KM3NeT & KM3NeT4RR

G. CUTTONE
FOR THE KM3NET &KM3NET4RR
COLLABORATIONS
(THANKS V. VALSECCHI & S. CIANCIO)

INFN - LABORATORI NAZIONALI DEL SUD (ITALY)

Caserta 15/03/2024

KM3NeT

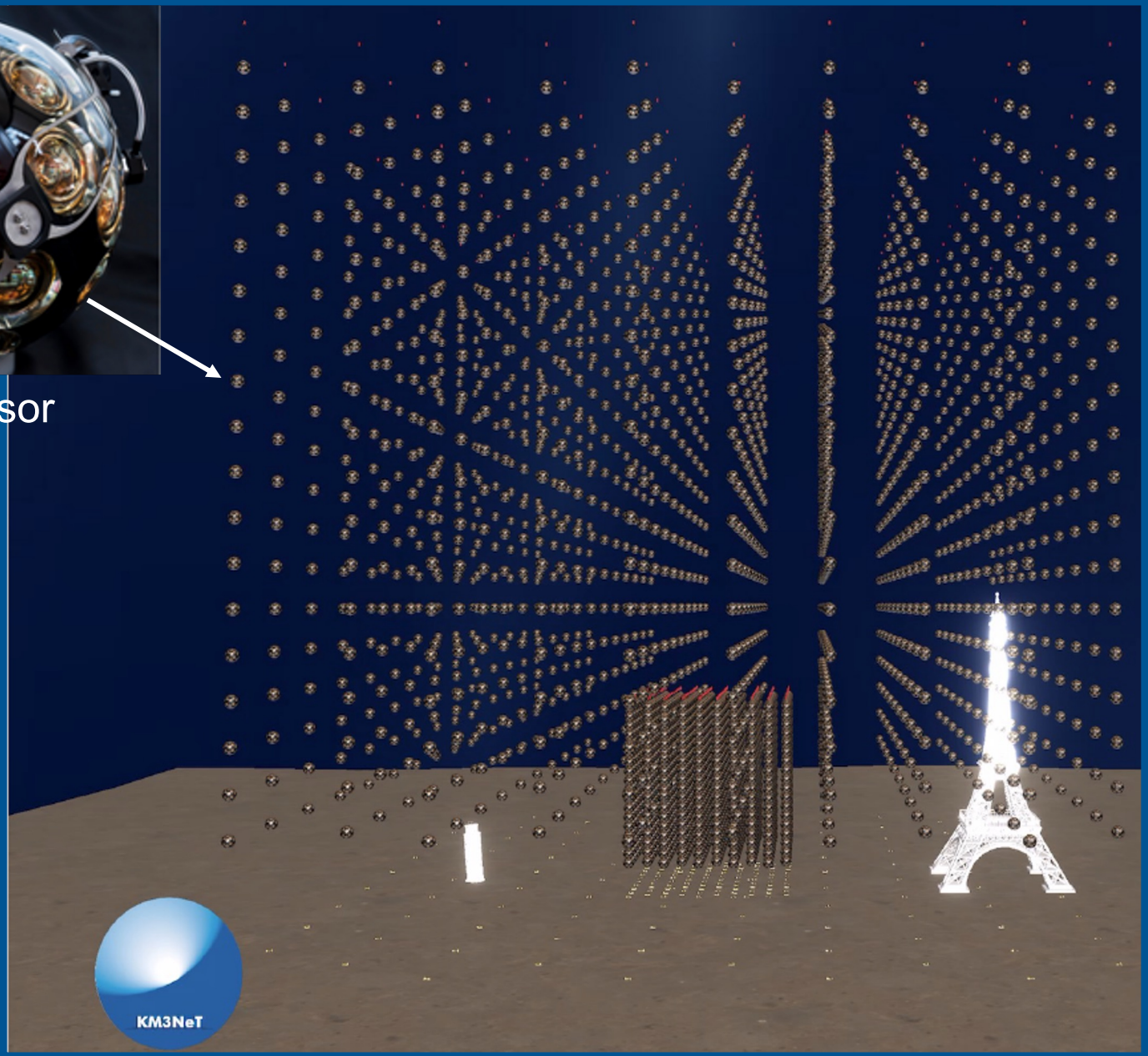
1 collaboration 1 technology 👉 2 detectors

- ARCA (Astroparticle Research with Cosmics in the Abyss)
  - observation of high energy (GeV ÷ PeV) neutrino sources 👉 a telescope offshore Capo Passero (Sicily-Italy) is in construction at a depth of 3500m. **INFN Budget mainly from external funds**
- ORCA (Oscillation Research with Cosmics in the Abyss)
  - determination of the neutrino mass hierarchy 👉 a detector offshore Toulon (France) able to detect neutrinos of tens of GeV is in construction at a depth of 2500m

Detectors in construction

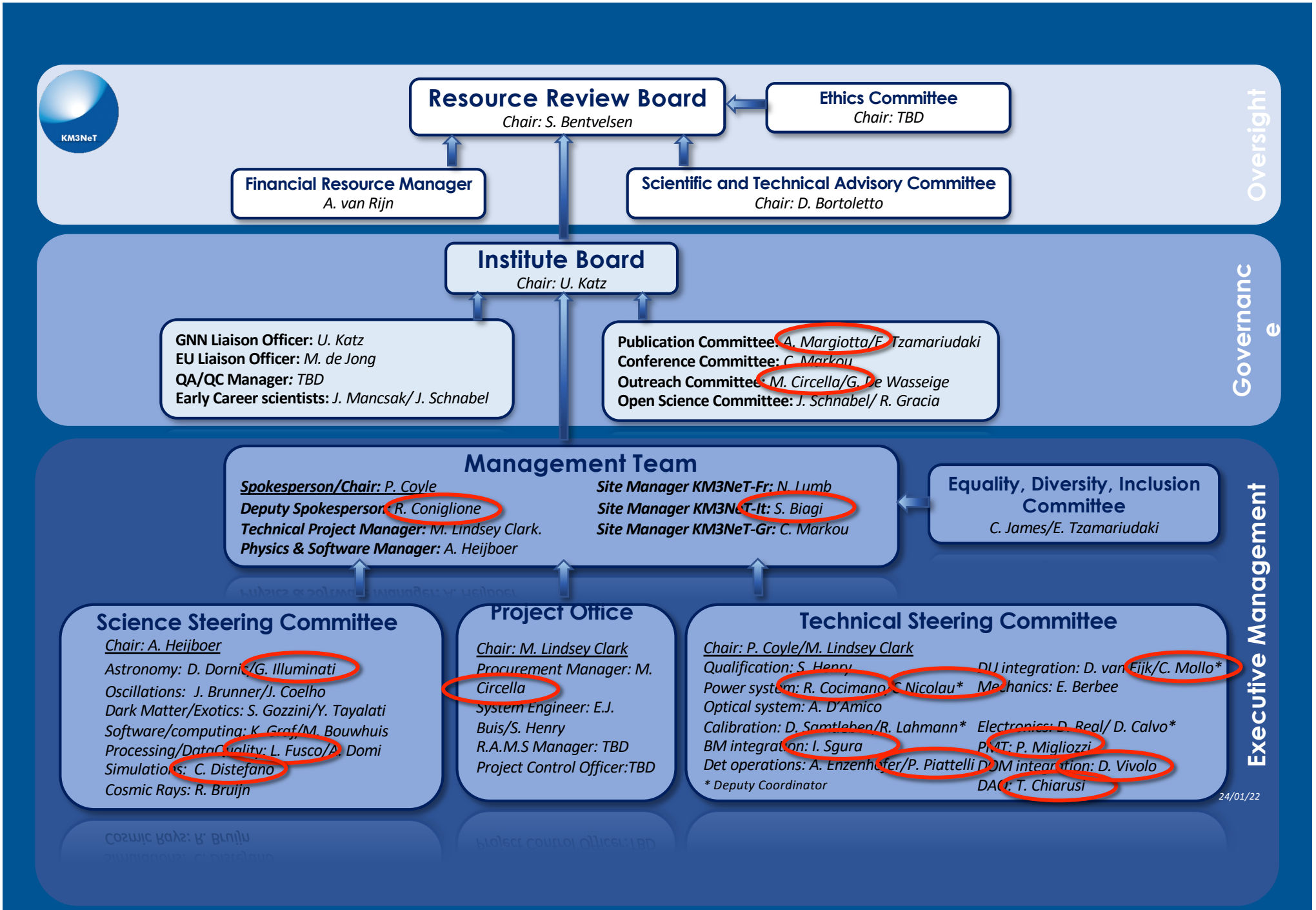
KM3NeT DETECTORS

Optical sensor



Detection Unit

KM3NeT ORGANIZATION



THE TECHNOLOGY

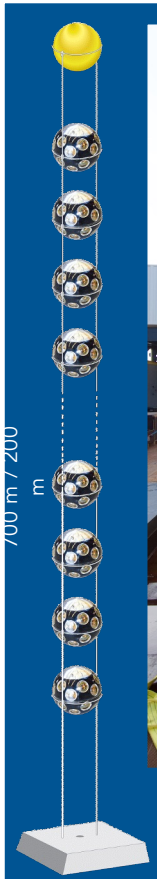
The basic elements:

- Optical sensors 👉 DOMs (Digital Optical Module)
- Strings 👉 DU (Detection Unit)
- Seafloor network 👉 Electro-optical cables and JBs (Junction Boxes)

DOM

It is a 17” glass sphere with inside

- 31 3” PMTs (photocathode aerea ≃ 3 × 10” PMTs)
- LED and Piezo
- Front-end electronics -> FPGA

