

News



- FCT project (fundo CERN) was approved
 - this was important to confirm LIP's participation in SND@LHC
 - even if it's a reduced amount (wrt to budget asked in proposal)
- Guilherme has formally started his PhD at IST
- Guilherme has been awarded a PT-CERN 4-year grant (FCT)
 - having received the highest classification
 - and in the most competitive domain (physics)
- LIP report, draft available ([document](#))
- student outreach: presentation to IST students, Inside Views session at LIP, March 9th ([slides](#))
- LIP slack channel available ([link](#))

LIP, 29/3/2022

News SND@LHC

<https://indico.cern.ch/event/1116258/>



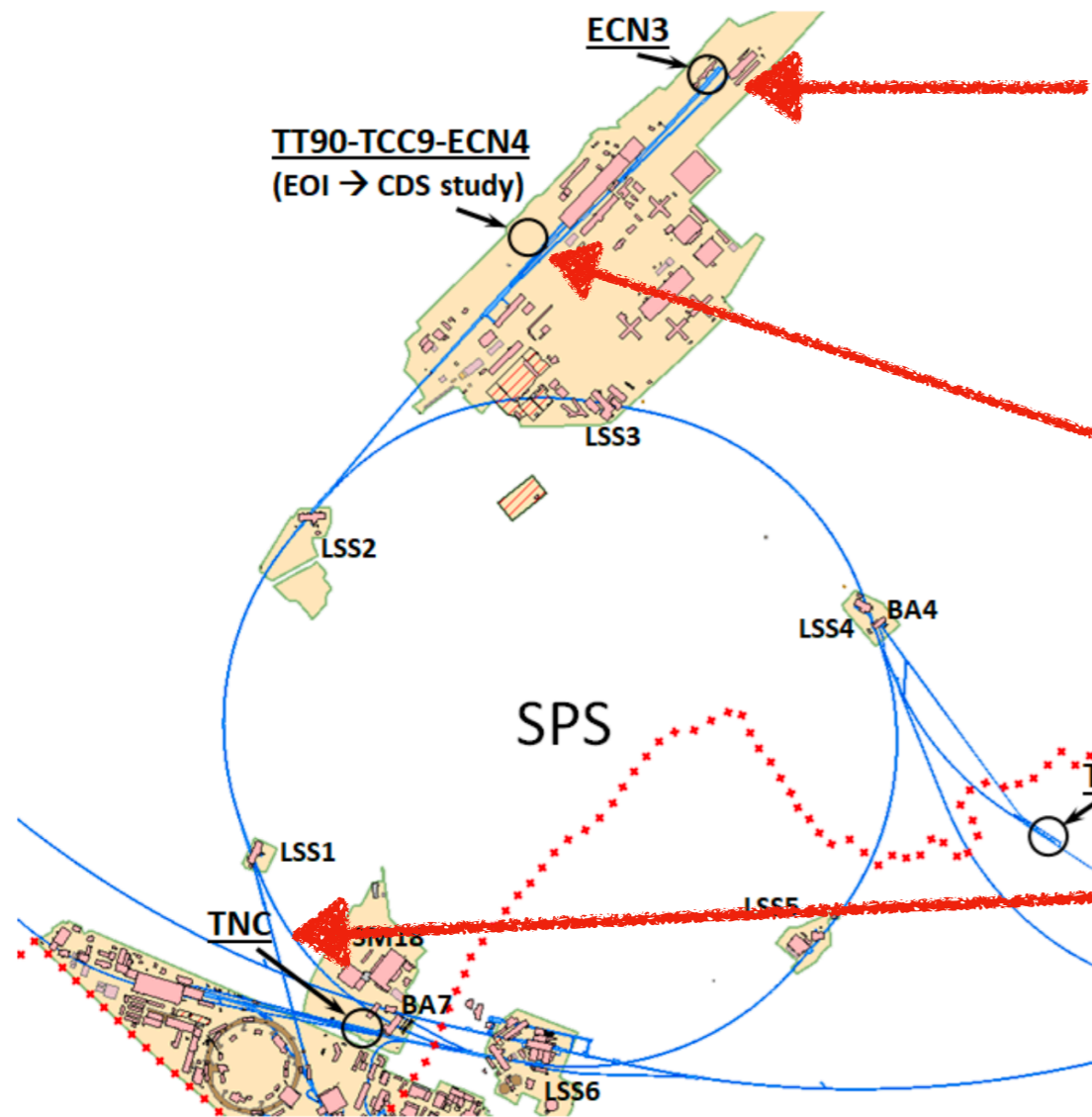
- detector fully installed in its location in T118 tunnel
- commissioning data
 - test beam data available
 - LHC beam arriving soon-ish
- goals
 - establish detector performance
 - background measurements
 - ν_μ/ν_e identification with electronic detectors
 - first (significant) observation of collider neutrinos
- aim to
 - pursue active involvement in detector commissioning
 - with a continued focus on the muon system
 - seek possibility to also take some shifts remotely (Lisbon, Coimbra)
 - take part in data taking, reconstruction and analysis

