



# SPARTA

## D2.7

### Final internal ELSA audit and supervision report

|                                  |   |
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| <b>Project number</b>            | 830892  |
| <b>Project acronym</b>           | SPARTA  |
| <b>Project title</b>             | Strategic programs for advanced research and technology in Europe |
| <b>Start date of the project</b> | 1 <sup>st</sup> February, 2019                                    |
| <b>Duration</b>                  | 36 months   |
| <b>Programme</b>                 | H2020-SU-ICT-2018-2020  |

|   |                                |
|---|--------------------------------|
| <b>Deliverable type</b>                             | Report                         |
| <b>Deliverable reference number</b>                 | SU-ICT-03-830892 / D2.7 / V1.0 |
| <b>Work package contributing to the deliverable</b> | WP2                            |
| <b>Due date</b>                                     | January 2022 – M36             |
| <b>Actual submission date</b>                       | 31 <sup>st</sup> January, 2022 |

|                                 |                |
|---------------------------------|----------------|
| <b>Responsible organisation</b> | INOV           |
| <b>Editor</b>                   | Gonçalo Cadete |
| <b>Dissemination level</b>      | PU             |
| <b>Revision</b>                 | V1.0           |

|                 |  |
|-----------------|--|
| <b>Abstract</b> | Reports on the methodology, work, and results from the ELSA audit and supervision done throughout the third year of the project. |
| <b>Keywords</b> | ELSA, audit, supervision, ethical aspects, legal aspects, societal aspects   |



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## Executive Summary

This deliverable reports on the methodology and outcomes of the audit and supervision activities related to ethical, legal, and societal aspects (ELSA), completed during the third year of the SPARTA project, towards achieving responsible research and innovation (RRI).

This report shares the same structure and methods that were used for producing the first and second yearly reports, to enable an easy comparison between contents and outcomes, and thus inform on the progress regarding the ELSA posture.

In Chapter 2, the purpose and scope of the ELSA activities are presented. This chapter thus provides the context for the audit and supervision methodology that was setup for the third year of SPARTA, described in Chapter 3 and Chapter 4. In Chapter 5, the audit and supervision functions of the SPARTA organization are presented, including functional requirements, organizational structures, and ethical considerations of the audit function itself.

All required audit and supervision mechanisms were planned, implemented, and run without significant constraints, during the third year of SPARTA.

The third yearly ELSA audit, initiated in December 2021 and presented in Chapter 6, had high participation and satisfaction rates. To promote and mature ELSA in SPARTA, as well as support the launch of the European Cybersecurity Competence Network (CCN), interactive feedback sessions were conducted with each work package leader, to elicit recommendations concerning ELSA improvement.

No serious issues were identified during the ELSA audit. However, several opportunities for improvement of ELSA were identified, and reported in Chapter 6. To address these opportunities, a set of recommendations are provided in Chapter 7, in support of ELSA excellence.

An ELSA Dashboard is made available in this report (Figure 4), to provide an overview of SPARTA's ELSA and RRI postures. The ELSA and RRI postures improved during the third year of the project, when compared to the second year (reported in deliverable D2.4 "Second internal ELSA audit and supervision report").

Overall, this report concludes that the current SPARTA posture regarding ethical, legal, and societal aspects is positive, and that SPARTA is committed to fostering responsible research and innovation.

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## Chapter 1 Introduction

As stated in the description of work of the SPARTA project [1] [2], ethical, legal, and societal aspects are fundamental to the success of the European Cybersecurity Competence Network (CCN):

*“Cybersecurity research and innovations will have sustainable success only if ethical and societal impacts – both short-term and long-term opportunities, constraints, and threats – are assessed and prioritised alongside technical and commercial impacts. Compatibility of innovations with the legal framework is obviously of fundamental importance.” [1]*

In SPARTA, a whole work package “WP2 – Responsible innovation: ethical, legal and societal aspects” is dedicated to address Ethical, Legal, and Societal Aspects (ELSA), relevant in the context of SPARTA’s large-scale cybersecurity research and innovation network.

The ELSA audit and supervision activities reported in this document are thus part of a broader effort to promote responsible cybersecurity research and innovation in SPARTA, by identification of ethical, legal, and societal aspects (Task 2.1) that are relevant for the European CCN, investigation of key challenges and solutions (Task 2.2), formulation of general guidelines (Task 2.3), and implementation of concrete solutions for the SPARTA programs (Task 2.4).

Assurance and promotion of ethical, legal, and societal aspects are considered important contributions to the governance of the SPARTA pilot, as well as to the governance of the future European CCN. Thus, throughout the SPARTA project and under “WP1 – CCN governance and assessment”, continual improvement and alignment of the governance, assessment, and ELSA frameworks are fostered, to leverage capabilities and to gradually improve overall governance and management maturity.

Also, a strong commitment of SPARTA stakeholders to comply with high ethical standards was reinforced in the scope of work package “WP14 –Ethics requirements”. This work package produced three deliverables in the early stages of SPARTA, to address ethical and legal requirements related to dual use [4], use of humans in research [5], and data protection [6].

Therefore, three work packages – out of a total of fourteen work packages – were setup specifically to foster high standards and state-of-the-art solutions for governance and assessment (WP1) and ELSA (WP2, WP14). Furthermore, a task in another work package (Task 12.4) aims at closing the gender and diversity gap in cybersecurity.

The purpose of this deliverable is to report on the methodology and outcomes of the audit and supervision activities related to ELSA, carried out during the third year of the project. The purpose and scope of the ELSA activities are presented in Chapter 2, the audit and supervision methodologies are described in Chapter 3 and Chapter 4, respectively, and the audit and supervision functions are described in Chapter 5.

In December 2021, the third ELSA audit engagement was initiated, using the same methodology that was used for the first and second yearly audit initiatives. The audit results are presented and discussed in this report (Chapter 6), as well as recommendations (Chapter 7). These recommendations aim at improving ELSA awareness, building ELSA capabilities, as well as improving the audit process itself, thus ensuring high and continually evolving ELSA standards.

In the last chapter, the main conclusions of this report are presented.

## Chapter 2 Audit and Supervision Purpose and Scope

In this chapter, the purpose and scope of the audit and supervision mechanisms and activities are presented and discussed, by describing its objectives, stakeholders, mission, engagement type, and constraints.

