



WideHealth

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Author(s) Orhan Konak (HPI), Bert Arnrich (HPI)

Contributor(s) Nina Rešič (JSI), Mitja Luštrek (JSI)

Reviewer(s) Nina Rešič (JSI), Mitja Luštrek (JSI)

Abstract:

The deliverable summarizes the ongoing activities that have led and/or will lead to the production of outputs and the foreseen plan for the rest of the project. The activities range from the joint preparation and submission of scientific publications to joint EU proposals. However, the path towards achieving those goals requires a lot of preparatory work and agreement. In this report, we go into the groundwork of those efforts and explain internal arrangements and communication that ultimately led to finding suitable events, publication venues, and EU calls. This is followed by a description of the goals achieved as a result. Furthermore, an outlook on future endeavors during the project is illustrated.

Keyword list: Joint papers, EU calls, joint proposals, future plan

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Abbreviations

FBK	Fondazione Bruno Kessler
FC.ID	Fciencias.Id - Associação Para A Investigacao e Desenvolvimento De Ciências
HPI	Hasso-Plattner-Institut für Digital Engineering gGmbH
JSI	Jožef Stefan Institute
KPI	Key Performance Indicator
UKIM	Ss. Cyril and Methodius University in Skopje
WP	Work Package
EU	European Union
DDH	Data-driven Healthcare
HFPH	Human Factors in Pervasive Health
FML	Federated Machine Learning
DH	Digital Health
CH	Connected Healthcare
WSI	Wearables/Sensors/IoT
UC	Ubiquitous Computing
PH	Pervasive Health
AI	Artificial Intelligence
ML	Machine Learning
DL	Deep Learning
SP	Signal Processing
CC	Cloud Computing
JCR	Journal Citation Reports
SCI	Science Citation Index
SJR	Scimago Journal Rank

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1 Introduction

The focus of the WideHealth project is to enable a new generation of researchers in widening countries to develop and adopt novel eHealth technologies. These will be exploited in the long run in their different healthcare contexts and establish a sustainable network of knowledge research and dissemination across Europe in the Pervasive Health topic. This deliverable is a direct result of WP5, which focuses on creating concrete outcomes from the training activities of WP2, WP3, and WP4; trainees engaged in producing various research outcomes by training, such as the production of joint research papers. Moreover, the trainees are envisioned to actively participate in research management activities such as fundraising through identifying EU calls and proposal writing. The activities foreseen in this WP aim to create a long-term relationship between project partners by starting projects/initiatives beyond the end of the WideHealth project. Other envisioned outcomes include thesis writing resulting from the joint supervision of students by institutions in the widening and non-widening countries. The goal of WP5 can be summarized as follows:

- Write joint research papers (KPI = at least six papers in top-ranked peer-reviewed technical journals and at least 10 joint papers in peer-review conference proceedings)
- Write EU proposals (KPI = at least three joint proposals)

WP5 is divided into the following tasks concerning the envisioned WideHealth joint output activities:

- T5.1 Papers and thesis writing and other research outcomes
- T5.2 Identification of EU calls
- T5.3 Joint Proposal Writing
- T5.4 Evolution of the publications in high impact journals in the WideHealth research fields

Based on the defined KPIs and the identified three core topics for the project, namely *Data-driven healthcare*, *Human factors in Pervasive Health*, and *Federated machine learning*, the remainder of this report is structured as follows: In compliance with task T5.1, Section 2 goes through the output of joint scientific publications, thesis writing, and other research outcomes related to the defined KPIs. Therefore, the section starts with the common approach identifying relevant events for publications, which is a direct consequence of WP2. Moving along, the section continues with the classification of relevant high-impact journals in the WideHealth research fields and concludes with a list of what has been achieved so far. Following on from this, Section 3 begins with the methodological identification of potential EU calls, followed by a list of proposals that have been submitted. Section 4 will be about the next steps; and lastly, in Section 5, the conclusions from this work are drawn.

