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The European IoT Hub

Growing a sustainable and comprehensive ecosystem for Next Generation Internet of Things

D5.5 Impact Assessment - Methodological Framework

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Abstract

The goal of this deliverable is to introduce the methodological framework that will be used to perform an impact assessment analysis on Next Generation IoT projects. Thus, a detailed description of the goals, processes, stakeholders, and impact categories that compose the methodological framework are presented. Moreover, the deliverable introduces the first steps taken toward the execution of the defined framework. Finally, a preliminary analysis of the collected data is described along with steps proposed for future development.

Keywords: impact assessment**;** impact methodology.

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Nature of the deliverable:	R	
Dissemination Level		
PU	Public, fully open, e.g. web	√
CI	Classified, information as referred to in Commission Decision 2001/844/EC	
CO	Confidential to EU-IoT project and Commission Services	

** R: Document, report (excluding the periodic and final reports)*

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

OTHER: Software, technical diagram, etc

EXECUTIVE SUMMARY

The EU-IoT D5.5 deliverable aims at defining and documenting the methodological framework towards assessing impact and exploitation opportunities of assets generated within Next Generation IoT projects supported by EU-IoT, in particular ICT-56 projects. Deliverable D5.5 corresponds to an outcome of WP5, Task 5.3.

The impact assessment methodological framework defines and establishes the goals, processes, stakeholders, and impact categories of the impact assessment procedure, thus setting up the underlying structure and concepts to perform the impact assessment analysis.

In summary, the goal of the impact assessment is to identify and characterize the impact and the implication a set of project's actions have on a specific area or a set of areas considered to be relevant. The developed methodology involves three main steps: (i) identifying impact assessment categories, (ii) collecting the required information, and (iii) analysing the data and proposing recommendations and potential relevant impact areas to target.

The relevant stakeholders are the ICT-56 projects, EU-IoT partners, and the European Commission who are involved in participating and/or providing feedbacks in the various iteration of the process. Finally, the relevant impacts categories were selected based on the six clusters that make up Horizon Europe's second Pillar, "Global Challenges and European Industrial Competitiveness" i.e. "Health", "Culture, Creativity and inclusive society", "Civil security for society", "Digital, Industry, and Space", "Climate, Energy, and Mobility", and "Food, Bioeconomy, Natural resources, Agriculture and Environment".

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ABBREVIATIONS

AB	Advisory Board
CB	Coordination Board
CTF	Coordination Task Force
EC	European Commission
EU	European Union
ICT	Information and Communication Technologies
IoT	Internet of Things
KPI	Key Performance Indicators
NGIoT	Next Generation Internet of Things
RIA	Research and Innovation Actions
SDO	Standards Development Organization

1 INTRODUCTION

The work carried out and described in this deliverable relates with WP5 – Amplifier, Task 5.3. WP5, EU-IoT AMPLIFIER is responsible for durable and effective outreach and impact creation, ensuring through dedicated activities visibility, increasing credibility and trust in the IoT efforts in a sustainable way. WP5 will curate and promote content provided by all WPs 1, 2 and 3, while it will produce guidelines which to ground the creation of an action plan for the development of a sustainable IoT ecosystem in close collaboration with key actors in the IoT value creation chain, via the Coordination Board, CB (WP2), the Coordination Task-Force, CTF (see T5.1), the Advisory Board, AB (WP2) and the European Commission, EC.

Task 5.3 focuses on the support of providing critical guidance in a forward looking perspective to projects, via a continuous impact assessment, exploitation, sustainability analysis and guidelines.

The goal of the impact assessment is to conduct a set of analytical processes to identify the impact and implications of the defined actions of the NG-IoT projects supported by EU-IoT and in particular, the ICT-56 RIA projects. Therefore, the impact assessment methodology and process involves the identification and characterization of impacts of the projects and the identification of assets and scope areas in alignment with the EU-IoT scope areas.

By carrying such an impact analysis, clear impacts can be identified, and consequently, projects can decide to focus, further develop, and/or adjust certain actions to further emphasize the desired impact.

Thus, the main objective of this deliverable is to introduce and define the overall methodological framework of the impact assessment process for projects. A second objective is to provide input to the analysis carried so far, which has been focused on the 6 NGIoT flagship projects (ICT-56 RIA projects, i.e. Assist-IoT, Ingenious, IoT-NGIN, IntellIoT, Terminet, VedIIoT). A third objective relates with proposing further steps and measures to strengthen the project impact.

1.1 Deliverable Structure

The deliverable is organized as follows:

- Section 2 describes the impact assessment methodological framework.
- Section 3 describes the steps taken in the first year of EU-IoT in regards to the analysis of projects based on the proposed framework.
- Section 4 covers the analysis steps.
- Section 5 provides recommendations and next steps.
- Section 6 concludes the deliverable.

2 IMPACT ASSESSMENT METHODOLOGICAL FRAMEWORK

The impact assessment methodological framework aims at defining the goals, processes, stakeholders, and impact categories of the impact assessment procedure. Defining the building blocks of the impact assessment framework aims at setting up the underlying structure and concepts to perform the impact assessment analysis [1]. The building blocks, illustrated in Figure 1, are as follow:

- **Goals**: the desired objectives of the impact assessment. The goals shall provide clear and defined benefits to the projects participating in the impact assessment.
- **Processes**: the set of steps and procedures to conduct the impact assessment analysis.
- **Stakeholders**: the actors involved in the impact assessment process.
- **Impact categories**: the set of classes representing the desired and expected impact of the participating projects. The impact categories shall align with the Horizon Europe strategies since the impact assessment process is applied on EU-funded projects.

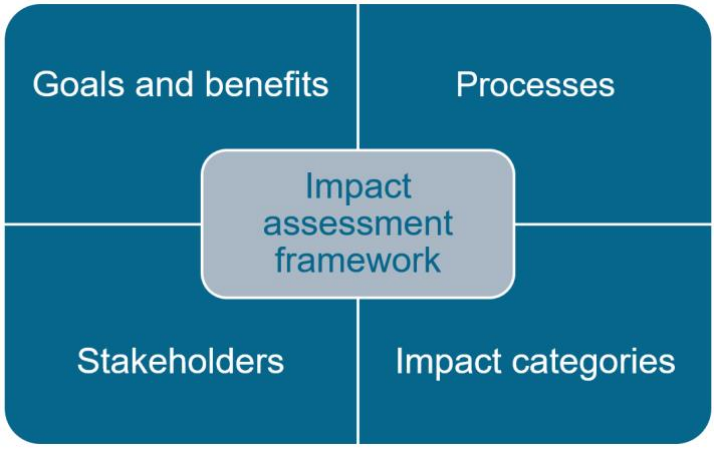


Figure 1 Impact assessment framework building blocks

2.1 Goals

The main goal of the impact assessment is to identify and characterize the impact and the implication a set of project's actions have on a specific area or a set of areas considered to be relevant. In this first year, the projects considered to develop a first analysis relate with the 6 NGIoT flagship projects being supported by EU-IoT, which are summarised in Table 1.