### 2.1 Objectives

SPARTA's audit and supervision mechanisms and activities, as reported in this document, are framed within the work package "WP2 – Responsible innovation: ethical, legal and societal aspects". Specifically, Task 2.5 of this work package mandates:

*"This task will focus on giving additional guarantees that all ethical, legal, and societal aspects (ELSA) are not only taken into consideration by all partners (including the project and Program leadership) but will be kept to the highest standard throughout the duration of the project. To achieve this goal, an internal continuous auditing and supervision mechanism will be put into place, that will enable to detect situations that may configure potential deviations from the recommended path, enabling to steer involved partners to take mandatory corrective actions, with the support of the project management structure and the project officer, if need be. This task will provide all along the project a help desk regarding the privacy's questions raised by the partners in their tasks. This help desk will lead to an internal FAQ document that will be written to resume these questions and answers."* [1]

The main goal of Task 2.5, supported by internal continuous auditing and supervision mechanisms, is thus to ensure high ELSA standards throughout the duration of the project.

SPARTA's description of work [1] mandates three audit and supervision reports (the third of which is this report):

- D2.2 First internal ELSA audit and supervision report (submitted in February 2020).
- D2.4 Second internal ELSA audit and supervision report (submitted in February 2021).
- D2.7 Final internal ELSA audit and supervision report (due in January 2022).

The ELSA audit and supervision mechanisms of SPARTA are, therefore:

- Three yearly ELSA audit initiatives, that provide formal audit engagements, reported in deliverables D2.2, D2.4, and D2.7; the third ELSA audit engagement is thus reported in this document.
- An internal Privacy Help Desk to respond to privacy questions raised by the partners in their tasks, along with an internal Privacy FAQ document that resumes these questions and answers.

The audit and supervision functions are described in detail in Chapter 5.

According to the description of the work of Task 2.1, ELSA provide inputs to improve the governance of the pilots, which entails that the governance, assessment, and ELSA frameworks and practices should be aligned.

The audit and supervision mechanisms were also designed and implemented to ensure awareness and compliance of SPARTA ethical requirements, as defined by the deliverables of work package "WP14 - Ethics requirements":

- D14.1 DU - Requirement No. 1 [4], that details on potential implications of the project and risk-mitigation strategies related to dual-use, i.e. civil and military purposes, in the sense of



the Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

- D14.2 H - Requirement No. 2 [5], that presents rules for activities performed in SPARTA that involve humans, namely addressing identification, recruitment, and consent procedures.
- D14.3 POPD - Requirement No.3 [6], related to protection of personal data, addressing data processing organization and measures.

Furthermore:

- Task 12.4 aims at closing the gender and diversity gap in cybersecurity.
- Fundamental rights and responsible cybersecurity research and innovation should be promoted, as per the description of the work of WP2.

Therefore, the ELSA mechanisms and activities should provide coverage for the following dimensions:

- Fundamental rights.
- Privacy.
- Ethics requirements.
- Gender and diversity.
- Responsible research and innovation.

To promote and mature ELSA in SPARTA, as well as support the launch of the European Cybersecurity Competence Network (CCN), interactive feedback sessions were conducted with each work package leader, to elicit recommendations concerning ELSA improvement.

## 2.2 Stakeholders

The main stakeholders of the audit and supervision mechanisms and activities are the SPARTA participants, the SPARTA beneficiary organizations, and the European Commission services:

- SPARTA participants and beneficiary organizations will benefit from a continually improving working environment that respects, protects, and fosters their fundamental rights, as well as other ethical, legal, and societal concerns related to the work products and outcomes of SPARTA's cybersecurity research. For the first ELSA audit, all work package leaders were invited to participate in the audit questionnaire to promote ELSA leadership and championship.
- The European Commission services aim at ensuring responsible research and innovation, thought excellence in ethical, legal, and societal aspects.

The fact that all WP2 deliverables are classified as “Public” demonstrates that there is public interest regarding ELSA transparency, as well as a clear drive for ensuring and demonstrating legal compliance and responsible research and innovation, in the European Union.

## 2.3 Mission and engagement type

The mission of the internal ELSA audit and supervision activities, mechanisms, and functions is to enhance and protect ELSA by providing objective assurance, advice, and insight.

Regarding the ELSA audit engagements, continual improvement and synergies with other activities should be sought, namely related to the aspects:

- Awareness of ELSA: deliverables D2.1, D2.3, D2.5, and D2.6 provide relevant instruments for clarifying ELSA concepts and for promoting ELSA education and awareness.
- Motivation of SPARTA participants, especially those directly engaged in the ELSA audit initiatives; care was taken to ensure a lightweight and well understood process by SPARTA partners.

- Empowerment of SPARTA participants, especially those directly engaged in the ELSA audit initiatives. Also, the members of SPARTA governing bodies and work packages leaders should feel motivated and empowered to foster high ELSA standards, as ELSA leaders and ELSA champions.

The ELSA audit engagements align with the requirement of a lightweight (i.e., efficient, and simple) and well understood process, as required by SPARTA's governance and assessment frameworks.

These considerations point to implementing increasing and proportionate levels of engagement, burden, and complexity.

For the third year of SPARTA, to support the launch of the European Cybersecurity Competence Network (CCN), interactive feedback sessions were conducted with each work package leader. These interactive sessions complemented the formal audit feedback (control objectives, as per section 3.4), to help elicit recommendations concerning ELSA improvement.

## 2.4 Constraints

No significant constraints regarding the audit and supervision mechanisms were identified during the second year of the SPARTA project.

However, continual improvement of the audit and supervision mechanisms and processes should be sought, as recommended in Chapter 7.

## Chapter 3 Audit Methodology

In this chapter, the ELSA audit methodology that was implemented during the third year of the SPARTA project is described, as well as how it addresses the scope and objectives presented in Chapter 2.

Considerations on how the audit framework and methodology may evolve beyond the third year of SPARTA are also presented.

### 3.1 Alignment with governance and assessment frameworks

Ethical, legal, and societal aspects are important components of governance. This entails the following implications regarding the relation between governance, assessment, and ELSA in SPARTA:

- Alignment should be sought between the governance, assessment, and ELSA frameworks.
- Alignment should be sought between best practice regarding governance, assessment, and ELSA.
- Continual improvement of the ELSA framework, practices, and mechanisms should consider the outcomes of all WP1 tasks regarding adaptation, synchronization, progress measurement, and improvement:
  - Task 1.1 Drive continuous improvement, and networking for the governance.
  - Task 1.2 Adaptation, synchronization, progress measurement, and improvement for governance of R&D&I activities.
  - Task 1.3 Adaptation, synchronization, progress measurement, and improvement for governance of community and exploitation activities.
  - Task 1.4 Governance assessment and recommendations.

