

XCET Detectors East Area Production Status

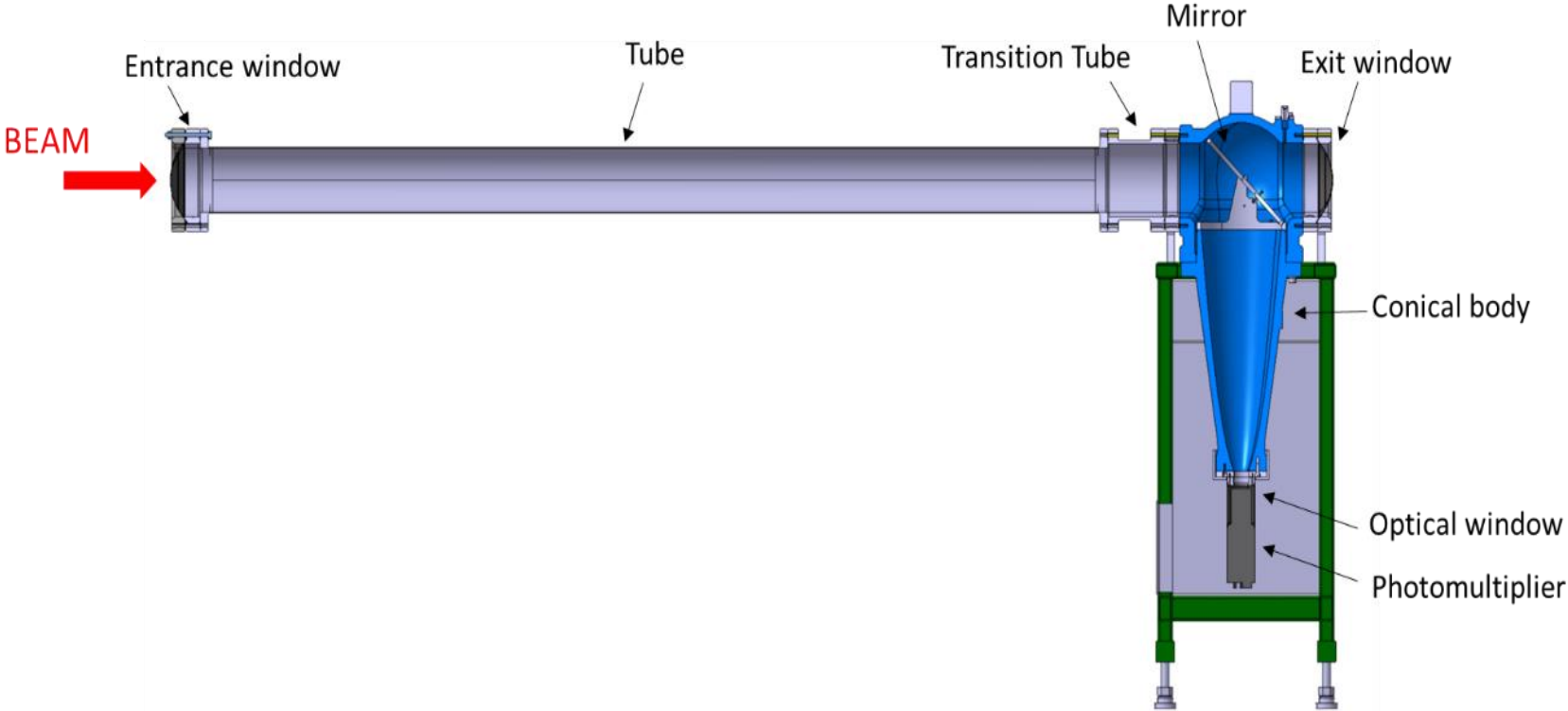
Giulia Romagnoli



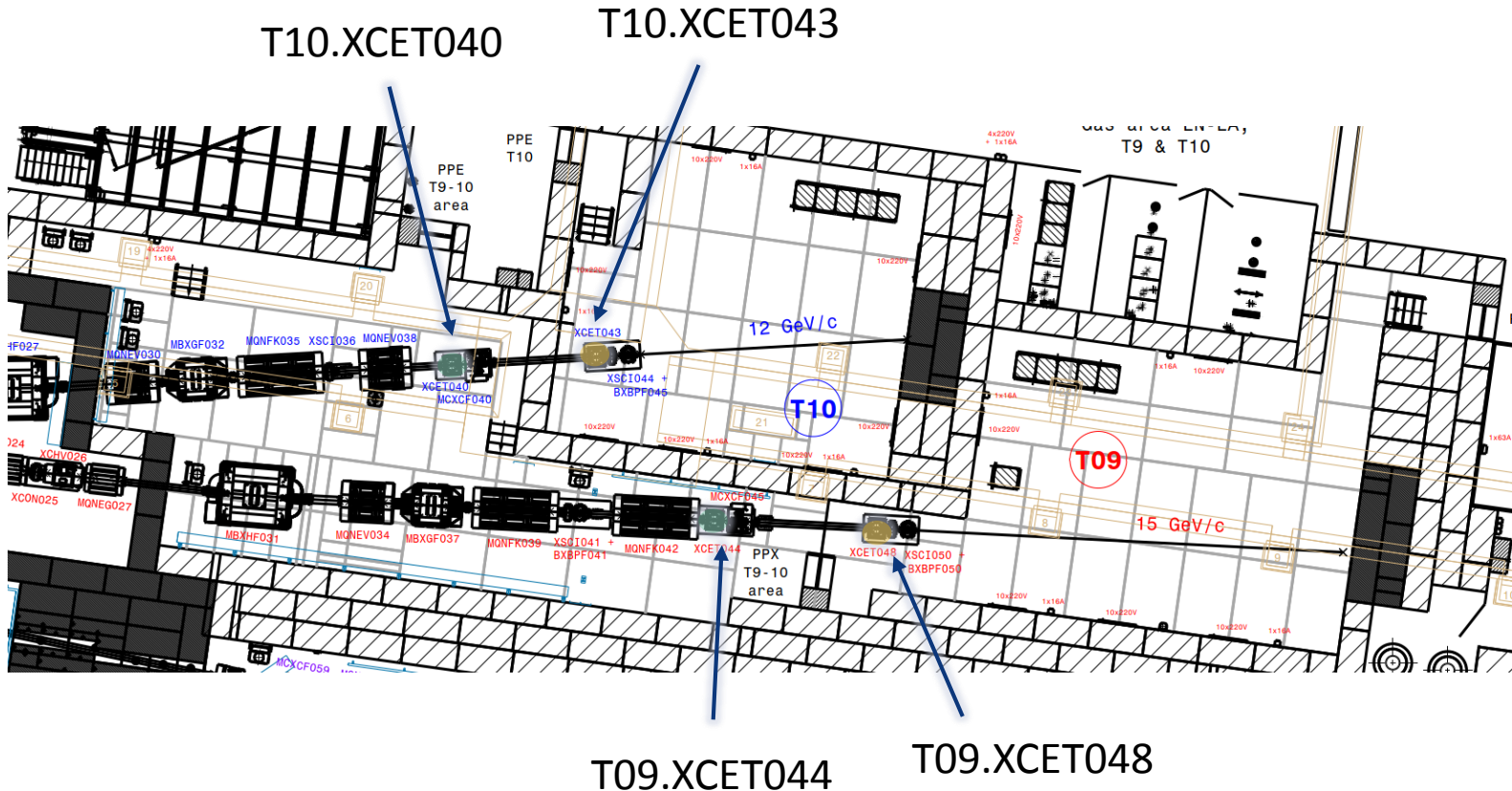
ENGINEERING
DEPARTMENT



XCET Detector



XCET East Area



XCET PARTS

Part	Status	Next Step
Spherical body	Recycled	Select the 4 heads and cones for the East Area
Conical body		
Optical SiO ₂ window (with flange)	Recycled	Visual inspection to be done (with documentation for safety file)
Sealing spacer DN159	New, CERN workshop	Produced - ready for assembly
Window DN159	New, subcontracted thickness 1.4 mm	Produced - ready for assembly
Flange Window DN159	New, CERN workshop	Produced - ready for assembly
Mylar window	New, EN-EA workshop	To be done
Transition 159/159	New, CERN workshop	Produced - ready for assembly
Gas tube	New, subcontracted	Produced - ready for assembly
Gas tube flanges	New, CERN workshop	Produced - ready for assembly

