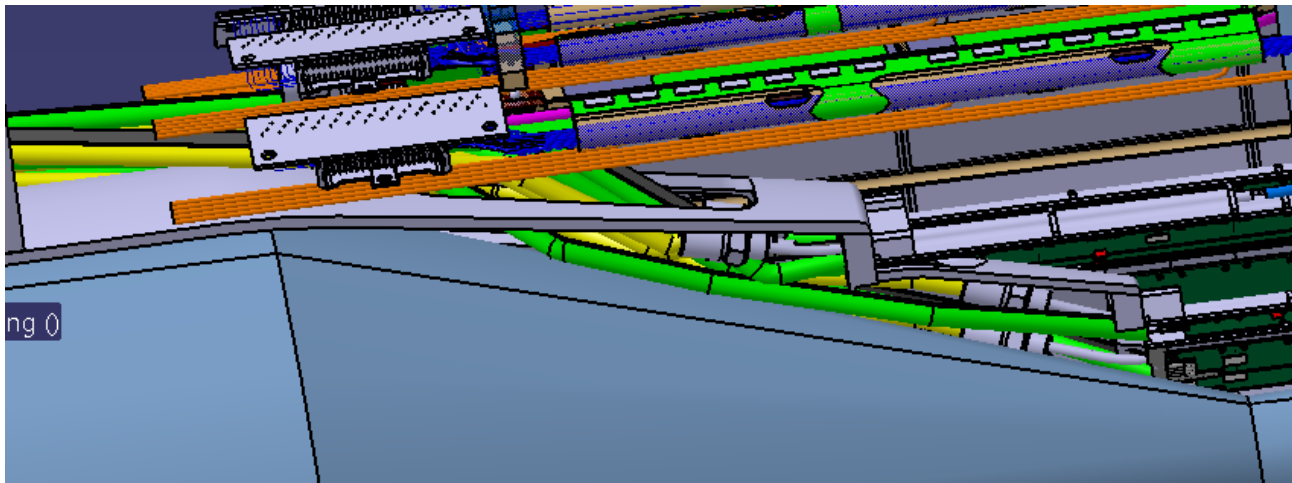
# MVD services

- 96 connectors in front of the first block of DC-DC converters.
- Interrupts connection between power supplies and DC-DCs.
- Simplifies installation.
- Only possible if the request to move the pump 20 cm upstream (as requested by Beppe in **SEPTEMBER 2014**) is accepted.
- 160 cooling pipes must be bent towards outer radius → the discs must be placed nearer to the DC-DCs and more spaced.