As part of the third ELSA Audit, interactive feedback sessions were conducted with each work package leader, engaging the leaders of Task 1.2 and Task 1.3, as well as the work package leader of work package “WP13 – Project Management”.

The ELSA framework, methodologies, practices, and mechanisms matured over the 3-year period of the SPARTA project, closely following maturity gains regarding governance and assessment:

- During the first year (M1-M12):
  - Initial Operation Capability (IOC) for ELSA was achieved, as well as the initial ELSA consensus regarding the overall approach, scope, and objectives, aligned with the SPARTA objectives as stated in the description of the work of SPARTA [1].
  - The first ELSA audit was performed; and audit results and recommendations were reported.
  - The Privacy Help Desk supervision mechanism was promoted, in the context of the first ELSA audit.
- During the second year (M13-M24):
  - The Privacy FAQ document was produced based on feedback from the first year of SPARTA.
  - The second ELSA audit was performed; and audit results and recommendations were reported.
- During the final year (M25-M36):
  - The ELSA framework, methodologies, practices, and mechanisms matured, based on formal feedback from the second year (audit engagements and project deliverables), as well as on continual feedback received during the third year, from the supervision mechanisms and other governance activities.

- The final ELSA audit was performed; and audit results and recommendations were reported (in this report). Interactive feedback sessions were conducted with each work package leader, engaging also the leaders of Task 1.2 and Task 1.3, as well as the work package leader of work package “WP13 – Project Management”.

Throughout the duration of the project, the ELSA framework, methodologies, practices, and mechanisms implement a lightweight (i.e., simple, and efficient) process well understood by the partners, ensuring high awareness, motivation, and engagement of SPARTA participants.

## 3.2 Control frequency

The ELSA audit engagements were performed on a yearly basis:

- The first ELSA audit engagement was performed in December 2019, i.e., as late as was possible in the first year of the project, pondering the review deadlines for the project deliverables, as well as seasonal constraints.
- The second ELSA audit engagement was initiated in October 2020, thus earlier in the year, to help mitigate risks related to the COVID-19 pandemic.
- The final ELSA audit engagement was initiated in December 2021 and ended in January 2022.

Along with these scheduled yearly audit engagements, a continuous audit and supervision mechanism is set up, in the form of a Privacy Help Desk, along with the Privacy FAQ document, as described in Chapter 4.

## 3.3 Follow-up

The procedures and mechanisms that were set up to follow-up on any ELSA issues, as well as on opportunities for improvements, are the following:

- Communicate and escalate ELSA issues to the Ethics Committee, as well as to other SPARTA governing bodies as appropriate.
- Coordinate and escalate ELSA implementation issues with project management (work package “WP13 – Project Management”);
- The Privacy Help Desk, as described in Chapter 4.

## 3.4 Control objectives

The third ELSA Audit used the same control objectives as the first and second ELSA Audit initiatives, thus allowing for a straightforward comparison of results.

The audit control objectives provide coverage for the dimensions presented in Chapter 2, namely:

- Fundamental rights, in the scope of the European Union [7].
- Privacy, as per GDPR [8] and related privacy laws and regulations.
- Ethics requirements, as per work package “WP14 - Ethics requirements” deliverables [4] [5] [6].
- Gender and diversity, as per SPARTA’s description of work, especially WP12 goals.
- Responsible research and innovation, the overall goal of WP2.

For all previously described dimensions, a specific control was included to assess whether existing policies, standards, procedures, and guidelines, were necessary and sufficient for ensuring high ELSA standards.

Twenty-five (25) control objectives were selected for use in the third ELSA audit engagement. The list of controls is presented in Table 1 and is similar to the list of controls used for the first and second ELSA Audit initiatives.

| Audit Coverage      |   | Controls   |
|---------------------|---|--|
| Topic               | Sub-topic                                       | Statement  |
| Fundamental rights  | Solidarity and Subsidiarity                     | The SPARTA project provides a working environment that fosters solidarity between SPARTA participants coming from different Member States.   |
| Fundamental rights  | Solidarity and Subsidiarity                     | The SPARTA project provides a working environment that fosters solidarity between SPARTA beneficiary organizations.  |
| Fundamental rights  | Solidarity and Subsidiarity                     | The SPARTA beneficiary organizations share equally, or at least reciprocally, in the benefits, burdens, and risks of collaboration in the project.   |
| Fundamental rights  | Solidarity and Subsidiarity                     | The SPARTA project provides a working environment that fosters team orientation, mutual respect, and openness for different views and approaches.  |
| Fundamental rights  | Freedom and Privacy                             | The SPARTA project provides a working environment that fosters compliance with privacy-related laws and regulations, as well as foster privacy-related ethical standards.  |
| Fundamental rights  | Freedom and Privacy                             | The SPARTA project provides a working environment that does not unduly restrict the professional autonomy of SPARTA participants.  |
| Fundamental rights  | Policies, Standards, Procedures, and Guidelines | The SPARTA project provides the necessary and sufficient policies, standards, procedures, and guidelines, related to fundamental human rights issues.  |
| Privacy - PII       | GDPR requirements                               | In the scope of the WP that I lead, GDPR legal requirements are well understood by the WP participants.  |
| Privacy - PII       | GDPR requirements                               | In the scope of the WP that I lead, technical and organizational measures to ensure data protection were designed and are being implemented for all processing activities.   |
| Privacy - PII       | Awareness and engagement                        | In the scope of the WP that I lead, generic privacy requirements and concerns were formally presented and discussed in a formal venue or procedure (telco, meeting, conference, workshop, or other effective communication means). |
| Privacy - PII       | Legal capabilities and competency               | I understand the legal concepts of "personal data", "consent", "data breach", "profiling", and I am able to apply these concepts in the scope of the WP that I lead.   |
| Privacy - PII       | Legal capabilities and competency               | I understand the legal concepts of "pseudonymisation", "encryption", and I am able to apply these concepts in the scope of the WP that I lead.   |
| Privacy - PII       | Legal capabilities and competency               | I understand the legal concept of "high risk data processing operations" and I am able to apply this concept to assess risk to rights and freedoms of the natural person, in the scope of the WP that I lead.                      |
| Privacy - PII       | Policies, Standards, Procedures, and Guidelines | The SPARTA project provides the necessary and sufficient policies, standards, procedures, and guidelines, related to privacy issues.   |
| Ethics requirements | "Dual-use" ethics category                      | In the scope of the WP that I lead, the issues of SPARTA dual-use items (i.e., for both civil and military purposes) were formally presented and discussed, namely according to the requirements of deliverable D14.1.             |

