

Japan and Europe Network for Neutrino and Intensity Frontier Experimental Research



Mid Term Meeting



REA Headquarters
Brussels, December 12th 2022

JENNIFER2 mission

*“ The JENNIFER2 project aims to produce **synergy and knowledge sharing** among experimental particle physics groups searching for signal of new physics in neutrino and flavour physics, exploiting the discovery potentialities of experimental facilities located in Japan. “*



Marie Slodowska Curie – Research and Innovation Staff Exchange



A Europe-wide Consortium



INFN (10 sites)

DESY (+ 10 affiliated Univ)

OAW-HEPHY

JSI Ljubliana

IFJ-PAN

NCBJ (+1 affiliated Univ)

UKP Prague

CNRS (3 sites)

CEA

Université de Genève

IFAE

King's College (+5 affiliated Univ)

UKRI – RAL (+3 affiliated Univ)

Tel Aviv University

METU Ankara

CAEN

Fondazione Bruno Kessler

17 beneficiaries !!!

JENNIFER2 Budget

Beneficiary	grant amount from GA	number of person months
INFN	€ 731.400,00	159
DESY	€ 372.600,00	81
OEAW	€ 101.200,00	22
JSI	€ 128.800,00	28
CNRS	€ 184.000,00	40
CEA	€ 96.600,00	21
KCL (*)	€ 207.000,00	45
UKRI	€ 151.800,00	33
UKP	€ 41.400,00	9
IFJ PAN	€ 82.800,00	18
NCBJ	€ 115.000,00	25
TAU	€ 27.600,00	6
METU	€ 27.600,00	6
UNIGE	€ 110.400,00	24
IFAE	€ 55.200,00	12
FBK	€ 4.600,00	1
CAEN	€ 13.800,00	3
Total	€ 2.451.800,00	533

(*) Replaced Queen Mary. Amendment signed in march 2020.



Consortium Agreement

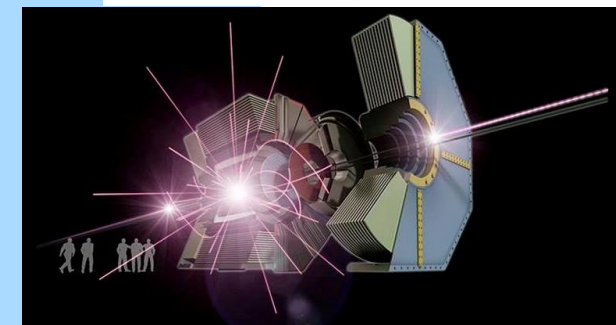
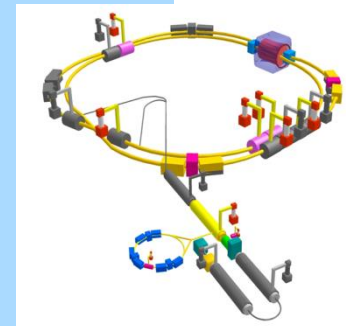
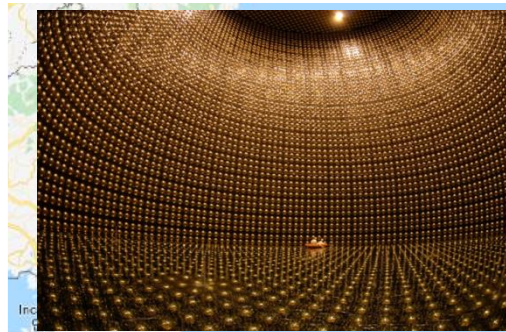
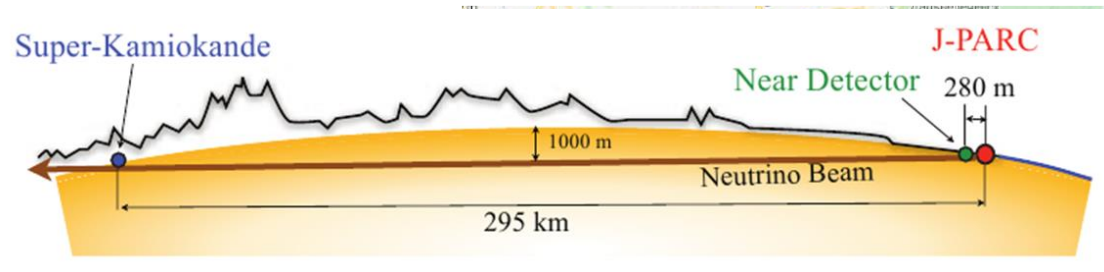
CONSORTIUM AGREEMENT

THIS CONSORTIUM AGREEMENT is based upon REGULATION (EU) No 1290/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 laying down the rules for the participation and dissemination in “Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)” (hereinafter referred to as “the Rules”), and the European Commission Multi-beneficiary General Model Grant Agreement and its Annexes, and is made on **march 31st 2019**, hereinafter referred to as the Effective Date

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Approved by ALL beneficiaries’ legal offices. Signature started in january 2020, but stopped for pandemics. Signatures received from: INFN, DESY, CNRS, KCL, IFAE, NCBJ, TAU. **RESTARTED now signature collection, to be concluded quickly.**

Our beloved Japanese Partners:



**No Partnership Agreement felt necessary so far:
excellent collaboration environment!**



JENNIFER2 governing structure

Executive Committee:

Project coordinator: Antonio Passeri (INFN)
WP1 coordinator: Christoph Schwanda (OAW)
WP2 coordinator: Emilio Radicioni (INFN)
WP3 coordinator: Francesca Di Lodovico (KCL)
WP4 coordinator: Rok Pestotnik (JSI)
WP5 coordinator: Sara Bolognesi (CEA)
WP6 coordinator: Zdenek Dolezal (UKP)
Chair of the Consortium Council: Philip Bambade (CNRS)

Meets regularly (about every 2 months), also during pandemics.

Monitor project status, propose actions to be taken and discussed in the Council. Reports to the Council also via regular emails.

Consortium Council:

1 representative (PI) for each beneficiary + 2 observers from partner organizations.

