

# Japan and Europe Network for Neutrino and Intensity Frontier Experimental Research



More than 3 years after our Kickoff meeting.....finally:

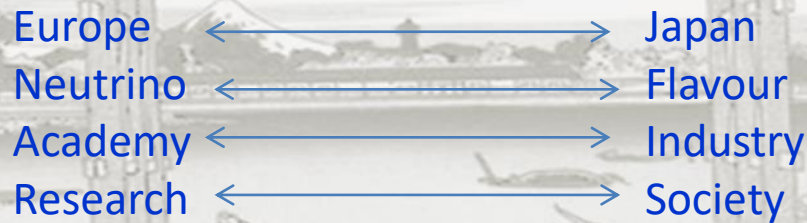
# General Meeting



**Prague, November 17th-18th 2022**

# First, remember our 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 Skłodowska Curie – Research and Innovation Staff Exchange



# Who we are:

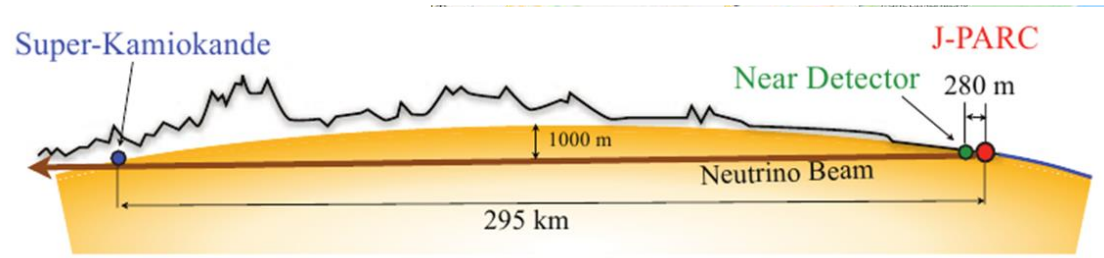


INFN  
DESY  
OAW-HEPHY  
JSI Ljubiana  
IFJ-PAN  
NCBJ  
UKP Prague  
CNRS

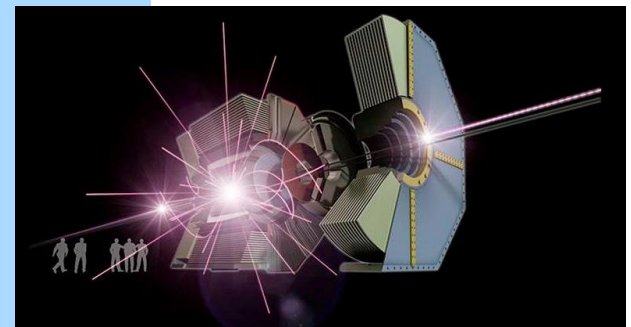
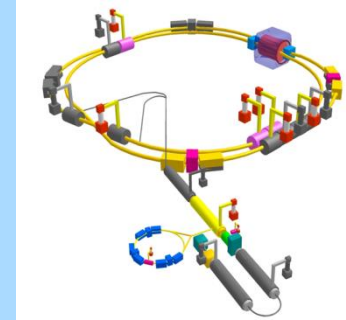
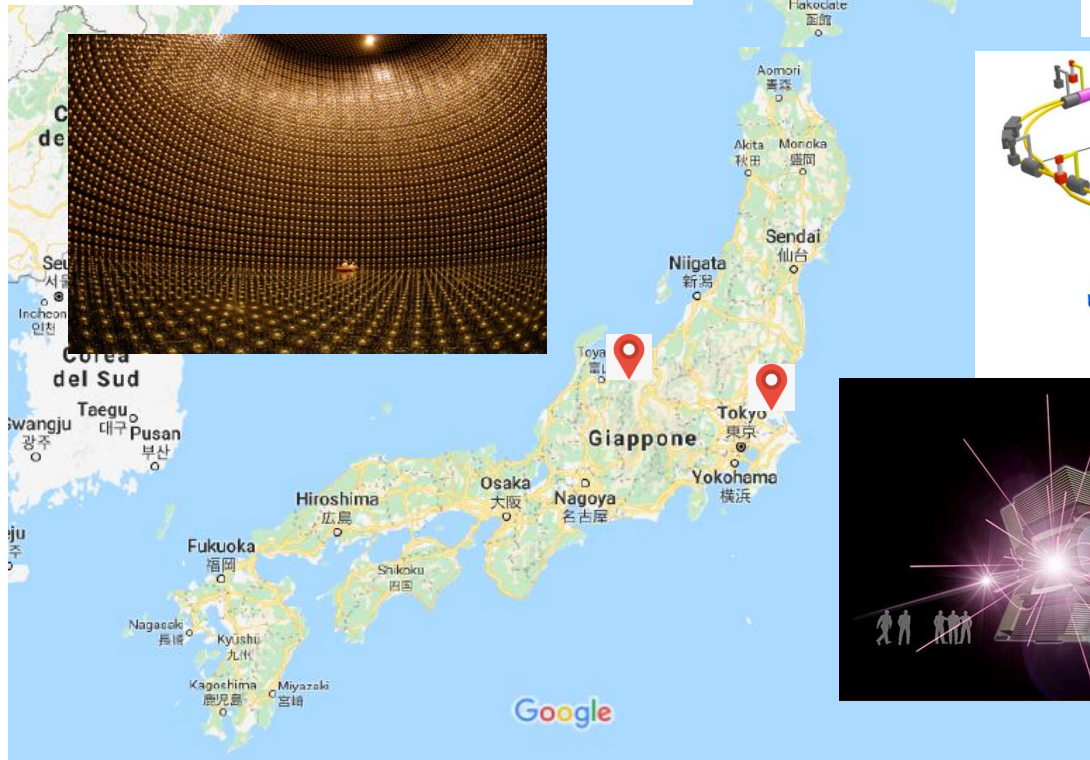
Université de Genève  
IFAE  
King's College  
UKRI - RAL  
Tel Aviv University  
METU Ankara  
CAEN  
Fondazione Bruno Kessler