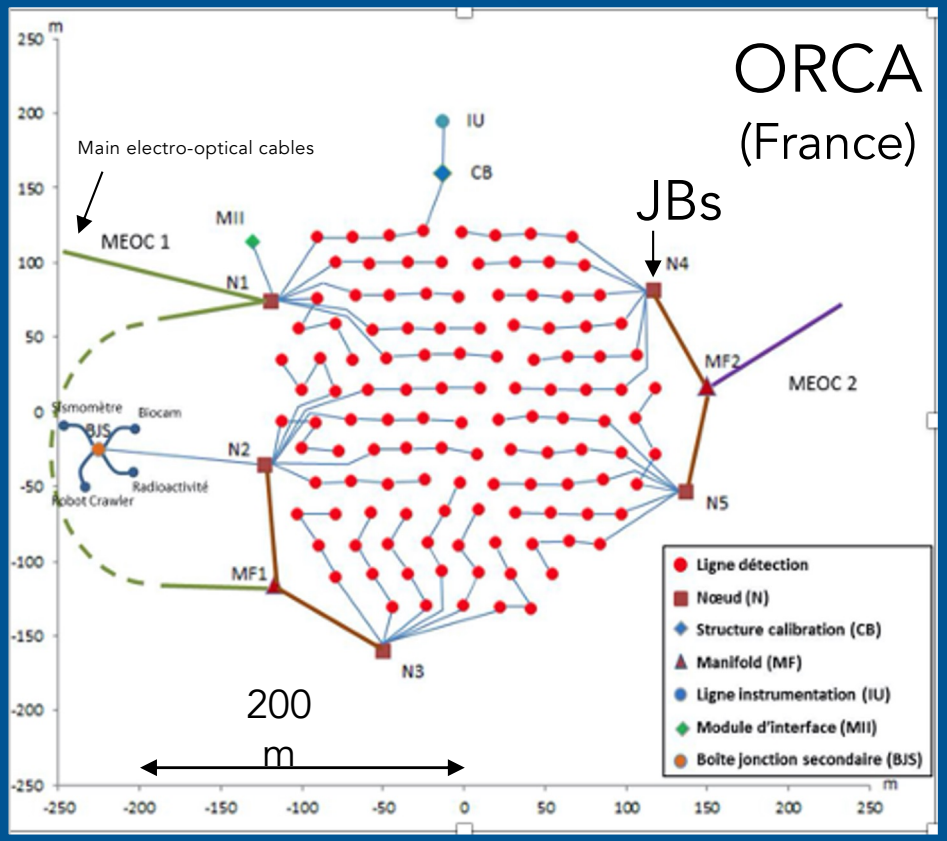


DU

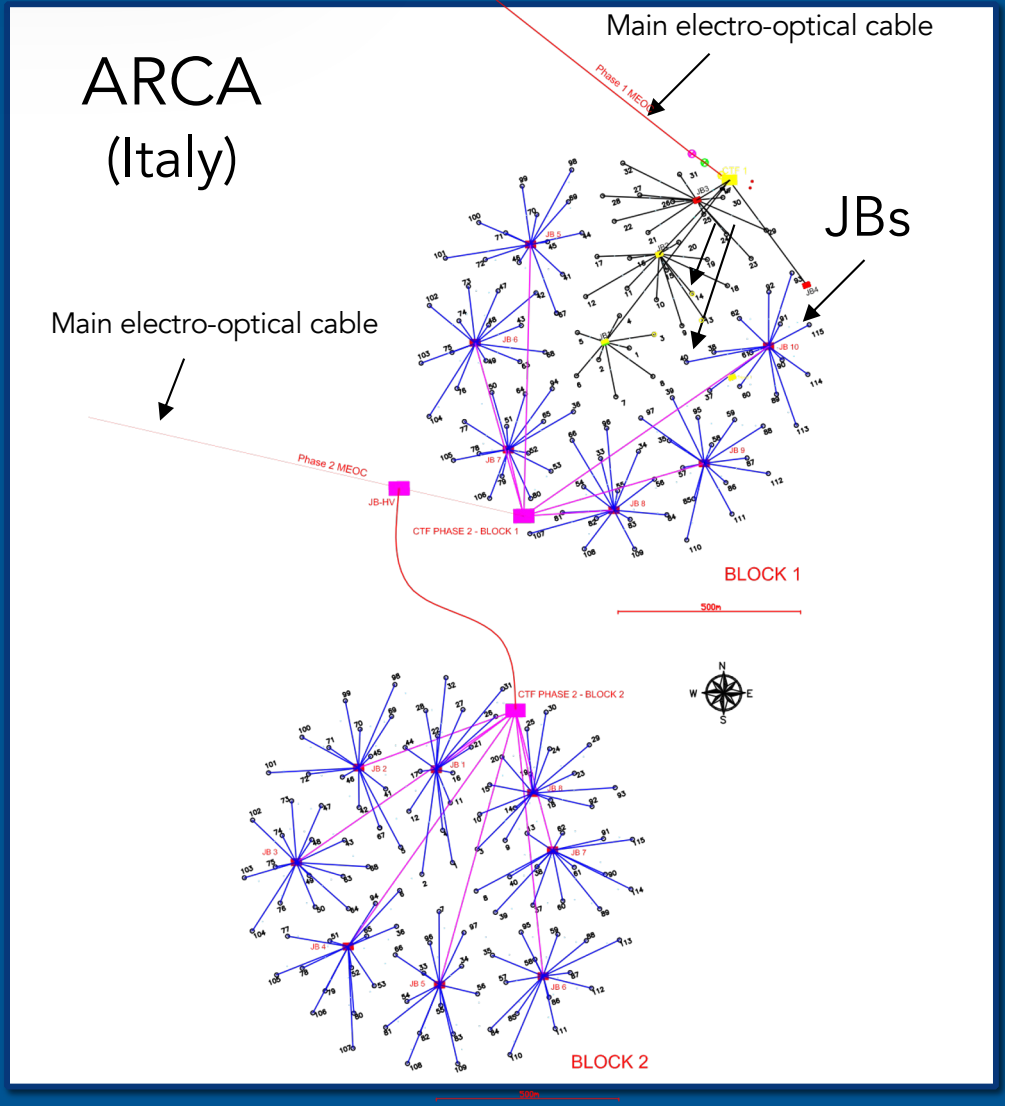
18 DOMs in a DU

JB

THE DETECTORS



ORCA is composed of 1 building block of 115 DUs with 20 m DU interspacing and 9m inter DOM spacing (7 Mton)



ARCA is composed of 2 building blocks of 115 DUs each with 90 m DU interspacing and 36m inter DOM spacing (Total Volume ~ 1 km^3)

Funding

75 ARCA DUs funded (IDMAR Sicilian Region Project+PACK MUR Project) integration completed on July 2023
KM3NeT4RR started on dec 1° 2022 for 30 months
50 ARCA DUs funded+CTF3 and 7 JBs (1 from ITINERIS)

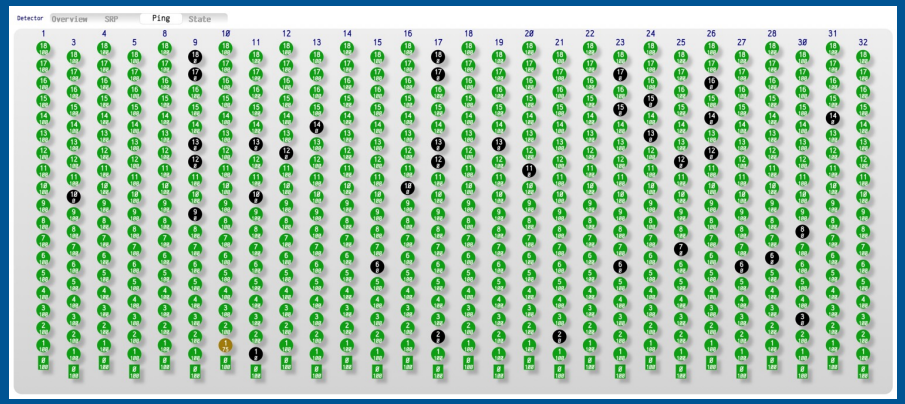
33 ORCA DUs funded September 2022
New funding needed by ~early 2022 (solution is not yet available)

Thanks to KM3NeT4RR dedicated staff hired.

New MOU signed
KM3NeT AISBL is going to be realized as legal entity.

Current Status: 46 DUs deployed (44 operational)

ARCA28



07/11/22: +CTF

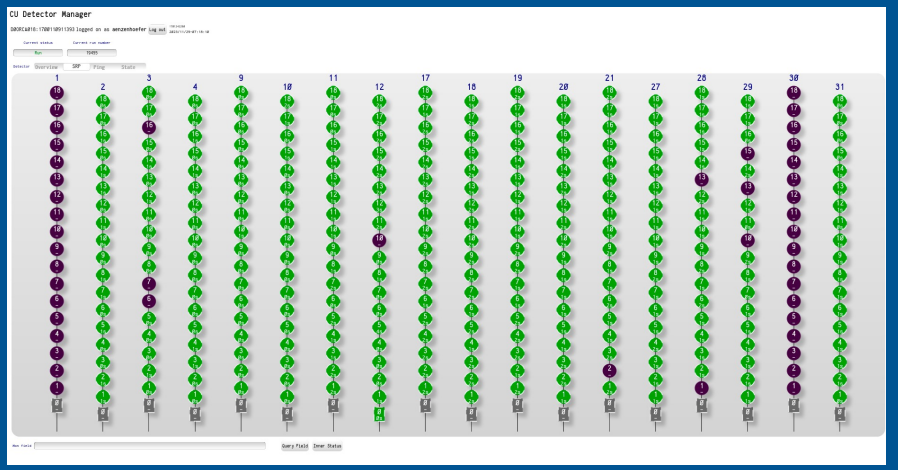
20/04/23: Lost DU38
19/05/23: Lost DU42

06/23: Sea op cancelled (boat unavailable)

09/23: -DU38, -DU42, +9DUs

9/24: +2DU, +2WRJB, +21-27WRDU

ORCA18.5



5/1/23: Lost 15/18 DOMs on DU36

4/23: +3DUs, +1RAB

4/23: +PreBJS

11/23 +DU89 (not connected)

