



Deliverable Number 6.3

Call 2021 Topics Selection

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Publishable abstract		The report describes the procedure for the selection of the topics for the CHIST-ERA Call 2021. CHIST-ERA partners and the Scientific Advisory Board were invited to propose topics. Additionally an open consultation was organized to collect research topic ideas from research communities. This resulted in a list of 14 elaborated candidate topics. Those topics have been scored, discussed and ranked in a joint workshop. On basis of the scores and a workshop discussion the CHIST-ERA Steering Committee has selected the following two topics for CHIST-ERA Call 2021: 1. Nano-Opto-Electro-Mechanical Systems (NOEMS) for ICT 2. Foundations for Misbehaviour Detection and Mitigation Strategies in Online Social Networks and Media (OSNEM)		
Keywords		Call scientific scope – Call topics – Selection procedure		

Executive Summary

The scientific scope of CHIST-ERA is wide, but the intention is to select focused, emergent topics of common interest. CHIST-ERA partners and the Scientific Advisory Board were invited to propose topics. Additionally, an open consultation was organized to collect research topics from research ecosystem and general public. Topic proposers were asked to use a topic suggestion form and provide a short description, a set of application sectors and keywords for the topic. Further, they were asked to provide a rationale based on a criteria grid evaluating the scientific interest and innovation potential of the topics and the suitability of the topic for a CHIST-ERA call. This resulted in a list of 14 elaborated candidate topics.

The elaborated topic descriptions were distributed to the CHIST-ERA consortium members and SAB members. They were asked to score the 14 topics on basis of the 8 criteria used in the topic suggestion form evaluating the scientific interest and innovation potential of the topics and the suitability of the topic for a CHIST-ERA call. On basis of the votes, an average was computed and ranking established. The ranking list served as basis for discussion in a joint workshop of the SAB and CHIST-ERA Steering Committee (SC). On basis of a profound analysis of the highest ranked topics and the workshop discussion, two topics were selected for the CHIST-ERA call 2021: 1) Nano-Opto-Electro-Mechanical Systems (NOEMS) for ICT; 2) Foundations for Misbehaviour Detection and Mitigation Strategies in Online Social Networks and Media (OSNEM).

The outcome of this process serves as an input for the preparation of a strategic workshop, where the scientific text for the joint call is further developed.

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Introduction

The CHIST-ERA topic selection process for the call 2021 is based on the procedure and topic selection form developed in previous CHIST-ERA calls. In this deliverable: the topics selection procedure and the criteria used to discuss and select the topics for the CHIST-ERA call 2021 are described; the candidate topics proposed are presented; and the results of the voting process and work shop outcomes are discussed; finally the two topics selected are presented.

The outcome of this process serves as an input for the preparation of a strategic workshop, where the scientific text for the joint call is further developed.

Topic identification

CHIST-ERA partners and the Scientific Advisory Board were invited to propose topics for CHIST-ERA Call 2021. Additionally, for the first time this year, an open consultation was organized to collect research topics from research ecosystem and general public¹. The latter needed to be addressed to a funding organisation in CHIST-ERA, to assess the opportunity to include it as candidate topic for the CHIST-ERA Call 2021.

Topic proposers were asked to use a topic suggestion form and provide a short description, a set of application sectors and keywords for the topic. Further, they were asked to provide a rationale based on a criteria grid evaluating the scientific interest and innovation potential of the topics on the basis of the following criteria:

View	Criteria	Description
Scientific interest and innovation potential	Novelty & ambition	State-of-the-art, missing science, and expected outcomes (the topic should be far from existing knowledge and technology), and analyse potential S&T issues (the topic should be plausible)
	Multidisciplinary and/or transformative	Knowledge and communities from different disciplines can be brought together to investigate unknown fields at the frontier of science and/or how the topic can be a game changer with a high scientific and technological impact
	Clarity and measurability	How well defined is the topic and how scientific and technological performance can be objectively measured in the area (measurement methods, metrics, tools, infrastructures, ...)
	Timeliness	Which opportunities might be lost if the topic is not funded
	Potential impact	The potential impact on future EU economy, environment and/or society, and analyse risks (social acceptance, legal issues, ...)
Suitability for a CHIST-ERA call	Need for transnational cooperation	How transnational cooperation in the framework of a joint call can bring added value (complementary national scientific strengths, need for critical mass, need for joint infrastructures, ...)
	Complementarity with existing calls	Closest calls (FET, H2020, ERA-NETs, ...) and how the topic complements and/or leverages them (the topic should not be redundant with other calls)
	Suitability of topic size	How a significant contribution in the area can be obtained with a call of a few M€, possibly giving indications about the size of the main events, initiatives or structures in the area (conferences, programmes, teams, centres, professional associations ...).

