

HI-ECN3.



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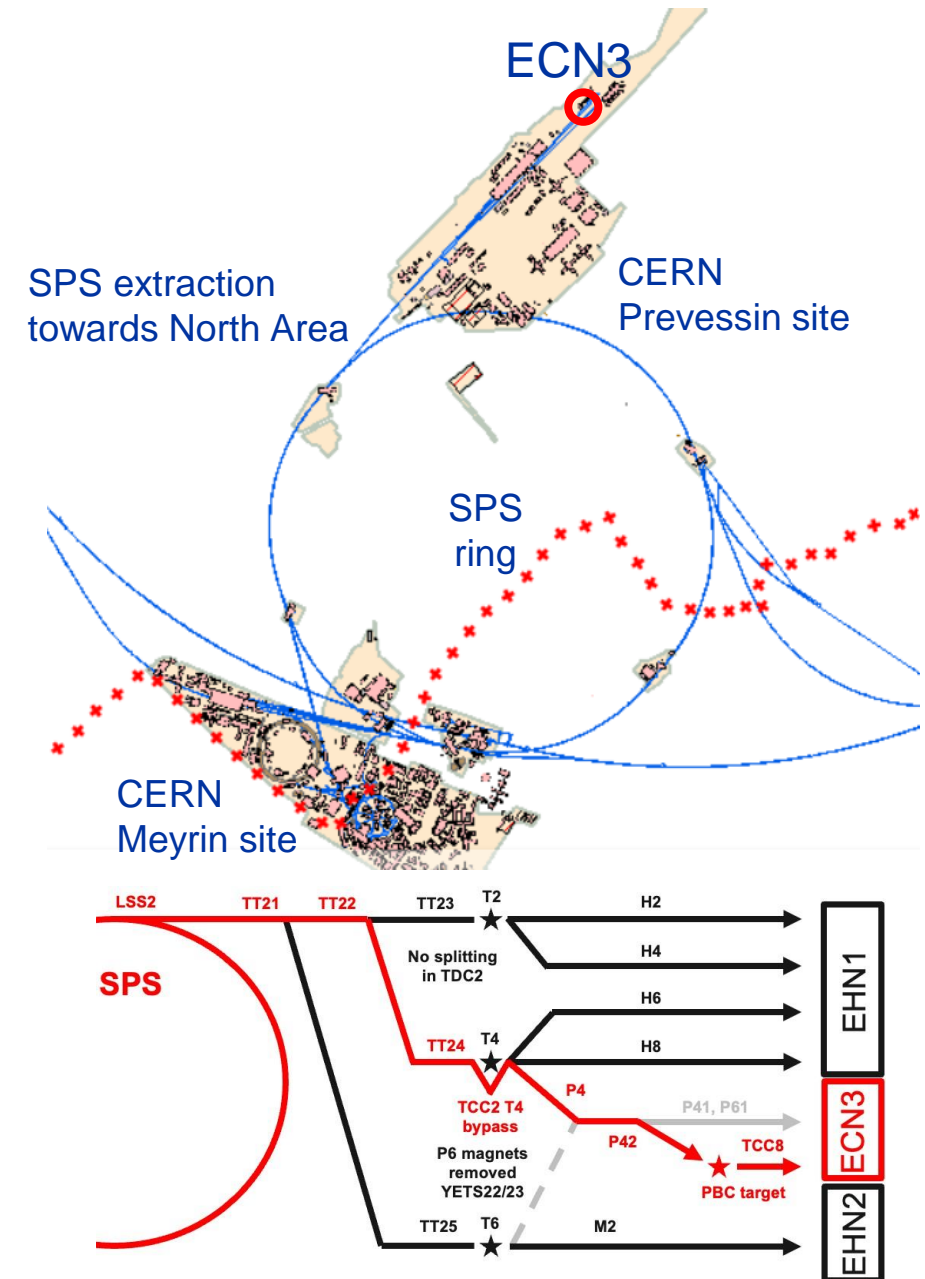
Design coordination

