EXCELLENCE IN HUMAN-CENTERED LOGISTICS 4.0

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D5.3 - PROTOCOLS FOR GUIDANCE ON IPR MANAGEMENT

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1. Introduction

X-HuLog4.0 addresses the scope of the WIDERA 2023-ACCESS 02-01: TWINNING under the priority "spreading excellence and widening participation." The project establishes cooperation with internationally leading research institutions – NTNU, TUDa, and USAAR – and allows defining strategies for building capabilities and establishing networks that help Vilnius Gediminas Technical University (VILNIUS TECH) to advance their R&I capabilities in human-centered logistics systems of the future (X-HuLog4.0).

The project entitled X-HuLog4.0 – Excellence in human-centered logistics 4.0 aims to fully realize and further develop the existing scientific potential of the widening partners VILNIUS TECH, which aims at scientific excellence in human-centered logistics systems of the future. While the focus is on widening partners, the project also enables the other partners to deepen their knowledge in this field and contribute to the advancement and adoption of X-HuLog4.0 results across Europe.

To this purpose, through its Work Packages (WP), X-HuLog4.0 intends to:

- increase the research and educational capabilities in Human-centered Logistics at VILNIUS TECH at the supporting partners;
- establish a long-term knowledge transfer between the contributing parties with a special focus on young-stage researchers;
- encourage the connection among researchers of the partner universities and other leading research institutes and promote networking;
- enable VILNIUS TECH to act as a knowledge centre providing modern methodologies, logistic tools, and solutions in the area of human-centered logistics to transfer knowledge to the widening and associated countries;
- increase the industry and society's awareness on human-centered logistics and the value of a close collaboration with academia;
- foster scientific developments through increases in the number of publications, patents, participation in research programs, and new products or services development.

In particular, the objective of WP5 is to strengthen the project management and proposal development skills among scientific and administrative staff at VILNIUS TECH. By passing and sharing the acquired knowledge by NTNU, the capacity and skills of the VINLNIUS TECH staff will be improved, giving them the necessary tools and knowledge to develop and implement research projects by fully utilising the experience and best practices of the internationally leading partners.

NTNU will lead this WP due to its recent very good success in Horizon Europe (HEU) with 112 funded projects, of which 95 are already signed (accounting for more than €59 million in funding – June 2023), positioning NTNU among the top HEU Norwegian actors.

WP5 is structured into 4 tasks:

- T5.1 Development of research management capacities in proposal preparation at VILNIUS TECH [M1-M24] [Task leader: NTNU; Partners involved: All]
- T5.2 Development of administrative skills in proposal preparation at VILNIUS TECH [M1-M24] [Task leader: NTNU; Partners involved: All]
- T5.3 Development of research management capacities and administrative skills in project management at VILNIUS TECH [M18-M36] [Task leader: NTNU; Partners involved: All]
- T5.4 Development of IPR management skills at VILNIUS TECH [M1-M36] [Task leader: NTNU; Partners involved: All]

Among the tasks foreseen in WP5, in T5.4, NTNU will help VILNIUS TECH to develop its skills to oversee and strategize Intellectual Property Rights management [M1-M36]. Through 2 physical/hybrid sessions with experts from NTNU, TUDa, and USAAR and external legal experts, participants will learn how to identify, protect, and exploit the intellectual assets generated within the project and in future projects.

The following document represents the deliverable D5.3, which is protocols for safeguarding innovations, ensuring compliance with EU regulations, and devising strategies for licensing and commercialization, including monitoring patent applications, copyright, and trademarks, as well as providing guidance on open access policies and data sharing.

This document is not binding, and it contains guidelines and best practices coming for the experience of the partners. This first version was created from the guidelines developed by NTNU and adapted to the X-HuLog4.0 project. The activities in T5.4 will result in updated versions of this document to reflect the evolution of the topic and the needs of primarily VILNIUS TECH and the other partners.

It complements what is included in:

- Article 16 of Grant Agreement - INTELLECTUAL PROPERTY RIGHTS (IPR) — BACKGROUND AND RESULTS —ACCESS RIGHTS AND RIGHTS OF USE
- Section 8 of Consortium Agreement - RESULTS

The structure of this document is as follows:

- Chapter 1 presents the introduction to the document.
- Chapter 2 describes the objectives of the document.
- Chapter 3 describes definitions of standard terms used in the document.
- Chapter 4 describes the principles of IPR policy.
- Chapter 5 describes the ownership of results under various scenarios and their safeguarding.
- Chapter 6 describes the process for licensing and commercialization.
- Chapter 7 describes the guidance on open access policies and data sharing.

