



CIS update

06/10/2017

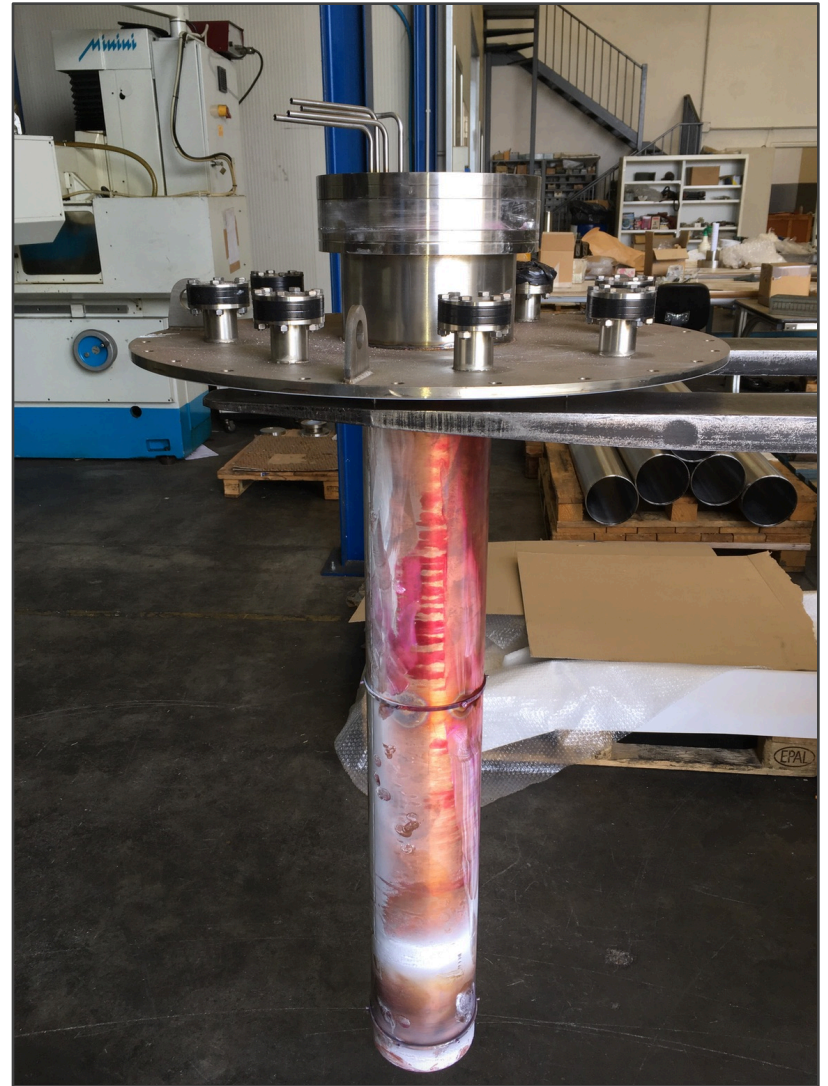
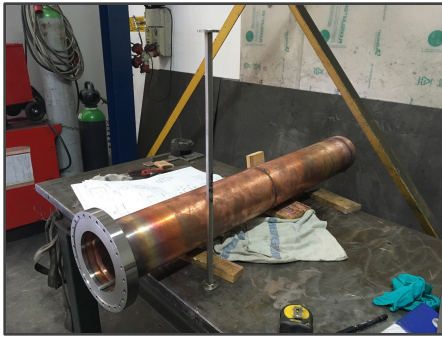
LNGS Collaboration Meeting

SABRE Experiment
V. Pettinacci – INFN Roma

Status summary

- **All components produced pursuant INFN Roma drawings and mostly delivered at LNGS**
- CIS frame only component still at Rome: dedicated delivery to be organized due to dimensions
- Top vessel flange modified (CF200 central port) and ETFE coating restored
- Copper tube and Top vessel flange welding certified by production company through penetrant liquid check