¹ [Open Consultation on Call 2021 Topics | CHIST-ERA \(chistera.eu\)](https://chistera.eu/open-consultation-on-call-2021-topics)

In case further elaborations or clarifications were needed topic proposers were contacted and giving the opportunity to modify the topic description in the form.

Based on the suggestion of CHIST-ERA partners, SAB and the open consultation a list of 14 topic proposals was established. The table below gives the title, description and proposers of the topics.

Topic	Description	Proposed by
Synthetic Data Generation	When moving data workloads to public clouds, privacy is even more relevant than in on-premise projects. An alternative to traditional anonymization methods you can use synthetic data with differential privacy. There have been a huge amount of research in Academia around deep learning based generative models (autoencoders, GANs, Normalizing Flows...) but nearly all of them focused on image or text generation. In this initiative I propose to evaluate all these new deep learning architectures to tabular data. This way synthetic data generation may become a powerfull alternative to migrating data to public clouds.	Open Consultation (AEI)
Modelling knowledge for health and biomedical research	Research in curation, analysis, visualization, modeling, cutting-edge knowledge generation, and next-generation mining approaches for connecting health research and biomedical knowledge digital objects.	Open Consultation (AEI)
Exploratory visual analysis (EVA) of large data sets over internet	Currently there are large datasets available, such as Copernicus data (data obtained by satellite Earth Observation and in-situ (non-space) data) that are mainly provided via open interfaces to users to study with their own computer facilities. In addition, many national operational tools, such as the new FICOS model system (Finnish Coastal Nutrient Load Model, used in monitoring water quality, planning measures for river etc.) in Finland, provide massive amounts of data. However, only a small fraction (less than 1 percent) is shown to the end user (authorities) through internet. Computational modelling is a commonly used method to obtain rigorous information that would be impossible or too expensive to obtain through other means. However, when reporting obtained results for relevant decision makers and/or stakeholders this happens even today by paper or digital documents with static figures or tables. Limited access to all existing data hinders the usage of individuals' own cognitive capabilities thus leading to poor or even wrong decisions. By offering a possibility to use individuals' own cognitive strengths and utilizing the possibilities of broader visual analysis would improve decision making and make the decisions more acceptable to others.	Open Consultation (AKA)
Reinforcement learning for real-world systems and industry-transforming applications	Reinforcement learning (RL) is an area of machine learning concerned with how software agents ought to take actions in an environment in order to maximize cumulative reward. This technique has led to many break-through results in various areas. Nevertheless, it is still very much in development and needs much more research both in theory and applications. Namely, despite major theoretical advancements, the broader deployment of RL in real-world application is lacking. Having in mind the potential benefits of successful RL applications across a variety of sectors, research should focus on identifying the challenges related with the "productionization" of RL to real world problems. For each identified challenge, research should further focus on outlining possible solutions that address the practical hurdle and facilitate the deployment of RL.	Open Consultation (SNSF)

