

JENNIFER3 activity monitor

Nov 17th 2025

- Scientific activities going on: just match them to expected milestones/deliverables
- Management very delayed (due to JENNIFER2 reporting): many items to be addressed urgently
- Planning of 2026 meetings to be done now
- Month 12 progress report due by end of January 2026.



Consortium composition: Beneficiaries

Participant	WP1	WP2	WP3	WP4	WP5	WP6	WP7	Total Person-Months
1 - INFN	34.00	14.00	29.00	13.00	11.00			101.00
2 - DESY	38.00			7.00	6.00			51.00
3 - CNRS	15.00	4.00	3.00	9.00	1.00			32.00
4 - OEAW Vienna	9.00			3.00	2.00			14.00
5 - JSI Ljubliana	11.00			4.00	3.00			18.00
6 - CEA Saclay		7.00	5.00	1.00				13.00
7 - CU Prague	6.00							6.00
8 - IFJ PAN Cracow	9.00	1.00						10.00
9 - NCBJ Warsaw		6.00	10.00					16.00
10 - TAU Tel Aviv	3.00				1.00			4.00
11 - CAEN			1.00	1.00				2.00
12 - IFAE-CERCA Barcelona		4.00	3.00	1.00				8.00
13 - CSIC Valencia	3.00			1.00				4.00
14 - UU Uppsala					3.00			3.00
15 - USE Sevilla		4.00						4.00
16 - UNIOVI Oviedo			4.00					4.00
Total Person-Months	128.00	40.00	55.00	40.00	27.00	0.00	0.00	290.00

Secondment implementation status

Istitution	Days total	months	planned	fraction done
INFN	589	19,6	101	19,4%
DESY	111	3,7	51	7,3%
CNRS	88	2,9	32	9,2%
OEAW MBI	32	1,1	14	7,6%
JSI	189	6,3	18	35,0%
CEA	16	0,5	13	4,1%
CU	0	0,0	6	0,0%
IFJ-PAN	0	0,0	10	0,0%
NCBJ	0	0,0	16	0,0%
TAU	0	0,0	4	0,0%
CAEN	0	0,0	2	0,0%
IFAE	19	0,6	8	7,9%
CSIC	0	0,0	4	0,0%
UU	42	1,4	3	46,7%
USE	0	0,0	4	0,0%
UNIOVI	0	0,0	4	0,0%
Total	1086	36,2	290,0	12,5%

Either beneficiaries which were not in J2 are not informing the secretariat....

Either we have a problem. Will contact one by one PI's.

King's College is a partner: we have 1 month secondment from INFN.

→ Plan to use it for collaboration in Computing (WP5).

→ Still possible to convert secondments from japanese partners to KCL if needed.

→ We can consider amendment fo include Geneva as partner and make secondments there for CERN activities.

JENNIFER3 Activity Structure

WP	Title	Lead beneficiary	Person months	Proposed coordinator
WP1	Search for new phenomena in the Belle II data	OEAW	128	C. Schwanda
WP2	Near detectors for neutrino physics at T2K and Hyper-Kamiokande	CNRS	40	C. Giganti
WP3	Far detectors for neutrino physics at T2K and Hyper-Kamiokande	KCL (partner)	55	F. Di Lodovico
WP4	Advanced Particle detector technologies	INFN	40	C. Cecchi
WP5	Information Technology and machine learning applications	DESY	27	S. Lange
WP6	Outreach and Communication	JSI	0	R. Pestotnik
WP7	Management of the project	INFN	0	A. Passeri

