D 7.9 – FINAL VERSION OF IPR PROTECTION PLAN

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Work Package	WP7 – Exploitation and dissemination plan including standardization activities

Abstract

This report contains the output of Task 7.4 which defines the final management plan of the Intellectual Property Rights (IPR) of each CPSoSaware component and provides a protection plan in means of exploitation and leverage of its outcome. Appropriate measures and methodologies are defined so that exploitation activities and IPR are efficiently managed.

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List of acronyms and abbreviations

CIAG	Commercial Interest Advisory Group
CA	Consortium Agreement
EPC	European Patent Convention
EPO	European Patent Office
FAIR	Findable, Accessible, Interoperable, Reusable
FOSS	Free and Open-Source Software
GA	Grant Agreement
IPR	Intellectual Property Rights
IP	Intellectual Property
PCT	Patent Cooperation Treaty

Executive summary

This document constitutes D7.9 “Final version of IPR protection plan” which is an updated version of D7.4 “Initial version of IPR protection plan” reports on the outcomes of the final phase of Task 7.4. It focuses on updating the defined measures and methodologies for the management of the Intellectual Property Rights (IPR), so as to ensure adequate exploitation of project outcome. Towards this direction D7.9 presents a glossary with useful terms and describes the management of Intellectual Property (IP) within CPSoSaware project, as well as the alignment with the legal framework. Furthermore, CPSoSaware formed a Commercial Interest Advisory Group (CIAG) which includes stakeholders whose goal is to advise the consortium on commercial initiatives. A dedicated webinar with the CIAG members was organized where the CPSoSaware consortium partners received useful feedback. For the protection of the results, CPSoSaware recognizes the most popular routes including trademark, patent, copyright, license and confidential information, while it also keeps a living IPR repository in order to keep track of the results and the corresponding owners. Regarding the IPR management process, this document presents the identification of background, sideground and foreground (results) along with the corresponding licenses for each of the developed components.

1 Introduction

The aim of this report is to present and update the measures and methodologies for managing exploitation activities that were initially introduced in D7.4 [1], including the management of the Intellectual Property Rights (IPR), so as to ensure adequate exploitation of project outcome. Within this context and taking into account the exploitation report and CPSoSaware business models presented in D7.3 [2] and D7.8 [3], as well as the Consortium Agreement (CA) [4], this deliverable targets at deploying the final protection plan and ensure that all project results will be formulated and compiled into a protectable form.

Furthermore, this deliverable presents the Commercial Interest Advisory Group (CIAG), comprising of representatives from industrial entities and leading research organizations who have expressed their interest in the CPSoSaware products. CIAG members were initially introduced in D7.4, while in this document the final list of members is presented as well as the feedback that was received and was related to the intellectual property rights. Feedback related to the exploitation of CPSoSaware solutions is presented in D7.8 and to the standardization in D7.10 [8].

The outcome of this deliverable will be provided to Exploitation Manager in order to act as a basis to investigate the novelty of the invention, while it also presents to the Consortium the possibility of applying for a patent protecting the IP generated.

The rest of the document is structured as follows:

- **Chapter 2** is an introduction to the Intellectual Property Rights in CPSoSaware.
- **Chapter 3** describes the internal procedures followed for the IPR management.
- **Chapter 4** presents the IPR Management process including the description of background, sideground, and foreground knowledge.
- **Chapter 5** concludes the document with some final remarks and directions for the next steps.

2 Intellectual Property Rights in CPSoSaware

In this section we present the Intellectual Property Rights (IPR) of the CPSoSaware Project. We first quote a list of Intellectual Property terms along with their definitions, and then we state how IPR is managed within CPSoSaware. Concluding, we report the alignment with the legal framework as it is presented in the EU regulations.

2.1 Glossary – Definitions

The following glossary consists of definitions of terms relevant to the IPR management in the Horizon 2020 context. The terms have been obtained through the combination of various sources, including the glossary of the European Commission Research & Innovation Participant Portal [5] and the glossary available by the European IPR Helpdesk [6].