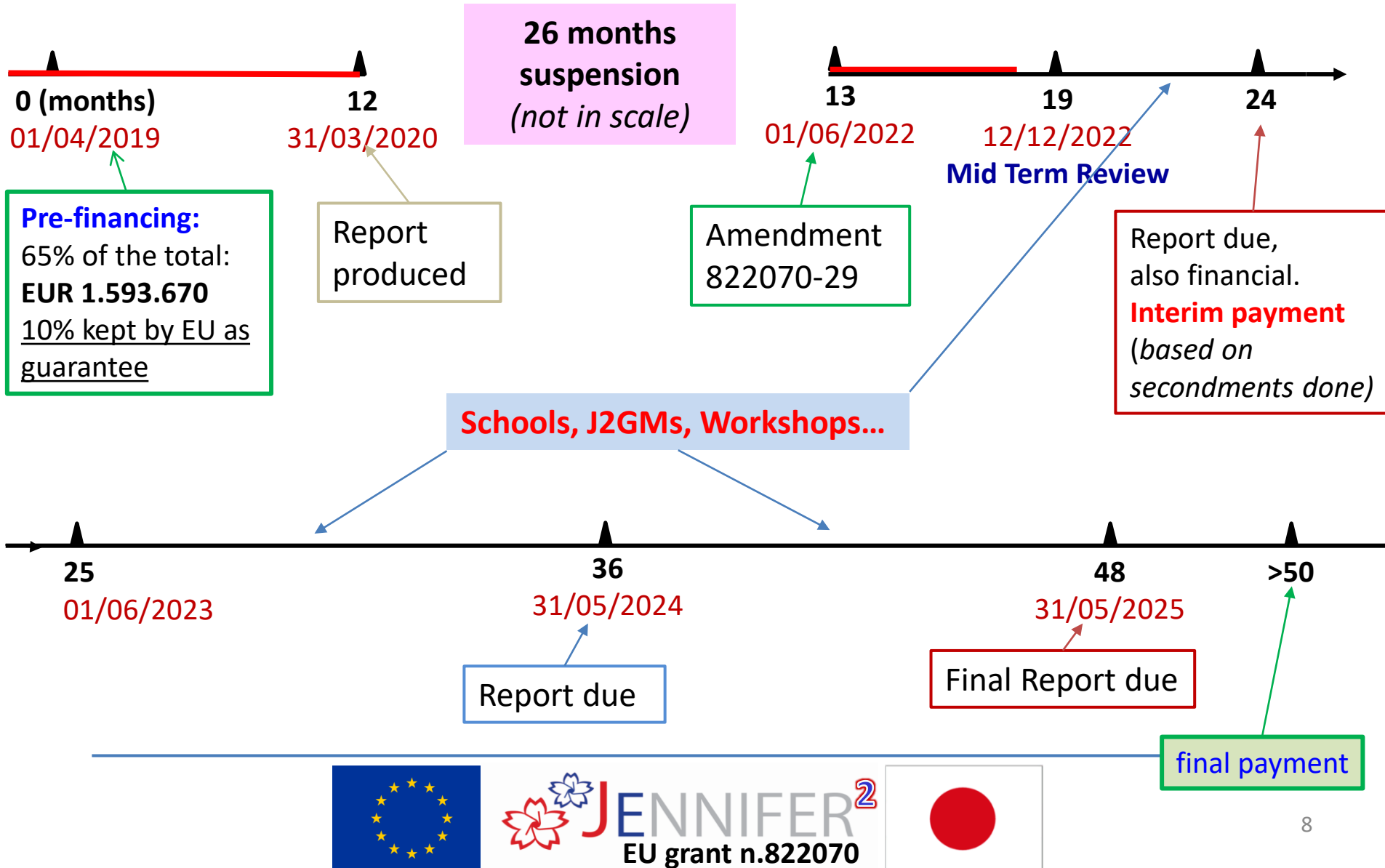
Meets at least yearly.
Discuss and decide EC proposals and any other project issue.

JENNIFER2 Kickoff Meeting: Vienna 12-13 september 2019

JENNIFER2 2nd General Meeting: Prague 17-18 november 2022



JENNIFER2 timeline



JENNIFER2 activity structure

	Person months:
WP1: Belle II data analysis.	220
WP2: T2K upgrade and data analysis.	138
WP3: Towards HyperK.	85
WP4: Photodetectors R&D.	34
WP5: Computing and common techniques.	56
WP6: Communication and outreach	0
WP7: Management	0
Total: 533 p.m.	



A quick status of JENNIFER2 tasks and deliverables

General Comments:

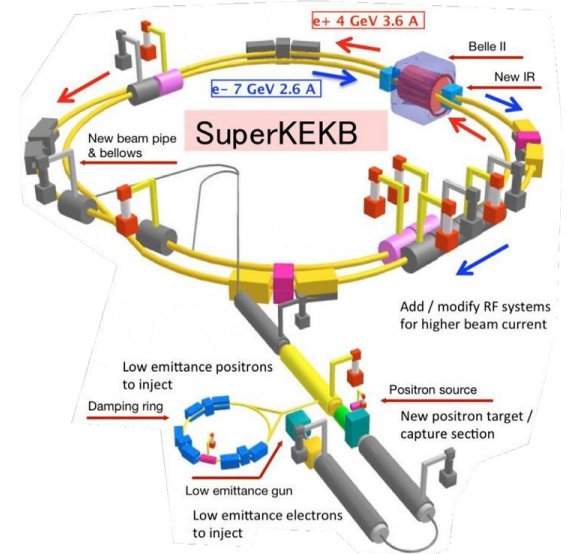
- **During pandemics all activities continued with different timing and organization.**
- **Travels to/from Japan were stopped or severely reduced until October 11th 2022.**
- **After JENNIFER2 suspension, experimental schedules are different from those considered in the proposal**
- **During suspension some staff people changed institution. No key people was lost, only in few cases activities need an adjustment.**
- **No changes in beneficiary responsibilities is necessary.**



WP1 : Search for New Physics Signals at Belle II

(C.Schwanda)

- Task 1.1: Detector performance**
- Task 1.2: CP violation**
- Task 1.3: Lepton Flavour Violation**
- Task 1.4: Dark sector**
- Task 1.5: Quarkonium**



SuperKEKB accelerator continued running during the pandemics and Belle II experiment managed to be fully operational for data taking.

Thanks to a smart organization a shift crew made of 1 person at KEK + 2 persons remotely connected was always operational!

