



# BOOSTLOG PROJECT

## DELIVERABLE REPORT

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### Disclaimer

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The BOOSTLOG project consortium consists of:

Part. No	Participant organisation name (short name)	Country
1 (Coordinator)	Alliance for Logistics Innovation through Collaboration in Europe, ALICE AISBL (ALICE)	BE
2	STICHTING SMART FREIGHT CENTRE (SFC)	NL
3	FUNDACION ZARAGOZA LOGISTICS CENTER (ZLC)	ES
4	STICHTING TKI LOGISTIEK (TKI Dinalog)	NL
5	HACON INGENIEURGESELLSCHAFT MBH (HACON)	BE
6	INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS (ICCS)	GR
7	Vlaams Instituut voor de Logistiek VZW (VIL)	BE
8	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V. (Fraunhofer)	GE
9	FIT Consulting SRL (FIT)	IT
10	FUNDACION DE LA COMUNIDAD VALENCIANA PARA LA INVESTIGACION, PROMOCION Y ESTUDIOS COMERCIALES DE VALENCIAPORT (VPF)	ES
11	TECHNISCHE UNIVERSITEIT DELFT (TU Delft)	NL
12	EUROPEAN ROAD TRANSPORT TELEMATICSIMPLEMENTATION COORDINATION ORGANISATION - INTELLIGENT TRANSPORT SYSTEMS & SERVICES EUROPE (ERTICO ITS EUR)	BE
13	LINDHOLMEN SCIENCE PARK AKTIEBOLAG (LSP)	SW



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1.1	08.05.2023	Including ALICE position paper	Yanying Li (ALICE)
1.2		Finalising funding programmes for TRL>7 innovation	Yanying Li (ALICE)
2.0	21.05.2023	Review	Carolina Cipres, Alicia Martínez (ZLC), Fernando Liesa (ALICE)
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## EXECUTIVE SUMMARY

This deliverable is the second version of 'barriers assessment and positive framework conditions'. The first version was published in 2021 as the BOOSTLOG's D2.3. key barriers and recommendations of D2.3 can be found in Annex A which are still valid. This deliverable provides additional inputs to this topic. This deliverable has been written based on gathering insights from other projects that also aim to facilitate implementation of results of research and innovation (R&I) projects and boost impacts of R&I projects in the transport sector. Inputs were also collected through BOOSTLOG activities such as expert interviews for the different cloud reports and workshops organised by BOOSTLOG, as well as external events BOOSTLOG participated, e.g. TRA conference 2022.

Barriers and recommended actions for each of the four groups identified in the second version of barriers assessment and positive framework conditions are:

Barriers	Proposed actions to enable positive framework	Action taken by:
Mismatch of demand and supply; innovative suppliers may not reach potential users and potential users may not be aware of or able to find innovations they need	Strengthen exploitation activities using various instruments provided by the European Commission that aim to connect users and innovation owners.	Project practitioners
Outcomes of R&I projects only reach lower Technical Readiness Level (TRL) and are not ready for market update.  Lack of funding or financial support to bridge efforts needed to transfer project outcomes to market ready solutions.	To synchronise funding opportunities that can support innovation update with R&I projects to support further development of R&I project results and enable implementation.  Calls of funding schemes for applications should take consideration of timelines of ongoing R&I projects to enable them to prepare for application during the project periods	Funding providers (mainly European Commission but also including national funding providers)
	To prepare for application for funding that can support implementation of project results during the project periods.  To reach out potential users that can benefit from the project outcomes and form partnership to prepare for application for future funding.	Project practitioners
	To cooperate with R&I project consortia for application for funding that support implementation of innovation.	Companies



	<p>To disseminate funding opportunities to project participants and to companies.</p> <p>To collect successful examples to demonstrate benefit of use various funding schemes to support implementation of R&amp;I project results</p>	Associations
Lack of ambitions from the project practitioners to transfer their project outcomes to be successful implementation cases.	<p>To collect successful implementation cases from past R&amp;I projects</p> <p>To communicate successful implementation cases to project practitioners, policy makers at high level events (e.g. TRA plenary and strategic sessions)</p>	Funding providers (mainly European Commission but also including national funding providers)
	<p>To raise awareness of successful implementation cases among project practitioners and researchers.</p> <p>To reach out companies to demonstrate benefits of exploitation of R&amp;I project outcomes in order to attract interests from companies to exploit project outcomes.</p>	Associations
Lack of comprehensive understanding of impact of R&I projects at local, regional and national levels	To encourage and facilitate industry associations, city networks and research membership organisations to evaluate short and long term impacts of R&I projects on their sectors or member cities.	Funding providers (mainly European Commission but also including national funding providers)
	To cooperate with regional and national funding schemes to exploit R&I project results and to communicate benefits of R& I projects at local level	Project practitioners
	To cooperate with regional and national funding schemes to support capitalisation of R&I project results and to understand impacts and benefits of R& I projects at local level	Associations
Lack of a common assessment methodology for assessing readiness for scale impact	To propose a new assessment methodology for assessing readiness of innovation and liaise with funding providers to implement such methodology in future R&I programmes	Associations



## 1 Introduction

### 1.1 scope of this deliverable

EU funded research and innovation projects on the logistics sector have played an important role in advancing innovations, accelerating digitalisation of the sector, reducing emissions and pollution, improving efficiency, and strengthening competitiveness. However, since not all project outcomes have been sufficiently exploited, eventually, expected societal impacts may not be delivered. BOOSTLOG aims to boost impacts of EU funded R&I projects. One of BOOSTLOG tasks is to identify barriers that prevent projects delivering impacts and propose positive framework conditions to address such barriers. BOOSTLOG consortium has analysed the reasons why some projects did not deliver expected impacts to understand successful factors as well as barriers. Results have been summarised in 'D2.3 Barrier assessment and positive framework conditions', published in March 2022.