Ready to go: +7DUs, +CU,
recover 2 DUs

ARCA Sea Op: Sept 11-23, 2023

Two weeks, 2 hitches

-DU38, -DU42, +9 DUs

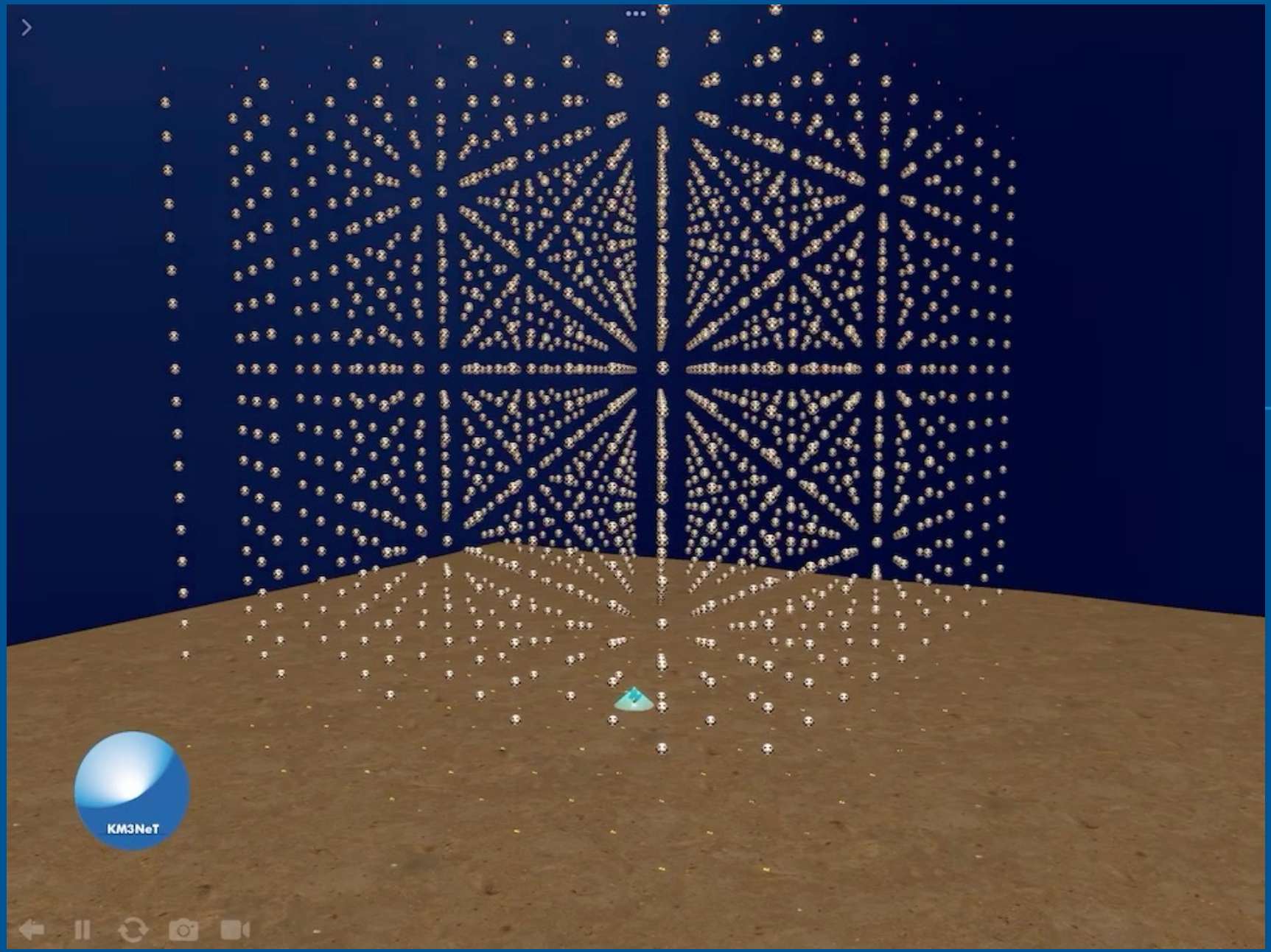
Optimus prime (Turkey)

Control room

Already Booked even for September 2024 Sea Ops.
New Contract with MTS assigned

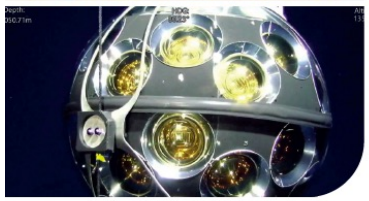
ARCA Sea Op: LOM release view on the boat

A Big Milestone: ARCA Phase 1 completed !



KM3NeT4RR

ETS: Mariangela Segreto
IN2P3 Nantes



INFN
Istituto Nazionale di Fisica Nucleare

PARTNERS

INAF Istituto Nazionale di Astrofisica
Politecnico di Bari
Università degli Studi della Campania Luigi Vanvitelli
Università di Catania
Università degli Studi di Genova
Università degli Studi di Napoli Federico II
Sapienza Università di Roma
Università degli Studi di Salerno

KM3NeT4RR

The proposal has been possible because of Km3NeT is:

- **ESFRI RI**
- **PNIR RI**
- **Strategic RI for the Sicilian Region**

Co-Applicants

- INAF (OA-Catania and OA-Palermo)
- Politecnico Bari
- Università Campania
- Università Catania (DFA - DEI)
- Università Genova
- Università Sapienza Roma
- Università Salerno
- Università Federico II Napoli

Budget 67.2 M€
(97% in Southern Italy)

KM3NeT4RR – in a nutshell

KM3NeT4RR is a project based on the Kilometre Cube Neutrino Telescope (KM3NeT), which is a large, European research infrastructure comprising a deep-sea neutrino detector in the Mediterranean Sea, located off the coast of Portopalo di Capo Passero (Sicily, Italy).

The mission of KM3NeT is to implement and operate a world leading open observatory for the study of cosmic neutrino and multidisciplinary research.

Selected as a high-priority research infrastructure for European science and included in the 2016 and 2020 ESFRI roadmaps, KM3NeT will generate breakthroughs in:

- neutrino astronomy: with its superior angular resolution, it will allow to identify the sources of cosmic neutrinos, as well as to measure the energy spectra and flavour composition of the fluxes;

- marine sciences: it will offer large opportunities for sensor connection providing long-term, high-bandwidth, continuous data collection. Moreover, these data can be correlated with the data from the neutrino detector itself, which can also monitor bioluminescent and bioacoustics activities and sea currents.

Besides the high potential for new discoveries, KM3NeT is strongly integrated with the regional and national territory. From the first stages of its preparation, its potential to generate positive socio-economic and environmental impacts has emerged.

Taking advantage of the gathered experience, the KM3NeT4RR project includes a set of activities to extend the seafloor network and the onshore infrastructures, and for preparation and operation of the components of the underwater detector, providing a significant boost toward final completion of the infrastructure. Education, Training and outreach will complete the picture and enhance the impact of the infrastructure on the territory.

In the next decade, KM3NeT will be the only site in Europe providing a unique opportunity to the scientific community of physicists, astronomers and marine scientists to push further their research frontiers.

KM3NeT4RR: KM3NeT for Next Generation EU (PNRR in Italy)

- WP1– Management - In this WP the coordination and management of all project activities (technical, administrative, and financial) will be addressed.
- WP2– Upgrading of the infrastructures. - To assure the reinforcement of the underwater infrastructure an adequate upgrade of all onshore laboratories is needed. The upgrade of the Capo Passero shore station, that hosts the Data Acquisition System and the control system of the subsea equipment is needed. Upgrades of the existing laboratories that are integration sites are also requested. This is needed to face the integration rate required by the project.
- WP3 – Caserta upgrading - Selected INFN laboratories are devoted to the Detection Unit integration process. This activity requires a large laboratory with special equipment (overhead crane, customs made big instruments, ...). To increment the DU rate integration, the extension of the already existing laboratory located in Caserta is needed. This WP is devoted to the design and realization of this extension.
- WP4 – Salerno upgrading -To increment the production rate of the Digital Optical Module the construction of a dedicated infrastructure at the University of Salerno for DOM integration is requested. Strengthening of the Database and test/reporting software is also requested.

KM3NeT4RR: KM3NeT for Next Generation EU (PNRR in Italy)

- WP5 – Seafloor upgrading - An important part of the offshore IR is the seafloor network (Second CTF and 6 Jbs) that connects the Detection Units to the shore station and assure the inter-DU connection. The power/data are transferred to/from the infrastructure via main electro-optic cables connected to JBs. The extension of the existing seafloor network is the main activity of this WP.
- WP6 – DU integrationt - The Procurement and construction of all the components of 65 Detection Unit of the ARCA detector is the aim of this WP.The increased size of the detector will allow an improvement of the detector sensitivity to cosmic neutrino fluxes, thus also increasing the importance of the detector in the multimessenger scenario.
- WP7 – Multimessenger liasons. - This WP addresses items that are strictly related to the multimessenger activities. The upgrade to higher frequencies of an INAF radio telescope located near Noto (Sicily) is requested. Recent studies and some experimental evidence point out that high frequency radio emitting sources are good neutrino candidates thus making this upgrade and collaboration even more important. Follow-ups of sources in the radio and gamma emission band are also foreseen. Modelization of neutrino emission from other sources of cosmicneutrinos and activities for training of Phd students are also comprises in this WG.
- WP8 – Education training and outreach - This WP addresses education, training and outreach activities paying particular attention to the development of the enterprise culture related to opportunities offered by the research infrastructure in the creation of added economical value and for the growth of our country and in particular of the southern regions.This will be achieved by means of innovative education and training rooms devoted to STEM valorization and to the multimessenger astrophysics and related technologies

I 3.1, "Fund for the creation of an integrated system of research and innovation infrastructures", Action 3.1.1 " Creation of new IR or strengthening of existing IR involved in the Horizon Europe Scientific Excellence objectives and the establishment of networks "

Official ranking (provisional) for ESFRI area: PSE - Physical Sciences and Engineering

