



Sharing and Automation for
Privacy Preserving Attack Neutralization

(H2020 833418)

D7.4 IP Plan, Report and IPR Issues (M12)

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Executive Summary

This deliverable D7.4 consolidates different aspects and descriptions of Intellectual Property (IP) Management, Intellectual Property Rights (IPR) protection plan to be used in the SAPPAN project. The objective, procedures, activities, and roles to manage IP are foreseen both in Section 3 of the Grant Agreement number 833418, in the SAPPAN Consortium Agreement (dated 1st March 2019) and in Annex 1 of the Description of Action (DoA). The IP strategy complies with the rules put out in Grant Agreement, the conditions agreed in the Consortium Agreement as well as the rules and recommendations defined in the EU Horizon 2020 framework.

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1 Introduction

This deliverable is the first version of the Intellectual Property (IP) Management, Intellectual Property Rights (IPR) protection plan for SAPPAN. The goal of the task is to outline IP related strategies to ensure that relevant knowledge is made accessible to those who need it and will benefit from it. The SAPPAN consortium members are aware that appropriate IPR regulations and their management are critical for the project results and, therefore, general IPR rules will apply to the project. Bearing in mind the collaborative nature of the project, intellectual property will be managed on an equitable basis by the partners who generate the knowledge and know-how. This knowledge will be protected in the form of patents, know-how, and trade secrets. The IPR strategies follow negotiation meetings to determine the percentage of effective contribution of each individual partner to an IPR object that has joint contributions and agreeing on the shared rights, as well as monitoring of innovations that should be IPR-protected.

2 Intellectual Property Management

Intellectual Property management is the process of effectively capturing, sharing organizational IP. In SAPPAN, it aims to provide the best use of the IP generated in different work packages within the consortium.

2.1 Legal Frameworks

The SAPPAN strategy for IP Management within the Consortium and the outside world complies with the rules defined in the Grant Agreement, the conditions agreed in the Consortium Agreement including the general rules and recommendations defined for projects of the H2020 Programme.

2.1.1 Grant Agreement

The Grant Agreement is the legal implementation of the project as agreed between the European Commission and the Consortium Parties. The Grant Agreement number 833418, Section 3 "RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND AND RESULTS" defines the rules for handling Intellectual Property Rights, their use, and dissemination. All Consortium partners are signatories to the Grant Agreement. In specific cases, the Grant Agreement allows the Consortium to agree on their own rules. The Consortium Agreement includes these individual rules.

Basic Definitions:

- As per the SAPPAN grant agreement, Subsection 2, Article 24, "**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:
 - (a) is held by the beneficiaries before they acceded to the Agreement, and
 - (b) is needed to implement the action or exploit the results.
- As per the SAPPAN grant agreement, Subsection 2, Article 25, "**Access rights**" means rights to use results or background under the terms and conditions laid down in this Agreement.

- As per the SAPPAN grant agreement, Subsection 3, Article 26, **"Results"** means any (tangible or intangible) output of the action such as data, knowledge or information — whatever its form or nature, whether it can be protected or not — that is generated in the action, as well as any rights attached to it, including intellectual property rights.
- As per the SAPPAN grant agreement, Subsection 2, Article 25, **"Fair and reasonable conditions"** means 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.

2.1.2 Consortium Agreement

Before the project started, the Consortium Parties entered into a formal Consortium Agreement where roles, responsibilities, and mutual obligations are defined. The SAPPAN Consortium Agreement is based upon the DESCA model consortium agreement [1].

The SAPPAN consortium agreement contains specific rules and procedures regarding KM as follows:

- Ownership and joint ownership of Results
- Transfer of Results
- Obligations regarding dissemination Results
- Handling of Background IP
- Handling of Access Rights
- Additional arrangement regarding Intellectual Property Rights to be applied to the partners in compliance with the general arrangement in the Grant Agreement
- The internal organization of the Consortium such as IP management, governance structure, and decision-making processes

2.1.3 Rules of Recommendations for Projects in H2020

The general rules and recommendations for IP management are given in the fact sheet for projects of the H2020 Programme by the European Commission [2]. It covers the following areas:

- Establishing contractual agreements between Parties for individual and joint exploitation of generated IP including the use of Background
- Guidelines for dissemination and exploitation of the project results
- Guidelines for IP protection including methodologies, software, technologies for commercial exploitation

2.2 Results

Results (also known as Foreground IP) are generated during the R&D collaboration in the SAPPAN project. The handling of Results is regulated in the Grant Agreement Subsection 3 with specific roles further placed in the Consortium Agreement.