Table 1 – Glossary of definitions of terms related to the IPR management.

Term	Definition
Access rights	The H2020 grant agreements set out specific obligations to give other parties (e.g., other beneficiaries, affiliated entities of another beneficiary, EU bodies, etc.) access to use results or background related to the project.
Action (also: project)	Beneficiary activities funded by the EU (via grants, procurement, prizes or financial instruments). In the present deliverable is used as a synonym for the term "project".
Background	Any data, know-how and/or information, whatever its form or nature (tangible or intangible) – including any rights such as IPR – which is: (i) held by participants prior to their accession to the action; (ii) needed for carrying out the action or for exploiting the results of the action; and (iii) identified by the participants.
Beneficiary	Legal person, other than the European Union or a funding body, who is a party in the Grant Agreement.
Communication	A strategically planned process that starts at the outset of the action and continues throughout its entire lifetime, aimed at promoting the action and its results. It requires strategic and targeted measures for communicating about the action and its results to a multitude of audiences, including the media and the public and possibly engaging in a two-way exchange.
Confidential information	Any data, documents or other material (in any form) of a confidential nature that may include information of a personal, scientific, industrial, business, or commercial nature, that is not available to the public.
Consortium	A group of institutions or companies acting together in the same project under common interest. In Horizon 2020 it refers to all the participants in the same project.
Dissemination	The public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications via any medium [9].
Exploitation	The use of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities.
Foreground	The tangible and intangible results which are generated within a given project, including pieces of information, materials and knowledge and whether or not they can be protected. It includes IPR (e.g., copyrights, industrial designs, patents, plant variety rights), similar forms of protection (e.g., rights for

	databases) and unprotected know-how (e.g., confidential material). Results generated outside a project are not foreground.
Intellectual Property (IP)	The creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. Intellectual Property also includes patents, patent applications, copyrights, trademarks, trade secrets, and any other legally protectable information, including computer software. It is the rights of the Background and the rights of the Foreground.
Intellectual Property Rights (IPRs)	The private legal rights that protect the creation of the human mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce. They are commonly divided into two categories: Industrial Property Rights (e.g., patents, trademarks, industrial designs, geographical indications), Copyright (e.g., rights of the authors/creators), and Related rights (e.g., rights of performers, producers and broadcasting organisations).
Owner	A party, public or private, holding legal title to Intellectual Property, consistent with national or international laws and regulations.

2.2 Management of Intellectual Property Rights

CPSoSaware project is committed to providing open access to new research data resulting from the project, thus addressing one of H2020's main objectives. In this respect, the consortium follows the open access publication model and use open access repositories connected to the tools suggested by the EU Commission as stated in D7.6 "Data Management Plan" [7], we intend to provide open access to data generated by the project following FAIR (Findable, Accessible, Interoperable, Reusable) principle. Therefore, the CPSoSaware Consortium will openly make available the content and data produced within the project where possible, according to the provisions of Article 29.1 of the Grant Agreement).

In this sense, all partners are encouraged to share their knowledge in order to improve the quality of CPSoSaware work. Most of this sharing will normally be unproblematic, but sometimes the knowledge may represent a significant value for the owner and in these cases, one needs to consider the IP ownership issues.

Ownership can then be established as one of the following types:

- *Background knowledge* is brought into the project from other activities. The background has already been registered in the CA and it is updated in Section-4. The owners of the IP are registered together with the IP. It is normally a good idea to register the background knowledge as such before it is disclosed to anyone in the project. Note also that registration as background can be denied if it is thought that its ownership is unclear or that the knowledge is not necessary for the project. Registration of background knowledge should be denied for knowledge that can be proven to be already part of the public domain.

- Results (or foreground) are produced in the project, alone or in cooperation with other partners. As a general rule, the partners that have contributed to the development will have joint ownership to the IP. A detailed list is presented in Section 4.3.