Table 1 List of the NGIoT flagship projects

Project Logo	Project Name	Project Link
assist-iot	ASSIST-IoT	https://assist-iot.eu/
inGenious	iNGENIOUS	https://ingenious-iot.eu/web/

Project Logo	Project Name	Project Link
IoT-NGIN	IoT-NGIN	https://iot-ngin.eu/
TERMINET H2020 PROJECT	TERMINET	https://terminet-h2020.eu/
VEDLIoT Very Efficient Deep Learning in IoT	VEDLIoT	https://vedliot.eu/
IntellIoT	IntellIoT	https://intelliot.eu/

- **ASSIST-IoT**[1]: aims at designing, implementing, and validating an open, decentralized reference architecture, associated enablers, services, and tools, to assist human-centric applications in multiple verticals.
- **iNGENIOUS**[2]: aims to design and evaluate the Next-Generation IoT solution, with emphasis on 5G and the development of Edge and Cloud computing extensions for IoT, as well as providing smart networking and data management solutions with Artificial Intelligence and Machine Learning.
- **IoT-NGIN**[3]: aims to empower Edge Cloud with federated on-device intelligence, enforce interoperability and data sovereignty, ensure trust, cybersecurity, and privacy, and introduce novel human-centric interaction based on Augmented Reality.
- **TERMINET**[4]: aims to provide a novel next-generation reference architecture based on cutting-edge technologies such as SDN, multiple-access edge computing, and virtualization for next-generation IoT, while introducing new, intelligent IoT devices for low-latency, market-oriented use cases.
- **VEDLIoT**[5]: develops an IoT platform that uses deep learning algorithms distributed throughout the IoT continuum, thus proposing a new platform with innovative IoT architecture that is expected to bring significant benefits to a large number of applications, including industrial robots, self-driving cars, and smart homes.
- **IntellIoT**[6]: focuses on the development of integrated, distributed, human-centered, and trustworthy IoT frameworks applicable to agriculture, healthcare, and manufacturing while enabling technologies such as 5G, cybersecurity, distributed technology, Augmented Reality, and tactile internet, focusing on end-user trust, adequate security, and privacy by design.

These projects have started during October and November 2020 and are therefore in an early

[1] https://assist-iot.eu/

[2] https://ingenious-iot.eu/web/

[3] https://iot-ngin.eu/

[4] https://terminet-h2020.eu/

[5] https://vedliot.eu/

[6] https://intelliot.eu/

stage of asset development. Thus, the aim is not to evaluate the outcomes in relation to their final impact but rather outline the set of potential impacts based on the project planned actions and outcomes. Performing such analysis at the early stages of the project aims to bring in the following benefits:

- Providing an overview of how different actions support and relate a specific impact.
- Strengthen the focus towards the EU vision.
- Provide a guiding framework for the various project's actions to achieve the desired impact.
- Identify relevant groups, entities, and audiences to further improve dissemination and communication.
- Assist WP3 in supporting liaisons towards relevant *Standards Developing Organizations* (SDOs) and related entities.
- Identifying potential synergies between the participating projects.
- Provide an overview of the project targeted or desired impacts.

The expected outcome of the impact assessment is therefore an impact assessment analysis and set of recommendations such as potential collaborations and relevant entities.

2.2 Process

The impact assessment process is designed to identify the set of steps required to achieve the previously identified goals. The impact assessment process follows a value chain approach and is composed of the following steps as illustrated in Figure 2:

- **Identify impact assessment categories:** the goal is to identify a set of relevant impact categories that align with the EU vision and EU-IoT framework. The aim is also to decide on a method of collecting the information and identify the relevant information for the analysis.
- **Collect information:** the goal of the second step is to collect the data, study constraints and opportunities facing identified topics (based on collected data), and pinpoint projects' planned actions and expected outcomes.
- **Analyse:** the final stage relates to analysing the collected information and proposing recommendations and potential relevant impact areas to target. In addition, the analysis would also involve identifying the relation between projects' actions and impact categories.

Figure 2 Impact assessment process.

2.3 Stakeholders

The main stakeholders are:

- **NGIoT projects**: the RIA projects, in particular ICT-56 projects, will be subject to the impact assessment process. Their main role is first to provide feedback about the selected impact categories and the overall impact assessment methodological framework from the perspective of their respective projects. The second role is to provide the necessary information used for the analysis. The final role is to provide feedback about the analysis results, propositions, and recommendations.
- **EU-IoT partners**: the main role of the EU-IoT partners in addition to supporting the process and analysis is to provide feedback to align the impact categories with the EU-IoT framework.
- **European Commission:** the goal is to align the impact assessment areas and results with EU vision and goals.

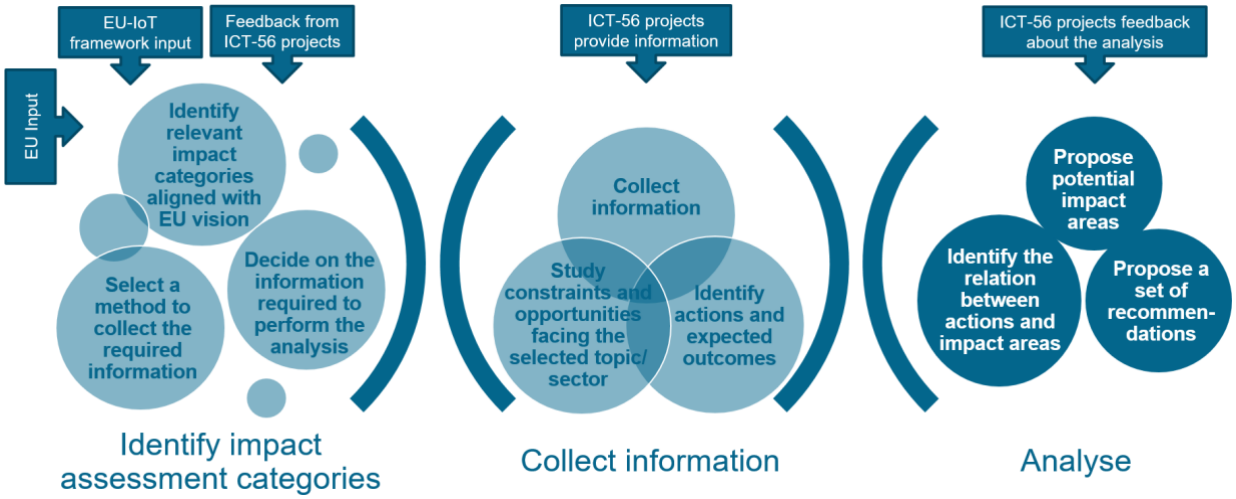


Figure 3 Interaction between the impact assessment process and the stakeholders.

