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Abbreviations

CA	consortium agreement
CECs	contaminants of emerging concern
CSIC	Spanish National Research Council, Institute of Environmental Assessment and Water Research
DMP	Data Management Plan
DoA	Description of Action
DPO	Data Protection Officer
GA	grant agreement
HE	Horizon Europe
IEA	Independent Ethics Advisor
IPR	Intellectual Property Rights
NDA	non-disclosure agreement
OA	Open Access
PH	project handbook
PST	Project Steering Team
QAS	quality assurance system
RMAU	Research management and administration unit
ROL	results ownership list
TFNS	University of Novi Sad, Faculty of Technology Novi Sad
UNL	NOVA University Lisbon, NOVA School of Science and Technology
WP	work package



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Executive Summary

The Intellectual Property Rights (IPR) Protection Plan is a fully open deliverable of the TwiNSol-CECs project, funded as a HORIZON Coordination and Support Action type by the European Commission under its Horizon Europe (HE) Programme. It follows the Plan for Dissemination, Exploitation and Communication, which is a TwiNSol-CECs public deliverable (D1.3) that gives detailed explanation of transmitting activities, target groups, and outcomes. This document discloses the guidelines for IPR Protection as derived from the TwiNSol-CECs Grant Agreement (GA) and Consortium Agreement (CA), and the recommendations defined under HE framework. This document should be regarded only as a guide to help beneficiaries (the signatories of GA) with IPR management and protection activities. Only the rules for HE, GA, and CA signed by the consortium are binding for the partners.

The goal of the Plan is to foresee appropriate activities and their implementation mechanisms for the proper protection forms of intellectual property of special importance for the TwiNSol-CECs beneficiaries. This Plan should remove all obstacles in the realization of the project in which three partner organizations participate, achieving and sharing results through teamwork.

The Plan includes the following contents:

- Brief introduction of the project objective, results, and the main dissemination, exploitation and communication activities,
- A set of the most relevant definitions and agreements that regulate the IPR,
- IPR management and plan,
- Expected IPR protection measures for the expected results in accordance with GA

1. INTRODUCTION

The main objective of TwiNSol-CECs project is to raise scientific and innovation excellence of the TFNS, Serbia, in various aspects of contaminants of emerging concern (CECs) research, integrated into broader EU networks of excellence, and contribute to national and regional scientific and economic growth and well-being. The project represents a coherent set of knowledge-, skills-, experience-, and awareness-raising activities, dissemination, communication, networking, and coordination, for the successful achievement of the project objectives.

The **expected project results** might be summarized as follows:

- Developed TFNS scientific strategy within domain of environmental research on CECs together with action plan on the strategy implementation and quality assurance system (QAS),
- Trained TFNS researchers, including young researchers, in domain of advance CECs research as well as in soft skills important for further sustainable and prosperous research activities at TFNS,
- Sustainable network with 2 top-class leading EU research institutions, CSIC and UNL, proven through successful joint research results and participation in new research endeavors,
- Established framework for Research Management and Administration Unit (RMAU) at TFNS,

- Scientific publications in international journals and at scientific events,
- Project events organized for knowledge transfer and successful project promotion,
- Increased mobility of qualified researchers to and from TFNS,
- „Club of TwiNSol-CECs interest“ representing a platform for interactive contacts and meetings with stakeholders.

The **main dissemination, exploitation, and communication activities** that are foreseen to be applied for spreading the results and promoting the TwiNSol-CECs project are described in details in D1.3; they could be summarized here as follows:

- **Dissemination:**

open access scientific articles, conference attendances with oral and poster presentations, organization of three workshops and final project conference, meetings and contacts for information exchange - all included in work package (WP) 6,

summer schools – WP3,

- **Exploitation:**

information meetings and/or round tables with representatives of stakeholders within „Club of TwiNSol-CECs interest“, for intensifying the links with stakeholders and enhancement of potential exploitability of the project results – WP6,

networking with established (research) platforms and/or clusters, including international consortia for new research endeavors, to address the various hazards and risks introduced by the CECs presence in the environment – WP6,

lab protocols on CECs wide-range analysis available for PhD student works, students' handbooks, and potential service analysis or trainings if requested by stakeholders (“show-how” side-result of the project research activities in WP4),

- **Communication and outreach activities:**

TwINSol-CECs website - WP6,

TwINSol-CECs e-Newsletters - WP6,

social media network profiles of TwiNSol-CECs - WP6,

open doors events - tribunes, popular presentations during Festival of Science and Education and Research Night events - WP6,

TV appearances - WP6,

informative portals articles - WP6.