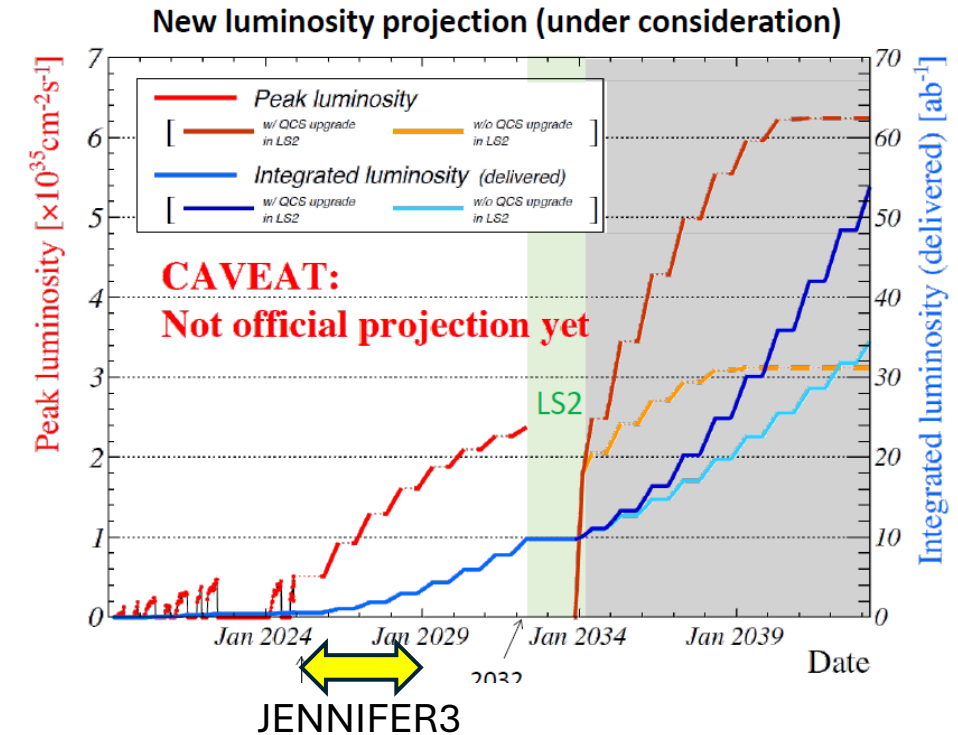
WP1: Search for new phenomena in the Belle II data

Tasks

- Task 1.1 Detector performance assessment.
- Task 1.2 Precision CKM tests and searches for non-SM CP violation
- Task 1.3 Rare decays and test for lepton flavour non-universality
- Task 1.4 Direct searches for light non-SM physics
- Task 1.5 Quantum chromodynamics: Quarkonium, exotic and hadron spectroscopy

Deliverables

- D1.1 – Belle II report on calibration and performances for collected data set - month 48
- D1.2 – Public Belle II report on CKM tests and CP violation - month 48
- D1.3 – Public Belle II report on LFU - month 48
- D1.4 – Public Belle II report on dark sector searches - month 48
- D1.5 – Public Belle II report on QCD measurements - month 48

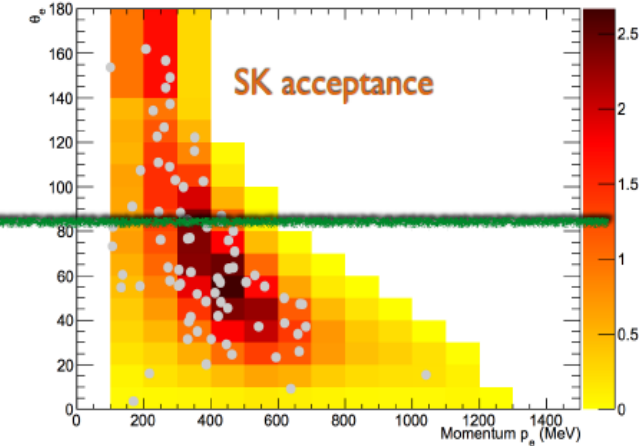
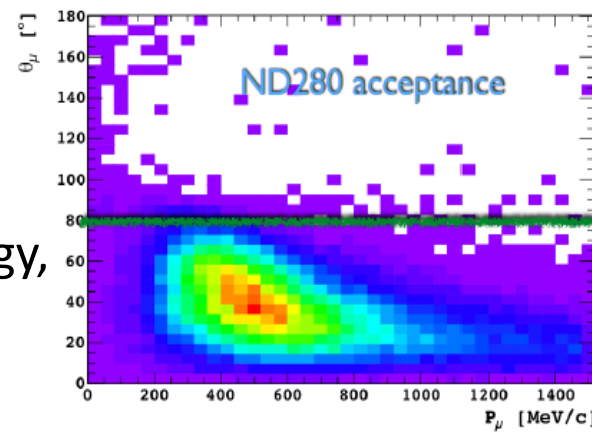