2.4 Impact Categories

To identify the relevant impact categories for this analysis, the Horizon Europe program structure has been analysed, then the impacts categories were selected based on the six clusters that compose the Horizon Europe's second Pillar, "Global Challenges and European Industrial Competitiveness". The six impact clusters reflect the four key strategic orientations for EU research and innovation [2]:

- **Promoting an open strategic autonomy** by leading the development of key digital, enabling, and emerging technologies, sectors, and value chains.
    - Impact areas: a competitive and secure data economy, industrial leadership in key and emerging technologies that work for people, secure and cybersecure digital technology, and high-quality digital services for all.
- **Restoring Europe's** ecosystems and biodiversity, and managing sustainably natural resources.
    - Impact areas: enhancing ecosystems and biodiversity on land and in waters, clean and healthy air, water, and soil, and sustainable food systems from farm to fork on

land and sea.

- **Making Europe the first digitally-enabled circular, climate-neutral and sustainable economy**.
    - Impact areas: climate change mitigation and adaptation, affordable and clean energy, smart and sustainable transport, and circular and clean economy.
- **Creating a more resilient, inclusive, and democratic European society**.
    - Impact areas: a resilient EU prepared for emerging threats, a secure, open, and democratic EU society, good health and high-quality accessible healthcare, and inclusive growth and new job opportunities.

Thus, along with the six impact clusters, a set of impact variables were added to each cluster to reflect the various strategic orientations and impact areas mentioned previously. The impact variables, illustrated in Figure 4, were derived from an EU survey related to “Horizon Europe First Strategic Plan 2021-2024” [3]:

- **Health:**
    - Impact 1: Staying healthy in a rapidly changing society
    - Impact 2: Living and working in a health-promoting environment
    - Impact 3: Tackling diseases and reducing disease burden
    - Impact 4: Ensuring access to innovative, sustainable, and high-quality health care
    - Impact 5: Unlocking the full potential of new tools, technologies, and digital solutions for a healthy society
    - Impact 6: Maintaining an innovative, sustainable, and globally competitive health-related industry
- **Culture, Creativity and Inclusive Society:**
    - Impact 1: Reinvigorated democracy
    - Impact 2: Exploitation of the full potential of cultural heritage
    - Impact 3: Boosted inclusive growth
    - Impact 4: Strengthened social and economic resilience and sustainability
- **Civil Security for Society:**
    - Impact 1: Reduced losses from natural, accidental, and man-made disasters
    - Impact 2: Improved passengers and shipments travel into the EU
    - Impact 3: Crime and terrorism are more effectively tackled
    - Impact 4: Increased cybersecurity and a more secure online environment
- **Digital, Industry, and Space:**
    - Impact 1: Global leadership in clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures"
    - Impact 2: Globally attractive, secure, and dynamic data-agile economy
    - Impact 3: Industrial leadership and increased autonomy in key strategic value chains with the security of supply in raw materials
    - Impact 4: Sovereignty in digital technologies and future emerging enabling technologies

- Impact 5: Strategic autonomy in developing, deploying, and using global space-based infrastructures, services, applications, and data
- Impact 6: A human-centered and ethical development of digital and industrial technologies

- **Climate, Energy, and Mobility:**
  - Impact 1: A climate-neutral and resilient society and economy
  - Impact 2: Clean and sustainable transition of the energy and transport sectors towards climate neutrality
  - Impact 3: More efficient, clean, sustainable, secure, and competitive energy supply
  - Impact 4: Efficient and sustainable use of energy, accessible for all
  - Impact 5: Climate-neutral and environmentally friendly mobility
  - Impact 6: Safe, seamless, smart, inclusive, resilient, and sustainable mobility systems
- **Food, Bioeconomy, Natural Resources, Agriculture and Environment:**
  - Impact 1: Climate neutrality
  - Impact 2: Biodiversity decline is halted
  - Impact 3: Sustainable and circular management and use of natural resources
  - Impact 4: Food and nutrition security for all
  - Impact 5: Sustainable development of rural, coastal and urban areas is achieved
  - Impact 6: Established Innovative governance models enable sustainability and resilience

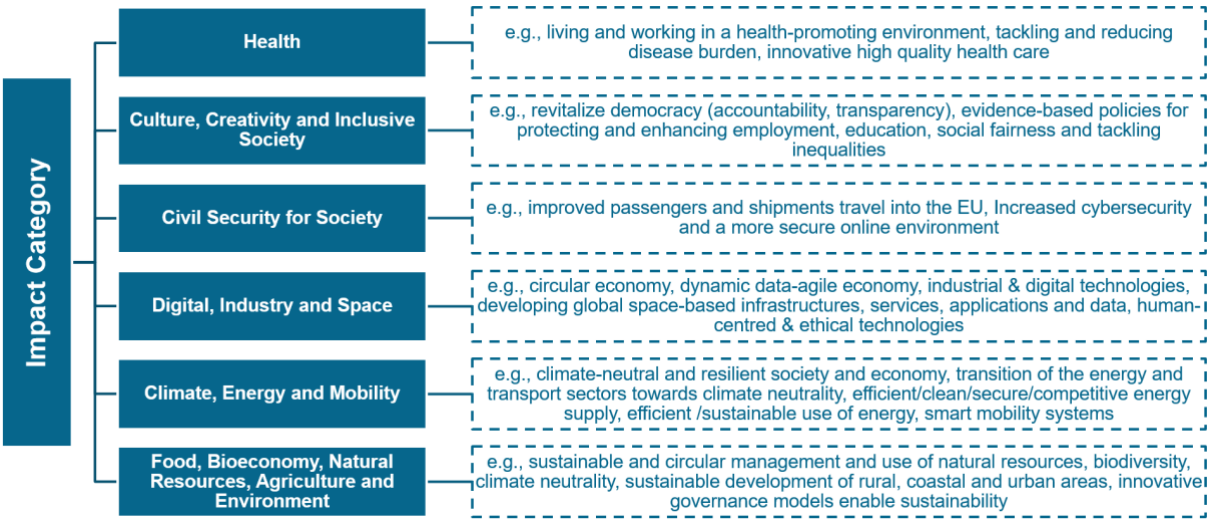


Figure 4 Impact assessment categories

3 IMPACT ASSESSMENT PROCESS

In this section, we describe the assessment developed during the first year of EU-IoT. This assessment has been developed for the 6 NGIoT projects detailed in Table 1.