Computational Intelligence in Logistics and Supply Chain Management	Over the last decades, logistics and supply chain management (SCM) have become one of the most often and intensively discussed fields in management and economics. Although many ideas and concepts used in logistics and SCM are reasonably old, much effort has been undertaken to transfer them into practice and to improve them further. Many publications, in academia as well as in application-oriented literature have appeared. Logistics and SCM have become fields which are rich in terms of innovation and progress. Despite these promising developments, there are still obstacles to bring advanced visions of improved planning and cooperation along logistics processes and supply chains into reality. On the one hand, there are many practical issues such as the availability and transparent processing of information, difficulties in establishing cooperation, or because of an increasingly uncertain or rapidly changing planning environment. On the other hand, it has become more and more apparent that the underlying planning problems are very complex and hard-to-solve even in the case that respective data is fully retrievable and complete. From a computational point of view many of these problems can be characterized as NP-hard, which means that the number of possible solutions is increasing exponentially with the problem size and that presumably no algorithms exist, which can solve them exactly within acceptable time limits - at least when the problems are "rather large". Unfortunately, most real-world problems can be considered rather large. Especially during the last twenty years, these problems have been investigated intensively in the academic literature and many suitable solution approaches have been suggested. As the problems usually cannot be solved exactly within an acceptable time, these methods allow to find sufficiently good, although not necessarily optimal solutions. One of the still growing streams of methods belongs to the field of Computational Intelligence (CI), which comprises mostly approaches inspired by concepts found in nature, e.g. the natural evolution or the behavior of swarms. These methods are based on general heuristic ideas and concepts for problem solving, which can - with some adaptations - be applied to a wide range of problems. To distinguish these methods from simple heuristics, which are often very specific to a single type of problem, they are also denoted as metaheuristics.	Open Consultation (SNSF)
Realistic Simulation of Human Behaviour	Realistic simulation of human behaviour is crucial in many applications. For instance, a social chatbot should give "reasonable" answers, and characters in video games should move and act like real humans. This topic may touch several and very diverse research fields: Dialogue Systems / Natural Language Generation (how to select or generate a reasonable answer); Speech Synthesis (how to generate a realistic voice; how to express emotions in voice); Image and Video Processing (how to recognize emotion in the facial/body expression of the counterpart); Motion Design (how to walk, how to design gestures); Psychology (how to model emotions, how to adapt behaviour depending on emotional state); Medicine (how to model mental disorders); Ethics (what kind of simulations should be banned); Forensics (how can generated/modified voice/video/image content be distinguished from genuine content). Although simulating humans has already a long tradition, recent advances in (deep) machine learning has given rise to several new solution approaches. Goal of the call would be to explore the potential and limitations of these new methods and how they might evolve in the next decade.	Open Consultation (SNSF)

Foundations of misbehaviour understanding in Online Social Networks and Media	Online Social Networks and Media (OSNEMs) are computer-based technologies that enable users to create content and entertain social relationships. OSNEMs have rapidly grown from an aggregation channel to a global phenomenon that has elicited a paradigm shift of our society, by transforming the way people access the news, share opinions, make business and politics. In such a scenario, accuracy, truthfulness, and authenticity of the shared content are necessary ingredients to maintain a healthy online discussion. However, in recent times, OSNEMs have been dealing with a considerable growth of malicious accounts and activities, which purposely undermine the integrity of online conversations by sharing false and inflammatory information in OSNEM platforms to influence the public opinion and sow conflict on social or political issues. Recent studies found evidence that these misbehaviours play a disproportionate role in manipulation and misinformation campaigns globally, highlighting the pitfalls of OSNEMs and their potential harms to several constituents of our society, ranging from politics to public health. The objective of this topic is to create a foundation on the identification and understanding of the peculiar behaviours of malicious entities to put the basis for the detection and elimination strategies for misbehaviour in OSNEMs, as well as for providing societal change towards OSNEM literacy and citizen participation. This includes the detection of malicious actors (e.g. bots and trolls), the identification of low-credibility information and fake news, the users' awareness and control of misbehaviours.	Open Consultation (SNSF)
Digitisation of Environmental Materiality Measures	In the recent years an increasing offer and popularity of digital services has been observed. Additionally the pandemic situation causing social isolation stimulated the need for broadly defined such services. It concerns, for example, dedicated internet tools, mobile phone applications, automatised of delivery systems and assistance provided by robots. Chatbots (virtual assistants) became a standard part of an online customer experience. They transformed the way people consult and obtain information lifting customer service to a new level. Besides virtual assistance the digital sales emerge as a new and increasingly exciting concept. Studies show that (https://digitalmarketinginstitute.com): 75% of people using social media outsell their peers, 78% of buyers expect sales to personalize interactions based on online activities. Similarly we also observe an increasing popularity of service robots. This concerns personal service robots (i.e., service robots for personal use) applied to non-commercial tasks, usually by lay persons and professional service robots (i.e., service robots for professional use) used for commercial purposes. Examples of personal service robots are: domestic servant robots, automated wheelchairs, personal mobility-assist robots, or pet exercising robots. Examples of professional service robots are: cleaning robots for public places, delivery robots in offices or hospitals, fire-fighting robots, rehabilitation and surgery robots in hospitals. For such robots advanced human-robot interfaces are needed. Such interfaces use diverse types of sensors, such as force or touch sensors detecting physical human-robot contact, or vision, sound/voice or distance detectors serving non-contact interactions. In this call the stress is laid on facilitation of human-machine communication means, applying safety measures and producing human-like reactions and responses resulting in efficient services.	Open Consultation (SNSF)