D2.3 'Barrier assessment and positive framework conditions'<sup>1</sup> has analysed the lifecycle of a R&I project, identified potential obstacles in each step of the lifecycle, and proposed appropriate framework conditions. This deliverable, D2.9 is the second version of D2.3, focusing on barriers identified after publishing of D2.3 and providing recommendations of actions that can be taken by various stakeholders to address such barriers. D2.9 also provides additional actions that can help to address barriers identified in D2.3 already. Barriers and positive framework conditions in D2.3 are still valid and will not be repeated in this deliverable. Summary of barriers identified and recommendations from D2.3 is provided in Annex A.

As indicated in D2.3, to create positive frameworks, actions are needed from all types of stakeholders. Four stakeholders in D2.3 who are considered to play key roles in R&I projects are:

- Funding providers (mainly European Commission, but also including national funding providers)
- Project practitioners (i.e. organizations participating as partners in funded R&I projects)
- External stakeholders (industry and business) who may not participate in R&I projects but can benefit from project results.
- Associations including technology platforms representing various sectors who play a key role in advocating for R&I funding, e.g. ALICE.

After identifying barriers to be addresses in this deliverable, actions that can be taken by each of the above four stakeholder groups are recommended in order to create positive framework conditions to advance project outcomes' implementation.

### 1.2 Methodology

#### Inputs from previous version (D2.3)

This deliverable has been developed based on a previous version of barriers assessment and positive framework conditions, i.e. D2.3, that has been developed based on analyses of the lifecycle of a R&I project in

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<sup>1</sup> The deliverable is available: [https://www.etp-logistics.eu/wp-content/uploads/2022/11/BOOSTLOG\\_D2.3-Barrier-Assessment-Framework-Conditions\\_Final.pdf](https://www.etp-logistics.eu/wp-content/uploads/2022/11/BOOSTLOG_D2.3-Barrier-Assessment-Framework-Conditions_Final.pdf)



the logistics sector. This deliverable proposes new positive framework conditions that can address barriers already identified in D2.3, and also collects inputs on new barriers that have not been identified before. Key conclusions from D2.3 is shown in Annex A.

### The Task Force on Accelerating Innovation Uptake for Sustainable Transport

This deliverable has been built on collected insights from other projects that also work on advancing implementation of innovation in the transport sector but not focusing on the logistics sector. Such discussions have provided new inputs such as lessons learnt and good practices that were inspiring to the logistics sector.

BOOSTLOG has teamed up with 6 other Coordination and Support action (CSA) projects to launch a Task Force on Accelerating Innovation Uptake for Sustainable Transport<sup>2</sup>. After launch of the Task Force in December 2021, 2 more projects joined the Task Force. Currently the Task Force has 9 projects including BOOSTLOG:

- ASSURED-UAM will look at scenarios for up to 10 use cases within 5, 10 and 15-years' timeframes, make knowledge base and policy recommendations in 8 languages. It will create standards for products and processes as well as tools for exchange and learning of Urban Air Mobility, project development support and technical assistance. There will be UAM community integration and wide consultations, cooperation, and synergy with other projects, industry and user groups. More information: <https://assured-uam.eu/>.
- ENTRANCE offers a common and legitimate European Matchmaking platform and complementary off-line services designed to mobilise financial resources to accelerate the market access and scale up of "first of a kind" sustainable transport solutions, thereby reducing the European CO2 emissions and pollutants caused by the transport and mobility sector. More information: <https://www.entrance-platform.eu/>.
- FastTrack helps cities accelerate the roll-out of sustainable mobility innovations through knowledge exchange and capacity building. It works with 24 urban and peri-urban areas to help them accelerate their deployment of sustainable mobility innovations. This work revolves around four topical clusters, each led by an Ambassador City. Throughout its learning programme – featuring a bottomup needs assessment, e-learning opportunities, and Capacity Building Weeks – FastTrack brings its community of local areas together with experts and solution providers to overcome the barriers to innovation deployment. More information: <https://fasttrackmobility.eu/about/project>.
- FUTURE-HORIZON will support ERTRAC, related HORIZON EUROPE partnerships and the European Commission in identifying future research needs for upcoming R&I programmes, in order to further facilitate a sustainable and efficient road transport system in Europe, while also fostering international cooperation. More information: <https://www.ertrac.org/index.php?page=futurehorizon>.
- PLATINA3 The main objective is to provide the knowledge base for the implementation of the EU Green Deal in view of further development of the European Commissions' IWT action programme (NAIADES) towards 2030. The project aims to improve the impact and broadening stakeholder engagement in support of transport research and innovation in Inland Waterway Transport (IWT). More information: <https://platina3.eu/what-we-do/>.