5 Milestones which are intermediate steps of each deliverable:
→ All at month 24

WP2: Near detectors for neutrino physics at T2K and Hyper-Kamiokande

Tasks

- Task 2.1: Characterization of the new detector technologies of the ND280 Upgrade.
- Task 2.2: Definition of Hyper-K Near Detector strategy, including IWCD and ND280.
- Task 2.3: Neutrino cross-section measurements.
- Task 2.4: Near Detectors inputs to oscillation analyses.



Deliverables

- D2.1 – Public report on upgraded ND280 performances - month 24
- D2.2 – Report on the study of ND280 and IWCD combination - month 36
- D2.3 – Public report on neutrino cross section measurement using hadron kinematics - month 36
- D2.4 – New T2K oscillation measurement - month 48

Milestones

- Readiness of the ND suite for Hyper-K - month 36
- Manuscript on implementation of mean-field and scaling models in event generators to predict lepton and hadron kinematics - month 24
- inclusion of ND280 Upgrade data in the T2K Oscillation Analysis - month 24

WP3: Far detectors for neutrino physics at T2K and Hyper-Kamiokande

Tasks

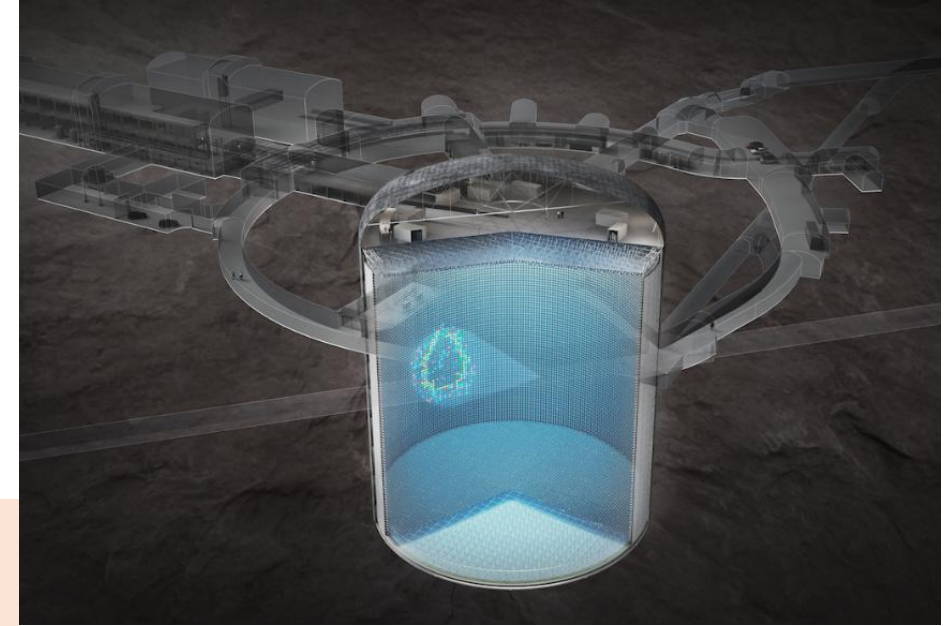
- Task 3.1 High-precision WC calibration and characterization
- Task 3.2 Underwater photodetection system
- Task 3.3 Underwater electronics.
- Task 3.4 CPV analysis.