| Audit Coverage                      |   | Controls   |
|-------------------------------------|---|--|
| Topic                               | Sub-topic                                       | Statement  |
| Ethics requirements                 | "Humans" ethics category                        | In the scope of the WP that I lead, the issues of human participation in SPARTA research activities (identification, recruitment, and consent) were formally presented and discussed, namely according to the requirements of deliverable D14.2. |
| Ethics requirements                 | Policies, Standards, Procedures, and Guidelines | The SPARTA project provides the necessary and sufficient policies, standards, procedures, and guidelines, related to ethical issues.   |
| Gender and diversity                | Intercultural enablers                          | In the scope of the WP that I lead, I have not encountered significant difficulties and roadblocks related to intercultural communication, understanding, and appreciation.  |
| Gender and diversity                | Negative discrimination                         | In the scope of the WP that I lead, I have not encountered significant difficulties and roadblocks related to women's attraction, participation, or retention in the workplace.  |
| Gender and diversity                | Negative discrimination                         | In the scope of the WP that I lead, I have not encountered significant gender stereotypes and unconscious bias, that may impact negatively organizational performance.   |
| Gender and diversity                | Policies, Standards, Procedures, and Guidelines | The SPARTA project provides the necessary and sufficient policies, standards, procedures, and guidelines, related to gender and diversity issues.  |
| Responsible research and innovation | Goal achievement                                | Overall, the SPARTA project fosters responsible research and innovation.   |
| Responsible research and innovation | Roles and empowerment                           | In the scope of the WP tasks that I lead, I am responsible for fostering responsible research and innovation.  |
| Responsible research and innovation | Roles and empowerment                           | In the scope of the WP tasks that I lead, I feel motivated and empowered to foster responsible research and innovation.  |
| Responsible research and innovation | Policies, Standards, Procedures, and Guidelines | The SPARTA project provides the necessary and sufficient policies, standards, procedures, and guidelines, related to responsible research and innovation.  |

Table 1: ELSA control objectives for the first and second ELSA audit engagements (for WP Leaders).

As for the first and second ELSA Audit initiatives, one additional control was selected for the second ELSA audit, to assess the overall usefulness of the ELSA audit for promoting responsible research and innovation, as presented in Table 2:

| Audit Coverage           |                  | Controls   |
|--------------------------|------------------|--|
| Topic                    | Sub-topic        | Question   |
| Usefulness of ELSA Audit | Promotion of RRI | Is the Second ELSA Audit useful for promoting RRI? |

Table 2: Control objective for the ELSA audit: usefulness for promoting responsible research and innovation.

### 3.5 Rating the control objectives

For rating the control objectives (Table 1), the following rating scale was used:

- Fully Agree/Achieved (FA): a very positive rating, defined by the interval [85%-100%].
- Largely Agree/Achieved (LA): a positive rating, defined by the interval [50%-85%].
- Partially Agree/Achieved (PA): a negative rating, defined by the interval [15%-50%].
- Not Agree/Achieved (NA): a very negative rating, defined by the interval [0%-15%].

This scale was adapted from the ISO/IEC 33020:2015 international standard. The ratings are thus a judgement of the degree of agreement with the statements in Table 1 (i.e., degree of achievement of the control objectives).



## Chapter 4 Supervision Methodology

The main mechanisms for ELSA supervision, implemented during the first two years of SPARTA, are:

- The Privacy Help Desk.
- The Privacy FAQ Document.

### 4.1 Privacy Help Desk and FAQ

The Privacy Help Desk and the Privacy FAQ document were designed and implemented according to the requirements:

- Simple.
- Easy to use, accessible.
- Reliable, available.
- Low communication and adoption barriers:
  - Interfaces are familiar for all SPARTA participants.
  - No costly training required for SPARTA participants.

The Privacy Help Desk implementation consists of:

- A ticketing system, for keeping track of requests and handling ticket state changes.
- An email address to serve as front-end interface:
  - Using an internal SPARTA mailing list, created specifically for this purpose.
  - Implemented in collaboration with project management (WP13).
  - Included in the official project contacts list, available to all SPARTA participants.

The Privacy FAQ document is located on a dedicated folder of SPARTA's official SVN solution, thus providing easy access, high availability, high reliability, and version control.

Therefore, the Privacy Help Desk and the Privacy FAQ document both use functionalities and interfaces that are familiar to SPARTA participants, ensuring low communication and adoption barriers.

### 4.2 Follow-up

The procedures and mechanisms that were set up to follow-up on ELSA issues, as well as on opportunities for improvements, are the same as those identified in Chapter 3 for auditing:

- Communicate and escalate ELSA issues to the Ethics Committee (see section 5.2), as well as to other SPARTA governing bodies as appropriate.
- Coordinate and escalate ELSA implementation issues within the project management (WP13).
- Setting up the Privacy Help Desk procedures, supported by a ticketing system.



## Chapter 5 Audit and Supervision Functions

This chapter describes the audit and supervision implementation details, regarding organizational structures and professional ethics, in support of the ELSA audit and supervision functions within SPARTA.

### 5.1 Requirements for the audit and supervision functions

As per the description of the work of SPARTA, the audit and supervision functions are defined in Task 2.5 of the work package “WP2 – Responsible innovation: ethical, legal and societal aspects”.

The partner INOV is responsible for the auditing implementation within SPARTA, as well as responsible for addressing gender and diversity aspects. Fourteen other beneficiary organizations also collaborate in the work package WP2.

### 5.2 Ethics Committee and Ethics Officer

An internal Ethics Committee was setup for SPARTA, as one of the governance instruments of the project.

The Ethics Committee is chaired by an Ethics Officer who is also the leader of the work package WP2.

To guarantee the independence of the Ethics Committee, the beneficiary organization that coordinates the project is not represented in this body.

According to SPARTA’s description of work [1], the Ethics Committee “sets up and maintains appropriate procedures, criteria, templates, information sheets, potential opinions and approvals from relevant entities, explanations, and relevant compliance documentation as well as descriptions of technical and organizational risk-mitigation strategies and measures (including security ones) implemented to comply to the ethics requirements”.

### 5.3 Professional ethics

The editor of this report conducted the third ELSA audit engagement.

