Proposal Evaluation Form

EUROPEAN COMMISSION

Horizon Europe Framework Programme (HORIZON)

Evaluation Summary Report (Review task) - PATHFINDER - OPEN

Call: HORIZON-EIC-2021-PATHFINDEROPEN-01
Type of action: HORIZON-EIC
Proposal number: 101046787
Proposal acronym: ECLIPSE
Duration (months): 42
Proposal title: ECL-based Infectious Pathogen (bio)SEnsor
Activity: HORIZON-EIC-2021-PATHFINDEROPEN-01-01

N.	Proposer name	Country	Total Cost	%	Grant Requested	%
1	ALMA MATER STUDIORUM - UNIVERSITA DI BOLOGNA	IT	833,421	26.62%	833,421	26.62%
2	META	BE	270,000	8.62%	270,000	8.62%
3	META GROUP SRL	IT	30,000	0.96%	30,000	0.96%
4	ISTITUTO DI RICERCHE FARMACOLOGICHE MARIO NEGRI	IT	359,775	11.49%	359,775	11.49%
5	UNIVERSITA DEGLI STUDI DI MILANO	IT	168,755	5.39%	168,755	5.39%
6	KARLSRUHER INSTITUT FUER TECHNOLOGIE	DE	371,920	11.88%	371,920	11.88%
7	UNIVERSITA DEGLI STUDI DI MESSINA	IT	400,125	12.78%	400,125	12.78%
8	CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE MICROTECHNIQUE SA - RECHERCHE ET DEVELOPPEMENT	CH	446,850	14.27%	446,850	14.27%
9	PERSONAL GENOMICS SRL	IT	250,000	7.99%	250,000	7.99%
	Total:		3,130,846		3,130,846	

Abstract:
Infectious diseases are a threat to mankind since their appearance in human history. Despite the advances in science and technologies, such threats are still recurrent, as recently shown by the COVID-19 pandemic in 2020 – 2021, which has revealed the urgent need for novel tools for pathogen detection that would be at the same time reliable, fast, cheap, portable and simple. The goal of ECLIPSE is to address this need, with a new platform exploiting innovative ultrasensitive protocols for the detection of pathogens. ECLIPSE builds on the combination of interdisciplinary elements to facilitate the transfer to industry, i.e., (i) ElectroChemiLuminescence (ECL) as a very sensitive transduction mechanism for realizing simple, portable and cheap devices, (ii) bio-, nano-, and supramolecular-based signal amplification structures for increasing the sensitivity, and (iii) two recognition strategies to afford high affinity and selectivity, thus leading to high reliability: the Phage-Sandwich technology for the whole pathogen, and the Surface Cooperative Hybridization technology for microbial and viral nucleic acid. We will demonstrate the feasibility and adaptability of the ECLIPSE platform with three test cases: a virus (SARS-CoV-2), a bacterium (Pseudomonas aeruginosa) and a protozoan parasite (Leishmania infantum). The platform is designed to be applied to many other infectious agents, making it a "ready for the next pandemic" technology. ECLIPSE is expected to become a game-changer in European countries, where it could be a cornerstone for fast testing and reliable tracking of infections, and in developing countries that will benefit from a cheap and simple approach to detect the many infectious diseases that affect millions of people every year. The project results will be validated and demonstrated at partners' premisses.

Evaluation Summary Report

Evaluation Result

Total score: 4.80 (Threshold: 0)

Panel comments on proposal

This Evaluation Summary Report contains the final score decided by the Pathfinder Open evaluation committee. It comprises a collation of the comments from individual reports, or extracts from them, a comment that summarises the assessment by the evaluation committee as well as any additional comments. The evaluation committee drew its conclusions on the basis of the remote score and the outcome of its consensus discussions, taking into consideration the comments from the rebuttal procedure, if any.

The comments from the individual evaluators are collated per sub-criterion, so in the report the comments on each sub-criterion reflect the opinions from all four evaluators. While not necessarily subscribing to each and every opinion expressed, the evaluation committee finds that the comments from the evaluators provide a fair overall assessment, indicating both essential strengths and weaknesses identified in the proposal.

