IMPACT AND DISSEMINATION PLAN

Deliverable D8.1

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6GSNS

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IMPACT AND DISSEMINATION PLAN

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SHORT ABSTRACT	This deliverable provides an overview of the planned communication, dissemination and exploitation activities of TARGET-X.
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Executive Summary

The impact and dissemination plan summarizes TARGET-X's plan for communication, dissemination, and exploitation of results targeting different audiences. The activities and strategies described will create the impact in the research and the commercial domain following the aim to integrate the fifth-generation mobile communication (5G) and beyond 5G technology in the verticals: energy, manufacturing, automotive and construction.

With the objective to accelerate the adoption of 5G / 6G technology in the four verticals via large-scale trials in the verticals, TARGET-X validates industrial features, transfers knowledge between the verticals and provides a testbed infrastructure for new use cases and business models ultimately strengthening Europe's role in 5G/6G. This includes identifying relevant key performance indicators (KPIs) as well as key value indicators (KVIs) that can be used for assessing the project results, as well as potential barriers. The communication channels of TARGET-X include the project's website, the TARGET-X LinkedIn account and the FundingBox Community. The communication activities aim at technical audiences from ICT and the different verticals as well as at non-technical audiences.
The dissemination activities include demonstration and validation events, as well as the participation in various industry events. The scientific community is targeted via publications in relevant journals and conferences, which have been identified. A detailed exploitation strategy for the project and exploitation plans per individual partners have been created and agreed upon.

The plans will be put into practice in an agile manner and may be adjusted throughout the project to create the maximum long lasting impact.

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1 Introduction

The objective of the TARGET-X impact and dissemination plan is the development and application of strategies for effective communication, dissemination, and exploitation of the project. Communication, dissemination, and exploitation are activities of high importance to the project. They enable the project to reach and increase the intended impact.

This deliverable, the "Impact and dissemination plan", describes the pathway of the project towards impact. It is giving visibility to the conducted research to the scientific community as well as industry communities in the verticals: energy, manufacturing, automotive and construction. Further it aims to increase the ecosystem and to strengthen Europe's pioneering role in 5G/6G.

The planned communication activities that are described in this document explain how TARGET-X will reach out to the technical and non-technical target audiences such as research, industry, and society to show the benefits of the project and reach its impact. The different activities and communication channels that will be used to promote the project and communicate the results to the audiences are described.

The TARGET-X dissemination activities outline how TARGET-X plans to transfer knowledge and results to the potential users from different audiences, such as the scientific community or industry from the verticals included in TARGET-X.

The exploitation plan shows the strategy on how the results obtained in TARGET-X can be used by the individual project partners and also by other user groups outside the project.

Further, the deliverable discusses potential obstacles and barriers that the project could face as well as possible countermeasures.

TARGET-X employs a dedicated work package for communication and dissemination to coordinate the contribution of all project partners working on relating activities and to enable a joint strategy for communication and dissemination to reach a maximum impact of the activities. The impact and dissemination plan is presented at the beginning of the project and will be regularly reviewed and adjusted throughout the project. Two further deliverables on communication and dissemination in TARGET-X will report, evaluate, and if necessary, adjust the activities.

1.1 Structure of the document

The deliverable is structured in the following way: the first section introduces the deliverable and its structure. The second section describes TARGET-X's pathway to impact, the expected impact, the strategy to evaluate the activities, and potential barriers and obstacles. Section 3 presents the communication activities, including the targeted audiences and the communication channels. The dissemination activities are described in Section 4. Then, in Section 5, the exploitation plan of the project is presented as well as the plans of each individual partner. Section 6 gives a summary of the deliverable and draws conclusions.

2 Impact of TARGET-X

2.1 Project's pathways towards impact

In Figure 1, the pathway of TARGET-X towards impact is given, accelerating 5G/6G adoption in different verticals, bringing together information and communications technology (ICT) and operational technology (OT) industries, driving future 5G/6G development, and driving standards and scientific research.

The foundation for a high impact of the project are the key research objectives, which focus on a validation of new 5G/6G technologies, diversifying and extending the results by transferring them to other verticals. Based on these focal points, gaps between the current state of the art, the target key performance indicators (KPIs) and key value indicators (KVIs), and the results obtained in the different activities are specified. These gaps are then used to develop new business models, 5G/6G features and identify barriers in the adaptation of 5G/6G technology. Results are then processed to a focused summary with clearly defined KPIs and KVIs for simple, widespread, and cross-vertical dissemination, exploitation, and communication, contributing to the expected outcomes in the work program. This pathway is carried out iteratively in the project to consider the constantly changing state of the art and state of research, but also in order to publish new results quickly and not only at the end of the project, creating a continuous impact during and beyond the duration of the project.

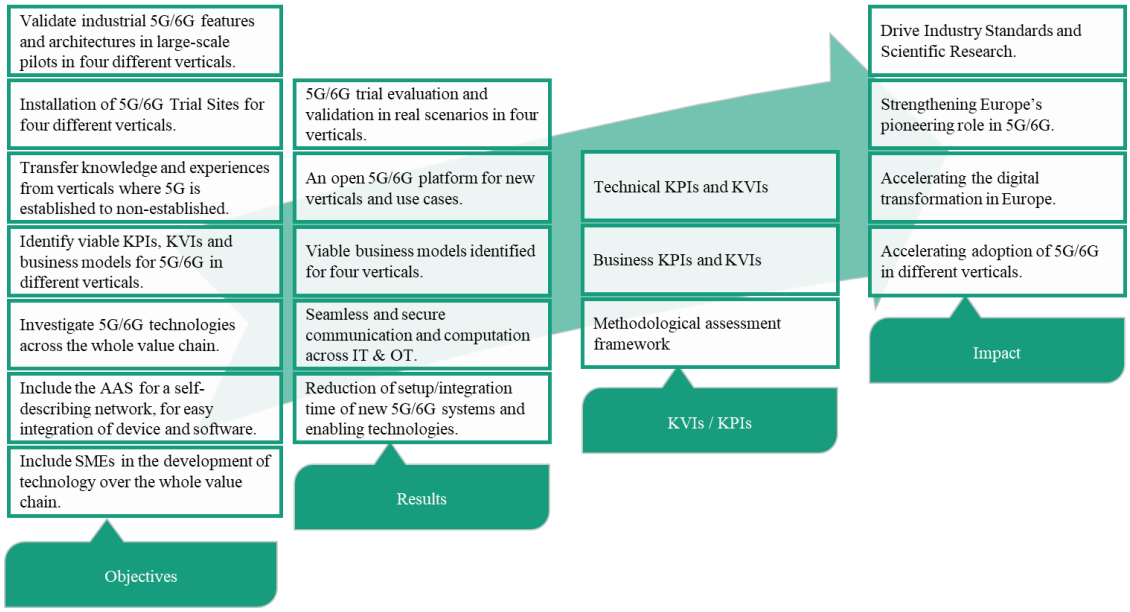

Figure 1: Pathway of the project towards impact.