Deliverables

- D3.1 – Report on first Hyper-K calibration - month 48
- D3.2 – Report on the operation of mPMT in Hyper-K - month 48
- D3.3 – Report on the operation of underwater electronics - month 48
- D3.4 – Report on analysis of first Hyper-K data sample - month 48

Milestones

- Performing Super-K Gd calibration with the upgraded laser and DTG. - month 24
- Complete quality assurance of the OD photosensing system - month 36
- Complete the installation of all the underwater electronic modules. - month 36
- Test of Hyper-Kamiokande oscillation packages - month 36



WP4: Advanced Particle detector technologies

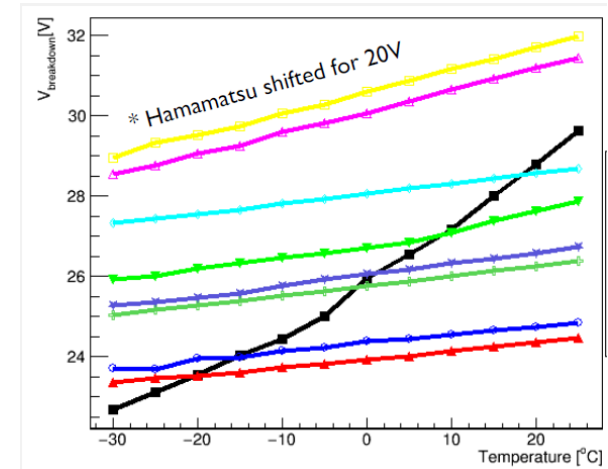
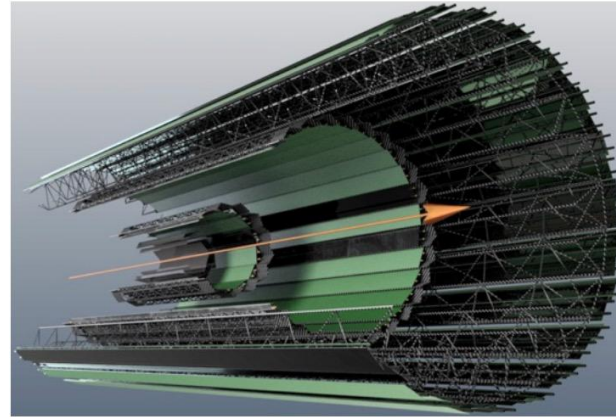
Tasks

Task 4.1 Monolithic silicon trackers

Task 4.2 Photodetection devices for particle detectors.

Task 4.3 Innovative detectors for particle beam monitoring

Task 4.4 Future neutrino imaging detectors



Deliverables

D4.1 – Report on prototype ladder with CMOS sensors - month 48

D4.2 – Joint report on photodetectors R&D - month 48

D4.3 – Report on luminometer and polarimeter design for SuperKEKB - month 48

D4.4 – Report on potentiality of imaging detectors for neutrino physics - month 36

Milestones

- Report on OBELIX chip performances - month 24
- Organization of an inter-sector event between the researchers and the key industry players in photo-detectors- month 24

Task 4.1

The development of a new vertex detector based on Monolithic Active Pixel Sensors (MAPS) in CMOS technology for Belle II upgrade. With spatial resolution, below 15 μm , material budget around 0.2% X/X_0 per layer for the inner radii and 0.8% X/X_0 per layer for the outermost radii. Hit rate of the order of 120 MHz/cm², a total ionising dose of 100 Mrad and a NIEL fluence (non-ionizing energy losses) of 5×10^{14} neq/cm²