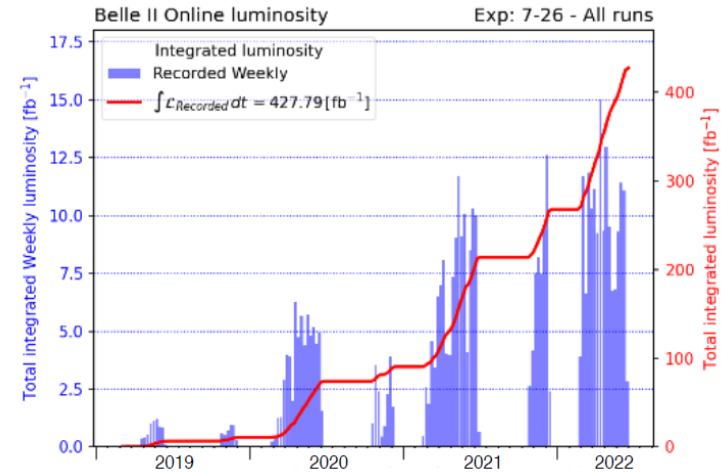
Data analysis and performance studies kept evolving thanks to a structure already well trained to remote collaboration.



Belle II collected a total integrated luminosity of 428 fb⁻¹ (despite an early stop of SuperKEKB operations due to energy cost increase).

Data analysis is ongoing in several challenging channels where important contributions are expected.

Belle II **already published 11 papers**, all related to JENNIFER2 activities. **Over 70 conference presentations** were given, some of them by JENNIFER2 members.



WP1 Milestones: all at month24 -> may 2023. BASICALLY DONE.

1.1	Report on detector performance	1	INFN	24	Document
1.2	Conference Presentation on CPV	1	HEPHY	24	PublicTalk
1.3	Conference Presentation on LFV and LFUV search	1	DESY	24	PublicTalk
1.4	Conference Presentation on dark sector search	1	HEPHY	24	Public Talk
1.5	Conference Presentation on Spectroscopy	1	JSI	24	Public Talk



New Belle II results at main 2022 HEP Conferences

Moriond 2022

ICHEP 2022

- Lepton-mass moments — paper, world best
- Λ_c^+ lifetime — paper, world best
- Darkhiggstrahlung — paper, world best
- B^0 lifetime and mixing — paper
- BF and A_{CP} of $B^0 \rightarrow K^0 \pi^0$
- BF, A_{CP} , and f_L of $B^+ \rightarrow \rho^+ \rho^0$
- $|V_{ub}|$ tagged
- $|V_{cb}|$ tagged
- BF of $B \rightarrow K^{*} \ell \ell$
- BF of $B^0 \rightarrow K^0_S \pi^0 \gamma$

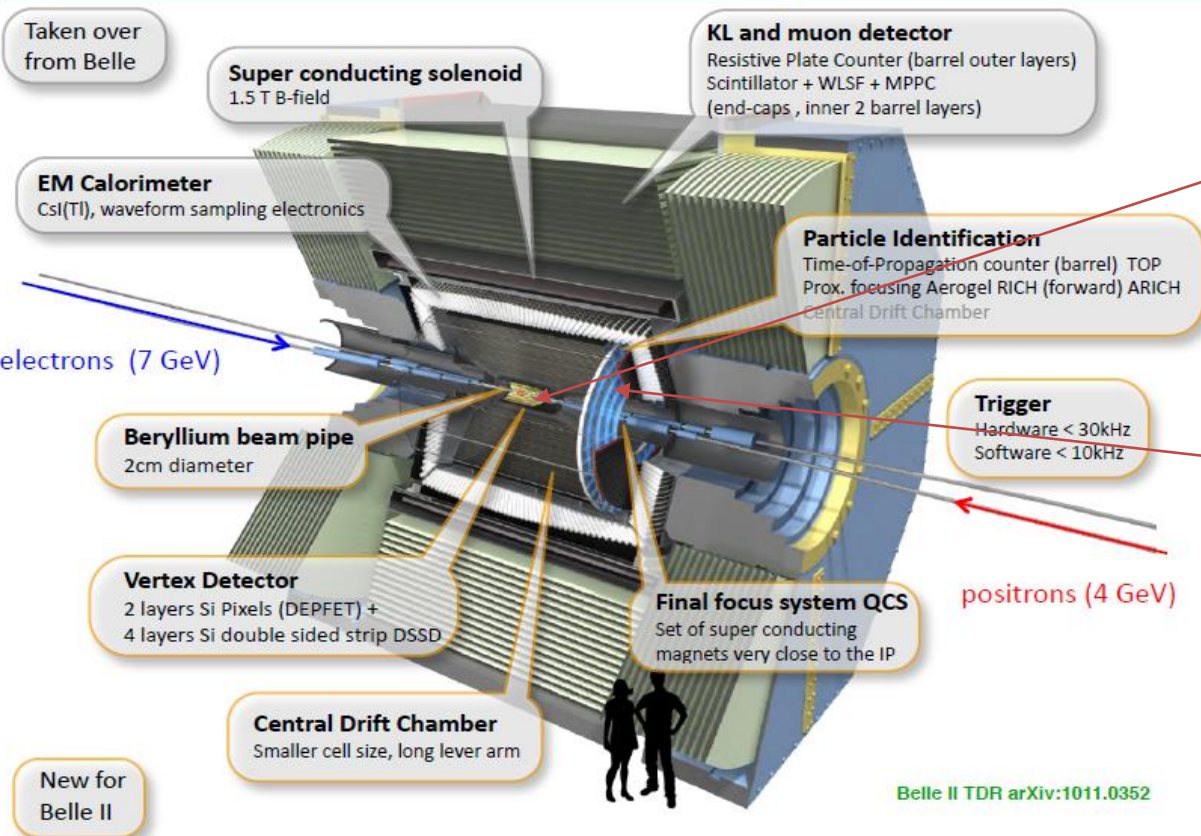
<p>V_{cb} from untagged $B \rightarrow D \ell \nu$ decays</p> <p>CONF</p>	<p>V_{ub} from untagged $B \rightarrow \pi \ell \nu$ decays</p> <p>CONF</p>	<p>$BF(B \rightarrow \rho \ell \ell)$ from tagged decays</p> <p>CONF</p>	<p>LFU test in semileptonic B decays</p> <p>Aiming at PRD or PRL</p>
<p>Inclusive $B \rightarrow X_s \gamma$ using hadronic tagging</p> <p>CONF</p>	<p>B^0 mixing phase ϕ_B from $B^0 \rightarrow J/\psi K_S^0$</p> <p>Aiming at PRD</p>	<p>CP violation in $B^0 \rightarrow K_S^0 K_S^0 K_S^0$ decays</p> <p>CONF</p>	<p>BF and f_L in $B^+ \rightarrow \rho^+ \rho^0$</p> <p>CONF</p>
<p>BF and A_{CP} in $B^+ \rightarrow \pi^+ \pi^0$</p> <p>CONF</p>	<p>BF and A_{CP} in $B^+ \rightarrow \pi^+ \eta$</p> <p>Aiming at PRD</p>	<p>Measurement of $R(K)$ in recent decays</p> <p>CONF</p>	<p>Measurement of the C_2 lifetime</p> <p>Accepted by PRD</p>
<p>Observation of $e^+ e^- \rightarrow \omega \gamma$ and search for X_c at and near 10.75 GeV</p> <p>With PRL</p>	<p>Search for $\tau \rightarrow \ell \alpha$ (invisible)</p> <p>Aiming at PRL</p>	<p>Search for $Z', S, AUP \rightarrow \tau$ in $\mu\mu$ final states</p> <p>Aiming at PRL</p>	<p>Search for an invisible Z' in $\mu\mu +$ missing energy</p> <p>Aiming at PRL</p>



Hardware activities now needed

While data analysis keeps progressing, SuperKEKB is having a shutdown period (LS1) until fall 2023 (extention could be considered too) for maintenance and upgrades.