2.2 Expected Impact from the Work Program

TARGET-X is part of the Smart Networks and Services Joint Undertaking (SNS JU) Phase 1 work program, and its targeted impact is connected to the targeted impact by the Phase 1 work program of the SNS JU. Table 1 shows how the expected impact from the work program is targeted in TARGET-X.

Table 1: Impact addressed by TARGET-X.

Contribution to the long-term availability of sustainable, seamless E2E evolved 5G and 6G test infrastructures including capability to integrate vertical use cases specific performance/KPI requirements, as applicable also across public and non-public networks and services.
The trial sites at the 5G-Industry Campus Europe, in Aachen, Germany and at IDIADA, in Santa Oliva, Tarragona, Spain contribute to **a long-term availability of 5G and 6G test infrastructures:** • The trials site in **Aachen** is involved with 5G testing since 2019. Since then, several projects have used the facility and further verticals have already been included. In the TARGET-X project the capabilities and interoperability will be further enhanced: Using Asset Administration Shells (AAS), the integration of new verticals with the network will be improved, additionally through further technological advancements. The infrastructure is adaptable and will allow the validation of core technologies and architectures within vertical specific large-scale deployments. Since it is a research campus, the trial site is open for companies and further institutes. • **IDIADA** offers a unique area with test tracks and a 5G cellular network to accelerate research in the automotive field. Such network, which is upgraded regularly with new features, together with the proving ground, facilitate R&D activities in the Advanced Driver Assistance System (ADAS) and connected and automated vehicles (CAVs) fields.
Validated core technologies and architectures (also developed in 5G Infrastructure PPP Phase 3 projects and in IoT and Cloud/Edge projects) in the context of specific vertical large-scale pilot use-case implementations and relevant deployment scenarios.
The performance of the 5G/6G services will be validated by using the adequate core 5G technologies in our trial facilities: Aachen and IDIADA. Validated technologies: • Localization: For navigation and condition/energy monitoring. • Digital Twinning: The AAS as “interface” between all components in an interconnected system (network (outdoor/indoor), computing, device, end devices, machines, etc.) with the possibility of self-connection of the devices to the network (zero touch). • Internet of Sense: Sensor fusion with network features and different on IoT-Devices. Validated architectures: • IoT-Networks with a large number of devices. • The integration of the Edge Cloud systems as Artificial Intelligence (AI) /Machine Learning (ML) platform supporting graphics processing unit (GPU) hardware for AI/ML.

• Deterministic real-time networks with Time-Sensitive Networking (TSN) or DetNet. • Enabling resilience by using redundant deployment mechanisms on edge and cloud systems, but also in the 5G/6G communication using different standards of TSN.
Viable business models for innovative digital use cases tested and validated across a multiplicity of industrial sectors, including demonstration of required device/network/service resource control from the vertical industry business model perspective.
Within TARGET-X new business models will be created over the course of the project and holistically evaluated. The holistic evaluation is reached in WP 1 by not only looking at technical or economical aspects (KPIs) of new use cases and business models, but also evaluating their societal impact, with a focus on sustainability and ecological assessment (KVIs). Furthermore, aspects of cyber security are considered by the development of a cyber security concept. The cyber security concept also contributes to the development of new digital and data-driven business models since it works as an enabler for them. All four verticals of the TARGET-X project bring relevant use cases and corresponding business models. They will be evaluated in a joint methodological assessment framework.
Support to impactful contributions towards standardization bodies notably for 6G use cases and technologies.
The technological advancements during the project, the acquired KPI and KVIs will be available not only for the next phases of the 6GSNS program but also contributed towards standardization. The project findings resulting from evaluating novel uses cases will result in requirements and technology building blocks that can lead to impactful contributions to standardization. There is a strong connection of most industry partners to relevant standardizations organizations and industrial alliances (such as 5G-ACIA, VDE GMA, 3GPP, VDI BAU, building SMART, Linux Foundation Energy and 6G-IA). Therefore, the standardization in five different sectors will be addressed: mobile communication, energy, automotive, manufacturing and robotics, and construction. More details are given in Section 4.2.
European 5G Evolution and 6G know-how showcasing.
The TARGET-X project will have a unique opportunity to show how EU major players in four verticals and telecommunication will jointly demonstrate and show in two European sites how the representative applications supported by enhanced 5G and upcoming 6G mobile communication technology. 5G Evolution and 6G know-how showcasing, through the project website, articles in open access journals and demonstrations onsite, is giving visibility to the conducted research, the potential, and the relevant topics. This leads to an increased attraction of interested researchers to European technology development. The communication of the results is described in more details in Section 3.
Stimulate large industrial stakeholders, SMEs, and the European academic and research community to timely engage in experimental activities aimed to validate technological trends for 6G networks.
Within the cascade funding in the TARGET-X project, up to 100 additional partners in the four targeted verticals can be enabled through Financial Support for Third Parties. This gives especially SMEs an opportunity to participate timely in the development of solutions and use cases.

Beside the cascade funding, TARGET-X aims at building a community with the goal to gather partners from all parts of the 5G-6G ecosystem. Use case owners, IT-provider, start-ups, scaleups, researchers and investors will participate in the community to interact at EU level.
Repository of requirements from verticals and of “lessons learned” to prepare for subsequent phases of the SNS program. It should include records and evaluation of 6G KPIs considering 5G Evolution, requirements and validating them with services linked to specific vertical sectors and related KVIs.
In WP 1 the definition of the use cases, requirements, KPIs and KVIs takes place. This includes a detailed description of each use case in the application fields of manufacturing, energy, automotive, and construction. Based on these results, a methodological assessment framework will be developed to analyze and validate new use cases based on KPIs and KVIs also defined in WP 1. The framework can be used either to validate a use case before the implementation or to optimize it by continuously monitoring with the framework. Therefore, subsequent phases of the SNS program can not only learn from the repository of requirements defined in WP1 but can also use the framework to validate the new use cases.
Contribution to a repository of open-source tools and modules that may be openly accessed and used by SNS projects over the program lifetime.
For TARGET-X open science contributions is a very important point, crucial for the success of the project.
Collection of new requirements that will be used by SNS Phase II Streams A and B projects. Requirements on the network infrastructure will be collected and driven.
With the development of the methodological assessment framework, the definition of KPIs and KVIs continues during the entire project. For subsequent phases of the SNS program can therefore rely on a set updated requirements of the infrastructure, the four verticals and the new 5G/6G features.

2.3 Evaluation of impact activities

In order to evaluate the impact activities, set by the TARGET-X project, as previously described, relevant KPIs need to be identified. Below, the four impact activities are addressed with their corresponding KPIs.

Drive Industry Standards and Scientific research

This activity will be measured by impact through scientific publication. The main KPI used will be the number of published papers targeting scientific journals and conferences. Further, the impact towards standardization bodies will be used for evaluation. The number of standardization contributions made by the TARGET-X partners in relevant standardization forums such as 5G-ACIA and industrial communities like the International Center for Networked Production (ICNAP) will be the secondary KPI to measure the achievements of this activity.