2 Conferences and Journals

Linked to WP5, the objective of WP2 is to increase the scientific and technological capacity of the partners to enable collaboration through matchmaking, exchange programs, and training programs in a trainer-trainee manner, joint supervision of researchers (see deliverables D2.1 *Training Plan*, and D2.2 *Mid-term report on early stage researchers and researchers training activities*), and consequently, among other things, supporting the activities in WP5. The outcome of this process is a file that reflects joint interests and the agreement on discussed topics. This file comprises overlapping and distinct topics alike and subsequently draws up a list with overriding topics in terms of content. The following topics in the form of a Venn diagram were set down:

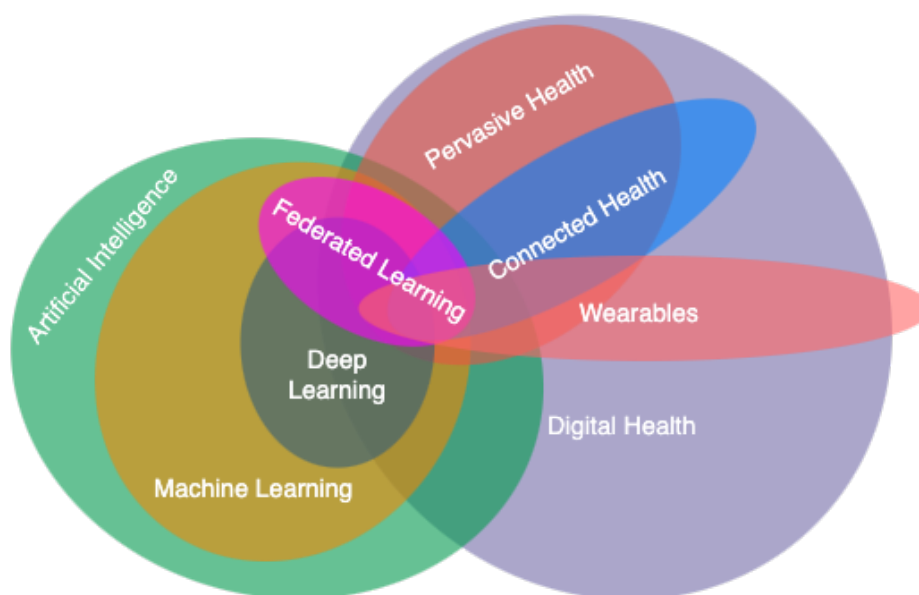


Figure 1: Venn diagram of joint interests

This listing of common areas of interest paved the way for all further activities, such as finding venues to publish joint work and potential EU calls.

2.1 Identification of Venues

Possible conferences, workshops, and journals are discussed and disseminated via an online spreadsheet. The list is getting updated throughout the entire time, with each partner having edit permissions. An excerpt of that list is shown in Table 1. The table's columns provide information about the publication type, deadline, and the topics agreed upon, as shown in Figure 1. Targeted publication venues are divided into journals, conferences, and workshops. The list is kept updated and venues with exceeded dates are deleted. The topics that are covered include: *Digital Health (DH)*, *Connected Health (CH)*, *Wearables/Sensors/IoT (WSI)*, *Ubiquitous Computing (UC)*, *Pervasive Health (PH)*, *Artificial Intelligence (AI)*, *Machine Learning/Deep Learning (ML/DL)*, *Signal Processing (SP)*, *Cloud Computing (CC)*, and *Federated Machine Learning (FML)*.

Table 1: Possible venues to publish scientific papers

Event	Journal	Deadline	Topics										
	Conference		Workshop	DH	CH	WSI	UC	PH	AI	ML/DL	SP	CC	FML
IoT-PROD 2022 : First International Workshop on Internet of Things Pervasive Real-World Deployments		Nov. 14, 2021			X							X	
CVPR 2022 : Computer Vision and Pattern Recognition		Nov. 16, 2021	X	X					X	X			
FL-AAAI 2022 : International Workshop on Trustable, Verifiable and Auditable Federated Learning in Conjunction with AAAI 2022		Nov. 30, 2021											X
ICCMC - International Conference on Computing Methodologies and Communication		Dez. 18, 2021	X					X	X	X			
ICPR 2022 : 26th International Conference on Pattern Recognition		Jan. 17, 2022			X				X	X	X	X	
ICMHI--SCI, Ei Compendex, Scopus 2022 : 2022 6th International Conference on Medical and Health Informatics (ICMHI 2022)--SCI, Ei Compendex, Scopus		Jan. 20, 2022	X	X					X	X		X	
ICPCSN 2022 : 2nd International Conference on Pervasive Computing and Social Networking		Feb. 19, 2022			X	X			X	X	X		
Sensors - Special Issue "Vision and Sensor-Based Sensing in Human Action Recognition"		Feb. 28, 2022	X	X	X	X	X	X	X	X	X		

Next to the dynamic entries, there is a list of static events that represent common and/or well-known events in the targeted areas, such as Ubicomp and Pervasive Health, as shown in Table 2.

