TRACE

inTegration & haRmonizAtion of logistiCs opErations

# D7.3 Dissemination & Communications Activities (A)

Horizon Innovation Actions | Project No. 101104278

Call HORIZON-CL5-2022-D6-02

Co-funded by the European Union

| | |
|---|---|
| Dissemination level | Public (PU) |
| Type of deliverable | R – Document, report |
| Work package | WP7 – Outreach Activities and Impact Creation |
| Status - version, date | Final v1.0, 05/12/2023 |
| Deliverable leader | INC |
| Contractual date of delivery | 30/11/2023 |
| Actual date of delivery | 05/12/2023 |

## List of authors

| Author Name | Organization |
|---|---|
| Ioannis Neokosmidis, Theodoros Rokkas, Sophia Adam | INC |
| Konstantina Papachristopoulou | INTRA |
| Paola Lorenzoni, Olivia Ferrari | ISIG |
| Ioanna Mesogiti | COSM |
| Anthony Dionigi | TUW |
| Shameem Puthiya Parambath, Christos Anagnostopoulos | UGLA |
| Lucrezia Lattanzi | MOD |
| Kostas Kolomvatsos, Christos Kylafas, Nikolaos Tymplalexis | UTH |
| Ioannis Papamichail, Theofilos Triommatis | TUC |
| Enrico Pavesi | OLV |
| Spyridon Thermos, Nikolaos Zioulis | CDW |
| Panagiota Papadopoulou, Nikos Giannakakos | UNISYSTEMS |

| | |
|---|---|
| Elias Kosmatopoulos, Athanasios Kapoutsis, Savvas Apostolidis, Emmanuel Raptis, Athanasios Petsanis, Kiziridou Alexandra | CERTH |
| Alexandros Dalkalitsis, Triantafillos Karagianis, Petros Arvanitis | HT |
| Cezar Gremi | URBICO |
| Paolo Burgio, Michele Seeber | UNIMORE |
| Martin Sénéclauze | CSEM |
| Dimitrios Petridis | EPS |
| Theocharis Saoulidis, Konstantinos Kyranou | SID |
| Miquel Cantero, Sheila Sánchez, Carlos Catalán | ROB |

## Version History

| Version | Date | Author | Description of changes |
|---|---|---|---|
| 0.1 | 15/10/2023 | INC | Initial ToC |
| 0.2 | 22/11/2023 | INC, All | Input in chapters 2,3,4,5,6 |
| 0.3 | 29/12/2023 | INC | Input in chapters 2,3,7 |
| 0.4 | 01/12/2023 | INC | Version for internal review |
| 1.0 | 05/12/2023 | INC | Final Version |

## Peer Review

| Version | Reviewer Name | Organization | Date |
|---|---|---|---|
| 0.4 | Konstantina Papachristopoulou | INTRA | 5/12/2023 |
| 0.4 | Anthony Dionigi | TU Wien | 5/12/2023 |

## Quality Manager Review

| Version | Reviewer Name | Organization | Date |
|---|---|---|---|
| 1.0 | Ioannis Neokosmidis | INC | 5/12/2023 |

## Legal Disclaimer

# Executive Summary

The purpose of this document is to present the initial dissemination, communication and exploitation strategy along with the standardization plan.

To achieve the dissemination objectives several communication tools will be utilized, each of the tools is presented with details in this deliverable that will act as a reference for all partners participating in TRACE. The deliverable includes information regarding the targeted stakeholders, the communication channels, along with an initial list of conferences and journals that can be used to disseminate the results of TRACE.

To measure the progress and the impact of the proposed plan a number of key performance indicators have been identified. These indicators will be monitored throughout the duration of the project.

The initial list of the exploitable items, the main owner(s), and the current and expected TRL is presented along with the plan for joint and individual exploitation.

Finally, the initial list of groups and open-source communities that TRACE can contribute has been identified.

# Table of contents

# Table of figures

# Table of tables

# Definitions, Acronyms and Abbreviations

| Abbreviation | Definition |
|---|---|
| 3GPP | 3rd Generation Partnership Project |
| 5GAA | 5G Automotive Association |
| 5GS | 5G System |
| AEL | Alliance for European Logistics |
| AGL | Automotive Grade Linux |
| AI | Artificial Intelligence |
| AIAI | Artificial Intelligence Applications & Innovations |
| API | Application Programming Interface |
| CAD | Connected and Automated Driving |
| CEF | Connecting Europe Facility |
| CLECAT | European Association for Forwarding, Transport, Logistics and Customs Services |
| DSRC | Dedicated Short-Range Communication |
| DT | Digital Twins |
| EC | European Commission |
| ETC | European Transport Conference |
| EU | European Union |
| EWSN | Embedded Wireless Systems and Networks |
| GDPR | EU general data protection regulation |
| GML | Geographic Markup Language |
| ICT | Information and communication technology |
| IEC | International Electrotechnical Commission |
| IEEE | Institute of Electrical and Electronics Engineers |
| IP | Intellectual property |
| IPR | Intellectual property rights |
| IT | Information technology |
| ITCS | Intelligent Transportation Systems Conference |
| ITS | Intelligent Transport Systems |
| JTC | Joint Technical Committee |

| Abbreviation | Definition |
|---|---|
| KML | Keyhole Markup Language |
| KPI | Key Performance Indicator |
| ML | Machine Learning |
| MVP | Minimum viable product |
| OMA | Open Mobile Alliance |
| OSI | Open-Source Initiative |
| QMS | Quality-Management-Systems |
| RTNS | Real-Time Networks |
| SME | Small and medium-sized enterprises |
| TBA | To be announced |
| TLS | Transport Level Security |
| UC | Use Cases |
| V2X | Vehicle-to-Everything |
| VR | Virtual Reality |
| WFI | World Forum on Internet of Things |
| WMS | Web Map Service |
| WP | Work Package |
| XML | Extensible Markup Language |
| XSD | XML Schema Definition |

# 1 Introduction

Communication, dissemination and stakeholders' engagement processes are essential elements of TRACE project vision and general objectives.

Funded under the European Union's Horizon Europe Research and Innovation Program (Grant Agreement n° 101104278), the aim of TRACE is to design, implement and deliver to the logistics industry an intelligent, universal platform with functionalities related to planning, scheduling, optimization and events management as well as the use of blockchain technology to facilitate the real time conclusion of smart contracts and financial operations, thus, becoming one of the first attempts to provide an "intelligent cover" upon the current logistics framework.

The present document is considered a living document and is the first one coming out of Work Package 7 (WP7): Outreach Activities and Impact Creation, two more iterations D7.4 and D7.5 will follow on M24 and M36 respectively. These will provide information of the activities performed and any required updates to the plans presented in this deliverable.

## 1.1 Scope of deliverable

The current deliverable constitutes a key reference document for all communication, dissemination, exploitation and stakeholder engagement activities to be implemented within WP7 of the TRACE project and it is intended to function as a living document through the project lifetime.

The deliverable develops a comprehensive communication and dissemination strategy for the TRACE project that will act as a general roadmap for all TRACE-related communication and dissemination activities. It aims to serve as the project's integrated approach for informing and creating awareness about its assets, engaging stakeholders in its evolutions and impact and efficiently publishing project's results.

The main objective is to present a coherent plan and make a constructive contribution to implementing and delivering high impact communication and dissemination activities. The plan describes all the actions planned for the different stages of the project as well as activities running throughout the lifetime of the project.

This document is made to ensure that clear communication objectives have been set, that key target audiences have been identified and well defined, that tailored messages have been crafted per each target

audience, that the appropriate channels will be used, that sufficient communication materials and resources will be produced and that the right evaluation methods will be implemented.

The phases of the exploitation strategy are presented, along with the initial list of exploitable results and the individual exploitation plans for each of the partners.

Finally, the standardization bodies that TRACE can contribute are presented.

## 1.2 Relation with other work packages/deliverables

This deliverable is closely linked to the following deliverables:

- Deliverable D7.4 – Dissemination and Communications Activities (B) and Deliverable D7.5 – Dissemination and Communications Activities (C), that both serve as reports on the communication and dissemination activities adopted and implemented through the project lifetime.
- Deliverable D7.6 – Community building and Workshops, a report that focuses on the outcomes of the TRACE consortium efforts to build a stakeholders' network as well as on the workshops organized and realized throughout the project lifetime.

## 1.3 Intended audience

D7.3: Dissemination and Communications Activities (A) is a public deliverable and constitutes useful guidance addressed to any interested reader.

It is primarily written for the European Commission (EC), the Project Officer (PO) and the consortium members of the TRACE project, as a useful guidance for the planning of and contribution to TRACE communication, dissemination, stakeholder engagement and outreach activities. More specifically, it serves as a tool that helps them understand the project's communication objectives and how these could contribute to raising awareness of TRACE achievements in an efficient and effective way.

Nevertheless, special effort and focus has been also given on making this report a standalone comprehensible document for the public.

## 1.4 Deliverable structure

The structure of this deliverable is the following:

- Chapter 2 presents the dissemination and communication plans

- Chapter 3 presents the communication tools that will be used in TRACE along with the individual dissemination plans
- Chapter 4 presents the exploitation plan
- Chapter 5 presents the standardization plan
- Chapter 6 presents an overview of the plan that will be followed to present the guidelines and recommendations to local authorities and stakeholders
- Chapter 7 presents the Key Performance Indicators (KPIs) and the tools that will be used for monitoring them
- Chapter 8 presents the conclusions and next steps.

# 2 Communication and dissemination strategy of TRACE

## 2.1 Communication Approach

The communication and dissemination strategy of TRACE is analysed in the following five-step approach, as outlined in the chart here below:


***Figure 1: Steps for communication and dissemination strategy***

The aforementioned approach aims to address most of the basic elements of the TRACE communication plan, namely the target audiences, key messages for each target audience, communication means and channels to be used, as well as the time frame for delivering the messages. It also includes a monitoring and evaluation process to ensure the efficiency of the communications strategy and allow for the smooth coordination of individual communications activities throughout the project lifetime.

The successful implementation of this approach will maximise the communication's impact and it will ensure the project's higher visibility to targeted audiences.

## 2.2 Objectives

TRACE's Communication and Dissemination Strategy is carefully designed to motivate consortium partners to develop a systematic approach for these activities, supporting the effective communication of the

project's scope, objectives and expected impact, in addition to the presentation of each partner's contributions and work.

As set out in the TRACE project Grant Agreement, the strategic objectives for all communication activities realized during the project's lifetime will mainly focus on:

- Widely disseminating the project's concept, vision, expected results, unique attributes and potential impacts among the full range of its stakeholders; while constantly revising and evaluating effectiveness of selected means, ensuring that they are engaging and interesting to the identified target audiences;
- Maximizing outreach in the target audiences via a clear view of the project's concept, goals and results and creating high impact relations with them;
- Establishing a bidirectional way of communication with the developers' ecosystem;
- Promoting the project's added value to increase public engagement;
- Ensuring exploitation of the project's results;
- Liaising, collaborating and sharing knowledge with other major European initiatives and projects;
- Aligning, liaising and promoting the activities with standardization bodies, open-source communities and complementary initiatives;
- Contributing, upon invitation by the CINEA, to common information and dissemination activities to increase the visibility and synergies between HE/H2020 supported actions.

## 2.3 Target audience

The TRACE consortium has identified the following key audience groups:

- Internal stakeholders
- Application developers
- Service end users (Logistics Industries)
- Manufacturers/Suppliers
- Carriers and agents
- Infrastructure providers
- ICT providers, systems integrators and vehicles vendors
- SMEs being active in the logistics domain
- Governmental agencies, policy makers and public authorities

- Citizens, customers and the wider public
- Academia, research and other projects
- Open-source associations, technology clusters
- The general media (news sites, newspapers, TV, radio)

## 2.4 TRACE key messages

This section presents a set of TRACE's key messages and phrases, aiming at communicating the project to identified target audiences and to get people engaged.

It should be noted that these messages are indicative rather than prescriptive, the messages will evolve along with the project implementation and its validation. Partners are encouraged to adapt these messages according to their needs.

### 2.4.1 TRACE General Message

The below TRACE general message represents the official definition of the project based on its overview and mission. The message will be partly or extensively displayed on the project's website, social media and all official communication and dissemination materials.

The TRACE project, funded by the European Union under the Horizon Europe Research and Innovation Program, aims to provide an integrated solution to support the synchro-modal logistics paradigm that enables stakeholders in the logistics industry to optimize shared logistic operations in terms of costs, emissions, time and fuel requirements.

To achieve this, innovative AI-driven practices along with blockchain technology and specialized infrastructure will be employed to setup the basis for a higher level of trust, security, automation, transport productivity and efficiency.

Logistics industry is facing continuous and significant challenges during the recent years. The trend is the adoption of intelligent services for increasing the performance of the provided systems and synchromodal operations. The goal of synchromodal operations and the integration of heterogeneous logistics services is the reduction of current transfers in order to reduce the carbon footprint while securing the uninterrupted deliveries and the resilience to any disruptive event.

TRACE is an ambitious project and bears significant innovation potential. Its core contribution is to easily integrate heterogeneous logistics operations and support them with an advanced mechanism for the technical and financial management of the shared resources. Thus, TRACE is expected to enhance the "interoperability" of logistics operations and create new pathways for innovative business models upon the current infrastructure.

### 2.4.2 TRACE Key Phrases

The following is a list of key phrases that may be used on several communication activities and means:

- ✓ TRACE will integrate, harmonize, and orchestrate independent logistics operations with heterogeneous processes.
- ✓ TRACE will design and implement an intelligent platform for combining open and shared logistics services for enhancing transparent collaboration activities.
- ✓ TRACE will design and implement the appropriate AI modules for supporting the automated synchro-modal services in the logistics domain.
- ✓ TRACE will implement the appropriate infrastructure for supporting dynamic flows towards the optimization of logistics services.
- ✓ TRACE will implement a set of large scale demonstrators in Greece, Italy and Slovenia adopting intelligent logistics operations in real traffic conditions.
- ✓ TRACE will perform a study on barriers and opportunities for realizing a logistics network.
- ✓ TRACE will perform a study on novel business models for future logistics operations.
- ✓ TRACE studies the governance of logistics networks and regulations around Europe and worldwide.
- ✓ TRACE performs the necessary outreach activities to raise the attractiveness and visibility of the platform while enhancing the collaboration with external actors and stakeholders.
- ✓ The ultimate goal of TRACE is to enhance the “interoperability” of logistics operations and create new pathways for innovative business models upon the current infrastructure.
- ✓ The scope of TRACE includes the adoption of novel technologies in combining heterogeneous logistics operations to develop a smart mobility system for the delivery of goods.

### 2.4.3 Tailored Key Messages per Audience Group

This section presents selected key messages tailored to each of the TRACE target audiences, to reflect efficiently on what the project intends to communicate per audience. By tailoring the messages, the TRACE team will ensure a significant impact of the diffused information and will engage the audience according to their interests and needs. The following table presents the list of key messages adapted to each one of the identified target groups.