2. Objectives of the document

This document provides guidelines for the protection and management of Intellectual Property Rights (IPR) and Results generated at institutions of X-HuLog4.0 partners. The document describes whom and what the policy covers, its purpose, and how to comply with it. It is easier to revise and update the practical guidelines later as circumstances require. This document applies to all participants on the X-HuLog4.0 project.

3. Definitions

Institution: any organization partner of the X-HuLog4.0 project

Employee: A person who has entered into a contract of employment with the institution.

Visiting Scholar: A person who by agreement conducts research and/or teaching at the institutions without being an employee or an independent contractor.

Visiting Student: A person who is registered as a student at another educational institution and who by agreement, takes part in research and/or teaching at the institutions.

Creator: The person or persons who generate a result.

Independent contractor: A natural or legal person who, by agreement, performs work or provides a service to the institution on commercial terms without being an employee or a visiting scholar.

Student: A person who has paid semester tuition fees and, who is registered as a student at the institutions, and who does not have an employment relationship with the institutions.

Third party: A natural or legal person who is not subject to the IPR policy.

Data: Any physical representation of details, knowledge, opinions, etc., as opposed to the content, which is called information. The representation may consist of text, sound, light, or electrical signals in sequences and combinations of numbers, patterns, letters, etc.

Results: All results that are created or are achieved in connection with a project, work, etc., including intellectual property rights, irrespective of whether the results are protected by law or not.

Intellectual property (IP): Things created by the mind. These may include inventions, trademarks, designs, production processes, methods, databases, research data, various types of creative work, know-how, and trade secrets. Intellectual property, creations of the mind, such as a literary work, a film, a piece of music, or a work of art:

A. writings of all kinds, including fiction and non-fiction
B. oral lectures
C. works for stage performance
D. cinematographic works
E. photographic works
F. paintings, drawings, graphics, and similar pictorial works
G. maps, also drawings, and graphic and plastic representations or portrayals of a scientific or technical nature
H. computer programs
I. translations and adaptations of the above-mentioned works.

Intellectual property rights (IPR): Intellectual Property Rights. All rights to technical solutions, methods, processes, and procedures, regardless of whether or not these are or may be patented, as well as all copyrights and rights to trademarks, designs, plant varieties, databases, integrated circuit layout designs, drawings, specifications, prototypes, trade secrets and the like.

Moral rights: The right of the creator/author to be named in the manner required by proper usage, as well as the author's right to object to the work being altered or made available in a way or in a context that is prejudicial to his/her literary, academic or artistic reputation or individuality, or the reputation or individuality of the work.

Learning resources: All forms of material used for teaching purposes. Examples include academic literature, musical works, works of art, video, software, presentations, and their performance and dissemination.

Open science: Principles for increased openness at all stages of the research process.

Technology Transfer Office (TTO): Academic or commercial entities facilitating intellectual property rights management and technology transfer by bridging the gap between research and practice. They support collaboration and mediate relationships between different innovation stakeholders, such as academia and industry.

4. Principles of the IPR policy

As a basic principle, the institution is to own all Results, IP, Data, and Physical Material created using the institution's resources unless otherwise provided by law or agreement by which the institution is bound or this document.

In exceptional cases, where the institution does not own Results, IP, Data, and Physical Material developed using the institution's resources, the institution must, by agreement, secure a license for use and further development within the institution's core tasks.

5. Ownership of results and their safeguarding

Results created by employees at the institution: For everyone who is employed at the institution, the institution owns all Results, IP, Data, and Physical Material that employees generate in connection with their position at the university unless exceptions are set out in this IPR policy. This applies regardless of the position in which the person is employed and includes independent contractors and visiting scholars.

The institution has rights to directories, databases, etc. that the institution has invested in building up, as well as to computer programs and learning resources created by employees in the performance of tasks covered by their employment relationship or according to the employer's instructions.

For many externally funded projects, it is a requirement that the institution has all rights to the results that are created in the project. In such projects, all employees, including independent contractors and visiting scholars, must consent to the assignment of all rights to the institution. Through employment agreements or supplements to these, the institution will ensure that the ownership of Results, IP, Data, and Physical Material generated using university resources is assigned to the institution.

Agreements on full or partial assignment of intellectual property rights to the Results, IP, Data, and Physical Material must always protect the employee's moral rights under national law.