Table 2: Static list of events in the area of common interest

Year	Conference	URL	When	Where	Deadline
2021	ETAI	http://etai.org.mk	September 23-24	Virtual	31/05/2021
2021	UbiComp	https://ubicomp.org/ubicomp2021/	September 23-24	Virtual	15/05/2021
2021	ISWC	https://iswc.net/iswc21/	September 23-24	Virtual	04/06/2021
2021	UbiComp & ISWC Workshops - Wild by Design	https://techandpeople.github.io/wildbydesign/	September 25-26	Virtual	15/06/2021
2021	UbiComp & ISWC Workshops - HASCA	http://hasca2021.hasc.jp	September 25-26	Virtual	15/06/2021
2021	ABC Conference	https://abc-research.github.io	October 2--23	Virtual	02/07/2021
2021	Mobile and Ubiquitous Multimedia	https://www.mum-conf.org/2021/	December 5-6	Leuven	01/09/2021
2022	BIOSTEC Workshops	http://www.biostec.org/Workshops.aspx	February 9-11	Vienna	22/09/2021
2022	AAAI Workshops	https://aaai.org/Conferences/AAAI-22/	February 22 - March 1	Vancouver	08/09/2021
2022	CHI Workshops	https://chi2022.acm.org/	April 30 - May 6	New Orleans	14/10/2021
2022	IEEE Percom	https://www.percom.org/	March 21-25	Pisa	14/10/2021
2022	IJCAI	https://ijcai-22.org/	July 23-29	Vienna	14/01/2022
2022	PervasiveHealth	N/A	N/A	N/A	N/A
2022	Information Society	https://is.ijs.si/?lang=en	October 10-14	Ljubljana	N/A

2.2 Classification of Venues

Journals are classified by the frequency with which the average article in a journal has been cited in a particular year, also known as the impact factor. The impact factor can vary depending on the research field. Hence, depending on the shared topics among the partners, the following categories were identified for closer inspection:

- Information Systems
- Artificial Intelligence
- Computer Science Applications
- Computer Vision and Pattern Recognition
- Health Informatics
- Signal Processing

The Web of JCR Database, SCI Journal, or SJR for all regions and countries were used to identify corresponding venues and ranks [1, 2, 3], and shared within the consortium. Table 3 shows an excerpt of the top ranked venues for the category *Computer Science - Information Systems* sorted by the SJR indicator for all subject areas, regions/countries, and all types. The SJR indicator is a measure of the journal's impact, influence, or prestige. It expresses the average number of weighted

citations received in the selected year by the documents published in the journal in the three previous years. Next to most of the published papers in lower ranked venues, the list serves as an overview for more desirable venues.

Table 3: Top 10% venues in the field of Information Systems

Title	Type	SJR	H index	Total Docs. (2020)	Total Docs. (3years)	Total Refs.	Total Cites (3years)	Citable Docs. (3years)	Cites / Doc. (2years)	Ref. / Doc.
Data Mining and Knowledge Discovery	journal	0,975	104	60	180	3021	1254	174	6,33	50,35
Journal of the Association for Information Science and Technology	journal	0,903	145	132	449	7604	1587	431	3,11	57,61
Journal of Information Systems	journal	0,859	33	34	69	2411	214	66	1,53	70,91
Journal of Artificial Intelligence and Soft Computing Research	journal	0,691	16	20	59	828	295	58	4,92	41,4
Pervasive and Mobile Computing	journal	0,687	64	68	350	2760	1558	342	4,67	40,59
Applied Computing and Informatics	journal	0,665	22	27	117	1047	770	93	6,82	38,78
Sensors	journal	0,636	172	7430	13140	343397	59728	13080	4,35	46,22
Knowledge and Information Systems	journal	0,634	76	162	407	8042	1752	404	3,75	49,64
Journal of Computer Information Systems	journal	0,632	63	103	145	5879	492	144	3,41	57,08
MobiSys 2017 - Proceedings of the 15th Annual International Conference on Mobile Systems, Applications, and Services	conference and proceedings	0,627	17	0	84	0	390	81	0	0
Online Information Review	journal	0,624	58	81	234	4944	693	231	2,56	61,04
2017 IEEE International Conference on Pervasive Computing and Communications Workshops, PerCom Workshops 2017	conference and proceedings	0,619	12	0	102	0	376	85	0	0
Information Systems Management	journal	0,617	58	50	82	2089	216	67	1,96	41,78
CAAI Transactions on Intelligence Technology	journal	0,613	15	40	79	1545	396	74	6,05	38,63
IET Smart Grid	journal	0,612	11	96	89	3800	340	87	3,82	39,58
Journal of Communications and Networks	journal	0,609	46	35	166	1160	689	160	5,14	33,14
Information and Software Technology	journal	0,606	103	121	420	6853	2316	403	5,12	56,64

