3D Model Space Clashes

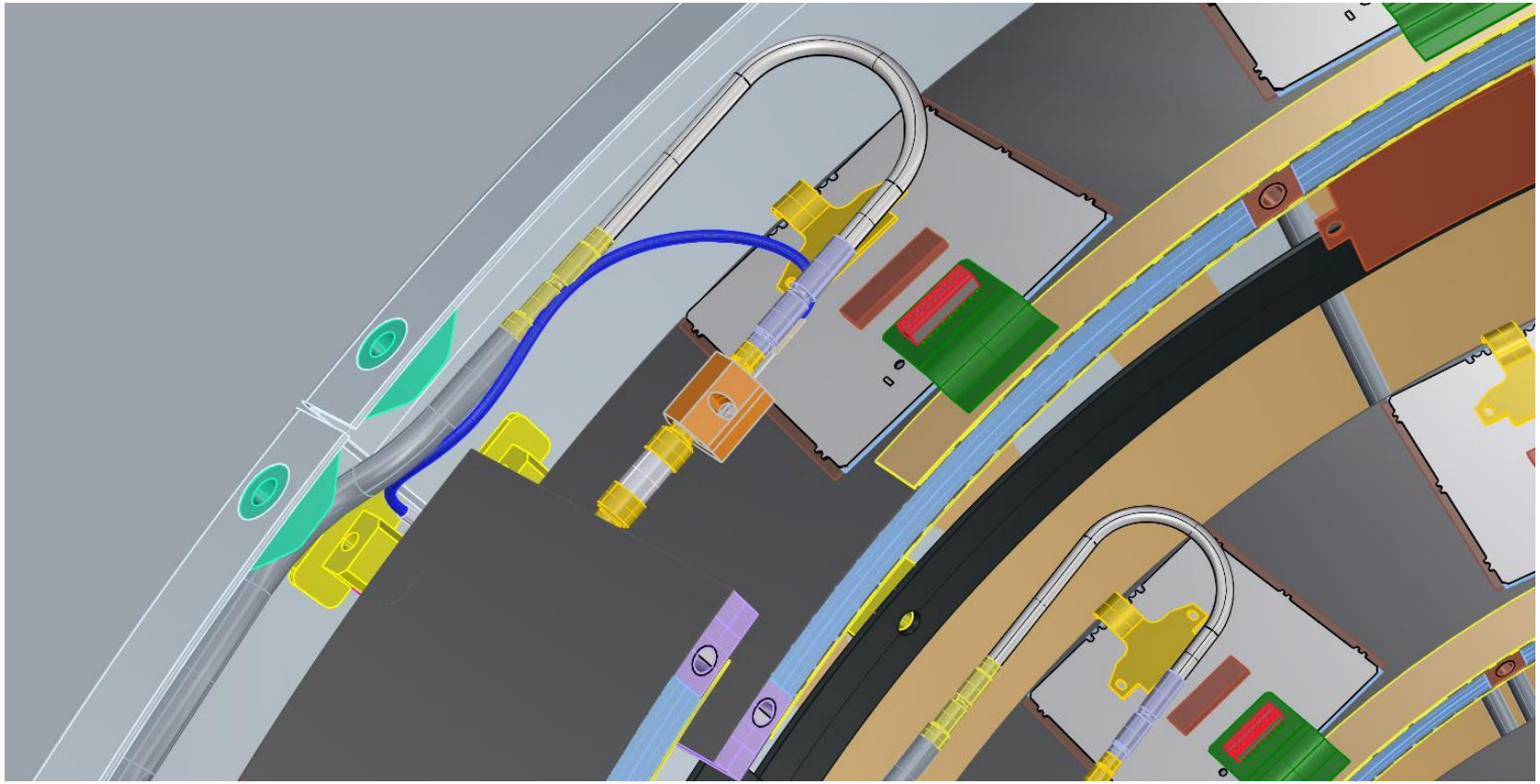
Tim

8th May 2024

3D model uploaded to EDMS

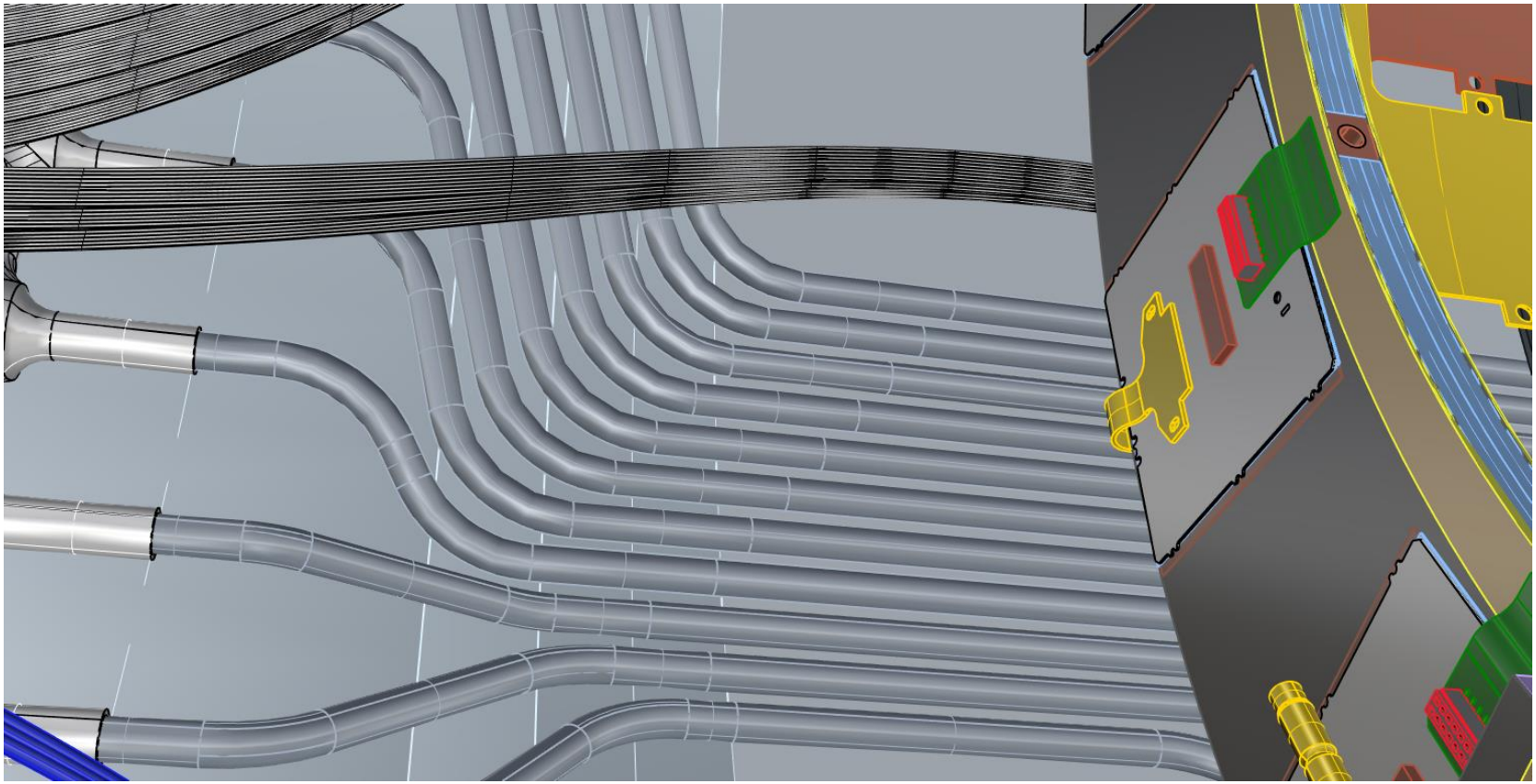
- Coordinates
  - https://edms.cern.ch/document/2052151/3
  - Last update 22nd April 2024
- Known infidelties
  - 3D model of DataPP0 out of date – see connector position mis-match
  - Many space clashes
    - No attempt to resolve – no time since Edinburgh
  - If anything – situation has got worse as component models are refined and additional parts added – eg Environmental Sensors
  - Still missing many parts – eg there are no clamps/fixations for the Type-1 cooling services.
- Integration issues
  - Is half-cylinder integration tooling compatible with fastening of cooling system temperature sensors from low-Z side ?
- Consider 2 types of clash
  - Space allocation within one half-cylinder
  - Interference (or danger thereof) during half-cylinder joining