*Table 1: Key messages per audience type*

| Target Audience | Key Message |
|---|---|
| **Internal Stakeholders** | Stay tuned with TRACE news and recent developments and continue to spread the word to your networks and colleagues. |
| **Application Developers** | The TRACE open platform provides the enabling environment for developers to build innovative, custom-made solutions upon heterogeneous logistics operations can be adopted by stakeholders active in the logistics domain. The adoption of the TRACE solution can significantly impact the creation of new startups, 5PL operations and beyond, as well as the growth of software SMEs in the field of logistics services, blockchain technologies enabling and also system integrators to seamlessly integrate 3rd party applications in their targeted customer service solutions. |
| **Service end Users (Logistic Industries)** | The logistics service end users are the recipients of the innovative technology solutions and are primarily benefited by the performance gains in their processes and the assistance in concluding smart contracts and financial operations upon shared resources. The discussed processes may range for optimised process and workflows scheduling, increased logistics automation, reduction of failures and interruptions, resistance to disruptive events and even cross-sector (internal) and cross-value chain (external) process optimisation including energy and resource savings while minimizing the impact on the environment. |
| **Manufacturers / Suppliers** | European vertical industries are seeking enhanced technical capacity to differentiate themselves at international level and to strengthen their brands. Especially for manufacturers/suppliers, TRACE has a significant impact on the smooth delivery of their products which enhances their brand names and minimize delivery failures. The availability of the TRACE outcomes will allow industries to set up and validate different use cases as well as to support the generation of what if scenarios and their evaluation. |

| Target Audience | Key Message |
|---|---|
| | In this way, industries can benefit from the enhancements and new capabilities provided by TRACE logistics operations allowing them to incorporate new processes and/or enhance existing ones, thus gaining in efficiency and profitability. Additionally, manufacturers/suppliers can easily collaborate with the aim of sharing and reducing individual logistics costs gaining form the advanced traceability functionalities. The envisioned deployments will be effective with significant impact on the manufacturers/supplier's operations as TRACE realizes an integrated information system shared between the various parties. |
| **Carriers and agents** | The common 'ground' for logistics operations and a novel smart contract system that TRACE proposes can facilitate carriers and agents to dynamically adjust their operations. Currently, with fixed contracts there is often unused capacity within the time and space leading to increased costs and negative effects in the supply chain especially when intermediate warehouses are involved. The necessary space is dynamically discovered based on our platform and the matching is concluded in real time together with the necessary financial operations to support new business models. The versatility of digital technology can make the whole booking and billing process fast and highly responsive as well as accurate. Additionally, TRACE creates opportunities for logistics businesses to lend consumers their small and medium-sized delivery trucks in 'neutral' time instances, e.g., evenings or at weekends. Similarly, if their forklifts and other materials handling equipment are not in constant use, they can be hired by warehouse-based retailers out of hours. Such expertise is exposed by the TRACE platform. |
| **Infrastructure providers** | Infrastructure providers can be discerned to logistics infrastructure actors and ICT/telecoms infrastructure stakeholders. Both facilitate the links to the logistics services end users and may exploit the TRACE platform as a service offering to them. The deployment of the TRACE functionalities is a significant |

| Target Audience | Key Message |
|---|---|
| | asset to easily bridge multiple players active in the supply chain. The adoption of TRACE opens up the pathways for logistics infrastructure providers to support services fully aligned with the real needs and the delivery of items meeting pre-defined constraints. The adoption of 5G/6G (5G corridors among them), ICT/telecoms infrastructure providers face a unique opportunity, i.e., to facilitate the collection and transfer of data to the edge and the backend infrastructure supporting the management of logistics operations in real time. Certainly, the usage of higher frequencies from 5G platforms requires a denser network, to make up with the smaller coverage range and the weaker propagation, however, TRACE incorporates this vision into the proposed deployments/demonstrators. The TRACE added value in this direction is that the proposed secure shared network in combination with the increased scalability, will make the role of infrastructure providers more crucial than ever. |
| **ICT providers, Systems integrators and vehicles vendors** | TG6 – ICT providers, Systems integrators and vehicles vendors. The Internet of Things (IoT) and network gadgets used in our pilots demonstrate our desire to reveal how those tools and technology will affect the manufacturing industry. Real-time processing is necessary, which paves the way for unique items in the near future. Over the past few years, significant advancements in this area have provided improved processing capability while reducing size and power consumption. These advancements call for a functional platform solution, like the TRACE platform, that can convey the end user application seamlessly and maximize its potential when deployed at the edge, especially as collaborative rather than single nodes. If such a solution is adopted and then the cost is reduced, as is anticipated in high production numbers, the market for this product might increase explosively. TRACE will have a significant positive impact on system integrators and technology/platform suppliers, and it will allow them to work with top industrial players and manufacturers. In particular, the ICT industry will |

| Target Audience | Key Message |
|---|---|
| | receive a clear roadmap and exploitation opportunity by participating in the design and prototyping of the ML, AI, blockchain/security, etc. The goal of moving closer to the network edge, virtualisation and "cloudification" of architectures will result in deep transformation of the network domain, unleashing a high demand of ICT as well as of cloud and edge computing expertise. |
| **SMEs being active in the logistics domain** | Partnerships involving some degree of joint planning will be facilitated aligning the supply chain partners and to make operating decisions. Joint control is another impact point of the TRACE solution which helps all the supply chain members to eliminate wastes and unnecessary operations enhancing their customer services. Also, TRACE assists in communication and information sharing to improve the coordination between supply chain processes enhancing the level of supply chain integration and affecting the performance of supply chain members in terms of cost and service level. The balance between sharing the risks and rewards is one of the key motivating factors for establishing and maintaining supply chain partnerships. Contracting is also facilitated reducing the costs of the financial operations and improving the commitment in partnerships. This is very significant as SMEs have as a common feature limited financial assets. Under the ICT/telecoms perspective, the decoupling of software and hardware virtualization technologies, and the introduction of successful, open-source software tools for networking and the processing through ML/AI and optimization techniques leads to open network ecosystems that are no longer limited to the large manufactures and their customers. With the use of blockchain, AI, ML-based instantiation and edge computing technologies, as proposed by TRACE, advanced functionalities will become easily reconfigurable and scalable while making very easy the integration of multiple heterogeneous logistics operations. This will greatly influence SMEs that develop ICT/telecoms services, since they will be able to innovate and |

| Target Audience | Key Message |
|---|---|
| | launch new applications leveraging the new capabilities of 5G/6G, AI/ML and blockchain. In the new, unlocked ecosystem of TRACE, SMEs can take the role of the application developers and maintainers. Lowering the barrier for new market entrants is a recognized benefit for software technologies, and is of particular importance for the corresponding market, which was traditionally dominated by few 'big' players. |
| **Governmental agencies, policy makers and public authorities** | TRACE provides the necessary studies on the required regulations to meet the challenges of the new era in the logistics domain. TRACE demonstrators will expose the required updates in the underlying physical infrastructures when synchromodality is the case. For instance, special urban and extra-urban corridors should be designed to be adopted in logistics operations. Authorities will find the ground to deeply analyse the provided use cases and gain valuable conclusions. All the above stand true for the financial as well as TRACE targets to propose a new financial and smart contracts tool based on the blockchain. There, regulations should be delivered to secure the market against disruptions and fraudulent events that could jeopardise the stability of the system. Finally, TRACE will expose the barriers in the integration of multiple heterogeneous logistics operations and the management of numerous financial transactions upon the optimized logistics workflows operations. |
| **Citizens, Customers, Wider Public** | The impact to the citizens/customers/society is transferred through the enabled services offered. The specific application areas in TRACE project demonstrate related direct benefits with respect to the working environment satisfaction and safety in logistics operations, especially when synchromodal services are incorporated into the supply chain activities. |

| Target Audience | Key Message |
|---|---|
| **Academia, Research and other Projects** | From the scientific point of view, a direct multi-disciplinary impact is expected on: a) the deployment of new drivers and controllers for different types of services and devices adopted for facilitating logistics operations; various tools, methodologies and technologies will be incorporated into the envisioned demonstrators, b) the development of new shared resource optimisation mechanisms, attestation, access control and monitoring schemes, c) the development of new types of applications across-diverse and collaborating logistics sectors in the industrial value chain and d) further enhancements related with advance tools for optimised logistics workflow scheduling, shared resources exchange and financial operations delivery. TRACE will also target high quality publications at top conferences and open access journals and will leverage greater collaboration between industry and academia around the adoption of ICT/telecom technologies in the logistics domain. The acquired knowledge will enable the proposition and proper design of new courses related to logistics and ICT technologies as well as the updated introduced and integrated technological developments, insights and results from TRACE into the syllabus and master/PhD level projects and research and, in that way, expose future generations of Logistics, Economic, Engineering and Computer Scientists within European community to leading edge R&D. |
| **Open-source associations, Technology clusters** | Due to the open nature of the TRACE platform, a key impact is expected through the involvement in open-source associations. The impact can be both towards the adoption of TRACE as a middleware platform for services over logistics and IoT/edge systems and the raise of awareness in vertical sectors. |
| **The Media** | TRACE is expected to generate significant media interest in order to flow its outcomes to a wider European audience. |

## 2.5 Communication and dissemination phases

In terms of time schedule, the TRACE project will follow a three-stage approach for the planning and implementation of its communication and dissemination activities.

**Phase 1 - Preliminary Project Promotion (M1-M12)**

- Agreeing upon the dissemination and communication strategy and the plans for future activities of TRACE.
- Creating initial awareness in the markets related to the project's objectives and scope.

**Phase 2 - Project Commercialization (M13-M30)**

- Creating more "targeted awareness" regarding TRACE technologies with key players and potential users;
- Informing the target market about the technological breakthroughs and business benefits of TRACE.

**Phase 3 - Business Strategy (M31-M36)**

- Maximizing target market and industry awareness regarding the TRACE universal platform and its exploitable products;
- Ensuring project sustainability and effective exploitation.

During the Preliminary Project Promotion phase, the focus will be given on informing the public about the project's concepts, the main objectives and the expected impact, as well as reaching out to the targeted audiences and relevant stakeholder groups. During this phase, special attention will be mainly given to spreading knowledge about the project's aims and its initial findings to gain maximum support from stakeholder communities, while at the same time motivating possible interested parties to actively engage.

The Project Commercialization phase will build upon the review and evaluation of the first implemented activities and will proceed with promoting the early project results from use cases' impact assessment, as well as the business benefits, in more tailored ways for each of the key targeted stakeholder groups. The focus will be concentrated on the effective communication of the already available project assets and results, and it will try to raise further awareness on project related issues, in a collaborative engaging way.

In the Business Strategy phase, a major effort will be focused on the effective dissemination of the project results and exploitable products to the targeted audiences in a way of ensuring the long-term impact of project's results and their market sustainability (in line with TRACE exploitation plan).

# 3 Communication tools and channels

## 3.1 Visual identity

The TRACE brand identity consists of a manual/guide that provides a thorough description of its visual and verbal elements. This set of guidelines reflects TRACE's commitment to quality, consistency and style. The TRACE logo guidelines must be followed throughout the project runtime, to achieve the desirable uniformity and integrity of its identity and to the awareness and recognition for its brand.

The guidelines serve also as a useful toolkit for the production of branded items for TRACE, as well as for the design of its dissemination and communication material.

A consistent and coherent visual identity has been already developed for TRACE, including a logo along with its variations, a colour palette, a template for project deliverables, a template for project PowerPoint presentations and a poster.

Additional communication material (e.g., video, e-newsletters, factsheet, leaflet, poster, rollup banner) will also be created. A meticulous description on TRACE visual identity will be also provided within Deliverable 7.4 "Dissemination and Communication Activities", due on M24.

The TRACE Brand Identity Guidelines including detailed information about the logo design and usage, the colour schemes and the typography have been produced, has been distributed to all partners and uploaded in project's common online collaborative tool for further relevance.

### 3.1.1 Project logo

A dedicated logo was designed by specialists from the beginning of the project in order to act as a trademark, promote instant public recognition and trigger reactions from the viewers even from the first conducted communication and dissemination activities.

The TRACE logo has a clear, memorable and easily recognisable visual style that gives an accurate impression of what the project mainly represents, its basic aspects and core activities.

The logo has been produced in several formats (including positive and negative formats) for different uses and reproduction purposes (presentations, roll-up banners, leaflets, website, etc.). It also has two versions, a horizontal and a vertical.

The graphical element of the logo, namely the icon, could stand itself and might be used as a monograph logo in a variety of printed and digital media.


*Figure 2: TRACE logo (horizontal)*


*Figure 3: TRACE logo (vertical)*

### 3.1.2 Colour Palettes

Colours is also an important part of TRACE's identity system. Colours create a vibrant visual experience. They make things more attractive, affect people's mood and can even subconsciously shape action.

Keeping the project's colours cohesive in both print and digital use (online presence, communication and dissemination materials, templates, documents, etc.), is a big part of maintaining its visual effectiveness and create a strong and consistent visual presence. For that reason and from the beginning of the project, TRACE's colour palette has been specified in detail and exact colour codes for each colour used have been laid out, including RGB and CMYK colour codes.

| | DARK GREEN | LIGHT GREEN | BLACK | WHITE |
|---|---|---|---|---|
| CMYK | C: 90% M: 35% Y: 100% K: 25% | C: 90% M: 35% Y: 100% K: 25% | C: 0% M: 0% Y: 0% K: 100% | C: 0% M: 0% Y: 0% K: 0% |
| Web Color Hex | #016838 | #8cc63f | #1D1E1C | #ffffff |
| RGB | R: 1 G: 104 B: 56 | R: 140 G: 198 B: 63 | R: 29 G: 30 B: 28 | R: 255 G: 255 B: 255 |

***Figure 4: TRACE colour palette***

### 3.1.3 Templates

Well-designed templates that reflect the project's visual identity and keep a consistent and cohesive visual presence have been created from the beginning of the project.

So far, the following resources have been created, based on a clear, minimalistic approach:

- PowerPoint Template
- Word and deliverables Template
- Meeting Minutes Template

All project templates have been uploaded on project's common online collaborative tool for further relevance.

## 3.2 Communication and Dissemination Channels for TRACE

For effective messaging, a broad range of communication channels including traditional and new media will be utilized by the project to reach and interact with its target audiences, capturing their attention frequently and precisely.

The main communication channels used to target specific groups of stakeholders have been divided into one-way communication channels and two-way communication channels. One-way channels have the benefit of achieving broad visibility, reaching general public en masse and enjoying the credibility of established media platforms. Two-way channels can be seen as more effective as they involve dialogue, interactivity and flexibility, but they often reach a smaller number of people. These two types of

communication thus complement each other. The key communication channels for TRACE are detailed below.

One-way communication channels for TRACE

- Project website
- Digital media, such as online newspapers and magazines
- Traditional media, such as TV, radio and press
- Communication and dissemination materials, such as roll up banners, leaflets, factsheets, posters and newsletters
- Press releases, advertorials

Two-way communication channels for TRACE

- Social media: Twitter, YouTube, LinkedIn;
- Dialogue with networks, communities and associations
- Face to face meetings
- Field events such as conferences, fairs, webinars and workshops
- Demonstrations
- Final Event

### 3.2.1 TRACE Website

The TRACE website will be the main communication channel, providing general information, news about the project and the latest results. The main objective of the website is to present the project to all interested parties, experts and to the public. The current version of the website has sections for three pilots and the work packages, the consortium, the project news, for the newsletter and for the outcomes. The first page presents the objectives, an overview of the consortium, and the pilots along with the latest news.

The website is being updated regularly with the latest news of TRACE, major achievements and results, participation and organization of events, all public deliverables, link to social media accounts of the project and the communication material that will be produced during the evolution of the project.

The URL of the TRACE website is the following: https://trace-horizon.eu/

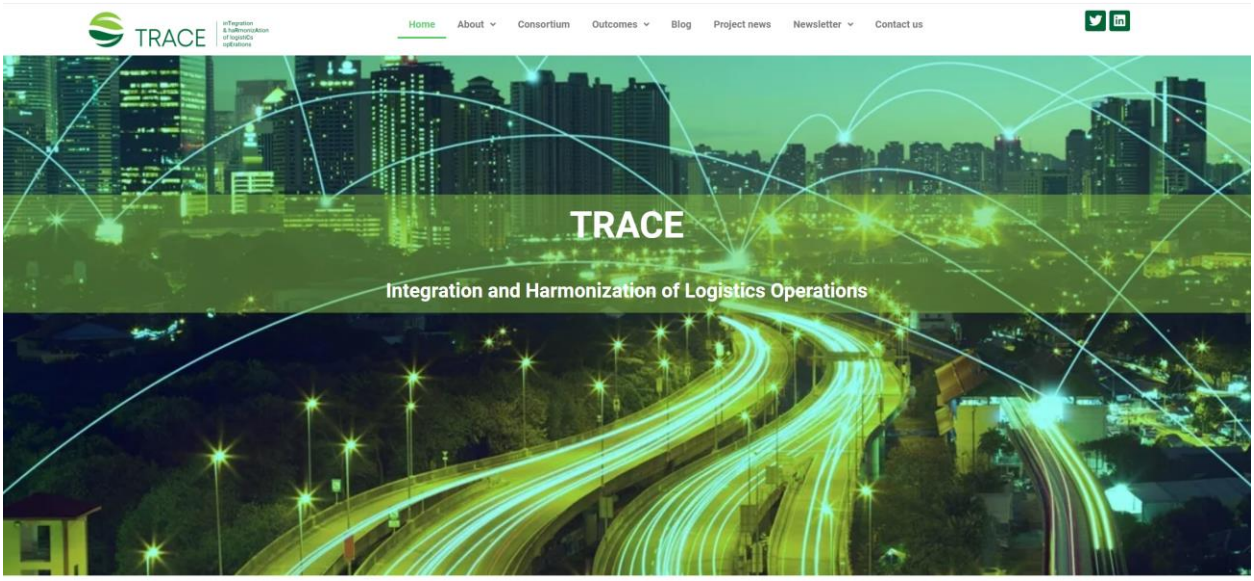


***Figure 5: website of TRACE***

The TRACE website will remain available at minimum for two years after the end of the project to help towards the sustainability of the project and its results.

### 3.2.2 TRACE at social media

In addition to the TRACE website, social media are being used as another communication channel to share the latest information about the project. For all created accounts, a common identity has been adopted using the same colours, logos and images, which supports the establishment of a brand name for the project.

The social media accounts utilised are Twitter (X), LinkedIn and YouTube. These channels will account the latest news and results from the project to be communicated to external stakeholders.