Strengthen Europe's pioneering role in 5G/6G

TARGET-X includes a strong consortium that consists of operational technology vendors, network operators as well as industrial customers. One of the most important factors for the success of 6G networks is the creation of ecosystems with verticals identifying real business pain points and how these can be addressed by advanced technological solutions. The activity will be measured by the size and impact of the TARGET-X community. The measured KPI is the number of contacts reached. The community goal is to build a bridge for the entire 5G/6G ecosystem by creating a cross border community which will foster the interactions among disruptive start-ups, scaleups, researchers and investors in the 5G/6G domain at EU level.

Accelerating the digital transformation in Europe

The list of new technologies developed within TARGET-X, and validated through simulations or prototypes, will be used to evaluate the impact of TARGET-X when showcasing the Europe know-how in 5G/6G. The number of dissemination activities, such as workshops, conferences, and presentations, planned in Section 4 will be considered when quantitatively measuring the success of this impact activity.

Accelerating adoption of 5G/6G

The TARGET-X project will demonstrate, validate, and evaluate the potential of 5G/6G in real environments. These trials will be used to measure the impact of this activity, by counting the number of successful trials and pilots of 5G technologies. Thus, the list of new prototypes or products described in the exploitation plans from each partner, and presented in Section 5, is the KPI to measure the impact of this activity.

2.4 Potential impact barriers and obstacles

On the path towards the expected impact given in Section 2.2, different potential barriers and obstacles can be identified. In Table 2 the obstacles identified are given, including the actions defined to lower the barrier.

Table 2: Potential impact obstacles and actions to lower barriers.

Barriers	Actions to lower barriers
Technological gaps in hardware and software developments for energy services	TARGET-X will provide access to the know-how related to software development of the energy services implemented in the project as open-source software and hardware. The open-source activities will be done as far as permitted by the program and the IP of the involved partners. The project is trying to support and rely on ICT community and initiatives.

Access and resource limitations for SMEs to 5G/6G testbeds	With up to 100 additional partners through financial support for third parties (FSTP), TARGET-X provides a large-scale access for SMEs to participate in the 5G/6G ecosystem development. By supporting and mentoring the FTPS projects, the SMEs receive the necessary know-how for the projects to succeed.
Technical and technological barriers of new robotics and ICT technologies in construction industry	TARGET-X aims to overcome technical and technological barriers in the construction industry by developing new robotics and ICT technologies for deconstruction. This includes things like cutting, drilling, and sampling with robots, as well as using AI tools and computer vision to plan and make decisions. The project will gather detailed specifications and requirements in the beginning to make sure the technologies are up to date and can be successfully deployed. The consortium will work together to integrate and demonstrate the use cases of the technologies in the TARGET-X project.
Some of the stringent requirements (e.g. synchronization, positioning) may not yet be considered in standardization.	TARGET-X will identify 1) technical implications of industrial Local Area Network (LAN) and Time Sensitive Networking (TSN) integration with 5G network, and 2) requirements for 5G-supported time synchronization and positioning. Those implications and requirements will be lifted to major alliances such as 5G-ACIA, and in addition the 3GPP players in the project will formulate common contributions to 3GPP on the matter.

3 Communication activities

The TARGET-X communication activities aim at interacting with the external stakeholders to spread information about the objectives and results of the project and build awareness on the benefits of the project and the possible ways to exploit the results under the different verticals and 5G/6G context. The widespread communication about the project will help to maximize the support of the adoption of the project results and ideas. Communication activities will be closely aligned with the dissemination activities described in Section 4.

Two main channels will be used for communication:

- Public website: A public website for the project will be presenting the mission, summary, consortium description, open calls for FTSP and public deliverables. The public website will be the central hub for the dissemination activities. Open access to scientific publications allows to provide access to the publications of TARGET-X also via the website.
- Social media and press releases: In order to ensure the largest possible exposure of the project, different social media and networking tools will be used (LinkedIn, FundingBox Community). Concerning the press, contacts will be established with the relevant trade press to extend the reach of the communications activities.

3.1 Target audiences

The TARGET-X project focuses on different verticals, includes several main players in the European ecosystem addressing the topics of industry 4.0, energy, automotive and construction. In this framework, the target audience is not only the 5G telecommunications industry but also all the industrial actors focusing on the digitalization through the automation and the usage of ICT for the dynamic and flexible production. In addition, research, investment, standardization, and policy-making communities will be potential targets of the dissemination activities in the project.

TARGET-X Community. The community goal is to build a bridge for the entire 5G/6G ecosystem by creating a cross-border community which will foster the interactions among disruptive start-ups, scaleups, researchers and investors in the 5G/6G domain at EU level. It will be done by transforming the traditional static dissemination and communication activities into something tangible and dynamic as a lively, rich and dynamic community of relevant stakeholders fostering them to interact, chat, exchange knowledge, find synergies and get value from a community of peers in the 5G/6G domain. In order to get it, a **Growth Hacking Strategy** will be defined to attract and retain users along the project. The growth hacking strategy will be divided into four phases: Launching phase, general content strategy, advanced SEO strategy and technical content strategy. This will include transversal awareness, acquisition, activation, retention and referral key actions like stakeholder mapping and contacting, paid ad campaigns, freelancers, ambassadors and supportive partners.

Additionally, some activities will be done to reinforce the TARGET-X community. A **supportive partners program**, which are relevant organizations in the 5G/6G area interested in cooperating with the project in a '*win-win cooperation mode*', will play a key role in disseminating the community

all around Europe (up to 24 supportive partners). Specific activities for interaction with the consortium partners networks will be included, to leverage the community impact and participation of stakeholders.

The community growth will be fueled all along the project by organizing **social media campaigns** to widely disseminate the Community within the 5G/6G ecosystem by applying highly effective '*Growth Hacking strategies*' and organizing **several interactive activities** such as *Q&A Sessions* and/or *Webinars* on 5G/6G. All the actors contacted through those actions will be invited to become part of the **TARGET-X Community**, a real-time community where users have all the knowledge and relevant stakeholders accessible through a couple of clicks. All these activities will be key to building a thrilling and active community.

Target Audience	Mechanism	Channels
Academia, Industry, R&D, Public R&D (OT)	Peer reviewed journals, white papers, fairs, TARGET-X Community	Including but not limited to: IEEE Instrumentation Society, Electronics Journal and Technology or CIRP annals of manufacturing technology, Journal of Field Robotics, Automation in Construction, IEEE Robotics and Automation Letters. The visibility will be guaranteed also by providing open access to the submitted versions of the paper on the project dissemination webpage in compliance with the EC open policy.
Academia, Industry R&D, Public R&D (ICT)	Peer reviewed Scientific and technology conferences, TARGET-X Community	Including but not limited to: IEEE Communication Magazine, IEEE WCNC, IEEE, international conference on dependable systems and networks, International Symposium on Automation and Robotics in Construction, International Conference on Intelligent Robots and Systems, International Conference on Robotics and Automation
ICT and Vertical's business stakeholders	Trade shows, TARGET-X Community	Including but not limited to: Hannover Fair and Mobile World Congress, Control, AWK, digitalBau, Bauma
General public	Press releases, social media	LinkedIn, TARGET-X Website

3.2 Branding TARGET-X

In order to create its own recognition value for the project, the design of a key visual was professionally commissioned. The design of the key visual is based on the distinctive X and a type of

radio waves, which make the reference to 5G and 6G. The project key visual will be integrated in this form on all communication media and is displayed in Figure 2.