Position	Proposal code	Applicant	Eligible costs	Total Score
1	IR0000030	Istituto Nazionale di Fisica Nucleare	27.119.150,00 €	191
2	IR0000016	Consiglio Nazionale delle Ricerche	59.999.988,15 €	188
3	IR0000024	ISTITUTO NAZIONALE DI FISICA NUCLEARE (INFN)	24.778.957,76 €	185
4	IR0000002	Istituto Nazionale di Fisica Nucleare	77.186.973,06 €	183
5	IR0000027	Consiglio Nazionale delle Ricerche	95.234.797,73 €	182
6	IR0000037	Istituto Superiore per la Protezione e la Ricerca Ambientale	19.062.481,00 €	181
7	IR0000012	INAF	89.243.505,61 €	181
8	IR0000003	ISTITUTO NAZIONALE DI FISICA NUCLEARE (INFN)	75.036.425,00 €	180
9	IR0000034	INAF - Istituto Nazionale di Astro Fisica	91.450.299,00 €	178
10	IR0000004	Istituto Nazionale di Fisica Nucleare	99.732.649,46 €	175
11	IR0000026	Istituto Nazionale di Astrofisica	24.940.698,48 €	172
12	IR0000028	Area Science Park	53.167.679,98 €	168
13	IR0000038	INAF - Istituto Nazionale di Astrofisica	61.510.669,60 €	160
14	IR0000015	CONSIGLIO NAZIONALE DELLE RICERCHE	69.663.514,88 €	160
15	IR0000021	Consiglio nazionale delle ricerche	39.952.658,16 €	158
16	IR0000019	Consiglio Nazionale delle Ricerche	32.000.052,46 €	156
17	IR0000006	CONSIGLIO NAZIONALE DELLE RICERCHE	20.000.000,00 €	149

PSE	IR0000002	KM3NeT4RR	INFN	67.186.973 €	104 del 20-06-2022	123 del 21-06-2022	2194 del 21-06-2022

PNRR proposal successfully approved

ARCA Detector with Km3NeT4RR

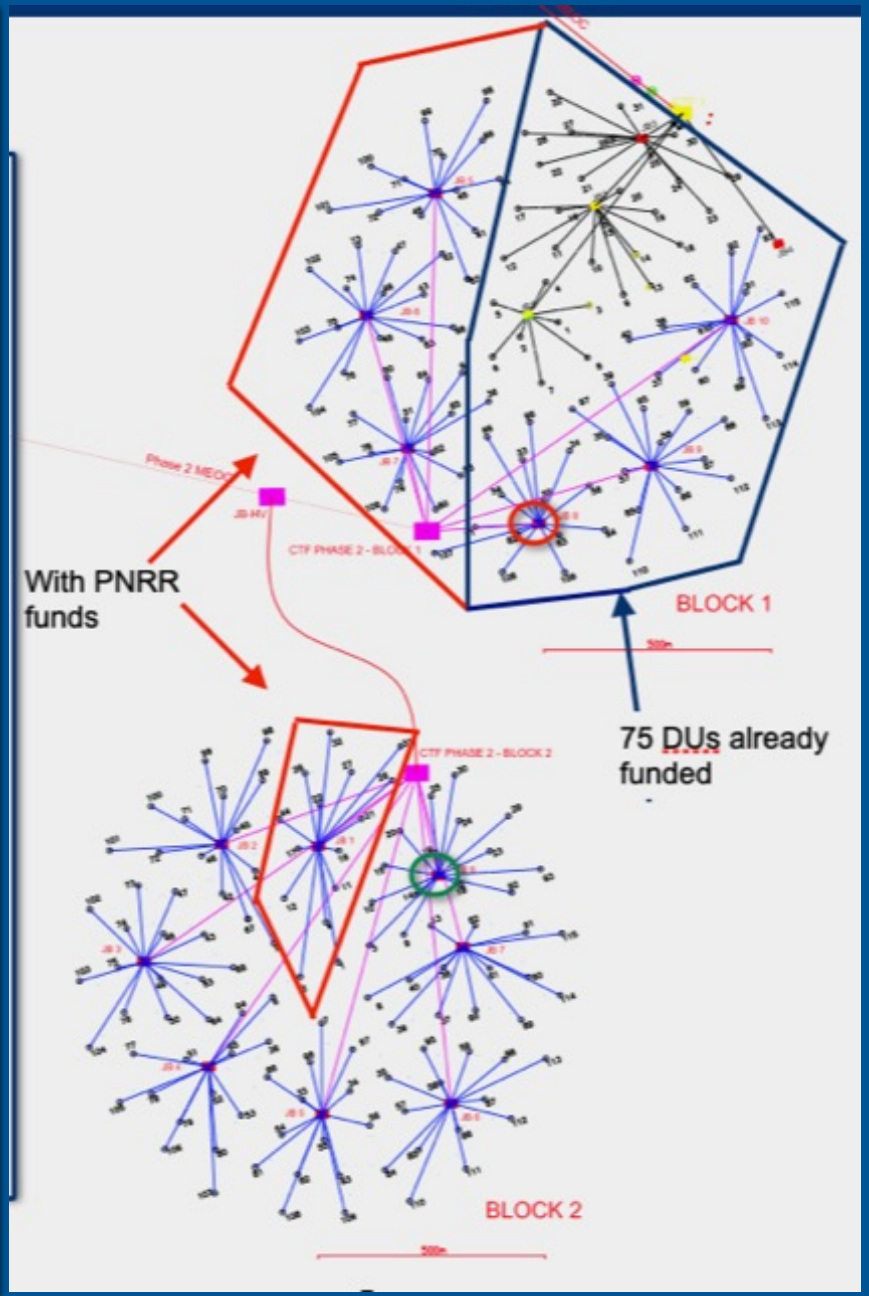
KM3NeT4RR approved for **67.2 M€** :

- 55 DUs (Initial Request for 65 Dus)
- The related sea floor infrastructure (5 JBs + 1CTF + IL cables)
- The reinforcement of INFN KM3NeT laboratories
- Human resources

This funds will allow the completion of the first block and the construction of about 15 DUs of the second block of the ARCA detector.

Marine Ops will be funded by INFN

Another PNRR call for Environment (ITINERIS) includes 1JB



Total budget divided by geographical area and cost categories

32.1 Entire project costs

COSTS (€) ENTIRE PROJECT			
	Costs included in the request for funding		
	To be located within the eight southern Regions	To be located outside the eight southern Regions	**Total requested grant**
a. Fixed term personnel specifically hired for the project	4.227.414,00	825.624,00	5.053.038,00
b. Scientific instrumentation and technological equipment, software licenses and patent	52.200.885,61	914.390,00	53.115.275,61
c. Open Access, Trans National Access, FAIR principle implementation	24.400,00	0,00	24.400,00
d. Civil infrastructures and related systems	4.254.800,00	0,00	4.254.800,00
e. Indirect costs, including running costs	4.269.771,77	125.637,68	4.395.409,45
f. Training activities	289.240,00	54.810,00	344.050,00
Total	65.266.511,38	1.920.461,68	67.186.973,06

Applicant / Co-applicant	% on total	TOTAL	a. Fixed term personnel specifically hired for the project	b. Scientific instrumentation and technological equipment, software licenses and patent	c. Open Access, Trans National Access, FAIR principle implementation	d. Civil infrastructures and related systems	e. Indirect costs, including running costs	f. Training activities
INFN	*88,3%*	59.330.290,48 €	3.257.034,00 €	52.136.835,61 €	0,00 €	55.000,00 €	3.881.420,87 €	0,00 €
INAF	*1,5%*	989.407,60 €	425.700,00 €	498.980,00 €	0,00 €	0,00 €	64.727,60 €	0,00 €
Poli-BA	*1,2%*	780.565,00 €	125.040,00 €	296.460,00 €	0,00 €	308.000,00 €	51.065,00 €	0,00 €
Uni-Campania	*5,2%*	3.512.583,16 €	306.168,00 €	183.000,00 €	0,00 €	2.684.000,00 €	229.795,16 €	109.620,00 €
Uni-CT	*0,5%*	329.200,48 €	213.264,00 €	0,00 €	24.400,00 €	0,00 €	21.536,48 €	70.000,00 €
Uni-SA	*2,6%*	1.726.697,52 €	405.936,00 €	0,00 €	0,00 €	1.207.800,00 €	112.961,52 €	0,00 €
Uni-Napoli	*0,3%*	231.389,64 €	106.632,00 €	0,00 €	0,00 €	0,00 €	15.137,64 €	109.620,00 €
Uni-Ge	*0,3%*	172.742,94 €	106.632,00 €	0,00 €	0,00 €	0,00 €	11.300,94 €	54.810,00 €
Uni-Sapienza	*0,2%*	114.096,24 €	106.632,00 €	0,00 €	0,00 €	0,00 €	7.464,24 €	0,00 €
TOTAL	*100,0%*	67.186.973,06 €	5.053.038,00 €	53.115.275,61 €	24.400,00 €	4.254.800,00 €	4.395.409,45 €	344.050,00 €

INFN – Budget divided by geographical area and cost categories

COSTS (€) PARTICIPANT [Istituto Nazionale di Fisica Nucleare]			
	Costs included in the request for funding		
	To be located within the eight southern Regions	To be located outside the eight southern Regions	**Total requested grant**
a. Fixed term personnel specifically hired for the project	2.644.674,00	612.360,00	3.257.034,00
b. Scientific instrumentation and technological equipment	51.222.445,61	914.390,00	52.136.835,61
c. Open Access, Trans National Access, FAIR principal implementation	0,00	0,00	0,00
d. Civil infrastructures and related systems	55.000,00	0,00	55.000,00
e. Indirect costs, including running costs	3.774.548,37	106.872,50	3.881.420,87
f. Training activities	0,00	0,00	0,00
Total	57.696.667,98	1.633.622,50	59.330.290,48

INFN - Budget divided by operating unit

Operating Unit INFN	% on total	TOTAL
INFN-BA	14%	9.696.472,65 €
INFN-BO	1%	798.025,26 €
INFN-CT	14%	8.867.415,28 €
INFN-GE	0,2%	192.908,16 €
INFN-LNS	35%	22.325.060,71 €
INFN-NA	25%	16.807.719,34 €
INFN-RM1	1%	642.689,08 €

INFN – LNS also includes the cost for the Infrastructure Manager contract: S. Ciancio in place on April 1° 23