3.1 Collecting Required Information

As stated in section 2, the goal of the impact assessment is to analyse the relationship between each project (expected) outcome and the targeted impact of the project. Therefore, information about each project outcome needs to be collected. To categorize the outcomes cohesively, the EU-IoT guiding framework has identified 5 scope areas [4]:

- Human/IoT interfaces.
- Far Edge.
- Near Edge.
- Infrastructure.
- Data spaces.

The collected information about projects' outcomes has then been categorized in terms of research areas as well as to the four EU-IoT main transversal dimensions, which are:

- Technology.
- Market.
- Standards and policies.
- Skills.

In addition to impact categories and expected outcomes, other information is expected to be collected. Such information includes the project's overall objectives, key performance indicators, support for open call experiments, and finally alignment with one or more of the sustainable development goals [5], as illustrated in Figure 5.

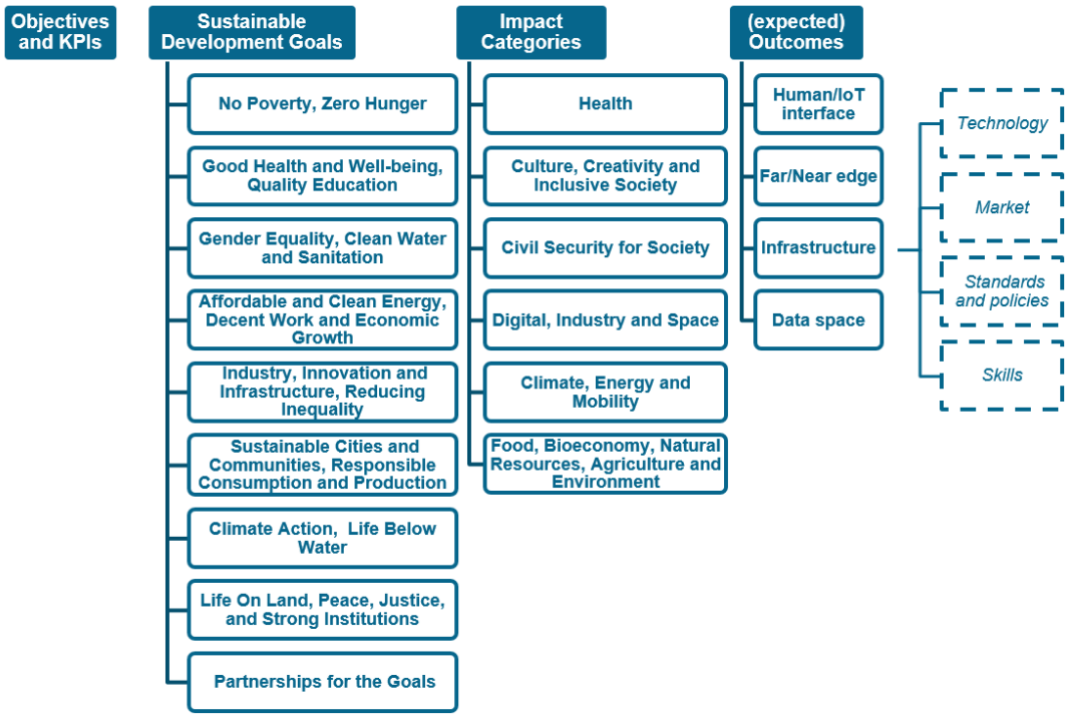


Figure 5 Categories of collected information.

3.2 Information Gathering Methods

To collect the required information, various methods can be used such as interviews and surveys. For this impact assessment analysis, we opted for primary data collection using a combination of quantitative and qualitative methods through a survey of the ICT-56 RIA projects partners using both close-ended and open-ended questions [6]. The survey was designed using LimeSurvey[7], a free and open-source online statistical survey Web app.

3.3 Survey Design

The survey fields are provided in Appendix A and are organised into four main sections. The first section collects general information about the projects such as the project's name, objective start and end dates while the second section collects information about the impact categories and impact variables applicable to each project. The respondents have been encouraged to add comments in the form to explain the reasons behind the selection of the impact variables.

The third section aims at collecting information about the outcomes. The outcomes are categorized in terms of technology, market, standards and policies, and skills. The respondent is then asked to select which EU-IoT framework area fits each outcome.

The last final section collects general information about open calls such as dates and budget. The reason behind collecting such information is to customize and adjust the analysis and recommendation to projects that are planning to organize open calls by proposing for example use cases and topics for the experiments that would align with the intended project impact. In addition, the section collects information about the agreed-upon KPIs, target groups, and targeted.

[7] https://www.limesurvey.org/

4 PRELIMINARY ANALYSIS

The next sub-sections provide a preliminary summary of the collected data from the six ICT-56 RIA projects focusing on the objectives, impact categories, and outcomes.

4.1 Project Goal Analysis

All ICT-56 RIA projects focus on the next generation Internet of Things vision; nonetheless, each focuses on a specific set of objectives and research lines. Figure 6 is a word cloud diagram that illustrates the main research and innovation topics of each of the projects. All projects seem to focus on security, privacy, and trust when developing their solutions and reference architectures. Moreover, distributed AI/ML and Edge and Cloud computing are also a common theme among all projects.