Further, TARGET-X documents and presentations will follow the project's style guide that unifies the project's appearance.

Figure 2:TARGET-X key visual with project name and without

3.3 Information Material

Leaflets and postcards will be designed for the project. They will be available digitally and in print. The material will convey the overall look and feel of the website and will be distributed at events (seminars, conferences, or similar) and serve as informational material for our target audiences. Print material will be published in English, however each partner is free to adpat the material to their own language.

3.4 Project website

The TARGET-X project is represented online via a public website. The goal of the project website is to support the communication and dissemination of the TARGET-X project and communicate, e.g., upcoming events or provide access to the project's deliverables. Also, the website will link the open access publications created in TARGET-X. Thus, the website provides information about the project in different levels of detail to address multiple audiences at the same time.

The website is accessible via the following URL:

https://TARGET-X.eu/

3.5 Social media

Social media channels will be used to spread information on the project, engage with our target audiences and attract new project partners. Building communities in social media requires a significant amount of time, therefore we make use of existing channels, cooperations and partner presences on social media. The goal is to benefit from an existing network.

3.5.1 LinkedIn

TARGET-X uses LinkedIn, in addition to the website, as a primary communication tool for continuous reporting on the project, partners, publications and milestones. As a showcasing site under the existing 5G-Industry Campus Europe channel, we will benefit from the existing community and audience, currently with a community of 3.5K followers. A showcasing page on LinkedIn has been created under the following URL:

https://www.linkedin.com/showcase/TARGET-X/

A screenshot is shown in Figure 3: TARGET-X LinkedIn Showcase. At the showcasing page, news, events, and relevant information is shared on a regular basis targeting a professional audience.

To generate regular posts, the social media tool “Dirico” through which posts can be scheduled in advance will be used. It also allows to evaluate the response to our posts and adapt the content to our target audience if necessary. The social media accounts will be used to build up an audience of interest in our project topic and TARGET-X is aiming for an additional follower count of 500 on the LinkedIn account by the end of the year. In addition, the partners will report on relevant TARGET-X milestones via their social media accounts, such as LinkedIn, Twitter, and Instagram. We are confident to reach an even larger community than we can with primary means.

The success of the social media presence of TARGET-X will be continuously monitored and regularly evaluated using both quantitative measures obtained through numbers, and qualitative measures, e.g., by evaluating the types of comments received. The aim of the communication will be on the one hand to accompany the application phase with calls and on the other hand to use the given platforms to accompany the progress of the project. We will focus on introducing the project partners as well as on integrating and vividly presenting the use cases with picture and video content. The frequency should be one post per week during peak periods. Interactions with European platforms, such as cordis.europa.eu, to reach a wider audience are planned.

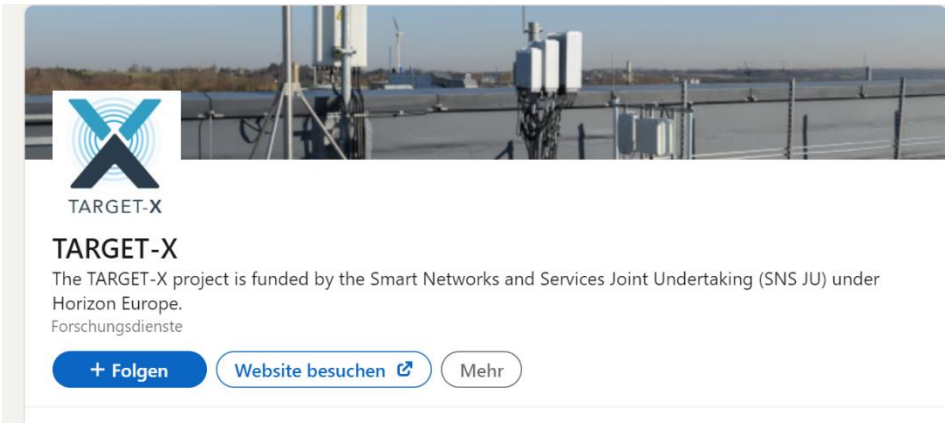

Figure 3: TARGET-X LinkedIn Showcase

3.5.2 FundingBox Community

To ensure the establishment and long-term sustainability beyond the lifetime of the project, the concept of 6G has been integrated into its broader and more holistic theme: Internet of Things (IoT). In this way we make sure to attract other related projects and stakeholders to create a true community that goes far beyond supporting open call applicants. The next generation of wireless communication technology, 6G wireless communication technology, is expected to transform the Internet of Things by enabling faster and more reliable communication. With 6G, large numbers of IoT devices will be capable of communicating in real time, with exceptionally low latency and high bandwidth. This will allow for the creation of novel products and services, such as automated driving, telemedicine, and intelligent buildings, which require enormous quantities of information to be delivered rapidly and safely.

By creating a dynamic online community that brings together all stakeholders of the Internet of Things within an inclusive environment, we expect to support the European IoT ecosystem and provide its members with the ideal framework for exchanges and development of best practices available for all. We also aim to promote a truly European approach to innovation by fostering knowledge sharing, minimizing fragmentation and barriers across the entire value chain, deriving higher efficiency and innovation. The TARGET-X community will become a key reference point and gathering for everyone interested in IoT in Europe. The aim is to promote a truly European IoT platform while supporting open call applicants through tailor-made helpdesks within this community.

The TARGET-X community was built using Spaces (https://spaces.fundingbox.com/c/iot-edge-community) - a proprietary platform owned and operated by FundingBox Communities. It is a dynamic and interactive web-based platform designed to foster the interaction among stakeholders and to provide information on best practices, trends in the market etc. It offers anyone working in a chosen domain the tools to find partners, to network with peers and specialists, to share ideas and to develop business opportunities by accessing information on best practices, trends in the market, etc. A landing page of the TARGET-X community on Spaces is shown in Figure 4, below.