INFN - Budget divided by operating unit and cost categories

Operating Unit	TOTAL	a. Fixed term personnel specifically hired for the project	b. Scientific instrumentation and technological equipment, software licenses and patent	c. Open Access, Trans National Access, FAIR principle implementation	d. Civil infrastructures and related systems	e. Indirect costs, including running costs	f. Training activities
INFN-BA	**9.696.472,65 €**	**299.304,00 €**	**8.707.819,97 €**	**0,00 €**	**55.000,00 €**	**634.348,68 €**	**0,00 €**
INFN-BO	**798.025,26 €**	**213.288,00 €**	**532.530,00 €**	**0,00 €**	**0,00 €**	**52.207,26 €**	**0,00 €**
INFN-CT	**8.867.415,28 €**	**299.304,00 €**	**7.988.000,00 €**	**0,00 €**	**0,00 €**	**580.111,28 €**	**0,00 €**
INFN-GE	**192.908,16 €**	**99.768,00 €**	**80.520,00 €**	**0,00 €**	**0,00 €**	**12.620,16 €**	**0,00 €**
INFN-LNS	**22.325.060,71 €**	**1.148.154,00 €**	**19.716.388,72 €**	**0,00 €**	**0,00 €**	**1.460.517,99 €**	**0,00 €**
INFN-NA	**16.807.719,34 €**	**897.912,00 €**	**14.810.236,92 €**	**0,00 €**	**0,00 €**	**1.099.570,42 €**	**0,00 €**
INFN-RM1	**642.689,08 €**	**299.304,00 €**	**301.340,00 €**	**0,00 €**	**0,00 €**	**42.045,08 €**	**0,00 €**

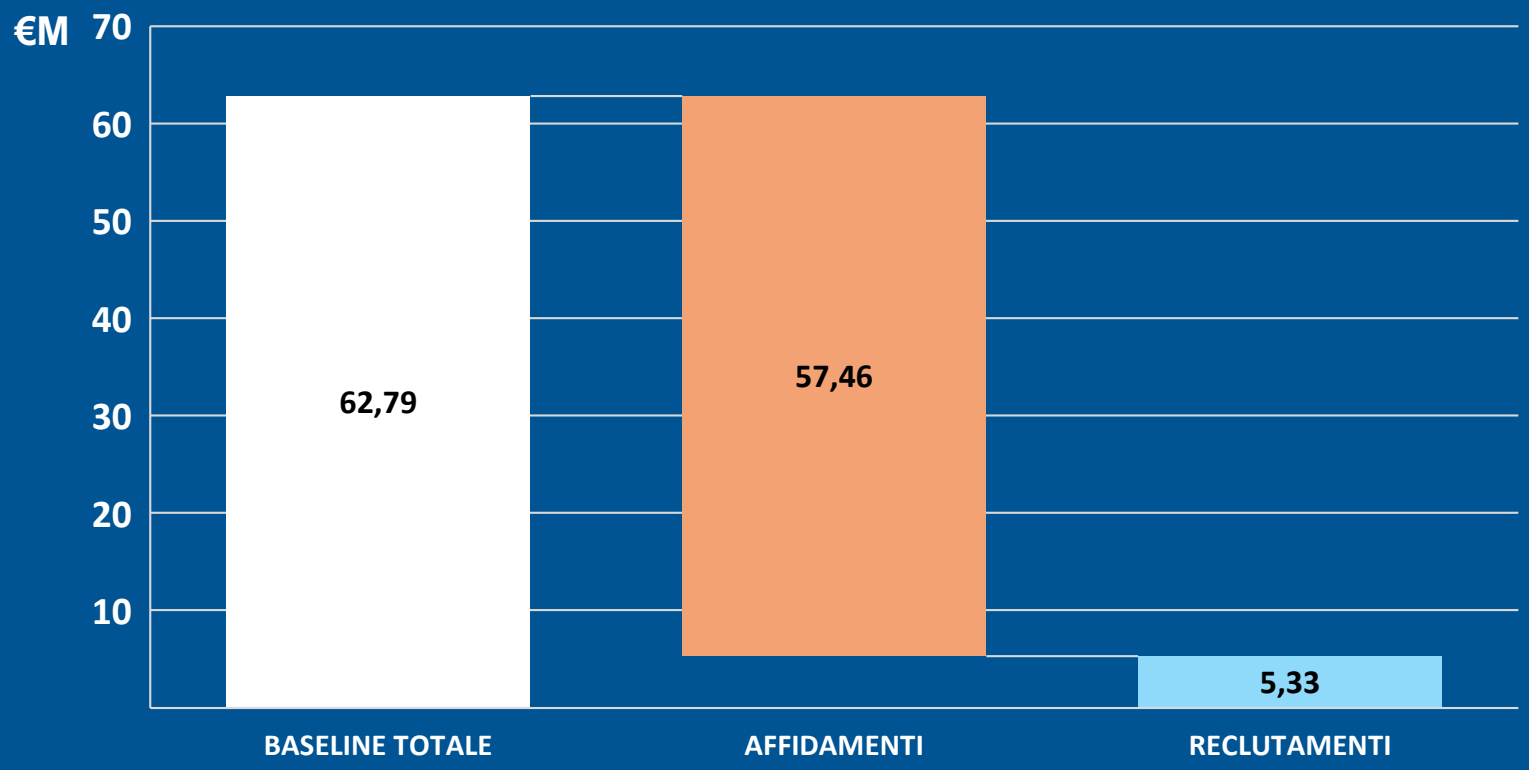
(INFN – LNS also includes the cost for the Infrastructure Manager contract)

KM3NeT4RR – INFN personnel to be hired

Op. Unit	Profile	N. of Units	Activity	Estimated cost
INFN-BA	CTER	3	Detector Integration	€ 299.304
INFN-BO	CTER	1	Det. Integration, site upgrade, test benches	€ 99.768
INFN-BO	Tecnologo III	1	Test benches	€ 113.520
INFN-CT	CTER	3	JB integration and test, detector integration	€ 298.304
INFN-GE	CTER	1	Detector Integration	€ 99.768
INFN-LNS	CTER	9	Shore station, detector integration	€ 894.912
INFN-LNS	Tecnologo III	2	Seafloor network design and installation	€ 227.040
INFN-NA	CTER	9	Site upgrade, detector integration	€ 897.512
INFN-RM1	CTER	1	JB integration and test	€ 99.768
Uni-Vanvit	Technician	2	Detector integration	€ 199.536
Uni-SA	Technician	3	Detector integration	€ 299.304

Being in mass production and having all the procedures defined, new technicians has been inserted in the integration teams already working. FULLY IN OPERATION. Pay attention at each single contract conclusion.

TOTALE COSTI DIRETTI



Fonte: Decreto di ammissione al finanziamento 123 del 21-06-2022

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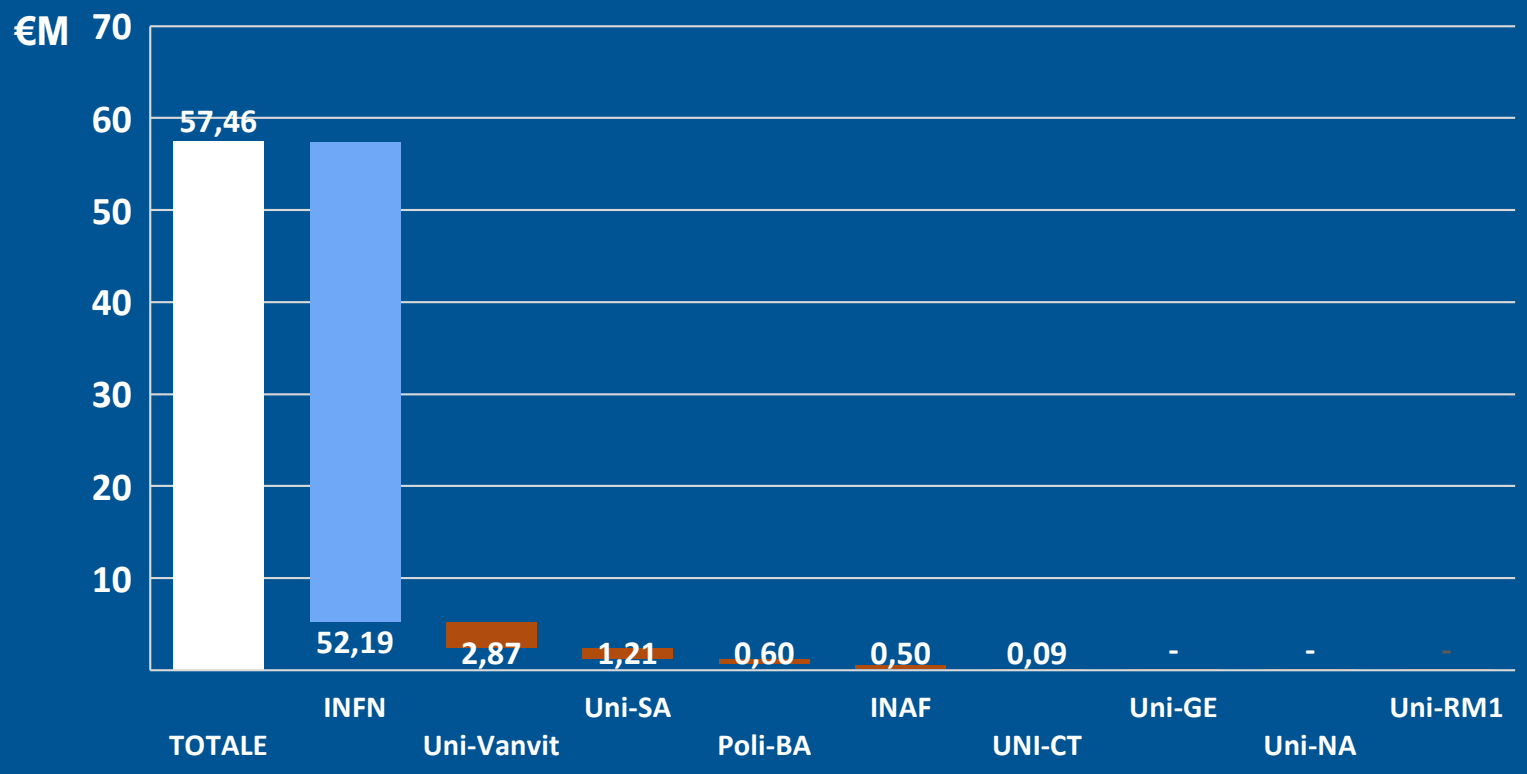
TOTALE AFFIDAMENTI PER COSTI DIRETTI PER ENTE