As already confirmed for T5.4 (see deliverable D5.1 *UKIM publications in high impact journals in the WeHealth research fields*) by UKIM in the Continuous Reporting Tool – in the PUBLICATIONS Tab – all the "Peer-Reviewed Publications" relevant to this project, which fall in the field of research of the project's activities, for the Coordinating Legal Entity, during the 3 years preceding the start date of the project, the number of the introduced publications are three [4, 5, 6]. Since then, three additional journal papers were published, as can be seen in Table 4 [7, 8, 9].

2.3 Published Joint Research Outcomes

All the previous efforts, such as matchmaking, defining common topics, searching, and setting up suitable events, paved the way for scientific publications. According to the KPI, within a timeframe of 12/30 (40%), the following numbers were achieved so far:

- Journals: 3/6 (50%)
- Conferences: 3/10 (30%)

Table 4 depicts the joint outcomes that have been published. It is further categorized according to the core topics defined in the grant agreement *Data-driven Healthcare (DDH)*, *Human Factors in Pervasive Health (HFPH)*, and *Federated Machine Learning (FML)*.

Table 4: Research paper outcomes

#	Partners	Type	Title	Research Field		
				DDH	HFPH	FML
1	JSI, UKIM	Journal	Smartwatch-Based Eating Detection: Data Selection for Machine Learning from Imbalanced Data with Imperfect Labels [7]	X	X	
2	JSI, UKIM	Journal	Cognitive Load Monitoring With Wearables—Lessons Learned From a Machine Learning Challenge [8]	X	X	
3	JSI, UKIM	Journal	Analysis of Deep Transfer Learning using DeepConvLSTM for Human Activity Recognition from Wearable Sensors [9]		X	
4	UKIM, HPI	Workshop/Conference	Machine Learning based Anomaly Detection in Ambient Assisted Living Environments [10]	X		X
5	UKIM, FBK	Workshop/Conference	Investigating Presence of Ethnoracial Bias in Clinical Data using Machine Learning [11]	X		
6	UKIM, HPI	Workshop/Conference	Differentially Private Federated Learning for Anomaly Detection in eHealth Networks [12]	X		X

Table 4 illustrates the varying distribution of the different research topics. It is apparent from this table that most of the papers are related to DDH. HFPH and FML are less prominent. This table is quite revealing in several ways. First, even though HFPH and FML are less prominent, their number of publications is still relatively high compared to papers published worldwide. Federated learning, for example, is a relatively new topic that gradually attracts more attention and therefore expressly underlines the forward-looking orientation of the project. Second, it clearly reflects the interest distribution of the consortium that was conducted in WP2. In addition to that table, three conference papers were published individually by members of the project [13, 14, 15]. Lastly, a master thesis was (co-)supervised jointly by the two partners UKIM and JSI [16].

3 EU Calls

Similar to identifying potential publication events, potential calls were identified based on the research and interest intersections named in Section 2. In addition, various EU events on upcoming calls were attended, allowing us to raise questions beyond the official description [17, 18, 19]. The pieces of information gathered from those events were shared within the consortium and discussed in subsequent meetings.

3.1 Published Joint Research Outcomes

In total, 96 potential calls were identified. A traffic light labeling system was introduced to filter calls that do not fit the expertise/intersection of joint interests. The outcome of that research can be seen in the appendix. As shown in Table 5, after the initial filtering, 14 calls remained.

Table 5: Top identified EU calls

Topic	Deadline model	Opening date	Deadline date
Healthy Citizens 2.0 - Supporting digital empowerment and health literacy of citizens	single-stage	6/22/2021	9/21/2021
Clinical validation of artificial intelligence (AI) solutions for treatment and care	single-stage	6/22/2021	9/21/2021
A roadmap for personalised prevention	single-stage	6/22/2021	9/21/2021
Data-driven decision-support tools for better health care delivery and policy-making with a focus on cancer	single-stage	6/22/2021	9/21/2021
Twinning Western Balkans Special	single-stage	6/29/2021	10/5/2021
Twinning	single-stage	7/20/2021	1/18/2022
Prevention of obesity throughout the life course	two-stage	10/6/2021	2/1/2022
Scaling up multi-party computation, data anonymisation techniques, and synthetic data generation	single-stage	10/6/2021	4/21/2022
Personalised blueprint of chronic inflammation in health-to-disease transition	single-stage	10/6/2021	4/21/2022
New methods for the effective use of real-world data and/or synthetic data in regulatory decision-making and/or in health technology assessment	single-stage	10/6/2021	4/21/2022
Trustworthy artificial intelligence (AI) tools to predict the risk of chronic non-communicable diseases and/or their progression	two-stage	10/6/2021	2/1/2022
Computational models for new patient stratification strategies	two-stage	10/6/2021	2/1/2022
Improved supportive, palliative, survivorship and end-of-life care of cancer patients	single-stage	6/22/2021	9/21/2021
Teaming for Excellence	two-stage	6/29/2021	10/5/2021
Active and Assisted Living Programme (AAL)	single-stage	1/29/2021	5/21/2021
Prevention in Personalised Medicine (ERA PerMed)	single-stage	12/1/2021	6/14/2022