# and our beloved Japanese Partners:



Unravelling the mysteries of matter, life and the universe.



# JENNIFER2 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**

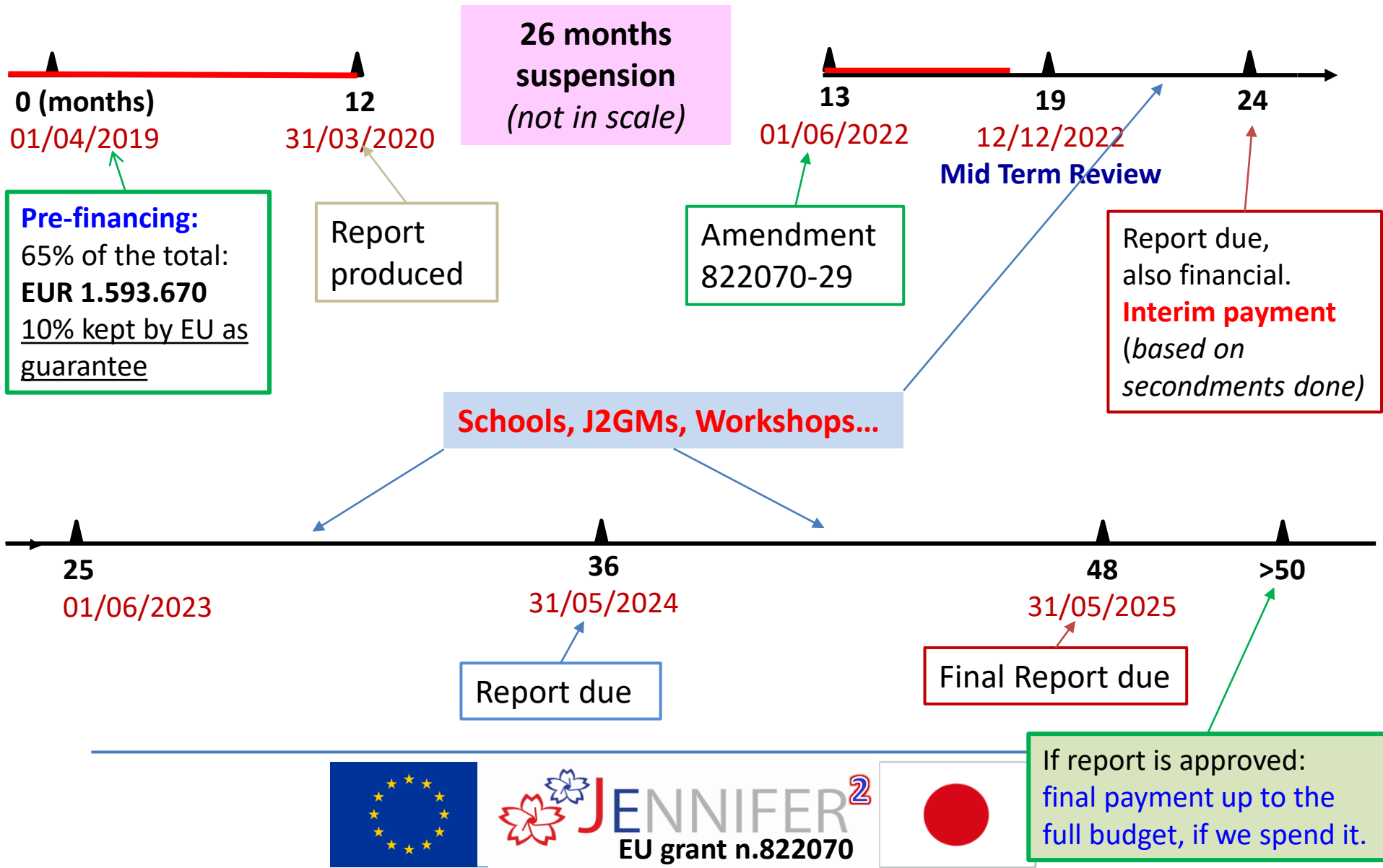
**Total: 533 p.m.**



# JENNIFER2 Budget

<b>Beneficiary</b>	<b>grant amount from GA</b>	<b>number of person months</b>
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
QMUL	€ 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
<b>Total</b>	<b>€ 2.451.800,00</b>	<b>€ 533,00</b>

# JENNIFER2 timeline



# What are we doing here today?

- 1. Review the status of all project tasks after the suspension and discuss whether any change should be done in our activity plan**
- 2. Check if milestones and deliverables are still realistic ones and decide whether some adjustment is necessary (to be then agreed with the PO)**
- 3. Review the status and the new plan of the secondment implementation. Take measures for critical cases.**
- 4. Prepare Mid Term Review: focus on requirements from REA.**





# A quick look through JENNIFER2 tasks and deliverables



# WP1 (C.Schwanda)

**Task 1.1: Detector performance** (G.Finocchiaro, C.Marinas)

**Task 1.2: CP violation** (C.Schwanda, F. Bernlochner)

**Task 1.3: LFV** (G. De Nardo, F. Bernlochner)

**Task 1.4: Dark sector** (E.Graziani, G.Inguglia)

**Task 1.5: Quarkonium** (R.Mussa, M.Bracko)

*my comments:*