According to the predefined scoring scale the proposal is Excellent and is above all thresholds as defined in the Pathfinder Open Work programme 2021.

The Evaluation Committee agrees with the majority of the evaluators that the long-term vision aiming at design and development of a platform to detect a variety of pathogenic organisms including viruses, bacteria and parasites is convincingly described. Furthermore, the science-towards-technology breakthrough is ambitious and demonstrates a capacity to provide a basis for the development of new technologies for ECL-detection of pathogens that will have a positive effect on European society and economy. The Evaluation Committee shares the opinion of most of the evaluators that the proposal significantly goes beyond the state-of-the-art to create a new diagnostic platform. The proposed research has a high level of interdisciplinarity and innovation.

Overall, the Evaluation Committee is of the opinion that the impact of the proposal in fundamental science will be relevant. However, the technology transfer and specific actions toward policy makers and R&D community in the field of clinical analysis are not sufficiently elaborated.

The Evaluation Committee received and examined the additional information provided via the rebuttal procedure. Such information was found to be relevant to the specific issues raised by the evaluators, e.g. in assessment by one of the evaluators of the consortium expertise, and has been duly taken into account during the discussion of the Evaluation Committee.

The Evaluation Committee discussed the requested funding for participant CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE MICROTECHNIQUE SA - RECHERCHE ET DEVELOPPEMENT, Switzerland, from non-EU countries not eligible for funding.
The Evaluation Committee concludes that the participation of CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE MICROTECHNIQUE SA - RECHERCHE ET DEVELOPPEMENT, Switzerland, is essential to achieve the scientific objectives of the action, because of the fundamental involvement of the partner on Nucleic Acid-chip and on Phage-chip development and characterization. The participant CSEM CENTRE SUISSE D'ELECTRONIQUE ET DE MICROTECHNIQUE SA - RECHERCHE ET DEVELOPPEMENT, Switzerland, requesting a grant amount of EUR 446850, should therefore exceptionally be funded.

Criterion 1 - Excellence

Score: **5.00** (Threshold: 4/5.00 , Weight: 60.00%)

The following aspects will be taken into account, to the extent that the proposed work corresponds to the description in the work programme:

Long-term vision: How convincing is the vision of a radically new technology that has the potential to have a transformative positive effect to our economy and society?

The proposal is well written and structured, relevant and with clearly defined long-term vision of the design and development of a new diagnostic platform for detection of pathogens based on Electrochemiluminescence (ECL) and engineered ECL-active supramolecular structures and bacteriophages. The vision of a new diagnostic technology with improved efficacy is convincingly argued.

The proposed combination of ECL, ECL- signal amplification, microfluidics and on-chip technology and clearly outlined in the proposal targeted technological characteristics (i.e. fast, cheap, selective and sensitive) of the proposed platform are expected to provide a technology for detection of pathogens with improved efficiency and with positive societal and economic impact. The development of the proposed diagnostic platform will be of the great interest for medicine.

The long term vision to produce a radically new technology that has the potential to have a transformative positive effect to our economy and society is extremely convincing since this project will design and development of a nanobiotechnological platform to address pathogen detection, making a breakthrough advancement in the fight against communicable diseases. This will be possible due to the use of Electrochemiluminescence (ECL), signal amplification strategies and recognition elements endowed with high affinity and selectivity. The sensor will therefore be highly reliable, decreasing the risk of false positive and false negative results and will be an additional crucial element to provide the requested sensitivity which will allow the application of ECLIPSE to many other infectious agents. Its rapid implementation by industry, will make this a "ready for the next pandemic" platform, that will have a strong societal and economic impact.

The proposal clearly and appropriately identifies the absolute need for a new generation of diagnostic methods toward infectious diseases that combines sensitivity, specificity, simplicity and low cost. The project is of very high societal importance as it would ensure a rapid and extensive roll out of diagnostic tools for present and future pandemics. The envisioned diagnostic platforms adequately target a variety of pathogenic organisms including virus, bacteria and parasite to increase the relevance of the developed technologies.