He declares to have followed the principles of integrity, objectivity, and competence, in the course of the audit assessment and reporting activities:

- Integrity:
  - The audit assessment and reporting activities were not hindered by third parties as far as honesty, diligence, and responsibility are concerned.
  - This report was subject to review, as stated on Page I. The review process did not hinder neither the audit process nor the current report, as far as its objectives, scope, conclusions, and recommendations are concerned.
- Objectivity:
  - The auditor does not participate in activities that conflict with the interests of SPARTA.
- Competency:
  - The auditor is a certified information systems auditor in good standing, currently holding the CISA®, CISM®, and CRISC® certifications from ISACA.

## Chapter 6 Audit Results

In this chapter, the results of the third ELSA audit are presented and briefly commented, with the following reporting goals:

- Provide a basis for ELSA recommendations, to support the launch of the European Cybersecurity Competence Network (CCN).
- Identify issues that should be reported urgently to the Ethics Committee.
- Provide a dashboard view, i.e., a summary high-level presentation of the ELSA posture in SPARTA.

### 6.1 Participation in the ELSA audit

For the third ELSA audit, all work package leaders were invited to participate.

As was the case for the first and second ELSA audit initiatives, the third ELSA audit also achieved 100% participation of all 14 (fourteen) work package leaders. Note that high participation of work package leaders is to be expected and required, given the mission and role of work package leaders in ELSA:

- Leadership in SPARTA also entails ELSA leadership, as ELSA is an intrinsic and important part of SPARTA's governance.
- Work package leaders belong to the first line of defence for ELSA.
- Work package leaders are important ELSA leaders and ELSA champions.
- Work package leaders should be engaged in promoting ELSA awareness.
- Work package leaders should be engaged in building ELSA capabilities.
- Work package leaders should be engaged in ensuring high standards for ELSA.

### 6.2 Usefulness of the ELSA audit

Regarding the usefulness of the first ELSA audit, for promoting responsible research and innovation:

- 7 participants responded “fully agree”;
- 6 participants responded “largely agree”, and
- 1 participant responded “partially agree”.

No participants responded “not agree”.

These results are presented in Figure 1.



Figure 1: Usefulness of the third ELSA audit, for promoting responsible research and innovation.

Overall, the results are positive, although there are opportunities for improving the usefulness of the ELSA Audit.

### 6.3 Urgent issues

No serious issues were identified, requiring the urgent attention of the Ethics Committee.

## 6.4 Opportunities for improvement

In this section, the main opportunities for improvement are presented and analysed.

### 6.4.1 Overall ELSA status

For comparison purposes, the overall ELSA status for the three years of SPARTA is presented in the following figure.

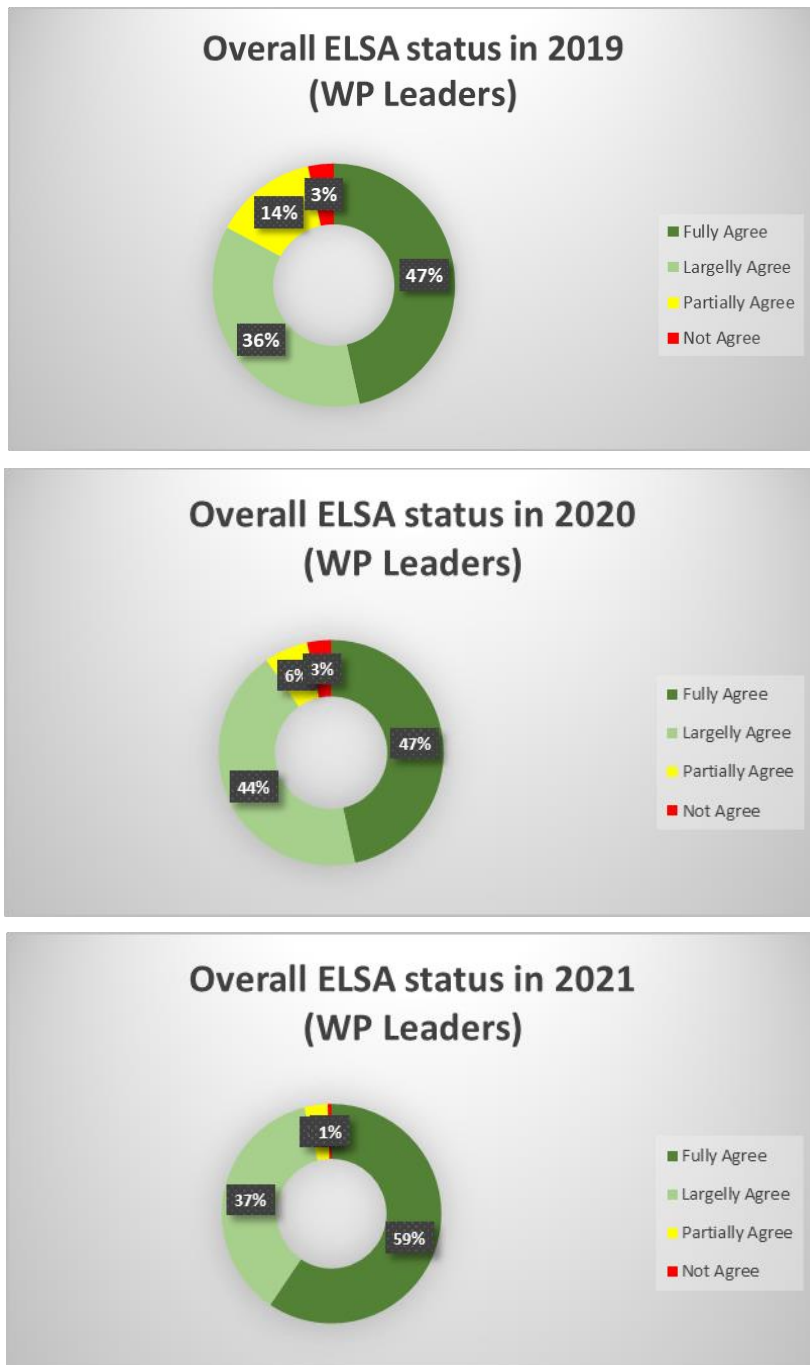


Figure 2: Overall ELSA status in 2019, 2020, and 2021, as per yearly ELSA audits, conducted with work package (WP) leaders.

We may conclude that, overall, the ELSA posture has been consistently improving during the three years of SPARTA. Also, the overall ELSA status is positive in the third year of SPARTA.

#### **6.4.2 Overall satisfaction of participants regarding ELSA**

In 2021 (third year of SPARTA), all WP Leaders are overall satisfied with the ELSA status.