All tasks are covered in Belle II. Available data sample allows to perform some measurement in all tasks.

Hardware activity for LS1 is not explicitly included (and will be main secondment activity for 2023).



# WP1

**Milestones: all at month 24 -> may 2023**

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

**Deliverables: all at month 48 -> may 2025**

D1.1	Publication on detector Performance	1 - INFN	Report	Public	48
D1.2	Publication on CPV	3 - OEAW	Report	Public	48
D1.3	Publication on LFV and LFUV	2 - DESY	Report	Public	48
D1.4	Publication on dark sector	3 - OEAW	Report	Public	48
D1.5	Publication on Spectroscopy	4 - JSI	Report	Public	48

# Work Package 2 (E.Radicioni)

T2K

**Task 2.1: Construction and Commissioning of Near Detector ND280 (T.Lux, A.Delbart)**

**Task 2.2: Construction and Commissioning of Super FGD (E.Noah Messomo)**

**Task 2.3: Neutrino cross section measurement (F.Sanchez, A.Longhin)**

**Task 2.4: Oscillation analysis (C.Giganti, L.Ludovici, J.Lagoda)**

**Deliverables: all expected in may 2025**

D2.1	Paper on the upgraded ND280	1 - INFN	Report	Public	48
D2.2	Report on neutrino cross section on Carbon and Oxygen	15 - IFAE	Report	Public	48
D2.3	Report on electron neutrino cross section	1 - INFN	Report	Public	48
D2.4	Report on CP violation phase sensitivity	5 - CNRS	Report	Public	48