News SHiP

<https://indico.cern.ch/event/1138547/>
<http://cds.cern.ch/record/2802705>



- study of new locations of BDF
 - cost reduction major factor for potential approval of the experiment
 - Implementation in an existing location major factor for early approval
- ECN3 line seems optimal location
 - contenders: SHiP, NA62, SHADOWS, TauFV
- PBC to launch report summarising the alternatives
 - requirements, goals, physics reach
 - report due 2023 to feed SPSC recommendation and management decision in time for next MTP (2024)
- SHiP to prepare physics sensitivity report assuming ECN3 (2022)
- “Composition of collaboration under review” (before May)



ECN3:

- lowest civil engineer → reduction of cost
- competition with the kaon program/shadows
- possibility to install during LS3

TT90-TCC9-ECN4:

- significant cost/uncertainty/risk
- option attractive wrt TCC4/TNC

TCC4: Complex civil engineering (disqualified)

TCN:

- good from radiation protection
- needs sizeable civil engineer work
- but cost reduction wrt CDS design

Accelerator schedule	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
LHC		Run 3			LS3				Run 4		LS4		
SPS													
BDF / SHiP	Design and prototyping				Production / Construction / Installation								Operation
Milestones					TDR	PRR						CwB.1	CwB.2

Today!

T0.1: Approval for TDR

T0.2: Start of construction

Cool-down - ECN3 decommissioning/beamline – CE in LS3

Facility commissioning (μ -shield?)