The long-term vision of the new technology is clearly stated - the consortium wants to design a new device for the detection of different pathogens, i.e. viruses, bacteria, and parasites. Such new technology has the potential to have a transformative effect on our economy and society, depending on the success rate of the new device surpasses the success rates of existing devices and methods. The proposed long-term vision of the radically new technology is convincing.

Science-towards-technology breakthrough: How concrete, novel and ambitious is the proposed science-towards-technology breakthrough with respect to the state-of-the-art? What advancement does it provide towards realising the envisioned technology?

The analysis of the state of the art is mainly focused on the currently available methods for biological assays and shortcomings of their applications; ECL bio-applications, ECL- signal amplification and strategies, and developed ECL-active supramolecular structures and bacteriophages are not sufficiently addressed in the proposal.

The proposal lacks the significant novelty component since it intends to combine techniques and ideas (ECL, ECL- signal amplification, ECL-active structures and phage-based sensors, microfluidics) already established for ECL detection of pathogens and biological assays. Also, novelty of the proposed ECL-active structures (e.g. functionalized nanoparticles and polymers) and methodology for their preparation is not convincingly demonstrated and justified in the proposal.

The proposed science-towards-technology breakthrough is ambitious and demonstrates a capacity to provide a basis for development of new technologies for ECL-detections of pathogens.

The science is breakthrough, concrete, novel and highly ambitious. Advancement towards realising the envisioned technology will be made by

developing an ultrasensitive platform allowing the detection of infectious agents using novel signal amplification strategies. These include using light emission triggered by the electrochemical reaction, since it does not suffer from background from scattered light or sample autofluorescence and can allow the construction of a portable, low-cost device. To further increase the high sensitivity the other project goal is to expand the number of active labels per analyte using high signal amplification, by developing dye-doped (breakable) NPs, supramolecular ECL active polymers, and engineered phages as (bio)nanotechnological scaffolds. These ECLs will target both sequence-specific recognition of the pathogen genome by suitable DNA probe sequences anchored on the electrode surface and also detect the entire pathogen – virus, bacterium, or parasite.

The proposal appropriately defines the scientific and technological locks that presently impair the developments of a new generation of high sensitivity/high specificity versatile diagnostic platform and proposes a number of technological breakthroughs toward the realization of their objective. It will provide a number of new technologies to significantly improve the present systems of signal amplification, allow the development of a suite of recognition and transducer probes and detection devices for nucleic acids and whole pathogens. It significantly goes beyond the state-of-the-art for all these technologies. Finally, the proposal not only envisions to develop individual novel technologies but more importantly to combine those to create multimodal diagnosis platforms.

The proposed science-towards-technology breakthrough is concrete - improvement of successful detection rates by using a different approach than state-of-the-art devices. The idea to use signal amplification strategies instead of conventional target amplification strategies is novel and ambitious and of high risk. The proposal provides the advancement in detection technology, which aims to result in a low-cost device that will be suitable for faster and more precise detection of pathogens even in developing countries. The ideas presented in the proposal are backed by consortium partners' previous work in detecting the Hepatitis B virus.

Objectives: How concrete and plausible are the proposed objectives? To what extent are high-risk/high-gain research approach and methodology appropriate for achieving them?

The main goal in the proposal is well defined. The proposed objectives relevant to the development of systems for signal amplification and probes for selective detection of pathogens are concrete, well explained and plausible.

The objectives relevant to the development of the proposed platforms for detection of the nucleic acids of infectious pathogens, whole pathogens and for analysis of real samples are well defined under Implementation, and plausible.

The proposed objectives are relevant to the main goal in the proposal and achievable within the duration of the project. The proposed research and methodology is of moderate risk since it is based on methodologies and approaches already described. The gender dimension is not considered as relevant to the proposed research and technology.

The objectives are concrete and plausible. This is an extremely high-risk/high-gain research approach. The methodology is excellent to achieving the objectives. The general objective of the project is the development of a platform for pathogen detection that is – at the same time – fast, cheap, selective, and ultrasensitive. Two specific objectives are to make a platform able to detect pathogen nucleic acid or microbial cells or virions by exploiting the synergic combination of Surface Cooperative Hybridization of complex targets (ds DNA genomes or genes or RNA strands) and ECL (Electrogenerated Chemiluminescence) transduction by ECL-intercalative dyes. The capture of the whole pathogen genome will be performed by means of two capture probes composed by short oligonucleotides to ensure high affinity and selectivity. To detect entire microbial cells or virions, an innovative ECL-Phage-Sandwich technology will be employed.