Exceptions to the basic principle on institutional ownership: the institution recognizes and emphasizes the right of employees to create and disseminate their own intellectual property. The institution will thus not claim ownership rights to traditional scholarly works, textbooks, and teaching materials that have a clearly personal character. These are owned by the employee. The institution nevertheless has the right to use (obtain a licence to use) this type of intellectual property for the exercise of its own core activities, except in commercialization activities.

Results created by an employee with two or more employers: The Act relating to the right to employees' inventions and the employment contracts with the staff (at a specific institution) state that the intellectual property rights to the results that are created as part of the employment relationship must be assigned to the employer. In cases where an employee has other employers, there is to be a distinction between the external relationship (to third parties), the relationship between the employers (the institutions), and the relationship between the owners of rights (employees and institutions).

Employers should agree in advance on rules for ownership of results in the event of dual employment. If there is no overlapping work content in the main and the additional position, then the ownership will be derived from the content in the main and the additional position. If the content of the positions overlaps, it may be natural to divide the ownership in relation to the full-time equivalency of the positions.

Suppose there was no regulation of rights before results were created, and the results according to the circumstances are considered to be jointly owned by both employers. In that case, an agreement must be

entered into between the parties to regulate further responsibility for commercialization and any assignment of rights to one of the parties against compensation.

Results created by students: All students who take study programmes at master's level must enter into an agreement with the institutions about master's theses as part of their course of study. The agreement must specify whether the thesis originates in and is carried out in an established research group at institutions, in a centre (with associated systems of agreements), in collaboration with an external partner, based on the institutions' IP or whether the student creates the idea and completes the thesis alone. The supervisor of a student's thesis will not automatically, based on the formulation of the thesis and the supervisor relationship, get copyright/right of ownership to the thesis. Agreements on IPR must be included as an annex to the master's agreement.

For the X-HuLog4.0 project (as well as for any other EU projects), the participating institution(s) must be able to exploit the research results. In these kinds of projects, it is therefore necessary to enter into a separate acquisition of rights agreement with the individual student in connection with the individual project. In such cases, the student(s) must fill in the «Acceptance – transfer of rights to an institution» form in advance.

Also, in other cases, the institution will be entitled to acquire students' rights to commercial exploitation of the results through voluntary transfer if the students' work is wholly or partly based on IP that belongs to the institution itself. Examples include students who, at their own request, participate in research centres, research projects, and student theses and student work based on IP, to which the institution has the rights. In such cases, the student(s) must fill in the «Acceptance – transfer of rights to the institution» form in advance.

If a student, through the work in the cases described in the paragraphs above, can document having made a significant contribution to a new idea with commercialization potential (new IP), the student must be compensated on an equal footing with an institution's employee.

As a minimum, agreements that are entered into between the institution and students or visiting students shall safeguard the institution's right to use Results, IP, Data, and Physical Material for the institution's core tasks.

Results created as commissioned or contract research: Unless otherwise agreed for the individual project, the right of ownership of results created as commissions passes to the commissioning party. For commissioned or contract research, the institution's rights to use the results for research, teaching, and publishing must be specified in the contract.

Results created in collaborative research: For employees who collaborate with external partners, the ownership and rights of use to results must be regulated by an agreement entered into between the partner and the institution. For collaborative research, the institution's rights to ownership and use of the results for research, teaching, publishing, and commercialization must be specified in the contract. The basic rule is that the institution owns results generated through collaborative research.

6. Process for licensing and commercialization

As a basic rule, the institution is to be notified through the Technology Transfer Office (TTO) (or alternative office with the same responsibilities) of all results and all physical material with the potential for

commercial exploitation, with a copy to the Head of Department/Center at the department/center where the creator is employed.

If the result of the idea is a patentable invention or can be commercialized, the academic employee(s) are still entitled to publish the invention as long as the rights of a third party do not impede this. An agreement on the postponement of publication can be made to fulfil other statutory requirements, such as privacy, national security, and trade secrets. Such an agreement on postponement must describe how the parties' needs and the societal benefits of the research results will be followed up. A delay must comply with the general rules at the institution and national level.

Copyright to traditional scholarly works, textbooks, musical works, and works is reported only to the Head of Department/Center.

After the employee has registered an idea with TTO, the employee must receive feedback as soon as possible and no later than 1 month after registration. The feedback must make it clear what TTO plans to do next. Examples of this include:

1. TTO creates a project to develop further and exploit the idea submitted – for example, when a patent application is planned.
2. TTO chooses not to proceed with the idea at this time. For example, if the technology is not mature enough or more research is required.
3. TTO needs additional time to obtain feedback from the inventor(s), the academic environment or external parties, clarifications of rights, further investigations, etc., before deciding on the further process.