On closer inspection of the topic descriptions like the expected outcome, scope, activities, project ideas, and impacts, as well as the conditions to participate like admissibility conditions and eligibility, two calls were identified for proposal.

3.2 Joint Proposal Writing

In the course of this project, it is expected to have three joint EU proposals. Based on the list in Table 5, internal exchanges, the identification of a sufficiently good project idea, and optimal to pursue this idea in collaboration with other project partners, the following two joint proposals were submitted:

1. JSI / FBK

ATLAS: Improving quAlity of life and qualiTy of care, for and with patients, caregivers, and healthcAre profeSsionals in oncology [20].

- Partners: JSI, and FBK
- Title = Improving quAlity of life and qualiTy of care, for and with patients, caregivers and healthcAre profeSsionals in oncology.
- Acronym = ATLAS
- Type of proposal = RIA
- Coordinator = University of Turin
- Partners = JSI, FBK (and many others, I don't have them all... do you need them?)

Abstract: In Greek mythology, Atlas is a Titan condemned by Zeus to carry the sky on his shoulders for eternity. An immense effort, which Atlas is forced to bear alone. Cancer patient's experiences can recall Atlas' story: cancer requires untold efforts that are often faced alone. The ATLAS project, through the ATLAS System, promotes the building of a network for and with the cancer patient, to live the disease in sharing, to reduce the burden and to transform that effort in solitude into a common commitment.

The project aims to connect and integrateat connecting and integrating clinical content, services and digital tools to improve the quality of care and quality of life of cancer in oncological patients. In particular, ATLAS will integrate interventions related to the areas of psychological suffering, physical suffering and information and education gaps during the survivorship, palliative and end-of-life phases. In line with the increasingly widespread approach of personalised care medicine, the ATLAS system aims to collect and process clinical and physiological data through Artificial Intelligence to perform risk prediction and to personalize the intervention as much as possible close to the patients' needs.

ATLAS: Improving quAlity of life and qualiTy of care, for and with patients, caregivers and healthcAre profeSsionals in oncology. It was submitted to the call HORIZON-HLTH-2021-DISEASE-04: Improved supportive, palliative, survivorship and end-of-life care of cancer patients

2. UKIM / FBK / Fraunhofer

DigitalINN [21]:

- Partners: UKIM (as coordinator), FBK, and Fraunhofer
- Title = Digital Innovations for Smart Societies
- Acronym = DigitalInn
- Type of proposal = CSA, 2-stage proposal (we submitted the first stage)
- Coordinator = UKIM
- Partners = Fraunhofer Institute (FHG) Center for Digital Transformation, and Fondazione Bruno Kessler (FBK) Center on Health and Wellbeing

Abstract: The digital transformation in North Macedonia is a key strategic asset for the future of the country, which is also noted in the National ICT Strategy 2021-2025, in which the focus areas are ICT, healthcare, and smart cities. Additionally, the smart specialization strategy of the country is suggested to be through digital innovations and Industry 4.0. The DigitalInn Project (Teaming for Excellence in Digital Innovations for Smart Societies) targets exactly these areas. The DigitalInn project will impulse the outreach of the Center for Technology Transfer and Innovations - INNOFEIT - to transform it into a national, regional and European Centre of Excellence (CoE) for digital innovations in smart societies, and will be the first CoE constituted in the country.

INNOFEIT is established by UKIM - the largest and oldest university in the country - which will be the coordinator of the project. INNOFEIT together with UKIM has a rich portfolio of services in the areas of contract research, consultancy, education/training, and tech transfer in the region of Western Balkans. The project will exploit INNOFEIT's background and reputation and build upon it through enhancement of current technical capabilities of INNOFEIT as well as introduction of novel expertise within the legal and organizational domains to realise the actual uptake of ICTs into the society.