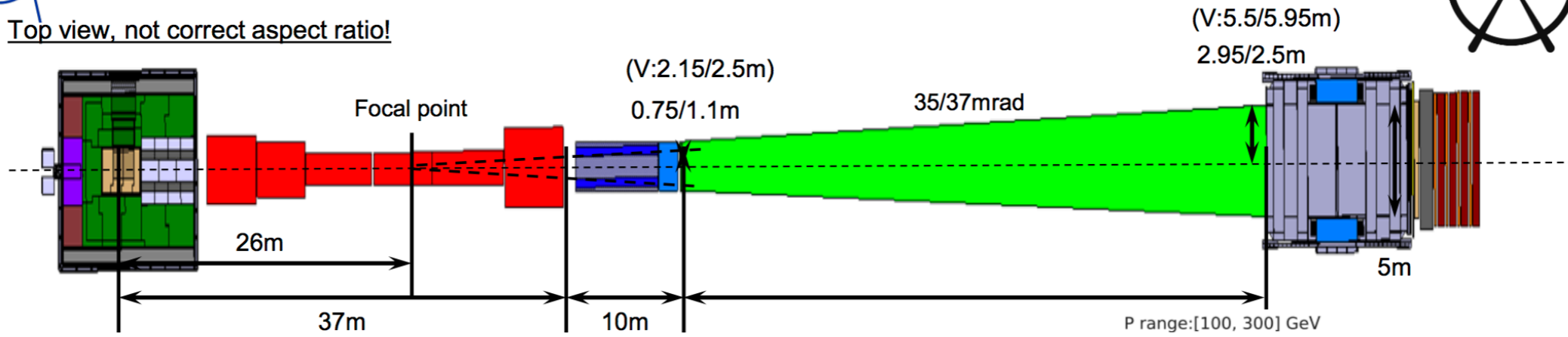
Approval for construction



SHiP v.2018 → v.2022



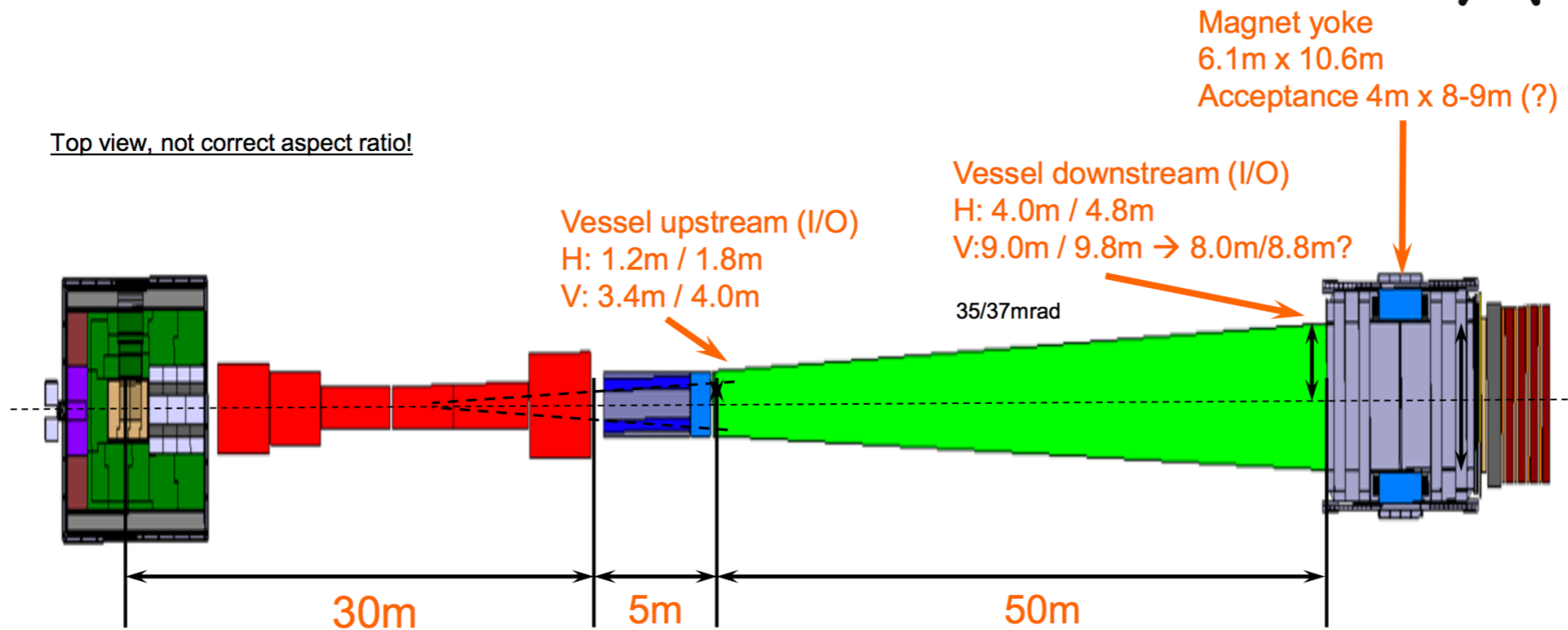
Top view, not correct aspect ratio!