If TTO does not create a project, the employee must clarify with their Head of Department/Center whether the academic environment should develop the idea further for possible commercialization later or whether ownership should be transferred to the inventor (i.e., the institution waives the ownership rights to the idea).

If a department/center, for example, for strategic reasons, wants to apply for a patent even if TTO does not recommend this, then TTO must facilitate the process, as long as TTO does not advise against filing a patent application because it might entail infringement of the rights of others. The department/center must then bear the patent costs and the costs of the patent process, and an agreement must be made between the institution and the inventor(s), where rights and financial obligations are specified. Distribution of revenue follows the three-way model specified below. In such cases, TTO cannot claim or expect a share of the income from commercialization.

If TTO does not choose to create a project and the institution through the Head of Department does not want to develop the idea further, the ownership of the idea can be transferred to the inventor(s). The inventor(s) thus take over the right to commercialize the idea. In such cases, an agreement must be made between the institution and the inventor(s), in which guidelines are drawn up for the inventor and the rights and financial obligations that both the inventor and the institution have with regard to using/not using equipment/lab facilities, reporting procedures and possibly time for developing the idea in their position at the institution. Any income to the institution from commercialization must be specified in the agreement.

TTO is responsible for implementing good processes, clarifying the roles between the parties, and ensuring that relevant agreements are entered into. TTO must regularly inform department management about submitted ideas and commercialization activities relevant to the individual department.

IP management models: Access to rights for commercial use of IP can primarily be regulated in two ways:

1. Licence agreement: TTO enters into an agreement with one or more third parties, where these parties are granted the right of use to the applicable IP against payment related to the sale of products in which the IP is used.

2. Sale of IPR: TTO transfers IPR to a third party, which acquires ownership of the IP in question.

Both of these models can be used in collaboration with an established company or by forming a spin-off company that enters into an agreement with TTO on the commercial use of the IP. The choice of model with associated pricing and financial terms must take place in a collaboration between TTO, the creator, and the Head of Department/Center at the institution.

In choosing a model and contracting partner, TTO must ensure that the agreements:

- fulfil the institution's social responsibility for sustainable development
- follow the institution's code of ethics for employees
- fulfil the requirement for active utilization of IP rights to achieve the broadest possible application of research results generated at the institution.

This means that it must be possible to revoke the agreements and commercialization rights if the ethical requirements are not met or if the results from the licensed/sold rights are not applied and distributed widely enough, an aspect that must be specified in the agreement. In the final choice of model, the potential for further research activity at the institution must be considered.

If a spin-off company is formed, an objective is to bring in competent long-term external capital at an early stage. At their own expense and risk, the inventor(s) and TTO may invest in shares in the spin-off company.

A licence agreement is generally entered between TTO and the spin-off company as the IPR management model if a spin-off company is formed. Only in exceptional cases can the sale of IPR be used, where income from the sale of IPR can either be a monetary sum or an equivalent holding of shares in the spin-off company.

In connection with the formation of a spin-off company where the technology is not directly patentable, a license agreement is not relevant, and one is dependent on the inventor becoming an entrepreneur, compensation for the sale of the technology must be a minimum of 10 % of the shares in the company.

TTO makes the final decision on the IP management model (license or sale of IP).

Distribution of revenue from IPR: All sales of rights of use and/or IP ownership must occur at market price. Generally, income from commercialization should be divided according to the three-way model described below.

A project's income distribution occurs after deducting any direct costs. Such income is hereinafter referred to as net income. Direct costs that can be deducted are limited to a maximum amount to be agreed on per project that TTO and/or the academic environment at the institution can document as incurred during

the commercialization project and that is not covered by other sources of funding or from the cooperation agreement/service agreement between the institution and its TTO.

All TTO's hourly costs for the commercialization project are expected to be covered through annual service agreements and/or other sources of financing and are not included in the calculation of net income. Hourly costs for the institution's employees are expected to be covered through their position at the institution or other funding sources and are not included in the calculation of net income.

Any direct costs or hourly costs that TTO may incur in addition to those specified above are at TTO's own cost and risk. The same applies to the academic environment and employees at the institution.

The distribution of net income is specified in the cooperation agreement between the institution and TTO. It must (as a rule) follow the three-way income model where the inventor, the institution's academic environment (department/center), and the institution (institutional share) are each allocated 1/3.