Important detector work is also programmed, to be performed also by JENNIFER2 groups:



Completion of Pixel detector installation in the interaction region to further improve vertex reconstruction.

Replacement of TOP photomultipliers to avoid gain loss and increase quantum efficiency

Not explicitly included in JENNIFER2 description of action, but naturally deriving from it.



WP2 : T2K Detector Upgrade and Neutrino Physics

(E.Radicioni)

Task 2.1: Construction and Commissioning of Near Detector ND280

Task 2.2: Construction and Commissioning of Super FGD

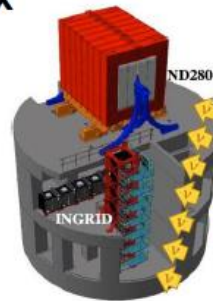
Task 2.3: Neutrino cross section measurement

Task 2.4: Oscillation analysis

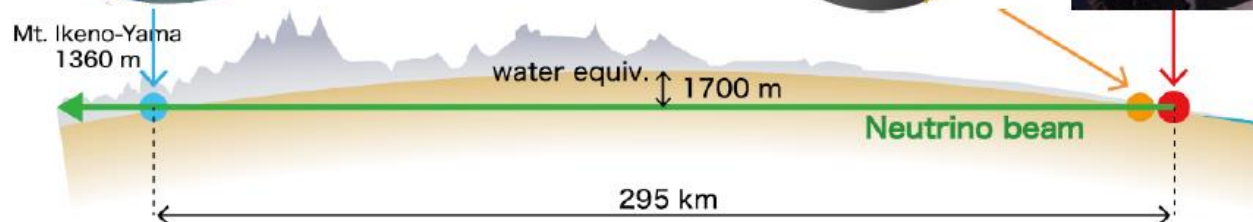
Far detector
Super Kamiokande



Near detector
complex

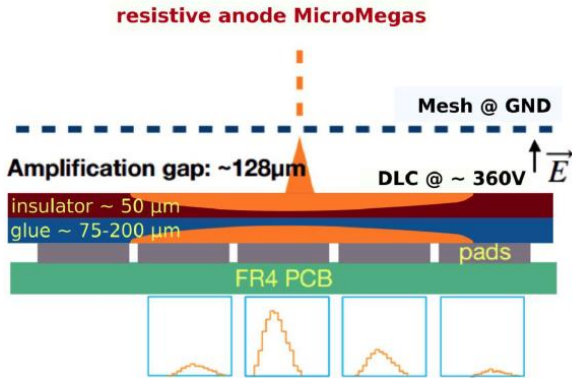


J-Parc
Neutrino Beam

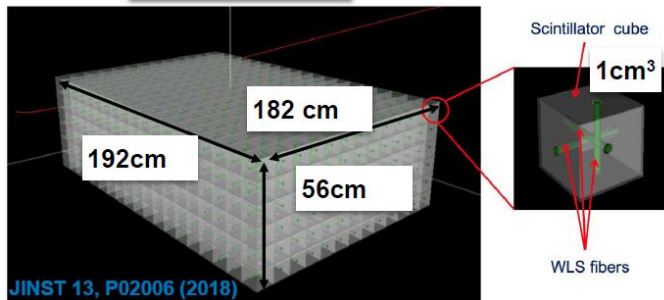


Near Detector upgrade activities

During pandemics the construction and test work progressed in EU labs:



2 High Angle TPCs prototypes with MicroMegas readout built and tested. Good performances observed. Construction started. Installation at KEK in July and November 2023.



SuperFGD «scintillator tracker» prototypes tested with charged particles and neutron beams.

Detector parts shipped to KEK starting in June-October 2022. Assembly with international team started and progressing well.



T2K Data Analysis

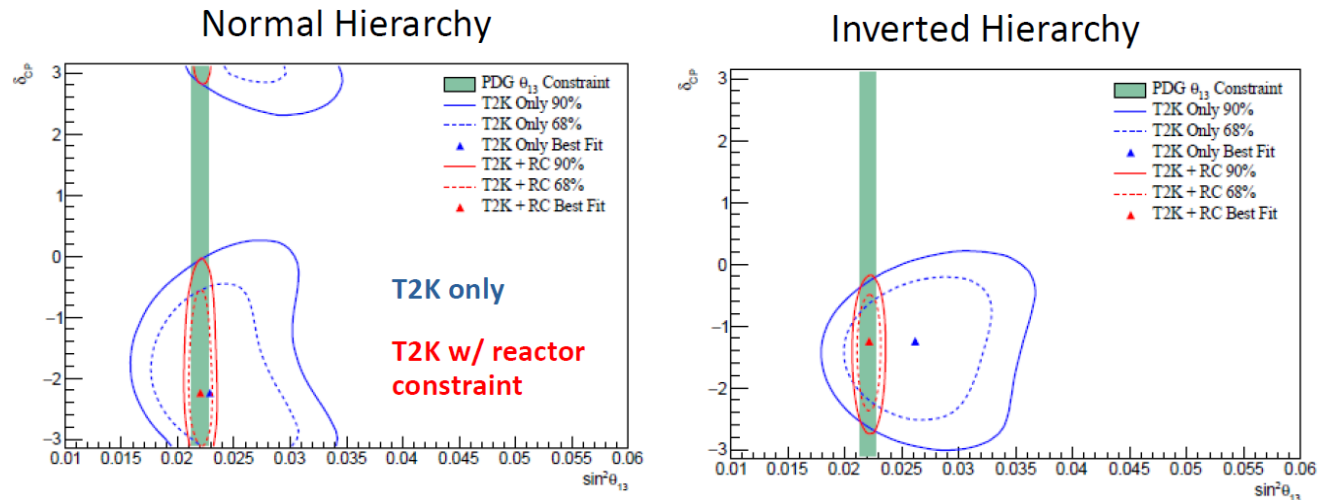
First hints of CP violation in the neutrino sector observed in 2020!