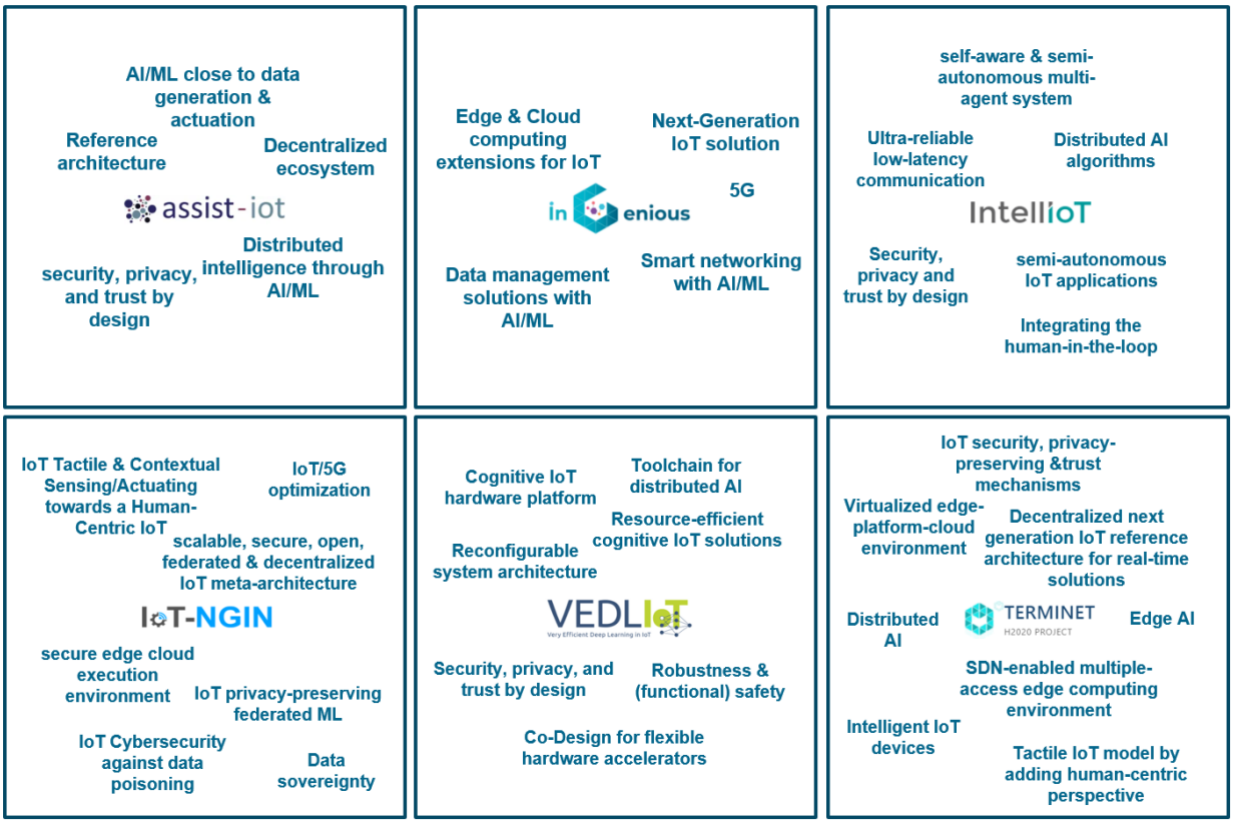


Figure 6 Summary of project's objectives as a word cloud.

4.2 Project Impact Categories Analysis

In the survey, the participants selected the specific impact areas where their projects fit the best. As shown in Figure 7, all projects selected the impact category “Digital, industry, and space”, which aligns with the call descriptions while none of the projects selected the impact categories “Culture, Creativity and Inclusive Society” and “Civil Security of Society”.

Terminet and IntelliIoT selected the impact category “Health”. Terminet, IoTNGIN, and VEDLIoT selected the impact category “Climate and Energy and Mobility”. Finally, Terminet, IoTNGIN, and IntelliIoT choose the impact category “Food, Bioeconomy, Natural Resources, Agriculture, and

Environment". Based on this high-level view of the impact areas, potential synergies can be detected among projects; however, it is important to look deeper into the specific impact variables and how they align among the projects.

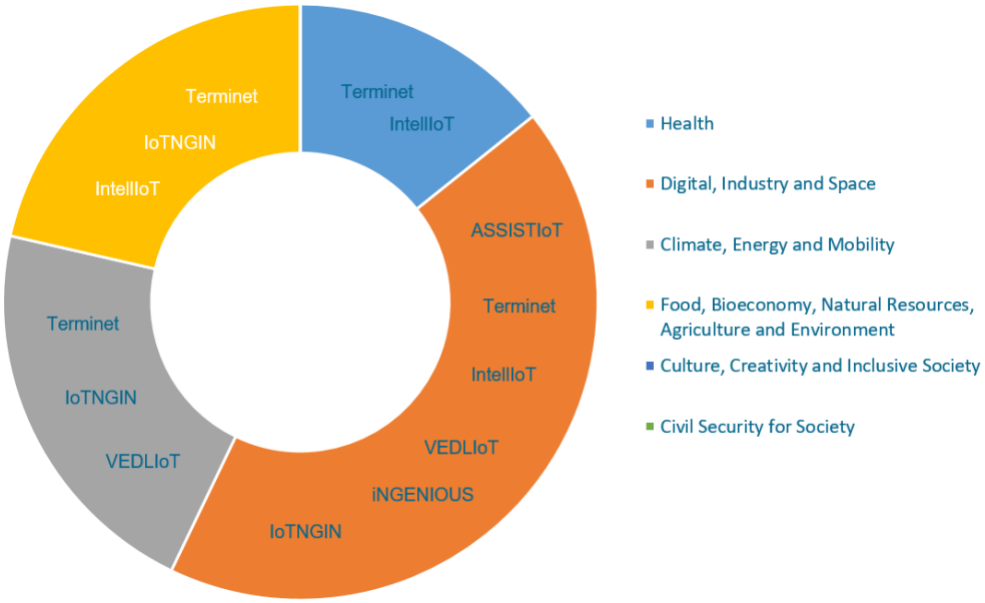


Figure 7 Projects' selected impact categories.

4.3 EU-IoT Scope Area Contributions Analysis

The respondents were asked to rank the importance of the human-cloud continuum topics based on the planned outcomes of their respective projects. Figure 8 shows the ranking of the human-cloud continuum topics per project. From the diagram, the "Human/IoT interface" topic has the highest ranking followed closely by the "Far Edge" topic. It seems from this high-level view that all six projects focus on topics related to the human-cloud continuum with different degrees of relevance; however, the Human/IoT interface seems to be the most relevant topic among all participating projects.

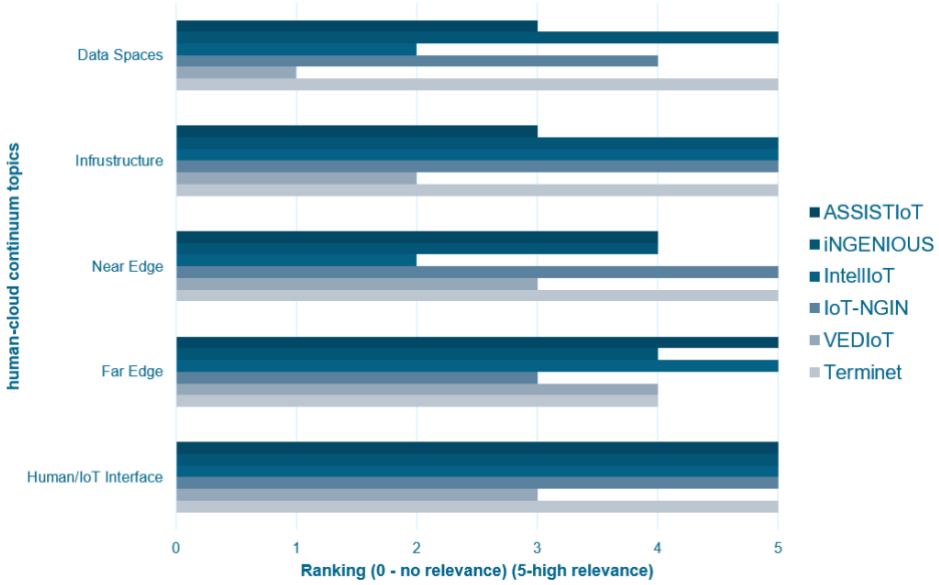


Figure 8 Projects' ranking of human-cloud continuum topics in terms of relevance.