2.2.1 Ownership

SAPPAN results are owned by the Party that generates them. Joint ownership is governed by Grant Agreement Article 26.2 and additionally in the Consortium Agreement. Regarding the joint ownership, where Results are generated from work carried out jointly by two or more Parties and it is not possible to separate such joint invention, design or work for the purpose of applying for, obtaining and/or maintaining the relevant patent protection or any other intellectual property right, the Parties will have joint ownership of this work.

Each of the joint owners will be entitled to Exploit the jointly owned Results and to grant non-exclusive licenses to third parties (without any right to sub-license) under Fair and Reasonable Conditions provided the other joint owners are given at least 45 calendar days advance notice.

2.2.2 Transfer of Results

Each Party may transfer ownership of its own Results following the procedures of the Grant Agreement Article 30. Each Party may identify specific third parties it intends to transfer the ownership of its Results to in Attachment (3) to this Consortium Agreement. The other Parties hereby waive their right to prior notice and their right to object to a transfer to listed third parties according to the Grant Agreement Article 30.1.

2.2.3 Licensing

The rules and policies for Licensing are given in the Grant Agreement Article 30.2. Each party may grant non-exclusive licences to its results (or otherwise give the right to exploit them), if:

- (a) this does not impede the access rights under Article 31 and
- (b) not applicable.

2.3 Background

Background IP is generated before the R&D collaboration. The handling of Background is regulated in the Consortium Agreement articles 9. In both Grant Agreement and in the Consortium Agreement, the Partners have defined the Background and provided Access Rights needed for the purpose of carrying out the SAPPAN project.

The Background IP of the SAPPAN project has been identified before the starting date of the project. As per the Grant Agreement Annex 1 and Consortium Agreement Attachment 1, the following table shows an initial overview regarding the Background IP which partners make available at the start of the project:

Background	Ownership	IP and Exploitation	Other partners who will use the IP	Specific limitations and/or conditions for implementation (Article 25.2 Grant Agreement)	Specific limitations and/or conditions for implementation (Article 25.2 Grant Agreement)
Network monitoring tools (High-speed metering points, IP-FIXcol, Nemea, Warden, Mentat)	CESNET	CESNET has developed numerous monitoring tools. These tools will generate data for SAPPAN. In addition, SAPPAN capabilities will be compared to some of the tools	Confidential	The network monitoring tools are released as open-source for non-com-	In case of commercial utilization, i.e. if another partner utilizes any tool or its part in its

		within the scope of the SAPPAN project. These tools are exclusive property of CESNET and is considered as background. So their inclusion in marketable solutions will be subjected to the specific conditions agreed in the CA.		mercial utilization, e.g. for the purpose of the Project, access is provided on a royalty-free basis.	Result and exploits this Result commercially, a royalty-fee or license fee is required. The specific conditions will be provided upon request by the CESNET legal department.
Network data processing and analysis tools (framework Stream4Flow)	MU	MU has developed numerous network data processing and analysis tools. Some of these tools will process and analyze data for SAPPAN. In addition, SAPPAN capabilities will be compared to some of these tools within the scope of the SAPPAN project. These tools are exclusive property of MU and are considered as background. So their inclusion in marketable solutions will be subjected to the specific conditions agreed in the CA.	Confidential	The network data processing and analysis tools (framework Stream4Flow) are released as open-source for non-commercial utilization, e.g. for the purpose of the Project, access is provided on a royalty-free basis.	In case of commercial utilization, i.e. if another partner utilizes any tool or its part in its Result and exploits this Result commercially, a royalty-fee or license fee is required. The specific conditions will be provided upon request by the legal department of Masaryk University.
<ul style="list-style-type: none"> ▪ Fast and correct netflow data processing at large scale ▪ Malicious trending web domains detection 	HPE	HPE has developed a series of network data processing tools. Some of these tools, like the fast and correct netflow data processing at large scale, will be used in SAPPAN. These tools are exclusive property of HPE and are considered background IP. So their inclusion in marketable solutions will be subjected to the specific conditions agreed in the CA.	Confidential	NA	NA
Threat Intelligence system	FSC	FSC operates a top-class threat intelligence (TI) system containing information about malicious and suspicious programs, documents, media files, URL's, IP's, etc. Within the project, we'll provide the partners with an API access to the system. The TI system is an exclusive property of FSC and is considered background IP. So utilizing the system in marketable solutions will be subjected to the specific conditions agreed in the CA.	Confidential	NA	In case of commercial utilization, i.e. if another partner utilizes any tool or its part in its Result and exploits this Result commercially, a royalty-fee or license fee is required. The specific conditions will be provided upon request by