2.3 Alignment with the legal framework

Knowledge and IPR management objectives, principles, and roles are generally foreseen in the Grant Agreement [9] as well as in the Consortium Agreement [4]. All knowledge and IPR management measures have been defined by CPSoSaware Consortium in pursuance of provisions contained in the Grant Agreement and in the Consortium Agreement, which are the main references in terms of legal framework. The Grant Agreement is the legal implementation of the project as agreed between the European Commission and the Consortium partners. All partners are signatories to the Grant Agreement. An important part of the Grant Agreement defines the rules for handling IPR. This topic is discussed in Section 2 of the Grant Agreement, which has to do with rights and obligations related to background and results.

In specific areas, the Grant Agreement allows consortia to agree on their own rules. These individual rules are then included in the Consortium Agreement. As part of such an agreement, Consortium members specify or supplement – before the project commences – binding commitments among themselves in terms of roles, responsibilities and mutual obligations.

3 Internal procedures for IPR management

3.1 The CPSoSaware Commercial Interest Advisory Group (CIAG)

The purpose of the CIAG group is to add value to the CPSoSaware project. The CIAG only advices and has no authority in the final decisions of the CPSoSaware project. The purpose of the CIAG can be summarized as follows:

- *Advice*: the CIAG assesses specific areas of the CPSoSaware project. For example, it guides the commercial proposition, properly positioning the CPSoSaware solution in the market.
- *Review*: the CIAG reviews the provided documents for the commercial CPSoSaware exploitation.
- *Assist*: the CIAG provides expert assistance to the CPSoSaware's members in the different stages of the project such as assessment in prototyping or commercial issues.
- *Advocate*: the CIAG contributes to the promotion of the CPSoSaware's solutions providing industrial insights.
- *Dissemination*: The CIAG provides an effective channel for relevant information and networks.

The CIAG selected professionals were consulted during the third year of the project in order to gather their opinion about advancements and commercial initiatives. The selection process is described in Section 3.1.1. Final members of the CIAG were duly informed about the progress of the project and they were also invited to a webinar that was organized within the CPSoSaware Project.

3.1.1 Selection Process of CIAG members

The potential CIAG members were identified from among the representatives of industrial entities and leading research organizations which expressed interest in the CPSoSaware products. The representatives were then invited to the CPSoSaware CIAG and formed the advisory body for the project. The CPSoSAware CIAG consists of nine members representing the industry, as well as leading industrial research organizations. The members of the CIAG group are:

- **Prof. George Alexandropoulos**, Assistant Professor, leader in NOESYS Research Group, in the Department of Informatics and Telecommunications, of National and Kapodistrian University of Athens (NKUA).
- **Dr. Pouria Khodashenas**, Principal Researcher 5.5G / 6G at Huawei | Green & Digital Transformation Specialist Industry 4.0 & CCAM / CA.
- **Mr. Athanasios Athanasiadis**, Athanasios has more than 5 years of experience in Automotive industry with responsibilities in the Automotive SW Test & Validation. During the past 2 years he has been working on an ADAS project Kenotom, where they develop software for embedded systems in the automotive sector.
- **Prof. Dimitris Vrakas**, Assistant Professor, Dept. of Informatics, Aristotle University of Thessaloniki, Greece.
- **Dr. Mihai Marin-Perianu**, managing director of Inertia. Inertia is specialized in the development of miniaturized wireless devices that can sense, process and communicate motion, vibration, and orientation features of interest.
- **Mr. Gian Paolo Gerio**, Development Chapter Manager in Comau. Comau is a leading company in the industrial automation field, at a global level. Combining innovative engineering solutions with easy to use, open automation, and enabling technologies, Comau helps companies of all sizes – and across a wide range of industrial segments – leverage the full potential of digital manufacturing. Comau's competency stems from over 45 years of field proven-experience and a strong presence within every major industrial country.
- **Prof. Bram Vanderborght**, Vrije Universiteit Brussel, Faculty of Applied Sciences, Department of Mechanical Engineering. Robotics & Multibody Mechanics (R&MM).