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<sup>2</sup> More details about the task force please refer to Press release on the launch of the task force, available: [https://www.etp-logistics.eu/wp-content/uploads/2021/12/Launch-of-the-Task-Force-on-Accelerating-Innovation-Uptake-in-Transport\\_20211215.pdf](https://www.etp-logistics.eu/wp-content/uploads/2021/12/Launch-of-the-Task-Force-on-Accelerating-Innovation-Uptake-in-Transport_20211215.pdf)





- RECIPROCITY aims at transforming European cities into climate-resilient and connected, multimodal nodes for smart and clean mobility through an innovative four-stage replication approach. The project will equip at least 20 cities across Europe, of varying size and mobility demand, with necessary tools, knowledge, contacts and methods to accelerate the replication of existing innovative mobility solutions. More information: <https://reciprocity-project.eu/about/>.
- LASTING aims to broaden engagement of the broader waterborne transport sector in European RD&I activities, by developing a communication strategy, and implementing a long-lasting communication campaign beyond the lifetime of this project, ultimately increasing, stakeholder engagement in the sector and thereby increasing impact of European waterborne transport RD&I. More information: <https://www.waterborne.eu/projects/coordination-projects/lasting/about-lasting>
- REMOBILISE is a 24-months project pursuing the overall objectives of strengthening cluster management excellence while facilitating strategic connections between our clusters and our specialised ecosystems and cities across Europe, in the sector of mobility. More information: <https://remobilise.eu/>

The Task Force has four work streams:

- Work Stream 1: Matchmaking services between innovation suppliers and buyers
- Work Stream 2: Finance & De-risking
- Work Stream 3: Best practice sharing
- Work Stream 4: Capacity building and guideline development

Through this Task Force, the BOOSTLOG consortium was able to exchange knowledge gained, lessons learnt and best practices identified by various project consortia in different domains of the transport sectors.

The Task Force organised an invited session at TRA2022<sup>3</sup> and the session has been used to present key outcomes of the Task Force and facilitated discussions among projects and with conference participants. The session description is available in Annex B.

Inputs from the Task Force as well the session at TRA have been used to identified barriers and form recommended actions.

#### Discussions with ALICE members

ALICE members as key stakeholders in implementation of R&I project results have shared their views on how to evaluate readiness levels of innovative solutions from industry/business's point views. Their views have been used to form a position paper<sup>4</sup> developed with input of ENTRANCE that calls for the need to recognize the complexity and gap between what is asked out of EU funded R&I projects (i.e. propose and prove that solutions work) and what is expected (i.e. solutions that are creating impact in the market and society). It calls for a proper assessment of the current framework including aspects such as market, commercial, societal and regulatory aspects and eventually work on a more holistic framework to assess the innovation readiness and

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<sup>3</sup> <https://2022.traconference.eu/invited-sessions/tuesday/>

<sup>4</sup> ALICE position paper on going beyond Technology Readiness Level to achieve impact out of R&I projects. ([Link](#))



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define which instruments and framework is required to fill the gap in the *valley of death* (i.e. the time delay between research activities and the actual implementation in practice).



## 2 Barriers identified and recommended actions

### 2.1 Mismatch of demand and supply

The barrier: Innovative suppliers may not reach potential users and potential users may not be aware of or able to find innovations they need.

Recommendations: D2.3 has recommended project practitioners to engage users of innovative solutions from the beginning of a project. Project practitioners are recommended to exploit possibilities to use various channels to reach out potential users, partners and investors to advance implementation of project outcomes. Following finishing of Horizon 2020 programs (2014 – 2020), the EC has set up several channels to support exploitation of Horizon 2020 projects, such as Horizon Results Platform<sup>5</sup> and Horizon Results Boosters<sup>6</sup>. These two services dedicate to exploitation of Horizon 2020 projects. There are also other channels, e.g. Enterprise Europe Network (EEN), European Intellectual Property (IP) Helpdesk etc. EC channels to support project exploitation are summarised by Ludger Rogge from the EC, shown below.



Figure 1. EC Channels to boost exploitation of R&I projects (Picture is done by Ludger ROGGE, European Commission, Directorate General for Research & Innovation)

BOOSTLOG activities that address this barrier: Use of the Innovation Marketplace and ALICE Knowledge Platform to facilitate match making between potential users and innovation suppliers.

<sup>5</sup> Horizon 2020 Results Platform - Making Result Matter:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-results-platform>

<sup>6</sup> <https://www.horizonresultsbooster.eu/>



## 2.2 Outcomes of R&I projects only reaching lower TRL

The Barrier: Outcomes of R&I projects only reach lower Technical Readiness Level (TRL) and are not ready for market uptake. Most R&I projects develop innovation in TRL 1 – 7 that are not ready for implementation. There is a strong need for financial support to bridge efforts needed to transfer project outcomes to market ready solutions.

Recommendations: D2.3 has proposed an innovation fund to support the implementation of publicly funded R&I projects, to help the logistics sector to exploit project outcomes. However, using of existing funding programmes should be considered instead of proposing a new funding programme. There are several EU funding programmes and financial instruments that can be used to support further development of project outcomes and implementation of innovation from R&I projects. Such fundings can also help mitigate risk of implementation of innovation by gaining supporting from policy makers and users. EC and other funding programmes should synchronise funding opportunities (EU, regional and national schemes) to enable project outcomes to access funding for uptake of R&I projects. Good practices have been learnt from supporting FP7 and Horizon 2020 projects to apply for Innovation Fund. Calls of funding schemes for applications should take consideration of timelines of ongoing R&I projects to enable them to prepare for application during the project periods. Project participants should aim to prepare for applications for funding during the project period. Associations should communicate funding opportunities and raise awareness of various funding programmes in the logistics sector.