Human oriented interfaces for digital services (e-services) (InterDigit)	In the recent years an increasing offer and popularity of digital services has been observed. Additionally the pandemic situation causing social isolation stimulated the need for broadly defined such services. It concerns, for example, dedicated internet tools, mobile phone applications, automatisations of delivery systems and assistance provided by robots. Chatbots (virtual assistants) became a standard part of an online customer experience. They transformed the way people consult and obtain information lifting customer service to a new level. Besides virtual assistance the digital sales emerge as a new and increasingly exciting concept. Studies show that (https://digitalmarketinginstitute.com): 75% of people using social media outsell their peers, 78% of buyers expect sales to personalize interactions based on online activities. Similarly we also observe an increasing popularity of service robots. This concerns personal service robots (i.e., service robots for personal use) applied to non-commercial tasks, usually by lay persons and professional service robots (i.e., service robots for professional use) used for commercial purposes. Examples of personal service robots are: domestic servant robots, automated wheelchairs, personal mobility-assist robots, or pet exercising robots. Examples of professional service robots are: cleaning robots for public places, delivery robots in offices or hospitals, fire-fighting robots, rehabilitation and surgery robots in hospitals. For such robots advanced human-robot interfaces are needed. Such interfaces use diverse types of sensors, such as force or touch sensors detecting physical human-robot contact, or vision, sound/voice or distance detectors serving non-contact interactions. In this call the stress is laid on facilitation of human-machine communication means, applying safety measures and producing human-like reactions and responses resulting in efficient services.	NCN
Embodied Intelligence	Embodied intelligence is an approach to the design and understanding of intelligent behavior in embodied and situated agents through the consideration of strict coupling between the agent and its environment (situatedness), mediated by the constraints of the agent's own body, perceptual and motor system and brain (embodiment). The emergence of the field of embodied intelligence is closely linked to parallel developments in computational intelligence and robotics. This call focuses on the efficient and novel methods for intelligent sensory-motor coordination assuring the autonomous actions of embodied agents. The agents should be able to improve their capabilities through self-learning and self-improving. The agents will gain the capabilities for performing safely and reliably useful actions with overcoming successfully unexpected situations. It is assumed that the proposed solutions will be inspired and supported not only by engineering but also by biology, neuroscience and cognitive sciences. Morphological computations (in morphological computations certain processes are performed by the body that otherwise would have to be performed by the brain) can also be taken into account. Diverse intelligent effector systems, including robots, should be treated as implementation examples.	NCN

Commonsense in artificial intelligence systems	Common sense has been called the “dark matter of AI” - both essential and elusive. That is because, among other reasons, common sense consists of implicit information - the broad (and broadly shared) set of unwritten assumptions and rules that humans automatically use to make sense of the surrounding world. However, common sense is the key to properly addressing many tasks such as natural language understanding, image and video understanding or reasoning and planning. Thus the objective of this topic is to boost the research on integrating commonsense knowledge and reasoning in current AI systems.	Open Consultation (AEI)
Human in the Loop for Artificial Intelligence (HITL4AI)	Current state-of-the-art in Artificial Intelligence (AI) requires human annotated data to learn how to solve each task in each application area. Annotated data reflects the past and static view and limits the applicability of AI in many tasks that evolve over the time. Human-in-the-loop (HITL) is the process of teaching the machine solving new problems with active human intervention by creating a continuous feedback loop allowing the algorithm to improve over time, where feedback can vary: in one extreme we have many users giving very few bits of information (agree/disagree), in the other we have a few users providing dense information (few-shot learning). HITL enables fast and flexible learning, particularly when the interaction with humans is natural, such as in robotics, computer vision, and natural language processing, among others, providing exciting opportunities to have more powerful AI systems.	Open Consultation (AEI)
(Room-T) Nano-electro-opto-mechanical interfaces	The fast rise of optomechanics, with milestone results in fundamental physics, opened the route to novel platforms which could offer several practical implementations of new optical elements and technologies. The combination of mechanical elements and waves and photonic structures is paving the way to fast and flexible manipulation of the state of light in terms of intensity, phase, polarization and orbital angular momentum, with the prospect of ultralow power, ultrafast modulators operating at room-temperature. Generation of mechanical waves by electric means enables an extra degree of freedom to manipulate light parameters at the nanoscale. Building arrays of such elements would give rise to nano-electro-opto-mechanical (NEOM) metasurfaces serving as advanced physical interfaces operating at room-T to be used in a plethora of applications. For example, a network of coupled optomechanical oscillators can be used as a versatile computational platform, satisfying the requirements for novel applications such as neuromorphic computing.	Open Consultation (ANR)

