



2nd General VTX workshop

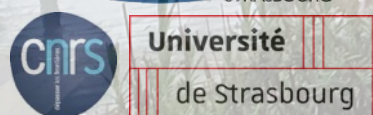
20-22 April 2026, DESY

<https://indico.belle2.org/event/18167>

VTX status & workshop goals

Welcome to DESY!

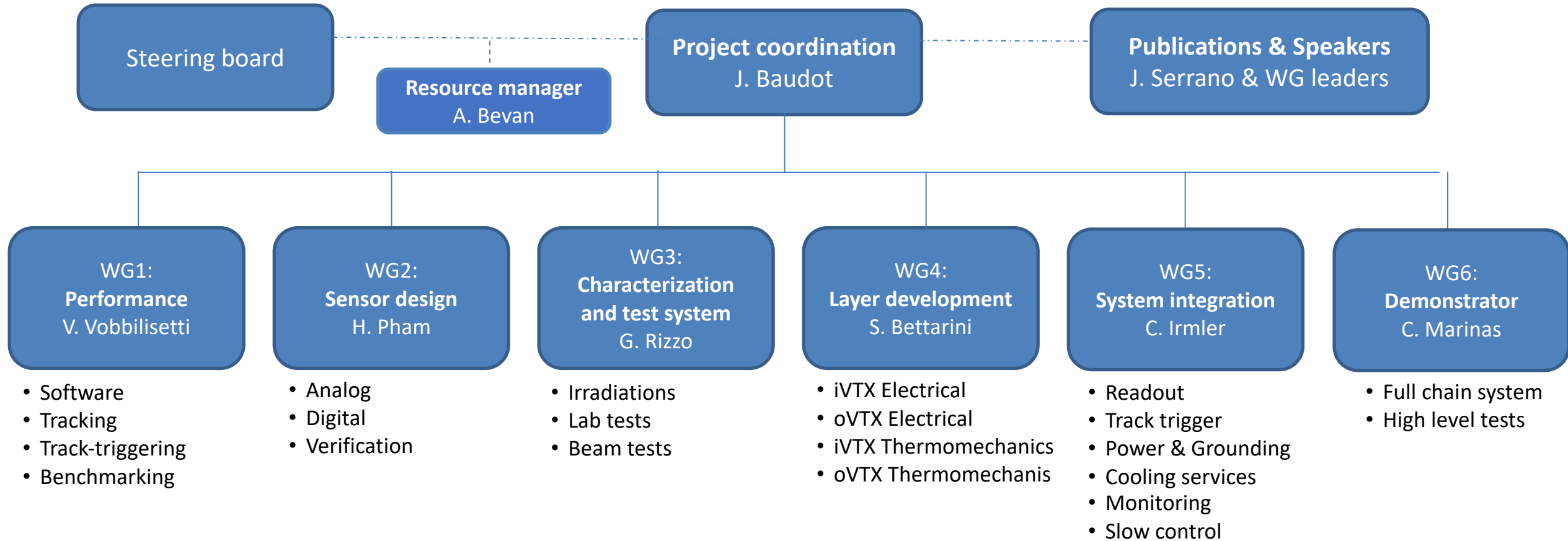
Jérôme Baudot



- Reminder of VTX structure
- Milestones
- Topics per WG



VTX collaboration structure



=> Structure to evolve after TDR

■ Mailing lists

- Reminder: **in principle always us vtx-upgrade@belle2.org**
- vtx-wg1-performance@belle2.org
- vtx-wg2-sensor-design@belle2.org
- vtx-wg3-sensor-testing@belle2.org
- vtx-wg4-ladder-dev@belle2.org
- vtx-wg5-system-dev@belle2.org
- vtx-wg6-demonstrators@belle2.org