### 3.2.3 Twitter (X)

Twitter is being used to communicate quickly the latest news from the project such as participation at events, publications, major achievements and milestones. It will also direct users to the TRACE website where they can find more information. The account name that was used is: @TRACE_HORIZON.

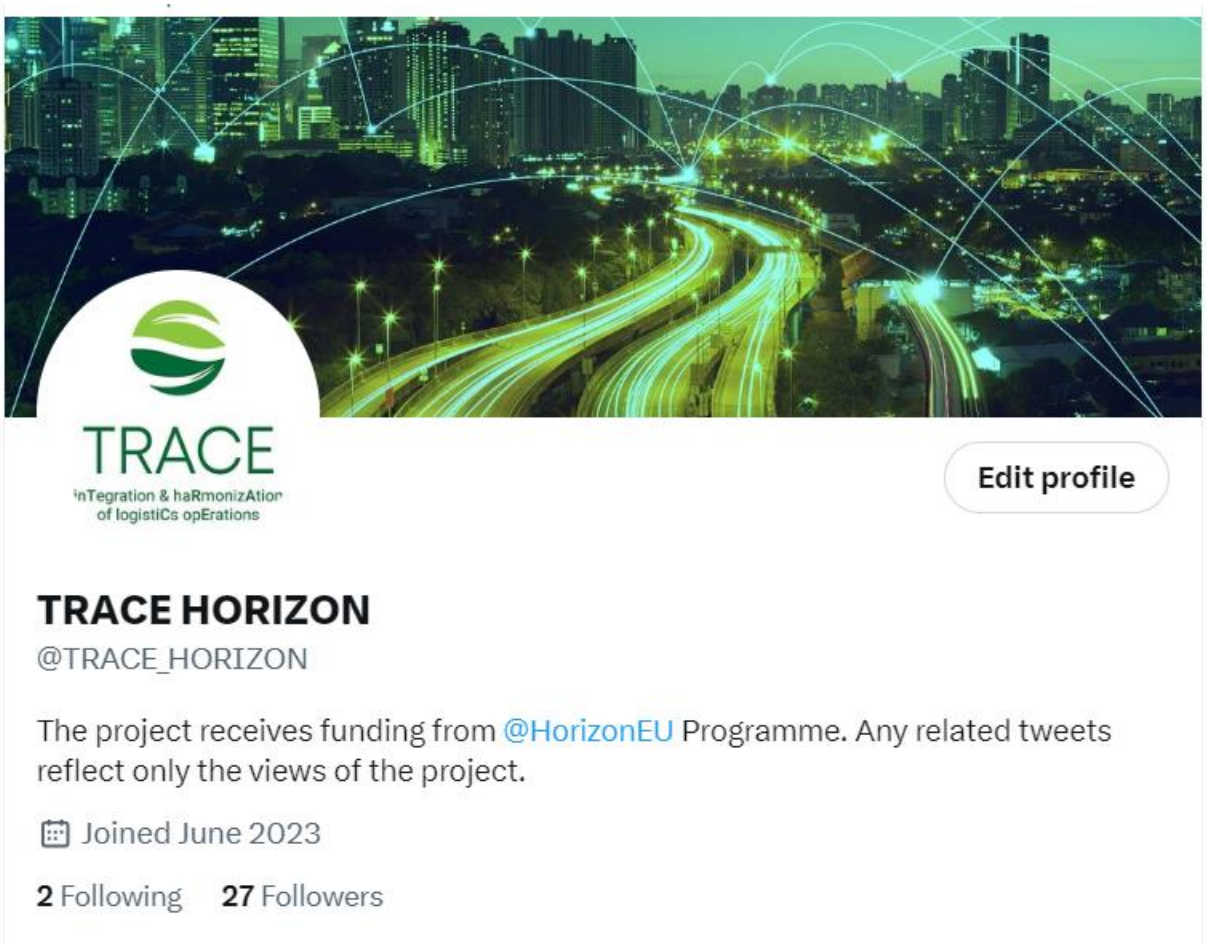


***Figure 6: TRACE twitter account***

### 3.2.4 LinkedIn

The LinkedIn account of TRACE is used also to post the project news targeting researchers and industrial stakeholders. The link of the account is the following:

https://www.linkedin.com/company/trace-horizon-project

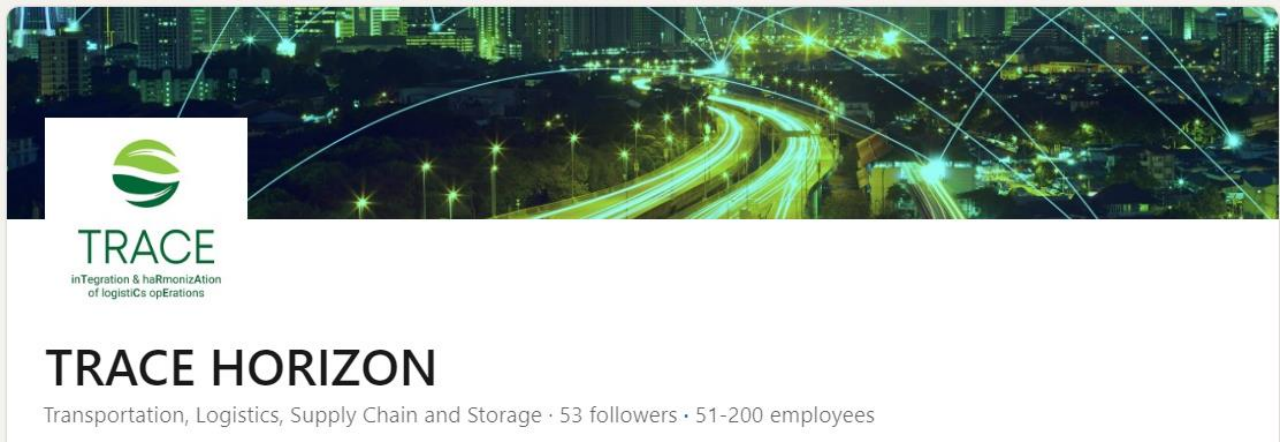


***Figure 7:TRACE LinkedIn account***

### 3.2.5 YouTube

A TRACE YouTube channel will be created at a latter phase and will be used as a key communications platform for project's upcoming video content.

## 3.3 TRACE Zenodo community

A TRACE community has been created in Zenodo, all publications and open data will be published there. The link to the TRACE Zenodo community is the following: https://zenodo.org/communities/trace_project

## 3.4 Newsletter

TRACE's newsletter will be disseminated via project's website, social media and direct mailing to a dedicated list of recipients that is currently being enriched via a dedicated subscription form uploaded on TRACE's website.

Moreover, partner recipients of the newsletter will be encouraged to spread TRACE newsletter to their own networks, which is expected to gradually result in a substantial number of subscribers and to generate word-of-mouth referrals.

Experts and professionals from different fields (AI, logistics, etc.) who can contribute to raise awareness on TRACE will be invited to contribute to the newsletters.

## 3.5 TRACE kit (Brochures, Flyers, Posters, Rollup Banners)

A poster dedicated to TRACE main ideas and vision has been designed and created by WP7 team members and is available to all partners for usage in their early communication and dissemination activities.

A TRACE brochure is expected to be developed, focusing on a general presentation of the project and its components and illustrating its concepts, mission and impact. It will be made available to all partners for usage and distribution at external conferences, workshops and meetings as well as during TRACE demos. The leaflet will be updated, if necessary, in the course of the project to include TRACE's key findings and results.

A Roll up banner template is also expected to be created, displaying the project's visual identity and providing a particularly practical tool with which to promote TRACE and deliver its assets, drawing the attention of the audiences during the different events.

A TRACE flyer that will present briefly the main elements and ideas of the project will also be created.


***Figure 8: First version of TRACE poster***

## 3.6 Videos

Videos will also be designed and created during the TRACE lifetime that will cover TRACE general ideas, presentations and talks, as well as non-technical information about the project, targeting mostly TRACE non-expert audiences. Video presentations will also follow each of the tested use cases by the involved partners. All videos will be publicly available via TRACE channels (e.g., social media, website, newsletters etc.) and widely open to receive feedback.

## 3.7 TRACE Q&A platform and Knowledge Hub (Stack Overflow)

Collaboration and knowledge sharing are essential to TRACE's success. To facilitate effective collaboration and leverage collective expertise, the consortium created a Stack Overflow team for TRACE to support interactions that are oriented to the development of the TRACE platform. Stack Overflow Teams, built on the foundation of the Stack Overflow community, enables teams to work seamlessly, share knowledge, and solve problems collaboratively. By creating a Stack Overflow Team, we create a centralized knowledge repository where TRACE members can post questions, share knowledge, and document solutions, creating a valuable knowledge base accessible to all. This enables efficient problem solving as team members can quickly search for answers, reducing project bottlenecks. The platform offers a private and secure environment, ensuring the confidentiality of sensitive project information. With features such as tagging, categorization, best practice documentation and enhanced collaboration, Trace can benefit from a streamlined workflow, higher productivity and better code quality, making Stack Overflow Teams a valuable tool for project development. This analysis shows how leveraging Stack Overflow Teams can significantly improve collaboration, problem solving, and cooperation.

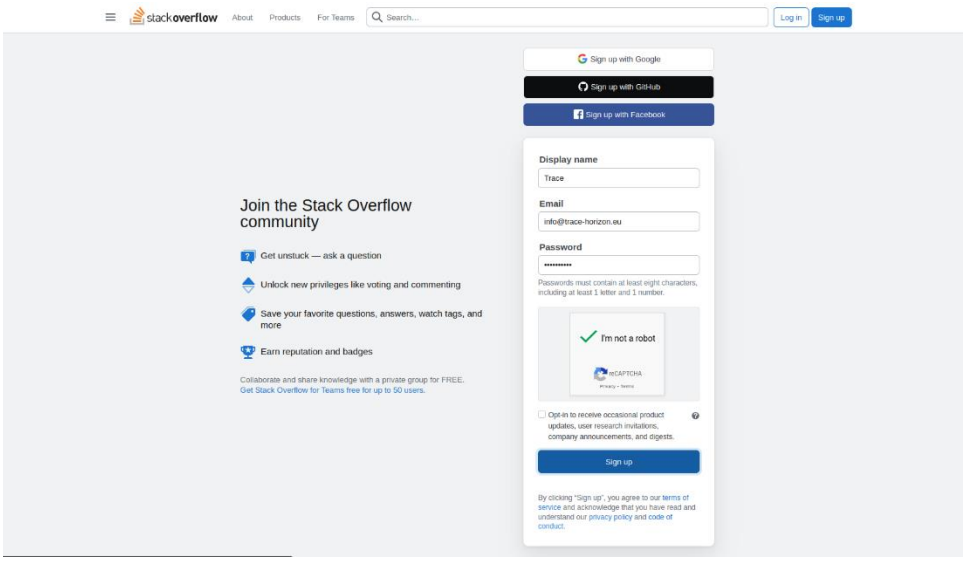


***Figure 9: The Stack overflow login page***

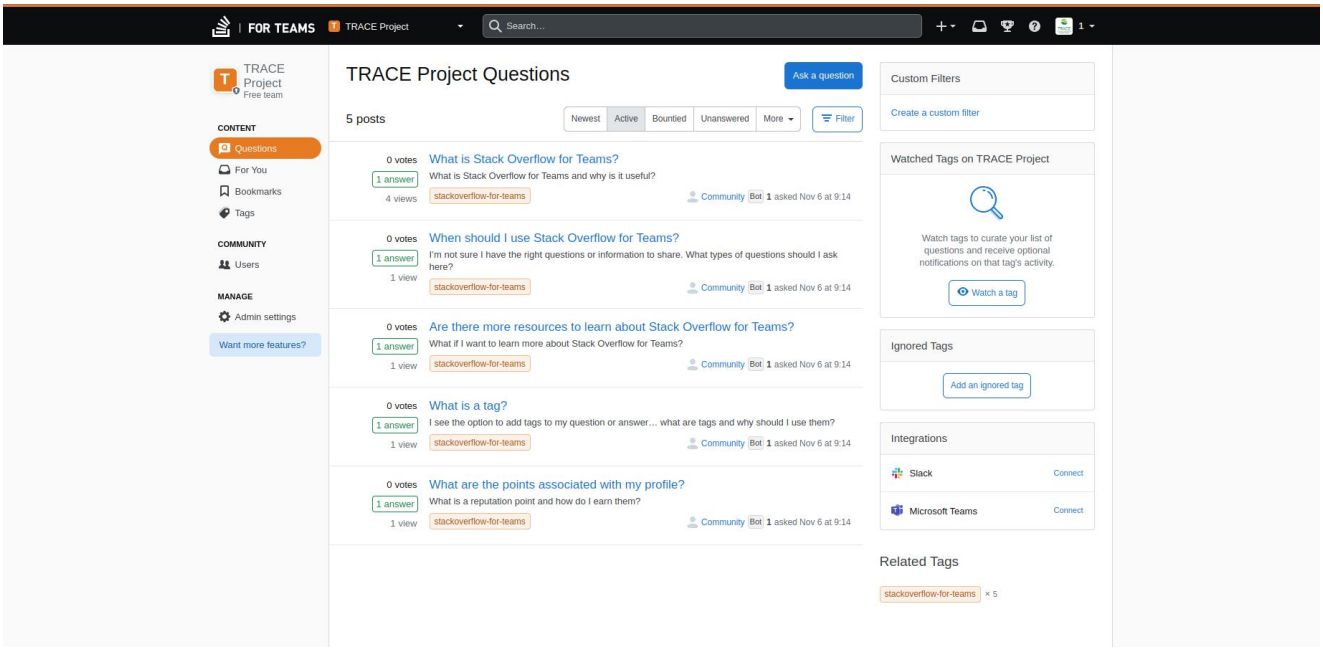


***Figure 10: The environment of the Stack Overflow TRACE team.***

## 3.8 Dissemination Activities

### 3.8.1 Scientific Publications

TRACE will draft scientific publications and other contributions for the technical literature and dedicated high impact journals to share with the scientific community the project's main concept, targets. Later on,

the outcomes and knowledge gained during the project will be also used for the drafting of peer reviewed publications.

The ultimate goal of scientific publications within TRACE is to enrich science by publishing original empirical and theoretical work developed within the project.

Type of publications:

- Technical papers for conferences, which contain information mainly related to certain innovation, tests, certain results, etc.
- Scientific conference papers, where the content is explained in a wider context (e.g., by adding literature references).
- Journal papers, which explain the work in a wider theoretical context and pinpoint the originality of the paper by positioning the work in existing literature.

Journals, as well as conference proceedings, are considered as key channels for TRACE scientific dissemination. TRACE will mainly include open access journals ("gold") and self-archiving ("green") to non-open access journals to comply with the Horizon Europe's Guidelines on Open Access. The TRACE communication team has already created an indicative list (calendar) of relevant scientific journals, to facilitate partners towards the submission of scientific papers, which can be found within Annex A of the current document.

### 3.8.2 Participation in Conferences, Events, Workshops, Fairs and Exhibitions

One of the project's significant dissemination activities will be the consortium participation (physical or virtual) in external conferences, workshops co-located with major conferences and other third party events of the interest of the project via project presentations and other knowledge exchange activities. Additionally, the project's presence in fairs and exhibitions is foreseen. The main aim of this practice is to raise awareness about the project, inform about its assets and disseminate its results within the scientific and technology community, businesses, end users, public authorities, policy makers, etc. From the beginning of the project a calendar of upcoming events and conferences are considered as valuable opportunities for the project have been created and is regularly updated mainly by WP7 team and by the consortium partners. TRACE partners are regularly informed about upcoming key opportunities so they will be able to benefit from them. The calendar can be found in Annex B of the current document.

### 3.8.3 Webinars

Targeted industrial webinars are also expected to be organized and implemented during the project lifetime that will address mostly the vertical end users and developers. The organized webinars will explain to the participants the main concept of TRACE, the capabilities of its platform as well as provide key application examples and practical details on the expected functionalities and interfaces.

### 3.8.4 Press Releases and Media coverage

Gaining positive and consistent coverage in the media is amongst the main goals of TRACE and is expected to have an incredible impact on the work we do. Getting more people thinking positively about the project and spreading its messages across to a wider audience are key prerequisites for TRACE's communication and dissemination activities and a great way of providing the project and its assets with greater credibility.

Media coverage could shape opinions, build the project's profile, be able to attract general public and get TRACE noticed among decision makers and politicians, professionals and organizations in the logistics industry and the scientific community.

Project's press releases will be developed both for all major events and for the dissemination of the project's key findings and results in various trusted local and European media. Partners will be responsible for translations and regional adaptations as well as to create media contact lists with key journalists and bloggers specialized in logistics, technology and science.