A framework for successful implementation of dissemination, exploitation, and communication activities is set within the fully open deliverable D1.3 – Plan for Dissemination, Exploitation and Communication, while to maximize the exploitation potential of the project's results, IPR Protection Plan (D1.4) is created to set a framework to ensure that relevant knowledge is made accessible to those who need it and the transfer will take place in control and legal manner.

IPR Protection Plan is based on provisions and definitions of GA, CA, and general rules and recommendations defined for HE Programme. This is the first version of the Plan and it should be

regarded as a guide to help beneficiaries (the signatories of GA) with IPR management and protection activities; GA and CA signed by the consortium are binding for the beneficiaries.

The goal of the Plan is to describe plan and measures for handling IPR related issues within the TwiNSol-CECs projects, helping to remove potential obstacles in the realization of the project in which three partner organizations participate, achieving and sharing results through teamwork.

2. IPR ISSUES

IPR Protection Plan of TwiNSol-CECs complies with the rules defined in GA and CA, including the general rules and recommendations for HE Programme.

GA establishes the right and obligations between the European Commission and the TwiNSol-CECs consortium partners. The GA number 101059867, Article 16 (Intellectual property right (IPR) – background and results – access rights and right of use), defines the rules for handling Intellectual Property Rights, their use, and dissemination. All Consortium partners (the coordinator and two other beneficiaries) are signatories to GA. Before the project started, the project participants entered into a formal CA that defines the legal basis for share of rights, mutual obligations and responsibilities. The TwiNSol-CECs CA is based upon the DESCA model consortium agreement for HE (version 1, Dec 2021). CA further defines and specifies relevant IP arrangements, in full compliance with the provisions provided in GA.

IPR-relevant key terms in the context of HE projects are: background, results, and access rights. In the following paragraphs, definitions of terms important for consideration of IPR protection as specified in GA and CA, are summarized:

Background means any data, know-how or information — whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights — that is:

- (a) held by the beneficiaries before they acceded to the Agreement and
- (b) needed to implement the action or exploit the results.”

Results means any tangible or intangible effect of the action, such as data, know-how or information, whatever its form or nature, whether or not it can be protected, as well as any rights attached to it, including intellectual property rights.

Access rights — Rights to use results or background.

Dissemination — The public disclosure of the results by appropriate means, other than resulting from protecting or exploiting the results, including by scientific publications in any medium.

Exploit(ation) — The use of results in further research and innovation activities other than those covered by the action concerned, including among other things, commercial exploitation such as developing, creating, manufacturing, and marketing a product or process, creating and providing a service, or in standardisation activities.

Fair and reasonable conditions — Appropriate conditions, including possible financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, for example the actual or potential value of the results or background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged.

FAIR principles — ‘findability’, ‘accessibility’, ‘interoperability’ and ‘reusability’.

Open access — Online access to research outputs provided free of charge to the end-user.

Open science — An approach to the scientific process based on open cooperative work, tools and diffusing knowledge.

Research data management — The process within the research lifecycle that includes the organisation, storage, preservation, security, quality assurance, allocation of persistent identifiers (PIDs) and rules and procedures for sharing of data including licensing.

Research outputs — Results to which access can be given in the form of scientific publications, data or other engineered results and processes such as software, algorithms, protocols, models, workflows and electronic notebooks.

The Annex 5 of GA explains **Agreement on background, Ownership of results, Protection of results, Exploitation of results, Transfer and licensing of results, Access rights to results and background.**

CA could be regarded as written agreement among the project partners (beneficiaries/parties) on the results ownership, including joint ownership, transfer of results, dissemination of the results, including the unpublished results or background, use of names, logos, and trademarks, and access rights. Thus, all partners agreed on rules regarding IPR ownership, access rights to results and background for the project execution and protection IPR, and confidential information, as addressed in greater detail in CA between the partners.