The proposal appropriately designed two complementary objectives toward an efficient diagnosis of pathogens using either the detection of nucleic acids and of whole pathogens. The developed tools are partly overlapping, which increases the chances of success without dramatically increasing the amount of work. The overall strategy to overcome present technological limitations of diagnostic tools, either using PCR or immunoassays, and reach the objectives is sound and consistent with the state of the art. Some of the expected breakthroughs, in particular the design of nanostructures with increased ECL signals, beneficiate from solid proofs of concept from the applicants, thus increasing the plausibility of the objectives. The way forward is clearly envisioned. Altogether, the proposal is a high risk research because it integrates multiple novel technologies but presents a very high gain in term of output to society.

The proposed objectives are clear and plausible for achieving during the project duration, however not all objectives are clearly measurable and the proposal fails to provide the key performance indicators for some objectives in a clear way. On the other hand, the objectives are very ambitious and require a high-risk/high-gain approach. The proposed research methodology is appropriate for achieving the listed objectives.

Interdisciplinarity: How relevant is the interdisciplinary approach from traditionally distant disciplines for achieving the proposed breakthrough?

The project is interdisciplinary and includes a certain number of scientific and technological disciplines such as chemistry, biochemistry, nanotechnology, material science, microbiology, genetics, electrochemistry and engineering. These disciplines are distant and usually do not work together. The foreseen contributions from these different scientific and technological disciplines are well described and credible. According to the proposal main goal and objectives this interdisciplinarity is fundamental for the successful implementation of the proposed scientific program.

The interdisciplinary approach is necessary for this project from the traditionally distant disciplines for achieving the proposed breakthrough. Chemists and biochemists are needed to develop the (bio)molecules for the natural and artificial receptors, material scientists for the surface immobilization and the NPs realization, molecular microbiologists, and virologists to handle viruses, bacteria, and parasites, geneticist to

interpret the genome and identify different strains, electrochemists and physicists to achieve the desired detection using ECL, and engineers to develop the final prototype. The use of ECL-phage-sandwich technology and use of transducer phages and the expertise required is necessary for this project. The expertise to engineer new (nano)structures is also required. Furthermore, self-assembling, supramolecular polymers will be developed to obtain a several-fold amplification compared to the ones obtainable from a single complex.

The proposal outlines a highly interdisciplinary approach with a wide range of scientific disciplines involved. The proposal has clearly and adequately identified the required multiple expertises in order to achieve the individual breakthroughs but most important to combine them toward a global solution.

In order to achieve the proposed breakthrough, the research requires an interdisciplinary approach, covering the fields of biotechnology, chemistry, physics, microbiology, material science, and engineering. The disciplines covered in the proposal are appropriate for achieving the proposed breakthrough.

Criterion 2 - Impact

Score: **4.00** (Threshold: 3.5/5.00 , Weight: 20.00%)

The following aspects will be taken into account, to the extent that the proposed work corresponds to the description in the work programme:

Innovation potential: How adequate are the proposed measures for protection of results and any other exploitation measures to facilitate future translation of research results into innovations with societal or economic impact? How suitable are the proposed measures for empowering key actors that have the potential to take the lead in translating research into innovations?

Expected project outcomes are outlined but their impact on science, technology, society and economy, and especially on healthcare sector is not sufficiently described and explained in the proposal.

The proposal does not describe concrete measures for effective exploitation of the project outcomes in healthcare, commercial, research and education sectors, and for translation of results into innovations with social and economic impact.

The opportunity for early-stage researchers to benefit from the project interdisciplinarity and to develop a unique multidisciplinary expertise and gain experience during the project is considered and realistic.

The proposal considers appropriate measures for IP management and protection. The consortium involves a partner with especial expertise in IP management. All IP activities will be controlled by an appointed Exploitation Committee. The proposed preparation of an agreement to regulate the ownership and IPR is reasonable.