5 RECOMMENDATIONS AND NEXT STEPS

Based on the preliminary analysis of the projects, we derive a set of recommendations that will be further explored in T5.3.

5.1 Recommendations

- **Boost cooperation across RIAs**. All 6 projects seem to focus on security, privacy, and trust when developing their solutions and reference architectures as well as distributed AI/ML and Edge and Cloud computing; therefore, we foresee and recommend working together on these common themes to align the developed work, share experience and expertise, and/or complement each other work whenever possible.
- **Quantitative analysis and qualitative analysis of contributions to the EU-IoT scope areas**. Through the preliminary analysis, we noticed that some projects have selected similar impact categories. Thus, we will further look into the specific targeted impact in each impact category and analyse how they align or differ. The aim is to pinpoint how each project's impact is similar to highlight potential synergies.
    - Quantitatively, we will analyse the number of success indicators, e.g., scientific publications, open-source software impact (e.g., git downloads/forks); contributions towards standardisation; Web page views, training.
    - Qualitatively, we shall analyse the impact, e.g., publication venue rank; type of SDO contribution.
- **Organization of events dedicated to specific topics**. Most projects ranked the "Human/IoT interface" topic as highly relevant for them; thus organizing workshops and training related to the topic would be beneficial.

5.2 Next Steps

The impact assessment process's first stage was to identify the type of information to be collected and the impact assessment categories to be used. The next phase was to define and design the collection method, then collect the required information.

As shown in Figure 9, the current work focuses on organizing and studying the collected information making sure the data is correct and cohesive. The next steps are analysing the data in more details and providing insights about the relationship between planned actions and desired impact, potential missed impact areas, and recommendations about potentials synergies between the projects or outside entities such as SDOs. Additionally, the intention is to include additional projects and perform similar analysis while utilizing the lessons learned.

Figure 9 Status of the impact assessment process.