The DigitalInn project connects carefully selected international partners capable of providing the necessary know-how for INNOFEIT's growth towards being a CoE in the area, namely Fraunhofer Institute (FHG) from Germany through its Center for Digital Transformation, and Fondazione Bruno Kessler (FBK) Institute from Italy through its Center on Health and Wellbeing. The national backup is ensured through the Ministry of Education and Science of North Macedonia that will provide the necessary infrastructure for the CoE as well as align the future policies on digital transformation along with the project's results.

4 Next Steps

As seen in Section 2.2, the consortium has positively acclimated to the current COVID situation and has demonstrated good adaptability. If currently applicable measures were to remain in place, this would not change the status quo and would not harm further development. The communications infrastructures are already well established and functioning properly. However, it cannot be ruled out that face-to-face events could once again generate a positive momentum of their own.

Considering the long chain of development from the first sketch of the collaboration to its completion in a scientific paper, it is expected to generate more outcomes in the upcoming time frame. As can be seen in D2.2 *Mid-term report on early stage researchers and researchers training activities*, most of the work is already defined and in progress. It is only a matter of time before this work will get converted into scientific contributions. A close monitoring from the trainers, dedicated meetings for reporting the progress are concrete measurements in place to help reach that goal. It is also expected that the organized events and communication channels described in D4.1 *Report on Events Organisation*, like seminars, workshops, winter/summer schools, web presence, will inevitably lead to greater attention amongst young researchers and thus to higher collaboration opportunities, as well as identifying possible publications.

The EU funding programs and funds financed from the EU budget and NextGenerationEU for the years 2021-2027 is a dynamic list including elements and calls as they become available. Associated with the project partners' joint background and interest fields, upcoming calls are expected from the different EU programs like Horizon Europe and EU4Health. A close monitoring of calls with an updated list will be always provided. After being available and eligible to apply, interesting calls and project ideas will be circulated and brainstormed within the consortium in scheduled meeting sessions. Interested partners will meet in smaller groups and write a joint proposal. Moreover, these efforts will be supported by dedicated training activities on proposal writing in WP3.

5 Conclusion

This deliverable summarizes the ongoing activities that have led and will lead to the production of outputs, including the next steps for the rest of the project. An initial presentation of the project partners about their expertise and areas of research/interest was followed by an individual exchange between the partners, which resulted in a table of cooperation topics. From this compilation, a list of intersectional fields of interest was extracted. These topic clusters determined the further course of the project. It served as a template for the constantly updated compilation of possible events for the publication of scientific papers, the identification of good journals, and the identification of project tenders within the EU. As a result, already in the first year, three journal publications, three conference publications, and a master thesis were produced. Furthermore, there were two joint project proposals. Future activities include reinforcing current projects, in-depth exchange and communication between the partners, conducting experiments, and generating results that lead to research outputs, which help to strengthen the cooperation and preserve long-term relations by writing joint proposals.