Data analysis being improved in many aspects:

- Neutrino-nucleus cross section measurements and models. A number of analyses in different topologies well advanced + many theory papers related to JENNIFER groups.
- Oscillation analysis repeated with new flux prediction, better neutrino interaction model, better tagging in near detector and more topologies in far detector.



New analysis confirms previous result on CP violation hints.



Despite pandemics WP2 is well on track and expected milestones for month 24 are essentially produced, both for data analysis and detector upgrade.

2.1	Production and test of ND280 prototypes	2	INFN	24	Prototype
2.2	Improved acceptance for cross section	2	IFAE	24	Internal Report
2.3	Off axis neutrino energy reconstruction	2	INFN	36	Internal Report
2.4	Inclusion of multi-ring topologies	2	CNRS	24	Internal Report



WP3 : Towards the Hype Kamiokande detector

(F.Di Lodovico)

Task 3.1: Gadolinium doped Water Cerenkov study

Task 3.2: Water Cerenkov calibration system

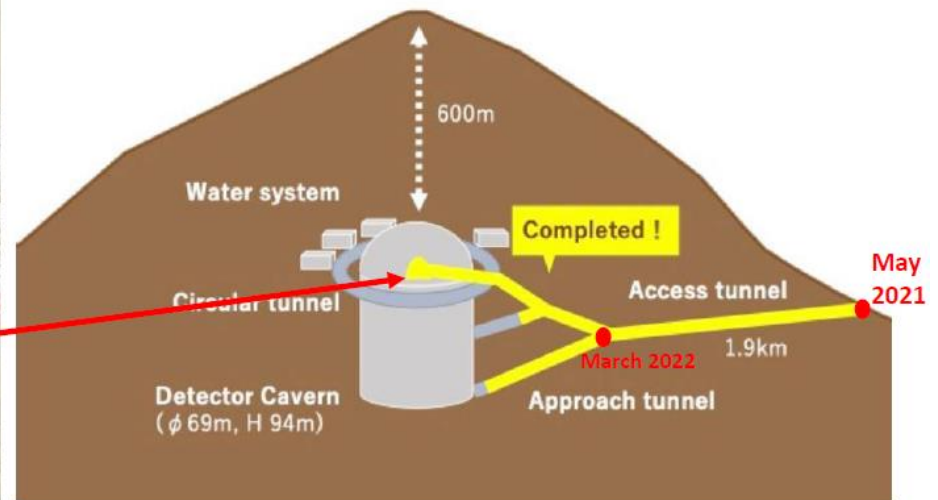
Task 3.3: HK outer detector design

Task 3.4: Low noise Front End Electronics for large area PMTs

Task 3.5: HK simulation

Breaking news:

HyperK construction started in may 2021. Start of operations scheduled for 2027



Not anymore an R&D !

Full detector simulation essential to finalize design.

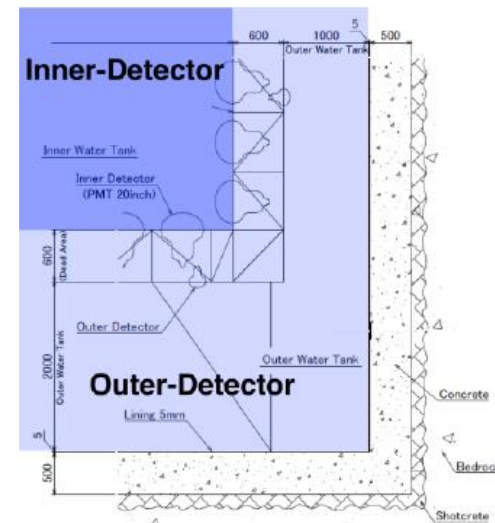
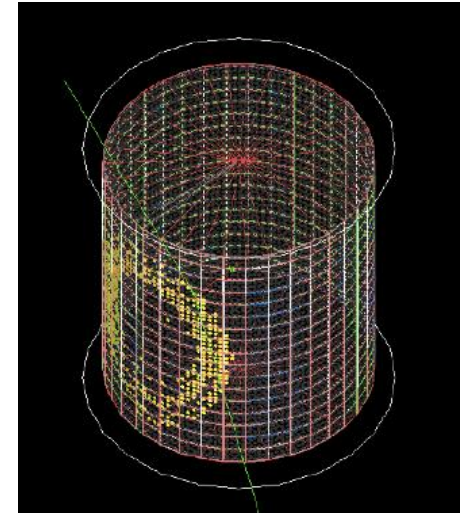
Outer detector optimization: number of PMT, WLS, support structure.

Calibration of such a large number of PMTs is a key issue.

Complementary methods have been defined:
Light injection system already implemented in SK (Gd-doped), gamma-rays from radioactive sources, pre-installation (in water, with electron LINAC).

Activity on electronics changed its focus to system integration and production of data processing module for the underwater electronics.

Meanwhile HyperK project dissemination continued in SNOWMASS process and in Conferences.



WP3 deadlines

Deliverables

november
2023

may 2024

D3.1	Decision on UV system to measure Gd concentration	8 - UKRI Basically done in SK	Report	Confidential, only for members of the consortium (including the Commission Services)	30
D3.2	Technical note on Outer Detector	7 - QMUL KCL	Report	Public	36
D3.3	Final report on low noise front end electronics	14 - UNIGE Need to re-define	Report	Public	48
D3.4	Full simulation and analysis with final photosensors	7 - QMUL KCL	Report	Confidential, only for members of the consortium (including the Commission Services)	48

Only one milestone for WP3

3.1	Report on waveform digitizers	3 Need to re-define	UGE	30	Internal Report
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WP4 : New Photodetectors Development

(R.Pestotnik)