3.1.2 CIAG Webinars

The meeting was held in the form of online webinar on November, the 18th 2022. The meeting was devoted to the challenges of CPSoSaware components exploitation, standardization, and IPR issues. During the meeting, each component was briefly presented and then the discussion followed. On top of that, the CIAG members were given access to a dedicated survey, in which they could provide further comments. The survey also contained a series of standardization related questions. The standardization and exploitation-related parts are described and presented in the Deliverables 7.8 [3] and 7.10 [8] respectively.

During the webinar thirteen CPSoS components were presented to the CIAG members, the list of components is presented in Table 2.

Table 2. CPSoSaware components presented during the CIAG meeting.

#	Component name	Developing partner
1	Security Runtime Monitoring and Management (SRMM)	ATOS
2	Homezone Perception Engine	PASEU
3	MOZART Systems Orchestrator	8BELLS
4	Driver State Monitoring	CTL
5	CASPAR- Semantic Information Fusion Framework	CTL
6	V2X Simulator	RTC
7	CPS connected Extended Reality System in HRC application	CRF
8	Posture and anthropometrics recognition	CRF
9	System for operator's state monitoring	CRF
10	Data Storage and Transformation Engine	IBM
11	Cooperative Awareness System (CAS)	ISI
12	Quantum Resistant Hardware Security Token	ISI
13	PoCL-Remote (TC2.2.2): Distributed Edge Offloading Software Runtime	TAU

3.1.3 Input from CIAG members regarding IPR management

Some aspects of IPR were discussed during the CIAG meeting. The licensing considerations mainly focused on open-source licenses. Key aspect of components developed within CPSoSaware is their easy integration into the existing solutions already used by the targeted end users, which allows for thinking of permissive opensource licenses as a suitable model.

Partners might decide on various licensing models within their revenue streams. Listed below are some interesting examples identified during the analysis of the possible licensing models for CPSoSAware components:

- **Apache 2.0** - The Apache License is a permissive free software license written by the Apache Software Foundation (ASF). It allows users to use the software for any purpose, to distribute it, to modify it, and to distribute modified versions of the software under the terms of the license, without concern for royalties.
- **MIT** - The Massachusetts Institute of Technology (MIT) License is a permissive free software license originating at the MIT. It puts only very limited restriction on reuse and has high license compatibility. The MIT License is compatible with many copyleft licenses, such as the GNU General Public License (GNU GPL). Any software licensed under the terms of the MIT License can be integrated with software licensed under the terms of the GNU GPL. It also permits reuse within proprietary software, provided that all copies of the software or its substantial portions include a copy of the terms of the MIT License and also a copyright notice.
- **GNU GPL 3.0** - The GNU General Public License (GNU GPL or simply GPL) is a series of widely used free software licenses that guarantee end users the freedom to run, study, share, and modify the software. It was originally written by the founder of the Free

Software Foundation (FSF). The license grants the recipients of a computer program the rights of the Free Software Definition.

All the above-mentioned licensing models are opensource licenses enabling quite a broad use of licensed products. Nonetheless, some of the partners might also want to consider some proprietary. licensing for either cloud-based SaaS or local machine licenses.

Moreover, the aspects of the IP communication to the wider audience were also subject to the CIAG meeting. The post-meeting survey included the question on the matter. Table 3 provides the overview of the recommendations provided by the experts.

Table 3. IP communications recommendations from the CIAG members.

Which pathway you suggest to take for each of the identified technologies in order to bring the specific information to standardization bodies/community?