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Appendix

Identification of EU Calls

Topic	Deadline model	Opening date	Deadline date
Coordination of complementary actions for missions	single-stage	6/22/2021	9/14/2021
Preparing UNCAN.eu, a European initiative to understand cancer	single-stage	6/22/2021	10/20/2021
Smart medical devices and their surgical implantation for use in resource-constrained settings	single-stage	6/22/2021	9/21/2021
Towards a molecular and neurobiological understanding of mental health and mental illness for the benefit of citizens and patients	single-stage	6/22/2021	9/21/2021
Building a European partnership for pandemic preparedness	single-stage	6/22/2021	9/21/2021
Building a European innovation platform for the repurposing of medicinal products	single-stage	6/22/2021	9/21/2021
Mobilising a network of National Contact Points (NCPs) for the Health Cluster	single-stage	6/22/2021	9/21/2021
Promoting a trusted mHealth label in Europe: uptake of technical specifications for quality and reliability of health and wellness apps	single-stage	6/22/2021	9/21/2021
A roadmap towards the creation of the European partnership on One Health antimicrobial resistance (OH AMR)	single-stage	6/22/2021	9/21/2021
Indoor air quality and health	single-stage	6/22/2021	9/21/2021
Improved supportive, palliative, survivorship and end-of-life care of cancer patients	single-stage	6/22/2021	9/21/2021
Enhancing quality of care and patient safety	single-stage	6/22/2021	9/21/2021
Innovative tools for use and re-use of health data (in particular of electronic health records and/or patient registries)	single-stage	6/22/2021	9/21/2021
Green pharmaceuticals	single-stage	6/22/2021	9/21/2021
Next generation advanced therapies to treat highly prevalent and high burden diseases with unmet medical needs	single-stage	6/22/2021	9/21/2021
Healthy Citizens 2.0 - Supporting digital empowerment and health literacy of citizens	single-stage	6/22/2021	9/21/2021
Clinical validation of artificial intelligence (AI) solutions for treatment and care	single-stage	6/22/2021	9/21/2021
Personalised medicine and infectious diseases: understanding the individual host response to viruses (e.g. SARS-CoV-2)	single-stage	6/22/2021	9/21/2021
Health impacts of climate change, costs and benefits of action and inaction	single-stage	6/22/2021	9/21/2021
Innovative approaches to enhance poverty-related diseases research in sub-Saharan Africa	single-stage	6/22/2021	9/21/2021
A roadmap for personalised prevention	single-stage	6/22/2021	9/21/2021
Health care innovation procurement network	single-stage	6/22/2021	9/21/2021
Data-driven decision-support tools for better health care delivery and policy-making with a focus on cancer	single-stage	6/22/2021	9/21/2021
Centre of excellence on inclusive gender equality in Research & Innovation	single-stage	6/22/2021	9/23/2021
The challenges of research ethics and integrity in response to crisis: the coronavirus pandemic and beyond	single-stage	6/22/2021	9/23/2021
Modelling and quantifying the impacts of open science practice	single-stage	6/22/2021	9/23/2021

Ensuring reliability and trust in quality of Research Ethics expertise in the context of new/emerging technologies	single-stage	6/22/2021	9/23/2021
Protection of Higher Education Institutions and research organisations against conventional and non-conventional threats	single-stage	6/22/2021	9/23/2021
A capacity-building and brokering network to make citizen science an integral part of the European Research Area	single-stage	6/22/2021	9/23/2021
Support to changes in the assessment of research and researchers to reward the practice of open science	single-stage	6/22/2021	9/23/2021
Policy coordination to advance the implementation of the ERA gender equality and inclusiveness objectives within Member States	single-stage	6/22/2021	9/23/2021
Towards a Europe-wide training and networking scheme for research managers	single-stage	6/22/2021	9/23/2021
Support for policy makers – Programme level collaboration between national R&I programmes	single-stage	6/22/2021	9/23/2021
Capacity-building for institutional open access publishing across Europe	single-stage	6/22/2021	9/23/2021
Supporting and giving recognition to citizen science in the European Research Area	single-stage	6/22/2021	9/23/2021
Developing a STE(A)M roadmap for Science Education in Horizon Europe	single-stage	6/22/2021	9/23/2021
Global cooperation on FAIR data policy and practice	single-stage	6/22/2021	9/23/2021
Societal trust in science, research and innovation	single-stage	6/22/2021	9/23/2021
Development, procurement and responsible management of new antimicrobials	single-stage	6/22/2021	9/21/2021
Exposure to electromagnetic fields (EMF) and health	single-stage	6/22/2021	9/21/2021
Standardisation Booster for fostering exploitation of FP-funded research results	single-stage	6/22/2021	9/23/2021
Implementation of a new macro-economic modelling concept	single-stage	6/22/2021	9/23/2021
R&I intensive IP management: Scenarios for the future	single-stage	6/22/2021	9/23/2021
European partnership for the assessment of risks from chemicals (PARC)	single-stage	6/22/2021	9/21/2021
Support to the implementation of inclusive gender equality plans	single-stage	1/19/2022	4/20/2022
An experimentation space for the uptake and use of R&I results for EU resilience and future preparedness	single-stage	1/19/2022	4/20/2022
Fostering balanced brain circulation – ERA Fellowships	single-stage	6/29/2022	9/29/2022
Teaming for Excellence	two-stage	6/29/2021	10/5/2021
Living Lab for gender-responsive innovation	single-stage	1/19/2022	4/20/2022
Increasing the reproducibility of scientific results	single-stage	1/19/2022	4/20/2022
Acceleration Services in support of the institutional transformation of Higher Education Institutions	single-stage	1/19/2022	4/20/2022
Stepping-up institutional and territorial changes towards open and responsible research and innovation	single-stage	1/19/2022	4/20/2022
Fostering balanced brain circulation – ERA Fellowships	single-stage	6/29/2021	10/12/2021
Developing an effective ERA talent pipeline	single-stage	1/19/2022	4/20/2022
Capacity building to strengthen networks of higher education institutions and cooperation with surrounding ecosystems	single-stage	6/29/2021	11/4/2021
New pricing and payment models for cost-effective and affordable health innovations	single-stage	10/6/2021	4/21/2022