## However WP2 milestones are very close:

### WP2 Milestones

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

may 2023

may 2024



**Task 3.1: Gadolinium doped WC study (V.Berardi)**

**Task 3.2: WC calibration system (N.McCauley, L.Thompson, G.Collazuol)**

**Task 3.3: HK outer detector design (S.Zoldos, S.Playfer)**

**Task 3.4: Low noise FE for large area PMTs (A.Bravar, A.Rychter)**

**Task 3.5: HK simulation (T. Dealtry)**

*my comments:*

Suffered for QMUL-KCL transition: few secondments implemented

First deadlines in 1 year from now (see next slide)





# WP3 deadlines

## Deliverables

november  
2023

may 2024

D3.1	Decision on UV system to measure Gd concentration	8 - UKRI		Report	Confidential, only for members of the consortium (including the Commission Services)	30
D3.2	Technical note on Outer Detector	7 - <del>QMUL</del> KCL		Report	Public	36
D3.3	Final report on low noise front end electronics	14 - UNIGE		Report	Public	48
D3.4	Full simulation and analysis with final photosensors	7 - <del>QMUL</del> 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	UGE	30	Internal Report
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**Task 4.1: SiPM in neutron irradiated areas (R.Pestotnik) + FBK**

**Task 4.2: Long lived MicroChannelPlate PMTs (E.Torassa)**

**Task 4.3: Multi PMTs for large WC detector (E.Berardi, HyperK)**

**Task 4.4: Organic photosensors R&D (A.Aloisio, P.Branchini. Collaboration with KEK and NIMS)**

*my comments:*

Situation very different in the 4 tasks: 2 and 3 more constrained to experiment needs/timing . 1 and 4 more independent R&Ds.



# WP4 deadlines

may 2023

## Deliverables

D4.1	Training pn photodetectors at NDIP	4 - JSI	Other	Public	<b>DONE</b>	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		24
D4.4	Report on SIPM prototype tests as single photon counters	4 - JSI	Report	Public	<b>april 2024</b>	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	<b>DONE</b>	12	Internal Report
4.2	Photo-transistor electrical characterization	4	INFN		24	Internal Report



Each task has 2 convenors: one from Belle II and one from the neutrino community

**Task 5.1: Common Computing and data handling (S.Pardi, S. King)**

**Task 5.2: Common DAQ and remote controls issues (S.Lange, B.Richards)**

**Task 5.3: Statistical methods for analysis combination (D.Tonelli, S.Bolognesi)**

**Task 5.4: Generators and phenomenology (E.Kou, G.Ricciardi)**

*my comments:*

Very relaxed deadlines. But only task 1 well advanced



# 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 - <del>QMUL</del> 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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**Task 6.1: Masterclasses both flavour and neutrino physics (Z.Doledal, L.Ludovici)**

**Task 6.2: Summer students at KEK (A.Soffer, F.Sanchez)**

**Task 6.3: Coordination of outreach to general public (A.Passeri)**

**Task 6.4: PhD co-supervision (P.Bambade)**

*my comments:*

Key activities for project impact on society. A lot of work still to be done.





# WP6 deadlines

may 2023

## Deliverables

D6.1	T2K Masterclasses	1 - INFN	Other	Public	48
D6.2	Summer School	12 - TAU	Other	Public	24
D6.3	Outreach Portal Fully to do	1 - INFN	Websites, patents filling, etc.	Public	24
D6.4	PhD students co- supervision	5 - CNRS	Other	Public	48

Post-pone?

Promote our virtual  
schools during suspension



# A first glance to secondments

Institution	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	140	4,7	6	77,8%	40
LAL-CNRS	385	12,8	40	32,1%	815
CEA	104	3,5	21	16,5%	526
IFAE	29	1,0	12	8,1%	331
UNIGE	54	1,8	24	7,5%	666
NCBJ	101	3,4	25	13,5%	649
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
KEK	0	0	2	0,0%	60
Total	4293	143,1	535,0	26,7%	11757



## A first glance to secondments: WPs

WP	Days total	months	planned	fraction done
WP1	3028	100,9	220	45,9%
WP2	522	17,4	137	12,7%
WP3	420	14,0	85	16,5%
WP4	156	5,2	34	15,3%
WP5	167	5,6	56	9,9%
<b>Grand Total</b>	<b>4293</b>	<b>143,1</b>	<b>532,0</b>	<b>26,9%</b>

Need a plan to convince the PO that we are really restarting seconding people in Japan and that we can manage to use the budget we got.