Jean-Louis Grenard WP4

04/09/2024

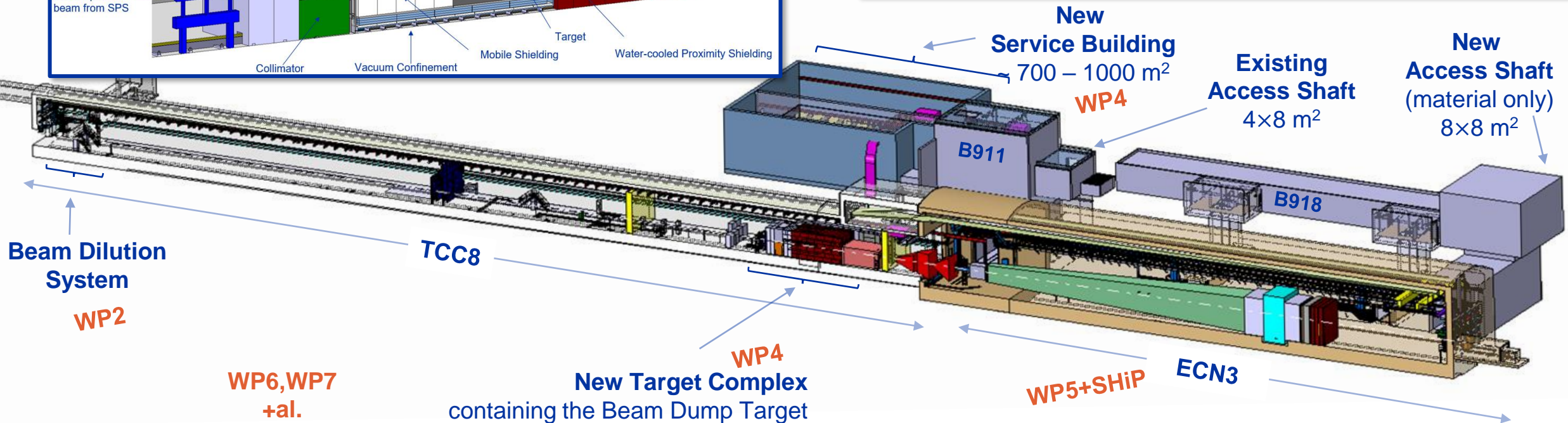
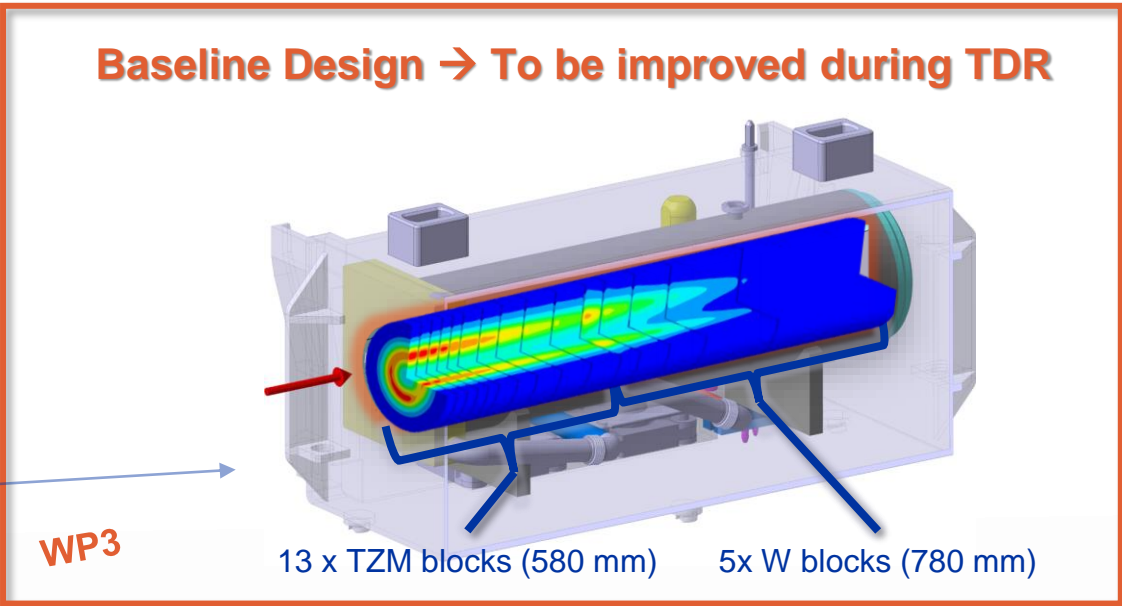
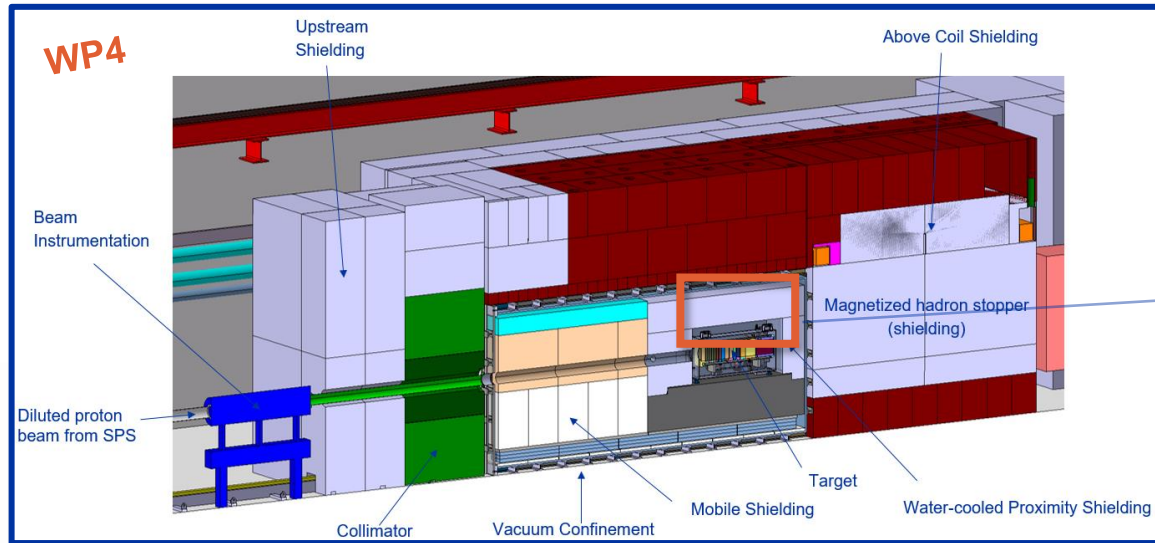
BDF-SHiP in an existing facility