#### **6.4.3 Controls with very low ratings (overall negative)**

In 2019 (the first year of SPARTA), two controls had overall negative ratings, i.e., statements without 50% or more positive ratings (“fully agree” and “largely agree”), as per Table 3.

| Audit Coverage      |                            | Controls   |
|---------------------|----------------------------|--|
| Topic               | Sub-topic                  | Statement  |
| Ethics requirements | "Dual-use" ethics category | In the scope of the WP that I lead, the issues of SPARTA dual-use items (i.e., for both civil and military purposes) were formally presented and discussed, namely according to the requirements of deliverable D14.1.                           |
| Ethics requirements | "Humans" ethics category   | In the scope of the WP that I lead, the issues of human participation in SPARTA research activities (identification, recruitment, and consent) were formally presented and discussed, namely according to the requirements of deliverable D14.2. |

Table 3: 2019 results, for WP Leaders: very low rated statements, i.e., statements without 50% or more positive ratings (“fully agree” and “largely agree”).

In 2021 (the third year of SPARTA), none of the controls received overall negative ratings.

#### 6.4.4 Controls with low ratings (one or more “not agree” ratings)

For comparison purposes, in 2019 (the first year of SPARTA), the statements that received at least one “not agree” rating from WP Leaders are presented in Table 4.

| Audit Coverage                      |   | Controls   |
|-------------------------------------|---|--|
| Topic                               | Sub-topic                                       | Statement  |
| Fundamental rights                  | Policies, Standards, Procedures, and Guidelines | The SPARTA project provides the necessary and sufficient policies, standards, procedures, and guidelines, related to fundamental human rights issues.  |
| Privacy - PII                       | GDPR requirements                               | In the scope of the WP that I lead, GDPR legal requirements are well understood by the WP participants.  |
| Privacy - PII                       | GDPR requirements                               | In the scope of the WP that I lead, technical and organizational measures to ensure data protection were designed and are being implemented for all processing activities.   |
| Privacy - PII                       | Awareness and engagement                        | In the scope of the WP that I lead, generic privacy requirements and concerns were formally presented and discussed in a formal venue or procedure (telco, meeting, conference, workshop, or other effective communication means).               |
| Privacy - PII                       | Policies, Standards, Procedures, and Guidelines | The SPARTA project provides the necessary and sufficient policies, standards, procedures, and guidelines, related to privacy issues.   |
| Ethics requirements                 | "Dual-use" ethics category                      | In the scope of the WP that I lead, the issues of SPARTA dual-use items (i.e., for both civil and military purposes) were formally presented and discussed, namely according to the requirements of deliverable D14.1.                           |
| Ethics requirements                 | "Humans" ethics category                        | In the scope of the WP that I lead, the issues of human participation in SPARTA research activities (identification, recruitment, and consent) were formally presented and discussed, namely according to the requirements of deliverable D14.2. |
| Gender and diversity                | Policies, Standards, Procedures, and Guidelines | The SPARTA project provides the necessary and sufficient policies, standards, procedures, and guidelines, related to gender and diversity issues.  |
| Responsible research and innovation | Roles and empowerment                           | In the scope of the WP tasks that I lead, I am responsible for fostering responsible research and innovation.  |
| Responsible research and innovation | Roles and empowerment                           | In the scope of the WP tasks that I lead, I feel motivated and empowered to foster responsible research and innovation.  |

Table 4: 2019 results, WP Leaders: Statements with at least one "not agree" rating.

In 2019 (the first year of SPARTA), ten (10) statements received at least one “not agree” rating (out of 25 control statements) from WP Leaders.

In 2021 (the third year of SPARTA), the statements that received at least one “not agree” rating from WP Leaders are presented in Table 4. These two (2) statements received one “not agree” rating.

| Audit Coverage      |                            | Controls   |
|---------------------|----------------------------|--|
| Topic               | Sub-topic                  | Statement  |
| Ethics requirements | "Dual-use" ethics category | In the scope of the WP that I lead, the issues of SPARTA dual-use items (i.e., for both civil and military purposes) were formally presented and discussed, namely according to the requirements of deliverable D14.1.                           |
| Ethics requirements | "Humans" ethics category   | In the scope of the WP that I lead, the issues of human participation in SPARTA research activities (identification, recruitment, and consent) were formally presented and discussed, namely according to the requirements of deliverable D14.2. |

Table 5: 2021 results, WP Leaders: statements with one "not agree" rating.

To enable comparison between Table 4 (2019) and Table 5 (2021) the rows that are not common to both tables are shaded (with a grey background). We may conclude that there was a significant improvement in the third year of SPARTA, when compared to the first year.

### 6.4.5 Achievement of responsible research and innovation

In 2021 (the third year of SPARTA), the results regarding responsible research and innovation (RRI) have improved. For comparison purposes, RRI achievement in 2019, 2020, and 2021 (the three years of SPARTA) are presented in the following figure.