BOOSTLOG activities that address this barrier: BOOSTLOG has developed a poster to show all funding schemes that can support innovation implementation and use the poster at the BOOSTLOG stand in Munch Transport Logistics fair held on 9 – 12 May 2023, a world's leading logistics trade fair. The poster is shown in Annex C. The BOOSTLOG consortium has also published a paper to explain various funding programmes, available in Annex D.

## 2.3 Lack of ambitions from the project practitioners

The barrier: project practitioners focusing only on winning a proposal or completing tasks defined by the grant agreement and often have no ambitions to transfer their project outcomes to be successful implementation cases.

Recommendations: to collect and showcase of successful uptake of past EU funded R&I projects among project participants, thus raising awareness and giving project beneficiaries ambitions to create start-ups and breakthrough innovation beyond winning a project and completing tasks of the project. For funding providers, to collect successful implementation cases from past R&I projects and communicate them to ongoing project consortium members. For EC, successful implementation of R&I projects and their impacts should be communicated at high level of events, e.g. TRA plenary or strategic sessions. Associations should systematically collect implementation cases and summarise impacts of R&I projects on the logistics sector, thus raising the awareness of successful implementation. Associations should also reach out companies to demonstrate benefits of exploitation of R&I project outcomes in order to attract interests from companies to exploit project outcomes.



BOOSTLOG activities that address this barrier: BOOSTLOG together with the projects of the Task Force has launched a Call for Action to raise awareness to project practitioners and a wide range of stakeholders. The Call for Action was launched on 15<sup>th</sup> March. The Call for Action has been supported by several industry associations, e.g. EUCAR<sup>7</sup> and CLEPA<sup>8</sup>, and city networks, e.g. POLIS<sup>9</sup>. More information about the launch of Call for Action to Support Uptake of Horizon 2020 Project Outcomes is available at ALICE website<sup>10</sup>.

## 2.4 Lack of comprehensive understanding of impact of R&I projects

The barrier: there is a lack of comprehensive understanding of impact of R&I projects at a local, regional, national level. Understanding impacts of R&I projects at local, regional and national level can motivate local regional and national governments to actively support implementation of EU funded R&I projects. Local governments can also play an important role in match-making to connect potential users of innovation with project practitioners at the local level.

Recommendations: to cooperate with regional and national funding schemes and local logistics clusters or associations to exploit R&I project results and to communicate benefits of R&I projects at the local level. European associations should strengthen cooperation with regional and national logistics clusters and associations, promoting networks from regional and national logistics clusters to EU project practitioners and encourage them to use local networks for implementations and advocate for future funding. Funding providers should encourage and facilitate industry associations, city networks and research membership organisations to evaluate short- and long-term impacts of R&I projects on their sectors or member cities.

BOOSTLOG activities that address this barrier: the BOOSTLOG consortium will work together with regional and national logistics clusters for the next version of the valorisation strategy (D3.4).

## 2.5 Lack of a common assessment methodology for assessing readiness for scale impact

The barrier: For many years Technical Readiness Levels (TRLs) have been used to assess progress from an idea towards a proven solution. But innovations achieving TRL9 – actual system proven in an operational environment –are still a long way from being buyable solutions for even the most forward-looking users. There is an intermediate stage where adoption has very high inter-dependencies. Various organisations have looked at this from different perspectives: societal readiness (society focus), market readiness (customer focus), commercial readiness (investor focus), regulatory readiness.

Recommendations: Recent research and innovation calls for proposals are recognising this issue without calling it out explicitly: more of the focus is on assessing impact and on the exploitation plan. But in the absence

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<sup>7</sup> <https://www.eucar.be/>

<sup>8</sup> <https://clepa.eu/>

<sup>9</sup> <https://www.polisnetwork.eu/>

<sup>10</sup> <https://www.etp-logistics.eu/call-for-actions-to-support-uptakes-of-h2020-he-project-outcomes/>



of a common assessment methodology for readiness for scale it is difficult to compare different proposals in this regard without being over-influenced by the honeyed words of the proposal writer. Creation and widespread adoption of a standard Scale Readiness Level is therefore recommended.

BOOSTLOG activities that address this barrier: ALICE and its members have published a position paper to propose a new assessment methodology for assessing readiness for scale impact<sup>11</sup>. The position paper has been published in May 2023, available at ALICE website for collecting feedbacks. The position paper is shown in Annex E. ALICE will collect feedbacks from stakeholders and advocate for designing and use such a methodology.

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<sup>11</sup> News on publishing the position paper is available at: <https://www.etp-logistics.eu/alice-aims-to-facilitate-value-and-impact-creation-out-of-research-implementation-through-practical-freight-and-logistics-innovations-addressing-societal-challenges/>



### 3 Conclusion

This deliverable has been written based on gathering insights from other projects that also aim to facilitate implementation of results of research and innovation (R&I) projects and boost impacts of R&I projects in the transport sector. Inputs were also collected through BOOSTLOG activities such as expert interviews for the different cloud reports and workshops organised by BOOSTLOG, as well as external events BOOSTLOG participated, e.g. TRA conference 2022. Results of this deliverable will be used to form the next version of valorisation strategy done by BOOSTLOG WP3.