The proposed measures for protection of results and any other exploitation measures to facilitate future translation of results into innovations with societal or economic impact are excellent. The use of the results will enable market opportunities for the companies that will adopt this technology by demonstrating its feasibility and practical potential. Each of the results will be characterised and analysed in terms of future use: unique value proposition – UVP, use model, market, early adopters, IP management, financials and implementation roadmap, risks and allocation of responsibilities/ownership. Partners will formalize, by the end of the project, the agreements on the ownership of each result, including share of future investments and potential revenues generated including ECL-based detection technologies licensed to one large pharma diagnostic company; ECL signal amplification structures licenced to one company; Phages-based sandwich technology licenced to one company.

The proposal appropriately identifies all the innovations and outcomes that will lead to technological and conceptual breakthroughs generated during the project and that have a potential for intellectual protection. The proposal describes in an appropriate manner a very complete and proactive strategy toward the potential protection of the key expected results. The proposal sets an effective methodology for early identification of industrial partners and will benefit from the support of an exploitation committee. The presence of industrial partners in the consortium is well accounted for in the IP management. However, the proposal fails to identify in specific terms how the IP strategy will be adapted to the specific innovations of ECLIPSE project and to potential stakeholders outside the partners of the project.

The proposed research has innovation potential, but the proposal provides little detail on the protection of results and the general exploitation plan. The key expected results of the project, as well as the expected outcomes, are clearly presented, however, the proposal does not make it clear how the intellectual property will be distributed among partners and how it will be protected, besides promising to make an IP management plan as a deliverable in the project. The societal and economic impacts are weakly addressed. The proposed measures for empowering key actors that have the potential to take the lead in translating research into innovations are adequate and suitable.

Communication and Dissemination: How convincing and wide reaching are the proposed measures and plans for public/stakeholder engagement and for raising awareness about the project outcomes, including through Open Science, with respect to their potential to establish new markets and/or address global challenges?

The proposed activities for dissemination of the project results are standard and mainly limited to scientific publications (peer-reviewed and open access journals), conferences.

Measures for communication of the project results and activities are listed but described in a very general way. Plans for communication and knowledge/results transfer across the members of the consortium are not sufficiently specified.

Activities to promote the action outputs to the industry and health care sectors, and potential commercial partners, are not sufficiently considered in the proposal. Measures for implementation of Open Science practices are limited to publications in open access journals.

The proposed measures and plans for public/stakeholder engagement and for raising awareness about the project outcomes, including through Open Science, with respect to their potential to establish new markets and/or address global challenges are very convincing and wide reaching. A Plan for Dissemination and Communication Activities and an Open Data Management Plan will be created. Channels for dissemination will include; publication in international journals and books preferentially via Platinum and Gold open access publishing options; presentation of results at International and National symposia; informing on the benefits and ethical and social quality of the achieved results to the civil society, including political institutions and no-profit organizations and Foundations. Specific attention will be devoted to organisations operating in developing countries, where detection of pathogens can save thousands of lives. A website and interaction with school students will also occur.

The proposal includes a balanced strategy of communications and dissemination toward scientific communities and general audience in international journals, symposia, multimedia tools and science fairs. The proposal appropriately mention the use of open access publishing. However, the proposal fails to propose clearly defined dissemination actions toward policy makers and R&D community in the field of clinical analysis.

The proposed dissemination plan is adequate and wide-reaching, promising open-access publications in international journals and participation in conferences and symposia. The proposal promises to use platinum and gold open-access for its publications. The communication plan is adequate as well. Both dissemination and communication plans are listed with clear activity targets, although without clear key performance indicators.

Criterion 3 - Quality and efficiency of the implementation

Score: **5.00** (Threshold: 3/5.00 , Weight: 20.00%)

The following aspects will be taken into account, to the extent that the proposed work corresponds to the description in the work programme:

Quality of the consortium: To what extent do the consortium members have all the necessary high quality expertise for performing the project tasks?

The project consortium consists of partners from the academia and companies with expertise in their respective fields and in the scope of the proposed research. The proposal does not sufficiently demonstrate the quality and level of expertise, competence and experience of the partners in the consortium; it is not demonstrated that the consortium members have all the necessary high quality expertise for performing the project tasks.