### 3.8.5 Presentations at standards organisations and Open-Source Communities

Dissemination of the proposed approach and generated knowledge will be targeting standards organizations (such as ETSI, ISO, etc.) and Open-source communities (e.g., OSOR, OSBA, OpenForum, GFOSS, etc.) for raising the awareness of decision-making groups and promote the potential exploitation of TRACE, as well as identify critical business synergies. Additionally, the extracted datasets and publications will be published in open repositories like OpenAIR, Zenodo, etc.

### 3.8.6 Source code repository

Encouraging a transparent and open-source culture, TRACE will make accessible its software repositories through well-known distributed source code platforms. The TRACE Zenodo community will also be used as a repository.

### 3.8.7 Whitepapers

Whitepapers will be created based on the results of the project to give readers the opportunity to better understand the achievements of the project. The first whitepaper has already prepared by BC5 and presents a detailed view on the suitability of the Algorand Blockchain for the TRACE project. The Whitepaper contains the comparative analysis of widely popular blockchain protocols on various quantitative and qualitative parameters. The whitepaper emphasizes the economical, technical & environmental sustainability of the blockchain protocol to be used. The Whitepaper is titled "Blockchain in Logistics: A Protocol Selection Guide". The second whitepaper that will be edited by EPS will present a whitepaper upon finalisation of the Task 2.7 concerning the KPIs.

## 3.9 Clustering & Networking Activities

TRACE will perform throughout the project duration networking activities to exploit potential synergies with pertinent EU projects, associations and clusters.

### 3.9.1 Clustering activities with other EU projects

TRACE consortium will coordinate with other relevant actors and build on top of existing national and European projects and initiatives. Possible collaboration in joint workshops or other activities and events (e.g., webinars, exhibition stands) will be sought wherever possible. TRACE will invite members of projects as speakers in webinars, workshops and other events and activities organised by the project to discuss and provide their valuable insights in the integration activities of the logistics industry and in standardisation. Moreover, the project will seek to participate in related projects' events with the aim to present the project's approach, key assets and outcomes and to have an exchange of views in common research fields.

### 3.9.2 Indicative list of related projects

TRACE is expected to establish scientific links with the HORIZON-CL5-D6-02 calls projects for interaction and common dissemination and standardization activities. Extension also towards projects in co-programmed activities such as HORIZON-CL5-2022-D6-02-02, HORIZON-CL5-2022-D6-02-04, HORIZON-CL5-2022-D6-02-05 and HORIZON-CL5-2022-D6-02-07.

The establishment of possible collaborations in joint workshops, webinars and other events and activities will be sought within the related projects that are indicatively listed and described below.

*Table 2: Related projects*

| Project name | Description |
|---|---|
| **ADMIRAL - Advanced multimodal marketplace for low emission and energy transportation** | ADMIRAL seeks to develop and pilot AI-driven solutions for managing logistics supply chains, including related missions to reduce transport and logistics emissions and increase transparency, resilience of logistics supply chains, and stakeholder cooperation.<br><br>For more info: https://www.admiral-project.eu/ |
| **SYNCHROMODE - Advanced traffic management solutions for synchronized and resilient multimodal transport services** | SYNCHROMODE delivers a suite of services for improving the overall transport network management, fostering the coordination of different agents involved in the provision and control of the transport services.<br><br>For more info: https://www.synchromode.eu/ |
| **ACUMEN - Ai-aided deCision tool for seamless mUltiModal nEtwork and traffic managemeNt** | ACUMEN aims to establish a technological and methodological framework that integrates state-of-the-art mobility modelling, data processing, prediction, and advanced visualization capabilities. By embracing the concept of Digital Twins (DT) and adopting a Hybrid Intelligence (HI) paradigm, ACUMEN aims to develop intuitive decision-support tools for smart cities. These tools facilitate effective collaboration between humans and AI, resulting in innovative services that benefit citizens.<br><br>For more info: https://acumen-project.eu/ |
| **ReMuNet - Resilient Multimodal freight Transport Network** | ReMuNet identifies and signals disruptive events and assesses their impact on multimodal transport corridors. It reacts quickly and seamlessly upon disruptive events in real-time. It supports TMS-providers to improve route planning resilience. ReMuNet communicates alternative, pre-defined, multimodal transport routes to logistics operators and subsequently to truck drivers, locomotive drivers and barge captains. Through this, it enables a faster and adaptive multimodal network response. ReMuNet orchestrates route utilization, suggests transshipment points and optimizes capacity allocation, minimizing damage and shortening the recovery time.<br><br>For more info: https://remunet-project.eu/ |

| Project name | Description |
|---|---|
| **SARIL - Sustainability and Resilience for Infrastructure and Logistics networks** | SARIL aims to complement the classic definition of resilience, which focuses on threat prevention, robustness and system recovery, by green aspects. Key performance indicators will be defined which quantify both the system resistance against disruptions as well as the environmental burden of freight transport. Adopting three different scenarios on different geographical scales (regional, national and international/EU), models will be developed which are able to capture the unperturbed system operation as well as the behavior in case of a disruption.<br><br>For more info: https://saril-project.eu/ |
| **UNCHAIN - Urban logistics and plaNning: AntiCipating urban freigHt generAtion and demand including dIgitalisation of urbaN freight** | Nowadays, almost everything we need can be ordered online and delivered to our doorsteps. However, last-mile delivery is far from supporting a sustainable society. The EU-funded UNCHAIN project aims to contribute to more sustainable urban logistics and help the transition towards climate-neutral and smart cities. To achieve this, it will boost the cooperation between public authorities and logistics stakeholders by implementing a standardized and reliable data exchange ecosystem and an innovative set of urban logistics services.<br><br>For more info: https://unchainproject.eu/ |
| **DISCO - Data-driven, Integrated, Syncromodal, Collaborative and Optimised urban freight meta model for a new generation of urban logistics and planning with data sharing at European Living Labs** | DISCO will develop and demonstrate - in real-life conditions - a federated European urban freight (UF) data space as one stop shop of data sharing on digital urban logistics solutions and smart tools for ambitious decision making. It will be a continental Ten-T – oriented and distributed real-life ecosystem to prove its value via demonstrated and replicable Use Cases (UCs), build upon innovation drivers to code concrete transformation of urban planning and land use by an open and collaborative UF Data Space with a smart governance model.<br><br>For more info: https://discoprojecteu.com/ |
| **GEMINI - Greening European Mobility through cascading innovation INItiatives** | GEMINI's vision is to accelerate the progress towards climate neutrality by reinforcing a modal shift through the demonstration and uptake of new shared mobility services, active transport modes, and micromobility and their integration with public transport in new generation MaaS services. |

| Project name | Description |
|---|---|
| | For more info: https://www.geminiproject.eu/ |
| **SUM - SEAMLESS SHARED URBAN MOBILITY** | The objective of SUM is to transform current mobility networks towards innovative and novel shared mobility systems (NSM) integrated with public transport (PT) in more than 15 European Cities by 2026 reaching 30 by 2030. Intermodality, interconnectivity, sustainability, safety, and resilience are at the core of this innovation. The outcomes of the project offer affordable and reliable solutions considering the needs of all stakeholders such as end users, private companies, public urban authorities. SUM project will develop five pillars consisting of technological, co-creation, and policy tools to tackle the identified NSM barriers for a typical, car-focused family.<br><br>For more info: https://sum-project.eu/ |

### 3.9.3 Networking activities with organisations, associations and clusters

TRACE partners will seek every opportunity to discuss TRACE evolutions within related organizations, associations and networks where they already participate, and technical advances are presented in respective technical meetings and fora. Networking with relevant associations, organizations and European R&D initiatives is very important since this will ensure knowledge interchange between key actors and the adoption of proposed solutions.

TRACE will disseminate its assets and share knowledge and experience with the below key actors:

- ALICE European Technology platform
- Smart Logistics
- Cluster Mobility and Logistics
- CLUSTERS 2.0
- Connected and Automated Driving (CAD)
- AUSVI
- NACTO
- European Logistics Association
- Alliance for European Logistics (AEL)
- European Association for Forwarding, Transport, Logistics and Customs Services (CLECAT)
- European Citizens Association
- ECTP-CEU – European Council of Spatial Planners

- International Society of City and Regional Planner
- Smart Cities and Communities European Innovation Partnership
- IoT Hub
- BDVA/DAIRO
- OPEN DEI
- NGIoT
- HCloud
- TRB Standing Committee on Freight Transportation Planning and Logistics (https://freightplanning.org)
- TRB Standing Committee on Freight Rail Transportation (https://sites.google.com/site/trbfreightrail)
- TRB Standing Committee on Freight Transportation Data (https://trbfreightdata.com/)
- TRB Standing Committee on Freight Transportation Economics and Regulation (https://sites.google.com/site/at010trb/)
- TRB Standing Committee on Vehicle-Highway Automation (https://sites.google.com/site/trbvehiclehighwayautomation/Home)
- 5G-SEAGUL CEF (Connecting Europe Facility) EU funded project (https://5g-seagul.eu/)

TRACE partners INTRA, UNISYSTEMS, EPS, ACS, AVLL, URBICO, PS are involved in various associations and clusters and are expected to undertake the related interactions.

## 3.10 Individual dissemination plans

This section presents the individual dissemination plans of TRACE partners.

### 3.10.1 NKUA

The dissemination of the project results will be assured on an international level as NKUA's main target is the publication of its research results in major relevant conferences and peer-reviewed journals whilst scientific results will be disseminated to relevant standardization bodies. In addition, tutorials are foreseen in large events, press releases, book chapters and web publications. Additionally, NKUA will organize webinars for presenting the main concept of TRACE project and the benefits that it brings to end users and citizens. Furthermore, NKUA will create awareness of the project through social networks and will establish links to related research projects in the field. Finally, NKUA will establish activities for community

building and liaisons with relevant EC initiatives (e.g., projects funded in HORIZON-CL5-2022-D6-02-02, HORIZON-CL5-2022-D6-02-04, HORIZON-CL5-2022-D6-02-05 and HORIZON-CL5-2022-D6-02-07).

### 3.10.2 CERTH

CERTH will actively support the dissemination activities of TRACE project by performing a set of actions, mostly targeting the scientific and research audiences. First, CERTH is expected to publish the results that will be achieved in the context of the project in well-respected scientific journals and conferences. If possible, CERTH will also participate in relevant seminars, workshops and webinars, to exchange knowledge on the field and communicate the work performed. Additionally, the public communication channels of CERTH's ConvCAO research group (including website and social media accounts like LinkedIn, X and Facebook) will be used to disseminate the groups and the project's results and achievements, by performing regular posts. Finally, depending on the nature of the achieved results, performing university lectures, writing blog posts on websites like Medium and creating public git repositories will be considered.

### 3.10.3 INTRA

INTRA will support the outreach activities of TRACE as described in the current dissemination plan. Specifically, INTRA will utilise its digital channels (corporate website and social media accounts, i.e., Linked In) to promote the project and its results, while also communicate the organisation of project targeted events, like workshops, webinars, etc. INTRA will support both scientific dissemination as well as industrial awareness and networking with potential stakeholders. Finally, INTRA will contribute to project-related publications, like the periodic newsletter or technical white papers.

### 3.10.4 UTH

UTH is an Academic partner and, thus, it has a strong commitment in pursuing the public interest objectives set by its charter and, in that sense, there is a strong interest in the dissemination and exploitation of the results from research projects to fulfil such objectives. Postgraduate and Ph.D. students will benefit from the applied research activities that will be introduced by TRACE. The participation of UTH in the TRACE project will exploit R&D opportunities for M.Sc. students, research activities and theses. UTH will also contribute to the research community through papers, book chapters and article submissions to high impact international conferences and scientific journals. UTH's participation in TRACE aims at increasing the understanding of the research community on the subject of data streams management, and applied machine learning, establishing the UTH's position as a significant research centre in the activities.

So far, one M.Sc. Thesis is supported, i.e., Christos Kylafas, 'Intelligent Events Management through the Assistance of Message Queues', MSc Thesis, Department of Thessaly August 2023 (https://www.iprism.eu/theses/KYLAFASXRISTOS_Final.pdf, In Greek).

### 3.10.5 ROBOTNIK

Robotnik will disseminate TRACE by creating a project info site (Spanish and English) and Social Media posts (the number of posts is dynamic depending on the development of the project). Robotnik also considers the possibility of including the project in some of the presentations or talks in which we participate as speakers and carrying flyers of the project in stands or displays at fairs and events. These options will be assessed according to the coherence between the event (fair, talk) in question and the framework of research and development of the project.

### 3.10.6 TU WIEN

The Technical University of Vienna's (TU Wien) MOVE transportation research unit will create a plan for internal and external communication of project milestones as well as potential ways to disseminate lessons learned and gained insights (conferences, journals, etc.). Based on the communication and dissemination plan, scientific dissemination will be planned, managed and organized. TU Wien will disseminate project information and findings through various mediums including at the local level: project presentations and discussions at TU Wien University (e.g. Forschungstag, Lange Nacht der Forschung, etc.) and EU-wide/global level: the MOVE website and social media posts, and publishing of papers and findings through relevant journals, conferences, etc. We plan to hold workshops with key stakeholders using questionnaires or interviews, workshops with SME's (e.g., AustriaTech, ALICE etc.), and to host or support webinar session(s). We also plan to attend conferences with a relevant connection to the TRACE project. As an academic institution, we will as well create scientific outreach through published papers and student´s thesis and suggest topics related to this project for final diploma theses for students.

### 3.10.7 BC5

BC5 is committed to an effective dissemination strategy, centered around the dedicated project website (bc5.eu), supplemented by dynamic social media engagement and regular newsletters. BC5's approach includes diverse contributions: active participation in conferences and webinars, creation of articles and community engagement, hosting workshops and academic publications, development of multimedia content and interviews, and involvement in industry events and educational partnerships. Collaborative initiatives involve joint webinars and publications to enhance interdisciplinary connections. Ongoing

monitoring and evaluation mechanisms will measure the impact of dissemination activities, ensuring continuous refinement for maximum outreach and influence across scientific, industrial, and public audiences.

### 3.10.8 CDW

To effectively disseminate the results TRACE, CDW will use its social media to run a campaign, its YouTube channel and its participation to relevant events. In detail, CDW will develop a content calendar highlighting key milestones and achievements, will regularly post updates on the company's social media platforms (Instagram, Twitter, etc.) to keep the relevant audience engaged, and will utilize targeted hashtags and mentions to increase visibility within relevant communities. Using its YouTube channel, CDW will create a series of informative and visually appealing videos showcasing part of project's progress, where it will include calls to action, such as subscribing to the channel or visiting the project website for more information. Apart from the in-house tools, CDW will coordinate with other project partners to cross-promote each other's achievements, and will explore opportunities for joint webinars, workshops, or shared social media content.

### 3.10.9 UNISYSTEMS

UNISYSTEMS will disseminate TRACE activities and results through publications by supporting the production of white papers, technical reports and business articles in journals, magazines and other relevant outlets. Dissemination will also be supported by having regular press releases, offering access to information resources and developing promotional content about TRACE that will be made available through the company website and social media channels. TRACE output will also be disseminated through conferences and workshops in which UNISYSTEMS will participate to engage with the academic and professional community. In addition, UNISYSTEMS can involve in dissemination activities through participation in exhibitions and other industry events, to reach relevant audience in the ICT and transport/logistics domain. Dissemination can also be extended to increase TRACE and UNISYSTEMS visibility in webinars and demonstration events across venues that can be organized by UNISYSTEMS as well as in collaboration with the project consortium members.

### 3.10.10 ISIG

ISIG will collaborate with all consortium partners in the design and implementation of the dissemination strategies and relevant activities. To this end, in light of the institute’s expertise, ISIG will specifically support the following activities:

- Workshops: both organised by the consortium, and individually. The workshops will aim to develop the TRACE participatory model, analyse citizens' needs in terms of logistics and mobility, as well as to analyse ethics challenges to be addressed in the development of the platform functionalities.
- Conferences: ISIG will support the organisation and/or participation to logistics and AI-related conferences to present the project findings and insights, especially those related to the participatory model for the engagement of end-users and stakeholders, as well as to the ethical and privacy framework design and management.
- Publications: support the elaboration and publication of white papers, reports, and articles in academic journals focusing on ethical AI and GDPR compliance in the field of logistics.
- Online content: ISIG will support the development of contents to disseminate the project results to be published on the project website and relevant channels, mostly focusing on the importance of involving stakeholders in AI development for logistics. Moreover, ISIG will contribute to the project communication and dissemination activities through its website and social media channels (LinkedIn, Facebook).
- Training programs: especially within the objectives of T7.3 – Knowledge Kit and Roadmap for Europe, ISIG will develop a set of recommendations addressed to public authorities and stakeholders in the ICT, Avs and logistics fields. The recommendations will support the efficient uptake and management of the TRACE platform by end-users and commercial actors.