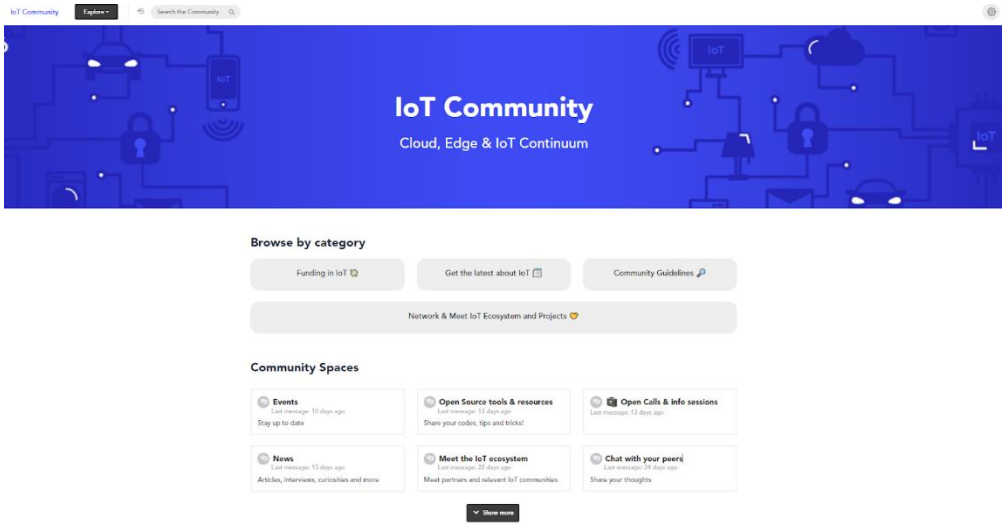

Figure 4: Overview of the TARGET-X community in the FundingBox Spaces platform

The TARGET-X community is meant to become a virtual meeting point and knowledge sharing agora that addresses the requirements of the project from the target audiences and the project side (consortium members). The aim of the TARGET-X community is to become a gateway for start-ups, helping them land funding through TARGET-X and for investors to find interesting investment opportunities. In order to meet different types of needs, the TARGET-X community will include an open forum and specialized, permanent or temporary chat rooms, news and events articles on funding and IoT and a helpdesk where open call applicants can reach the FTPS directly to solve question on their applications. An article introducing the TARGET-X project on Spaces is shown in Figure 5, below.

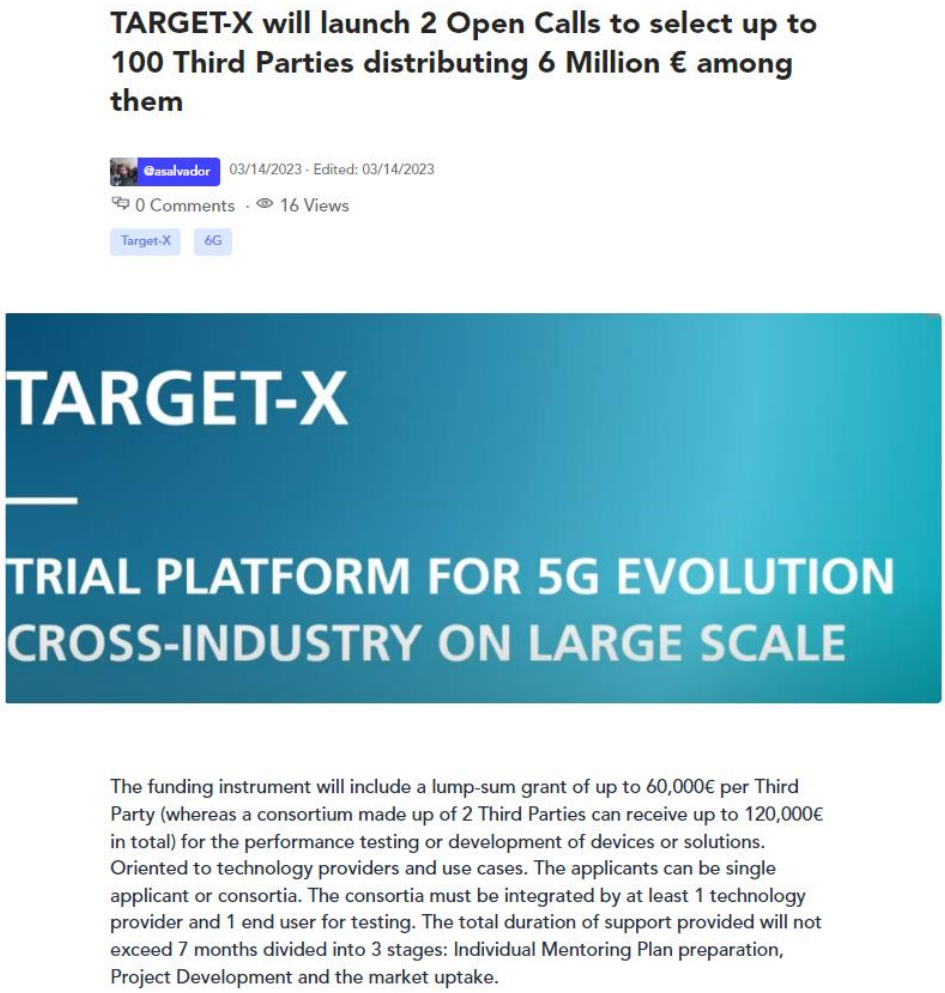

Figure 5: Example of an article introducing the TARGET-X open calls in the community

4 Dissemination activities

TARGET-X will dedicate activities to promote and disseminate the 5G/6G vision and showcase feasibility for various verticals. TARGET-X will also spread the knowledge and achievements obtained by the project and make it available to the European and worldwide research community to achieve a strong and long-lasting impact worldwide. Emphasis will be on joint dissemination activities with 5G-ACIA to best-in-class conferences, journals, and other suitable events. The international composition of the TARGET-X consortium having key players from technology and different verticals, will ensure effective and intense dissemination of results worldwide. Dissemination activities will include TARGET-X trial open day, industry events, scientific publications, and workshops. Training activities allow for knowledge exchange between verticals and technologies. In this chapter, some of the dissemination channels are described in more detail. To have a clear goal, Table 3 shows the target values for the dissemination activities in TARGET-X.

Table 3: Planned dissemination activities with target values

Planned dissemination activities	Target value
Journal papers, white papers and international conferences	30
Contributions to standards and regulatory bodies	5
Keynotes and panels	10
Participation in 5G/6G events for addressed verticals in the project	20
Training activities	15
5G/6G demos and validation events	15

4.1 Scientific publications

TARGET-X partners will maximize the scientific visibility of the results by publishing papers at major conferences and in high impact and target group-oriented journals. Special relevance are the journals specific for vertical manufacturing, energy, robotics, automotive, and construction. The visibility will be guaranteed also by providing open access to the submitted versions of the paper on the project dissemination webpage and using TARGET-X social media channels in compliance with the EC open policy. The target audience and examples of relevant journals and conferences are given in Table 4 and in Table 5.

Table 4: Target audience and examples of suitable journals.

Target audience	Examples
Communication	• IEEE Open Journal on Antennas and Propagation • IEEE Transactions on Wireless Communication • IEEE Communications Surveys & Tutorials • IEEE Transactions on Vehicular Technology • IEEE Communications Magazine • Wireless Networks • IET Communications
Construction	• TAD Journal - Technology | Architecture + Design • Automation in Construction • Journal on Construction Robotics • Journal of Information Technology in Construction
Manufacturing and robotics	• Journal of Intelligent Manufacturing • IEEE Robotics & Automation Magazine (JCR IF 4.25) • IEEE Transactions on Industrial Informatics • Robotics • International Journal of Advanced Robotic Systems • Frontiers in Manufacturing Technology
Energy	• Energies • Smart Energy • Journal of Modern Power Systems and Clean Energy • Energy, Sustainability and Society
Automotive	• IEEE Vehicular Technology Magazine • Automotive Innovation • Vehicles • Journal of Intelligent and Connected Vehicles

Table 5: Target audience and examples of suitable conferences.