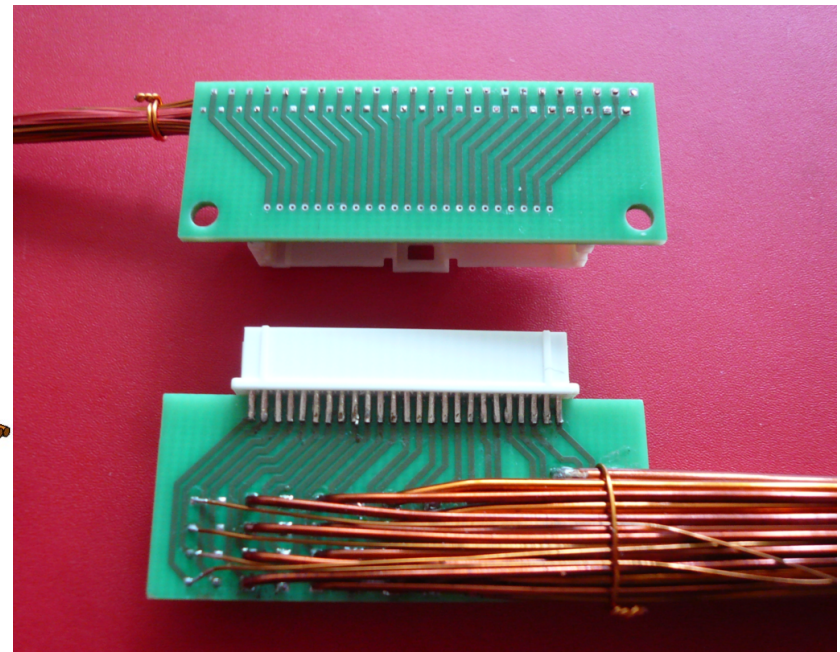
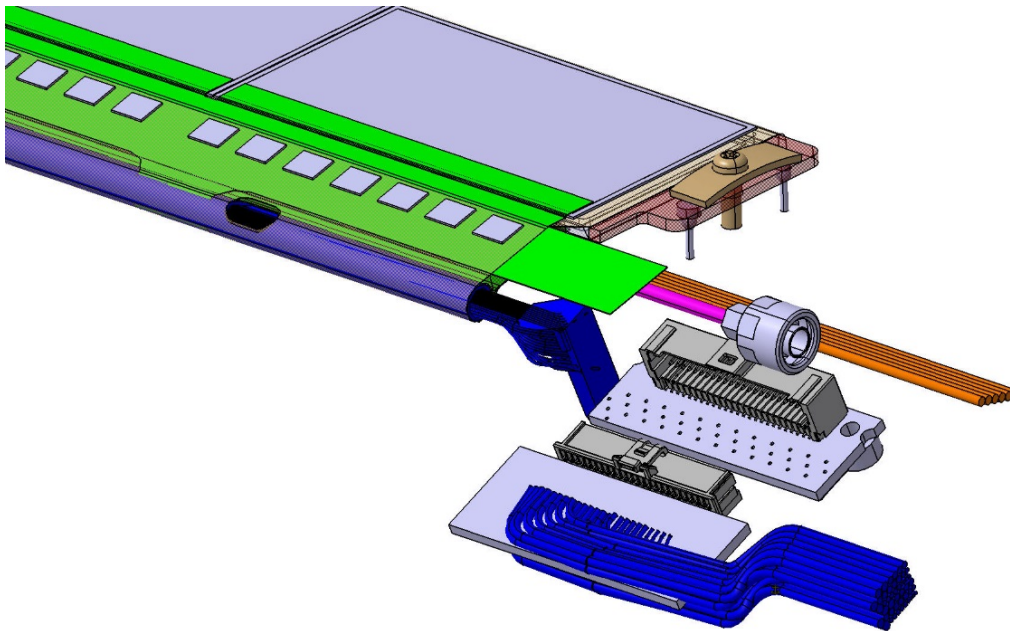
# MVD cables

- Routing of cables around the pixel barrel cone under study.
- Prototype of flat busses available.
- Very complex structure, a complete 3D model would be required.
- Changes to the structure (not shape) of the cone are likely.
- Progress hindered by lack of manpower.