Barriers and recommended actions are summarised:

- Mismatch of demand and supply; innovative suppliers may not reach potential users and potential users may not be aware of or able to find innovations they need.
  - ✓ All project participants should strengthen exploitation activities and benefit from various instruments provided by the EC.
- Outcomes of R&I projects only reach lower Technical Readiness Level (TRL) and are not ready for market uptake.
  - ✓ EC and other funding providers should synchronise funding opportunities for innovation uptake; all project participants should prepare for application for loads/grants/funding for uptake during the project period.
- Lack of funding or financial support to bridge efforts needed to transfer project outcomes to market ready solutions.
  - ✓ Calls of funding schemes for applications should take consideration of timelines of ongoing R&I projects to enable them to prepare for application during the project periods.
- Lack of ambitions from the project practitioners to transfer their project outcomes to be successful implementation cases.
  - ✓ Best practices should be collected and training/capacity building should be provided.
- Lack of comprehensive understanding of impact of R&I projects at local, regional and national levels
  - ✓ Strengthening cooperate with regional and national funding schemes to exploit R&I project results and to communicate benefits of R&I projects at local level.
- Lack of a common assessment methodology for assessing readiness for scale impact
  - ✓ Systematically evaluate impacts of R&I project activities at sector level and at organisation level.



## Annex A: Summary and conclusions in D2.3

Use of EU R&I project results in practice relies not just on capabilities and willingness of the industry to take up results and convert them into business. It also relies on framework conditions which are under the influence of governments and the EU-subsidized R&I projects themselves. This report has made an inventory of the main barriers to uptake of R&I project results and calls for more attention to specific framework conditions.

Before project phase:

- **Barrier:** Engagement of stakeholders for topic identification and work programme forming is often limited to a small group who are familiar with EU funding but lack of knowledge, skills and ambitions in implementation;
  - **Propose:** Engaging industry partners who are users of innovation from the very beginning of a work programme, e.g. identifying topics;
- **Barrier:** Proposal evaluation does not consider implementation possibility;
  - **Propose:** Requiring business plan in proposal;
  - **Propose:** Facilitating knowledge transferring and developing guidelines for business plan;
  - **Propose:** Exploitation potential should be an important part of evaluation of proposal;
- **Barrier:** Consortium consists of only researchers, project managers and developers; consortium may not have users/customers of innovation;
  - **Propose:** Team members of a proposal should include skills and knowledge in legal and business issues aiming for exploitation;
  - **Propose:** Best practice sharing and capacity building among similar types of stakeholders;
- **Barrier:** Logistics innovation implementation often requires competitors working together;
  - **Propose:** Encouraging competitors to be in the same proposal;
  - **Propose:** Demonstrating successful experiences to industry stakeholders;

During project phase:

- **Barrier:** Dissemination activities failed to reach out high-level decision makers in industry and policy making;
  - **Propose:** Engage with high-level industry leaders in the logistics sector, and policy makers for public policy making at dissemination event to raise awareness;
- **Barrier:** Consortium and funding organisation do not evaluate progress towards implementation during project duration;
  - **Propose:** Evaluate potential impacts and potential implementation throughout the project duration.

Post project phase:

- **Barrier:** Inadequate evaluation of usage of project outcomes and expected impacts;
  - **Propose:** Post-project audits to evaluate the expected impacts of projects, creating of a learning mechanism in order to strengthen the current approaches to steer towards impact in industry practice;





- **Barrier:** Project outcomes are not ready for commercial market and further development is needed; lack of funding or financial support to bridge efforts needed to transfer project outcomes to market ready solutions, while this lack of funding for the sector has not been a focus of policy making
  - **Propose:** An innovation fund to support the implementation of publicly funded R&I projects, to help the logistics sector to exploit project outcomes.

Concerning the entire lifecycle:

- **Barrier:** Lack of knowledge, skills and ambitions in implementing project outcomes from project practitioners;
  - **Propose:** Best practice sharing and capacity building among similar types of stakeholders;
  - **Propose:** Knowledge gained from R&I projects should be included in professional trainings and curricula of higher education;
  - **Propose:** Developing guidelines specifically for transferability or scale-up;
- **Barrier:** Lack of trust among competitors to foster partnership;
  - **Propose:** Consortium with competitors working together should be encouraged;
  - **Propose:** Demonstrating good practices to raise awareness of benefits of such cooperation.

Main recommendations can be summarized as follows:

- Manage knowledge, skills and ambitions throughout the entire R&I project lifecycle, including the post project phase:
  - Business and industry's needs should be taken into account from the very beginning and throughout the project;
  - Consortium members should include developers, implementers with business and legal knowledge and users/customers;
  - Exploitation potential and outlook should be a more important part of the evaluation of proposals;
  - Knowledge gained from R&I projects should be included in professional trainings and curricula of higher education to enable knowledge transfer to current and future generation of workforce.
- Create an innovation fund to support the implementation of publicly funded R&I projects to help the logistics sector to exploit project outcomes.
- Increase transferability of results to facilitate scale-up of project outcomes:
  - Best practice sharing and capacity building among similar types of stakeholders;
  - Guidelines specifically for transferability or scale-up should be developed by R&I projects;
  - Cooperation among various projects, projects from different funding schemes, and different initiatives should be facilitated.
- Perform post-project audits to evaluate the expected impacts of projects, creating a learning mechanism in order to strengthen the current approaches to steer towards impact in industry practice.
- Build trust among competitors for pre-competitive stages of R&I:



- Competitors joining the same R&I projects should be highly encouraged;
- Framework for sharing data, physical asset and infrastructure should be encouraged; demonstrating benefits of such framework would help build trust;
- Dissemination of benefits should reach to a high-level decision making people.