Target audience	Examples
Communication	• IEEE International Conference on Communications (ICC) • IEEE Global Conference on Communications (GLOBECOM) • IEEE Personal Indoor and Mobile Radio Communications (PIMRC) • IEEE Wireless Communications and Networking Conference (WCNC) • EuCNC & 6G Summit

Construction	• RobArch 2024 • ISARC 2024
Manufacturing and robotics	• CIRP MANUFACTURING SYSTEMS CONFERENCE • CIRP Conference on Assembly Technology and Systems • World Mass Customization & Personalization Conference • IEEE International Conference on Robotics and Automation (ICRA) • EuCNC & 6G Summit
Energy	• International Conference on Smart Energy Systems and Technologies • 2023 IEEE 13th International Workshop on Applied Measurements for Power Systems (AMPS)
Automotive	• IEEE Vehicular Technology Conference (VTC) • EuCNC & 6G Summit

4.2 Contributions to standardization and regulation activities

SDO, forum	Specific group	Partners	Preliminary ideas for involvement
5G-ACIA	**WG2**	**Fraunhofer IPT**	Fraunhofer IPT actively contributes to the aspects of testing, test procedures and certification, and testbed and trials ensuring to meet industrial needs and requirements. Results and findings of TARGET-X will therefore be directly used as input for standardization activities.
5G-ACIA	**WG2, WG4**	**Mitsubishi Electrics**	MEE plays a key role in 5G-ACIA through holding key positions in the Association including member of the board.
5G-ACIA	**WG1 – WG4**	**Ericsson Qualcomm**	Ericsson plays a central role in 5G-ACIA and holds several key positions in the Association including Vice-Chairman of the Board, Chair of WG 3, and contributes to many topics e.g., requirements, spectrum, operator model, and certification. Ericsson will ensure with other TARGET-X partners (that are 5G-ACIA member) to bring collectively the findings during the course of the project. Qualcomm is also a strong contributor to 5G-ACIA (active in all WGs, board member) and is interested to support Ericsson and the other TARGET-X partners in developing new contributions, working on deliverables based on TARGET-X results for white papers, workshops, testbeds, etc. in 5G-ACIA.

5G-ACIA	**WG5**	**Fraunhofer IPT**	Fraunhofer IPT contributes to the WG5 'Industrial 5G in Practice' regularly. Specifically, Fraunhofer IPT will contribute to an Industrial 5G user guide, where learnings of TARGET-X will be actively integrated. Also, WG5 is responsible for the testbed program, where TARGET-X will apply to have at least one testbed endorsed by 5G-ACIA. As Fraunhofer IPT provides the co-chair of the WG5, the consortium is in a good position to disseminate results from the project outcome within 5G-ACIA and the wider 5G ecosystem.
VDE GMA	**Tech. Division 8 – Optical Technologies**	**Fraunhofer IPT**	Fraunhofer IPT is Deputy Chairman of the Advisory board VDI/VDE Society Measurement and Automation Control (VDI/VDE GMA), Technical Division 8 – Optical Technologies. In this role, Fraunhofer IPT will use the results of the project to impact the different technical committees dealing with different kinds of optical sensing technology and image processing and vice versa derive requirements coming from the different committees towards 5G.
3GPP	**SA1, SA2 WGs**	**Ericsson**	Ericsson is a driver in 3GPP standardization. Ericsson will bring relevant learnings from TARGET-X into the respective standardization groups: SA1: requirements and service requirements for cyber-physical control applications in vertical domains. SA2: system architecture aspects.
3GPP	**SA1, SA2, RAN WGs**	**Qualcomm**	Qualcomm is one of the leaders in 3GPP standardization. The learnings and experience collected in TARGET-X are expected to result in the adjustment of existing specifications of features already standardized in 3GPP as well as in definition of new requirements and possibly new features in 3GPP specifications. Qualcomm will coordinate with the other 3GPP members among the TARGET-X partners to develop relevant contributions for the respective standardization groups: SA1: requirements and service requirements for cyber-physical control applications in vertical domains. SA2: system architecture aspects. RAN WGs: Radio Access Network working groups as needed.
VDI BAU	**Society for Construction and Building Technology**	**RWTH-IP**	RWTH-IP is actively involved in the VDI BAU Society for Construction and Building Technology. The findings from TARGET-X will be further utilized in the expert round to demonstrate the benefits of 5G/6G functionalities on the construction site.

Building-SMART		**RWTH-IP**	RWTH-IP is involved in BuildingSMART which is a global community of various stakeholders from the construction sector. Here, the results from TARGET-X will be further used to maximize the impact of the findings in the construction sector.
Linux Foundation Energy	**TAC Representative to the Board, TAC Chair, Technical Lead, SOGNO**	**RWTH-ACS**	RWTH-ACS is driving the developments of the SOGNO platform within LF Energy as a de-facto standard, with Prof. Monti acting as TAC Representative to the Board, TAC Chair, and Technical Lead for SOGNO.
6G-IA		**All Partners**	All partners of the TARGET-X consortium are member of the 6G Smart Networks and Services Industry Association (6G-IA).
UNECE	**WP.29**	**IDIADA**	The group on Connected and Automated Vehicles deals with regulations on Automated Driving Systems and connected vehicles. IDIADA participates as an observer in the Working Group activities.
Euro NCAP	**Virtual testing, SAS, V2X**	**IDIADA**	Euro NCAP has on its roadmap the inclusion of new connected and automated vehicle protocols in the upcoming years. Besides the virtual testing and SAS working groups, a new connected vehicle group has been recently created. These groups will work on the connected vehicle safety protocols to be published in 2024/2025. IDIADA is a member of the Euro NCAP board and can connect TARGET-X outcomes with Euro NCAP needs, providing key results which might be used as references by the different working groups.

4.3 Industry events and fairs

One focus of TARGET-X is the transfer of 5G/6G technology to industrial applications, and the transfer of the results to the manufacturing companies. Industry events and trade shows provide a very good means to promote the work of the project to a large number of professionals and the general public. The project will target several major events throughout Europe. Their timing is well spaced to have measurable results and the locations are major European cities. Promotional material will be prepared for these events. In *Table 6: Target events and fairs for dissemination.*Table 6 some examples for target events are given.

Table 6: Target events and fairs for dissemination.

Dates	Event	Comments
April 17th – 21st 2023, also in 2024, 2025	Hannover Messe International, Hannover, Germany	Demonstrators, printed materials dissemination
February 26th - 29th 2024	Mobile World Congress, Barcelona, Spain	Printed materials dissemination
April 18th – 20th 2023	Advanced Factories Congress, Barcelona, Spain	Printed materials dissemination
May 11th – 12th 2023	Aachener Werkzeugmaschinen-Kolloquium AWK'23, Aachen, Germany	Demonstrators, printed materials dissemination
July 04th – 06th 2023, also in 2024, 2025	digitalBau, München, Germany	Printed materials dissemination
April 17th – 22nd 2023, also in 2024, 2025	BAU, World's Leading Trade Fair for Architecture, Materials, Systems, München, Germany	Printed materials dissemination
June 20th 2023, also in 2024, 2025	RWTH Open-Campus-Week, Aachen, Germany	Demonstrators, printed materials dissemination
June 07th – 08th 2023, also in 2024, 2025	AI World Congress 2023, London, UK	Printed materials dissemination
Mai 17th – 18th 2023, also in 2024, 2025	IoT Tech Expo World Series	Printed materials dissemination
September 18th to 23rd 2023, also in 2024	EMO, Hannover, Germany	Printed materials dissemination
April 23rd to 26th 2024	Control, Stuttgart, Germany	Printed materials dissemination

4.4 Project presentations

Trial Open Days: TARGET-X Trial Open Days will be organized at Aachen trial site targeting energy, construction, manufacturing, and robotics verticals. The format of Trial Open Day will include presentations of TARGET-X results and live demonstration of 5G/6G trial use cases. This activity will

strengthen the impact into the standardization work. Further a showroom will present the current demonstrators for visitors even after the Trial Open Days.