- Implementation in the SPS North Area ECN3 designed at construction in 70's for a High Intensity (NAHIF)
- Currently used by NA62 experiment
- SPS North Area beam lines and associated infrastructure being currently consolidated
- Require the dismantling fraction of current P42 beam line, target station, the NA62 experiment



BDF/SHiP complex

Baseline Design → To be improved during TDR



Project Team

HI-ECN3 Study Project Team

Project Leader (PL):
Matthew FRASER

Deputy Project Leader (DPL):
Claudia AHDIDA

Project Safety Officer (PSO):
Melenia AVERNA

Project Radiation Safety Officer (PRSO):
TBC

Project Budget Officer:
Sylvie PRODON

Project Planning Officer (PPO):
Fernando PEDROSA

Configuration & Quality Assurance Manager:
Giulia ROMAGNOLI

Integration Support via ICEA:
Michael LAZZARONI

North Area Operation & Experiment Liason:
Dipanwita BANERJEE

SHiP Experiment Contact Person:
Richard JACOBSSON

SHiP Experiment Safety Correspondant:
Letizia DI GIULIO

Project & Experiment Safety Support (PESS) Correspondant :
James CURRIE

Admin Support:
Katarina SIGERUD & Ane-Mona BRANZA

+ WPLs

Matt's
slides at
345th IEFC

WP1 – Project
Management
Matthew FRASER

WP2 – Beam Extraction,
Transfer and Delivery
Francesco VELOTTI
Deputy Laurie NEVAY