In the Attachment 1 of CA, the beneficiaries identified and agreed on their background brought from other activities into the TwINSol-CECs project at the moment of the CA signing. Anything not identified in that Attachment 1 is not the object of Access Right obligations regarding Background. Beneficiaries may add additional background to Attachment 1 during the Project in accordance to the protocol defined by CA (section 9, article 9.1, point 9.1.2). If the knowledge is evidently a part of the public domain, it is not needed to be registered or access right granted.

“New” or so-called “foreground” knowledge represents results obtained in the TwINSol-CECs project, by one partner alone or in cooperation with other partners. TwINSol-CECs results are owned by the GA beneficiary (consortium partner) that generates them. In accordance to GA, the consortium partners that have contributed jointly to the results generation/development will have joint ownership of this work if it is not possible to establish the respective contribution of each beneficiary, or separate them for the purpose of applying for, obtaining or maintaining their protection.

The project partners have agreed to grant non-exclusive, royalty-free access to background and foreground to each other for the execution of the project. Access rights will also be free of any administrative transfer costs. The granting of access rights has been made conditional on the acceptance of specific conditions aimed at ensuring that these rights will be used only for the intended purpose and that appropriate confidentiality obligations are in place. Results and background will be used only for the purposes for which access rights to it have been granted. Further details on access rights policies are outlined in CA Section 9.

The beneficiaries must promote the action and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner. TwINSol-CECs is committed to provide free open access to project research data following FAIR principles. In similar manner, the project beneficiaries are encouraged to share mutually their knowledge for efficient accomplishment of the TwINSol-CECs objectives, including background and foreground granted in accordance CA to the extent that is needed for the implementation of the action.

The TwINSol-CECs consortium must acknowledge any communication activity by displaying the EU emblem and disclaimer in accordance to GA and D1.3.

3. IPR MANAGEMENT AND PLAN

Main IP challenges in HE Programme during the project implementation is to analyze the existing and potential knowledge creation and management tools, and to discuss possible IP protection methods (e.g. copyright)¹; proper handling of IPR during the project implementation is important as the management and ownership of the results is a basis for possible future exploitation. After the project end, challenges are: definition of joint exploitation pathways, identification of possible IP ownership arrangements and related responsibilities, and discussion of potential agreements options on use of IP resulting from the project¹.

TwINSol-CECs IPR management aims to effectively capture IP generated in different work packages and the relevant ownership, and to use the best efforts to exploit the results adequately protected where justified.

Project Steering Team (PST) is responsible for IPR management; if need arises, PST will reach out to the European IP Helpdesk², legal teams within TwINSol-CECs partners and/or external IPR advisor to get support. PST also closely works with an independent ethics advisor (IEA), who will also collaborate with IPR and Data Protection (DPO) Officers, assisting Project Managers at UNL and CSIC. Names of DPOs at partner institutions will be available to the all team members and all registered participants of the project events, whose personal data (not special categories) will be collected in accordance to DMP (deliverable D1.2).

IPR plan of TwINSol-CECs will follow next steps³:

- Results identification
- Results description/recording with identification of ownership,
- Establishing the relevant IPR protection measures (e.g., NDA, copyrights),
- Planning and performing the dissemination and exploitation,
- Evaluation.

The background of the project has been identified during CA preparation and it is recorded in CA at the moment of the signing. During the project implementation, PST will identify new results to be generated (initial estimated results are available in Description of Action (DoA) of GA). Each exploitable IP from the Results will be identified and recorded.

Results identification and description will be monitored through creation and regular updating with new pieces of knowledge (foreground) of a living IPR management database. Eventually this database will serve as a **results ownership list (ROL), which is mandatory at the end of the project to be indicated in the final periodic report**⁴. For each project result (foreground), key elements will

¹ IP Management in collaborative Horizon Europe projects. https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/other/events/20210609/4_ip-management-in-collab-horizon-projects_en.pptx

² https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk_en

³ <https://sappan-project.eu/wp-content/uploads/2021/03/D7.4.pdf>

⁴ https://www.youtube.com/watch?v=gyXIYDkXQ2E&ab_channel=EUScience%26Innovation

be identified, like whether the ownership is of two or all three partners, the name of the owners, the country of establishment of the owners and whether the results will be disseminated and/or exploited. Every result will be assessed if it is likely to be commercialized, valuable for increasing the scientific knowledge (those with low TRL can be ground for further development), or if it is not for commercialization nor for publication but can be used for internal improvements and more efficient research. This will help, promote, speed up and simplify dissemination and exploitation and will help the partners to have complete information about their sustainability once the project is finished.

