

# SND@LHC status and plans

Letter of Intent (CERN-LHCC-2020-013 / LHCC-I-037), 27 August 2020

- Presented at dedicated LHCC Focus Session and Open Session in 17-18 November 2020

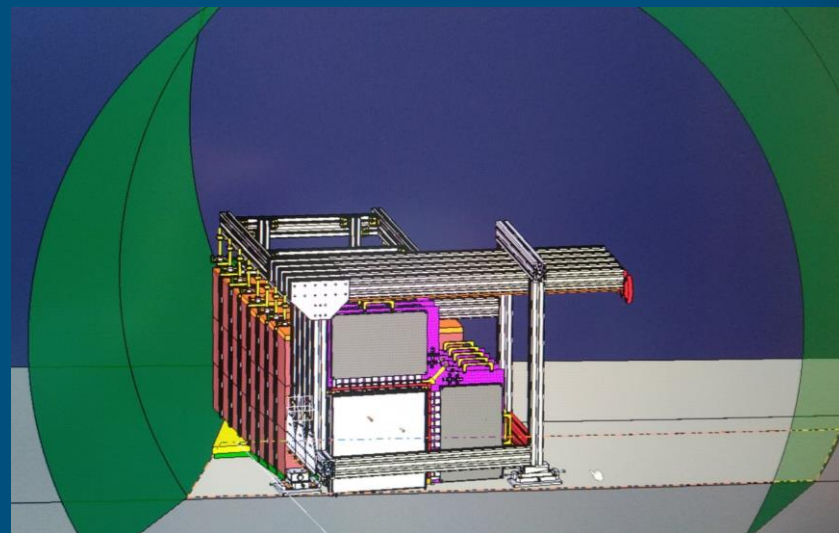
Technical Proposal (CERN-LHCC-2021-003 ; LHCC-P-016), January 2021

- Reviewed by LHCC in February 2021
- Final discussion at LHCC Focus Session, 2 March 2021
- Expect recommendation on approval to RB on March 17

# Update on detector status



- Veto system
  - Detector ready by end of May
  - Integration with readout June-July
- Target mechanics
  - Design ready by end of March
  - Production by end of June
- Emulsion
  - Company ready to start production
- Target tracker
  - 4/5 modules ready, #5 by end of March
  - Detector fully ready by end of April
  - Integration with readout and calibration May - July
- Muon detectors
  - Detector modules ready by end of June
  - Integration with readout July
- Electronics and readout
  - Production and tests ready by end of April
- ➔ Very good prospect for detector commissioning on surface with full detector
- ➔ Request for external zone downstream of H8 submitted to SPS coordinator for September-October
  - ➔ Pre-installation and commissioning, including muon beam parasitically



# Work ahead...



- ECR: “preparatory works in UJ18/TI18 prior to installation of the SND detector”, EDMS 2424088
  - Should go for another round of circulation and then approval as soon as project is approved
  - All works discussed with Tomas Otto
    - ➔ Covered by existing Work Safety Authorisations, including SND detector installation
    - ➔ Another iteration with Olivier Pirotte and Delphine Letant-Delrieux next week
- Reviews of detector and mechanics March - April
- Another round of survey strategy with detectors
- Another round on humidity control in cold box with CV
- LHC Schedule review March 15
- Safety Launch Discussion form filed in
  - Project Safety Requirements (PSR) and Regulatory Framework
- Safety and RP aspects of detector installation and commissioning, and later procedure for emulsion replacement (buffer zone)
- Surface commissioning at EHN1-H8, Sep - Oct, personnel and planning
- Detailed detector installation planning, including tools, procedures and personnel
  - ➔ Expect access “7/7” October - December

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**EDMS NO.** 2424088    **REV.** 0.1    **VALIDITY** DRAFT

**REFERENCE**  
LHC-

**LHC**

Date: 2020-10-12

**ENGINEERING CHANGE REQUEST**

**Preparatory works in UJ18/TI18 prior to installation of the SND detector**

**BRIEF DESCRIPTION OF THE PROPOSED CHANGE(S):**

SND (LHC Scattering and Neutrino Detector) is a proposed small stand-alone experiment capable of making measurements with neutrinos in a domain inaccessible to other experiments and searching for feebly interacting particles. The detector is design to take data in Run 3, and is to be located at the downstream end of TI18. This document reports on the works necessary to prepare the experimental area and to secure the transport of components under and over the LHC for installation in 2021. Special attention has been paid to ensure that all works and installation can be carried out with the LHC in cold conditions with no impact on the schedule and plans for the machine in 2021.