SNS JU Events: The Smart Networks and Services Joint Undertaking (SNS JU) is a public private partnership between the European Commission (public side) and the 6G Smart Networks and Services Industry Association (6G-IA), an industry community of the information and communication technology industry and further digital actors (private side). TARGET-X is part of the SNS JU Phase 1 projects and will be active in the steering board, the technical board, and the communications team. There, TARGET-X will collaborate for a joint communication with the comms team and participate in joint activities and events with the other SNS JU projects.

5G-ACIA: TARGET-X aims to operate at least one 5G-ACIA endorsed testbed. The testbed activities will be aligned with the contents of TARGET-X. The learnings and results from the testbed will be shared inside 5G-ACIA. Potential demonstrators from the testbed might be exposed at 5G-ACIA events, such as the 5G Industrial Days or tradeshow appearances of 5G-ACIA.

4.5 White papers

As another means of dissemination, TARGET-X will publish white papers to describe the project as a whole and to highlight results. The partners in the consortium have different channels to publish whitepapers either directly via the company's dissemination channels or via industrial or communication related forums such as the 5G-ACIA or the 6G-IA.

5 Exploitation plan

5.1 Project exploitation plan

To maximize the impact, the TARGET-X project has a multi-fold dissemination and communications strategy to provide relevant information to all stakeholders and facilitate market adoption of the project's result. The key actions of the strategy are:

- To disseminate the project results through **standardization bodies** such as 5G-ACIA and **industrial communities** such as the International Center for Networked Production (ICNAP).
- To communicate with the **research community** through scientific publications, presentations and participations in scientific conferences and cooperate with other research projects.
- To create **synergy between operational technologies** players and **telecommunications** industry. This is achieved by working with relevant industrial alliances and related standards development organizations, and through demonstrations at relevant trade events specialized in industry 4.0 topic.
- To include **SME** from the IT and the OT side in the development of new 5G/6G features and use case implementations. This is achieved by building of a community, cascade funding and live events at the test sites.

In Figure 6 the main results and the main impact of the TARGET-X project is given. Project partners and SME involved via cascaded funding, will leverage features to increase their competitive advantage and improve their products and services related to operational technologies and industrial production. More specifically, depending on the partners' profile (university, research institute or industry player), activity and size (large enterprises or SMEs), the consortium members will target some/all of the impact factors. The specific exploitation plans for each partner are given below.

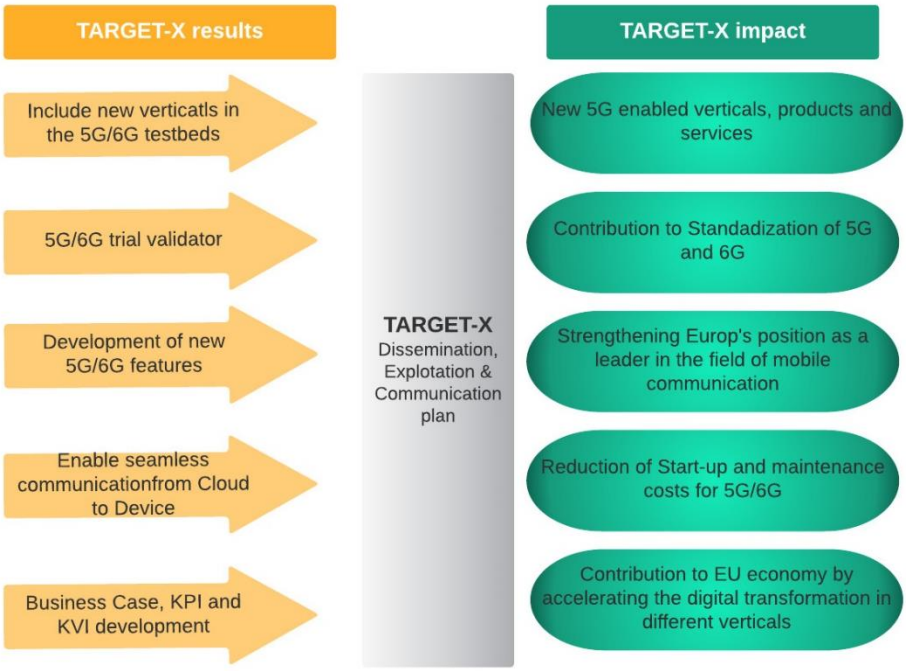

Figure 6: TARGET-X dissemination, exploitation, and communication plan

Since TARGET-X's main goal is to show the readiness of 5G in various verticals and test new 5G/6G features, the trials will use commercial and pre-commercial products. TARGET-X will be a cornerstone for partners in new verticals like energy and construction CCR and IP, or partners extending and developing existing and new use cases such as Fraunhofer IPT, WZL, IDIADA in the existing testbeds. Further TARGET-X will enable partners like Neutroon, Fivecomm, I2CAT, Ericsson, Marposs and Mitsubishi in enhancing the planned products in the area of 5G and the related applications in the verticals.

5.2 Individual partner exploitation plans

Partner	Exploitation plan
Fraunhofer IPT	By providing the 5G/6G Manufacturing Testbed at Campus Melaten, the Fraunhofer IPT has the opportunity to offer industry and research partners an environment for testing and developing 5G solutions. Together with the knowledge and experience gained from the project in the area of digitalization of the manufacturing industry, a fundamentally increase of business opportunities for further industry and research collaboration on 5G/6G-enhanced manufacturing processes. Fraunhofer IPT could support partners and manufacturing companies by consulting in suitable use cases, requirements, business models and deployment strategies regarding the use of 5G/6G as enabler for digitalization and could play a key role in prototyping and delivering proof of concept solutions to customers. Furthermore, the new technical solutions for factory and in-process monitoring developed within TARGET-X will help to influence other process technologies and support to gain new insights and process