Task 4.1: Silicon PM in neutron irradiated areas

Task 4.2: Long lived MicroChannelPlate PMTs

Task 4.3: Multi PMTs for large Water Cerenkov detector

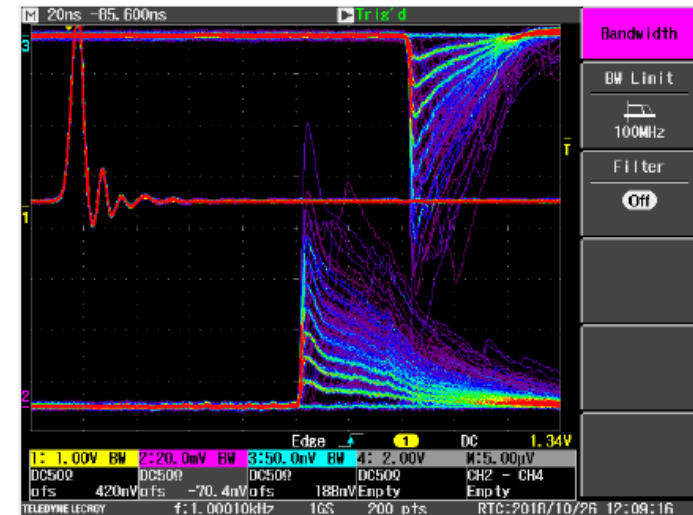
Task 4.4: Organic photosensors R&D

Challenging technology for more sensitive experiments:

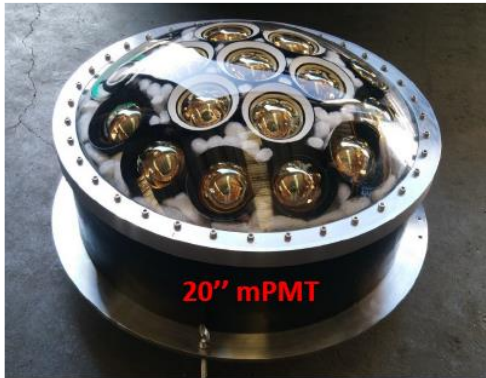
Silicon photo-multipliers operation under severe neutron flux tested at TRIGA reactor with cryo cooling.

Amplification and readout developed. Close collaboration with FBK.

SiPM are now considered as a solution also for task 4.2 where construction of MCP-PMT seems to have reached a limit → again FBK collaboration is essential.



Even more challenging photo-detection devices !



Multi PMT for the water Cerenkov HyperK detector.

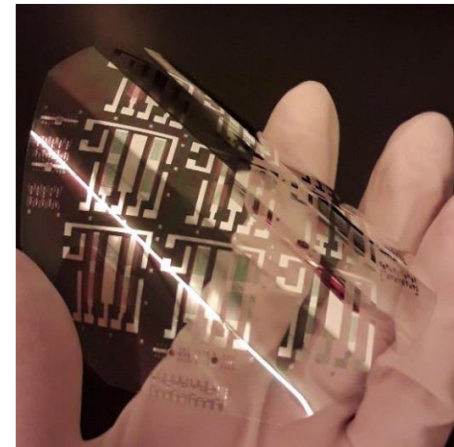
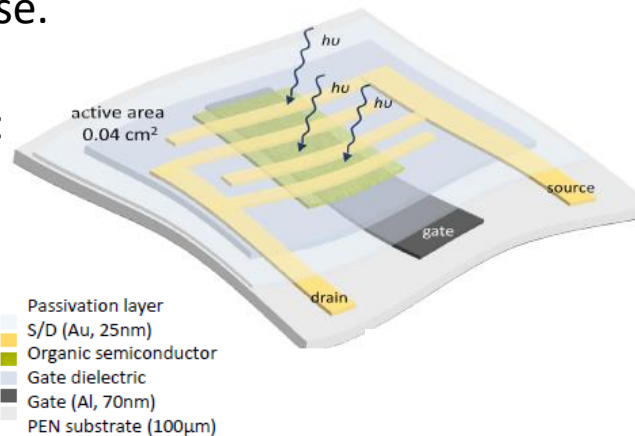
Starts from KM3NeT design, with more stringent requirements for radiation free vessel, readout electronics, mechanics.

Organic Photo-Transistors

Both electrical components and photo-sensors can be integrated in the same thin support.
Charaterization performed with LED pulses.
Very flexible and cheap. Slow response.

Common interest with japanese labs:
JENNIFER2 will support secondment
from Japan to Italy .

Highly sensitive organic phototransistor for flexible optical detector arrays. Organic Electronics, Volume 102, March 2022, 106452.



JENNIFER2 provided photo-detection techniques training opportunity at NDIP 2020 conference for undergraduate students

Support organization and participation to photon detectors training sessions for PhD students at NDIP 2020 conference (M18)

-> Well received by the organizers

NDIP20 @ TROYES 2022

GRANTS

Talks by JENNIFER2 members too!

Thanks to the *JENNIFER*² program*, a very special rate is available to support young scientists' participation to NDIP20.

**JENNIFER*² (Japan and Europe Network for Neutrino and Intensity Frontier Experimental Research) is funded under the Horizon2020 program of the European Union as a Marie Skłodowska Curie Action of the RISE program and includes among its activities a work package dedicated to photodetectors. *JENNIFER*² is committed to promote training and dissemination in the scientific fields in which it is involved, and supports the participation of young students to the NDIP conference, an outstanding European event in photon detection.



	Early birds Before June 15, 2022	Late birds After June 15, 2022	Comments
First 10 Under graduate students (2 max/lab)	FREE**	/	Students (Master level or lower) must prove to be students registered in a University - Late cancellation or no show will cause a charge of € 205 VAT incl.**
From 11th Under graduate students' rate	€ 170 VAT incl.***	€ 205 VAT incl.	Students (Master level or lower) must prove to be students registered in a University



WP4 deadlines

may 2023

Deliverables

D4.1	Training pn photodetectors at NDIP	4 - JSI	Other	Public	DONE	18
D4.2	Report on MCP-PMT lifetime optimization	1 - INFN	Report	Public		24
D4.3	Realization of a mPMT prototype module	1 - INFN	Demonstrator	Public	OK	24
D4.4	Report on SIPM prototype tests as single photon counters	4 - JSI	Report	Public	april 2024	35
D4.5	Resport on organic photodetectors	1 - INFN	Report	Confidential, only for members of the consortium (including the Commission Services)		48

Milestones

4.1	Report on acrylic vessel	4	INFN	DONE	12	Internal Report
4.2	Photo-transistor electrical characterization	4	INFN	DONE	24	Internal Report



WP5: Computig and Common Techniques

(S.Bolognesi)

Task 5.1: Common Computing and data handling

Task 5.2: Common DAQ and remote controls issues

Task 5.3: Statistical methods for analysis combination

Task 5.4: Generators and phenomenology

The real and fruitful sinergies between Belle II and neutrino communities !