The proposal outlines the participation of the consortium partners in international collaborations and large-scale collaborative European projects; Members of the consortium are ERC winners.

The gender dimension is considered as a measure to eliminate gender inequalities. It is outlined in the proposal that the partners will aim for a balanced research team at all levels through an open and impartial recruitment procedure of new collaborators.

The consortium members have all the necessary high quality expertise for performing the project tasks as it consists of 5 research groups and two companies with expertise in analytical, inorganic, material, organic, bio- and electro-chemists, together with physicists, virologists, biologists, geneticists and engineers. All groups have significant experience of international collaborations at the highest level, and most have been or are involved in large-scale collaborative European projects during FP6, FP7 and H2020. Some of the partners are ERC winners. The consortium covers all the needs for running the project and facilitating the use of its results and is specifically designed to ensure complementarities and interdisciplinary dialogue. The consortium will strongly promote the European initiative to eliminate gender inequalities and assure gender equality. The partners will aim for a balanced research team at all levels through an open and impartial recruitment procedure.

The consortium brings together five research groups and two companies that include know-how and expertise required to tackle all the aspects of the project. Although the roles of the consortium members are highly complementary, many share common know-how that will ensure a ground for easier member-to-member communication and smooth delivery of data. The input of each partner is very clearly and appropriately described, which leaves no doubt on the integration of all members into the project.

The consortium members have the necessary expertise for performing the project tasks and achieving the project objectives. The consortium is interdisciplinary, covering all the required disciplines for achieving the proposed project objectives. It is a balanced mix of academic members (universities), research institutions, and companies. The researchers have the necessary expertise to perform the project tasks.

Work plan: How coherent and effective are the work plan (work packages, tasks, deliverables, milestones, timeline, etc.) and risk mitigation measures in order to achieve the project objectives?

The work plan is well developed and coherent following the main objectives in the proposal. The work packages and constituent tasks are well described; the partners involved in each particular WP and the duration of their activities are relevant to the project objectives.

The deliverables and milestones related to the objectives are clearly defined and timely allocated. The milestones are well distributed across the project and feasible.

The activities relevant to the project management, dissemination, communication and exploitation of the results are well planned and appropriate for implementation of the project program.

The starting points and the duration of the activities within the WPs are reasonable to ensure successful execution of the proposal.

Possible risks that may arise during the execution of the project are considered and the contingency plans are effective.

Ethical Self-Assessment plan is presented.

The work plan (work packages, tasks, deliverables, milestones, timeline, etc.) and risk mitigation measures are excellent. The work plan consists of a number of work packages divided into Tasks with deliverables. The WPs are all strongly interconnected and are coherent and logical and follow the following order: Systems for signal amplification; Probe development; Platform for the detection of the nucleic acid of infectious pathogens; Platform for the detection of whole pathogens; Analysis of real samples; Project exploitation; Project communication and dissemination and Project management. All the deliverables and milestones are clearly listed. Risk management and mitigation measures are clearly identified and evaluated.

The proposal describes in a very detailed and comprehensive manner the work plan that includes not only the scientific development and validation phases, but also the dissemination and exploitation of results and the management tasks. The deliverables and milestones are precisely identified and integrated into the project. The project will greatly beneficiate from an integrated pipeline designed to identify, validate and exploit key discoveries since the very first stages. The scientific and administration risks are well accounted for and the proposed mitigation measures are adequately described.

The work plan is appropriate for achieving the project objectives. The purpose of each work package is clear, as well as the links between work packages. It is very positive to have a separate work package dedicated to exploitation. The tasks are clearly described with an excellent level of detail. The deliverable plan is average, with most work packages ending after the last deliverable, which poses a question on the evaluability of the work at the end of the work packages. The proposal has a weak plan for reporting dissemination and exploitation activities, with just a single report at the end without intermediate reports. Some work packages have a weak deliverable plan. The milestone plan does not clearly show the timeline of the project achievements. The risk mitigation plan is appropriate, although the proposal does not plan mitigation measures for risks in all work packages.