1. No action required
2. Dissemination of the information in general scientific/technical community
3. Dissemination of the information in Standardization specific community
4. Transfer information to European Projects/clusters active in the standardization field (write acronym in 'other' field in case you have suggestions)
5. Contact with National Standardization body or technical committee to suggest an update of a standard (write contact in 'other' field in case you have suggestions)
6. Other

Component name	1	2	3	4	5	6
Security Runtime Monitoring and Management (SRMM)		++	++			
Homezone Perception Engine	+	++	+			
MOZART Systems Orchestrator	++	+				
Driver State Monitoring	+	++				
CASPAR - Semantic Information Fusion Framework	+	++	+			
V2X Simulator		+++	++			
CPS connected Extended Reality System in HRC application		++	+			
Posture and anthropometrics recognition		++	+			
System for operator's state monitoring		+++	+			
Data Storage and Transformation Engine	+	++	++		+	
Cooperative Awareness System (CAS)		++	++			

Quantum Resistant Hardware Security Token		++	+			Contact with wolfSSL [1] community (providing secure communication for various applications including IoT), which has apparently already been initiated by the consortium
PoCL-Remote (TC2.2.2): Distributed Edge Offloading Software Runtime		++	+++			

3.2 Protection of results

There are a number of routes available to CPSoSaware partners to protect the Intellectual Property they have generated on the project. The most relevant to CPSoSaware are trademark, patent, copyright, license and confidential information.

- **Trade Mark**: A trade mark is an exclusive right over the use of a sign in relation to the goods and services for which it is registered. Trade marks consist of signs capable of distinguishing the products (either goods or services) of a trader from those of others. Such signs include: words, personal names, logos, letters, numbers, colours, shapes/packaging, sounds.
  The main function of a trade mark is to identify the commercial origin of a product. Trade marks also convey a message about the quality of a product, therefore facilitating consumers' choice. Furthermore, they are used for advertisement purposes and can function as an investment instrument (e.g., they can be assigned, licensed, etc.).
  Trade mark registration can be performed at three different levels - national, regional and international. The best route usually depends on the applicant's target markets, business and financial capabilities, as well as commercial expectations.
  The exclusive right conferred by a trade mark allows its owner to prevent others from using the same or similar signs for identical or related goods and/or services as those protected by the trade mark in the course of trade, without the owner's prior permission.
  EUIPO [10] is the European Union Intellectual Property Office responsible for managing the EU trade mark and the registered Community design.
- **Patent**: A patent is an exclusive right granted for the protection of inventions (products or processes) offering a new technical solution or facilitating a new way of doing something. The patent holder enjoys the exclusive right to prevent third parties from commercially exploiting their invention for a limited period of time. In return, the patent holder must disclose the invention to the public in the patent application.
  Patent registration can be performed at three different levels: national, regional, and international (through the Patent Cooperation Treaty (PCT) System [11]). The best route usually depends on the territories where a company intends to exploit the patent. A European patent can

[1] https://www.wolfssl.com/

be obtained for all the European Patent Convention (EPC) contracting states by filing a single application, under a single set of fees with the European Patent Office (EPO) [12].
The exclusive right conferred by a patent allows its owner to prevent others from making, using, offering for sale, selling or importing a product or a process based on the patented invention, without the owner's prior permission.

- **Copyright**: Copyright (or author's right) is the term used to describe the rights that creators have over their literary, scientific, and artistic works. There is not an exhaustive list containing the works that can be protected by copyright. However, there is a number of works usually covered by copyright at international level (the examples most relevant to CPSoSaware are highlighted in bold):
    - literary works such as novels, poems, plays, newspaper articles;
    - **computer programs, databases;**
    - films, musical compositions, and choreographies;
    - artistic works such as paintings, drawings, photographs,
    - and sculptures;
    - architecture; and
    - advertisements, maps, and **technical drawings**.