					F-Secure Corporation.
<ul style="list-style-type: none"> ▪ Tools for malicious domain name detection based on various machine learning techniques including SVMs, RFs, CNNs, RNNs ▪ Implementations of cryptographic tools (in particular for homomorphic encryption and secret sharing techniques) ▪ Implementation of privacy-preserving protocols for various functionalities 	RWTH	<p>RWTH has developed several tools for DGA detection which will be used and extended to fulfill the specific SAPPAN use case. Further, RWTH has developed cryptographic tools including homomorphic encryption and secret sharing techniques as well as privacy-preserving protocols for various functionalities which might be used within SAPPAN.</p> <p>These tools are exclusive property of RWTH and are considered as background. So their inclusion in marketable solutions will be subjected to the specific conditions agreed in the CA.</p>	Confidential	NA	NA
<ul style="list-style-type: none"> ▪ Input for analysis and specification of response and recover use-cases and for data selection and data processing design, including country-level open data ▪ Support for automated incident response process and IDS design ▪ Audit/test security of the solution itself 	DL	NA	Confidential	NA	NA

As to Fraunhofer and Universität Stuttgart, it is agreed between the Parties that, to the best of their knowledge, no data, know-how or information of that will be needed by another Party for implementation of the Project (Article 25.2 Grant Agreement) or Exploitation of that other Party's Results (Article 25.3 Grant Agreement).

2.4 Access Rights

The project partners have agreed to grant non-exclusive, royalty-free access to Background and Results to each other for the execution of the project. Access Rights will also be free of any administrative transfer costs.

As per the Grant Agreement Annex 1 of the Description of Action (DoA), Partners agree on the following:

1. Access Rights on the Pre-Existing know-how needed for carrying out the Project shall be granted on a royalty-free basis.
2. The new IP shall be the property of the partner who generates it

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 SAPPAN access rights policies are outlined in the Consortium Agreement Section 9.

2.5 Access Rights to Software

The SAPPAN Consortium Agreement also sets out specific provisions for Access Rights to software.

As per the Consortium Agreement,

- **“Software”** means sequences of instructions to carry out a process in, or convertible into, a form executable by a computer and fixed in any tangible medium of expression.
- **“Application Programming Interface”** means the application programming interface materials and related documentation containing all data and information to allow skilled Software developers to create Software interfaces that interface or interact with other specified Software.
- **“Controlled Licence Terms”** means terms in any licence that require that the use, copying, modification and/or distribution of Software or another work (“Work”) and/or of any work that is a modified version of or is a derivative work of such Work (in each case, “Derivative Work”) be subject, in whole or in part, to one or more of the following:
 - a) (where the Work or Derivative Work is Software) that the Source Code or
 - b) other formats preferred for modification be made available as of right to any third party on request, whether royalty-free or not;
 - c) that permission to create modified versions or derivative works of the Work or Derivative Work be granted to any third party;
 - d) that a royalty-free licence relating to the Work or Derivative Work be granted to any third party.
- **“Object Code”** means software in machine-readable, compiled and/or executable form including, but not limited to, byte code form and in form of machine-readable libraries used for linking procedures and functions to other software.
- **“Software Documentation”** means software information, being technical information used, or useful in, or relating to the design, development, use or maintenance of any version of a software program.
- **“Source Code”** means software in human readable form normally used to make modifications to it including, but not limited to, comments and procedural code such as job control language and scripts to control compilation and installation.

The Parties’ Access Rights to Software do not include any right to receive Source Code or Object Code ported to a certain hardware platform or any right to receive Source Code, Object Code or respective Software Documentation in any particular form or detail, but only as available from the Party granting the Access Rights. The intended introduction of Intellectual Property (including, but not limited to Software) under Controlled Licence Terms in the Project requires the approval of the Steering Committee to implement such introduction into the Consortium Plan, however always

provided that the use of such Intellectual Property will affect the use of another Party's Results or Background e.g. by applying the Controlled License Terms to such a Result or Background.

More specific details regarding Access Right to Software are available in the SAPPAN Consortium Agreement Subsection 9.8.

2.6 Results Dissemination

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.