Knowing that failure to fill in the ROL will block the submission of the final periodic report and hence the payment, dedicating sufficient time on the results identification and recording during the project will avoid hurdles at the end of the project. PST will be in charge for creation and maintenance of ROL database.

PST will be in charge of maintaining the knowledge produced during the project on a regular basis with the partners in innovation. The non-disclosure agreements (NDAs) can be done on a peer-to-peer basis during collaboration. If necessary, the PST may ask for legal advice for assessing the opportunities to apply for patents or declare copyrights.

PST decides whether dissemination, exploitation or a combination of both strategies will be applied, and this is preliminary covered by Plan for Dissemination, Exploitation and Communication (D1.3).

Afterwards, dissemination and/or exploitation actions will be performed such as scientific publications in open-access journals, “show-how” demonstration or service analysis.

The final step would be the evaluation of IPR protection measures, dissemination, and exploitation activities during and after the project lifetime, indicating the effectiveness of the applied measures and activities, suggest if it is necessary to modify or even abandon them. It is important that IPR management system continue after the end of the project in order to, if needed, maintain the protection, manage agreements related to IPR, and manage the relevant costs and revenues.

At the end of each project year, results identification, IPR protection measure will be discussed at the PST meeting.

4. EXPECTED IPR PROTECTION MEASURES

The first estimation of the project results is assumed in the project preparation phase, which is incorporated in the Description of Action (Annex 1 of GA), and the envisaged results are listed in Section 1 (Introduction). During the project implementation, research results will be generated jointly by two or all three partners. Those results will be identified properly and recorded.

The decision on the most suitable form of IPR protection is highly dependent on the character of the results and overall dissemination and exploitation plan. Project results should be disseminated as soon as possible and by appropriate means. Any results that are capable of commercial or industrial exploitation should be protected before any dissemination activity, and this will be a matter of

discussion between the partners representatives within PST, particularly in a case of joint ownership⁵.

Any draft of a scientific publication, conference paper or poster, article, or other intention to present project results in the public domain (via an interview, news brief, internet posting, etc.) will be communicated to PST in advance of any submission to a publishing body or instrument. The PST will advise on the appropriateness of such a publication and recommend suitable amendments to the information where it deems necessary.

In the case where confidential information should be discussed outside the consortium (for instance, during the meetings with Advisory Board members) NDAs will be signed in compliance with CA (Attachment 5).

The project Consortium agrees with Open Science practice as it “has the potential to increase the quality, efficiency, and impact of R&I, lead to greater responsiveness to societal challenges, and increase trust of society in the science system”⁶. For scientific publications in open access journals, the licensing schema of the publication repository should be followed. In most cases this it will be Budapest Open Access (OA) Declarations (CC-BY) schema; thus, TwINSol-CECs will strive to adopt it also for collected/generated data when depositing in public repositories. Publishing in OA peer-reviewed scientific journals will be used as the main mean of public disclosure of collected/generated research data.

The follow up of the exploitation activities will continue after the end of the project. The first year after the end of the project, and if no exploitation takes place, **beneficiaries must use the Horizon Results Platform for making their exploitable results visible** (unless obligation is waived)⁷.

⁵ https://intellectual-property-helpdesk.ec.europa.eu/system/files/2021-02/EU-IPR-Guide-to-IP-in-Horizon-2020-EN%20%282%29_0.pdf

⁶ European Commission, Directorate-General for Research and Innovation, *Horizon Europe, open science : early knowledge and data sharing, and open collaboration*, Publications Office of the European Union, 2021, <https://data.europa.eu/doi/10.2777/18252>

⁷ https://ec.europa.eu/research/participants/data/ref/h2020/other/events/2020-10-09/3_exploitation-ipr-open_science_en.pdf