  In the EU, copyright protection is obtained automatically from the moment when the work is created and no registration or other formality is required. However, some countries allow for the voluntary registration/deposit of works protected by copyright. Therefore, registration is not constitutive of the right but can be useful in some situations (e.g., to solve disputes over ownership or creation, to facilitate financial transactions).
- **License**: For a license to be valid it must be granted by the owner of the work's IPR. Under the policies of most research institutions and commercial companies, developers who have created a piece of software are unlikely to own full rights to their works. Instead, the organization generally holds or shares legal right to developed software. Policies on IPR ownership vary, but in most cases the organization will be the legal rights owner, and will be the entity that grants the license chosen for the produced software.
  Colloquially speaking, the spectrum of software licensing strategies can be divided into three categories: "free and open source", "proprietary" or a hybrid of the two.
    - *Free and Open Source Software (FOSS)* Licensing: Free and open source software (FOSS) represents a fundamentally different approach from the proprietary software licensing. The primary intent of FOSS is to give the licensor the ability to maximise the output of their software by breaching barriers to software use, dissemination, and follow-on innovation. There is a variety of FOSS license types with small but significant changes, but all grant free (as in freedom), open, and non- discriminatory access and rights to modify licensed software and associated source code. A common misconception is that FOSS is synonymous with "non-commercial." In fact, as described by the two most influential definitions of FOSS, "non-discriminatory" means that no category of user or distributor can be prohibited, including for-profit commercial entities. Due to this, FOSS-licensed software can be, and often is commercially exploited. Due to the simplicity of the FOSS licenses and their non-discriminatory nature, they offer continued development and collaboration when researchers switch organisations, and when they collaborate across

organisations. FOSS can also help to extend the useful lifetime of a piece of software beyond the direct involvement of the creators.

- *Proprietary Licensing*: The main purpose of proprietary software licensing is to limit the use of software. As a result, proprietary licenses are often very restrictive for end-users because they are in line with the software owners' business strategy. They typically allow the user to interact with most of the software but in a restrictive manner. Other aspects of a proprietary license are to only allow use on a single computer, to forbid users from copying, redistributing, or altering the work, and specifically to prohibit the creation of derivatives using parts of the work. Importantly, programs under proprietary licenses are typically distributed only in binary form and forbid examination of the program code or reverse engineering of any part of the program.
- *Hybrid Software Licensing*: Some software developers find that their needs are not well met by using either proprietary or FOSS licensing models. In these cases, hybrid approaches-combining a FOSS license with a proprietary "closed" license-are sometimes used. Under this strategy, the rights owner chooses which license to apply on a case-by-case basis. When ownership and licensing rights are clear, these licensing schemes can maintain some of the benefits of FOSS while also permitting creators to employ multiple business models. The downside can be a significant added burden for the rights owner in applying, administering, and enforcing multiple licenses. This has generally limited the adoption of hybrid license models to large and very specific software development initiatives.

- **Confidential Information**: Confidentiality is an extremely important issue for participants in Horizon 2020 projects, from the setting-up (even during earliest discussions on the assessment of participation) to the implementation and exploitation phases.
  Exchanging valuable information with other partners is a necessity that regularly occurs in collaborative undertakings. However, it is worth noting that written or oral information given to a person who is not bound by the secrecy or confidentiality obligations constitutes a disclosure. In such cases, disclosures could be detrimental to future filings for protection of project results. Thereafter, it is vital to keep information confidential, mainly with regard to those project results for which registration has not been done or decided yet. Moreover, secrecy may be key not to jeopardize the highly competitive value characterizing some information assets.
  Accordingly, confidentiality issues and measures should be seriously taken into consideration by CPSoSaware Consortium in order to safely exchange information, facilitating the project development and ensuring the non-disclosure of sensitive technology, business or commercial confidential information.

In the following table we identify possible subject matters for protection within the project.

Table 4 – Possible subject matters for protection within the project.

Subject Matter	Trademark	Patent	Copyright	License	Confidential Information
Invention (e.g., device, process, method)		X			X
Software			X	X	X
Scientific article			X		
Design of product	X		X		
Name of a technology/product	X				
Know How		X			X
Website			X		

A detailed description of the IPR Management Process followed in CPSoSaware is presented in Section 4.

3.3 IPR Repository – Management of results

The mapping between a concrete IP and the planning for exploitation activities first of all requires the identification of the CPSoSaware IP assets. All expected IP values within the project have to be identified, listed, named and analysed, in a systematic way, in order to produce a project IP portfolio.