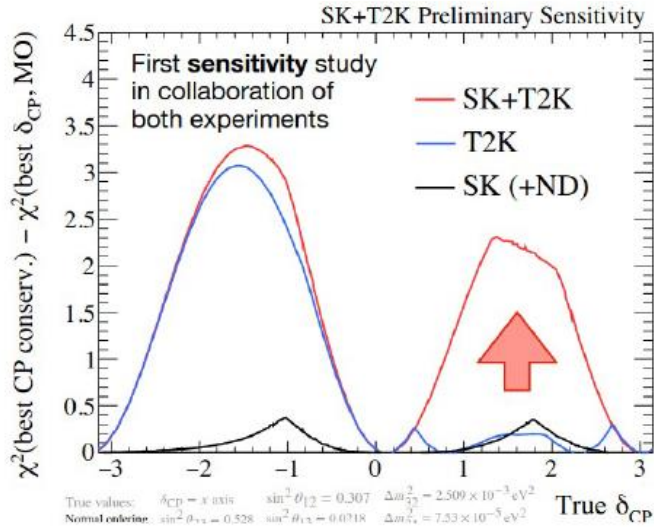
Computing collaboration well advanced. First common workshop organized. Common cloud Demonstrator developed and presented at 2 conferences. More contribution for CHEP 2023 + new common workshop!

DAQ needs are quite different in collider and large volume detectors, but very interesting to compare. While slow control and monitoring sensors/electronics is a promising sinergic field. Workshop in preparation.



Not just open access: data sharing is the future!

A conceptual and sociological challenge: T2K and Belle II pioneered a new paradigm.



HEPData Record for $B^+ \rightarrow K^+ \nu \bar{\nu}$

First HEPData Record for Belle II is online since 28.9.2022!

<https://www.hepdata.net/record/ins1860766>

HEPData @HEPData · 29. 8.
Added #Belle-II data on "Search for $B \rightarrow K \nu \nu$ Decays Using an Inclusive Tagging Method at Belle II" to [hepdata.net/record/ins1860766](https://www.hepdata.net/record/ins1860766)...

Based on publication [PRL 127, 181802 (2021)]

git repository for the this record:
`git clone ssh://git@stash.desy.de:7999/~sstefkov/hep_data_b_knuu.git`

Slavomira Stefkova, Belle II Data Preservation Workshop, 07.10.2022

Techniques to allow open data combination and independent analysis need to be developed. Likelihood preservation is an issue. A large community is growing around this matter.

Collaboration between theorists and experimentalists to develop a coherent framework from CP violation analyses in both quark and lepton sector has started:

Bigi, G. Ricciardi, M. Pallavicini, New Era for CP Asymmetries
 (Axions and Rare Decays of Hadrons and Leptons) IWorld Scientific 2022



...let me just mention that.....

WP5 coordinator Sara Bolognesi received the EPS Emmy Noether Distinction for Women in Physics 2022



“for her development of data analysis techniques that conclusively improved the sensitivity of the CERN-CMS experiment, thus allowing the discovery of the Higgs boson and the first measurement of its spin and parity”, it was made clear that her decision to change field and her contributions to the T2K experiment played an important role for the appointment of the award.

WP5 deadlines

may 2024

Deliverables

D5.1	Common Cloud Computing demonstrator	2 - DESY	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	36
D5.2	Joint workshop on real time techniques	7 - QMUL KCL	Other	Public	36
D5.3	Reference Statistical Report	6 - CEA	Report	Public	36
D5.4	Common Physics Workshop	5 - CNRS	Other	Public	48

5.1	Flavour and neutrino internal physics workshops	5	CNRS	36	Workshops
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WP6 : Communication and Outreach

(Z.Dolezal)

Task 6.1: Masterclasses both flavour and neutrino physics

Task 6.2: Summer students at KEK

Task 6.3: Coordination of outreach to general public

Task 6.4: PhD co-supervision

Will be reported in details in the dedicated talk this afternoon

Activities never stopped, even during project suspension.

Communication is an asset of the project. Milestones and deliverables on the way, apart from summer school in Japan (wait 2024)



Two very successful virtual Summer Schools organized in 2020 and 2021 during project suspension !

We are really proud of !



Publications and Open Access

At project start we opted out the Open Research Data Pilot because we should verify the policy of Belle II and T2K collaborations in this respect.

However, all publications produced until now by JENNIFER2 activities are accessible in the free open access archive arxiv.org even BEFORE their publication on journals



Now, three years after, many things have changed towards open access publication in all scientific fields, and we are ready to change our past statement.



EU funding Acknowledgment

JENNIFER2 project and Marie Curie program are always acknowledged in all papers supported by project activities:

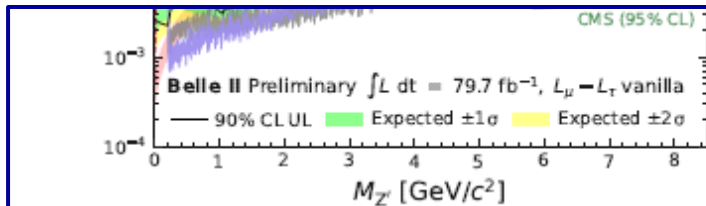


FIG. 4: Observed 90% CL upper limits on the coupling g' for the vanilla $L_\mu - L_\tau$ model as functions of the Z' mass. Also shown are previous limits from Belle II [19] and NA64-

Research Council, Seventh Framework PIF-GA-2013-622527, Horizon 2020 ERC-Advanced Grants No. 267104 and No. 884719, Horizon 2020 ERC-Consolidator Grant No. 819127, Horizon 2020 Marie Skłodowska-Curie Grant Agreement No. 700525 "NIOBE" and No. 101026516, and Horizon 2020 Marie Skłodowska-Curie RISE project JENNIFER2 Grant Agreement No. 822070 (European grants); L'Institut National de Physique Nucléaire et de Physique des Particules (IN2P3) du CNRS (France); BMBF, DFG, HGF, MPG, and AvH Foundation (Germany); Department of Atomic Energy under Project

Larger and detailed acknowledgments are used on website and advertising materials of events and conferences supported or organized by JENNIFER2:

Thanks to the *JENNIFER*² program*, a very special rate is available to support young scientists' participation to NDIP20.

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Secondment management

The project activities are strictly related to experimental schedules and require flexibility in the implementation of secondment plan:

→ timing, split periods, people involved may change significantly from original expectation.