Collective Memories	The 1950/1960s have seen a vast proliferation and democratization of analog photography. Likewise, the 1970s have seen a similar development with analog home video. In the last years, several attempts to digitize and thus to preserve this content have been undertaken. However, detailed meta information on the content of the media objects and in particular on the context of this content is needed. Otherwise, the further use of digitized objects would be significantly limited. Today, substantial time is spent to index content, so that it becomes accessible in repositories. Without further activity, much of the cultural heritage of the people, events, places and traditions shown in these images and videos would be irrevocably gone, together with the generation having the knowledge on all these details. Therefore, the knowledge of contemporary witnesses is essential for the index work. The preservation of the cultural heritage contained in such multimedia collections necessitates approaches from machine learning for detecting objects in single images, image clusters, and videos together with their spatial relationships, but also advanced (location- and profile-aware) crowdsourcing mechanisms and appropriate user interfaces for the collection of further meta information at large scale. Since existing knowledge bases and open data on places, people, events, or traditions already exist, approaches to entity recognition and linking and the integration of such data sources and knowledge bases using semantic technologies and interoperability are highly important as well for this topic.	SAB (Heiko Schuldt)
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Topic Selection

Topic Voting

To select the topics, the CHIST-ERA partners and SAB members are asked to score the 14 topics on basis of the 8 criteria used in the topic suggestion form. In addition, the RFO are asked to specify with a yes/no flag for each topic whether they were likely to fund it if selected. This additional information allows the RFOs to express their scientific interest independently of their foreseen available budget.

The voting of 14 RFOs resulted in an average score of each topic on basis of which a ranking was compiled. Also on basis of the voting of 6 SAB members an average score was calculated and ranking compiled. The ranking lists of RFOs and SAB have been combined by calculating the average of each topic and on basis of that a combined ranking of RFOs and Scientific Advisory Board was compiled.

Average score and ranking RFOs votes

Rank	Topic Title	Global Score	STDEV
1	Human oriented interfaces for digital services (e-services) (InterDigit)	3,98	0,65
2	Foundations of misbehaviour understanding in Online Social Networks and Media	3,95	1,04
3	Exploratory visual analysis (EVA) of large data sets over internet	3,88	0,84
4	Human in the Loop for Artificial Intelligence (HITL4AI)	3,83	0,83
5	(Room-T) Nano-electro-opto-mechanical interfaces	3,81	0,68
6	Reinforcement learning for real-world systems and industry-transforming applications	3,77	0,52
7	Collective Memories	3,68	1,08
8	Commonsense in artificial intelligence systems	3,65	0,89
9	Modeling knowledge for health and biomedical research	3,57	1,24
10	Computational Intelligence in Logistics and Supply Chain Management	3,43	0,94
11	Embodied Intelligence	3,42	1,30
12	Synthetic Data Generation	3,19	1,00
13	Digitisation of Environmental Materiality Measures	3,19	1,23
14	Realistic Simulation of Human Behaviour	2,56	1,45

Average score and ranking of Scientific Advisory Board

Rank	Topic Title	Global Score	STDEV
1	Foundations of misbehaviour understanding in Online Social Networks and Media	3,73	1,70
2	Collective Memories	3,73	1,51
3	Commonsense in artificial intelligence systems	3,69	1,51
4	(Room-T) Nano-electro-opto-mechanical interfaces	3,58	1,43
5	Embodied Intelligence	3,40	1,39
6	Reinforcement learning for real-world systems and industry-transforming applications	3,33	1,55
7	Exploratory visual analysis (EVA) of large data sets over internet	3,31	1,49
8	Human in the Loop for Artificial Intelligence (HITL4AI)	3,28	1,34
9	Computational Intelligence in Logistics and Supply Chain Management	3,23	1,45
10	Human oriented interfaces for digital services (e-services) (InterDigit)	3,15	1,49
11	Digitisation of Environmental Materiality Measures	2,96	1,31
12	Modeling knowledge for health and biomedical research	2,88	1,33
13	Synthetic Data Generation	2,85	1,21
14	Realistic Simulation of Human Behaviour	2,80	1,23

