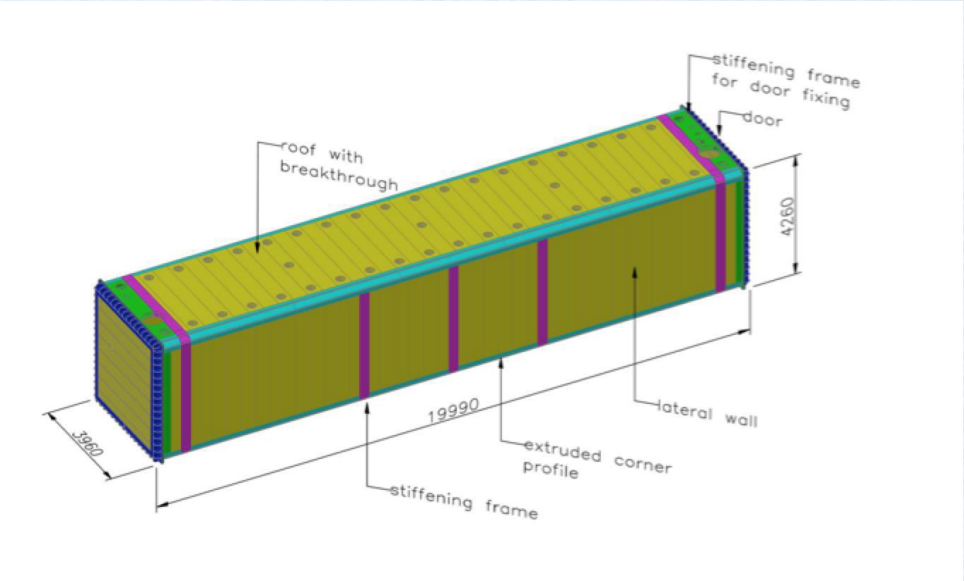
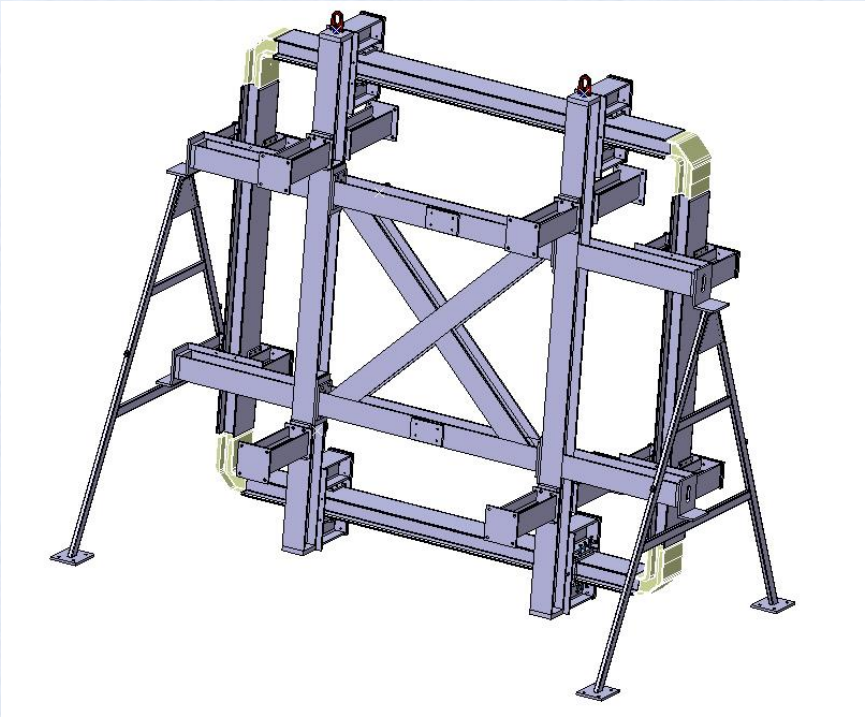
WA104
Status of welding development

- Stiffening U-Frames
  - Assembly tooling
  - Welding development
  - Final Corner design
- Corner assembly test piece
- Welding qualifications