### 3.10.11 ACS SMSA

ACS can support the TRACE project through media channels, company website and newsletters.

### 3.10.12 INC

INC is the leader of the task associated with communication and dissemination activities (T7.1) of TRACE and will contribute to dissemination and communication activities of TRACE, more specifically will maintain and update the website and the social media accounts. It will also edit the newsletter and monitor all dissemination and communication activities. INC will disseminate the project achievements through workshops and conferences such as the CTTE conference and our own publications (such as the INC newsletter). Furthermore, INC will actively contribute to the creation of scientific papers and publications in international Journals (e.g., Telecommunications Policy, Telematics, and Informatics) and Magazines (e.g. IEEE Communications Magazine). Finally, INC is willing to announce the main results of

the project through its personal website as well as its accounts on social media (Facebook, Twitter, and LinkedIn)

### 3.10.13 EPS

EPS will use its digital channels (website and social media accounts) along with its day-to-day communication with its Partners to the European & Maltese projects is handling to promote TRACE projects and its results. Especially with respect to Malta, EPS will get in contact with Transport Malta and Malta Post to promote TRACE and its results for evaluation, with a target to decide on future tenders on enhancing mobility within their organisations. (https://www.transport.gov.mt) (https://www.maltapost.com)

### 3.10.14 TUC

TUC will support the outreach activities of TRACE as described in the current dissemination plan. Specifically, TUC will utilise its digital channels (website and social media accounts, i.e., Linked In) to promote the project and its results, while also communicate the organisation of project targeted events, like workshops, webinars, etc. TUC will support scientific dissemination and networking with potential stakeholders. Finally, TUC will contribute with scientific publications at related conferences and journals.

### 3.10.15 COSM

COSM will focus on contributing to the project efforts towards achieving maximum project visibility raising awareness regarding the project objectives, related activities and outcomes among the full range of potential stakeholders. To this end, COSM will pursue to have presence in relevant exhibitions, scientific and industry conferences in Greece and Europe, with papers and/or presentation addressing both the academic and research communities and the ICT industry.

Moreover, COSM has already established collaboration links and interactions with complementary EU research activities such as CEF (Connecting Europe Facility) and SNS EU funded projects, through the company's participation in 6G-IA and other relevant Working groups. These channels already allow TRACE to align the project activities with complementary ICT frameworks / programmes and to obtain support on technology and market issues. At next stages, these channels can be used to maximise the impact of the project, by fusing TRACE results therein.

Lastly, even from the first phases of the project COSM has dedicated a webpage to inform the general public on the company's involvement and on the TRACE scope and objectives, also re-directing the interested readers to the official TRACE website.

(https://www.cosmote.gr/cs/otegroup/en/ereuna_kai_kainotomia.html)

### 3.10.16 UM

University of Maribor will support TRACE's outreach activities by publishing project results and achievements on our social media platforms (Twitter, LinkedIn, Facebook, etc.), on the faculty and university website, in local media, at scientific conferences, and in scientific and professional articles. In collaboration with the Slovenian partners (AVLL and PS), we will disseminate the project and pilot results through various events and workshops with different target groups of stakeholders.

### 3.10.17 UNIMORE

UNIMORE will promote the Trace project to their media channels, and journals/newspapers at the local (city) and global (nation) level. As an addition, we plan to push the research we carry on into peer-reviewed papers. Finally, we will promote the technology project for adoption by industrial partners, future publicly funded projects, and similar initiatives.

### 3.10.18 MOD

MOD will collaborate in disseminating TRACE project carrying out the activities that best suit the scope and expertise of a public authority:

- press releases will be published throughout the project, to highlight the most relevant updates. One has already been published to launch TRACE;
- news and online contents will be created and updated to have citizens and stakeholders aware of what's going on within the project. A dedicated page already created on the City website (https://www.comune.modena.it/europa-e-relazioni-internazionali/progetti/fondi-a-gestione-diretta-e-di-cooperazione-territoriale-europea/trace-integration-harmonization-of-logistics-operations;
- news will be shared with the local media with specific reference to the Demonstration Action foreseen in Modena, during its implementation phase, to give relevance to the activities that will be performed and their impact on the City;

- stakeholders will be engaged and informed about the project, its results, and its impact on the City. A first stakeholders' group (representatives of local trade associations) has been recognized and involved in a dedicated meeting, when TRACE was presented.
- Local events dedicated to themes and issues related to TRACE will be exploited to present the project and its results. In particular, the Smart Life Festival – in its 2024 or 2025 edition (https://www.smartlifefestival.it/) could be exploited as a chance for getting visibility among citizens, students, and stakeholders interested in discussing and learning about innovation and digital technologies in many fields of the contemporary society.

### 3.10.19 DIFLY

DIFLY is setting up an integrated logistics use case for medical delivery, where Unmanned Aircraft (drones) are used to cover specific legs of a multimodal transportation, and a payload specific component is employed to manage the particular type of payload (e.g., blood, organs, etc.) throughout the whole journey.

The expected dissemination is mainly related to posts and news when the experimental flight tests (scheduled for M16-M36 in T6.3) will take place.

A further stream of publication is envisaged, if cooperation with local hospitals will allow to set up a use case that is not only relevant for logistics according to TRACE but is also relevant from a medical point of view. Opening the field to scientific publications in the medical and health community is only a possibility so far, as such use case set-up activity is in its earlier phase.

### 3.10.20 AVLL

AV Living Lab will disseminate project information, pilots and findings through different channels to reach as many relevant stakeholders and general audiences as possible.

We will utilise our mailing lists (1500+ recipients), online presence (webpage, LinkedIn and potentially other social media channels). Within the project, we will also organise and moderate workshops with various stakeholders. During the pilot, we will also disseminate our results though local and national media. Additionally, we will promote the TRACE project though our other events or presentations and key partners.

### 3.10.21 OLV

One Less Van as part of ALETE group will participate to several Exhibition in Europe to promote TRACE project and its portfolio of cargo bikes for the Last Mile Logistic: EUROBIKE (Frankfurt DE), Ecomondo (Rimini IT), Italian Bike Festival (Misano IT), Prodays Paris (FR), The cycle show (London UK), International Cargo Bike Festival (Amsterdam NL).

OLV is also usually invited to promote Bike Logistic in conventions or meetings organized by main Logistic Players such as DHL and GLS and others to disseminate the advantage of cycle logistic itself. In this framework TRACE will be included in the topics to be presented as a possible next step for this industry.

OLV will also promote TRACE in its website, social media profiles (LinkedIn, Instagram, Facebook)

### 3.10.22 URBICO

Urbico will promote TRACE through social media (LinkedIn), publications (magazines and newspapers) and local and national events. Through our website and our future marketing and communication campaign.

### 3.10.23 SID

SID's strategy to efficiently disseminate TRACE project results and foster future collaborations involves a robust online presence, stakeholder engagement, and active participation in academic and industry events. Continuous visibility will be ensured through partner participation in seminars, workshops, and webinars when applicable. Media and social network engagement will be prioritized for broader reach. SID's workplan includes tasks to establish communication channels and create an open digital space for the European community. Moreover, SID will support the dissemination activities by publishing results of the project in scientific journals and conferences, contributing to widespread awareness and adoption of TRACE within the European community.

### 3.10.24 PS

Pošta Slovenije will disseminate project information, pilots and findings through different channels to reach as many relevant stakeholders and general audiences as possible.

We will prepare online presence (webpage, LinkedIn and potentially other social media channels). Within the project, we will also present project results to various stakeholders. During the pilot, we will also disseminate our results though local and national media. Additionally, we will promote the TRACE project though our other events or presentations and key partners.

We plan to present the project on national Logistics congress in Portoroz in March/April. Presenting project TRACE also on:

- one of the workshops on postal innovation platform - https://www.postal-innovation.com,
- Post and Parcel EXPO (largest postal congress),
- Post EUROPE (green postal forum or innovation forum https://www.posteurop.org/innovationforum).

### 3.10.25 HT

HT serves as the leading railway company in the Hellenic Region. Within this capacity, HT will actively contribute to the project's dissemination plan by engaging daily passengers who use the company's trains. Additionally, project flyers can be distributed in the main stations of Athens and Thessaloniki, while posters can be displayed prominently in major ticket offices.

HT collaboration with railway companies and various research institutes in the Hellenic and EU regions will enhance the project's connectivity with other initiatives and organizations. The Greek pilot will be executed in the Thriasio area, the largest logistics hub in Greece. This strategic location will provide an opportunity for the largest logistics companies, truck operators, and freight forwarders to gain insights into TRACE results.

Furthermore, HT will use its website as a key dissemination tool for the project and its outcomes.

### 3.10.26 ITL

The Institute for Transport and Logistics (ITL) will disseminate and promote the TRACE key contents during national and international events, on its institutional website and social media (LinkedIn), among its own main public shareholders (in particular with the Emilia-Romagna Region) and others EU project’s partners and on scientific conferences. In collaboration with the other Italian project’s partners, a particular emphasis will be paid on promoting the key results of the Bologna and Modena demonstrators through various targeted events and workshops with different public and private stakeholders.

### 3.10.27 CSEM

CSEM will promote the individual and joint results of Trace by means of its actual communication channels (LinkedIn, Instagram). In addition, results of research project are whenever possible used as success stories in the conference, and seminars organized by CSEM. We are convinced that TRACE will be a very good source of inspiration.

### 3.10.28 UGLA

UGLA will focus on disseminating TRACE project by organizing workshops and taking part in conferences. UGLA already organized a workshop on Intelligence in the Edge in conjunction with IEEE World Forum on

Internet of Things. We are also planning to organize another workshop in conjunction with ICDCS conference in 2025.

- Conferences: UGLA will organize and participate in international conferences related to AI to present the methodologies, algorithms and insights developed as part of TRACE project.
- Publications: UGLA will contribute to the top journals in AI and ML to publicize and increase the visibility of the project.

# 4 Exploitation plan of TRACE

## 4.1 Exploitation strategy

The project provides a strong motivation for the consortium to build high-quality solutions that correspond to real needs of service providers, stakeholders, policy makers and citizens. Apart from the stakeholders and citizens, the diversity of partners ensures that the project will appeal to a broad range of clients in the future, increasing the likelihood of commercial exploitation directly by project partners. The direct exploitation route of the project will be mainly through the industrial partners and policy makers, strengthening their position and incorporating developed components to their products, services portfolios and regulatory plans. Partners will exploit the technological achievements of the project through technology, know-how and patent licensing. The joint commercialization of the platform would involve most partners with different roles. Industrial partners of the consortium have extensive expertise in launching products and services targeting either wide markets or more specific groups. Additionally, academic partners have expertise presenting and disseminating project results, submitting papers to conferences and publishing findings in scholarly peer-reviewed journals to build on the existing knowledge base, The cooperation between all partners is intended to be based on shared and strong business interests. The consortium is committed to explore and compare the viability, sustainability and scalability of a large number of different exploitation schemes (e.g., direct exploitation by the partners, creation of new ventures) and take clear go and no-go decisions, which will be reflected at the end of the project on the TRACE Business Plan (Tasks 5.1, 7.5). The important is that the consortium partners have already conducted a preliminary analysis identifying opportunities for potential exploitation. Three phases are identified within the project duration as seen in Figure 11.

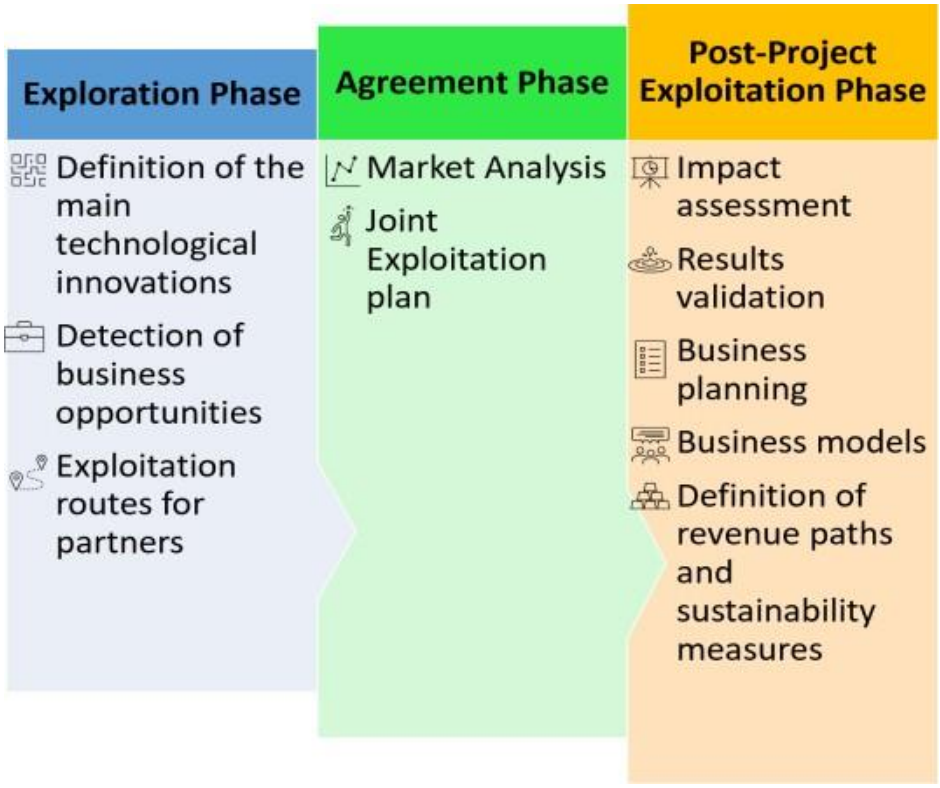


*Figure 11: Phases of Exploitation strategy*

The exploration phase runs in parallel to the design phase and provides a preliminary analysis of the exploitable assets (see next Tables) the related stakeholders and the market potentials. The agreement phase runs until M24 and starts with an initial market analysis, it updates the list of exploitable assets based on the development work and identifies the initial joint exploitation opportunities among project beneficiaries. The post-project exploitation initiates with the detailed socio-economic studies and migration plan and considers the results from the testing phase of the project to assess the exploitation potentials and extract the go-to-market path. The final exploitation plans are extracted towards two directions; one that assesses the proposed platform as a service solution in the logistics domain and one that focuses on the supported application use cases' outcomes and the related industry market potentials. The outcomes of the last phase are extended beyond the project end and for a duration up to 5 years.

In general, the adopted Exploitation Framework will be used to guide relevant activities throughout the project subject to the IP Management and Protection Strategy. Each partner will be responsible for notifying the IPR manager that is already nominated during the preparation of the proposal (see Section 3) of their specific protection activities. Commercial assessment will be undertaken using a mixed method approach including desk and primary research based on (a) extant industry analysis, and (b) online surveys

and interviews for each target customer segment and user type for assessing potential commercialization options and potential barriers to overcome. A variety of tools will be considered for commercialization sense-making support including a Portfolio of Opportunities, Needs Discovery and Lean Disruptor Empathy Maps, and Value Proposition and Business Model Canvas. To identify and support a feasible post-project exploitation plan, the following significant pieces of research, including primary research, will be undertaken in Tasks 5.3 & 7.5, namely: D5.5 Socio-Economic Opportunities and Guidelines to Authorities (M36) & D7.1, D7.2 Commercialisation and Sustainability Options (M24, M36). This will be complemented by ongoing analysis within the project of competing and complementary technologies, products and services in the market and indirectly through other partner activities. In the event that partners wish to jointly exploit IP together post-project in a jointly owned commercial vehicle, a business plan will be prepared to source support an investment proposal including appropriate due diligence, detailed financial forecasts, and funding plans. Specifically, this plan will address the corporate governance structure for enabling joint exploitation, business models, product roadmaps, sales and marketing. At the end of the project, it is expected that sufficient interest and evidence (particularly given by the pilots) will attract additional investment in a timely post-project manner.