Fonte: Decreto di ammissione al finanziamento 123 del 21-06-2022

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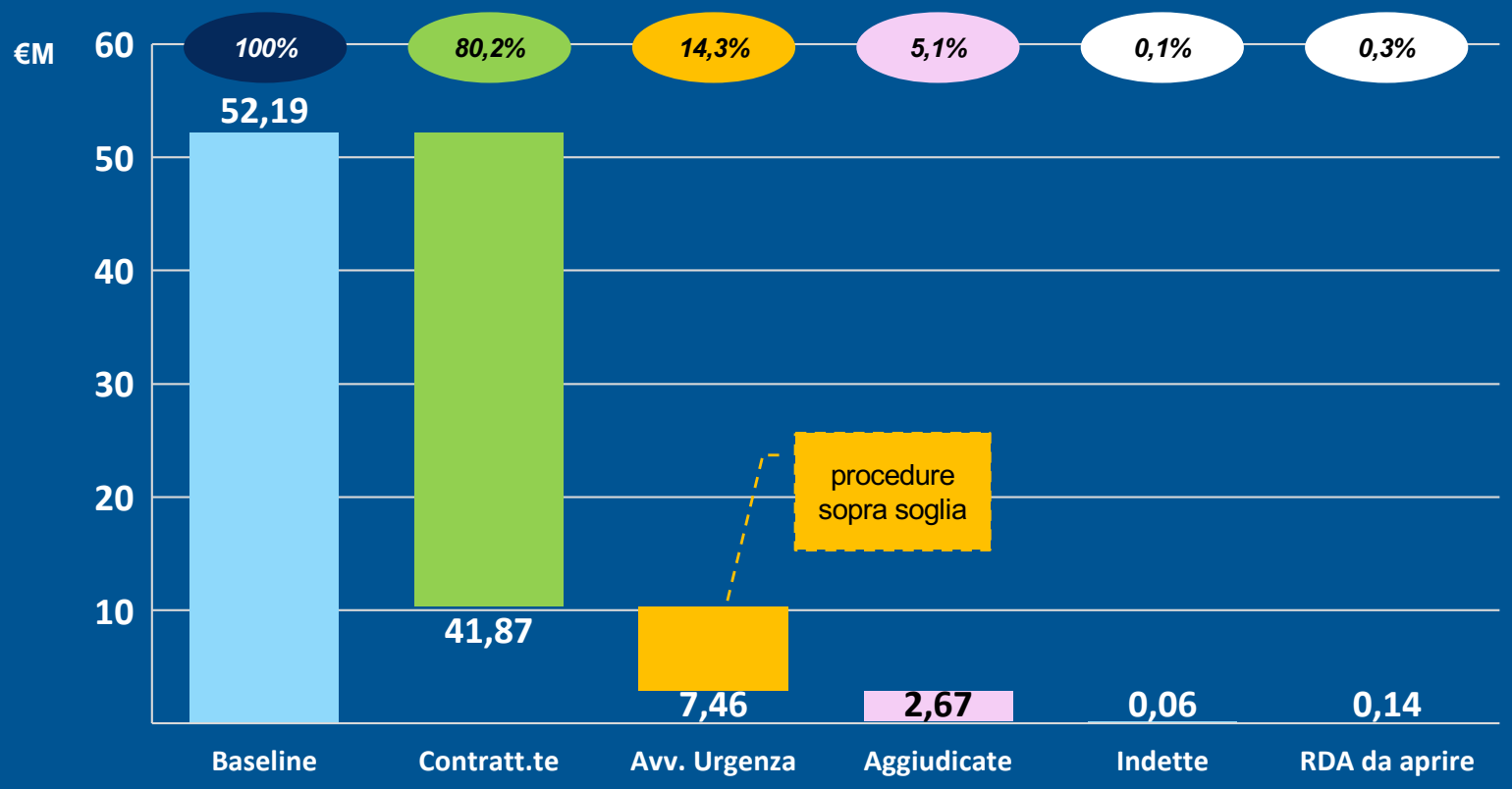
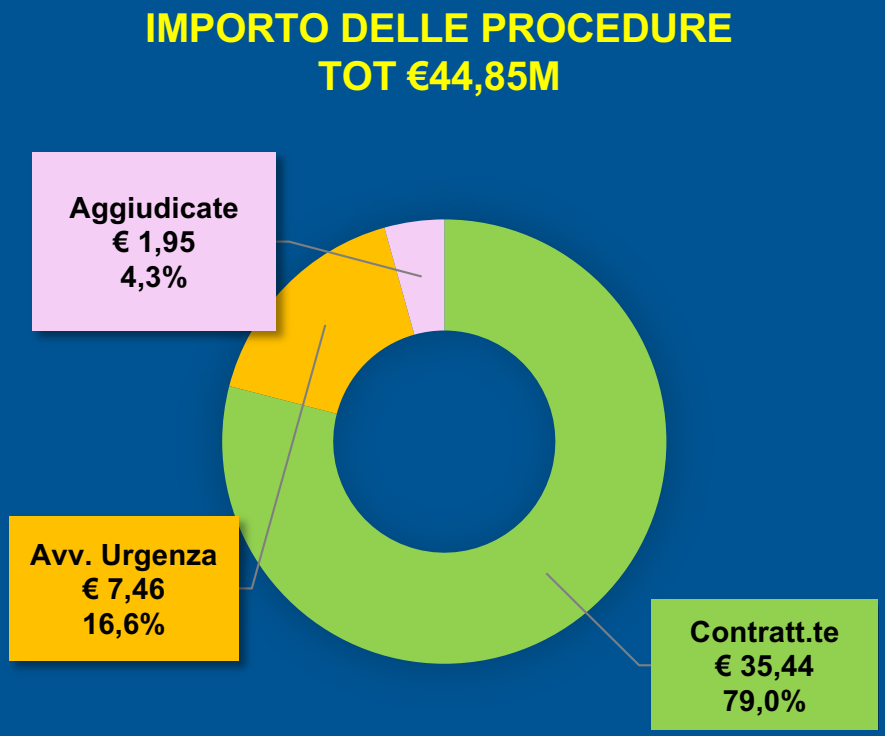
TOTALE AFFIDAMENTI PER COSTI DIRETTI - INFN

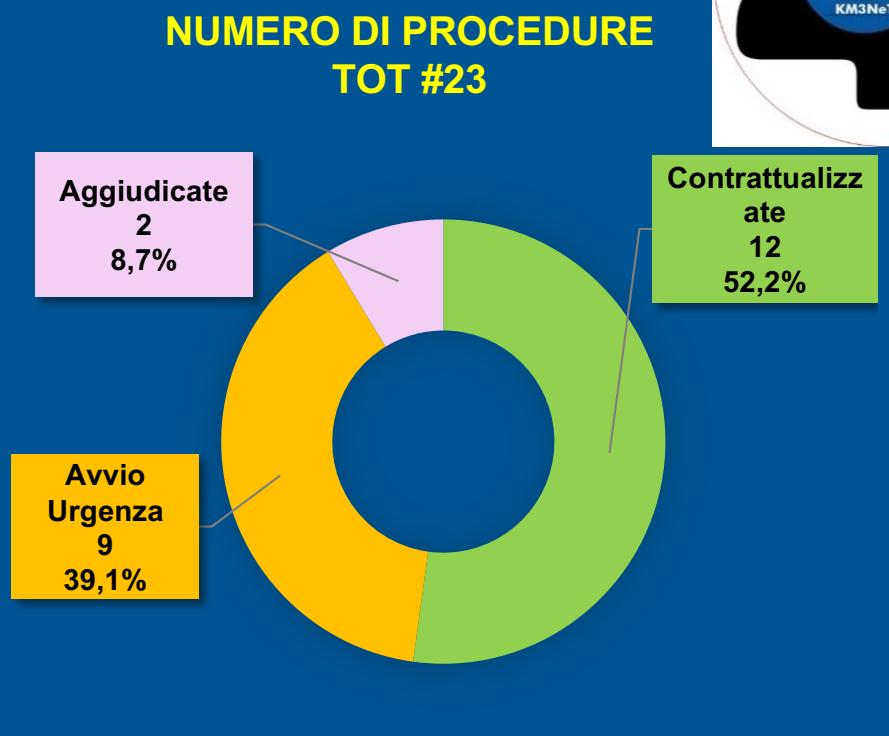


Nota: stato di avanzamento alla data del 13/03/2024 sulla base dei dati estratti da RDA e delle informazioni ricevute dai RUP

Istituto Nazionale di Fisica Nucleare

AFFIDAMENTI PER COSTI DIRETTI – INFN SOPRASOGLIA



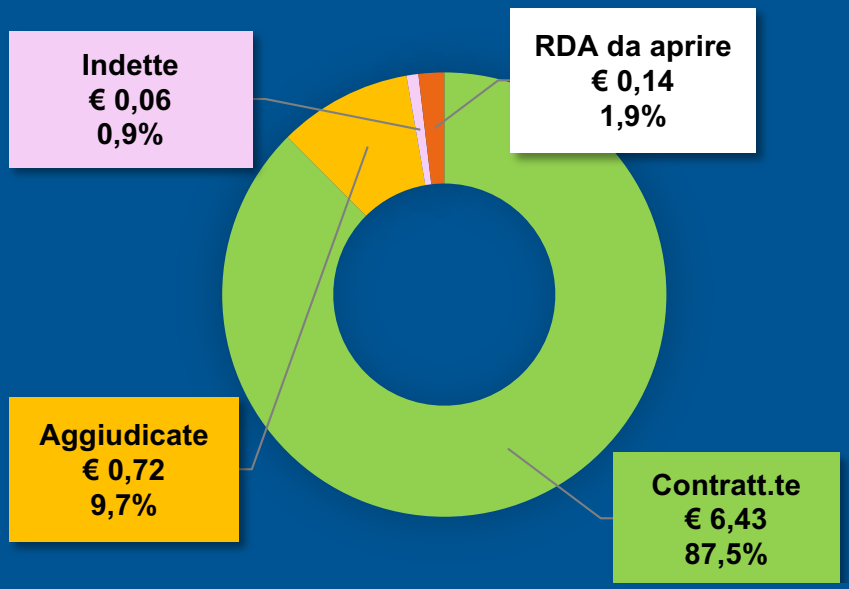


Nota: stato di avanzamento alla data del 13/03/2024 sulla base dei dati estratti da RDA e delle informazioni ricevute dai RUP