CIS components production

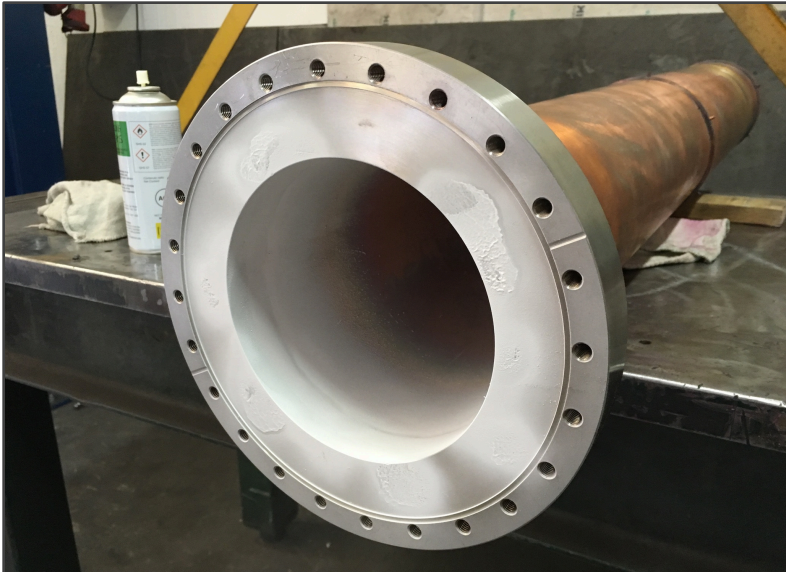


CIS components: welding leak test

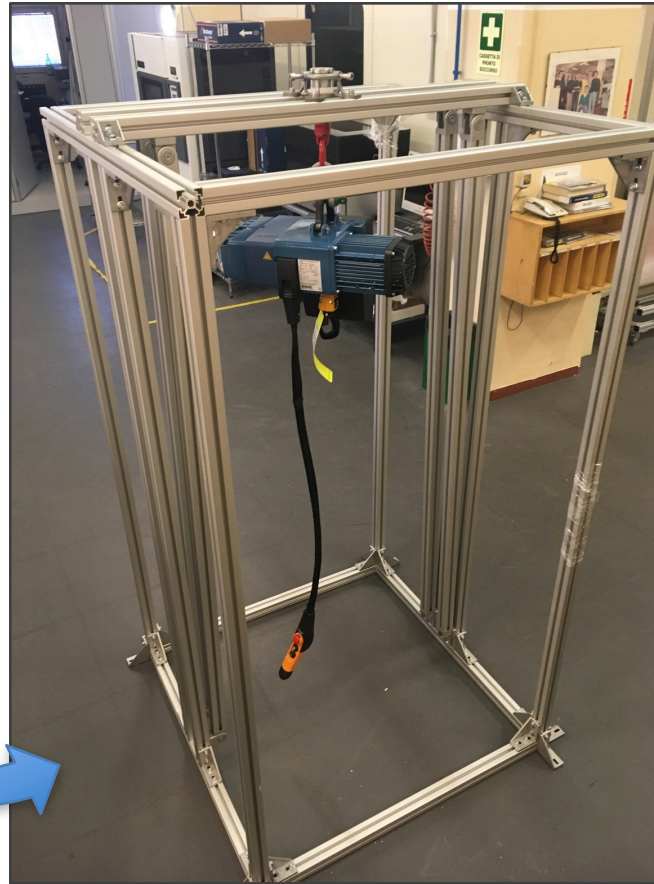
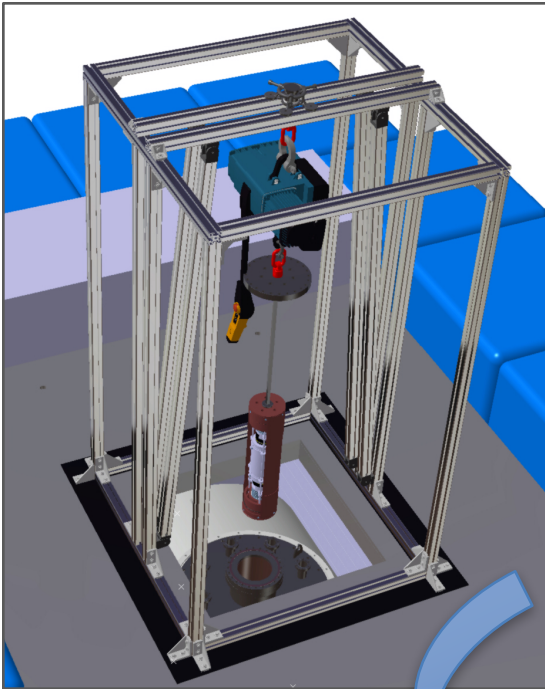
TIG welding check (between OFE copper and AISI304 steel)