Cooling System Temperature Sensors (Ring 1)



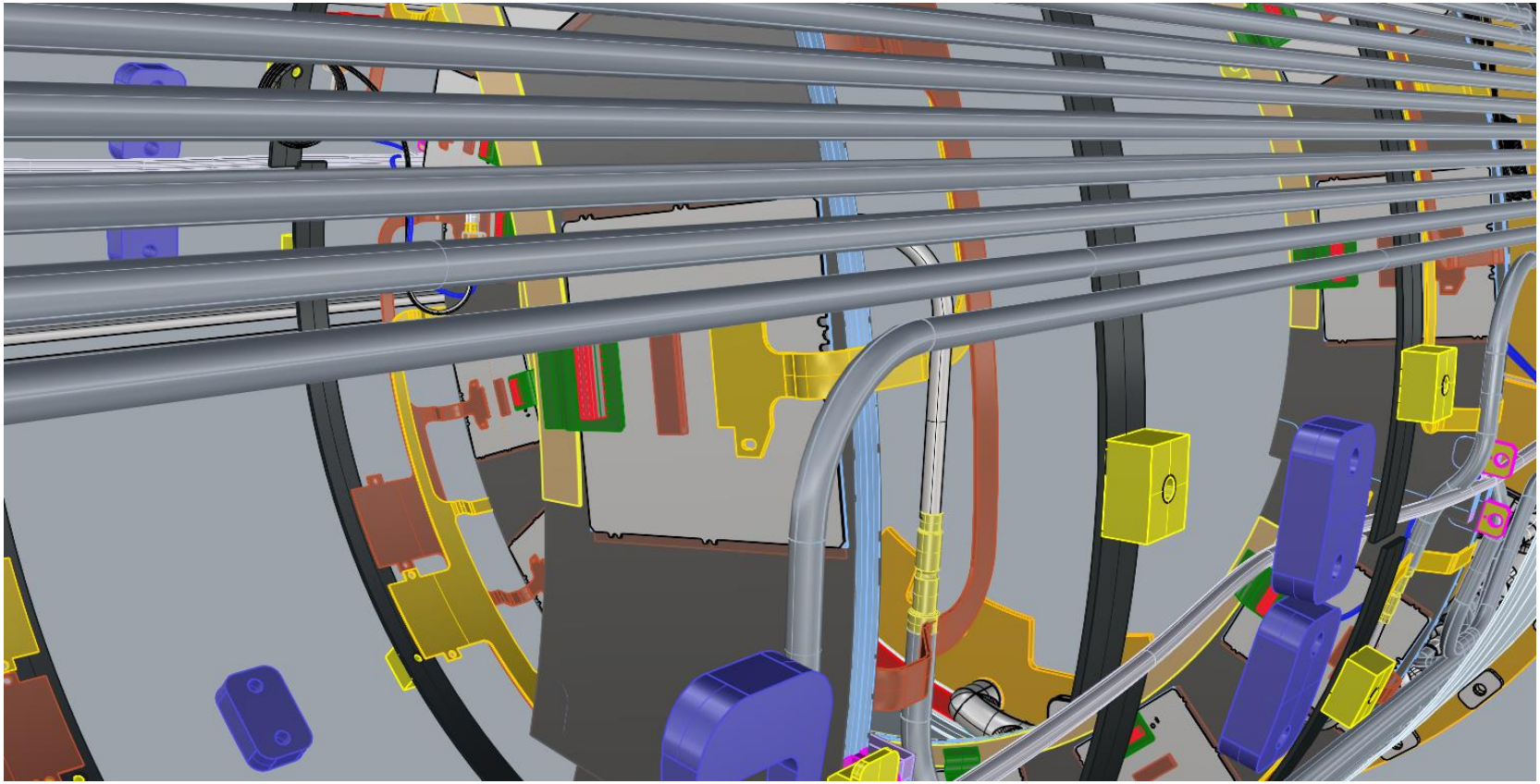
When there are added the Front Support is not blocking access – but we've always assumed access to all fixings (eg half-ring mounting screws, Data PP0s, Power connectors are on the high Z side (except for last HR). Does the HC integration tooling permit access ?