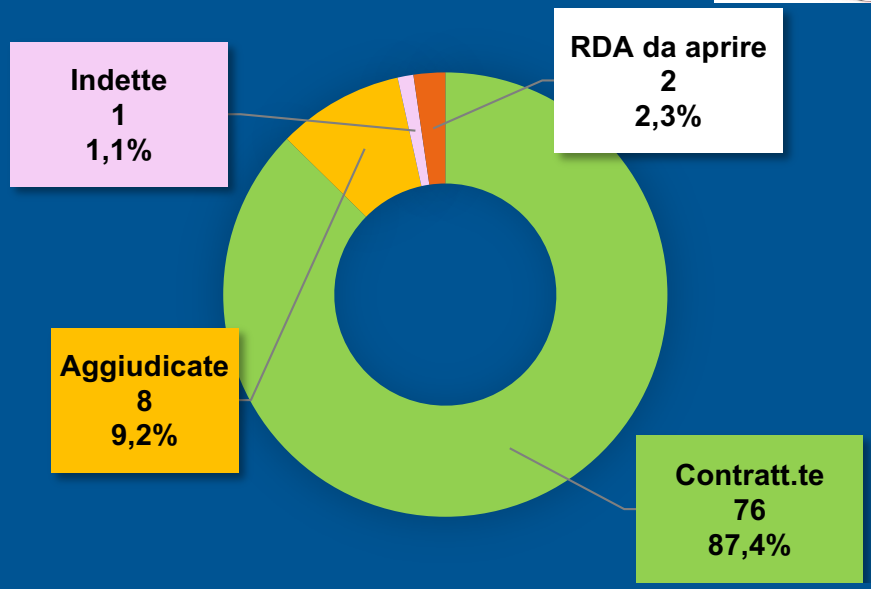
Istituto Nazionale di Fisica Nucleare

AFFIDAMENTI PER COSTI DIRETTI – INFN SOTTOSOGLIA

IMPORTO DELLE PROCEDURE
TOT €7,35M



NUMERO DI PROCEDURE
TOT #87



Nota: stato di avanzamento alla data del 13/03/2024 sulla base dei dati estratti da RDA e delle informazioni ricevute dai RUP

Istituto Nazionale di Fisica Nucleare

AFFIDAMENTI PER COSTI DIRETTI PARTNER

ACTIVITY WP	Uni-Vanvitelli	Uni-SA	Poli-BA	OACT	OAPa	Uni-CT-DEI	TOTALE
2.11			604.460				**604.460**
WP2			**604.460**				**604.460**
3.1	183.000						**183.000**
3.2	305.000						**305.000**
3.3	-						**-**
3.4	793.000						**793.000**
3.5	854.000						**854.000**
3.6	671.000						**671.000**
3.7	61.000						**61.000**
WP3	**2.867.000**						**2.867.000**
4.3		1.207.800					**1.207.800**
WP4		**1.207.800**					**1.207.800**
7.1				401.380			**401.380**
7.2					97.600		**97.600**
WP7				**401.380**	**97.600**		**498.980**
8.1						94.400	**94.400**
WP8						**94.400**	**94.400**
TOTALE	**2.867.000**	**1.207.800**	**604.460**	**401.380**	**97.600**	**94.400**	**5.272.640**

Fonte: Decreto di ammissione al finanziamento 123 del 21-06-2022

Istituto Nazionale di Fisica Nucleare

RECLUTAMENTI INFN

UO	RECLUTATO	DECORRENZA INCARICO	WP	ATTIVITA'	IO	DATA INIZIO	DATA FINE	MESI PARZIALI	MESI TOTALI
LNS	CIANCIO Sebastiano	03-04-23	1	1.1	1.1	03-04-23	02-03-26	35	35
	Anastasi Massimo	02-01-23	2	2.1	2.1	02-01-23	30-11-23	11	11
	Sciuto Davide	01-12-23	2	2.6	2.6	01-12-23	30-11-24	12	12
	ZITO Daniele	15-05-23	2	2.1	2.1	15-05-23	14-11-23	6	24
			5	5.4	5.11	15-11-23	14-05-24	6	
			5	5.7	5.17	15-05-24	14-11-24	6	
			5	5.1	5.4	15-11-24	14-05-25	6	
	PLATANIA Luca	15-05-23	6	6.14	6.20	15-05-23	14-05-25	24	24
	FELICE Fabiano	21-06-23	6	6.14	6.20	21-06-23	20-06-25	24	24
	TANGORRA CASCIONE Riccardo	17-07-23	6	6.14	6.20	17-07-23	16-07-25	24	24
	COPPOLINO Lucio Mirko	16-05-23	6	6.14	6.20	16-05-23	15-05-25	24	24
	RICCERI Rita Domenica	15-05-23	6	6.14	6.20	15-05-23	14-05-25	24	24
	CAMMARATA Francesco	15-05-23	6	6.14	6.20	15-05-23	14-05-25	24	24
	CAVALLARO Bern. Maria Concetta	15-05-23	6	6.14	6.20	15-05-23	14-05-25	24	24
NA	CASSESE Simone	01-06-23	2	2.7	2.7	01-06-23	31-05-25	24	24
	DE GIOSA Alessandro	03-07-23	6	6.10	6.16	03-07-23	02-07-25	24	24
	RUBINI Domenico	03-07-23	6	6.10	6.16	03-07-23	02-07-25	24	24
	DI CERBO Umberto Maria	01-06-23	6	6.10	6.16	01-06-23	31-05-25	24	24
	LIBRIZZI Emiliano	01-09-23	6	6.10	6.16	01-09-23	31-08-25	24	24
	OTRANTO Pietro	01-09-23	6	6.10	6.16	01-09-23	31-08-25	24	24
	TBD	TBD	6	6.10	6.16	TBD	TBD	24	24
	TBD	TBD	6	6.10	6.16	TBD	TBD	24	24
	TBD	TBD	6	6.10	6.16	TBD	TBD	24	24
BA	MORGA Michele	03-07-23	6	6.12	6.18	03-07-23	02-07-25	24	24
	APRILE Ximenes Nicola Maria	15-05-23	6	6.12	6.18	15-05-23	14-05-25	24	
	TATONE Francesca	15-05-23	6	6.12	6.18	15-05-23	14-05-25	24	24
CT	CAFICI Emanuele	01-06-23	5	5.6	5.15	01-06-23	31-05-24	12	24
			5	5.2	5.7	01-06-24	31-05-25	12	
	IMPERIALE Gianfranco	01-06-23	5	5.6	5.16	01-06-23	31-05-24	12	24
			5	5.3	5.10	01-06-24	31-05-25	12	
	RICHICHI Giovanni	03-07-23	6	6.9	6.15	03-07-23	02-07-25	24	24
BO	RAGONESI Salvatore	04-09-23	2	2.3	2.3	04-09-23	03-03-24	6	24
			2	2.10	2.12	04-03-24	03-09-24	6	
			6	6.13	6.19	04-09-24	03-09-25	12	
	BENFENATI Francesco	15/05/23	2	2.10	2.12	15/05/23	14-05-25	24	24
RM1	TUDORACHE Alexandru	01-09-23	2	2.8	2.10	01-09-23	30-11-23	3	24
			5	5.8	5.19	01-12-23	31-08-25	21	
	Passaro Gianluca	23-01-23	2	2.8	2.10	23-01-23	22-11-23	10	20
			5	5.8	5.19	23-11-23	22-09-24	10	
	PAESANI Daniele	03-07-23	2	2.8	2.10	03-07-23	02-12-23	5	24
			5	5.8	5.19	03-12-23	02-07-25	19	
GE	BARUZZI Alberto	06-11-23	6	6.15	6.21	06-11-23	05-11-25	24	24

Istituto Nazionale di Fisica Nucleare

RECLUTAMENTI PARTNER

UO	RECLUTATO	DECORRENZA INCARICO	WP	ATTIVITA'	IO	DATA INIZIO	DATA FINE	MESI PARZIALI	MESI TOTALI
OACT	1 Ricercatore III liv 30m - Loru Sara	01-08-23	7	7.1	7.3	01-08-23	31-07-24	12	12
	1 Tecnologo III liv 30m - Alan Cosimo Ruggeri	01-08-23	7	7.1	7.3	01-08-23	31-07-24	12	12
OAPa	1 Ricercatore III liv 30m - Sabina Ustamujic Salihovic	07-08-23	7	7.2	7.5	07-08-23	06-08-24	12	12
Poli-BA	1 tecnologo 24m - Maria Francesca Bruno	31-03-23	2	2.11	2.13	31-03-23	30-03-25	24	24
Sapienza	1 RTDA 24m - Massimo Mastrodicasa	09-06-23	7	7.6	7.10	09-06-23	08-06-26	36	36
Uni-Campania	1 PHD 30m - Maria Rosaria Musone	01-12-22	6	6.8	6.14	01-12-22	30-11-25	36	36
	1 PHD 30m - Maria Lucia Mitsou	01-12-22	6	6.8	6.14	01-12-22	30-11-25	36	36
	1 RTDA 24m - Elia Lizeth Morales Gallegos	01-05-23	6	6.8	6.14	01-05-23	30-04-26	36	36
	1 Tecnico 24m - Cinotti Pasquale	01-12-23	6	6.8	6.14	01-12-23	30-11-25	24	24
	1 Tecnico 24m - Pizza Enrico	01-12-23	6	6.8	6.14	01-12-23	30-11-25	24	24
Uni-CT-DFA	1 RTDA 24m - Giovanna Ferrara	01-03-23	7	7.5	7.9	01-03-23	28-02-26	36	36
	1 RTDA 24m - Iara Tosta E Melo	01-03-23	7	7.5	7.9	01-03-23	28-02-26	36	36
Uni-GE	1 RTDA 24m - Francesca Badaracco	OCT23	7	7.4	7.7	OCT23		na	na
	1 PHD 30m - Vittorio Parisi	Feb23	7	7.4	7.8	Feb23		na	na
Uni-NA	1 RTDA 24m - Antonio Condorelli	19-12-23	7	7.3	7.6	19-12-23	18-12-26	37	37
	1 PHD 30m - Veronica Oliviero	01-01-23	7	7.3	7.6	01-01-23	31-12-25	36	36
	1 PHD 30m - Riccardo Maria Bozza	01-01-23	7	7.3	7.6	01-01-23	31-12-25	36	36
Uni-SA	1 RTDA 24m - Chiara Poirè	27-03-23	4	4.4	4.7	27-03-23	26-03-26	36	36
	1 CTER 24m	CANCELLED	6	6.11	6.17	CANCELLED	CANCELLED	CANCELLED	CANCELLED
	1 CTER 24m	CANCELLED	6	6.11	6.17	CANCELLED	CANCELLED	CANCELLED	CANCELLED
	1 CTER 24m	CANCELLED	6	6.11	6.17	CANCELLED	CANCELLED	CANCELLED	CANCELLED