=> All with self-subscription

=> all conveners subscribed to all

■ VTX main page

<https://gitlab.desy.de/vtxupgrade/vtxdvpmt/-/wikis>

■ Indico categories

- General: <https://indico.belle2.org/category/128/> weekly
- Workshops: <https://indico.belle2.org/category/242/>, twice a year + topical ones
- WG1: <https://indico.belle2.org/category/211/>, replaced by Upgrade performance meetings
- WG2: <https://indico.belle2.org/category/168/>, weekly
- WG3: <https://indico.belle2.org/category/238/>, bi-weekly
- WG4: <https://indico.belle2.org/category/239/>
- WG5: <https://indico.belle2.org/category/240/>
- WG6: <https://indico.belle2.org/category/241/>
- Gemba: <https://indico.belle2.org/category/244/>

} Monthly when no workshop

=> conveners with management rights

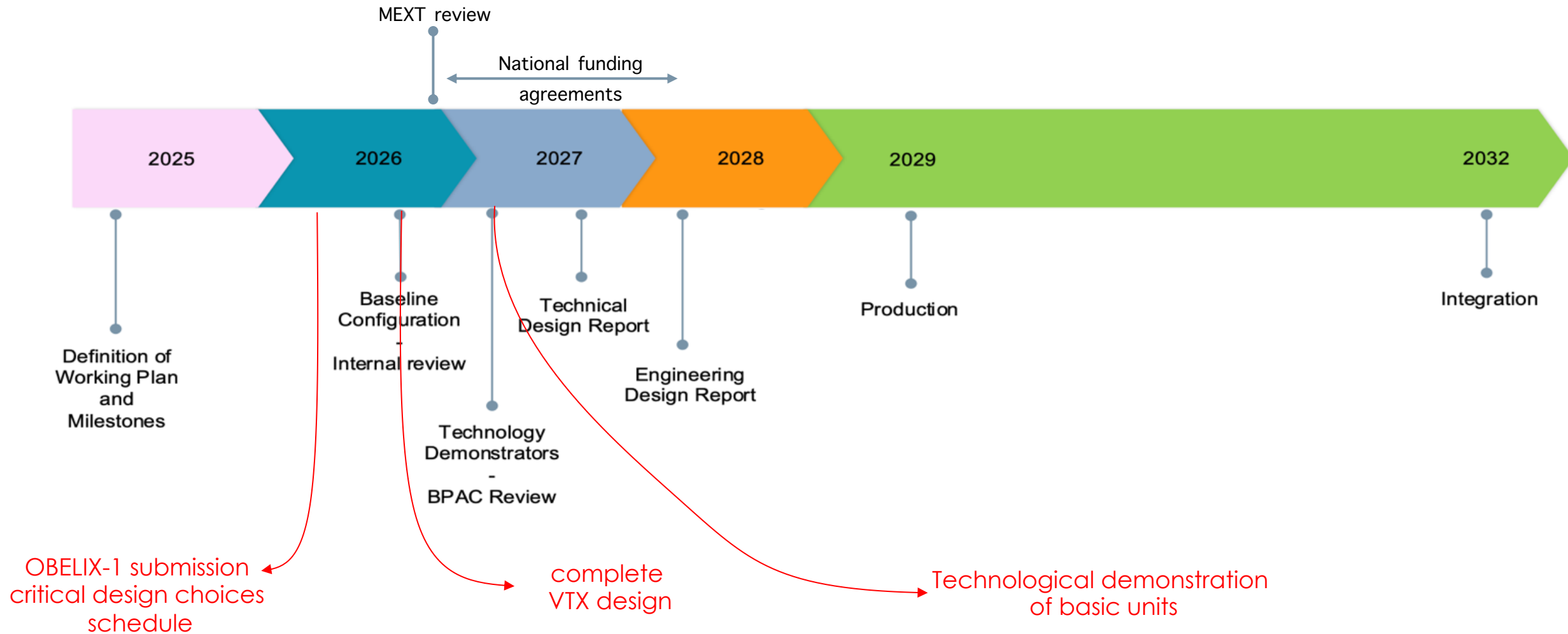
- Entry point is: <https://gitlab.desy.de/vtxupgrade/vtxdvpmt/-/wikis/VTX-project>
 - Contribute within: <https://gitlab.desy.de/vtxupgrade/vtxdvpmt>
 - Simple .md files with images to provide technical description: **docs**
 - Technical notes, which are not yet ready for Belle II server: **technotes**
- => the web page is then automatically built: <https://vtxupgrade.pages.desy.de/vtxdvpmt/>
- Sharepoint for large files: <https://syncandshare.desy.de/index.php/s/tj4LxD3modH9Kyz>

