


Proposal Evaluation Form

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	<p>EUROPEAN COMMISSION</p> <p>Horizon 2020 - Research and Innovation Framework Programme</p>	<p>Evaluation Summary Report - Research and innovation actions/Innovation actions</p>
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Call: H2020-SC5-2018-2
Funding scheme: IA
Proposal number: 820886-1
Proposal acronym: WASTEWATER DIGIT
Duration (months): 36
Proposal title: DIGITAL PLATFORM FOR DATA MANAGEMENT OF THE SEWAGE-WASTEWATER TREATMENT PLANT-EFFLUENT SYSTEM IN THE INTEGRATED WATER CYCLE
Activity: SC5-11

N.	Proposer name	Country	Total Cost	%	Grant Requested	%
1	UNIVERSITA DEGLI STUDI DI UDINE	IT	5,450,000	100.00%	5,450,000	100.00%
2	KEMIJSKI INSTITUT	SI	0	0.00%	0	0.00%
3	ISTITUTO DI RICERCHE FARMACOLOGICHE MARIO NEGRI	IT	0	0.00%	0	0.00%
4	ACQUEDOTTO POIANA SPA	IT	0	0.00%	0	0.00%
5	TECHNISCHE UNIVERSITAET WIEN	AT	0	0.00%	0	0.00%
6	IRISACQUA srl	IT	0	0.00%	0	0.00%
7	AGENZIA REGIONALE PER LA PROTEZIONE DELL'AMBIENTE DEL FRIULI VENEZIA GIULIA	IT	0	0.00%	0	0.00%
8	UNIVERSITAET INNSBRUCK	AT	0	0.00%	0	0.00%
9	CAFC S.p.A.	IT	0	0.00%	0	0.00%
10	ACEGAS-APS Spa	IT	0	0.00%	0	0.00%
11	BEANTECH SRL	IT	0	0.00%	0	0.00%
12	HydroGEAspa	IT	0	0.00%	0	0.00%
13	Liverza Tagliamento Acque S.p.A.	IT	0	0.00%	0	0.00%
Total:			5,450,000		5,450,000	

Abstract:

The project proposal deals with the realization, at a demonstration level in a local territory, of a water-smart solution for sewerage, wastewater treatment plant (WWTP) and final discharge data collection, elaboration and modelling for water resource and environment safeguarding. A Digital tool for the sewerage-WWTP-Effluent system data management represents an unique instrument which can monitor the whole sewage-WWTP system providing and sharing real-time data (rain, flow, depth, velocity, TSS, COD, ...) useful both for sewer-WWTP operators to carry out the best management actions for the whole system and to have a database useful for calibration and validation of urban drainage and WWTP numerical models.

Flow and pollutant concentration on-line sensors will be placed along the urban water cycle. Thanks to an IIoT (Industrial Internet of Things) platform, real time-analysis and monitoring will provide the data base to perform integrated water modelling as an instrument for the water and wastewater utilities management. This can be used to quickly run simulations during extreme water conditions or to plan actions to improve water management in relation to effluent toxicological data.

The overall concept of the proposal is to introduce a quali-quantitative advanced modelling tool for IWC (Integrated Water Cycle) management companies. To open up IWC management operation to this advanced tool a digital transformation to new information technologies is necessary by IIoT integration.

The development of these new Information and Communications Technology(ICT)/water standard tools will enable improved the decision making on water management and the performance of water infrastructures.

This Digital platform can be considered as an innovative management tool for the urban sewage-WWTP systems, supporting cities towards the concept of "smart cities" into a new era of pro-active management and control.

This tool can be exported to other regions where upgrading IWCs are present.

Evaluation Summary Report

Evaluation Result

Total score: 5.00

Form information

Proposals must be evaluated as they were submitted, NOT on their potential if certain changes were made.

Therefore, do not recommend any modifications (e.g. consortia composition, resources or budget, or inclusion of additional work packages).

All shortcomings must instead be reflected in lower score.

If a proposal is partly out of scope, this should be reflected in the scoring and explained in the comments

SCORING

Scores must be in the range 0-5.

0 The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information.

1 Poor. The criterion is inadequately addressed, or there are serious inherent weaknesses.

2 Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.

3 Good. The proposal addresses the criterion well, but a number of shortcomings are present.

4 Very good. The proposal addresses the criterion very well, but a small number of shortcomings are present.

5 Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.

Criterion 1 - Excellence

Score: **2.50** (Threshold: 4/5.00 , Weight: -)

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

Clarity and pertinence of the objectives

The objectives of the proposal are clear and pertinent to the call objectives. Specific objectives are clearly presented. Six sewerage-WWTP-final discharge systems within the Friuli Venezia Giulia-Italy region are proposed as demonstration sites.

However, there are a number of shortcomings. The specific project objectives do not provide a structured outline of the proposal direction. The objectives do not include testing and validation of the system in different water scarcity and climate conditions to assure applicability of the proposed solution.

Soundness of the concept, and credibility of the proposed methodology

The proposed work is well oriented on demonstration research on urban drainage modelling, waste-water treatment process modelling and ecotoxicology and their integration in the six demonstration sites.

However, the proposal does not present a sound concept and a credible methodology and this is a serious inherent weakness. What will be done (the concept) and how it will be done (the methodology) to realise the process 'data collection - data management - decision making tools' remains at a general level of description. For example, the models to be developed are not specified and it is unclear which processes will be managed by their use as well as how this will be realized. Provided that the tool (the digital platform/water smart solution tool) has not yet been developed, it appears unclear why the proposal claims to be situated at TRL 7.