Longitudinal and endcap TIG welding check

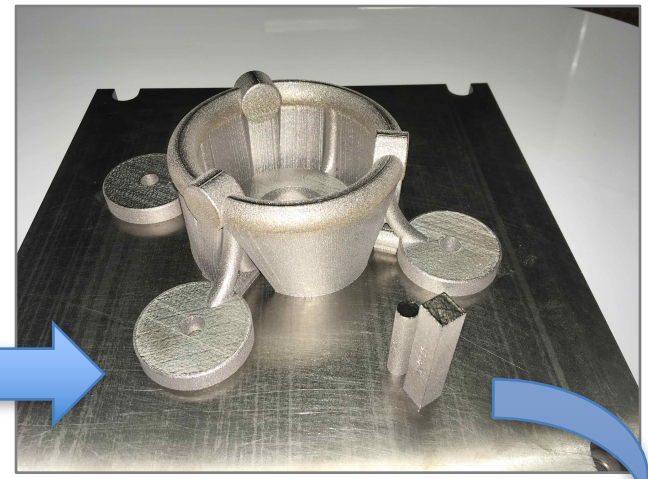
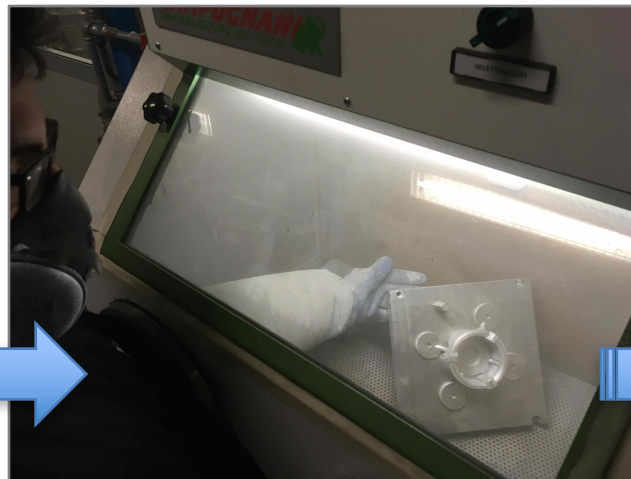
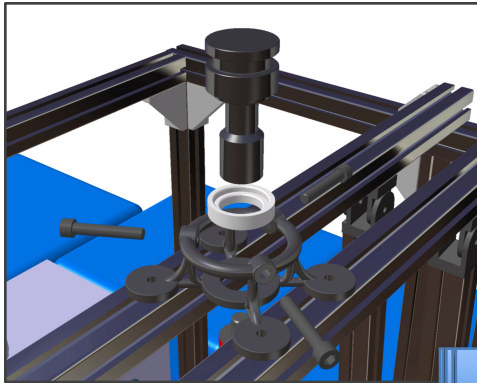


CIS frame assembled and tested



- Tested with more than 65kg load → test report ready and available for LNGS acceptance procedure
- FEM calculation confirmed with good accuracy: 0.5 mm deflection (laser measurement)
- Test performed at INFN Roma Mechanical Workshop (*thanks to M. Iannone, F. Pellegrino*)

CIS frame: pulley alignment system



System ready and delivered at LNGS together with other components

One of the first metallic (Titanium) part produced with additive manufacturing technique (Direct Metal Laser Melting) in the history of INFN



CIS delivered to LNGS



Open items

- **Calibration source:** large plug now installed on the connector flange (1" NPT) but a suitable interface must be defined for a proper insertion
- **Cleaning process** protocol to be defined for all the components (depending by the level request for each part)
- **Additional leak check** to be performed underground on the CIS components: procedure to be discussed and agreed
- **Detailed planning** of activities underground for installation