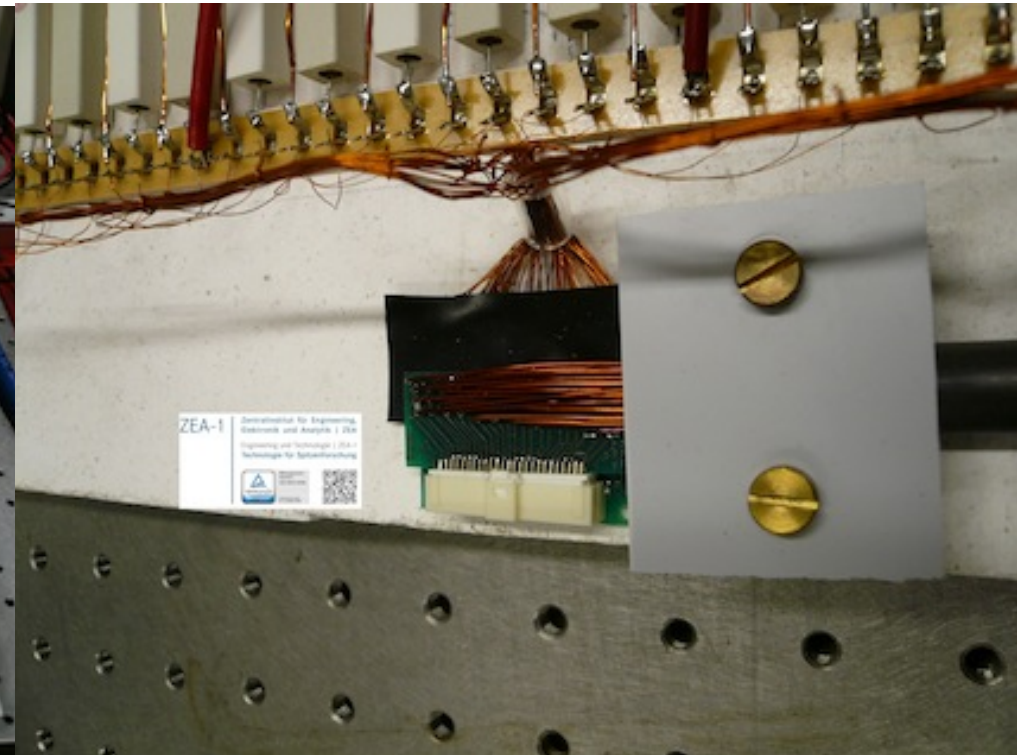
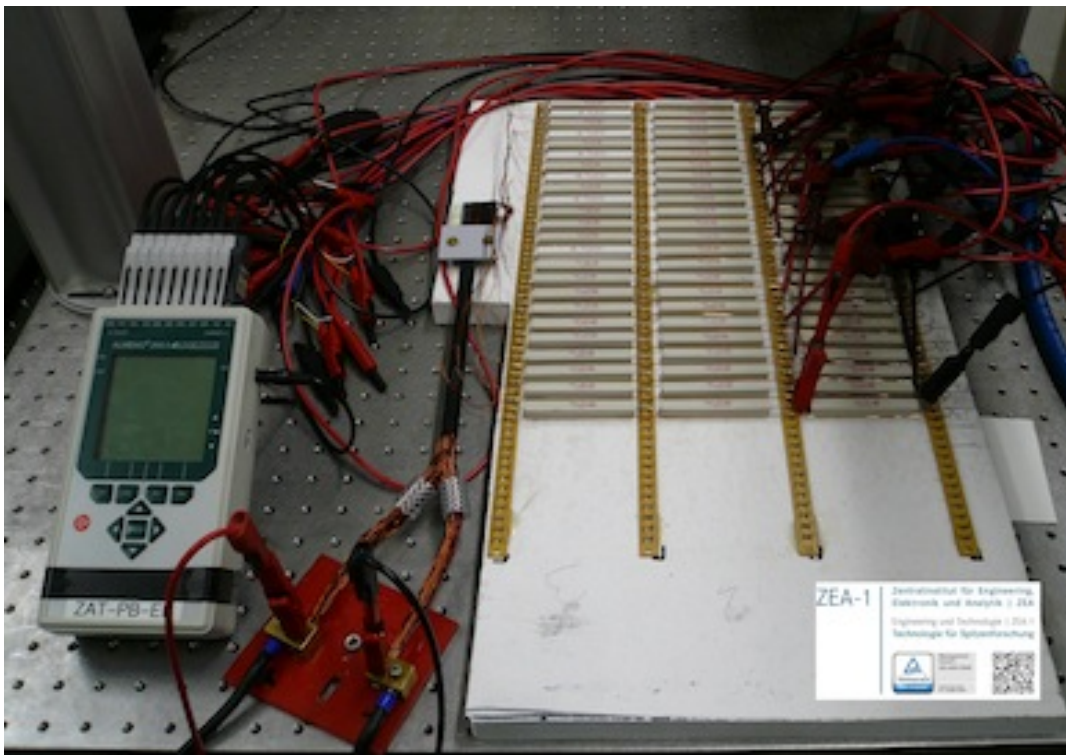
# Stave cooling and cabling

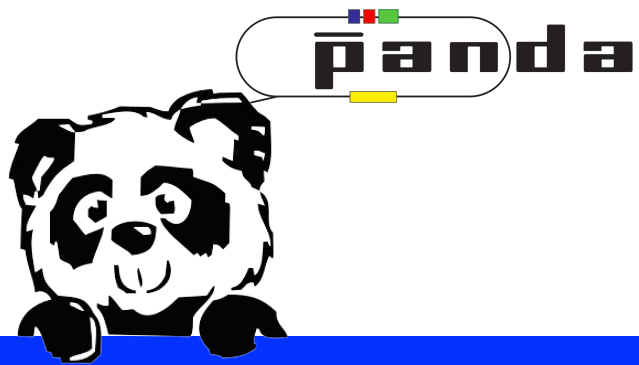
- Significant progresses in design and testing of strip stave cooling and cabling.
- Connector with PCB designed and produced.
- Several connector orientations are being considered.



# Cooling tests at Jülich

- Test system to measure temperatures reached by the copper cables in the staves and by the connector (thanks E. Rosenthal).
- First tests in progress, temperatures way too high ( $\sim 100^{\circ}\text{C}$ ).
- Next test with different (larger) diameters coming soon.





Thank you for your attention!