RICHIESTE FOE KM3-2023

- *Per queste specifiche voci si richiede quindi la assegnazione urgente ai:*

- *• LNS sul programmatico “Km3net_it “ capitolo U3010102008 per €*
- *1.100.000*

- *• Sez. di Napoli sul programmatico “Attr. Serv. Base - Trasporti, Traslochi*
- *E Facchinaggio capitolo” U1030213003 per € 300.000*

- *Tale assegnazione trova già copertura sulla assegnazione FOE Progetti Internazionali 2023, già disponibile.*

RICHIESTE FOE KM3-2024

- OPERAZIONI MARINE DEL 26-27: € 2.400.000
- TRASPORTI: € 500.000

	Numero di pezzi (1 = "a corpo")	Costo unitario (IVA esclusa)	Costo totale (IVA esclusa)	Costo totale (IVA inclusa)	Costo totale (incluso contingencies)
Componenti per processo 4 (integrazione DU)	1	23.400 €	23.400 €	28.548 €	30.000 €
Idrofoni	4	7.000 €	28.000 €	34.160 €	35.000 €
Connettori per Idrofoni	6	3.000 €	18.000 €	21.960 €	22.000 €
Supporti per sistema acustico	1	5.000 €	5.000 €	6.100 €	7.000 €
Sfere in vetro (DOM)	210	950 €	199.500 €	243.390 €	250.000 €
Materiale per integrazione DOM	1	8.000 €	8.000 €	9.760 €	10.000 €
Sfere in vetro (galleggiamento LOM)	24	600 €	14.400 €	17.568 €	19.000 €
Componenti per integrazione DOM	1	10.000 €	10.000 €	12.200 €	15.000 €
Penetratori DOM	24	550 €	13.200 €	16.104 €	17.000 €
Gel ottico	1	75.000 €	75.000 €	91.500 €	95.000 €
Connettori elettro ottici	11	7.500 €	82.500 €	100.650 €	100.000 €
TOTALE				581.940 €	600.000 €

RICHIESTE FOE KM3-2025

- OPERAZIONI MARINE DEL 26-27: € 2.400.000
- TRASPORTI: € 500.000

- 2 Coppie Cavi Intelink CTF3-JB € 1.000.000

- ***Si sottolinea che a fronte di una richiesta presentata sulla base dei costi complessiviprevisti a Gennaio 2022 (pari a circa 55 M€), e tenuto conto in particolare dell'impatto della Guerra Russo-Ucraina sulla disponibilità e sui costi del Titanio (materiale di elezione per connettori e rete di fondo), e più in generale dell'aumento dei costi, gli extra costi richiesti complessivamente fra 2023 e 2024 sono stati di circa 2 M€, pari a meno del 5% del costo complessivo di progetto PNRR.***

La presente Scheda è esclusivamente finalizzata ad acquisire i fabbisogni delle IR regionali; pertanto, non rappresenta in alcun modo uno strumento di selezione delle proposte.

Denominazione Progetto/IR: IDMAR4SICILY

1. INDICARE IL SOGGETTO PROPONENTE

INFN

2. INDICARE SE LA IR È GIÀ FUNZIONANTE O SE È UNA NUOVA IR DA REALIZZARE

Già Funzionante

IDMAR4SICILY
(INFN,UNICT, UNIPA, INGV)

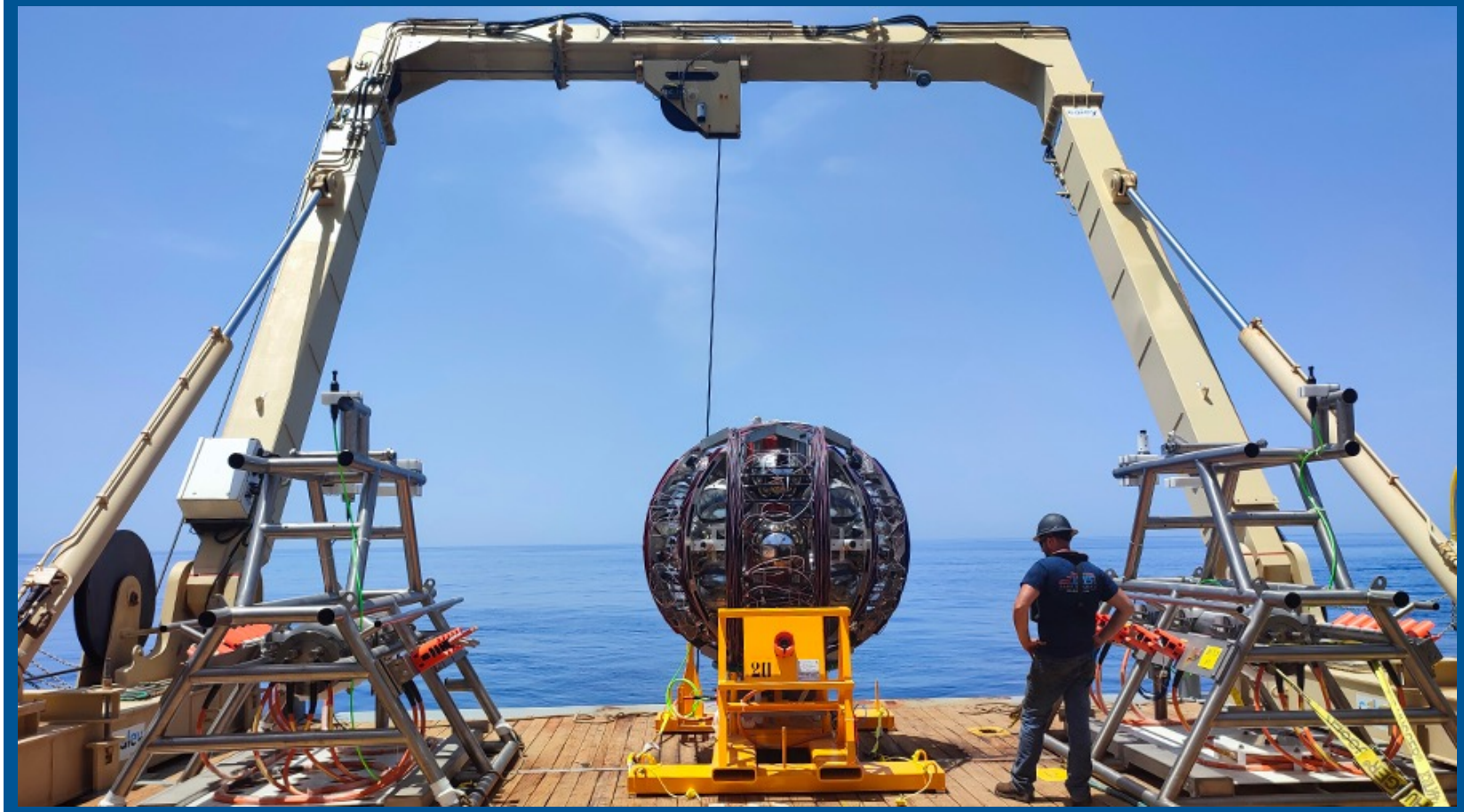
Bando previsto settembre 2024
Durata 3 anni
Intensità di finanziamento 80%

SCHEDA FABBISOGNI IR- PR FESR SICILIA 2021-2027 AZIONE 1.1.4 "SOSTEGNO ALLE INFRASTRUTTURE DI RICERCA"

Item	Num.	Costo Unitario	Costo	V.A.T.	Contingency	Totale
Stringhe	65	290.000 €	18.850.000 €	0,22	0,10	25.296.700 €
Cavo Interlink	65	70.000 €	4.550.000 €	0,00	0,15	5.232.500 €
Junction Box	6	1.500.000 €	9.000.000 €	0,00	0,05	9.450.000 €
Interlink	6	450.000 €	2.700.000 €	0,00	0,15	3.105.000 €
Ottica e DAQ	1	1.000.000 €	1.000.000 €	0,22	0,10	1.342.000 €
Sub-Totale						44.426.200 €
Operazioni Marine	3	1.600.000 €	4.800.000 €	0,00	0,10	
Totale Rivelatore						49.706.200 €
		5.280.000 €				
Strumentazione Geofisica						
stringhe per geofisica	8	290.000 €	2.320.000 €	0,00	0,15	2.668.000 €
cavo Interlink	8	70.000 €	560.000 €	0,00	0,15	644.000 €
Junction Box	1	1.500.000 €	1.500.000 €	0,00	0,05	1.575.000 €
Ottica e DAQ	1	1.000.000 €	1.000.000 €	0,22	0,10	1.342.000 €
rvizi Piattaforma analisi D	1	1.500.000 €	1.500.000 €	0,22	0,10	2.013.000 €
tale Struentazione Geofisica						8.242.000 €
Personale						
RTDA Universitari	2	150.000 €	300.000 €	0,00	0,00	300.000 €
Ricercatori EPR	4	150.000 €	600.000 €	0,00	0,00	600.000 €
Tecnici	8	135.000 €	1.080.000 €	0,00	0,00	1.080.000 €
Totale Personale						1.980.000 €
TOTALE Richiesto						59.928.200 €

Thank You for your Attention from:

Km3NeT & Km3NeT4RR



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