For this purpose, CPSoSaware Consortium has created the IPR Repository. This repository, which is an evolution of the CPSoSaware background list, represents the living IPR database during the project's implementation. It basically identifies project intangibles and retraces their ownership, being also functional helping partners to recognize their IP assets and ascertain the existence of third parties' rights (e.g., relevant pre-existing patents).

For each project result, key elements have been identified, like partners directly contributing to its development, needed background, owner, rights to use such result, and license scheme. This has paved the way for a further identification of those really exploitable results and allows the partners to have the most complete information in order to decide about their sustainability once the project is finished.

In order to ensure that CPSoSaware results/development activities do not infringe existing third parties' rights and to provide the Consortium with a strong basis for IP protection decisions for making the

exploitation of the results convenient (e.g., technology transfer, spin-off creation), the Consortium is expected to conduct in-depth searches for IP rights and “Freedom to Operate” searches (or "infringement clearance” searches), including patent searches and the existence and check for validity of third parties’ IP. These searches are aimed at taking care not to infringe existing third parties' rights, since they allow users to identify third parties' patents, trademarks or other IP rights, both in force and pending applications. In CPSoSaware it is expected that this assessment will be done for all countries in which commercial exploitation or use is considered.

4 IPR Management Process

The purpose of the IPR management process is to outline a strategy for the protection of the project results aiming also at steering the exploitation roadmap of the partners. The process consists of **four steps** and has been active and running for the whole project duration.

- **Background identification**: This step started during the proposal phase, where some of the partners have listed their know-how and/or software that forms the background of the project.
- **Sideground identification**: As for the previous step the identification of the possible project sideground has been continuously updated during the project life span. However, there was no sideground identified by the CPSoSaware partners.
- **Foreground identification**: Each partner has identified the software components/algorithms that will be developed within CPSoSaware.
- **Foreground classification**: Each partner who has developed software components or machine learning algorithms is in charge of deciding which license to be used for such items, according to the license listed and described in sub-section 3.3 of this document. The resulting table is reported in sub-section 3.3.
- **Rules and policies**: all project partners have been requested to comply with the policies and rules stated in the CA, and briefly summarized in section 1 of this document.

4.1 Background

All CPSoSaware partners brought some assets to the project such as data, know-how or software that have been identified during the proposal phase and listed in our CA. These assets constitute the project background.

To avoid the possibility of usage (or re-usage) of background leading to any breach of obligations, or infringement of IPR belonging to others, CPSoSaware partners have re-identified the background needed for the project and an updated version of the table is presented below.

Table 5 – Identified background needed for the project.

Background description	Owner	Specific limitations and/or conditions for implementation (Article 25.2 Grant Agreement)	Specific limitations and/or conditions for Exploitation (Article 25.3 Grant Agreement)
Architecture Optimization Workbench (AOW). AOW provides multi-objective and multi-layer architecture optimizations capabilities	IBM	No specific limitation and/or conditions	No specific limitation and/or conditions
RoSi simulation platform - full simulation platform for development, validation and testing of Autonomous Vehicles. Thanks to high performance ROS2 support, optimized and scalable architecture, it enables fleet of autonomous vehicles simulation	RTC	No specific limitation and/or conditions	No specific limitation and/or conditions
Security Runtime Monitoring Module (SRMM) High performance correlation engine for huge amounts of data coming from heterogeneous sources to raise meaningful cybersecurity alarms aiming at quick reaction	ATOS	Royalty-free during the implementation of the project	Under fair and reasonable conditions to be agreed
Perception Engine for Scene Understanding and supporting CPSs on cyber attack detection and co-operative awareness	PASEU	No specific limitation and/or conditions	No specific limitation and/or conditions
Method and installation for assembling and mounting a group of motor-vehicle	CRF	No specific limitation and/or conditions	No specific limitation and/or conditions

component parts in a motor-vehicle assembly line			

4.2 Foreground / Results

The table below lists all the components or software modules that constitute the result of the project R&D activity and have been identified in D7.3 and updated in D7.8. The table was initially introduced in D7.4 and the consortium partners were requested to provide any related updates. For each of the components listed we specified the owner, the related WP and the associated license type. Most of the foreground knowledge is associated to well-known open-source license types, while some of them can be used and distributed under proprietary licenses, which are reported in Annex A of this document.