SHiP v2022.0

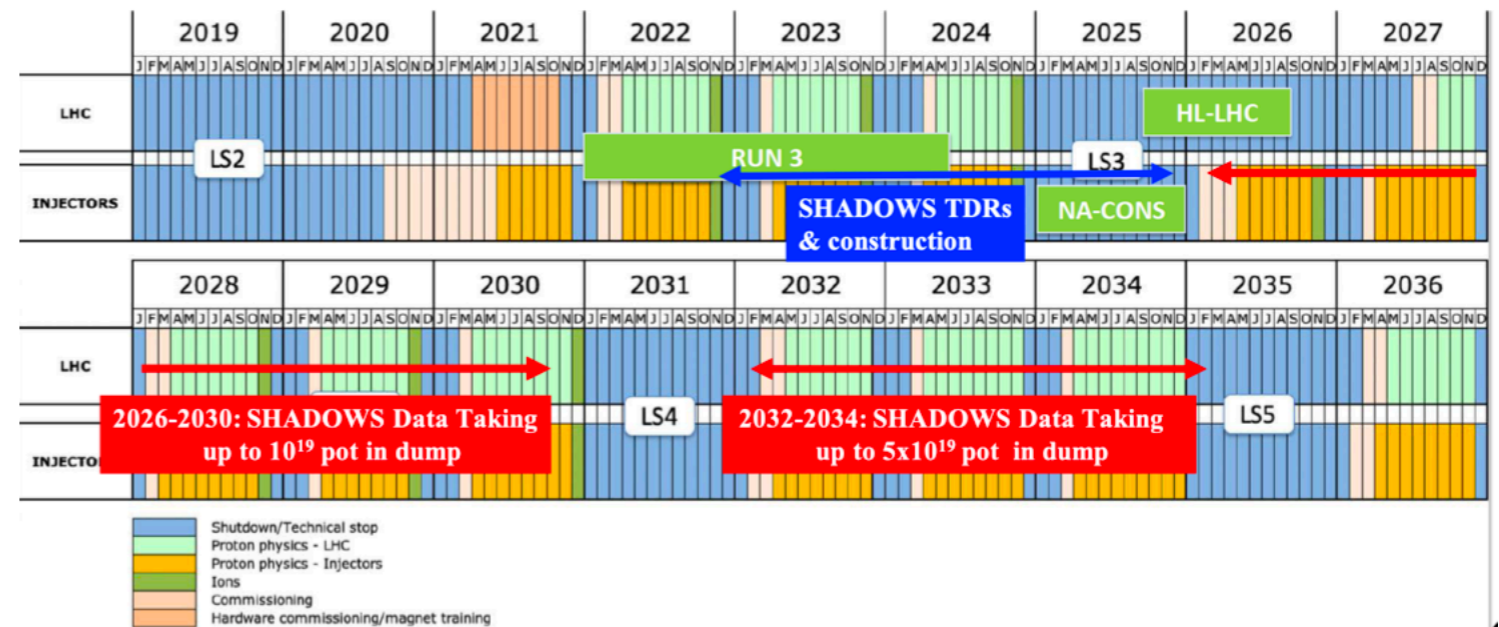
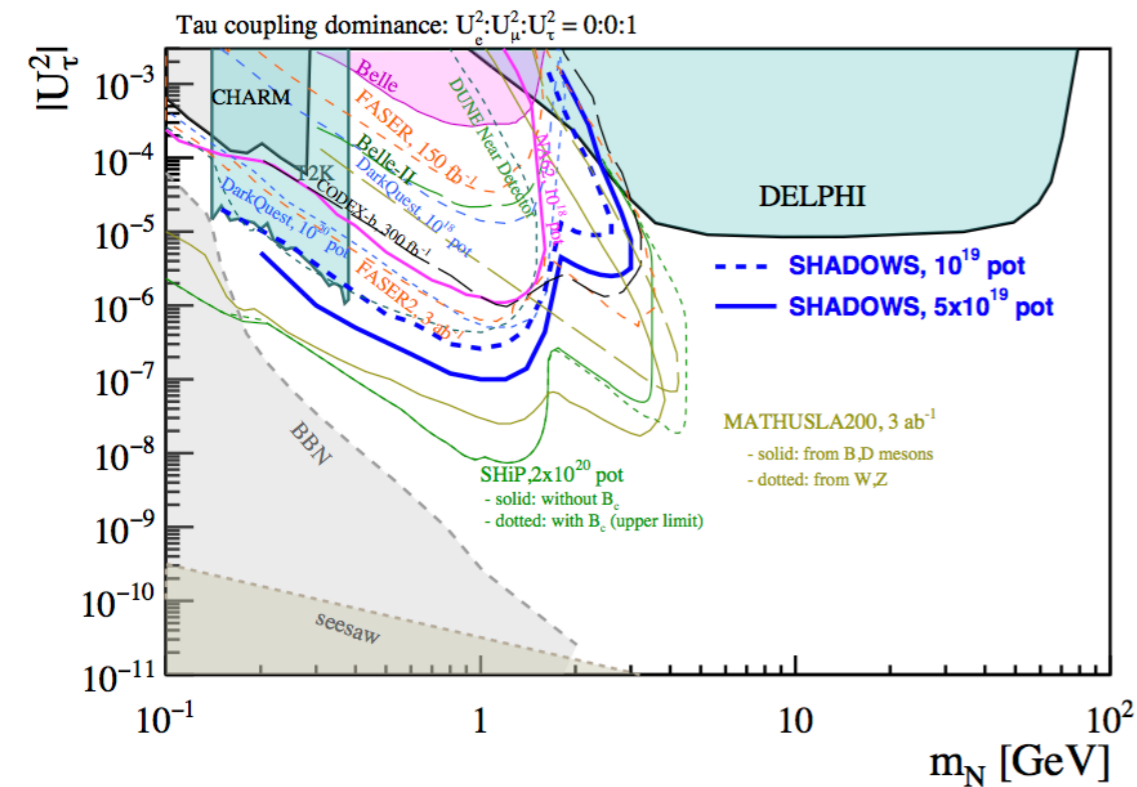