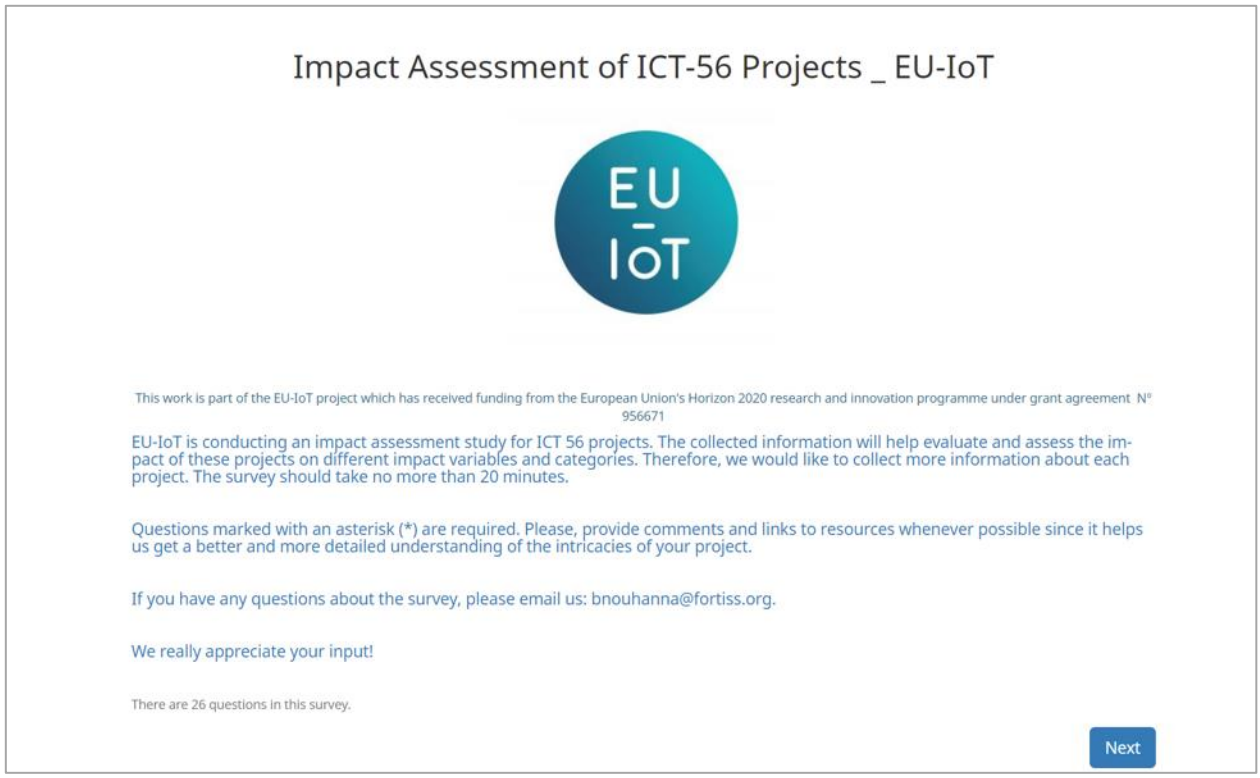
6 SUMMARY

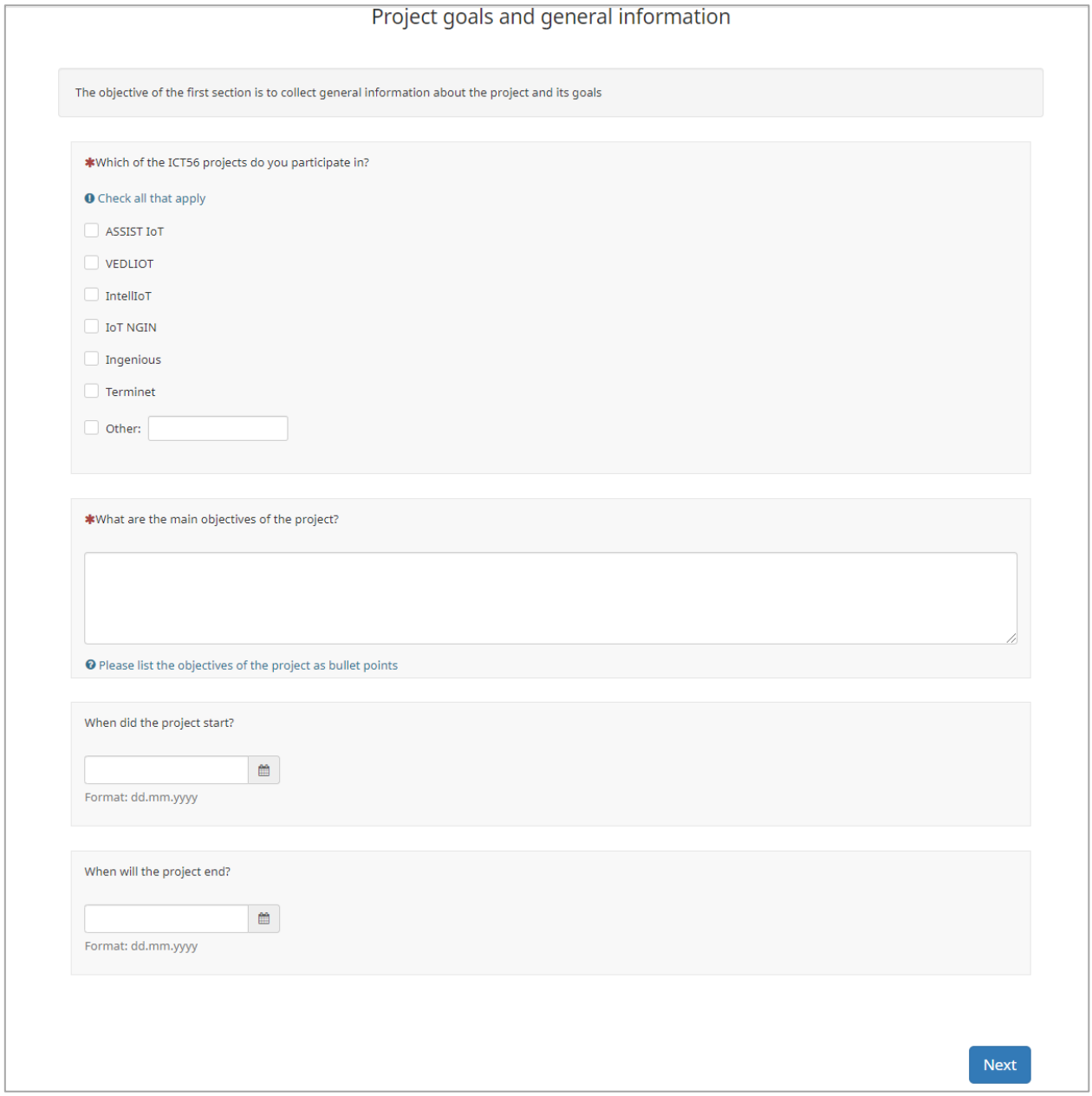
This deliverable introduces and documents the methodological framework and sets-up the underlying structure and concepts to perform the impact assessment analysis on ICT-56 projects. Therefore, the main building blocks of the impact assessment methodological framework were introduced namely the goals, processes, stakeholders, and impact categories. In addition, the deliverable presents the first steps undertaken in executing the proposed methodological framework focusing on specifying the impact categories, identifying the required information to be collected from the involved projects, and defining the information collection method to be used.

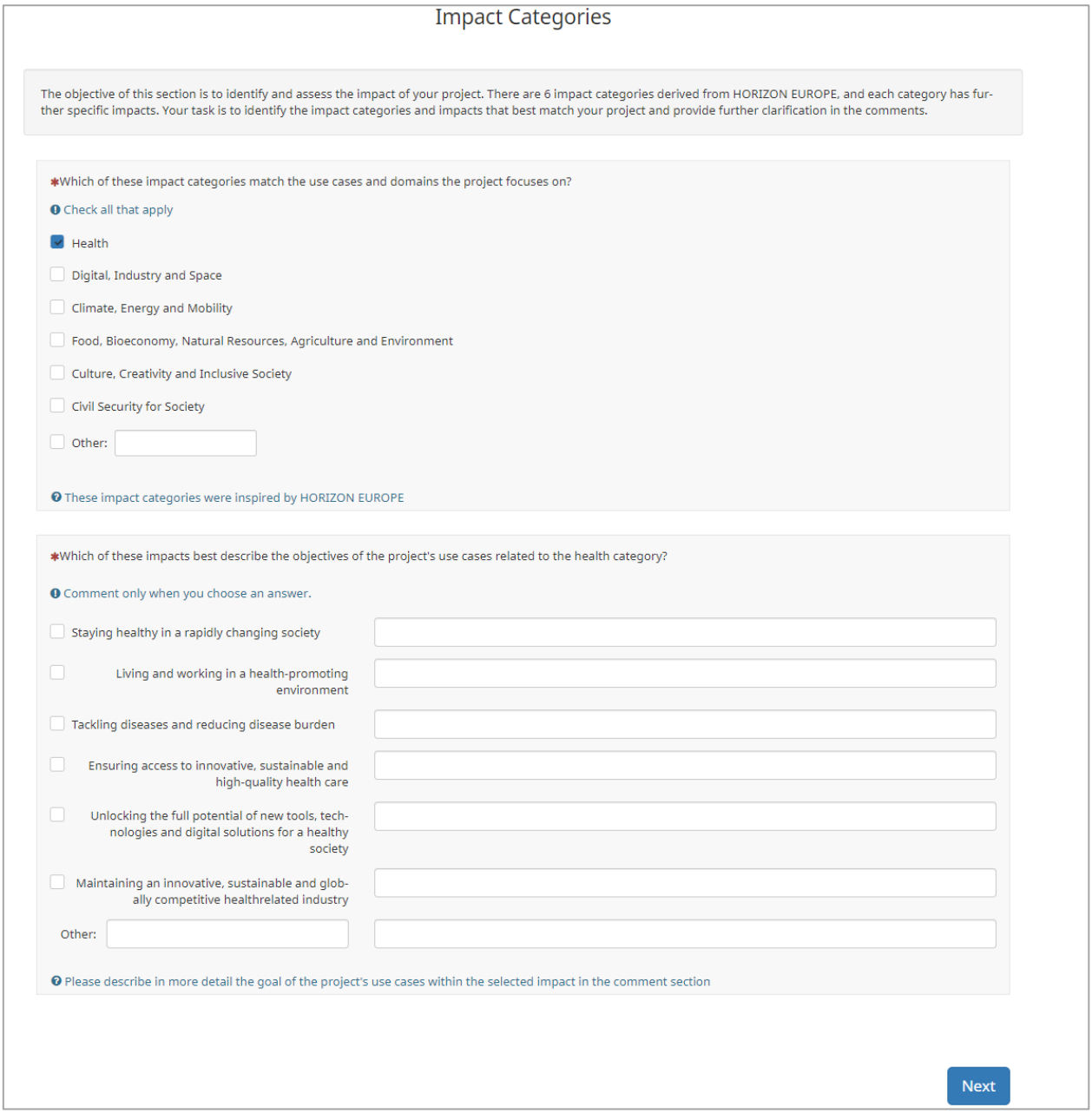
The required information were collected; therefore, a preliminary analysis of the collected data is also presented in the deliverable. The current work is focused on organizing and pre-processing the collected data while checking that the data is complete and cohesive. This step is crucial and a prerequisite to the analysis step especially that the ICT-56 projects just started and currently working on better defining the scope of their projects.