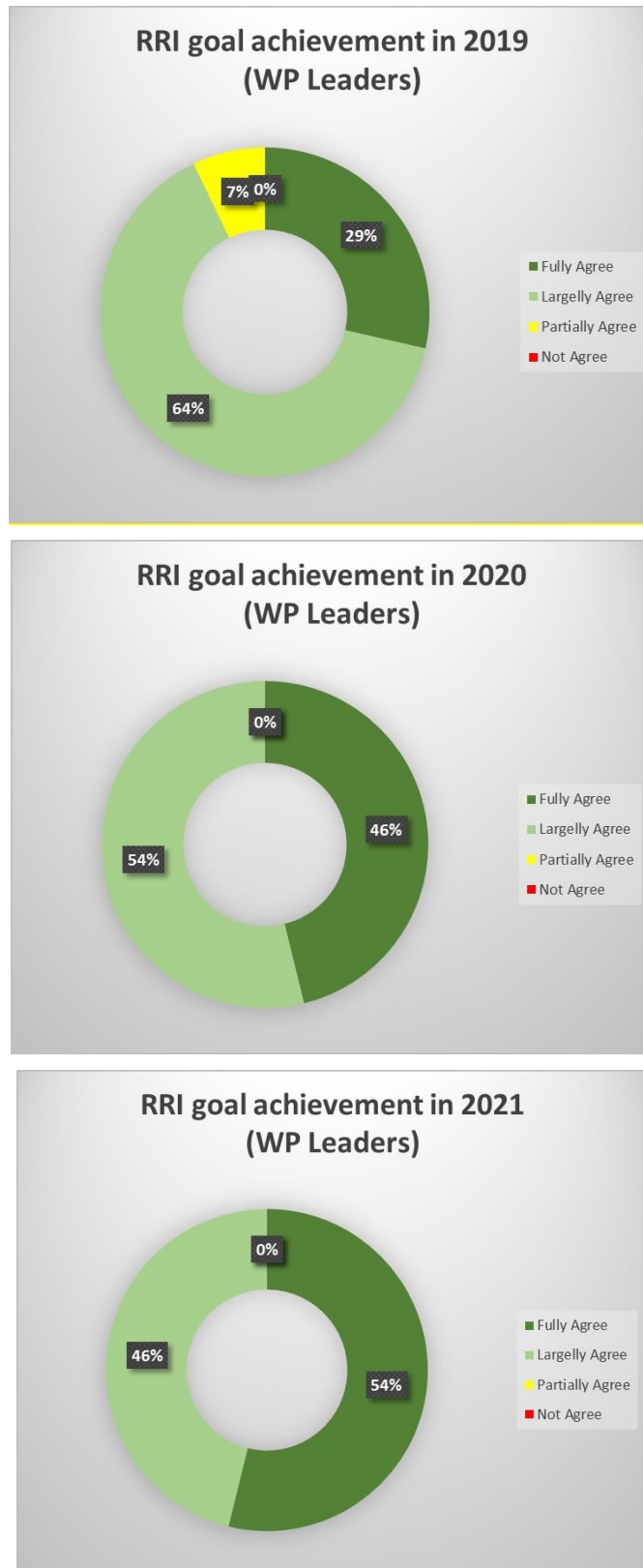


Figure 3: Goal achievement for RRI, for the three years of SPARTA.



The definition of this goal is presented in the following table.

| Audit Coverage                      |                  | Controls   |
|-------------------------------------|------------------|--|
| Topic                               | Sub-topic        | Statement  |
| Responsible research and innovation | Goal achievement | Overall, the SPARTA project fosters responsible research and innovation. |

Table 6: Control for RRI goal achievement

We may conclude that the RRI status has thus been consistently improving, during the three years of SPARTA

These results are consistent with the improvement in the overall ELSA posture, as per section 6.4.1.

#### **6.4.6 Main opportunities for improvement**

Although the formal results of the third ELSA Audit indicate a positive ELSA and RRI posture, as well as continual improvement from previous years, there are significant opportunities for improvement:

- Policies, standards, procedures, and guidelines, regarding;
  - Fundamental rights.
  - Gender and diversity.
- Awareness of work package WP14 deliverables on "Dual-use" and "Humans" ethics categories.

During the interactive feedback sessions conducted with each work package leader, engaging the leaders of Task 1.2 and Task 1.3, as well as the work package leader of work package "WP13 – Project Management", the following opportunities for improvement were elicited:

- Responsible disclosure should be included in the ELSA scope, with clear policies, guidelines, and procedures.
- AI-specific topics should be included in the ELSA scope, given that AI needs to be better understood by citizens to be well trusted; explainability and security solutions are key and need to be further investigated and promoted.
- ELSA as a formal process, with goals, continual improvement, agile approach, and beyond compliance.
- ELSA "by-design", embedded into research processes (part of a formal governance framework).
- Train people on ELSA, including a kick-off workshop.
- Include ELSA audits conducted by an external party.
- More dissemination and communication of ELSA issues and outcomes.

## 6.5 ELSA Dashboard for 2021

The ELSA Dashboard for 2021 (the third year of SPARTA) is presented in the following figure.

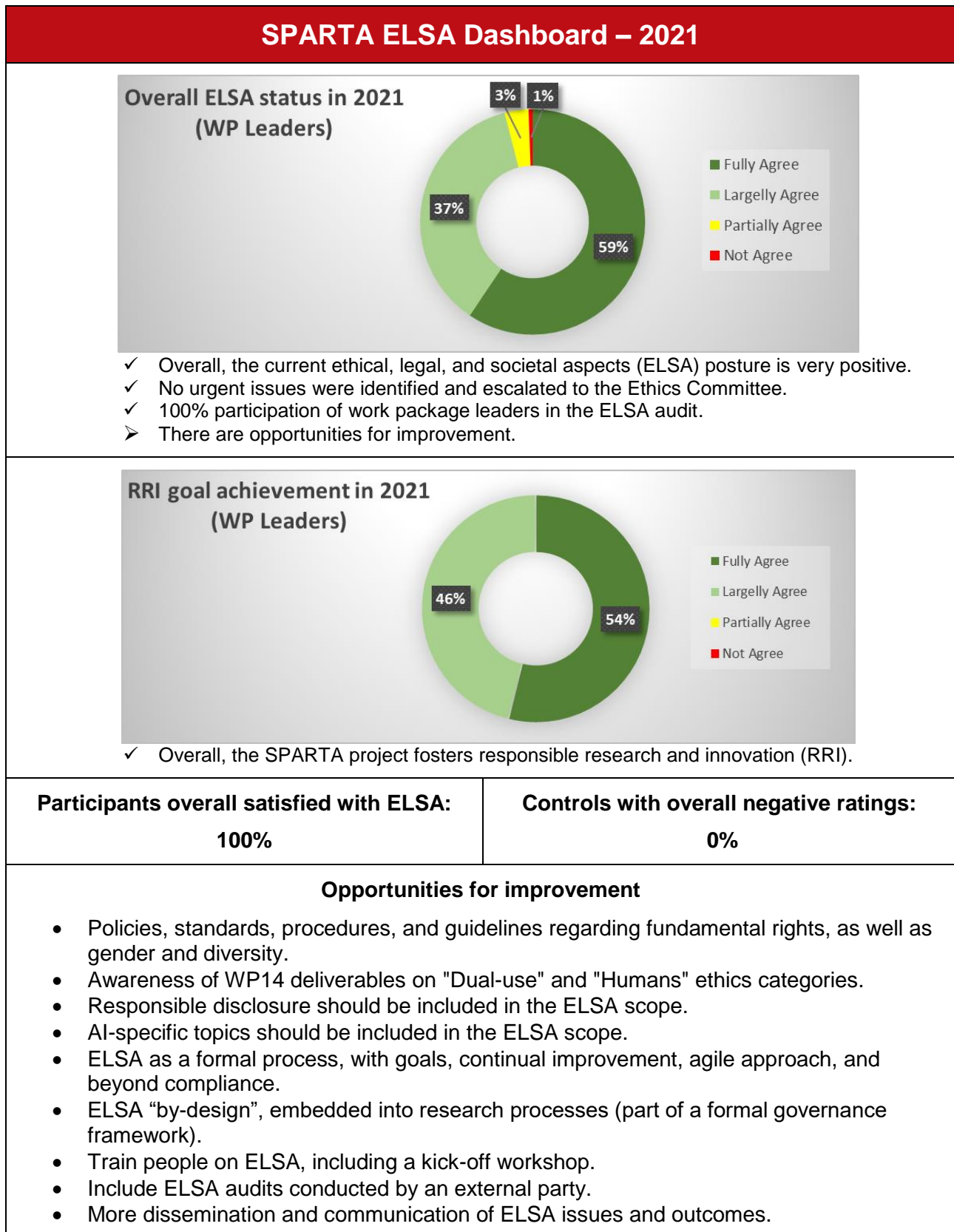


Figure 4: The 2021 SPARTA ELSA Dashboard.