In the allocation of net license income, the creator and the academic environment (department/center) in which the creator is employed are to be compensated with a higher proportion at the start, where net income up to an agreed amount (suggested value of 50k€) is divided 50/50 between the inventor and the academic environment.

Net income from 50k€ and up to 1000k€ is distributed as 1/3 to the inventor, 1/3 to the academic environment (department), and 1/3 to the institution (institutional share).

Net income over 1000 k€ is distributed as 1/3 to the inventor(s), 1/6 to the academic environment (department), 1/6 to the academic environment (faculty) and the last 1/3 to institution (institutional share).

For the sale of the shares where TTO has received a specified holding in spin-off companies determined using a market-based valuation of the sale/transfer of IPR to the company, gains on the sale of the shares are distributed according to the same model as the license income described above. In such cases, compensation to the inventor, the institution's academic environment and institution's institutional share will take place at the time of sale of the shareholding in the spin-off company.

Any allocation of institutional share to TTO must be formalized and will be specified in the annual service agreements between the institution and TTO.

Income allocated to both the academic environment (department) and institutional share (possibly further to TTO) must be used to strengthen the academic activities at the university.

All the monetary values introduced here must be considered as indicative and subject to changes.

Transfer of ownership and rights of use to physical material: Physical material that is created or produced with the institution's resources or in another way has been collected or produced through activities at the institution is the institution's property, provided that this is not or will not come into conflict with other party's rights.

Staff at the institution may transfer physical material owned by or at the disposal of the university to third parties on the following conditions:

- The Head of Department/center must be involved and must approve the transfer.

- Some of the material must be left at the institution, that is, the source must normally not be depleted.
- The recipient must not forward the material to others without the prior written consent of the manager.
- It shall only be possible to use the material for research purposes and not for commercial use. The institution shall ensure that the material will be used in an ethical manner.
- The way the material is to be handled after the research project ends must be established by contract.

7. Open Access policies and data sharing

Open Access (OA) means that peer-reviewed academic publications are freely available online. The author(s) retain(s) the copyright to the publication but grant anyone with Internet access to read and use it.

Making your publication Open Access has many advantages:

- Your research becomes available for researchers and institutions that generally can't afford to keep increasingly expensive journal subscriptions.
- Because your research is more available and visible than it would be in a subscription journal, it can significantly impact the academic environment. Open Access publications also tend to have more citations than publications in non-OA journals.
- Your research is made available to the public and can influence the public discussion.
- The institutions that provide funding for the research demand that the research be given Open Access. EU, ERC, and National Funding Bodies demand that their funded publications be made Open Access. Some funding bodies have now introduced a new scheme for OA, meaning that such expenses should not be included in the project application.

Plan-S and cOAlition S (https://www.coalition-s.org/): On the 4th of September in 2018, a group of national research funding organisations, with the support of the European Commission and the European Research Council (ERC), announced the launch of cOAlition S, an initiative to make full and immediate Open Access to research publications a reality. It is built around Plan S, which consists of one target and 10 principles.

cOAlition S signals the commitment to implement the necessary measures to fulfil its main principle:

"With effect from 2021, all scholarly publications on the results from research funded by public or private grants provided by national, regional, and international research councils and funding bodies must be published in Open Access Journals, on Open Access Platforms, or made immediately available through Open Access Repositories without embargo."

cOAlition S funders (a group of national research funders, European and international organisations, and charitable foundations) have agreed to implement the 10 principles of Plan S in a coordinated way, together with the European Commission and the ERC. Other research funders from across the world, both public and private, are invited to join cOAlition S.

Alternatives to Open Access-publishing

Self-archiving ("Green OA"): You have already published a paper in a peer-reviewed journal and make a copy of the publication available in your institutional archive.

Open Access publishing ("Gold OA"): This kind of Open Access implies that you publish directly in an open, peer-reviewed journal. Some institutions have a publication funding arrangement that covers open publishing.

Making sure the journal you want to submit to is registered in DOAJ is important due to the increasing amount of questionable journals attempting to fool researchers into publishing their work in journals without a proper peer-review process.

"Hybrid Open Access": Many subscription journals give you the option of paying a fee to make your article Open Access. This often leads to double costs for the institution: first, the institution pays a subscription fee for the journal and pays a second fee to make your article Open Access in the same journal. To avoid this, some institutions have negotiated agreements with publishers. These agreements also ensure that the institution covers the APCs for its corresponding authors.

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