Clash between DataPP0 finger and Type-1 Cooling Exhaust – HR11

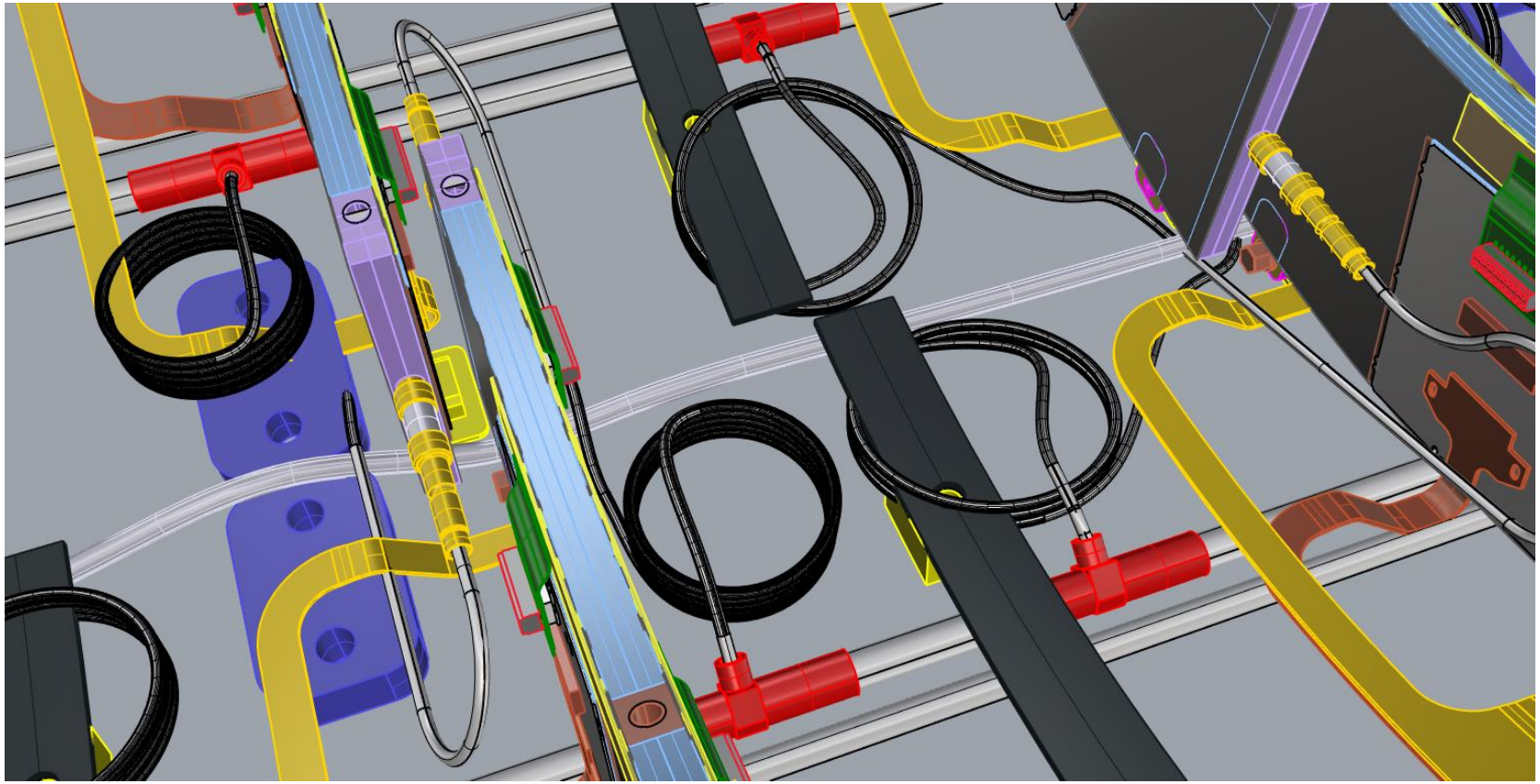


I have a DataPP0 here – I do not believe the bends assumed in the 3D modelling are realistic – unless there is a ‘feature’ on the outer rim of the half-ring to fix the DataPP0 finger to. Suggest moving group of 4 exhaust tubes round in phi.