## 4.2 Exploitable results

This section provides the list with the initial exploitable items that are expected to come out of TRACE. As the project evolves the list will be updated with more information. The following table summarizes the exploitable assets, the main owners and the expected TRL at the end of the project, based on the information provided in the first 6 months of the project.

| ID | Name | Short Description | TRL (start of project) | TRL (end of project) | Owner(s) |
|---|---|---|---|---|---|
| 1 | Study on drivability and compatibility (ODD, street level, trl CAV) | Analysis of drivability, compatibility, suitability of street spaces for different Use-Cases of automated logistics, looking at existing spatial elements (e.g., freight capacity, infrastructure, traffic) and potential for modifications / | 2 | 6/7 | TUW |

| ID | Name | Short Description | TRL (start of project) | TRL (end of project) | Owner(s) |
|---|---|---|---|---|---|
| | | shifting of mobility to suit proposed TRACE model. | | | |
| 2 | Event detection and management mechanism, Machine learning modules for data analytics and optimization of workflow management | Automated detection of events upon data streams coming from (autonomous) vehicles<br>Automated optimization of scheduling activities | 2 | 6/7 | UTH |
| 3 | Data management interoperability layer | An interoperability layer based on semantic modelling and data connectors that will tackle the heterogeneity of data coming from logistics companies. | 2 | 7 | NKUA |
| 4 | Edge computing and optimization | Integration layer to communicate with blockchain infrastructure and decision-making algorithms | 2 | 6/7 | UGLA |
| 5 | Logistic data management using Blockchain | The outcome of the project will deliver a working blockchain model that can handle logistic data efficiently with emphasis on economic & environmental sustainability | 3 | 7 | BC5 |
| 6 | Remote VR monitoring module | An application for remotely monitoring and interacting with a vehicle immersed through a VR experience | 4 | 6 | CDW |
| 7 | Optimization module for workflow | Focusing on the demonstrators the Platform will reveal whether it meets | 2 | 7 | EPS |

| ID | Name | Short Description | TRL (start of project) | TRL (end of project) | Owner(s) |
|---|---|---|---|---|---|
| | management, Data Analytics | specific KPIs with respect to the interconnection of the TRACE components & critical parts, the transfer of data and with the expected outcomes | | | |
| 8 | Hierarchical Computing | A mechanism to share computing and AI on the different level of hierarchical computing | 3 | 6 | CSEM |
| 9 | Embedded AI (image, voice) | A set of tools to allow recognition of objects (parcels) and sound to evaluate surroundings of the Bikes and Cargo Bikes | 2 | 4 | CSEM |
| 10 | Embedded Security & remote update | Mechanisms to integrate end devices into the overall Trace framework and allow updates of those devices in a secure way | 2 | 4 | CSEM |
| 11 | Resilient communication for mobile | Components to allow local mesh networking without having to rely on cellular network to communicate between bikes and cargo bikes | 4 | 6 | CSEM |
| 12 | Data streams management modules | Modules for handling the large amount of heterogeneous data, messages and events enabling the interconnection of all different data sources and associated components of TRACE, integrated in the distributed event driven streaming platform Stream Handler | 6/7 | 7 | INTRA |

| ID | Name | Short Description | TRL (start of project) | TRL (end of project) | Owner(s) |
|---|---|---|---|---|---|
| 13 | AI4CI | AI4CI is a specialized suite of AI frameworks meticulously tailored to align seamlessly with the unique requirements of the project. This dedicated suite will empower the project with innovative AI-driven practices, offering a tailored solution that optimizes performance and ensures a precise fit for project-specific needs. | 5 | 7 | SID |

## 4.3 Individual exploitation plans

This section presents the individual exploitation plans of TRACE partners.

### 4.3.1 NKUA

NKUA's research work on Data Management Interoperability Layer will be published in international scientific journals or conferences, whilst scientific results will be disseminated to relevant standardization bodies. New research activities will be engaged. Postgraduate and Ph.D. students will also benefit. NKUA will push for commercial exploitation through the University's spin-off company that specializes in sensor-based solutions and geo information systems.

### 4.3.2 CERTH

CERTH is expected to exploit the results achieved in the context of TRACE project by transferring technology and know-how to its spin-off companies for commercialization, and to relevant research activities for the development of i) more mature solutions in the same field and ii) solutions that will use the performed work as a basis to solve problems in different research fields and real-world applications. As first goal will be set to develop a prototype product or service, based on the work done in the context of the project, to a stage where it could constitute a minimum viable product (MVP). After that, commercialization strategies will be used, including the development of detailed business plans for

bringing research-based products or services to the market, focusing on the identification of possible target markets and potential customers, as well as market penetration strategies. By performing such targeted actions, CERTH's work is expected to be further exploited, both during and after the duration of TRACE project, in the research domain as well as the market.

### 4.3.3 INTRA

Netcompany-Intrasoft (INTRA), as one of the contributing partners to the TRACE integrated platform, will exploit this platform to its full potential through strategic actions. Our primary approach involves seeking new collaborations, engaging in fresh research projects, exploring licensing agreements, and indirectly expanding the functionalities and use cases of StreamHandler. The validated technologies within the TRACE framework are expected to attract significant interest, creating opportunities for new collaborations with industry stakeholders for technology transfer. These collaborations may involve licensing agreements and partnerships, further advancing the commercialization of our innovations. Additionally, these interactions may lead to proposals for extending the knowledge and technologies acquired during the project, ensuring that our contribution to the TRACE platform is leveraged to its fullest potential for the benefit of all involved parties.

In parallel, the StreamHandler solution owned/provided by INTRA represents a robust big data platform tailored for seamless integration of tools and services, enabling the interconnection, storage, and processing of vast data volumes. In the context of TRACE, StreamHandler assumes a central role as the foundational component of the TRACE Integrated platform; in efficiently managing streaming data before it enters the core TRACE platform, incorporating message distribution and advanced event processing services, ensuring high throughput and availability. As an industrial partner in the TRACE project, INTRA aims not only showcasing its cutting-edge technologies but also enhancing its expertise. We aim to demonstrate the feasibility of our proposed solution by targeting an updated TRL level for StreamHandler. Furthermore, we are actively exploring innovative business models that provide unique value propositions, access customers through novel channels, and generate sustainable revenue streams.

### 4.3.4 UTH

UTH's exploitation strategy is focused on the Academic exploitation and industrial collaboration. UTH is committed to the development of new knowledge and the spread of this knowledge, initially, to students. The TRACE results will allow UTH to improve the existing tool portfolio in the area of data streams management, applied machine learning, and optimization identifying and specifying new architectures

and services. UTH is planning to explore the commercial potential of those tools and services and decide on the most appropriate route for exploiting these results.

### 4.3.5 ROBOTNIK

Robotnik, as a European robotics service company, is very interested in the exploitation of the project results and improved robotic systems. The developments regarding the environment awareness and navigation in difficult conditions, together with the sensor payload adaptation and mission specifics are expected to raise the interests of end-users in such robotic solution.

These results will be used to expand and enhance the portfolio of our applications in service mobile robotics, including a new market niche as the First Responding robotics units. This system will allow the company introduce robotics in certain areas where dangerous, repetitive and complex specialized tasks are to be executed, improving our global market visibility and providing us great relevance in the field of disaster prevention and assessment.

### 4.3.6 TU WIEN

Through most TRACE Work Packages, moreover WP2 and WP6 where the University plays a task lead role, TU Wien intends to provide an analysis and to develop a framework that looks at drivability, compatibility and suitability of street spaces for the different use-cases of automated logistics in the project. This is done through an examination of existing spatial elements (e.g., infrastructure, traffic conditions, freight capacity etc.) and the need for potential modifications to existing infrastructure, a shift in mobility, or other changes that would better suit the intended implementation of the TRACE model. Taking the results of the framework development process in WP2 and applying them to WP6. TU Wien is expected to ensure the transfer of the TRACE platform deployment within the infrastructural requirements, to continuously monitor the data management policies across pilot sites, and to systemically evaluate the effectiveness of pilot demonstration activities based on the formal assessment methodology.

### 4.3.7 BC5

BC5, specializing in blockchain technology, will leverage TRACE project outcomes through academic integration and technology transfer. The organization aims to disseminate knowledge within academic communities, explore commercialization opportunities, and potentially establish spin-off companies for product development. BC5 will actively engage in collaborative initiatives, pursue licensing agreements, and contribute to the dissemination of TRACE results. With a focus on legacy support and anticipating

future tender opportunities, BC5 seeks to maximize the impact of TRACE innovations in the blockchain domain.

### 4.3.8 CDW

CDW aims to maximize its impact and commercial success through TRACE. This will include a thorough market analysis to identify the target audience, competitors, and potential users for the VR monitoring application as an immersive medium to communicate with a “smart” vehicle. Then, a clear definition of a possible unique selling point and value proposition will follow. This will involve some iterations and feedback from potential collaborators and strategic partners within the project ecosystem and will require that the company will form partnerships with other project contributors, such as hardware manufacturers or data providers, to enhance the overall solution and broaden the application's reach. CDW will complement any interaction with potential partners with the implementation of a robust feedback loop that will involve regular communication with end-users, project stakeholders, and partners, and will use feedback to drive future updates, improvements, and potential expansion into new markets. These steps will ensure that CDW can position itself as a leader in the VR remote monitoring domain for human-vehicle communication, ensuring a fair chance to enter the corresponding market.

### 4.3.9 UNISYSTEMS

UNISYSTEMS exploitation strategy is focused on seeking commercialization opportunities to bring project results into the market. TRACE findings can be applied to create and deploy innovative high-quality solutions that provide added value to targeted sectors. UNISYSTEMS will utilize the project results to improve and strengthen the portfolio of its current products and services, incorporating and integrating TRACE technological achievements into them. UNISYSTEMS plans to exploit the experience gained within the project to extend the range and scope of its systems and applications and thus extend its range of customers. The expertise and the know-how from TRACE will be used in the company’s R&D activities for designing and implementing new products and services, which can be launched to new markets. UNISYSTEMS will exploit TRACE outcomes to enhance its strong industry position and competitiveness, increasing sales, reaching new markets and fostering new industry partnerships.

### 4.3.10 ISIG

ISIG will support the project exploitation activities by promoting the replication and implementation of key results and outcomes in other projects and initiatives at local, regional, national, and international level. To this end, T7.3 – Knowledge Kit and Roadmap for Europe, further described in section 6 of the

present document, will support the elaboration of a set of guidelines and recommendations for the efficient uptake, application and management of the solutions developed by the project. Moreover, ISIG will support the activities related to the legacy of the project, by supporting dissemination activities aimed at sharing good practices and reaching policymakers at EU level.

### 4.3.11 ACS SMSA

The expertise and the know-how from TRACE will be used in the company's R&D and business development activities for designing and implementing innovative services, to support the current business model.

Exploiting TRACE outcomes would help ACS to enhance its leading industry position and competitiveness.

### 4.3.12 INC

As a market research company, INC will take advantage of TRACE to enhance its future market reports and seminars with a specific focus on business cases and opportunities via advanced use cases. INC provides consulting services to a variety of industry players from telecom operators and technology providers to regulatory authorities and governmental bodies by producing market reports and providing consulting services. These upcoming market reports will be used by stakeholders involved in the logistics industry to better understand the opportunities in the logistics sector.

### 4.3.13 EPS

Based on the dissemination strategy described already in paragraph 3.17.13 it is our target to persuade the Maltese Authorities that it would be very beneficial for them to decide on a future tender through which they would request their own upgrades on the already existing systems of Malta Transport & Post services. It is believed that this is a practical way to evaluate the exploitation of the TRACE results in real world.

### 4.3.14 TUC

TUC plans to exploit the results achieved in the context of the TRACE project by transferring technology and know-how to its spin-off companies for commercialization, and to relevant research activities of the involved research units for the development of more mature solutions in the same field.

### 4.3.15 COSM

COSM being a long-established and leading Mobile Network Operator in Greece -part of OTE Group, constantly pursues network technology superiority to ensure the highest service quality for its customers.

In line with the company's activities and strategy, provisioning of logistics and automated vehicles mobility services is considered a very promising business opportunity, to further enhance the company's service portfolio, and at the same time to secure network infrastructure investments (4G/5G, cloud etc.).

In the context of TRACE, COSM brings in the network operators' perspective and works on the identification of the infrastructure/ system requirements and specifications, as well as the overall system architecture. In addition, COSM has expertise in the integration, testing and execution of trials towards the validation/evaluation of the projects' outcomes. To support the project demonstration activities COSM will extend -and where applicable tailor- its network infrastructure, contributing in this way to advancing the TRL level of the integrated technologies - by enabling the use cases deployment in operational environments. For this purpose, besides the dedicated R&D Department, all relevant COSMOTE Network Planning Departments are completely engaged in the work performed; in this way, directly gaining in know-how and expertise in the relevant fields. Beyond the project end, this experience will be directly fused to the future company's activities related to adopting TRACE or similar solutions.

In the context of TRACE, COSM will also investigate alternative, viable service deployment options, the related challenges and risks, and the business opportunities coming from these advancements. COSM will also explore the impact of TRACE advancements on the service provisioning ecosystem and the company's position in novel business models. At later project stages, the value of the solution and its innovation, along with the identified opportunities and risks will be directly channelled to the relevant commercial departments of the company. Expertise gained will serve as reference for the company's future infrastructure expansions and services provisioning, and for the timely adjustment of business activities to next generation technologies and services.

### 4.3.16 UM

Based on the results of Slovenian demonstrator, the University of Maribor will exploit the solutions with a view to develop advanced and commercial solutions applicable on a larger scale. The activities will mainly cover different upscaling ways of using sensors to collect the required data and advanced use of the data to optimize synchro modal logistics processes.

### 4.3.17 UNIMORE

UNIMORE will foster the adoption of technology produced within Trace to a higher TRL through our startups and spinoffs, especially exploitable assets such as the on-board communication box for bicycles,

the cloud aggregator infrastructure, and (most importantly) components for enhancing existing bicycles with full and partly autonomous capabilities.

### 4.3.18 MOD

The results of the Demonstration Action carried out in the City will be mainly exploited by MOD to support the overall project ambition to positively impact on policies and strategies at EU, regional and local level. In particular, as local authority, the City will enhance the experience shared and the lessons learnt from TRACE to improve the political and regulatory framework on logistics at local level.

### 4.3.19 DIFLY

It is well acknowledged that employment of unmanned aircraft (UA, drones) for last mile delivery is a promising but challenging case. The demonstrator in T6.3 will contribute to addressing most of the challenges related to operational authorization of UA flight, which is still blocked by several issues related to air risk (interaction with other airspace users) and ground risk (safety of overflown population). UAS normative evolution has seen a huge progress in last years, but actual application of new rules still needs to be addressed on real use cases, allowing authorities (Civil Aviation Authorities but also other local authorities) to better understand the needs, the risks, the mitigations and the reliability of such drones. Flight activities for our use case within TRACE project will contribute to making drone transportation a real use case, for the sake of all the stakeholders.

The medical delivery use case that is targeted is expected to open a new stream of logistics supply, which is partly in common with general payload transportation addressed by logistics but encompasses specific features that integrated logistics technologies can support. Interaction of high-the SMEs with medical personnel will pave the way to the use of the proposed technologies and transportation solution to the medical and health environment, therefore extending the capabilities of TRACE.

### 4.3.20 AVLL

AV Living Lab's main exploitation goal is to utilize results of Slovenian (and other) pilots to speed up implementation of automatized delivery vehicles in the country, especially delivery robots. We aim to influence and motivate regional and national bodies to legalize their use outside of controlled environments to tackle the lack of drivers, enable more efficient delivery, lower delivery costs, broaden pedestrian zones in the city centers and lower energy costs and $CO_2$ emissions. Additionally, we see the TRACE project as a base for similar pilots and commercial applications.

### 4.3.21 OLV

OLV is expected to provide 4-wheel cargo bikes able to be actuated by and automatic system that includes, Motor Control, Self-Steering and Self Braking system. To do so we have to adapt and upgrade our current vehicle SUM-X. This activity is expected to impact OLV investment plan with new molds and tools, new design, R&D activities. 2 Samples vehicles will be delivered to UNIMORE to start the development and the installation of sensors and controls for the Italian Use case.

### 4.3.22 URBICO

As city logistics company specialized on cargo bike's delivery, Urbico's primary exploitation goal is to use the knowledge and expertise achieved during TRACE to R&D and consolidate our mid-term business model. Our aim is to set new standards for city logistics operations, switching from vans delivering on our city centres to autonomous cargo bikes. The data and expertise collected during the Italian Pilot will help us to prove and reinforce to local and national authorities, logistics operators and e-commerce giants the importance of a more efficient and sustainable logistics first and last mile delivery mode.

### 4.3.23 SID

SID's exploitation plan centers around maximizing the impact of TRACE findings, strategically integrating the AI suite into existing services and applications. This tailored approach enhances functionality and provides immediate benefits to users. The plan extends to a deliberate expansion of the services and product portfolio, with a strong emphasis on added value services derived from TRACE's customizable frameworks. Leveraging TRACE's insights, SID aims to pioneer the development of new solutions, addressing emerging market needs and positioning itself as a leader in innovative AI applications. Simultaneously, the company actively seeks to enhance its expertise by providing technological support to third parties, fostering collaboration and ensuring a broad impact. Through this focused strategy, SID anticipates heightened competitiveness, solidifying its position as a key player in delivering cutting-edge AI solutions. The commercialization emphasis, inspired by TRACE findings, drives the strategic deployment of these solutions, creating a significant and targeted impact across various sectors.