2.6.1 Open Access

The partners that disseminate Results with peer-reviewed scientific publications, will aim for open access [3]. The consortium measures to provide open access are described in the Grant Agreement Annex 1 DoA, section 2.2.2 Open Access and Data Management Plan (DMP), and the ongoing deliverables on the Data Management Plan.

Acknowledgment: visibility of EU funding

SAPPAN consortium must acknowledge any communication activity by displaying the EU emblem and including the text as following:

“This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 833418”.



For infrastructure, equipment and major results:

“This [infrastructure][equipment][insert type of result] is part of a project that has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 833418”.

When another logo is displayed, the EU emblem must have appropriate prominence.

3 Intellectual Property Rights Protection Strategies and Plan

Intellectual Property Rights (IPR) broadly refers to the legal rights placed on the products of the intellectual activity in the industrial, scientific, literary and artistic fields. The SAPPAN IPR protection strategies consider conditions of use, conditions of exploitation, IP protection, and maintenance, intellectual property (IP) monitoring and infringement, governing law, jurisdiction, or alternative dispute resolution (ADR) systems.

3.1 Intellectual Property Rights Protection Strategies

It is important for the successful exploitation of the SAPPAN project that all partners agree on rules regarding IP ownership, Access Rights to Results and Background IP for the project execution and protection IPR, and confidential information. These issues have been addressed in greater detail in the Consortium Agreement between the partners. We describe some of the SAPPAN consortium's IPR protection strategies as follows:

3.1.1 Results Protection

More details regarding the protection of Results can be found in the Grant Agreement, Article 27. Each beneficiary must examine the possibility of protecting its results and must adequately protect them for an appropriate period and with appropriate territorial coverage if:

- (a) the results can reasonably be expected to be commercially or industrially exploited and
- (b) protecting them is possible, reasonable and justified (given the circumstances). When deciding on protection, the beneficiary must consider its own legitimate interests and the legitimate interests (especially commercial) of the other beneficiaries.

3.1.2 Patent Protection

A patent is a legal title that allows the patent holder to prevent his/her invention from any third party exploitation, even if it is generated independently. The European Patent Convention allows to file patents for “computer-related inventions”, it may be relevant to seek protection for the SAPPAN platform or its parts, provided the patentable subject qualifies as a computer-related invention eligible for protection by European patents.

3.1.3 Exploitation of Results:

As per the Grant Agreement, Article 28.1, Each beneficiary must examine the possibility of protecting its results and must adequately protect them for an appropriate period and with appropriate territorial coverage if:

- (a) the results can reasonably be expected to be commercially or industrially exploited and
- (b) protecting them is possible, reasonable and justified (given the circumstances). When deciding on protection, the beneficiary must consider its own legitimate interests and the legitimate interests (especially commercial) of the other beneficiaries.

3.1.4 Confidentiality and Non-Disclosure Agreements (NDA)

SAPPAN consortium participants can sign a confidentiality agreement or NDAs for exchanging confidential information (e.g., not yet protected by patents). This will ensure confidentiality obligations and under which conditions the access is granted between two partners. Also, this should specify the time frame for confidentiality obligations.