Secondment tracking is a key issue in JENNIFER2 management. A simple procedure is always followed (started in former JENNIFER project and «audit proof»):

1. each secondment period is notified prior to travel to central jennifer2-secretariat in Rome.
2. Jennifer2-secretariat promptly informs the relevant host laboratory secretariat
3. On arrival to host lab, secondee shows up to the local secretariat
4. Before travelling back home, secondee receives a secondment declaration from host institutions secretariat, where secondment is acknowledged
5. Secondee write and sign a basic activity report of her/his secondment, and all split periods
6. Such documents + travel and financial ones are conserved in beneficiary's local archive.



Financial policy

- All beneficiaries use the largest part of the project budget to support seconded staff:

Not just «category A» is payed to secondee, but also most of «category B», both for travel cost and for living allowance.

- As stated in Consortium Agreement, all beneficiaries contribute 7% of their budget to a common fund, managed by Executive Committee, to be used for all common activities: schools, project meetings, outreach, networking.



Secundee rights and obligations

Each JENNIFER2 beneficiary is responsible to guarantee the application of the **Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.**

Each beneficiary, while using its national and internal administration rules, is committed to guarantee that:

- Secondments are part of the normal activity of the staff
- During secondments the staff works only on JENNIFER2 project activities
- Staff contracts start at least 1 month before secondment and last more than it.
- Secundee medical insurance is active during secondment and covered by home institution.
- Secondment related expenses are covered by JENNIFER2 or institutional budget
- Working conditions at hosting organization are good and stimulating
- Secundee receives all informations and support concerning secondment administrative procedure.



Secondment status as of November 15th 2022

Istitution	Days total	months	planned	fraction done	missing days
INFN	1429	47,6	159	30,0%	3341
DESY	1110	37,0	81	45,7%	1320
OEAW-HEPHY	283	9,4	22	42,9%	377
IFJ-PAN	84	2,8	18	15,6%	456
UKP	55	1,8	9	20,4%	215
JSI	356	11,9	28	42,4%	484
METU	0	0,0	6	0,0%	180
TAU	57	1,9	6	31,7%	123
CNRS	409	13,6	40	34,1%	791
CEA	104	3,5	21	16,5%	526
IFAE	29	1,0	12	8,1%	331
UNIGE	71	2,4	24	9,9%	649
NCBJ	71	2,4	25	9,5%	679
KCL (Qmul)	13	0,4	45	1,0%	1337
UKRI	150	5,0	33	15,2%	840
CAEN	0	0,0	3	0,0%	90
FBK	0	0,0	1	0,0%	30
Total	4221	140,7	535,0	26,3%	11829

403 days (13.4 months) already implemented after project resume on 01/06/2022



Secondments discussion

- **King's College** could not really start secondments : Amendment for replacing QMUL with KCL approved in march 2020. Only after that KCL received the budget from QMUL.
→ no special countermeasures needed: just quickly start the many secondments planed
- **METU** group had a person-power problem: PhD students previously involved in Belle II data analysis left. → a re-definition of METU activity is ongoing, with focus on data acquisition electronics upgrade (WP5 instead of WP1).
- WP2 and WP3 secondments were already planned mostly after month 18 for their detector schedule → **IFAE, NCBJ, UNIGE** secondments are (still) as expected.
- **CAEN** and **FBK** have a small budget which will be used mostly in second period.

WP	Days total	months	planned	fraction done
WP1	2969	99,0	220	45,0%
WP2	509	17,0	137	12,4%
WP3	420	14,0	85	16,5%
WP4	156	5,2	34	15,3%
WP5	167	5,6	56	9,9%
Total	4221	140,7	532,0	26,4%

It should also be noted that WP5 and WP4 tasks have overlaps with WP1-2-3 activities and people: sometime part of the work is shared in the same secondment



Impact for non-academic organizations

JENNIFER2 has no direct industry-academy staff exchange, but implements a strong intersectorial collaboration in many tasks.

Benefit for non-academic organization is not just in the secondments, but mostly in the joint activities which are developed before and after secondments.



Profit by the close collaboration with research groups with many different needs for advanced electronics. Supports activities for T2K upgrade and HK design. Regularly seconded an engineer to Japanese partners until 2019 (JENNIFER project). Will restart soon.



Started with very close collaboration on task 4.1, which was then extended to task 4.2. Strong interest in all photo-detection aspects of the project, which could trigger new developments in their future activities. Sinergy with AIDAInnova project



Secondments which cannot be completed

Due to the long suspension a significant number of incomplete secondments are left by young researchers who moved to other institutions. Also a couple for retirement.

ID	Surname	Name	gender	Institution	days done	WP	where now
86	Suvorov	Serguei	M	CEA	18	2	left research
87	Munteanu	Laura	F	CEA	22	2	CERN
89	Mazzucato	Edoardo	M	CEA	11	2	CEA other group
	Noah	Etam	M	UNIGE	7	2	left research
	Saba	Parsa	M	UNIGE	10	2	post doc
	Bron	Stéphanie	F	UNIGE	9	2	post doc
15	Laurenza	Martina	F	INFN	13	1	Uppsala-Belle2
16	Martini	Alberto	M	INFN	15	1	DESY
60	Oberhof	Benjamin	M	INFN	9	1	
68	Ospina Escobar	Nataly	F	INFN	17	3	Madrid
73	Riccio	Ciro	M	INFN	8	2	Stony Brook
	Harvey-Fischenden	Eric	M	UKRI STFC	8	2	
93	Zarnecki	Grzegorz	M	NCBJ	10	2	IFJ-PAN
124	Praz	Cyrille	M	DESY	22	1	KEK
130	Rados	Petar	M	DESY	14	1	OAW
109	Karl	Robert	M	DESY	17	1	
131	Dattola	Filippo	M	DESY	22	1	
132	Scavino	Bianca	F	DESY	14	1	Uppsala-Belle2
123	Windel	Hendrik	M	DESY	9	1	
106	Huber	Stefan	M	DESY	23	1	
78	Knysh	Boris	M	CNRS	19	1	left research
Total					297		

Other
JENNIFER2
beneficiaries

Just a first survey: about 10 months. We would like to ask the Commission to consider applying special accounting rules for such cases, to avoid loss of budget for the beneficiaries.



Conclusions Continuation

JENNIFER2 project survived pandemics and is ready to play a key supporting role for EU particle physics collaboration with Japan, both for flavour physics, neutrino physics and the related technologies.

Secondment of european researchers to Japanese labs has restarted and is planned to increase very much in 2023 due to detector maintenance and installation work.

Challenging physics research with many technological and innovative by-products has never stopped in JENNIFER2. Only minor changes to project milestones and deliverables are needed.

JENNIFER2 is driving a number of outreach activities in order to spread in European civil society the knowledge about particle physics and the high quality scientific collaboration with Japan.