### 4.3.24 PS

The primary exploitation goal of project TRACE for Pošta Slovenije is to leverage the outcomes of Slovenian (and other) pilot projects to accelerate the implementation of automated delivery vehicles in the country, including delivery robots and autonomous delivery vehicles. Our aim is also to influence and motivate

national authorities to legalize of autonomous vehicle usage beyond controlled environments, addressing the shortage of drivers, facilitating more efficient delivery, reducing delivery costs, expanding pedestrian zones in city centers, and decreasing energy expenses and $CO_{DE}$ emissions. Furthermore, we view the TRACE project as a foundation for similar pilot initiatives and commercial applications.

### 4.3.25 HT

HT is interested in research and evaluation of new innovative actions in logistics services in Thriasio hub. Depending on the nature of requirements and TRACE proposals, HT will carry out tests on rights of way inside the national railway network implementing new services in Athens – Thessaloniki route. Parts of the TRACE project could be implemented in future services that HT plans to develop in Railway Terminals, such as Thriasio, with other logistics partners. The developed solutions can be used with other truck operators to develop new last mile services that will use trains as the main transportation mean and will reduce the environmental and energy footprint of Greek railway and Greece.

### 4.3.26 ITL

The main exploitation plan is related to the utilization of the key results of the Italian demonstrator to influence local and regional policies towards a more organic legislative frameworks related to the syncromodal logistic solutions. Moreover, thanks to the scientific and technological studies and analysis conducted in TRACE, ITL intends to present scientific papers and working documents able to define a solid technical and economic base for further implementation of similar measures.

### 4.3.27 CSEM

Centre Suisse d'Electronique et de Microtechnique will benefit from the results of the project through the application of its know-how and demonstration of its technologies in the fields of IoT. IoT technology has vast applicability and will find uses in many application fields. In accordance with CSEMs mission to bridge the gap between research and Industry, the technology developed in the project will be transferred into industrial developments in the field of industrial safety, aeronautics, health, automotive and transport applications in particular.

As an RTO, CSEM plans to leverage the outcomes of the aforementioned technologies in two primary ways. Firstly, these results will be applied across various projects we engage in, extending beyond logistics-related domains. Anticipated areas of application include indoor localization (involving hierarchical computing and AI) to industrial security (incorporating Embedded AI). The communication for mobile and

remote update aspects will be systematically employed across all our low-power communication sectors. Secondly, we aim to establish new research avenues for Ph.D. and Master's thesis students joining CSEM.

### 4.3.28 UGLA

UGLA being an associate partner, will exploit the platform to develop and test stream driven prediction algorithms. We also intend to present our findings and insight in world's leading conferences and journals. Moreover, derived knowledge from predictive analytics algorithms will establish MSc and PGR projects for CS postgraduate students in the School of Computing Science.

# 5 Standardization plan

## 5.1 Standards organizations

The presented standards encompass a comprehensive framework for the evaluation and regulation of various aspects within the realm of transport services, with a focus on both quality and environmental considerations. For instance, ISO/AWI 20850 focuses on supply chain interoperability and integration related to strategic sourcing concepts. Additionally, the presented standards cover areas like safety management for transporting dangerous goods, quality system requirements for self-storage facilities, and methodologies for calculating energy consumption and GHG emissions in transport services. On the technology front, the 3GPP standards and documents delve into V2X services, LTE support for Vehicle-to-Everything (V2X) services, and architectural enhancements for 5G System (5GS) to V2X services, showcasing a blend of regulatory and technological standards shaping the transport industry. The following list reports on the most relevant standards already present in research and industrial settings and gives a short description for each one.

- EN 13011:2000: Specifies requirements for making declarations about the quality of performance of a goods transport service, enabling service providers to provide specific data on performance criteria.
- CEN/TR 14310:2002: Provides guidelines for preparing environmental declarations and reporting in freight transportation, emphasizing the importance of transparency in reporting environmental performance.
- EN 13876:2002: Offers a "Code of Practice" for managing customer's cargo throughout the transport process, focusing on best practices and performance measurement.
- EN ISO 9001:2000: Specifies requirements for a quality management system applicable to organizations providing freight transportation services by road and rail, including storage and distribution.
- EN 12507:2005: Provides guidelines for applying EN ISO 9001 to the provision of freight transportation services by road and rail, including storage and distribution activities.
- EN 12798:2006 and EN 12798:2007: Specify quality system requirements for the management of safety in the transport of dangerous goods by road, rail, and inland navigation.
- EN 15696:2007: Specifies requirements for the provision of self-storage facilities and related services for personal and business purposes.

- CSN EN 16258: Describes the methodology for calculating and declaring energy consumption and GHG emissions of transport services (freight and passengers).
- ISO/AWI 20850: Specifies supply chain interoperability and integration related to strategic sourcing concepts, principles, and data requirements.
- EN 12834:2003, EN 12795:2003, and EN 12253:2004: Standards for road transport and traffic telematics based on Dedicated Short-Range Communication (DSRC) standards, providing communication requirements for various applications in road transport and traffic telematics.
- ISO/IEC 20547-4:2020: focuses on the security and privacy aspects of big data reference architecture and provides guidelines for ensuring the security and privacy of big data systems.
- GPP Standards and Documents:
  - TS 22.185: Service requirements for V2X services.
  - TS 22.186: Service requirements for enhanced V2X scenarios.
  - TR 22.885: Study on LTE support for Vehicle-to-Everything (V2X) services.
  - TR 22.886: Study on enhancement of 3GPP support for 5G V2X services.
  - 3GPP TS 23.286: Application layer support for Vehicle-to-Everything (V2X) services; Functional architecture and information flows.
  - 3GPP TS 23.287: Architecture enhancements for 5G System (5GS) to Vehicle-to-Everything (V2X) services.
  - 3GPP Release 17 Description: Summary of Rel-17 Work Items.
  - TS 29.522: 5G System; Network Exposure Function Northbound APIs; Stage 3.
  - 3GPP TS 23.434: Service Enabler Architecture Layer for Verticals; Functional architecture and information flows.
  - 3GPP TS 24.486: Vehicle-to-Everything (V2X) Application Enabler (VAE) layer.
  - 3GPP TS 29.486: V2X Application Enabler (VAE) Services; Stage 3.
  - 3GPP TS 22.185: Service requirements for V2X services.
  - 3GPP TS 22.186: Service requirements for enhanced V2X scenarios.
  - 3GPP TR 22.885: Study on LTE support for Vehicle to Everything (V2X) services.
  - 3GPP TR 22.886: Study on enhancement of 3GPP Support for 5G V2X Services.
  - 5GAA (5G Automotive Association)
- ISO 9001: Certification is a Global standard for Quality-Management-Systems (QMS).

- ISO 14001 assists in monitoring and controlling by quantifying the amount of impact of operations of the organization is creating in the environment.
- DIN EN 16258 – Methodology for calculation and declaration of energy consumption and GHG emissions of transport services (freight and passengers).
- DIN SPEC 1001 – Warehousing and transport logistics – standardized performance description and assessment in the tender phase.
- Data and Messages Exchange Standards:
    - Keyhole Markup Language (KML) – s a file format used to display geographic data in an Earth browser such as Google Earth.
    - Geographic Markup Language (GML) – It is the XML grammar defined by the OGC to express geographical features.
    - Web Map Service (WMS) – It provides a simple HTTP interface for requesting geo-registered map images from one or more distributed geospatial databases.
    - ECF 4.0.1 Security and encryption; Data Exchange Protocol: Enhanced transport requirements shall be Secure HTTP (HTTPS) that consists of the standard HyperText Transfer Protocol (HTTP) layered on top of a secure Transport Level Security (TLS) session; Data content is to be constrained through the use of namespaces and XML Schema Definition ("XSD") files.
    - ISO 20614:2017 defines five transactions (Transfer, Deliver, Dispose, Modify and Restitute), which the partners can use to exchange Data Objects.
    - ISO/IEC JTC 1/SC 42 - Artificial Intelligence – primary focus and proponent for GOL
    - GOL (JTC) 1's standardization program on Artificial Intelligence and input in to JTC 1, IEC, and ISO committees developing Artificial Intelligence applications.

During the implementation activities, the consortium will pursue the contribution in a set of the above standards in order to expose the findings of the project that could be useful to the research and industrial domains.

## 5.2 Open-source communities

Open-source communities target to provide spaces where developers can share the source code of their activities and allow anyone to modify, improve, or redistribute it. This aspect is very important for a project like TRACE that targets to enhance the knowledge in the domain of (automated) logistics. TRACE is

committed to adopt and pursue the key objectives of the new open-source strategy of the EU, i.e., progress towards digital autonomy of Europe's own, independent digital approach; implement the European Commission Digital Strategy; encourage sharing and reuse of software and applications, as well as data, information and knowledge; contribute to the knowledge society by sharing the Commission's source code; build a world-class public service. Some target open-source communities being on the focus of TRACE are as follows:

- OpenStreetMap (OSM): A collaborative mapping project providing a free, editable map of the world. Valuable for geospatial data in transport applications.
- Eclipse IoT: Focuses on open-source implementations of IoT standards. Relevant for V2X services and connected transport technologies.
- The Linux Foundation - Automotive Grade Linux (AGL): Develops an open-source platform for connected car technologies, addressing challenges in the automotive industry.
- Ara Platform: An open-source platform for connected electric, and autonomous vehicles. Aims to standardize vehicle hardware.
- Hyperledger (Sawtooth): Modular platform for building distributed ledgers. Relevant for blockchain applications in transport services.
- Apache Traffic Server: Open-source caching proxy server. Useful for optimizing content delivery and performance in transport services.
- OpenTelematics: Initiates and maintains a telematics data standard, crucial for transportation and fleet management.
- OSVehicle: Open-source platform for designing and building electric vehicles. Relevant for projects involving vehicle design and manufacturing.
- Open-Source Initiative (OSI): A global non-profit promoting and protecting open-source software. Offers principles and guidelines for open-source projects.
- GitHub: A platform hosting numerous open-source projects across domains. Facilitates collaboration and contributions to a wide range of projects.

### 5.2.1 IoT Communities for data management

- IoT Community (https://www.iotcommunity.net )

The IoT Community is a global organization that brings together professionals, developers, and enthusiasts interested in the Internet of Things. It covers various aspects of IoT, including data management.

- Open Mobile Alliance (OMA) (https://www.openmobilealliance.org/)

  OMA is a standards development organization that focuses on mobile and IoT technologies. It provides a platform for collaboration and discussion on IoT data management standards.

- IoT Eclipse Working Group (https://iot.eclipse.org/)

  Eclipse IoT is a working group that focuses on building open-source IoT projects. It includes projects related to IoT data management and communication.

- Industrial Internet Consortium (IIC) (https://www.iiconsortium.org/)

  IIC is a global organization that works on accelerating the adoption of the Industrial Internet of Things (IIoT). It covers various aspects, including data management in industrial settings.

- IEEE Internet of Things (IoT) Initiative (https://iot.ieee.org/)

  IEEE has a dedicated initiative for the Internet of Things, covering various aspects of IoT, including data management. It provides resources, events, and publications related to IoT.

# 6 Knowledge Kit and Roadmap for Europe action plan

Within the activities of WP7, the consortium will also pursue the preparation of a set of guidelines and recommendations addressed to local authorities and stakeholders for the efficient uptake of the proposed TRACE solutions and their management.

To this end, T7.3 – Knowledge Kit and Roadmap for Europe, which will start at M13 (June 2024) and will be led by ISIG, will focus on the development of guidelines and recommendations to support the target of the TRACE solutions in understanding their functionalities, application potential and management. This activity falls within the scope of WP7, which aims at disseminating project results and outcomes, as well as reaching a wide group of stakeholders for the exploitation of project solutions.

The task develops around different steps, briefly described as follows:

1. Mapping and analysing stakeholders that are interested/impacted by TRACE solution: authorities, communities, end-users, commercial actors from the Information and Communication Technologies (ICT), Autonomous Vehicles (AVs) and logistics domain.
2. Collect feedback, within the framework of project demonstration activities in order to identify the needs of and feedback from the identified stakeholders to co-design the guidelines and recommendations for the future application of TRACE solutions.
3. Reiterating a validation process involving stakeholders to fine tune the guidelines and recommendations for their implementation in a wide set of communities.
4. Leveraging the TRACE guidelines towards the exploitation of good practices and lessons learned for the efficient uptake of the TRACE solutions, in collaboration with T7.5 – Exploitation, Sustainability, and Suitability & Impact analysis.

The activities carried out within T7.3 will be reported in D7.4 – Dissemination & Communications Activities (B) at M24 (May 2025) D7.5 – Dissemination & Communications Activities (C) at M36 (May 2026).

# 7 Monitoring and evaluating

This chapter presents the tools that will be used to monitor the traffic on the website and the social media accounts of TRACE along with the Key Performance Indicators for dissemination and communication activities that have been defined.

## 7.1 Monitoring tools

### 7.1.1 Google analytics

To monitor KPIs related to the traffic towards the website as the number of visits we will use Google analytics. Google Analytics is a freemium service that has been installed on the website and is being used to measure the impact and popularity of the website. Google Analytics analyses web traffic. Using this data the dissemination leader will be able to indicate how close the project is to achieve the dissemination and communication goals established in the current plan.

### 7.1.2 Twitter (X) analytics

To monitor the statistics related to posts made in Twitter we will use their analytics service that is offered by the platform. Twitter analytics provides a dashboard that allows users to monitor several different metrics related to the performance of the tweets.

## 7.2 Key Performance Indicators

Measurable targets for dissemination activities have been set, since the proposal phase, to ensure that the desired impact is achieved. The table below describes the planned TRACE Communication activities to be performed in the different project phases and the associated KPIs setting the target values for any of the corresponding activities.

***Table 3: Key Performance Indicators***

| KPI | Target Value |
|---|---|
| Social media accounts | >3 |
| Social media posts | >12/year |
| Social media contacts | >500 |
| Project specialized material | >3 |
| Project non-specialized material | >5 |
| Media appearances | >5 |

| KPI | Target Value |
|---|---|
| Public appearances | >6 |
| Press releases | >9 |
| Video clips | >9 |
| Technical brochures | >3 |
| Non-Technical brochures | >3 |
| Public events | >3 |
| Fairs / exhibitions | >2 |
| Journal papers | >10 |
| Conference papers | >10 |
| Workshop papers | >8 |
| Workshops organised | 2 |
| Workshop participants per event | >50 |
| Number of project brochure copies delivered | >30 |
| (Industrial) Short webinars | >4 |
| Presentations at standard organizations and open-source communities | >4 contributions<br>>10 datasets for open access |
| Transfer of concept and established links to associations | >5 |
| Liaisons with other projects | >5<br>2 co-organised workshops<br>4 co-organised webinars |
| Publicly available deliverables | >10 |
| Source code | >2 repositories |
| Q&A platform and Knowledge Hub | Participate in >15 scientific conversations |
| Policy and debate hubs | Fora and hubs to interact >5<br>Contributions >5 |
| MSc theses | 15 |
| PhD theses | 12 |
| Seminars / lectures | 10 |

## 7.3 Risk Management and Compliance

In TRACE project, risks are considered as an integral part of the workplan. The complexity of the problem at hand and the trans-disciplinary nature of the consortium add to the number of risky aspects that may cause issues in the project execution lifecycle.

Although quality and risk management falls into the scope of D1.1: Quality Plan and Risk Management, there are some potential risks specifically related to the conduction of TRACE outreach and impact creation activities, where their level of importance is considered fundamental for the successful implantation of TRACE communication Strategy and Plan.

These issues are expected to be tackled a priori by exploiting the accumulated project implementation experience of partners and by applying a well laid-out management scheme. A list of potential risks can be found in the below Table, along with respective mitigation measures.