The BOOSTLOG project has been working and will continue working on creating positive framework conditions including:

- Collecting implementation cases (as best practices) and developing a comprehensive understanding of factors enabling successful implementation through 'Cloud Reports' on various topics;
- Developing valorisation strategies and guidance to help the logistics sector to exploit R&I project outcomes and facilitate implementations (D3.1);
- Disseminating best practices and raising awareness of benefits of Implementing R&I project outcomes;
- Cooperating with other Horizon 2020 CSA projects to launch a Task Force on Advancing Innovation Uptake for Sustainable Transport<sup>12</sup> for disseminating best practices, raising awareness, capacity building, and advocating for specific funding to bridge the gaps in TRL.

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<sup>12</sup> Detailed information about the Task Force can be found: <https://www.etp-logistics.eu/launch-of-the-task-force/>



## Annex B: TRA202 Invited Session 13: Accelerate Innovation Market Uptake for Sustainable Transport

Tuesday 15 November 2022, 17:00 – 18:00

This session invites eight CAS projects funded by Horizon 2020, BOOSTLOG, ENTRANCE, FastTrack, Reciprocity, LASTING, ASSURED-UAM, PLATINA3, and FUTURE-HORIZON, to present their efforts and cooperation on accelerating market uptake of innovation in all aspects of the transport sector, e.g. logistics, urban transport and mobility, air transport, and waterborne transport. This session aims to facilitate dialogues on how to advance innovation uptakes for all the transport sector, while further raising awareness of ongoing activities from various stakeholders to a wide range of stakeholders including high-level policy makers, thus creating cross-project, cross-organisational cooperation to facilitate innovation implementations and large-scale uptake.

### ORGANISERS:

Yanying Li, Head of Programme & Knowledge Management, ALICE

Jeanett Bolther, PNO Consultants & Coordinator of the ENTRANCE project

### MODERATOR:

**Patrick Mercier-Handisyde**, European Commission

### SPEAKERS:

**Jeanett Bolther**, PNO Consultants & Coordinator of the ENTRANCE project

**Fernando Liesa**, ALICE & Coordinator of the BOOSTLOG project

**Joaquín Crespo Martín**, Instituto Aragonés de Fomento & partner of the RECIPROCITY project

**Jan Christiaens**, Mobiel21 & partner of the FastTrack project

**Oliver Lah**, UEMI & partner of the Future Horizon & Solution Plus

**Bartosz Dziugiel**, Institute of Aviation Poland & Coordinator the ASSURED project

**Mihai Barcanescu**, Waterborne & Coordinator of the Lasting Project & partner of Platina3




## Annex C: Poster - European Funding for Logistics Innovation







## Annex D Mapping EU funding to support innovation (TRL>7)

The following EU funding programmes have been identified that can support logistics innovation (TRL>7):

<i>EU funding programme</i>	<i>Period</i>	<i>Total budget</i>	<i>Funding mode</i>	<i>Minimum number of consortium</i>	<i>Project budget</i>	<i>Project period</i>	<i>Scope</i>
<a href="#"><u>Connecting Europe Facility (CEF) – Transport</u></a>	2021 – 2027	25.8 B€	Grants	1	>1M€	2 – 5 years	Infrastructure investments in transport
<a href="#"><u>European Investment Bank (EIB)</u></a>	2021 – 2027 (current transport lending policy)	>100 B€ per year	Loans, equity, guarantee	1	>25 M€	n.a.	Investing in a cleaner and smarter transport system
<a href="#"><u>EIC Accelerator</u></a>	2021 - 2027	10.1 B€	Grants, equity	1 (SEM only)	2,5M€ (grant), 15M€ (equity)	< 2 years	Supports SMEs to develop and scaleup game-changing innovations
 eit Urban Mobility	2020 – 2026	400 M€	Grants	2	< 1 M€	< 3 years	Investment in urban mobility start-ups



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	2021 - 2027	6.5 B€	Grants	1	1 -2 M€	2 – 5 years	Bringing innovative and sustainable solutions to regional development challenges
<a href="#">Innovation fund</a>	2020 - 2030	Maximum 38 B€	Grants	1	>2.5 M€	< 5 years	Demonstration of innovative low-carbon technologies
	2021 – 2027	5.4 B€	Grants	1	1-3 M€	< 10 years	Environmental protection



## Annex E ALICE position paper - Beyond Technical Readiness Levels: how do we assess readiness for scale impact?

*Beyond Technical Readiness Levels:  
how do we assess readiness for scale impact? April 2022*

**alice** Alliance for Logistics Innovation through Collaboration in Europe

### Beyond Technical Readiness Levels: how do we assess readiness for scale impact?

#### Summary

The European Union has been investing heavily in research addressing critical challenges, often with great success in enabling new solutions. But there is frustration that proven innovations struggle to deliver the envisaged impact, not because they prove to be bad ideas but because the barriers to widespread adoption go beyond proving that something works.

For many years Technical Readiness Levels have been used to assess progress from an idea towards a proven solution. But innovations achieving TRL9 – actual system proven in an operational environment – are still a long way from being buyable solutions for even the most forward-looking users. There is an intermediate stage where adoption has very high inter-dependencies.

This is not a new thought. Various organisations have looked at this from different perspectives: societal readiness (society focus), market readiness (customer focus), and commercial readiness (investor focus) all have their champions. And this list is not complete, with regulatory readiness being an obvious gap.