### **Focus of Mid Term Review is secondment implementation!**

*How much we did, if we respected the plan, if not why, what are corrective measures, what is new plan....*



# Secondment management

JENNIFER2 has a well established secondments accounting procedure. Building blocks are:

- Communicate secondment dates prior to travel to jennifer2-secretariat
- Collect secondment declaration in host institutions secretariats
- Write and sign a very basic report of your secondment (or groups of secondments)

**Note: in JENNIFER2 you can sum up in the same secondment different WPs (but not secondments to a different partner organization)**

## Essential EU rules for a valid secondment:

- The secondee must be a staff of the beneficiary (have a position) since at least 1 month before starting secondment
- The beneficiary must pay to secondee at least 2100 euros per secondment month from JENNIFER2 funds
- During secondment the secondee must work 100% for JENNIFER2 tasks.

***They must be kept in mind by secondees who will be interviewed by EU officers during MTM***



# JENNIFER2 impact

**This is the second focus of MTR !** Impact includes:

- **Careers of young researchers and success stories**

We have many examples but should collect them and pick some to show.

In some cases our secondees got new positions leaving secondments incomplete....this should be carefully reported

- **Dissemination of results to:**

- Scientific community: publications
- General society: outreach

Here we have a lot of activity to report.

- **Added value for non-academic organizations,**

i.e. companies in the project (or around it)

This has to be agreed with CAEN and FBK.



# JENNIFER2 Website

<http://www.jennifer2-project.eu/>

Website was maintained up to end 2021. A new maintenance agreement has to be started. Structure is ok, but still many contents are missing or outdated. Secondments table online should be restored.

18/11/22, 08:52

Jennifer 2 Project – An MSCA-RISE project funded by European Union under grant n.822070



ABOUT WORK PACKAGES SECONDMENTS EVENTS OUT



JENNIFER2 is the evolution of the former JENNIFER project – Japan and Europe Network for Neutrino and Intensity Frontier Experimental Research – funded under the Horizon2020 program of the European Union as a Marie Skłodowska Curie Action of the RISE program, under grant n.822070.

The JENNIFER2 project is based on research programs at experimental facilities located in Japan including accelerator produced neutrinos (T2K and Hyper-K collaborations), cosmic neutrinos detection (Hyper-K collaboration) and a high luminosity electron-positron collider (Belle II experiment at SUPERKEKB) where very rare processes can be observed, aiming to jointly investigating the quark and lepton

Type Here to Search

## Project news

T2K Results Restrict Possible Values of Neutrino CP Phase



## Upcoming events

2nd JENNIFER2 General Meeting  
November 17 @ 16:00 - November 18 @ 19:00

[View All Events](#)

## Tweets from Consortium social feeds

MrFalken @MrFalken

3 Members



# Publications and Open Access

Starting JENNIFER2 activities we «opted out» the Open Access requirement in GA.

**From our withdrawal letter, attached to the Grant Agreement:**

*“.....JENNIFER2 must observe the internal rules of Belle II and T2K to be allowed to implement its scientific program.*

*However JENNIFER2 management will discuss, first inside the project members, and then with the Belle II and T2K Collaborations management, if there is a possibility or an acceptable form to open their data to a larger community. (...) Therefore we ask now to opt out of the PORD, but we would like to be able to reconsider this option after the first 12 months of the JENNIFER2 project.”*

Now, after 4 years, everybody is moving to OA. What about our Collaborations?

BTW: **we always have arxiv** ! We can use papers on arxiv.org for EU portal and claim this is our standard OA platform



# Conclusions

**JENNIFER2 activities have continued during pandemics**

**Mostly they should not require big changes in the project, but if necessary we must act now.**

**Implementing secondments must now be our “mantra”**

**We have to prepare very well for Mid Term Review**