U-frames
Assembly tooling

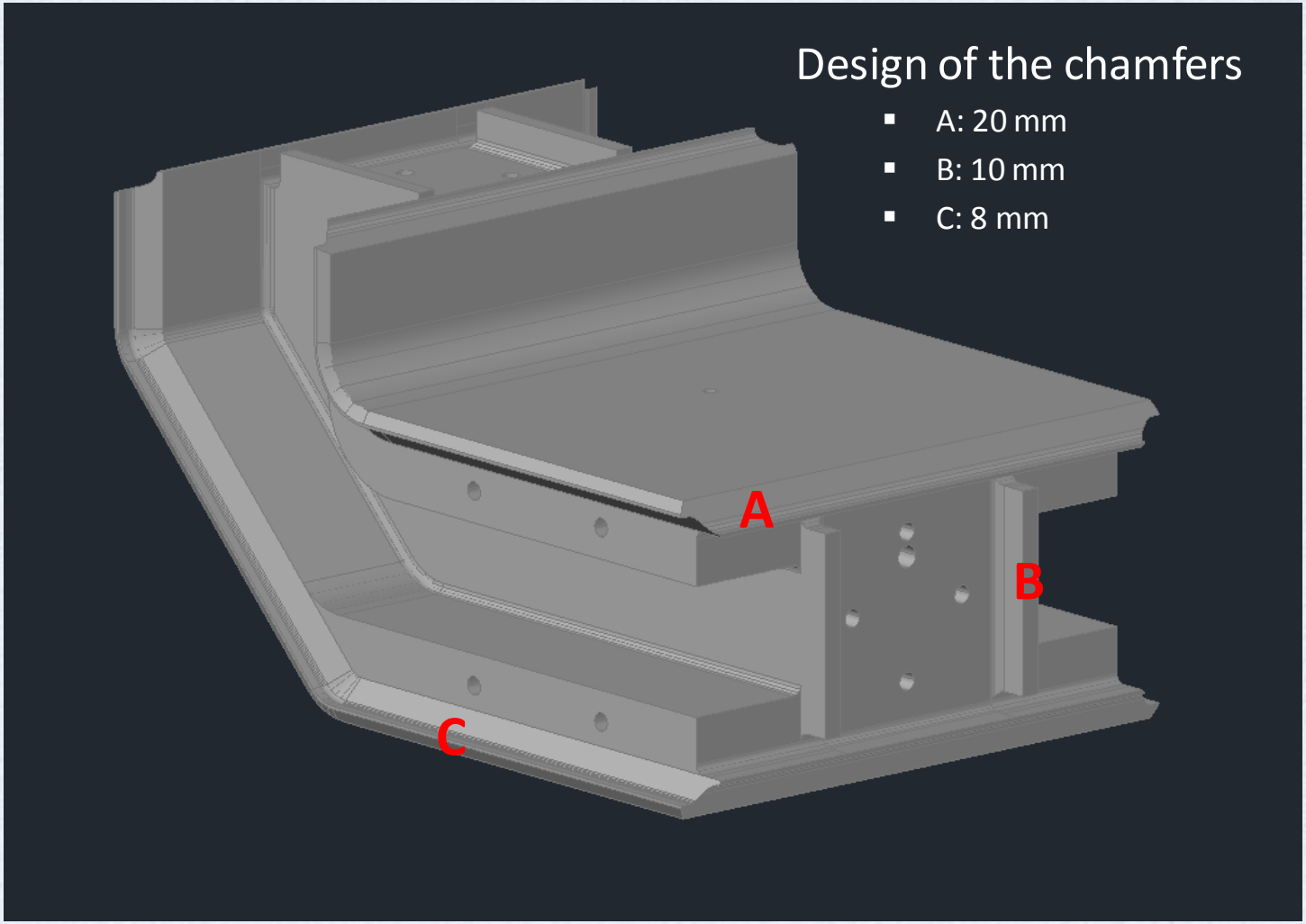


Design of a specific tooling

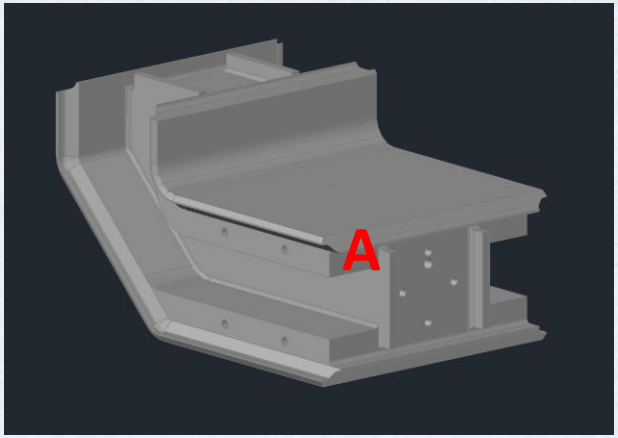
- To ensure an appropriate positioning and clamping of the parts in order to achieve the thigh tolerances required
- To allow the welding in flat position which is mandatory to achieve the quality level required