Top view, not correct aspect ratio!



News SHADOWS

- EoI released, submitted to SPSC, in January (2022)
 - Search for Hidden And Dark Objects With the SPS
 - <https://cds.cern.ch/record/2799412>
- located together with NA62 (kaon physics) in ECN3 line
- further detailed background (from μ, ν -DIS) studies awaited



Implications of current global circumstance

- contributions by Russian institutes to new projects are currently suspended (following CERN Council resolution of March 25th)
 - includes BDF/SHiP R&D, afaict
- participation to SND@LHC (existing collaboration) not affected
- imports from Russia blocked (internationally imposed sanctions)
 - disruption of supply of emulsion films (provided by Russia, Japan)
 - seeking possibility to increase production at the Japan facility (Nagoya)
 - may further result in a significant cost increase

project

- SND@LHC

1. Commissioning

- alignment/calibration of muon system, cross integration of other systems
- particle identification and reconstruction
- data acquisition, monitoring, analysis

2. Physics

- towards the observation of muon (and electron) neutrinos

3. Sealed RPCs

- for monitoring/measurement of muon flux @SND
- in a close collaboration with the LIP's Detector Lab

SND@LHC weekly meetings

- **SoftPhys meeting**
 - Tuesdays, 13:30
 - <https://indico.cern.ch/category/14601/>
- **Commissioning**
 - Tuesdays, 08:00
 - <https://indico.cern.ch/category/13141/>
- **Veto/Muon system**
 - Wednesdays, 13:00
 - <https://indico.cern.ch/category/13141/>