<b>DOCUMENT PREPARED BY:</b>	<b>DOCUMENT TO BE CHECKED BY:</b>	<b>DOCUMENT TO BE APPROVED BY:</b>
		P. Collier (on behalf of LMC)  M. Lamont (on behalf of TREX)  J. M. Jimenez (on behalf of LS2C)

**DOCUMENT SENT FOR INFORMATION TO:**  
O. Beltramello, LS2 Committee, ATS groups leaders

**SUMMARY OF THE ACTIONS TO BE UNDERTAKEN:**

In order to install the SND in 2021 the following main work is needed in UJ18/TI18:

- Preparation of electrical power (installation of connection box and circuit breaker) and optical fibres (installation of tubes for blowing fibres).
- Preparation of the experimental area in TI18 (removal of unused components (old ventilation duct), installation of lights, power sockets, AUG, optical fibres).
- Installation of transport infrastructure to lift removed section of the unused ventilation duct, SND cooling unit, and iron blocks over the QRL cryo and LHC beam lines.

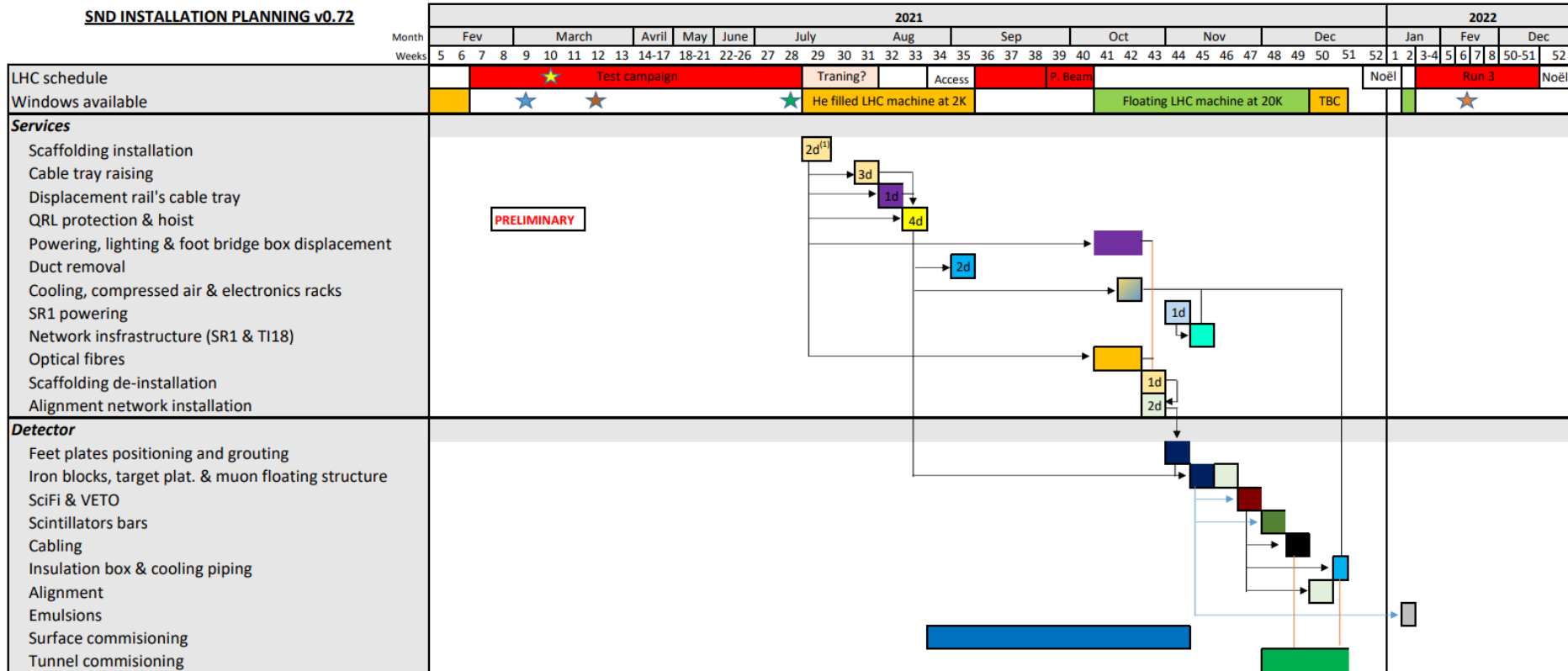
Note: When approved, an Engineering Change Request becomes an Engineering Change Order. This document is uncontrolled when printed. Check the EDMS to verify that this is the correct version before use.

# Draft planning



Pablo Santos Diaz

## SND INSTALLATION PLANNING v0.72



- ★ EN-ACE-OSS → BE-OP-LHC
- ★ LHCC committe
- ★ Research Board (potential approval)
- ★ First Run 3 beam
- ★ UJ17 shielding chicane

- EN-HE-PO
- BE-EA-AS
- EN-EL-FC
- EN-EL-EWS
- EN-CV
- BE-GM-ASG
- IT-CS
- EP-ADO-PO

P. Santos Diaz