Combined ranking average score RFOs and Scientific Advisory Board

Rank	Topic Title	RFOs	SAB	Average
1	Foundations of misbehaviour understanding in Online Social Networks and Media	3,95	3,73	3,84
2	Collective Memories	3,68	3,73	3,70
3	(Room-T) Nano-electro-opto-mechanical interfaces	3,81	3,58	3,70
4	Commonsense in artificial intelligence systems	3,65	3,69	3,67
5	Exploratory visual analysis (EVA) of large data sets over internet	3,88	3,31	3,59
6	Human oriented interfaces for digital services (e-services) (InterDigit)	3,98	3,15	3,57
7	Human in the Loop for Artificial Intelligence (HITL4AI)	3,83	3,28	3,56
8	Reinforcement learning for real-world systems and industry-transforming applications	3,77	3,33	3,55
9	Embodied Intelligence	3,42	3,40	3,41
10	Computational Intelligence in Logistics and Supply Chain Management	3,43	3,23	3,33
11	Modeling knowledge for health and biomedical research	3,57	2,88	3,23
12	Digitisation of Environmental Materiality Measures	3,19	2,96	3,07
13	Synthetic Data Generation	3,19	2,85	3,02
14	Realistic Simulation of Human Behaviour	2,56	2,80	2,68

Topics selection workshop

The results of the voting were discussed in the CHIST-ERA Call 2021 topics selection online workshop on the 28th of January 2021, with the participation of the CHIST-ERA Steering Committee and the Scientific Advisory Board.

All 14 topics were introduced and discussed on basis of comments from the voting process. The topics were presented in reverse order of the combined ranking of SAB and RFOs votes. Strengths and weaknesses of each topic were discussed and complementarities/overlaps with topics in other calls were explored. For each topic in the first round of discussion was decided if it was worthwhile to keep it for further discussion or to discard it.

After having discussed all topics it was decided to keep six topics for further discussion and launch a voting process for them: (Room T) Nano electro-opto-mechanical interfaces; Human

oriented interfaces for digital services (e-services) (InterDigit); Foundations of misbehaviour understanding in Online Social Networks and Media; Collective Memories; Commonsense in artificial intelligence systems; Modeling knowledge for health and biomedical research.

Several rounds of votes were organized where each was asked to vote for its two 'favourite' topics out of the remaining topics. On basis of the votes and further discussion the topics: (Room T) Nano electro-opto-mechanical interfaces; and Foundations of misbehaviour understanding in Online Social Networks and Media were selected as workshop outcome. Those two topics are, in cooperation with the topic proposers, further prepared for publication at www.chistera.eu taking into account comments and issues raised during the workshop.

Conclusion

On basis of the votes and workshop discussion CHIST-ERA steering committee has selected two topics for the CHIST-ERA call 2021 with the following descriptions and key words:

Topic 1. Nano-Opto-Electro-Mechanical Systems (NOEMS) for ICT

The fast rise of optomechanics, with milestone results in fundamental physics, opened the route to novel platforms which could offer several practical implementations of new optical elements and technologies. The combination of mechanical elements and waves with photonic structures is paving the way to fast and flexible manipulation of the state of light in terms of intensity, phase, polarization and orbital angular momentum, with the prospect of ultralow power, ultrafast modulators operating at room-temperature. Generation of mechanical waves by electric means enables an extra degree of freedom to manipulate light parameters at the nanoscale. Building arrays of such elements would give rise to nano-opto-electro-mechanical metasurfaces serving as advanced physical interfaces operating at room temperature to be used in a plethora of applications in ICT.

Application sectors: Light-based ICT, low-power ICT

Keywords: Nano-opto-electro-mechanical interfaces, light manipulation, room temperature, neuromorphic computing, high frequency switch, advanced communications and radar, tunable and surface-addressable / surface-emitting nanophotonic devices, beam steering, microwave photonics...