WP3 – Target & Beam
Intercepting Devices
Rui XIMENES

WP4 – Target Complex
Jean-Louis GRECARD

WP5 – Exp. Area,
Interface & Integration
Francois BUTIN

WP6 – Radiation
Protection & Safety
Claudia AHDIDA

WP7 – Infrastructure,
Services & Civil Eng.
Fernando PEDROSA

WP8 – Radiation field and
R2E & R2M effects
Luigi ESPOSITO



Introduction

- TDR aimed to be completed by end of 2025
- TDR phase is not implementation phase
 - CE on the critical path
 - Need to define the envelopes by end of 2024
 - Constrains by existing CE structures (911 shaft, 918 and TCC8 soil retaining wall)
- But need to already foresee modifications of existing structures in 2024 and 2025 (ie new 911 doors, trench) to optimize CE work during LS3
- NA-CONS activities foreseen during LS3 in TCC8 and ECN3 (fire doors, fire detection) integrated in HI-ECN3 taking in consideration new requirements

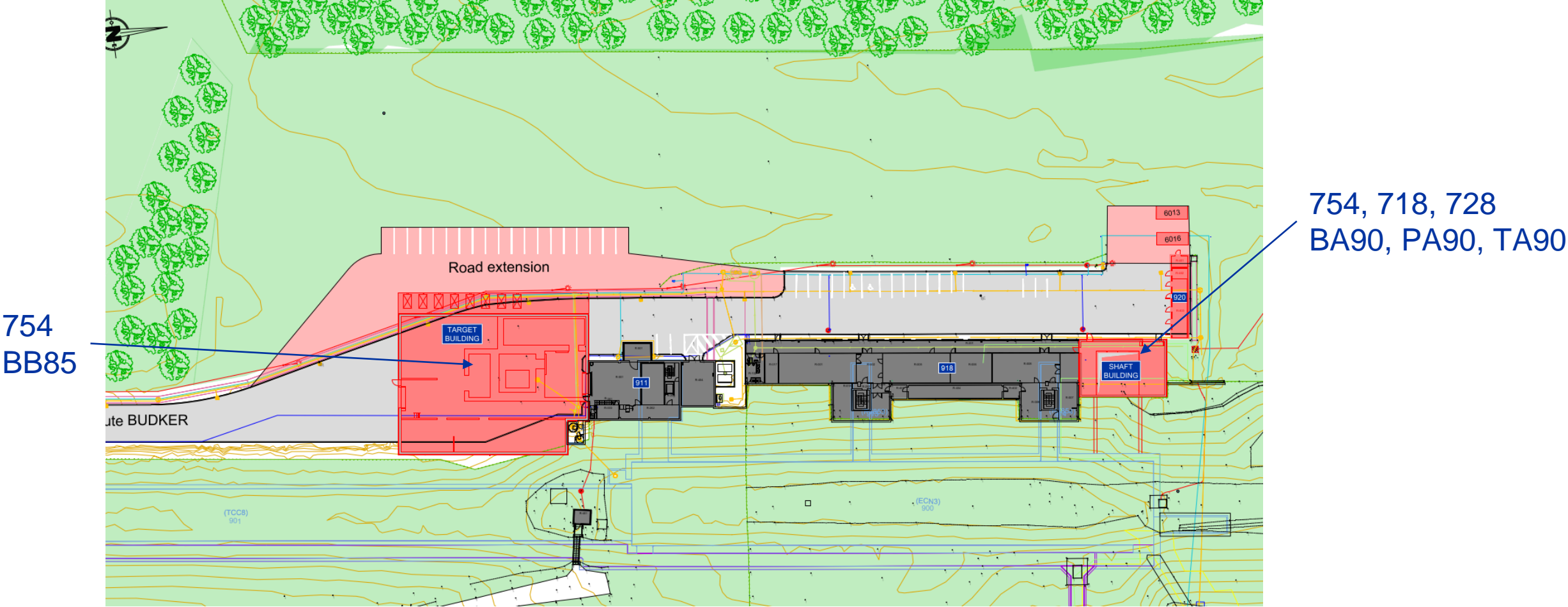
TDR phase - integration

- Definition of the new layout
- Integration of new beam line equipment
 - Magnets
 - Beam instrumentation
 - Target station
- Integration of the new experiment
- Integration of the new buildings and access shaft
- Integration of structures modification
 - ECN3 and TCC8 floor excavations
 - New compartmentation of TCC8

TDR phase - integration

- Integration of the associated utilities
 - Cooling and Ventilation
 - Handling
 - Electricity distribution
 - Control system distribution
 - Safety systems (fire detection, fire doors, access system)
- Integration of volumes for installation and maintenance tasks
 - Target replacement
 - Dismountable shielding
 - Experiment maintenance volumes
 - Handling volumes