## Chapter 7 Recommendations

In this chapter, recommendations are provided to address the current ELSA opportunities for improvement.

### 7.1 ELSA recommendations

The main recommendations for ELSA improvement, to be addressed by the Ethics Committee and other SPARTA governing bodies, are presented in Table 7.

| ID | Title                           | Description and implementation notes   |
|----|---------------------------------|--|
| 1  | Fundamental rights – policies   | Define, approve, and communicate policies, standards, procedures, and guidelines.  |
| 2  | Gender and diversity – policies | Define, approve, and communicate policies, standards, procedures, and guidelines.  |
| 3  | Ethics requirements             | Promote awareness of ethics requirements, namely on "Dual-use" and "Humans" ethics categories.   |
| 4  | ELSA scope                      | Responsible disclosure should be included in the ELSA scope.<br>AI-specific topics should be included in the ELSA scope.   |
| 5  | ELSA governance approach        | ELSA as a formal process, with goals, continual improvement, agile approach, and beyond compliance.<br>ELSA "by-design", embedded into research processes (part of a formal governance framework). |
| 6  | RRI –incentives                 | Motivate, empower, and engage WP leaders in promoting RRI.<br>Training on ELSA.<br>More dissemination and communication of ELSA issues and outcomes.   |

Table 7: Recommendations for ELSA improvement.

### 7.2 Audit and supervision roadmap

The following recommendations and goals are proposed for improving the audit and supervision mechanisms:

- Ensure a high participation rate for ELSA audit initiatives.
- Ensure a high satisfaction rate for ELSA audit initiatives.
- Include ELSA audits conducted by an external party.

## Chapter 8 Conclusion

In this deliverable, we have reported on the ELSA audit and supervision activities done throughout the third year of the SPARTA project.

All audit and supervision mechanisms were planned, implemented, and run without significant constraints, during the third year of SPARTA.

The third ELSA audit, initiated in December 2021, had high participation and satisfaction rates. Its main goals were to mature ELSA awareness and engagement, thus ensuring high ELSA standards throughout the SPARTA Project.

The Ethics Committee provided prompt and effective support for the third ELSA audit. The third ELSA audit did not identify serious issues that require urgent convening of the Ethics Committee.

Several opportunities for improvement of ELSA were identified in Chapter 6. To address these opportunities, a set of recommendations are provided in Chapter 7, along with recommendations regarding the audit and supervision roadmap, in support of ELSA excellence.

An ELSA dashboard is provided in Figure 4, to help communicate a high-level view of SPARTA's ELSA posture. The ELSA and RRI postures improved, between the second and third years of SPARTA.

We may conclude that there is evidence that SPARTA fosters responsible research and innovation (RRI), although opportunities for improvement were identified.

Overall, the current SPARTA ethical, legal, and societal aspects (ELSA) posture is positive.

## Chapter 9 List of Abbreviations

| Abbreviation | Translation  |
|--------------|--|
| AI           | Artificial intelligence  |
| CCN          | Cybersecurity Competence Network   |
| CISA         | Certified Information Systems Auditor (see the Glossary)                 |
| CISM         | Certified Information Security Manager (see the Glossary)                |
| CRISC        | Certified in Risk and Information Systems Control (see the Glossary)     |
| EC           | European Commission  |
| ELSA         | Internal ethical, legal and societal aspects                             |
| FAQ          | Frequently asked questions   |
| GDPR         | General Data Protection Regulation                                       |
| ICT          | Information and Communications Technologies                              |
| PII          | Personally Identifiable Information; Personal Data; Personal Information |
| RRI          | Responsible Research and Innovation                                      |
| SPARTA       | Strategic Programs for Advanced Research and Technology in Europe        |
| SVN          | Subversion Document Repository   |
| WP           | Work Package   |

## Chapter 10 Glossary

| Term  | Definition  | Reference   |
|---|---|---|
| ISACA   | As an independent, non-profit, global association, ISACA engages in the development, adoption and use of globally accepted, industry-leading knowledge and practices for information systems. Previously known as the Information Systems Audit and Control Association, ISACA now goes by its acronym only, to reflect the broad range of IT governance professionals it serves.       | ISACA<br>Organization website:<br><a href="http://www.isaca.org">www.isaca.org</a>  |
| Certified Information Systems Auditor             | CISA, a branded certification from ISACA. The CISA designation is a globally recognized certification for IS audit control, assurance and security professionals. Being CISA-certified showcases audit experience, skills and knowledge, and demonstrates capability to assess vulnerabilities, report on compliance and institute controls within the enterprise.                      | ISACA<br>Organization website:<br><a href="http://www.isaca.org">www.isaca.org</a>  |
| Certified in Risk and Information Systems Control | CRISC, a branded certification from ISACA. The CRISC certification that prepares and enables IT professionals for the unique challenges of IT and enterprise risk management and positions them to become strategic partners to the enterprise.   | ISACA<br>Organization website:<br><a href="http://www.isaca.org">www.isaca.org</a>  |
| Certified Information Security Manager            | CISM, a branded certification from ISACA. Being CISM-certified demonstrates information security management expertise. The management focused CISM certification promotes international security practices and recognizes the individual who manages, designs, and oversees and assesses an enterprise's information security.  | ISACA<br>Organization website:<br><a href="http://www.isaca.org">www.isaca.org</a>  |
| SPARTA  | Acronym for “Strategic Programs for Advanced Research and Technology in Europe”, a European Commission Horizon 2020 programme, project number 830892, as per call H2020-SU-ICT-2018-2020, Work programme H2020 SU-ICT-03-2018: Establishing and operating a pilot for a Cybersecurity Competence Network to develop and implement a common Cybersecurity Research & Innovation Roadmap. | SPARTA<br>Organization website:<br><a href="http://www.sparta.eu">www.sparta.eu</a> |

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