The next step is to analyse the collected information and provide the projects with insights on the relationship between planned actions and desired impact, potential missed impact areas, and recommendations about potentials synergies between the projects or outside entities.

APPENDIX A







Impact Categories

The objective of this section is to identify and assess the impact of your project. There are 6 impact categories derived from HORIZON EUROPE, and each category has further specific impacts. Your task is to identify the impact categories and impacts that best match your project and provide further clarification in the comments.

*Which of these impact categories match the use cases and domains the project focuses on?

Check all that apply

- [x] Health
- [ ] Digital, Industry and Space
- [ ] Climate, Energy and Mobility
- [ ] Food, Bioeconomy, Natural Resources, Agriculture and Environment
- [ ] Culture, Creativity and Inclusive Society
- [ ] Civil Security for Society
- [ ] Other:

These impact categories were inspired by HORIZON EUROPE

*Which of these impacts best describe the objectives of the project's use cases related to the health category?

Comment only when you choose an answer.

[ ] Staying healthy in a rapidly changing society	
[ ] Living and working in a health-promoting environment	
[ ] Tackling diseases and reducing disease burden	
[ ] Ensuring access to innovative, sustainable and high-quality health care	
[ ] Unlocking the full potential of new tools, technologies and digital solutions for a healthy society	
[ ] Maintaining an innovative, sustainable and globally competitive healthrelated industry	
Other:	

Please describe in more detail the goal of the project's use cases within the selected impact in the comment section

Next

Outcomes

The objective of this section is to collect the project's outcomes in terms of technology, market and business development, policy and standard, and skill transfer, then categorize the project's outcomes in the human-cloud continuum.

*How would you rate each of these topics in terms of relevance to your project?

	0 (no relvance)	1	2	3	4	5 (high relevance)
Human/IoT interface	○	○	○	○	○	○
Far edge	○	○	○	○	○	○
Near edge	○	○	○	○	○	○
Infrustructure	○	○	○	○	○	○
Data spaces	○	○	○	○	○	○

Human/ IoT interface relates to topics such as intelligence, digital interfaces (e.g. virtual reality), sensing digital (e.g. tactile internet), and robotics.

Far edge relates to topics such as intelligence at the far edge, improving processing (e.g. low power devices), and context awareness

Near edge relates to topics such as intelligence at the near edge and improving processing (e.g. virtualization- digital twins)

Infrastructure relates to topics such as improving processing (e.g. network virtualization) and intelligent networks (e.g. time-sensitive networking, 5G)

Data spaces relate to topics such as efficient and secure data spaces (e.g. plug & play models for autonomous applications) and managing data spaces (e.g. data governance)

*Please, describe the set of technologies you are developing in the project. Also, include links to any documentation or description of the developed technologies such as deliverables, papers, source code, and/or website.

*Please, describe the set of technologies you are developing in the project. Also, include links to any documentation or description of the developed technologies such as deliverables, papers, source code, and/or website.

*How would you categorize your outcomes related to technology in the human-cloud continuum?

Check all that apply

- ☐ Human/ IoT interface
- ☐ Far edge
- ☐ Near edge
- ☐ Infrastructure
- ☐ Data spaces
- ☐ Other:

Human/ IoT interface relates to topics such as intelligence, digital interfaces (e.g. virtual reality), sensing digital (e.g. tactile internet), and robotics.

Far edge relates to topics such as intelligence at the far edge, improving processing (e.g. low power devices), and context awareness

Near edge relates to topics such as intelligence at the near edge and improving processing (e.g. virtualization- digital twins)

Infrastructure relates to topics such as improving processing (e.g. network virtualization) and intelligent networks (e.g. time-sensitive networking, 5G)

Data spaces relate to topics such as efficient and secure data spaces (e.g. plug & play models for autonomous applications) and managing data spaces (e.g. data governance)

*Please, describe the project contribution in terms of market and business development.

*How would you categorize your outcomes related to market and business development in the human-cloud continuum?

Check all that apply

- [ ] Human/ IoT interface
- [ ] Far edge
- [ ] Near edge
- [ ] Infrastructure
- [ ] Data spaces
- [ ] Other:

Human/ IoT interface relates to topics such as intelligence, digital interfaces (e.g. virtual reality), sensing digital (e.g. tactile internet), and robotics.

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Data spaces relate to topics such as efficient and secure data spaces (e.g. plug & play models for autonomous applications) and managing data spaces (e.g. data governance)

*Please, describe the project contribution in terms of policy and standard. Specify the relevant SDOs and standardization entities as well as the specific topics or working groups you are targeting or considering.

e.g., W3C - WoT Thing Description - we are interested in the WoT security working group - we would like to contribute with an implementation of the specification in the healthcare use case

*How would you categorize your outcomes related to policy and standard in the human-cloud continuum?

Check all that apply

- [ ] Human/ IoT interface
- [ ] Far edge
- [ ] Near edge
- [ ] Infrastructure
- [ ] Data spaces
- [ ] Other:

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*Please, describe the set of training, skill transfer, or workshops you are planning to provide to the communities you are targetting. Also, describe how and where these activities are advertised and carried out.

e.g., training and workshops about IoT solutions developed in the project use case to SMEs in Greece operating in the agriculture domain. The trainings and workshops are held online and were advertised through a local SME agriculture association in Greece.

*How would you categorize your outcomes related to skills and training in the human-cloud continuum?

Check all that apply

- [ ] Human/ IoT interface
- [ ] Far edge
- [ ] Near edge
- [ ] Infrastructure
- [ ] Data spaces
- [ ] Other:

Human/ IoT interface relates to topics such as intelligence, digital interfaces (e.g. virtual reality), sensing digital (e.g. tactile internet), and robotics.

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Next

Results and open calls

The objective of this final section is to collect information about open calls if planned, get an overview of what the project has achieved so far, and collect some initial ideas on the contribution of the project to sustainability goals.

*Are you planning to organize open call experiments?

Choose one of the following answers

- (●) Yes
- ( ) No

If yes, please provide further information

Start date	
Duration	
Budget	
Open calls challenges	

*Please, list the set of KPIs defined for the project as described in the DoA (description of action).

e.g., reach 100 SMEs in the agriculture and health domains

If applicable, please, describe any initial results and milestones achieved by the project (provide relevant resources e.g., documents, links)

*What markets and target groups are of interest to your project?

*How your project is planning to contribute to achieving the targets in the Sustainable Development Goals (SDGs)?

e.g, The IoT use case in the agriculture domain deals with challenges associated with food security which aligns with SDG zero hunger.

To know more about the sustainable development goals check this link: https://sdgs.un.org/goals

Submit

We are very appreciative of the time you have taken to answer the survey. We will share the results with you once we have collected and analyzed the information in one of our EU-IoT calls.

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