■ Proposal for documentation task force

- No change since December (Pisa meeting)
 - maybe not issue for now
- To be rediscussed on Wednesday

General Upgrade timeline

Minimal changes / Dec. 2025 @ Pisa



■ Sensor in fabrication:

=> April 2026

■ Baseline design:

- **For:** iVTX & oVTX ladder structure, support structure, services up to drop-box
- **Goals:** conflict-free drawings exist, cooling & mechanical stability proven in simulations
mock-ups/prototypes supporting simulation results

=> July 2026

+ Homework for Upgrade Group

■ Technical demonstrators for TDR

- See complete list at <https://vtxupgrade.pages.desy.de/vtxdvpmt/tdr-demonstrators/>

=> mid-2027

- Commitment from collaboration institutes
- Project management

■ Prototypes for Engineering Design

- Protos with OBELIX-1, full detector mock-up ... => list to be established

=> For 2028, before production starts in 2029?

Main goals for these 2 days



- Limited participation due to other mini-workshops => full session not for all WGs
- **Review status of baseline design for iVTX and oVTX**
- Review IR integration
- Contact with STL project
- Review collaboration-wide questions

- Main focus on VTX-ITT-oDC combined performance
 - Implementation of reduced reduced acceptance?
 - Performance results expected for July 2026
- “New” VTX-only questions
 - Boost reduction => further improvement of DCA resolution?
 - Description of detailed geometry in simulation?

Tuesday 21, late afternoon

16h45

17:00

Status and plan for VTX simulations & performance	<i>Vidya Sagar Vobbilisetti</i>
<i>Building 1B, Seminar room 4a/b, DESY</i>	16:45 - 17:05
Status of Upgrade performance studies	<i>Alessandro Gaz</i>
<i>Building 1B, Seminar room 4a/b, DESY</i>	17:05 - 17:25
Discussion on on-going or next tasks	
<i>Building 1B, Seminar room 4a/b, DESY</i>	17:25 - 17:55
Discussion with STL	
<i>Building 1B, Seminar room 4a/b, DESY</i>	17:55 - 18:25

18:00

■ WG2: OBELIX-2 design

- Start on known modifications (list:) in Spring 2026
- Organisation to be discussed after OBELIX-1 submission

■ WG3: OBELIX-1 test

- Preparation well on-track
- 2 mini-workshops organised
 - TJ-Monopix2 test recap: 16-18 April
 - DAQ for test hackathon: 3-5 May
- Planning for Set./Oct. critical

Monday 20, afternoon
14h45

15:00

WG2 sensor design report

Building 1B, Seminar room 4a/b, DESY

Thanh Hung Pham

14:45 - 15:05

WG3 sensor testing report

Building 1B, Seminar room 4a/b, DESY

15:05 - 15:25

■ iVTX ladder design not well established

- Good progress on TPG properties
- Demonstrator for cooling with TPG in the making
- Sliding mechanism rather complex

■ Learning from PXD experts

- Tuesday 21, 11h00 => discussion
- Tuesday 21, 13h00 => visit HERA Hall West

Tuesday 21, morning

8:30

Plans towards iVTX ladder prototypes with TPG

Julien Bonis

Building 1B, Seminar room 4a/b, DESY

08:30 - 08:50

09:00

Progress on the sliding mechanism and overall iVTX mechanical support

Dominic Howgill

Building 1B, Seminar room 4a/b, DESY

08:50 - 09:15

New QMUL set-up for In/Through plane thermal conductivity

Adrian Bevan

Building 1B, Seminar room 4a/b, DESY

09:15 - 09:30

Thermal conductivity of irradiated TPG

Franz matejcek

Building 1B, Seminar room 4a/b, DESY

09:30 - 09:55

10:00

RDL: electrical measurements on IZM structures and prototype

Mr Andreas Ulm

Building 1B, Seminar room 4a/b, DESY

09:55 - 10:20

WG4 – oVTX layer development



■ oVTX ladder design

- Review of activities within well-establish plan
- Discussion on assembly starting