3.2 Intellectual Property Rights Plan

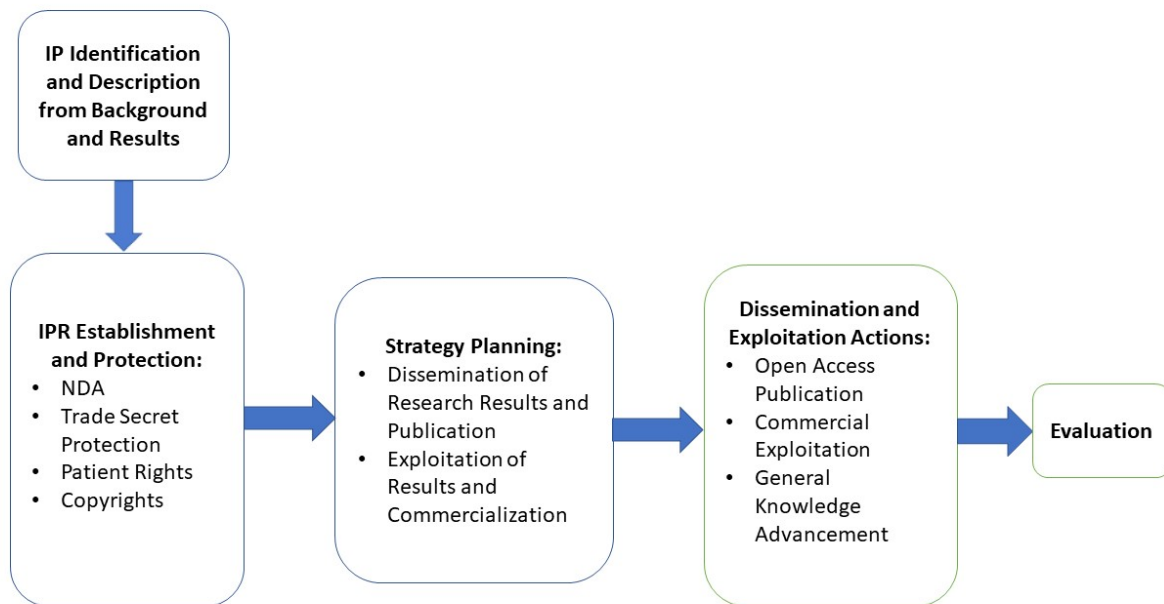


Figure 1: SAPPAN IPR Plan in Steps

SAPPAN consortium will aim to follow the guidelines provided by the European IPR helpdesk Fact Sheet [4] to deal with intellectual property (IP) matters in the internationalization process and efficiently manage intellectual property rights (IPR). The SAPPAN consortium will follow its IPR plan process in the following steps:

1. **Identification IP from Results and Background:** The background of the SAPPAN project has been identified at the beginning of the project. During the project implementation, partners will identify the Results to be generated (initial estimated Results are available in DoA). Each exploitable IP from the Results will be identified and recorded. The IP related products can be based on one or more SAPPAN components.
2. **Description of Interfaces of Identified IP:** The next step is to record a clear description of the products and their interfaces with other SAPPAN components, deployment prerequisites, etc.
3. **Establishing IPR and Ownership:** After identification and description of the product, the consortium will identify the ownership and joint ownership of the Results. The consortium may use an IPR identification sheet [4].
4. **IPR Protection Measures:** The coordinator will be in charge of maintaining the knowledge produced during the project on a regular basis with the partners in innovation. The NDAs can be done on a peer-to-peer basis during collaboration. If necessary, the SAPPAN Steering Committee may ask for legal advice for assessing the opportunities to apply for patents or declare copyrights. More specific responsibilities for IPR protection may include a description of innovation elements from R&D work, reviewing existing patents and databases for similar innovation, reporting the status to the Steering Committee, and proposing registration for the patents. SAPPAN IPR protection measures will be handled at the participant level and as well as consortium level.

5. **Strategy for Dissemination and Exploitation:** In this step, SAPPAN consortium will plan possible IPR protection strategies for Dissemination and Exploitation such as open access and commercialization of products.
6. **Dissemination and Exploitation Actions:** This step will perform different protection actions of Dissemination and Exploitation such as scientific publications in open-access journals, keeping a record of exploitation activities, patent filing, commercialization of products, etc.
7. **Evaluation:** The final step would be the evaluation of IPR protection measures, dissemination, and exploitation activities.

4 Conclusion and Next Steps

In the present deliverable, we describe the best practices and measures that have been planned by the SAPPAN Consortium for handling IP related issues in a systematic manner. Furthermore, if the need arises, the Consortium will reach out to the European IPR Helpdesk, legal teams within SAPPAN members or external IPR advisory firms to get support. There is also an ongoing discussion among Consortium members regarding the dissemination level of this deliverable, which will be discussed in the next Steering Committee Meeting. Next iteration and updates of this deliverable are scheduled in month 24 and month 36.

5 References

1. DESCA 2020 Model Consortium Agreement. <http://www.desca-2020.eu/>
2. Fact Sheet: How to manage IP in Horizon 2020: project implementation and conclusion, European IPR Helpdesk. July 2015. <http://www.ipr-helpdesk.eu/sites/default/files/newsdocuments/Fact-Sheet-IP-Management-H2020-Project-Implementation-and-Conclusion.pdf>
3. Open Access in H2020. <https://www.iprhelphdesk.eu/sites/default/files/newsdocuments/Open Access in H2020 0.pdf>
4. Fact Sheet: Intellectual property relevance in internationalisation, European IPR Helpdesk. February 2018. <http://www.iprhelphdesk.eu/sites/default/files/newsdocuments/Fact-Sheet-IP-relevance-in-internationalisation-EN.pdf>