The proposal does not capitalize on the outcome of previous FP7 or H2020 projects, as there is no plan to use the IoT architectures or platforms for IoT. This is a significant weakness.

The demonstration pilots are mentioned, but these are not described with enough detail and the description fails to provide sufficient information on what types of monitoring will be applied in each of those 6 locations and to what extent the measurements and data management functions will be repeated for each of those locations. No performance indicators are proposed to monitor the performance of proposal components in the demonstration sites. This is a shortcoming.

Extent that proposed work is beyond the state of the art, and demonstrates innovation potential (e.g. ground-breaking objectives, novel concepts and approaches, new products, services or business and organisational models)

The perspectives on water treatment and reuse, as well as the analysis on how the new information generated in this proposal can influence policy and regulations, are well covered.

However, in general, the proposal does not demonstrate the creation of useful novelties beyond what is already existing. This is a significant weakness. As an example, the integration of IIoT technology in the urban water cycle for real-time monitoring of sewage and WWTPs by on-line sensors is not innovative by itself, as there is no information on what is meant by real-time (e.g. how often the data will be gathered) and what will be the accuracy and complexity of the imposed monitoring. There is also no information on what mathematical models will be applied for quali-quantitative simulation of the water cycle and how they compare to the state of the art. This is also a significant weakness.

Appropriate consideration of interdisciplinary approaches and, where relevant, use of stakeholder knowledge and gender dimension in research and innovation content

The project is interdisciplinary. The use of stakeholder knowledge is considered in regard to policies for emerging pollutants. Water utilities are appropriately involved in the proposal. The adequate and relevant measures to address gender issues in all activities are taken, in compliance with the requirement to provide equal employment opportunities.

However, there are some shortcomings:

- relevance for social sciences and human disciplines is only very briefly mentioned;
- the proposal fails to involve market uptake partners and end users from a wide range of different European regions, as all the pilots will be executed in a single country and only representatives of the potential users from this country are involved; and
- stakeholders are mostly considered as 'knowledge recipients', rather than as 'knowledge providers', e.g. the tools will be developed solely by the project consortium and will only be demonstrated to stakeholders.

Criterion 2 - Impact

Score: **2.50** (Threshold: 4/5.00 , Weight: -)

The following aspects have been taken into account:

The extent to which the outputs of the project would contribute to each of the expected impacts mentioned in the work programme under the relevant topic

The EIP Water objectives are addressed through the development of a digital platform for water resources and environmental safeguarding,

Nevertheless, the impact of the proposal is limited to the single region in the EU, where the proposed IIoT system is about to be deployed. This is a shortcoming. Furthermore, the proposal does not demonstrate great potential for contributing to the expected impacts of the call. Some significant weaknesses are identified:

- the proposal does not provide a clear indication of how the developed platform will support decision making;
- the interoperability of decision support systems is not appropriately addressed, as the compatibility with water standards for data sharing and annotating (such as e.g. WaterML) is not mentioned; and
- maximising return on investments through reduced operational costs is not evident either. The costs of the installations and the monitoring are not discussed in comparison with the potential savings due to the optimization of infrastructure performance, and therefore, the impact of the proposal on RoI is not based on a solid foundation.

In addition, the proposal lacks an effort dedicated toward wider adoption of the developed IIoT platform that would provide market development of an integrated and cyber-resilient ICT solution. Also, the proposal does not show how the platform may open a digital single market for water services. These are significant weaknesses of the proposal. Further, the proposal does not clearly address the enhanced public awareness on water consumption and usage savings. This is a shortcoming.

Scope of the proposal

Status: **Yes**

Comments (in case the proposal is out of scope)

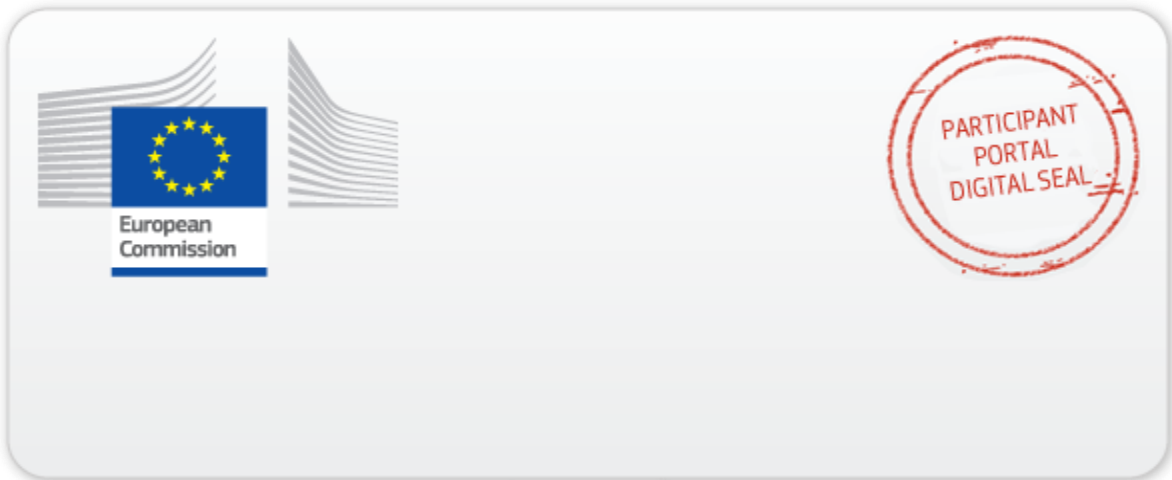
Not provided

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 also state if it cannot be assessed whether the use of hESC is necessary or not because of a lack of information.

Not provided



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