Allocation of resources: How appropriate and effective is the allocation of resources (person-months and equipment) to tasks and consortium members?

The person-months assigned to the work packages are in line with the proposed objectives and appropriate in relation to the proposed activities.
The necessary infrastructure and resources are available within the consortium to ensure the performance of the proposed research program.
The overall budget, as provided in the proposal is reasonable and well balanced.

The allocation of resources (person-months and equipment) to tasks and consortium members is excellent. The purchase costs' items (travel and subsistence, equipment and other goods, works and services) are clearly identified and justified.

The resources are appropriately allocated between participating members and depending on the workload of individual tasks.

Allocation of resources (person-months and equipment) to tasks and consortium members is appropriate for achieving the project objectives.

Scope of the application

Status: **Yes**

Comments (in case the proposal is out of scope)

Not provided

Exceptional funding

A third country participant/international organisation not listed in the General Annex to the Main Work Programme may exceptionally receive funding if their participation is essential for carrying out the project (for instance due to outstanding expertise, access to unique know-how, access to research infrastructure, access to particular geographical environments, possibility to involve key partners in emerging markets, access to data, etc.). (For more information, see the HE programme guide)

Please list the concerned applicants and requested grant amount and explain the reasons why.

Based on the information provided, the following participants should receive exceptional funding:

Not provided

Based on the information provided, the following participants should NOT receive exceptional funding:

Not provided

Use of human embryonic stem cells (hESC)

Status: **No**

If YES, please state whether the use of hESC is, or is not, in your opinion, necessary to achieve the scientific objectives of the proposal and the reasons why. Alternatively, please state if it cannot be assessed whether the use of hESC is necessary or not, because of a lack of information.

Not provided

Use of human embryos

Status: **No**

If YES, please explain how the human embryos will be used in the project.

Not provided

Activities excluded from funding

Status: **No**

If YES, please explain.

Not provided

Do no significant harm principle

Status: **Yes**

If Partially/No/Cannot be assessed please explain

Not provided

Exclusive focus on civil applications

Status: **Yes**

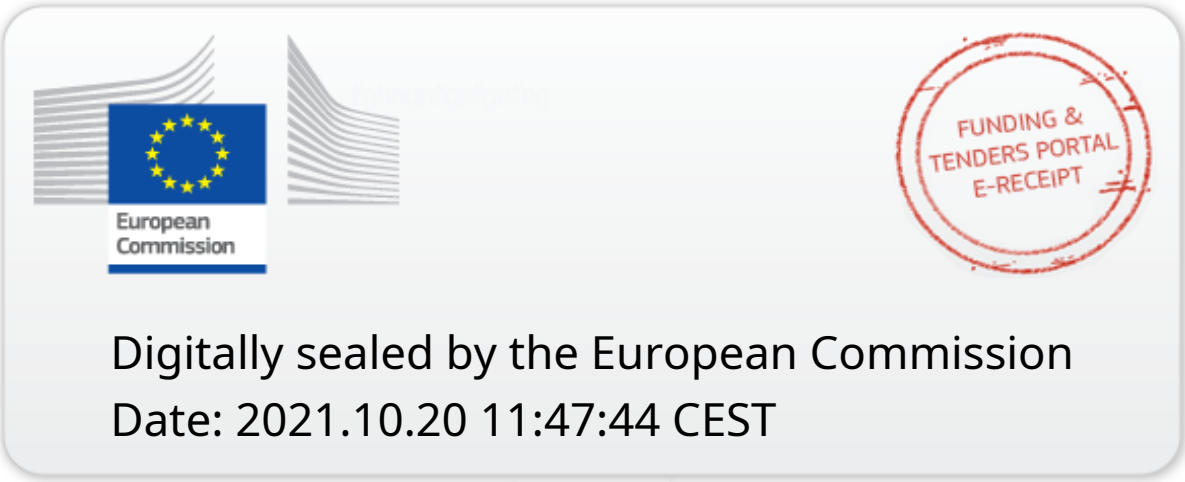
If NO, please explain.

Not provided

Artificial Intelligence

Status: **No**

If YES, the technical robustness of the proposed system must be evaluated under the appropriate criterion.



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