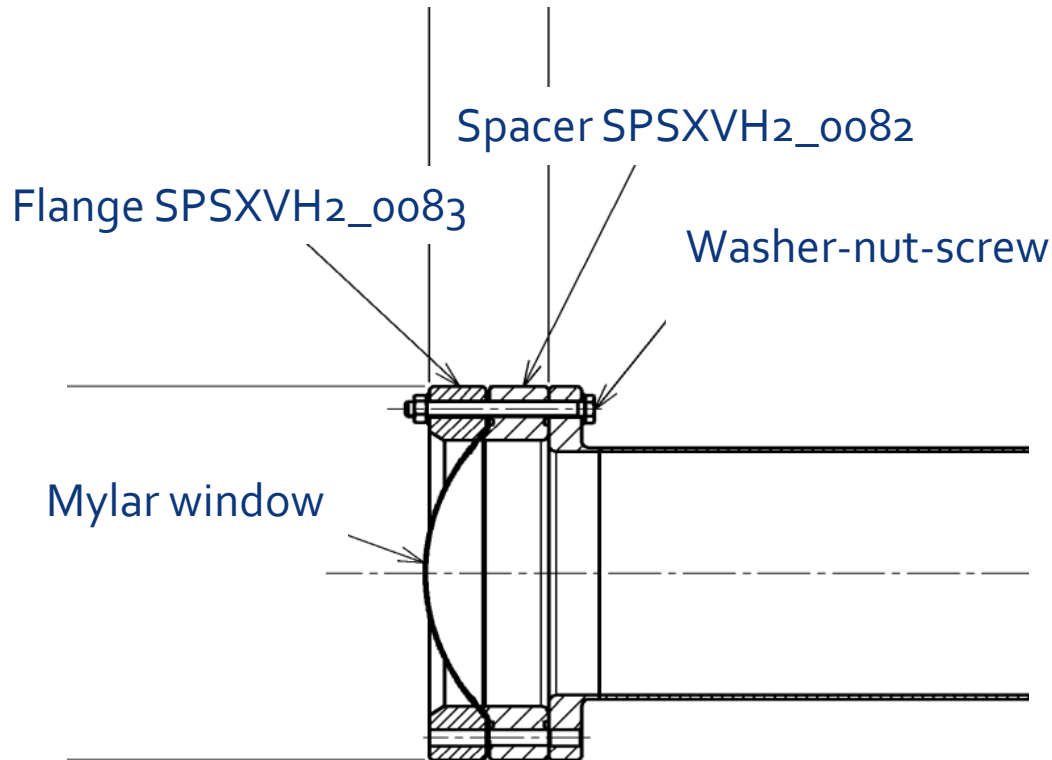
Next Steps - Bodies

- XCET bodies to Preveessin
- **Decide which head and cones to take → EAR project decision**
- Assembly the 4 XCET bodies in R-L40 867
- LEAK TEST in 867
- Send the 4 body assembly to Meyrin
- Pressure test in the HSE bunker

Next Steps - TUBES

- XCET tubes to Preveessin (EDH 8343047)
- **Waiting for magnets readiness**
- Sending 2 tubes to bldg. 181 for installation inside the magnets
- Welding of 2 flanges (MME)
- X-ray control of welding