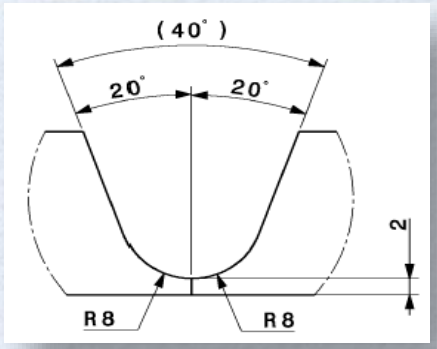
Delivery date foreseen: end October

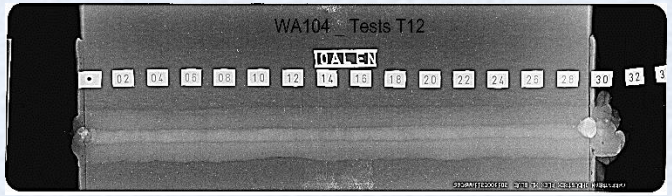
U-frames
Corner design



U-frames
Corner design - Welding development







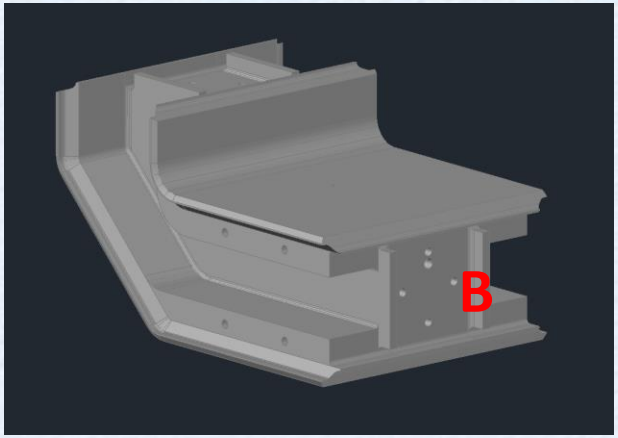
Base material:	6082 T6
Filler metal:	5556A
Process:	MIG
Number of runs:	≈ 12
Backing support:	No
Shrinkage:	≈ 3.5 mm

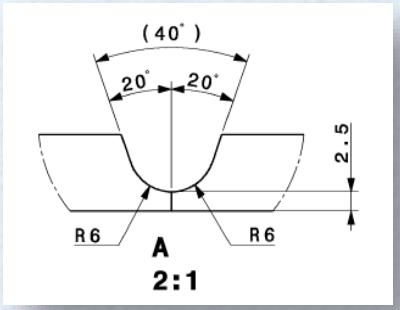
Quality level achieve: level B (stringent) according to ISO 10042

Next steps:

- Design of the run-in & run-out plates
- Tensile test

U-frames
Corner design - Welding development





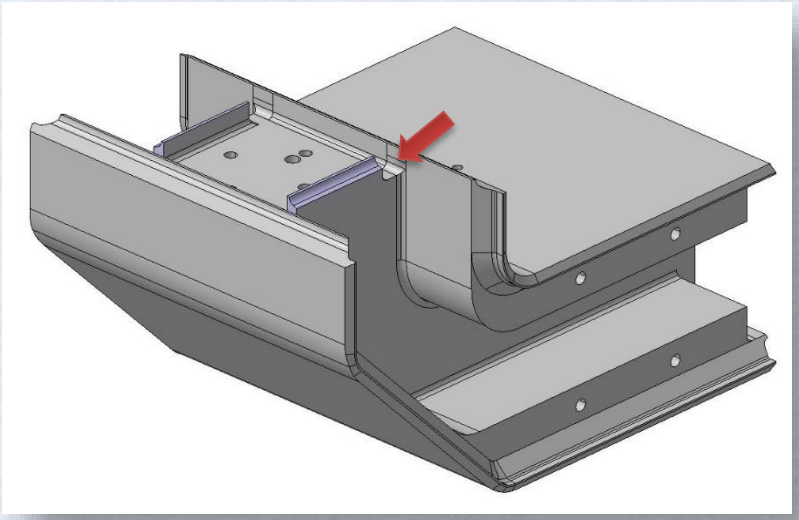
Process: TIG

Number of runs: ≈ 3

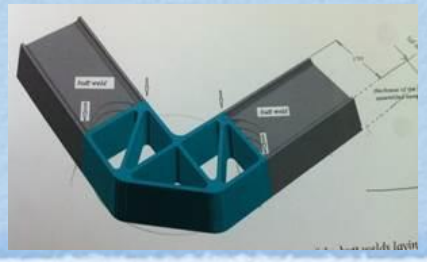
Backing support: No

Quality level achieve: X-Ray to be done

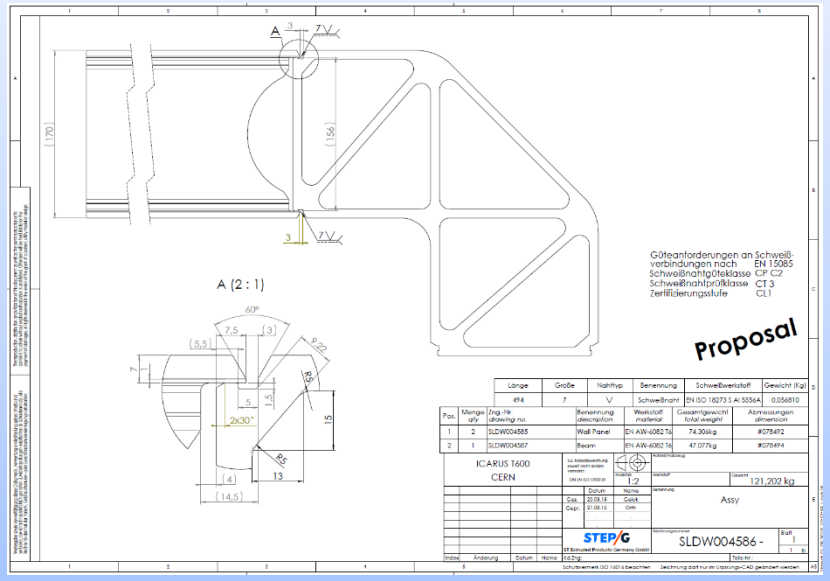
Length of the weld to be reduced by 10 mm each side to optimize the access (by facilitating the welding operation the risk of imperfections will be reduced)

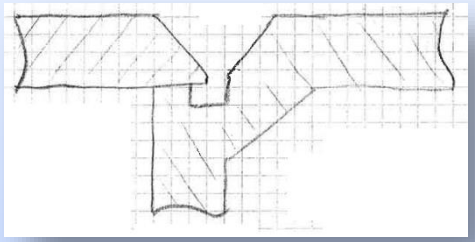


WA104
Corner assembly test piece



Welding tests in progress, 3 configurations will be tested

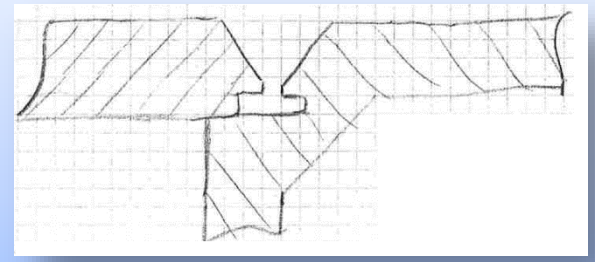


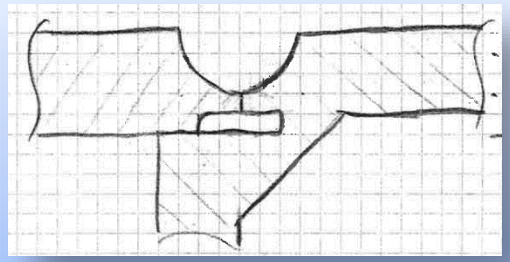


(1) STEP-G proposal

(2) & (3) CERN proposals

(with and without gap)

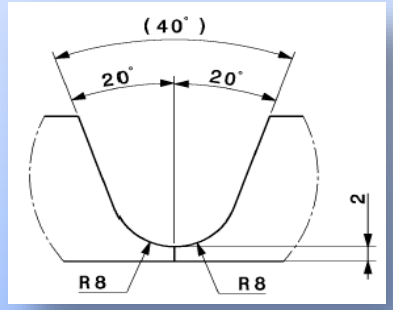


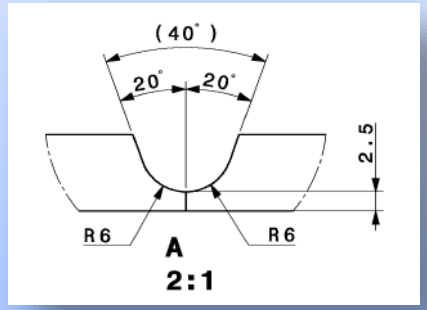


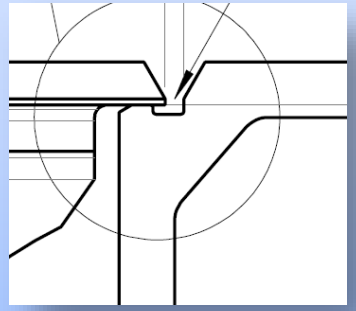
WA104
Welding qualifications

Welding Procedure Qualification (WPQ) & Welder Qualification (WQ)

- 3 WPQR will be carried out in the coming weeks (w43 & w44) with the external Body APAVE
- 4 welders will be qualified for each WPQ







WA104
Next step

Welding tests on the “standard” configuration

- Scrap parts needed from STEP-G