Topic 2. Foundations for Misbehaviour Detection and Mitigation Strategies in Online Social Networks and Media

Online Social Networks and Media (OSNEMs) are computer-based technologies that enable users to create content and entertain social relationships. In recent times, OSNEMs have been dealing with a considerable growth of malicious accounts and activities, which purposely undermine the integrity of online conversations by sharing false and inflammatory information to influence the public opinion and sow conflict on social or political issues. The objective of this topic is to create a foundation on the identification of peculiar behaviours of malicious entities and create the basis for detection and mitigation strategies for misbehaviour in OSNEMs, as well as for providing societal change towards OSNEM literacy and citizen participation. This includes the detection of malicious actors (e.g. bots and trolls), the identification of low-credibility information and fake news, the users' awareness and control of misbehaviours.

Application sectors: Online social networks and media

Keywords: Online social networks and media, misbehaviour, fake news, bots, trolls, citizens, literacy

Annexes

A.SAB (Scientific Advisory Board)

SAB

Member	Institution	Country
Elisabeth André	Augsburg University	Germany
Luis Castedo Ribas	University of A. Coruña	Spain
Siobhán Clarke	Trinity College Dublin	Ireland
Charles Despins	Prompt & University of Québec	Canada
Yiannis Kompatsiaris	Center for Research and Technology - Hellas	Greece
Mark Liberman	University of Pennsylvania	United States
Heiko Schuldt	University of Basel	Switzerland
Sharon Sputz	Columbia University	United Stated

B. Topic selection timeline for Call 2021

Timeline for topic selection CHIST-ERA Call 2021

13 October 2020	RFO and SAB s called to submit topic proposals	AEI
23 November 2020	Deadline to submit topic proposals	RFOs and SAB
27 November 2020	Publication of final list of topic proposals and call for votes	AEI
<i>3 weeks</i>	<i>Get internal agency feedback about topics and cast votes</i>	<i>RFOs and SAB</i>
18 December	Deadline for votes/ feedback	RFOs and SAB
	<i>Analysis of voting results</i>	<i>AEI</i>
mid-January 2021	Voting results and analysis sent to NFOs and SAB	AEI
End of January 2021	Workshop with SAB to discuss topics	RFOs and SAB
February 2021	Publication of topics CHIST-ERA Call 2021	CHIST-ERA SC

C.Template for topic suggestion

CHIST-ERA Call 2021 Topic suggestion

Please send this form back to era-ict@aei.gob.es

Proposer

Institution / Initiative	
Contact(s)	

Topic definition

Topic title (2-10 words)	
Short description (30-100 words)	
Application sectors	
Keywords	

Selection criteria grid

Please provide based on the CHIST-ERA topic selection criteria grid, for each criteria a rationale of between 2-20 sentences

Criteria	Description	Score ²
Scientific interest and innovation potential (Required for RFOs and SAB)		
Novelty & ambition	Describe the state-of-the-art, missing science, and expected outcomes (the topic should be far from existing knowledge and technology), and analyse potential S&T issues (the topic should be plausible)	
Multidisciplinary and/or transformative	Describe how knowledge and communities from different disciplines can be brought together to investigate unknown fields at the frontier of science and/or how the topic can be a game changer with a high scientific and technological impact	
Clarity and measurability	Describe how well defined the topic is and how scientific and technological performance can be objectively measured in the area (measurement methods, metrics, tools, infrastructures, ...)	
Timeliness	Describe which opportunities might be lost if the topic is not funded	
Potential impact	Describe the potential impact on future EU economy, environment and/or society, and analyse risks (social acceptance, legal issues, ...)	
Suitability for a CHIST-ERA call Required for RFOs, optional for SAB)		
Need for transnational cooperation	Describe how transnational cooperation in the framework of a joint call can bring added value (complementary national scientific strengths, need for critical mass, need for joint infrastructures, ...)	
Complementarity with existing calls	Describe closest calls (FET, H2020, ERA-NETs, ...) and how the topic complements and/or leverages them (the topic should not be redundant with other calls)	
Suitability of topic size	Describe how a significant contribution in the area can be obtained with a call of a few M€, possibly giving indications about the size of the main events, initiatives or structures in the area (conferences, programmes, teams, centres, professional associations, ...).	

² Range: 1 (minimum) to 5 (maximum)

References

Provide bibliographical references and/or web links