Mylar Windows



Mylar window: 200 μ m Mylar plus 100 μ m polyethylene foil

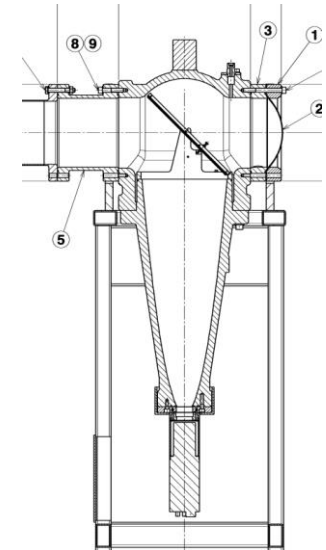
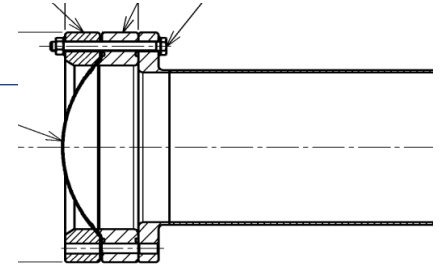
*These thicknesses have been used before in the XCET of the north area up to 3.5 bar
They have been used in the last 41 years (last 20 at 3.5 bar maybe in the past at higher pressures)*

EDMS 2263532

Part	Status	Drawings Number	Design report (FEM/Calculation note)	Material	Material certificates	Experimental verification of the design/state	Inspection report	Pressure bar (g)	Functional Position (Layout Database)
Spherical body	Recycled	EDMS 2257257	Preliminary FE simulations 1882354 + FEA SIMULATIONS 2332407	Alufont 42	/	Individual Pressure test	Tomography 2322485	15 bar	T09.XCET044
								3.5	T09.XCET048
								15 bar	T10.XCET040
								3.5	T10.XCET043
Conical body	Recycled	EDMS 2257256	FE Simulation 1907055	Alufont 42	/	Individual Pressure test	Tomography 2322485	15 bar	T09.XCET044
								3.5	T09.XCET048
								15 bar	T10.XCET040
								3.5	T10.XCET043
Optical SiO2 window (with flange)	Recycled	/	FE Simulation 1907055	SiO2	2013291	Pressure/burst tests: 2009236 2008503 2009638 Individual Pressure test	/	15 bar	T09.XCET044
								3.5	T09.XCET048
								15 bar	T10.XCET040
								3.5	T10.XCET043
Sealing spacer DN159	New, CERN workshop	SPSXVH2_0082	FE Simulation 1907055	Al 6082	2316857	pressure test 2009273+2009625 burst test 2088294+2088293 Global pressure test	/	15 bar	T09.XCET044
								3.5	T09.XCET048
								15 bar	T10.XCET040
								3.5	T10.XCET043
Window DN159	New, subcontracted thickenss 1.4	SPSXVH2_0085	Window validation according to standards 2141807	Al 7075 T6	EDMS 2308644	EDMS 2308644	15 bar	T09.XCET044	
Flange Window DN159	New, CERN workshop	SPSXVH2_0083		Al 6082	2316857		/	15 bar	T10.XCET040
								15 bar	T09.XCET044
								3.5	T09.XCET048
Mylar Windows	New, EN-EA workshop							15 bar	T10.XCET040
								3.5	T10.XCET043
Transition 159/159	New, CERN workshop	SPSXCET_0003	Preliminary FE simulations 1882354 + FEA SIMULATIONS 2332407	Al 6082 T6	2316857		/	3.5	T09.XCET048
								15 bar	T10.XCET040
								15 bar	T09.XCET044
								3.5	T10.XCET043
Gas tube	New, subcontracted	SPSXCET_0001	FEA SIMULATIONS 2332407	SS 316L	Pressure/Material Certificate 2263272	X-ray 2384535	welding job documents + Metrology report	15 bar	T09.XCET044
		SPSXCET_0004						3.5	T09.XCET048
		SPSXCET_0005						15 bar	T10.XCET040
		SPSXCET_0006						3.5	T10.XCET043
Gas tube flanges	New, CERN workshop	SPSXCET_0002	FEA SIMULATIONS 2332407	SS 316L	2316873		/	15 bar	T09.XCET044
								3.5	T09.XCET048
								15 bar	T10.XCET040
								3.5	T10.XCET043
Bolts			FEA SIMULATIONS 2332407						

FINAL STEPS

- Assembly of 4 windows (2 aluminum and 2 mylar) on the tubes
- Assembly of 4 windows on the bodies
- Pressure test in the bunker of T09.XCET048 and T10.XCET043
- Pressure test in the East Area of T09.XCET044 and T10.XCET040



Thank you!