New buildings – draft layout



754
BB85

754, 718, 728
BA90, PA90, TA90

3d Integration methodology

HI-ECN3 complex centralized integration via BE-EA integration team

- CATIA model

New service buildings

- Once we agree on volumes in CATIA design will be performed with REVIT mainly managed by SCE and EN-CV to take full benefit of BIM system
- Will be migrated regularly to CATIA to check and validate interfaces and keep general TCC8/ECN3 integration managed by BE-EA integration team UpToDate

ICEA role

- Presentation of design progress to ensure coherence with NA-CONS
- Validation of designs before ECRs
- Defined: <https://edms.cern.ch/ui/file/3018359/1.0/SPS-XPM-MEMO-0001-1.0.pdf>

3d models responsibilities

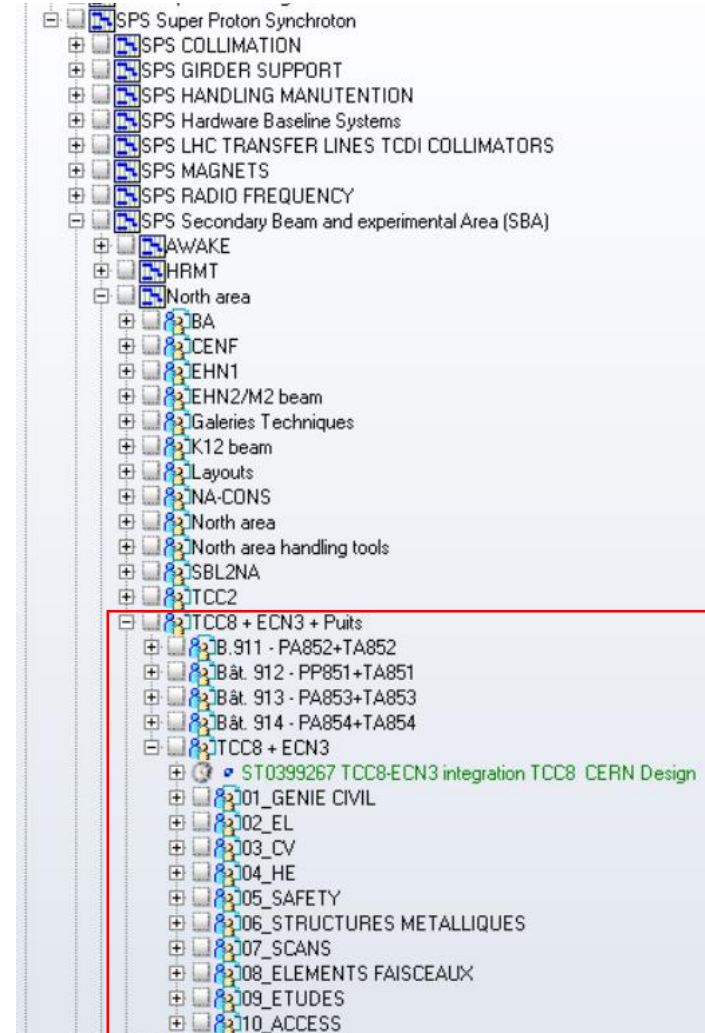
- Target station models: SY-STI Christophe
- EL systems (cable tray, racks): EN-EL Jean-Pierre
- CV systems: EN-CV Mathieu
- Handling systems: EN-HE Cristina
- Safety system (access, fire safety system, RP monitoring): BE-EA Beatriz, Sylvain
- Civil engineering structures: SCE-SAM Amine
- Beam line including skeleton including experiment: Beatriz, Sylvain
- Experiment integration model to be defined

- Service building integration for definition of volumes SY-STI Christophe
- **General integration models BE-EA Beatriz, Sylvain**

- **Are we missing someone?**

SMARTTEAM - PLM structure

- To be created
- Should be coherent with NA structure
- Duplication of TCC8-ECN3 existing structure?



Exchange of models CATIA - REVIT

- Storage of REVIT models? SCE/CV to organize and share folder?
- Exchange frequency? Every month?

Questions?



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