Recent research and innovation calls for proposals are recognising this issue without calling it out explicitly: more of the focus is on assessing impact and on the exploitation plan. But in the absence of a common assessment methodology for readiness for scale it is difficult to compare different proposals in this regard without being over-influenced by the honeyed words of the proposal writer.

The Boostlog project has demonstrated the need to create systematic ways of bridging this gap. The Entrance project is seeking to bridge this gap for a number of specific innovations, bringing together interested buyers with proven solutions and jointly identifying and addressing the interdependencies.

This paper envisages the creation and widespread adoption of a standard Scale Readiness Level.

To do this requires answers to two different questions:

1. If such a tool existed, who would lead its widespread adoption?
2. What needs to be done to create it?

Working alongside Boostlog and Entrance projects, ALICE is proposing to co-ordinate work to address these two questions.

#### Why are Technical Readiness Levels not enough?

TRLs assess the progress of a solution idea towards a state of being proven in an operational environment. The creator of TRLs was NASA, for whom the readiness of a solution to be used in their space programme was the only concern. They had no need to create a market or to find investors for each idea; their arena was beyond the scope of most regulators. Whether it worked was the only important measure. TRLs were

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then taken up by the UK Nuclear Decommissioning Authority, who again had no need to create a customer-base. And now TRLs are widely used by a variety of technical research programmes.

TRLs were never designed to assess the readiness of a fragmented potential user base to buy and use the solution. The designers had one user in mind – themselves. But for the challenges of decarbonisation, and other challenges, the user-base is highly fragmented, and their adoption of the new solution is dependent on a series of different concerns that go beyond technical readiness.

1. Is the societal framework in place that sees solving the problem in the way the solution envisages as desirable? Are the necessary changes in ways of life accepted and valued?
2. Is the regulatory framework in place that minimises risk to customer, investor and wider society?
3. Is there a pipeline of potential users, each understanding the potential value, what needs to be in place and at what price-point they will buy?
4. Is there an investable proposition, whereby the roadmap to critical mass can at least be hypothesised? (Critical mass for this purpose is defined as the point where both the revenue stream exceeds the cost of provision, and where the risks associated with dependencies on external factors are acceptable).

### Social Readiness Levels

A scale of Social Readiness has been created and adopted by a number of organisations such as the Danish Innovation Fund. Its concepts have clear links to Market Readiness (potential customers) and Regulatory readiness, and through these to Commercial readiness (potential investors).

Examples of this would be society's willingness to accept bigger trucks in return for fewer of them even if the highways could accommodate them, or of willingness not to use the local planning system to block onshore windfarms near them. On a smaller scale the willingness to adopt different behaviours, such as sorting waste into different bins, actually reusing reusable bags, or bringing back packaging to claim a small deposit refund.

### Regulatory Readiness Levels

Regulatory readiness has a close relationship with societal readiness but is more easily measured. Is the use of the innovation legal? Are the necessary frameworks in place so that compliance can be established.

Examples of this would be self-driving vehicles on public roads and their associated insurance requirements, or the use of drones for delivering goods.

### Market Readiness Levels

For many innovations this is the critical hurdle, as the change often does not demand social or regulatory change.







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The key to this is looking at the solution from the buyer's perspectives. What are the criteria that different potential buyers use to establish whether the innovation is both a clear solution to a recognised problem and is ready to buy and use.

And the literature is full of both examples of technically successful innovations that don't sell, and of the theories around them. The simplest summary is to split the potential market into five groups, each of which have different motivations and requirements:

Segment	Volume Share	Motivation	Requirement
Innovators	1% max	Technical exploration	Newness & excitement
Early Adopters	5% max	Benefit Visionaries	Fundamentals work; workarounds for the rest
Early Majority	44%	Practical value	Holistic practicality
Late Majority	30%	Low risk following	Market standard
Laggards	20%	Retention of capability	Obsolescence of traditional

The volume share numbers are highly indicative, varying enormously from one innovation to another. But the key point is that the innovators, who often band together to create something that works, are a tiny proportion of the user base and are not representative of the rest. The early adopters listen to the innovators, and are then sufficiently excited by the possibilities that they are willing to overlook the rough edges of the solution so long as the fundamentals are in place; in fact they often see those rough edges as the opportunity to shape the complete solution. Without innovators and early adopters the solution never gets to the early majority, which is the key to scale. But the early majority require a holistic solution: they're driven by practicality and expect the innovation to be both easy to buy and easy to use.

In many cases the late majority and the laggards convert inevitably over time: the late majority adopt what is no longer an innovation because everybody else is doing it; and the laggards adopt because their previous solution is no longer available. In most markets the late adopters & laggards represent 50% of the market, so any focus on scale impact cannot ignore them.

There is often a chasm between the early adopters and the early majority into which innovations regularly fall and perish. Crossing the chasm – the title of the classic book by Geoffrey Moore – is fundamentally about addressing the different needs of the early majority while the investors think that the product development process has moved from fundamental change to continuous improvement. Addressing this chasm is the difference between take-up rates for the same innovation in similar but different markets: for example why over 50% of new car registrations in Norway are electric relative to less than 10% in Sweden, Denmark & Finland (2020 data). Clearly a close link with societal and regulatory readiness levels, as the different take-up in Norway is largely driven by the tax treatment in combination with the investment in recharging points.

