SHiP
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Some plans and actions

Huge milestone achieved: SHIP input to HIECN3/BDF TDR delivered

Thanks everyone!

Preliminary detector cost

[kCHF] Sub-projects		Construction (2026)	Cost SHiP Run4 Initial	Run 4 Nom.	Complete	Uncert.	Leading group
Muon Shield		**10,000**					
Magnet Bend Muon Shield	MBMS	10,000	10,000			40%	SHiP / CERN EP
Scattering Detector	SD	**10,591**					
Sd veto		?	?				?
Sd timing		?	?				?
Sd High-Granularity Calorimeter	- SHGC	6,854	685			30%	?
Sd Medium Granularity Calorimeter	-	800	200				?
Sd Tracking Calorimeter sciPads	- STCP	1,490	370			29%	BE
Sd Tracking Calorimeter sciFi	STCF	1,447	145			30%	CH
Decay Detector	DD	**29,199**					
Dd VOLume	DVOL	1,140	1,140			17%	IT / CERN EP
Dd Background Tagger Straw	DBTS	546	546			0%	UK
Dd Background Tagger Timing	DBTT	1,472	1,472			26%	BE / CH
Dd Surround Background Tagger	DSBT	3,738	2,000			25%	DE
Dd Spectrometer Magnet	DSM	11,000	11,000			27%	CERN EP / TE-MSC
Dd Spectrometer Straw Tracker	DSST	3,168	3,168			40%	DE
Dd Spectrometer Timing Detector	DSTD	471	471			23%	CH
Dd ECAl	DECA	2,760	?				DE
Dd (LHCb SPD)		?	?				?
Dd Ecal Precision Layers	DEPL	3,953	?			29%	?
Dd HCAl (LHCb)	DHCA	?	?			0%	?
Dd Tail catcher (LHCb PS)		951	100			31%	?
Infrastructure		**1,000**					
Common INFrastructure	CINF	1,000	1,000			30%	CERN EP
Online+Offline		**1,500**					
Common Electronics		400	300			40%	FR
Common Online system	CCDO	400	400			40%	CERN EP
Common Computing		700	500			40%	CERN EP
Common Physics SoftWare	CPSW						DE
Total		**52,290**	**31,497**			**29%**	

Recuperated detectors and material don't come for free

Technical Design Reports

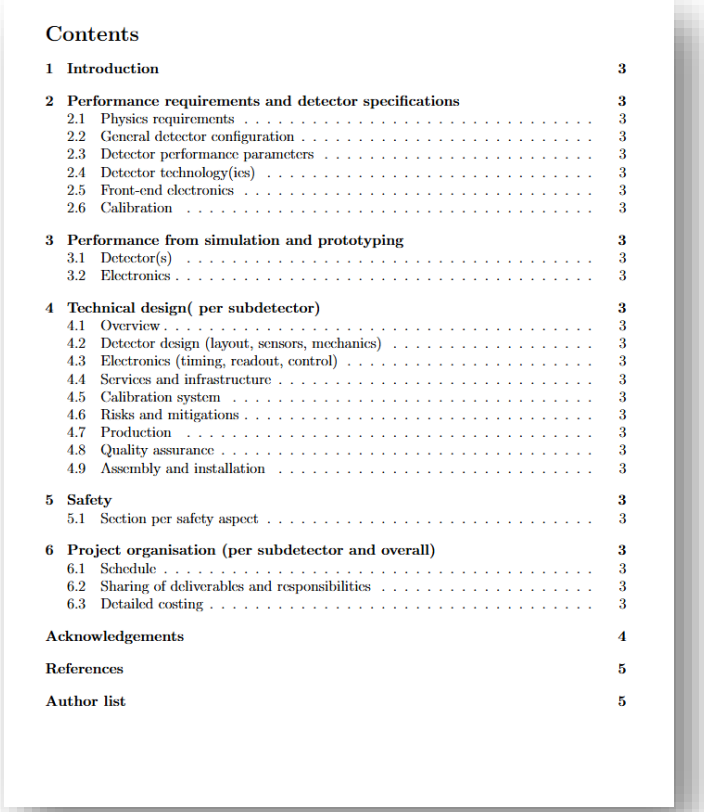
We have ***committed*** to submit TDRs by end of 2027

