



Buncher Interfaces

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A Partnership of:

US/DOE

India/DAE

Italy/INFN

UK/STFC-UKRI

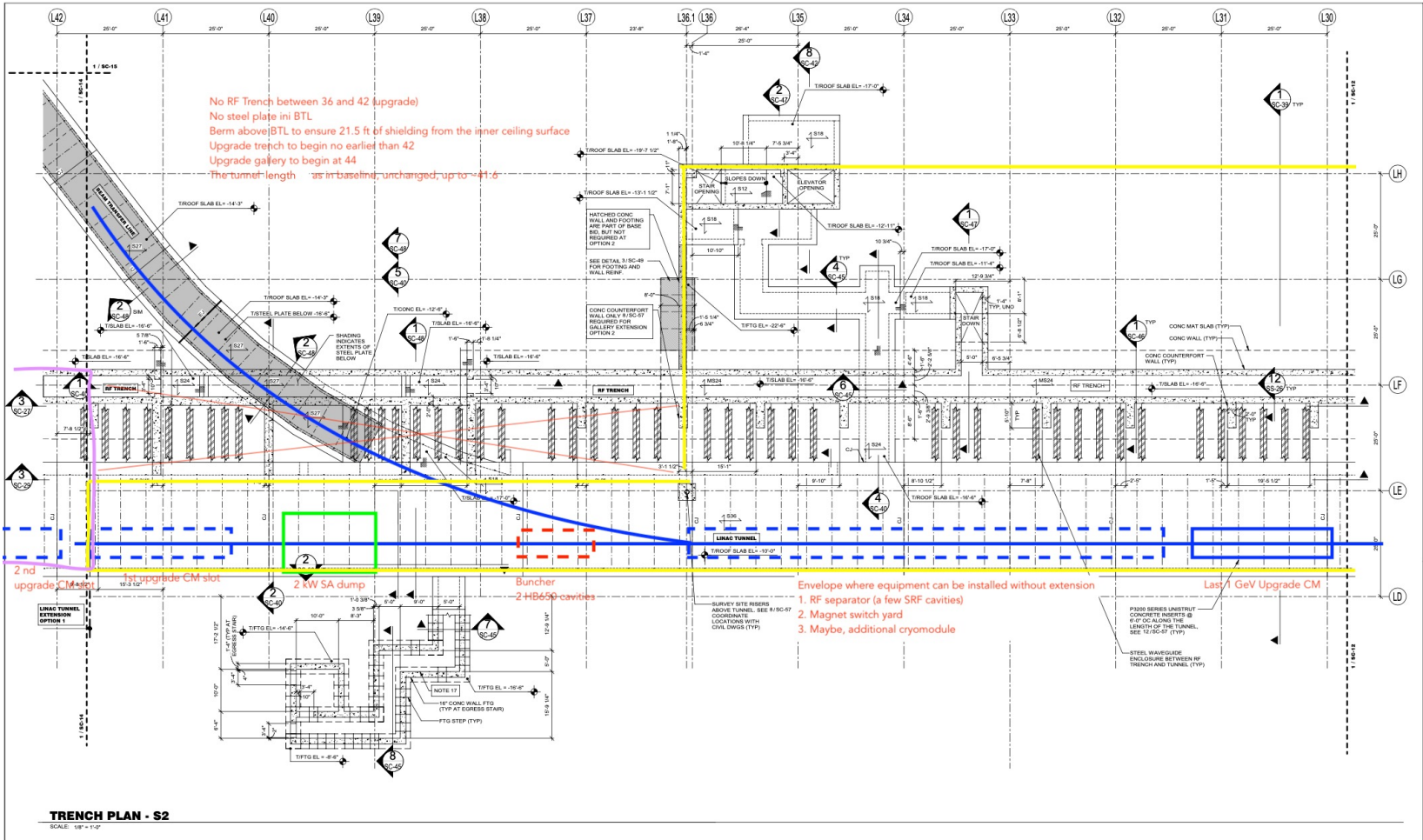
France/CEA, CNRS/IN2P3

Poland/WUST



SRF Buncher Interfaces: CF

- Buncher most likely can be accommodated without modifications to CF

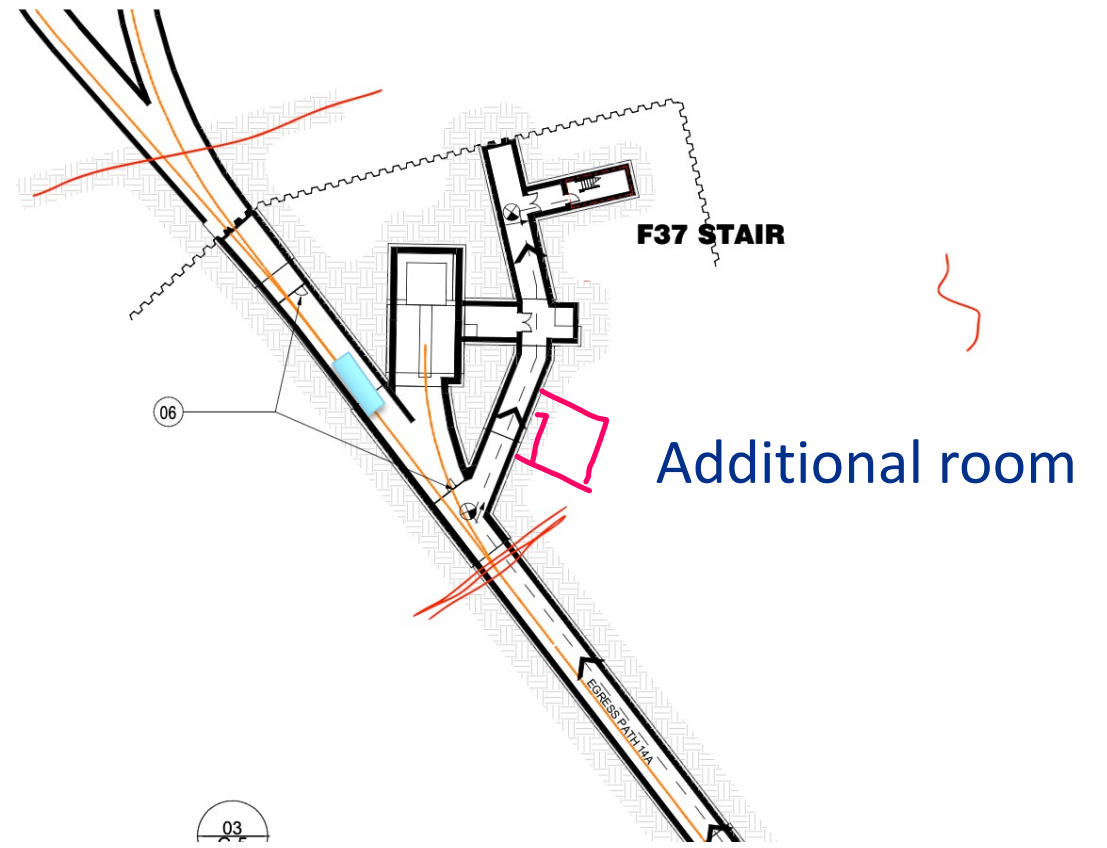


SRF Buncher Interfaces: Accelerator Systems

- RF:
 - One SSA amplifier $P < 10$ kW for both 650 MHz and 1.3 GHz
 - Nominal power to maintain 20 MV without beam is ~ 25 kW at the cavity
- LLRF
 - Two channel
- Cryogenics:
 - Need the cryogenic distribution line to be extended
 - Can the cavity be operated at 4K?
 - 20W at 2K, 20MV, CW - > 1.25 W at 2k, 5MV, CW - > 0.13 W at 2k, 5MV, 10% DF - > 0.26 W at 4K, 5MV, 10% DF
- Timing:
 - 650 MHz timing is available nearby
- Vacuum:
 - Not a clean/particulate free area

RT Buncher Interfaces: CF

- Presently interfaces with CF were not defined, requirements need to be developed and provided
 - No space in F37?
 - Possible space in the tunnel
 - Maybe different location in MR crossing



RT Buncher Interfaces: Accelerator Systems

- RF
 - CCL: Two 50 kW amplifiers, 2% DF, 2 to 4 rack space
 - Decoupled Cell Cavity (DCC): 14 5-6 kW amplifiers, 2% DF, 2-4 rack space
- Cables:
 - CCL: two 3 1/8 coaxial + 6 LLRF
 - DCC: 14 0.75 coaxial + 42 LLRF cables
- LLRF
 - CCL: two channels
 - DCC: 14 channels
- Temperature control
 - Two chillers ~ a few kW, small devices
- Timing distribution line – requirements should not be very stringent
- Vacuum: 2 ion pumps, two permanent TMPs or a cart

Total rack space: 5 – 8 racks

Power:

- ~150 kW pulsed
- 20-30 (?) kW average

Conclusion

- Designs need to be evaluated and preferred options selected
- Specifications need to be developed and provided to stakeholders