***Table 4: Risk register***

| # | Description of Risk | Risk-Mitigation measures | Probability \| Impact |
|---|---|---|---|
| **1** | Low outreach of TRACE communication channels and low relevance to the specifics of the target audiences | Communication strategy and plan has been early developed (M6) and constantly evaluated to assure that all developed channels and means are relevant to the specifics of the target audiences; specific KPIs have been provisioned for monitoring the success of the strategy. Statistics on the use of the TRACE webpage and social media accounts will be reviewed periodically to monitor visitors' flow and increase the diffusion in time. | L \| H |
| **2** | Low engagement of consortium partners in dissemination/communication activities (e.g., participation in | Close collaboration of WP7 Leader with all consortium partners and continuous triggering of the inactive members through bi-lateral communication and regular WP7 meetings. | L \| M |

| # | Description of Risk | Risk-Mitigation measures | Probability \| Impact |
|---|---|---|---|
| | events, write scientific papers etc.) | | |
| **3** | Low participation at the TRACE external events | All communication channels are used to broaden the number of stakeholders involved in activities. Effort will focus on engaging the stakeholder community, the members of which are expected to participate at workshops and demonstrations; Partners are committed to share information about TRACE events through individual channels and invite their colleagues, through their network of contacts. | L \| M |
| **4** | Confidential information is disclosed through project's dissemination/ communication activities | TRACE has identified and described the required communication and dissemination procedures for publishing project's dissemination material. All partners are obliged to follow these guidelines. A second level of security has also been established, where all information related to communication/ dissemination issues must be first approved beforehand by TRACE communication group. | L \| H |
| **5** | Low penetration of TRACE brand name to the national and EU audiences | TRACE team has already proceeded with:<br>• the development of a precise communication and dissemination strategy in an early stage of the project (M6), | L \| M |

| # | Description of Risk | Risk-Mitigation measures | Probability \| Impact |
|---|---|---|---|
| | | • the design of TRACE brand story and website to support dissemination activities and the project's outreach and<br>the creation of TRACE dedicated social media accounts linked to the corresponding EC ones. | |
| **6** | Protection of personal data processes are not handled correctly in TRACE | In order to have a clear view of the needs in data protection, a Data Management Plan has been produced (D1.2) and will be updated in the project course, describing procedures for data sharing, archiving and preservation, considering EU GDPR and national laws. | L \| H |
| **7** | Travelling to present papers in conferences may not be possible for many partners (COVID related) | Drafting scientific papers will be encouraged throughout TRACE implementation period by identifying relevant opportunities (e.g., Open Access journals). For their presentation, TRACE team will try to make use of complementary alternatives for increasing TRACE outreach (e.g., virtual interviews, attendance of on-line seminars/ workshops etc.) | M \| L |
| **8** | A delay in the delivery of a task output shifts the beginning of a depending task | Resources have been carefully planned at project level and partner's internal level by defining the dependencies between WPs/Tasks. A phased delivery of outputs will enable dependent tasks to initiate their work based on preliminary versions/outputs. | M \| L |

| # | Description of Risk | Risk-Mitigation measures | Probability \| Impact |
|---|---|---|---|
| | | Specific actions can be decided to correct deviations modifying some partners' internal plans. | |
| **9** | Changes in legislative framework in one or more countries | Continuous monitoring and update of possible adoption of new laws and rules. | L \| M |
| **10** | Limited dissemination of TRACE results | Intensify internal flow of information related to events/conferences. Tight monitoring of such activities by the coordinator. Increase the number of graduate students and researchers to pursue research and publish papers is also a remedial measure. | L \| H |
| **11** | Stakeholders outside the project are not interested | Stakeholders will be contacted early in the project through the Advisory Board and through various communication activities in an effort to raise interest throughout the scientific and end user community. Of special importance is communication with logistics associations in Europe where the consortium will have the opportunity to expose the TRACE findings and results. NKUA plans to subcontract experts in the logistics domain in Greece to support TRACE partners in the requirement analysis and provide consultancy services. The external entities together with TRACE partners with expertise in logistics and their contacts in Europe and Worldwide will provide the pathways to reach a wide group of experts and logistics companies towards increasing the awareness and interest in the TRACE's outcomes. Proper channels have been defined and will be used within WP7 already. | M \| H |

# 8 Conclusion

This deliverable presented the TRACE communication, dissemination and exploitation strategic approach, which is expected to be used as a guide for the consortium members towards the effective allocation of time and resources and the maximization of project's impact. It describes TRACE's communication approach by defining the key communication objectives, analyses the key audiences that TRACE aims to distribute its messages, along with the corresponding key messages and the channels to be used for achieving the maximum desired outreach. D7.3 focuses also on the evaluation and monitoring of communication and dissemination activities and the partners' role and effort. Special attention is also given to the dissemination activities and the clustering plan that will be developed and implemented within the project, as well as to liaison activities with relevant authorities and initiatives.

The TRACE communication, dissemination and exploitation strategy is considered as a flexible and adaptive living document to enrich the project's approach to communication and to ensure that information about the project and its outcomes are effectively communicated through its life and beyond.

The second version of this deliverable: D7.4 Dissemination and Communication activities (B) that is due on M24 will present all implemented activities until M24 and any updated to the dissemination and communication plans that might be required.

The updated exploitation plans along with more details on exploitable results will be presented in D7.1 Commercialisation and Sustainability Options (A) that is due on M24.

# Annex A

***Table 5: Calendar of proposed scientific journals***

| Title of journal | Website | Scientific areas related to TRACE |
|---|---|---|
| Transportation Research Part B: Methodological | https://www.sciencedirect.com/journal/transportation-research-part-b-methodological | Developments and solutions of problems to deal with important aspects of the design and/or analysis of transportation systems |
| Transportation Research Part C: Emerging Technologies | https://www.sciencedirect.com/journal/transportation-research-part-c-emerging-technologies | Developments, applications, and implications, in the field of transportation systems and emerging technologies |
| Transportation Research Part E: Logistics and Transportation Review | https://www.sciencedirect.com/journal/transportation-research-part-e-logistics-and-transportation-review | Logistics and transportation research |
| IEEE Transactions on Intelligent Transportation Systems | https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6979 | Design, analysis, and control of information technology as it is applied to transportation systems |
| Transportation Letters | https://www.tandfonline.com/journals/ytrl20 | New methodological, theoretical, and conceptual insights spanning all areas of transportation research |

| Title of journal | Website | Scientific areas related to TRACE |
|---|---|---|
| | | |
| EURO Journal on Transportation and Logistics | https://www.sciencedirect.com/journal/euro-journal-on-transportation-and-logistics | The EURO Journal on Transportation and Logistics offers a forum for the presentation of original mathematical models, methodologies and computational results, focusing on advanced applications in transportation and logistics. |
| The International Journal of Logistics Management | https://www.emerald.com/insight/publication/issn/0957-4093 | International Journal of Logistics Management provides a platform for development and examination of management theory and practice relating to logistics and the supply chain. We seek to deliver relevant research that delivers credible knowledge to industry and society while advancing the discipline. |
| Logistics | https://www.mdpi.com/journal/logistics | Logistics is an international, scientific, peer-reviewed, open access journal of logistics and supply chain management published quarterly online by MDPI. |
| Future Generation Computer Systems | https://www.sciencedirect.com/journal/future-generation-computer-systems | Federated Learning for distributed Optimization |

| Title of journal | Website | Scientific areas related to TRACE |
|---|---|---|
| International Journal of Vehicle Autonomous Systems | https://www.inderscience.com/jhome.php?jcode=ijvas | vehicle autonomous systems research and development |
| Cleaner Logistics and Supply Chain | https://www.sciencedirect.com/journal/cleaner-logistics-and-supply-chain | green, sustainable, and circular logistics and supply chain management |
| Journal of Business Logistics | https://onlinelibrary.wiley.com/journal/21581592 | research, and best practices across the logistics and supply chain discipline |
| IEEE Transactions on Knowledge and Data Engineering | https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=69 | knowledge and data engineering aspects of computer science, artificial intelligence |
| Journal of Systems and Software | https://www.sciencedirect.com/journal/journal-of-systems-and-software | Methods and tools for software requirements, design, architecture, verification and validation |
| Journal of Optimization Theory and Applications | https://www.springer.com/journal/10957 | mathematical optimization techniques and their applications to science and engineering |
| Journal of Optimization | https://www.hindawi.com/journals/jopti/ | theoretical and applied aspects of mathematical programming and optimization methodologies in science and engineering |
| Journal of Data, Information and Management | https://www.springer.com/journal/42488 | up-to-date research and development in the data-information-management interdisciplinary problems |

| Title of journal | Website | Scientific areas related to TRACE |
|---|---|---|
| The IET MENA journal / ERTICO / ITS World Conference | https://itsworldcongress.com/technical-programme/ | The IET journal will publish works from the ITS World Conference in Dubai (Sept 2024). The deadline for contributions is December 15, 2023 |
| Data and Information Management | https://www.sciencedirect.com/journal/data-and-information-management | Innovative theories and technologies in data-driven information analytics, including knowledge discovery and organization, cloud computing, machine learning, information visualization, and human-computer interaction |
| Blockchain: Research and Applications | https://www.sciencedirect.com/journal/blockchain-research-and-applications | theoretical and applied papers in established and emerging areas of blockchain research to shape the future of blockchain technology |
| International Journal of Shipping and Transport Logistics | https://www.inderscience.com/jhome.php?jcode=ijstl | IJSTL is an international peer-reviewed journal addressing all methodological aspects in the field of shipping and transport logistics, particularly those that require empirical or mathematical analysis with managerial implications. |
| International Journal of Logistics Management | https://www.emeraldgrouppublishing.com/journal/ijlm | International Journal of Logistics Management provides a platform for development and examination of |

| Title of journal | Website | Scientific areas related to TRACE |
|---|---|---|
| | | management theory and practice relating to logistics and the supply chain. |
| Autonomous Robots | https://link.springer.com/journal/10514 | Autonomous Robots is a peer-reviewed journal that publishes papers on the theory and applications of robotic systems capable of some degree of self-sufficiency. |

# Annex B

***Table 6: Calendar of proposed conferences, events, workshops & fairs***

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| 14 December, 2023 | INFOCOM World Athens, 2023 | Athens, Greece | Annual exhibition taking place in Athens, Greece. The exhibition focuses on ICT technologies and applications in various domains and attract important stakeholders of the Greek and European ICT industry. | https://infocomworld.gr/ |
| January 7-11, 2024 | Transportation Research Board Annual Meeting - TRB 2024 | Washington DC, USA | The event covers all transportation modes, with sessions and workshops addressing topics of interest to policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions. | https://events.jspargo.com/TRB24/Public/enter.aspx |
| February 28 – March 1, 2024 | MENA Transport Congress & Exhibition | Dubai, United Arab Emirates | This year's theme, "Sustainable Mobility and Wellbeing", exemplifies the unwavering commitment to shaping a greener future for urban mobility, harnessing cutting-edge technology, implementing effective policies, and embracing industry best practices to create a brighter, | https://www.menatransport.org/website/3387/ |

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| | | | healthier world. The objective is prioritizing sustainable mobility and wellbeing to inspire positive change and drive towards a more sustainable and liveable future. | |
| 15-18 April, 2024 | Transportation Research Arena (TRA 2024) | Dublin, Ireland | Venue for researchers, policy makers and industry representatives to get together and contribute to the discussion on how research and innovation can reshape the transport and mobility system. The conference provides a unique opportunity to hear about mobility trends in different parts of Europe, learn from achievements in industry as well as share best practices of policies and deployments. | https://traconference.eu/ |
| May 2 – 4, 2024 | The 7th International Conference on Logistics Operations Management: Smart | Marrakesh, Morocco | GOL'24 aims to bring together researchers and professionals interested in logistics from different points of view: industrial engineering, management, economics and social sciences. This multidisciplinary conference will examine the current state of the art focusing on innovations in | https://gol24.sciencesconf.org/ |

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| | Sustainable and Green Logistics | | concept, model, method and tools for global supply chain management. | |
| 22-23 May 2024 | Smart Transportation Conference & Exhibition 2024 | London, UK | This conference brings transportation industry leaders together to discuss smart strategies and technologies, using digitalization, predictive processes, real-time fleet monitoring, and big data analytics, all aimed at making transportation networks safer, more efficient, and sustainable. | https://transportation-conference.com/ |
| 18–20 June, 2024 | 12th symposium of the European Association for Research in Transportation (hEART) | Espoo, Finland | Organized by the European Association for Research in Transportation | https://www.aalto.fi/en/events/heart-2024 |

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| 18-20 June, 2024 | Electric & Hybrid Marine World Expo Conference | Amsterdam, Netherlands | Electric & Hybrid Marine Expo Europe will showcase new electric and hybrid marine transportation and propulsion solutions, shore charging equipment and efficient emerging technologies to help you on your path to zero-emission shipping and net zero. | https://www.electricandhybridmarineworldexpo.com/en/ |
| 27 – 30 June, 2024 | IFIP International Conference on Artificial Intelligence Applications & Innovations (AIAI 2024) | Corfu, Greece | AIAI conferences attract hundreds AI experts-enthusiasts, academicians and researchers from all over the globe. Participants are interacting on scientific achievements and are discussing numerous aspects of AI advances, under the 4th industrial revolution. Conferences reflect communities formed under the auspices of the AIAI conference, namely:<br><br>The Community of Mining Humanistic Data, The Community of 5G technologies putting intelligence in the network's Edge, The Community of | https://ifipaiai.org/2024/ |

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| | | | Cybersecurity innovations and Applications, The Community of AI and Ethics. | |
| 3 - 7 July, 2024 | EUROBIKE2024 | Frankfurt, Germany | Annual exhibition. EUROBIKE is the central platform for the bike and future mobility world. It plays a leading role in transforming the energy and transport sector, driving social change and setting new standards in the areas Sport, Leisure, Health and Mobility. OLV will present at EUROBIKE with a specific focus on TRACE project dissemination | https://eurobike.com/frankfurt/en.html |
| 16-20 September, 2024 | 30th ITS World Congress | Dubai, United Arab Emirates | Smart mobility and digitalisation of transport | https://itsworldcongress.com/ |
| 18-20 September, 2024 | European Transport Conference - ETC 2024 | Antwerp, Belgium | Supply chain challenges, Regulatory issues, Funding and financial sustainability, Cities and transport | https://www.ectri.org/2023/09/14/etc-2024-save-the-date/ |
| 24-27 September, 2024 | IEEE Intelligent Transportation Systems Conference (IEEE ITCS 2024) | Edmonton, Canada | Intelligent Transportation Systems, conveying new developments in theory, analytical and numerical simulation and modelling, experimentation, advanced deployment and case studies | https://ieee-itsc.org/2024/ |

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| October 9-11, 2024 | 20th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob 2024) | Paris, France | WiMob is an international forum for the exchange of knowledge and experience among researchers, developers and practitioners of wireless and mobile technology. | http://www.wimob.org/wimob2024/cfw.php |
| 22-24 October, 2024 | The Parcel+Post Expo Conference 2024 | Amsterdam, Netherlands | An exhibition of future technologies, solutions and services for the parcel delivery, e-commerce logistics and postal industries | https://www.parcelandpostexpo.com/en/ |
| 30-31 October, 2024 | Electric & Hybrid Aerospace Technology Symposium | Frankfurt, Germany | Launched in 2015, Electric & Hybrid Aerospace Technology Symposium has firmly established itself as the premier event for high-level aerospace engineers and designers, leading research academics, propulsion engineers, aircraft manufacturers, heads of electrical system design and engineering, and anyone working on developing the future of aircraft technology. | https://www.electricandhybridaerospacetechnology.com/en/ |

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| December 10-13, 2024 | EWSN 2024: International Conference on Embedded WIreless Systems and Networks | Abu Dhabi, United Arab Emirates | The International Conference on Embedded Wireless Systems and Networks is a highly selective, annual forum for presenting research results in the field of networked embedded systems, broadly defined, including for example Wireless Sensor Networks, Internet of Things, or Cyber-Physical Systems | https://ewsn24.tii.ae/ |
| TBA | 32nd International Conference on Real-Time Networks and Systems (RTNS 2024) | TBA | RTNS covers a wide-spectrum of topics in real-time and embedded systems, including time-sensitive networks, and real-time applications | https://rtns24.hotcrp.com/ |
| TBA | Pe-Wasun: Performance Evaluation of WIreless, Ad-Hoc, Sensor and Ubiquitous Networks | TBA | Focus on all aspects of wireless ad hoc, sensor, and ubiquitous networks with a specific emphasis on their performance evaluation and analysis, including VANETs, wireless communications and traffic models | http://pewasun.upc.edu/PEWASUN2023/ |

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| TBA | 10th IEEE World Forum on Internet of Things (IEEE WFIoT2024) | TBA | Annual world conference that took place at Aveiro, Portugal in 2023. The conference discusses different aspects of IoT including Transportation and Communication. | https://iot.ieee.org/component/content/category/11-conferences.html |
| TBA | The Future of Transportation World Conference | TBA | The FoT Conference was one of the first to recognize the potential of 'getting transportation off the ground' and examines how soon personal airborne transportation systems will become viable VIP and later mass transportation. | https://www.thefutureoftransportconference.com/en/ |
| TBA | The multi-conference Logistics Conference 2024 | TBA | The multi-conference Logistics Conferences and the exhibition "Supply Chain & Logistics" and "Cargo Truck & Van Expo". Multiple themes, discussion and reflection panels, research, innovative case studies, as well as announcements on new corporate practices, highlighting the needs, concerns and challenges of the market, in an event that has been consistently bringing the entire industry together for 15 years. | https://sce.gr/en/conferences/ |

| Date | Event | Location | Description | Website |
|---|---|---|---|---|
| TBA | International Logistics and Supply Chain Congress 2024 | TBA | The congress provides an excellent opportunity for both researchers and practitioners to discuss recent and future trends in logistics and supply chain management. | https://lmscm2023.hku.edu.tr/ |