- We did not exactly say for which subsystems and how many…. At least Run 4 configuration!
- Documents to be ready ***in ~400 days*** ***(natural submission deadline two weeks before November SPSC)***
- …including electronics architecture and breakdown of deliverables and responsible, cost profiles
- Needs system reviews of ***up to*** 19 systems
- We need time for ***internal reviews*** of TDRs

➔ ***We need a common calendar "now"!***

- Template Overleaf project for chapter/section structure setup since March 2026
- Consider importance of ***SPSC reviewing TDRs in limited time***

➔ Failure to deliver will mean….


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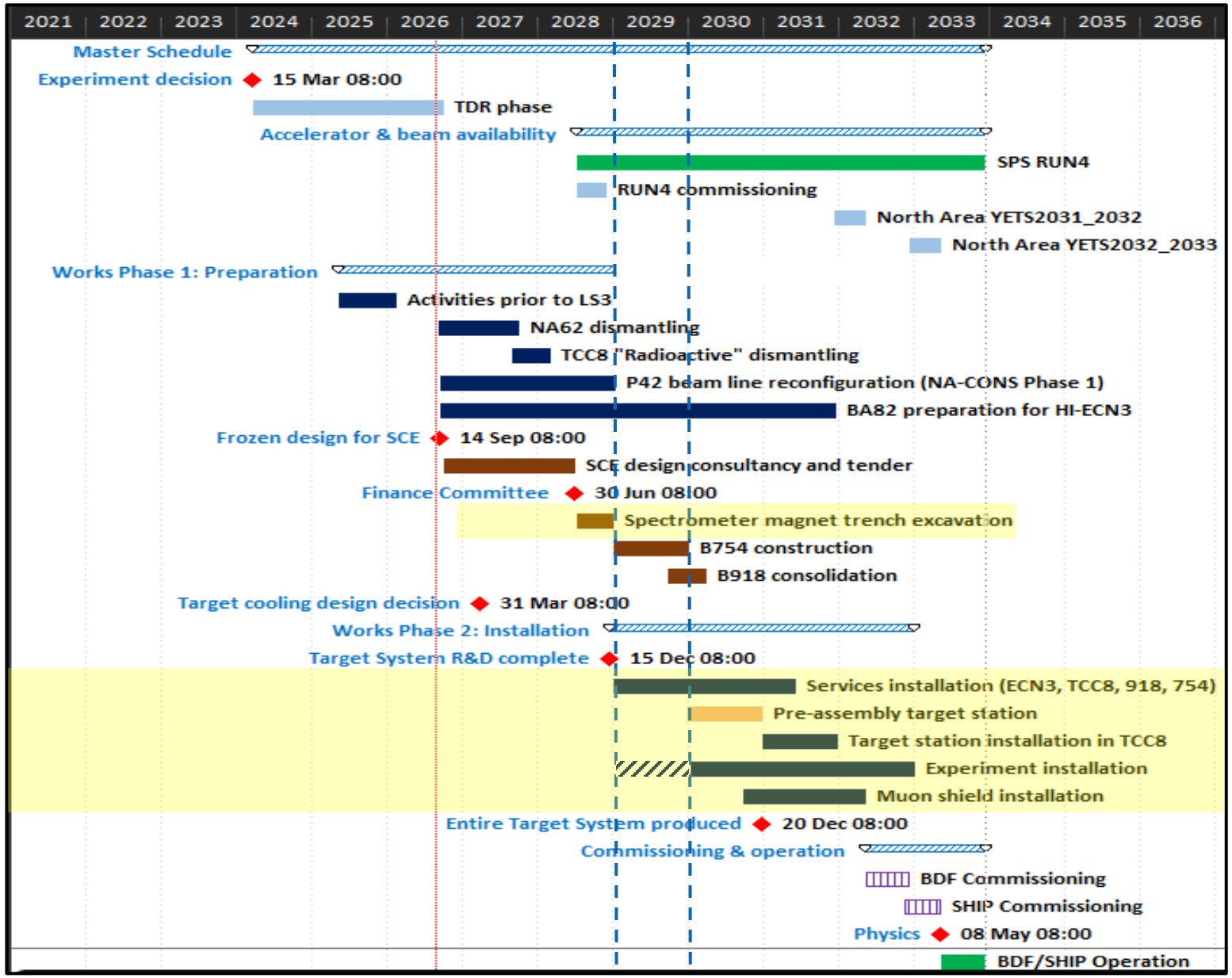
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- Suggested TDR organisation from 2024 Freiburg CM: SHiP Status&Plans