Task 4.2

- Study of Silicon Photomultipliers (SiPM) in single-photon regime in highly irradiated areas of Belle II Particle identification devices (expected fluence more than 10^{12} n/cm²). JSI
- The use of SiPM in a multiphoton regime for the light readout of crystal electromagnetic calorimeters INFN
- ASICs for photodetectors:
 - FASTIC+ low power, low noise amplifier, shaper, and discriminator with a 25 ps TDC. JSI + KEK ?
 - HKROC digitizer (JINST 18 (2023) 01, C01035) for measurement of the charge deposited in the sensors and its Time-of-Arrival (ToA). CEA

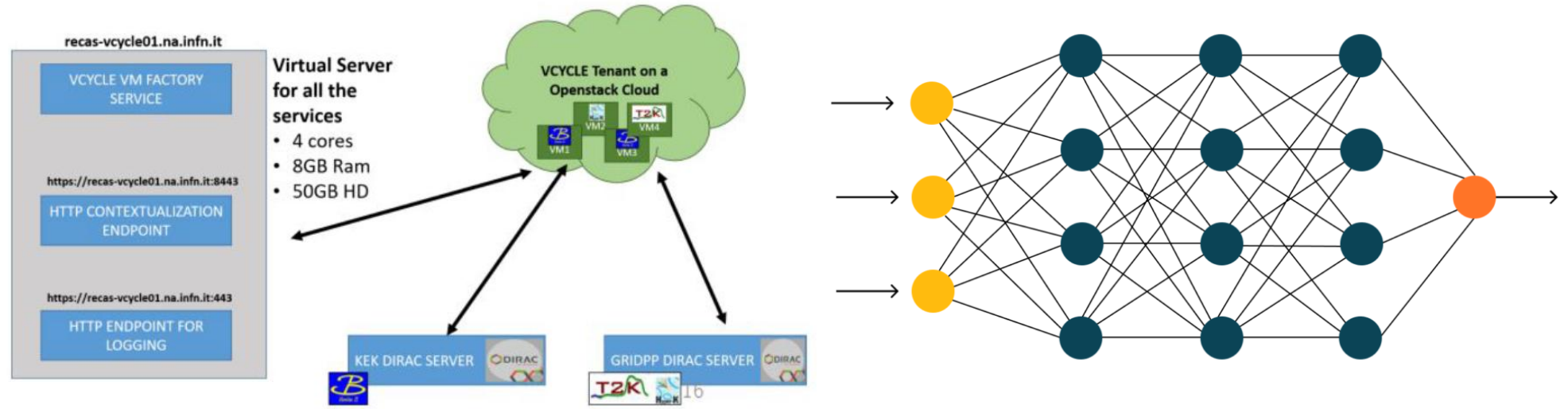
Task 4.3

- Luminosity monitor detectors (diamonds) for high lumi SuperKEKB and polarimeter (CNRS)
- FPGA based background monitor (Single Event Upsets) (INFN)

Task 4.4

- High Pressure TPCs for imaging neutrino detectors INFN + CNRS ?
- Emulsions for FASER ν DESY

WP5: Information Technology and machine learning applications



Tasks

Task 5.1 Worldwide distributed computing.

Task 5.2 Advanced network solutions.

Task 5.3 Machine learning for big data analysis

Task 5.4 Machine learning for real time applications

Deliverables

D5.1 – Workshop on cloud computing - month 24

D5.2 – Report on joint data challenge - month 36

D5.3 – Bi-annual workshop on ML for data analysis - month 24-48

D5.4 – Report on real time ML on FPGA - month 48

NO Milestones !

Early deliverables

Task 5.1

Distributed computing: explore the potential of Platform as a Service (PaaS) and Software as a Service (SaaS) paradigms **INFN, CNRS, KLC**

Task 5.2

A collaborative Data Challenge session involving Belle II and Hyper-K, to test network links, storages, replication tools and the entire computing infrastructure that connects Europe and Japan.