Table 6 – Identified foreground/results.

Component	Owner	WP	License
MoZART Systems Orchestrator (Provision of Services referring to simulation orchestration, containerization, environment setup)	8Bells	2	Proprietary Licensing
V2X Simulator – co-simulator for real time modelling of radio based communication. Currently integrated with RoSi via ROS2 interface, more integration interfaces to be created	RTC	2/4	Proprietary Licensing
Driver State Monitoring	CTL	3/4	Proprietary Licensing
CASPAR - Semantic Information Fusion Framework	CTL	4	Proprietary Licensing
Security Runtime Monitoring Module (SRMM) Distributed SIEM for heterogeneous environments,	ATOS	4	Basic version: GPLv2 Premium version: proprietary

which detects incidents by correlating events from different components without losing the capability to identify incidents in isolation In addition, a lightweight version of this component is developed for installation in environments with limited available computation resources, and for highly focused monitoring of restricted scope, aimed at detecting a reduced set of cyber incidents New correlation rules aimed at detecting cyber attacks targeting autonomous vehicles New correlation rules aiming at the detection of cyber attacks targeting autonomous vehicles			

5 Conclusions

This deliverable presents some basic terms used in IPR along with their definitions, also presents the methodology that was followed within CPSoSaware for the management of IPR. A preliminary version of the IPR protection plan was initially presented in D7.4, and in this deliverable the corresponding partners provided updates related to their commercially exploitable components. The Commercial Interest Advisory Group that was formed, provided advice to the consortium regarding commercial initiatives. CPSoSaware has followed the most known routes for the protection of results and kept a living IPR repository until the end of the project in order to keep track of the results and the corresponding owners. The background, sideground and foreground has been identified from each partner who is going to commercially exploit their results, while the corresponding licenses have been identified.

References

[1] Deliverable D7.4 Preliminary Version of IPR Protection Plan – CPSoSaware Consortium - January 2022.
[2] Deliverable D7.3 Preliminary Version of Exploitation Report and CPSoSaware Business Models – CPSoSaware Consortium - June 2021.
[3] Deliverable D7.8 Final Version of Exploitation Report and CPSoSaware Business Models – CPSoSaware Consortium - January 2023.
[4] CPSoSaware Consortium Agreement – January 2020.
[5] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/glossary
[6] https://intellectual-property-helpdesk.ec.europa.eu/regional-helpdesks/european-ip-helpdesk/europe-glossary_en
[7] Deliverable D7.6 Data Management Plan – CPSoSaware Consortium - June 2020.
[8] Deliverable D7.10 Final Version of Standardization and Concertation Activities Report – CPSoSaware Consortium – January 2023.
[9] Grant Agreement – Number 871738 – CPSoSaware – H2020-ICT-2018-20/H2020-ICT-2019-2.
[10] https://euipo.europa.eu/ohimportal/en/home
[11] https://www.wipo.int/pct/en/faqs/faqs.html
[12] https://www.epo.org/

Annex A – Proprietary Licences

In this Annex we report the proprietary licenses issued by the different partners that regulate the access rights of the respective components designed and developed within the CPSoSaware project.

A.1 CATALINK Foreground License

Under a foreground licensing scheme, the Results will be made available under the terms, conditions and access regime set for in the Consortium Agreement.

A.2 Eight Bells Ltd. Foreground License

Eight Bells Ltd. will offer its Foreground under a propriety license that will address the “Controlled License Terms" as defined in subsection **9.8 Specific provisions for Access Rights to Software** of CPSoSaware Consortium Agreement, specifically adhering to provisions of paragraph **9.8.4 Software license and sublicensing rights**.

A.3 Robotec.ai sp. z o.o. Foreground License

Under a foreground licensing scheme, the Results will be made available under the terms, conditions and access regime set for in the Consortium Agreement.