### Commercial Readiness Levels

Most banks and investment organisations have firmly established criteria for assessing the investability of a particular enterprise. One limitation will be that these will tend to evaluate investment risk of a company





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rather than of an idea; and many such assessments are focused at particular points in the development of an enterprise – from seedcorn funding, through angel investments to venture capital, or lending money to established businesses.

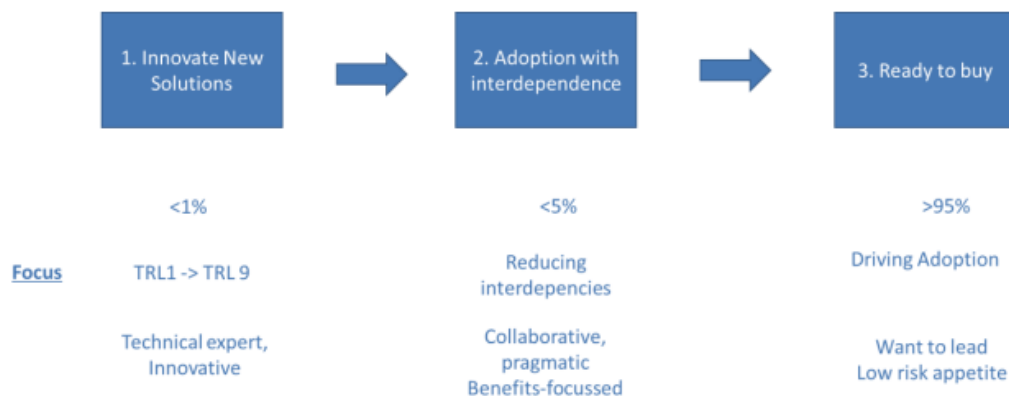
These criteria, particularly those of angel investors focused on taking an equity share in start-ups, may give a rounded approach as to the credibility of the innovation, the market, the competition, the intellectual property, the organising team, their business plan and associated assumptions and timelines.

### Other

There may be other dimensions we have not yet considered. The concept of economies of scale will need to be covered somewhere. We will be engaging with a diverse group specifically to address the “what else?” question.

### Conclusion

In its essence this is about creating an assessment methodology that recognises the necessary progress from “Stage 1 – Innovate New Solutions” to “Stage 2 – Adoption with interdependence” to “Stage 3 – Ready to Buy”. Its at the third stage that the scale & impact can really take place.



As illustrated above the types of critical participants evolve over time. One of the dangers is that the leading edge research & innovation specialists drawn to the technical excitement of Stage 1 are rarely the people to empathise with the potential buyers in Stage 3.

Without an assessment scale it is not surprising that innovations get stuck between Stages 1 and 3, with the participants in Stage 1 preaching to the converted, and the potential customers in Stage 3 frustrated that an exciting-sounding innovation just doesn't qualify as a buyable solution.

Extending the readiness level assessment scale beyond technical readiness is a critical step to converting innovation into impact at scale.





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## Action Plan

The action plan is addressed to the two key questions identified at the start:

1. Discussion of the issue with potential sponsors of a new Scale Readiness assessment tool
2. Development of a draft Scale Readiness assessment tool

Michael Archer, Chair ALICE Thematic Group 4 Supply Network Coordination and Collaboration

We welcome feedback and input to this discussion paper. To that end, please contact Fernando Liesa: [fliesa@etp-alice.eu](mailto:fliesa@etp-alice.eu)

## About ALICE

**ALICE**, the **Alliance for Logistics Innovation through Collaboration in Europe**<sup>1</sup> is a non-for-profit industry led association based in Brussels with 160+ **members** reaching the full stakeholders' groups within freight transport, logistics and supply chain. ALICE is the Alliance of European leading companies and experts in implementing logistics and supply chain innovation.

ALICE's vision is to achieve an affordable **transition towards net zero emissions logistics**. To that end, logistics, from global to urban, need to evolve. Assets and resources, including transportation means, need to be better utilized. By creating seamlessly interconnected logistics networks through the **Physical Internet (PI)** better conditions for affordability of zero emissions solutions will be created through improved asset sharing and efficiency, contributing also to improved agility and resilience of supply chains. This efficiency gains will reduce the burden to transition of assets and energies needed for zero emissions transportation and logistics.

This transition requires scalable innovation and that European freight transport and logistics R&I ecosystem perform optimally boosting impact generation out of R&I investment and accelerating R&I take up.

ALICE supports, assists, and advises the European Commission<sup>2</sup> in the definition and implementation of the EU Program for research: Horizon 2020 and Horizon Europe in Logistics.

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**Disclaimer** *This discussion paper aims to bring together the views of a wide range of ALICE members regarding this subject. The views expressed in this report are based on the author consolidation work and of the stakeholders and experts consulted through different activities such as workshops, surveys, direct contacts, etc. The individual organizations as part of the ALICE membership may not necessarily fully support all the views expressed in the document. All the stakeholders involved do share a common interest however: Accelerate the transition towards climate neutrality in an affordable way and the need of innovation development and accelerated take up to realize it.*

<sup>1</sup> Transparency Register number 006901422654-34

<sup>2</sup> Recognized by the European Commission as a European Technology Platform (ETP) in 2013. SWD (2013)272/F1 COMMISSION STAFF WORKING DOCUMENT STRATEGY FOR EUROPEAN TECHNOLOGY PLATFORMS: ETP 2020