Task 5.3

Machine Learning Data Analysis techniques:

- Foundational model for Belle II (DESY, TAU)
- Continuum suppression in Belle II with a DeepSet NN (TAU)
- NN Charm Flavour tagging (OEAW-MBI)
- Punzi-net and Punzi-loss NN for new particle searches (OEAW-MBI)
- Graph NN for seedless track reconstruction (DESY)
- HyperK water cherenkov reconstruction algorithm with NN (INFN)

Task 5.4

ML algorithms in real time environment:

- test of the Versal hardware platform and study realtime applications of pattern recognition in the DAQ and trigger systems for Belle II
- Application of the Versal system to anomaly detection for the Belle II PXD

WP6: Outreach and Communication

Meet people ! General public, high-school students, young physics students.

Tasks

- Task 6.1 Masterclasses on flavour and neutrino physics.
- Task 6.2 General public particle physics communication with visual tools
- Task 6.3 Support to KEK Summer School.
- Task 6.4 Joint European-Japanese PhD supervision

Deliverables

- D6.1 – MAsterclasses questionnaire analysis - month 48
- D6.2 – Virtual reality portable tools - month 48
- D6.3 – Co-Organization of KEK Summer school - month 48
- D6.4 – Award to best co-supervised thesis - month 48
- D6.5 – Communication, Dissemination and Exploitation Plan

Take some existing SIMPL
example and adapt to J3

month 6

NO Milestones !

WP7: Management of the project

Tasks

Manage secondments and their accounting

Coordinate communication and decision making among beneficiaries and partners

Manage risks which can delay or stop the project activities.