Similar Clash – HR10

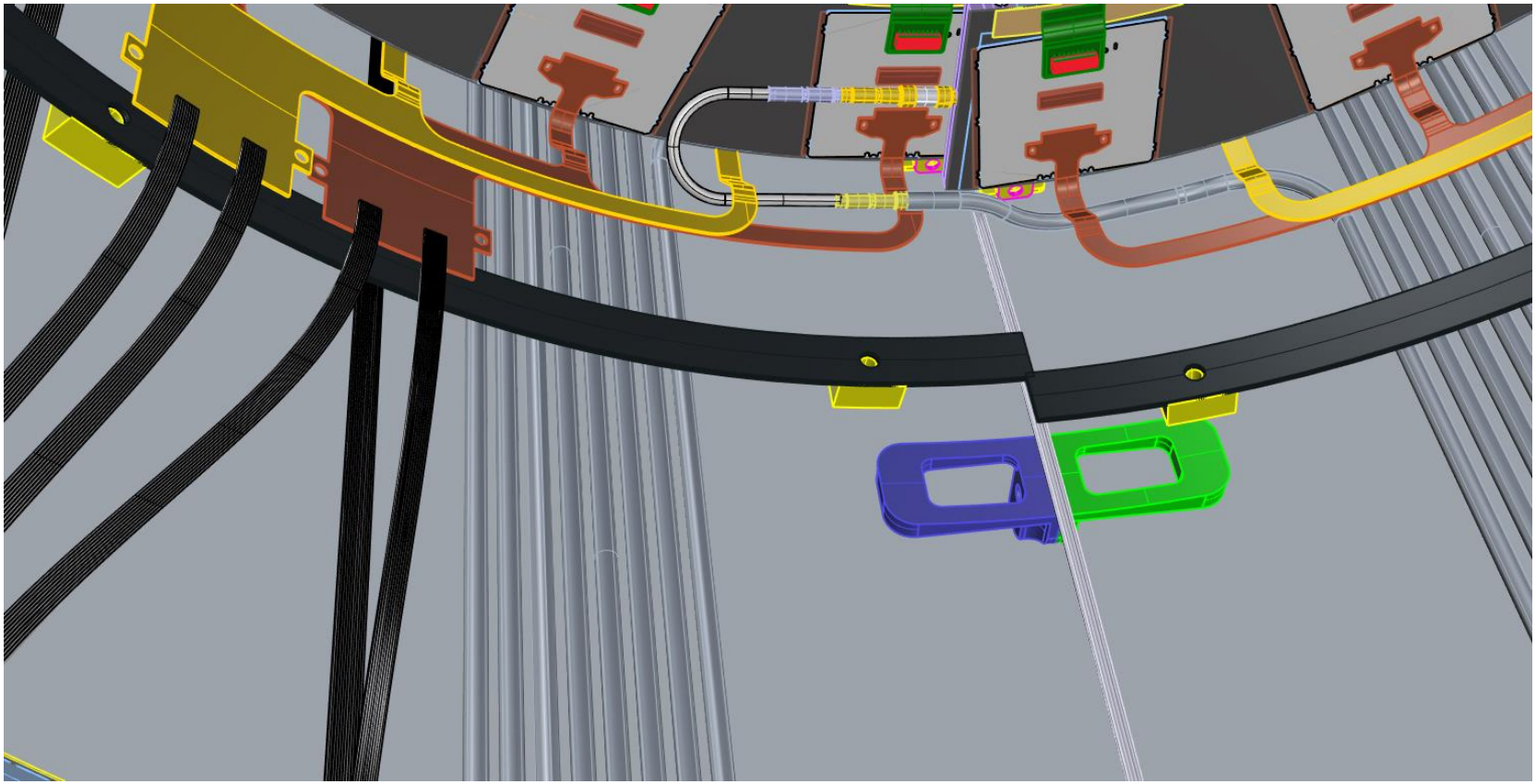


Type-1 Cooling Inlet – many clashes

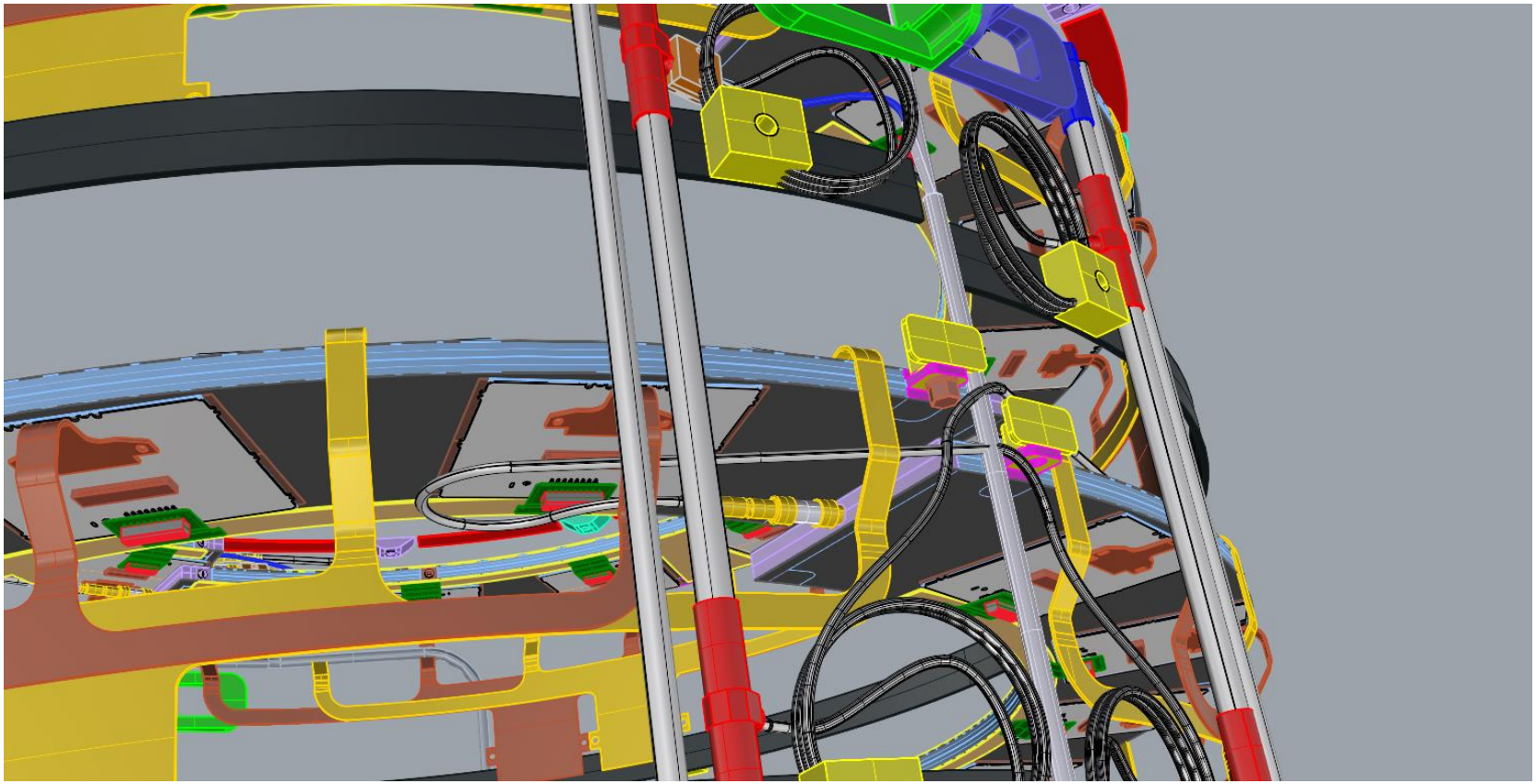


Identified & discussed at Edinburgh but no time to fix due to preparations for FDR. Plan is to investigate turning capillary coils through 90 degrees – might also help with clashes during HC joining.

Interference during Half-cylinder Joining



Half-cylinder joining – Inlet side



Long length of capillary loop penetrates into opposite side – what keeps it in place ?