Non-communicable diseases risk reduction in adolescence and youth (Global Alliance for Chronic Diseases - GACD)	single-stage	1/12/2022	4/21/2022	
Vaccines 2.0 - developing the next generation of vaccines	two-stage	10/6/2021	2/1/2022	
European partnership on transforming health and care systems	single-stage	10/6/2021	4/21/2022	
The empirical and behavioural approach to research ethics and integrity	single-stage	1/19/2022	4/20/2022	
A European competence centre for science communication	single-stage	1/19/2022	4/20/2022	
Support for policy makers – Programme level collaboration between national R&I programmes	single-stage	1/19/2022	4/20/2022	
Testing of the ERA Hub concept – pilot phase	single-stage	1/19/2022	4/20/2022	
Supporting the development of aligned policies for open access books and monographs	single-stage	1/19/2022	4/20/2022	
Twinning Western Balkans Special	single-stage	6/29/2021	10/5/2021	
ERA Chairs	single-stage	6/29/2021	3/15/2022	
Excellence Hubs	single-stage	11/3/2021	3/15/2022	
Innowwide Bridging Facility	single-stage	1/19/2022	4/20/2022	
Developing and piloting training on the practice of open and responsible research and innovation	single-stage	1/19/2022	4/20/2022	
Open schooling for science education and a learning continuum for all	single-stage	1/19/2022	4/20/2022	
Twinning	single-stage	7/20/2021	1/18/2022	
Setting up a European Electronic Health Record Exchange Format (EEHRxF) Ecosystem	single-stage	10/6/2021	4/21/2022	
Prevention of obesity throughout the life course	two-stage	10/6/2021	2/1/2022	
Public procurement of innovative solutions (PPI) for building the resilience of health care systems in the context of recovery	single-stage	10/6/2021	4/21/2022	
Scaling up multi-party computation, data anonymisation techniques, and synthetic data generation	single-stage	10/6/2021	4/21/2022	
Pandemic preparedness	single-stage	1/12/2022	4/21/2022	
Boosting mental health in Europe in times of change	two-stage	10/6/2021	2/1/2022	
Personalised blueprint of chronic inflammation in health-to-disease transition	single-stage	10/6/2021	4/21/2022	
Optimising effectiveness in patients of existing prescription drugs for major diseases (except cancer) with the use of biomarkers	single-stage	10/6/2021	4/21/2022	
Enhancing cybersecurity of connected medical devices	single-stage	10/6/2021	4/21/2022	
Development of new effective therapies for rare diseases	two-stage	10/6/2021	2/1/2022	
Methods for assessing health-related costs of environmental stressors	single-stage	10/6/2021	4/21/2022	
Better financing models for health systems	single-stage	10/6/2021	4/21/2022	
New methods for the effective use of real-world data and/or synthetic data in regulatory decision-making and/or in health technology assessment	single-stage	10/6/2021	4/21/2022	
Support for the functioning of the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R)	single-stage	1/12/2022	4/21/2022	
European partnership fostering a European Research Area (ERA) for health research	single-stage	1/12/2022	4/21/2022	
Pre-commercial research and innovation procurement (PCP) for building the resilience of health care systems in the context of recovery	single-stage	10/6/2021	4/21/2022	

Trustworthy artificial intelligence (AI) tools to predict the risk of chronic non-communicable diseases and/or their progression	two-stage	10/6/2021	2/1/2022	Green
Support the deployment of lighthouse demonstrators for the New European Bauhaus initiative in the context of Horizon Europe missions	single-stage	9/28/2021	1/25/2022	Red
Pre-clinical development of the next generation of immunotherapies for diseases or disorders with unmet medical needs	two-stage	10/6/2021	2/1/2022	Red
Computational models for new patient stratification strategies	two-stage	10/6/2021	2/1/2022	Green
Setting up a European Smart Health Innovation Hub	single-stage	10/6/2021	4/21/2022	Orange
Improved supportive, palliative, survivorship and end-of-life care of cancer patients	single-stage	6/22/2021	9/21/2021	Green
Teaming for Excellence	two-stage	6/29/2021	10/5/2021	Green
Active and Assisted Living Programme (AAL)	single-stage	1/29/2021	5/21/2021	Green
Prevention in Personalised Medicine (ERA PerMed)	single-stage	12/1/2021	6/14/2022	Green