Deliverables

D7.1 – Progress report - month 13-37

D7.2 – Mid-term meeting - month 16

D7.3 – Data Management Plan - month 6

Milestones

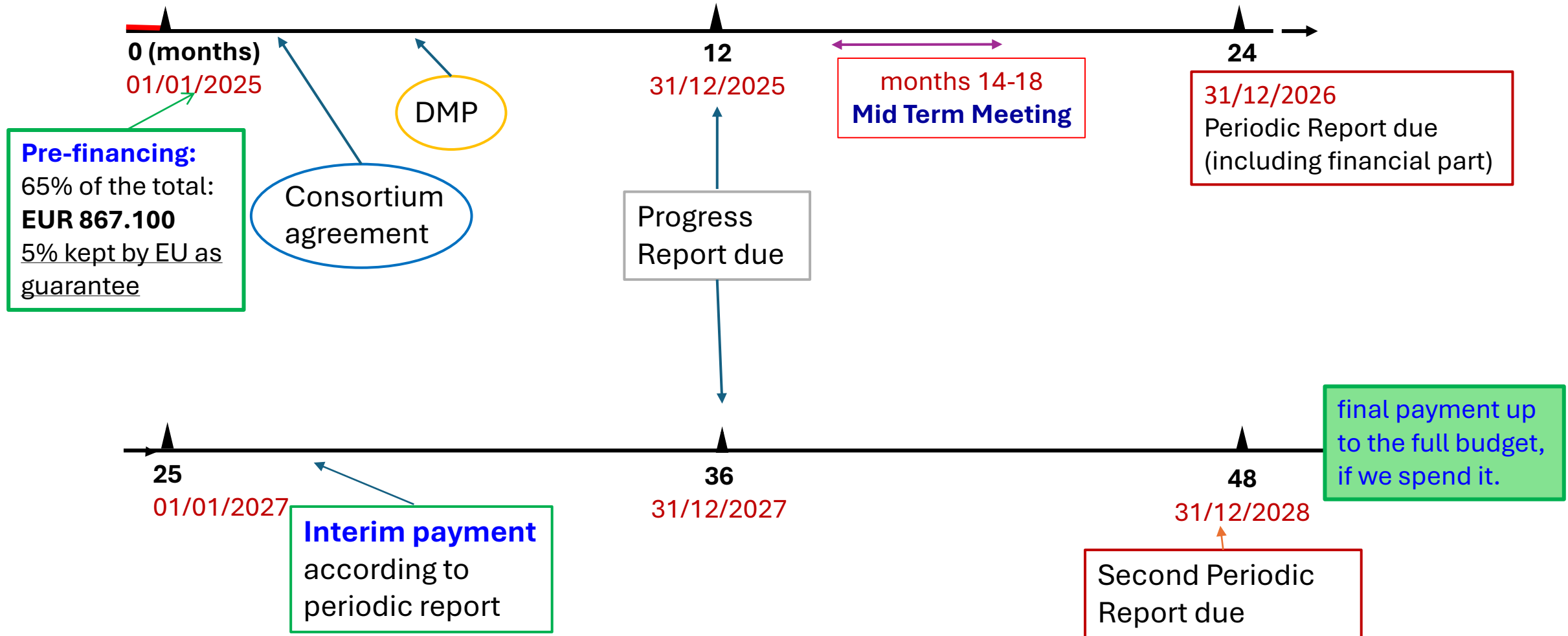
Project website first version - month 3

Election of Consortium Council Chair - month 6

Kickoff meeting - month 1



Project lifetime



Website

Buy a commercial one, ensuring basic features:

- project web identity, news, updates
- Reserved area for the project Pis where always check secondment status and other common infos

Detailed discussion with company last summer. To be reshuffled and do procurement.
...however less urgent than deliverables!

Consortium Agreement

Draft implementing both DESCA template and JENNIFER2 specific choices sent to all beneficiaries. Got reply from 6 of them.

Only strong objection from Oviedo University: process stuck since summer. Should restart it and find a solution.

→ Not a milestone, nor deliverable, but very important and URGENT.

Data Management Plan

To be started yet !

Quite delicate to adapt standard principles to particle physics experiments:

«FAIR» principles: Findable Accessible Interoperable Reusable

We will follow existing DMPs in Belle2 and T2K:

<https://docs.belle2.org/files/4222/BELLE2-REPORT-2024-045/1/BELLE2-REPORT-2024-045.pdf>

<https://t2k-experiment.org/for-physicists/data-management-plan/>

Important to distinguish the type of data. Moreover: JENNIFER3 is not the owner of Belle2 and T2K data, but is possibly the co-owner of R&D data of its tasks.



Project Common Fund

what	estimated cost	cost w/out travels	notes
Support to KEK-SSP	20.000,00 €	20.000,00 €	5K every year or 10K every 2 years
2 project meetrings in Europe	50.000,00 €	10.000,00 €	Kickoff costed 1500 € only
2 project meetings in Japan	4.000,00 €	4.000,00 €	travel with secondment
workshop cloud computing	5.000,00 €	1.000,00 €	
2 workshop on ML in data analysis	10.000,00 €	2.000,00 €	attach them to J2GM
award to co-supervised thesis	2.000,00 €	2.000,00 €	
website	5.000,00 €	5.000,00 €	
Total	96.000,00 €	44.000,00 €	
Available budget		46.368,00 €	

We will try to get more accurate costs estimate as the project evolve.

There is already a new request for a contribution to MAPS summer school at KEK to be discussed.



Meeting Planning

Mid Term meeting must happen btw month 14 and 18:

PO and REA referees can participate **ONLY REMOTELY**. However the whole Consortium should participate, either in person or remotely.

→ PO asked me to plan it between may 25 and june 12.

Possible alternatives: in person (with remote connection)? Fully remote? Europe or Japan? (check budget)

Computing and ML workshops: when/where ?

Consortium Council meeting to be organized soon to keep all beneficiaries involved and informed: January ? Poll to be launched in advance.

Another brief EC meeting before. Progress report preparation.

SPARES

Budget basics reminder



Category A

- Mobility allowance
- Full amount payment
- Keep supporting documents
- Staff retains rights

Category B

- R&I activities, training
- Other indirect costs
- No supporting documents needed
- Can complement Category A