Monday 20, late afternoon
16h00

16:00	oVTX Design Status <i>Building 1B, Seminar room 4a/b, DESY</i>	<i>Maurizio Massa</i> 16:00 - 16:40
17:00	Status of the Design of the 4-chip Cu Dummy flex <i>Building 1B, Seminar room 4a/b, DESY</i>	<i>Massimo Minuti</i> 16:40 - 17:10
	oVTX Module/Ladder assembly <i>Building 1B, Seminar room 4a/b, DESY</i>	<i>Stefano Bettarini</i> 17:10 - 17:50

■ Coupling with IR design to be constantly followed

- Note Shuji Tanaka-san official role for LS2
- New section in our documentation: <https://vtxupgrade.pages.desy.de/vtxdvpmt/tdr/integration/>

■ Connexion with STL

- Discussion these days

Monday 20, afternoon

14h30

	LS2 IR mechanics activity status and plan	<i>Shuji Tanaka</i>
15:00	<i>Building 1B, Seminar room 4a/b, DESY</i>	14:30 - 15:10
	oVTX services and rings' shape	<i>Margherita Rovini</i>
	<i>Building 1B, Seminar room 4a/b, DESY</i>	15:10 - 15:25
	oVTX Ladder mount concept "a la SVD" (compliant with the sliding mechanism)	<i>Maurizio Massa</i>
	<i>Building 1B, Seminar room 4a/b, DESY</i>	15:25 - 15:40
16:00	Discussion also with STL	
	<i>Building 1B, Seminar room 4a/b, DESY</i>	15:40 - 16:15

■ WG5: baseline full chain to be established

- Clear plan up to dock-box
- Dock-box needs
- Back-end in “setting requirement” phase

■ WG6: initial info this week

- Integration with other WGs to be discussed

Wednesday , early morning 8h00

08:00	WG5 general <i>Building 5, auditorium, DESY</i>	<i>Christian Irmeler</i> 08:00 - 08:10
	Results of IpGBT and VTRx+ irradiation campaign <i>Building 5, auditorium, DESY</i>	<i>Markus Friedl</i> 08:10 - 08:35
	Update IpGBT testing for iVTX at CPPM <i>Building 5, auditorium, DESY</i>	<i>Patrick Breugnon</i> 08:35 - 08:55
09:00	Report from Chinese Groups WG5 <i>Building 5, auditorium, DESY</i>	<i>Jingzhou Zhao</i> 08:55 - 09:15
	Requirements on the Interface between VTX back-end and Belle II Trigger <i>Building 5, auditorium, DESY</i>	<i>Taichiro Koga</i> 09:15 - 09:30
	WG6 - plan for OBELIX telescope (TBC) <i>Building 5, auditorium, DESY</i>	<i>Carlos Marinas</i> 09:30 - 09:50

■ TDR preparation

- List of sections
- Appointing section writers

■ Steering meeting

- VTX collaboration
 - new chat
 - database
 - documentation
 - groups in Gitlab
 - next workshop
- Requests to institutes for
 - Upgrade Group
 - Project-level information needed for TDR

Wednesday 22, morning 9h50

10:00	Coffee break <i>Building 5, DESY</i>	09:50 - 10:20
11:00	TDR preparation <i>Building 5, auditorium, DESY</i>	10:20 - 11:20
12:00	Steering group meeting <i>Building 5, auditorium, DESY</i>	11:20 - 12:00
	Closing <i>Building 5, auditorium, DESY</i>	<i>Jerome Baudot</i> 12:00 - 12:30