SHiP sub-projects

Sub-projects	Work packages	Abbr.	Lead group	TB membership (= TDR responsible) Convener 1	Convener 2		TDR submission
Muon Shield							
Magnet Bend Muon Shield		MBMS	CERN	M. Ferro-Luzzi	M. Liebsch		2027-Q2
Scattering Detector		SD		G. De Lellis	A. Di Crescenzo		
Scattering Detector (SD)	Sd veto		?				2027-Q4 (Demonstrator)
	Sd timing		?				
	Sd High-Granual Calorimeter	- SHGC	?				
	Sd Medium Granularity Calorimeter	-	?				
	Sd Tracking Calorimeter Pads	- STCP	Gent	K. Skovpen	N. Anfimov		
	Sd Tracking Calorimeter sciFi	STCF	EPFL	E. Zaffaroni			
Decay Detector		DD					
Dd Volume Helium		DVOH	CERN	P. Santos Diaz	A. Miano		2027-Q4
Dd Background Tagger Straw		DBTS	Liverpool	T. Bowcock			
Dd Background Tagger Timing		DBTT	Gent	K. Skovpen	N. Anfimov		
Dd Surround Background Tagger		DSBT	Berlin	H. Lacker	H. Fischer		
Dd Spectrometer Magnet		DSM	CERN	F. Savary	L. Baudin		2027-Q4
Dd Spectrometer Straw Tracker		DSST	Hamburg	D. Bick			2027-Q4
Dd Spectrometer Timing Detector		DSTD	Zurich -->	G. Vasquez	C. Betancourt		
Dd PID (DPID)	Dd ECAl	DECA	Mainz				2027-Q4 (Initial)
	Dd (LHCb SPD)		?				
	Dd Ecal Precision Layers	DEPL	?	W. Bonivento	R. Wanke		
	Dd HCAL (LHCb HCAL)	DHCA	?				
	Dd Tail catcher (LHCb PS)		?				
Infrastructure							
Common INFrastructure		CINF	CERN	P. Santos Diaz			
Control and data handling							
Common Controls, DAQ and Online (CCDO)	Electronics		IJClab	J. Maalmi	D. Breton		2028 - Q1
	Online system		CERN	F. Alessio			
	Computing		CERN	E. Gamberini			
Common Physics SoftWare		CPSW	Seigen	O. Lantwin			w. "physics TDR"?

Master schedule



A few outstanding

- UBT straw mechanical design
- Topical meetings on subsystem electronics architectures
- High-statistics files with beamline background
- Time structure in simulation
- Detector data rates

Imminent: SPSC Annual Report

To be submitted two weeks before SPSC November 23-24

- Andrey:

1. Introduction (2p.)
   - Current status of SHiP
   - SHiP time plan
   - Preparation of TDRs planned for 2027
2. Muon Shield (5p.)
3. Status of the SHiP sub-systems
   - 3.1 Scattering detector
   - 3.2 Decay detector
     - Decay volume
     - Background taggers
       - DUBT
       - DSBT
     - Spectrometer
       - Magnet
       - DSST
       - DSTD
     - PID system
4. Background evaluation

Credible proposal here → 5. Detector and objectives for Run4

6. Status of collaboration
7. Conclusion