	understandings, opening totally new research opportunities and approaches. In order to further increase the visibility of Fraunhofer IPT and partners and improve the world-wide common understanding of 5G for industrial use, as an academic partner, Fraunhofer IPT will disseminate findings and results through national and international publications and conferences. The projects findings and the gathered experiences will further be utilized in workshops and lectures for industrial and scientific transfer.
Ericsson (EDD and EBY)	Ericsson is the market leader in 3G, 4G and 5G mobile technologies. Their product portfolio comprises mobile- and fixed-network infrastructure, broadband and IoT solutions for operators, enterprises, and developers. Ericsson conducts and actively drives research and development of new sustainable solutions, targeting market needs for mainly telecommunication and other vertical industries such as smart production, media, mining, and transport. World class innovation is achieved through cooperation within Ericsson and with partners, customers, universities, and research institutes. As an active player and technology leader in the 5G field (RAN, Core and Cloud), Ericsson will benefit greatly from the early validation activities in TARGET-X covering a wide range of use-cases brought in by the consortium and the open call partners. Insights will be used for the further evolution of 5G and taken as input for 6G considerations. Especially, with the development and integration of Asset Administration Shell, Ericsson will gain more expertise and define new research opportunities in this domain towards 6G. Ericsson will also publish major TARGET-X research findings at leading conferences, journals, and in the form of white papers. Furthermore, the gained insights will also be transferred into the relevant industry fora like e.g., 5G-ACIA or 5GAA. In addition, Ericsson will use TARGET-X results and findings to ensure an adequate generation and ownership of intellectual property, to guarantee profitability of the manufacturers' business. Most importantly, the project results will be discussed with business units and product development units to shape the roadmaps of future products not only for the in TARGET-X considered vertical industries, but also for adjacent verticals.
RWTH Aachen University WZL	TARGET-X will provide opportunities for the advancement of young scientists (dissertations, theses) at WZL and the use of knowledge for teaching in courses such as Industrial Assembly Systems and Robotic Sensor Systems. The research results obtained will be disseminated through publications at high-level international conferences, standardization committees such as DIN/ISO, VDMA, VDI/VDE, and by contribution to open-source software projects and communities (e.g. open source robotics foundation). An exchange with the TARGET-X Community and appropriate funding instruments such as the High-tech start-up fund or the EXIST grant and the corresponding start-up centre (RWTH Innovation) provides the basis to establish spin-offs and start-up enterprises. The WZL actively supports these processes.
RWTH Aachen University ACS	RWTH will exploit the project results by specialized scientific publications and at national/international conferences, as well as in updating lectures and in training researchers in an early career stage (master students, PhDs, Post-Docs). The software results of the Institute for Automation of Complex Power Systems will be published according to the institute's open-source policy for ensuring utmost outreach and continued development. Development of open-source software platforms will be pursued and will result in advancements for example for the SOGNO or other ACS driven platforms.

RWTH Aachen University IP	As a research institute, the Chair of Individualized Production will mainly focus on the dissemination activities of the research results by pursuing: (i) Publications in high impact scientific journals and conferences in robotics and material scanning, signal processing, computer vision and machine learning, image processing, respectively, (ii) Contribution to the dissemination material content and participation in standardization committees (BuildingSmart, VDI Bau, Bauforum Stahl, etc.), (iii) Demonstration to industrial partners and potential research collaborators. Moreover, findings and research results can be further utilized to extend the international master's program "Construction Robotics" curriculum at the RWTH Aachen University.
IDIADA	Applus+ IDIADA provides design, testing, homologation and engineering services to the automotive sector worldwide. Through its main technical center (in Santa Oliva, Tarragona, Spain) of 370 hectares that gives rise to 14 tracks surrounded by a safe and controlled environment, IDIADA provides activities focused in the area of ADAS and Connected and Automated Vehicles (CAV). Communications are entering the automotive sector and will increase strongly in the coming years. This project and its results will provide IDIADA with new insights into 5G technologies and related capabilities, which will be used to enhance its current exclusive and controlled 2G/3G/4G/5G cellular network, expanding its features and thus increasing IDIADA's ADAS/CAV testing and development services.
Center Construction Robotics (CCR)	In interdisciplinary cooperation with industrial partners, Construction Robotics GmbH strives to develop new technologies, both scientifically and application-oriented, in order to advance digitalization on the construction site. Due to the successful implementation of existing projects and preliminary work, the CCR has expertise in application-oriented research in the field of automation in the construction industry, both of machines and processes as well as component tracking. Furthermore, as a consortium research platform at the RWTH Aachen Campus, the CCR integrates associated partners such as Hilti, Leonhard-Weiß, Liebherr and Doka, so that a basic knowledge already exists in this application area. In addition, the CCR is the operator of the Reference Construction Site in Aachen, which is a 4000m^2 real laboratory for testing digital construction processes. Beyond the direct benefit for the users, the developed methods are suitable for companies with similar use cases and transferable to other construction processes. This is ensured by the involvement of the CCR network. In addition, the participating partners will exploit the findings on the 5G/6G empowered construction machines and processes through their working groups and participation in associations (e.g. Autodesk Construction Days, euRobotics). The demonstrators will be tested on the reference construction site in Aachen (operated by the CCR) in practical operation and made available to students and industrial partners beyond the scope of the project. The scientific exploitation takes place in particular by means of practice-oriented (lectures, industry/association journals, trade fairs) as well as scientific publications, which also make the results accessible to third parties. Furthermore, CCR's range of seminars and lectures can be expanded through the project results and offered via CCR's network in order to disseminate the acquired knowledge in the industry.

I2CAT	i2CAT will take advantage of its participation in TARGET-X to advance its knowledge about state-of-the-art management and orchestration (M&O) of network and radio resources, as well the planned integration of the M&O with the radio access network/ 6G core. In addition, I2CAT will share its knowledge about network configuration and analysis tools. Special focus will be given to the automotive vertical scenarios, which i2CAT expects to exploit to enrich its expertise in vehicular communications in 6G networks. Regarding the dissemination plan, i2CAT will disseminate project research results to scientific journals and conferences. i2CAT can also support dissemination in relevant venues such as Mobile World Congress Barcelona.
Marposs SpA (MARP)	With the trials of 5G/6G in industrial scenarios in the framework of TARGET-X, Marposs SpA will share with the partners its knowledge of the production environment, especially with regards to the measurement and process monitoring in automotive, aerospace, and other industries alike. In close cooperation with the partners, Marposs SpA aims at evaluating and potentially evolving the 5G/6G specifications and services for the workshop floor environments. Where appropriate, the concepts will be protected by suitable intellectual property rights. Marposs SpA will use the results and the know-how obtained from the project and its activities, with the purpose of developing or improving its products and solutions.
FundingBox (FBA, FBC)	TARGET-X project will enable FBA to deepen, share and enlarge the public FTSP funding activities towards 5G and 6G ecosystem. This will help the generation of open innovation schemes in Next Generation networks and services, feeding one of the core activities of FBA. Regarding FBC as affiliated entity, the project will enlarge its community engagement activities through a growth hacking strategy and SEO content strategy, creating a new and vibrant community of 5G-6G stakeholders. It will allow an active engagement with other related communities of projects, which will be interested in the project results.
Fivecomm (FIVE)	Fivecomm will further develop and upgrade their 5G hardware devices from Rel-15 to future 3GPP releases within the window of the project (i.e. Rel-16 and 17). The implementation of TSN when chipsets integrating such functionality are available is also our objective. This is an activity that will put us at the forefront of the 5G and future 6G market. Having such a unique solution will lead us to a great economic, social, industrial, and environmental impact. Naturally, the main target audience within the project are stakeholders related to the industry vertical. However, 5G-IoT developed devices can be applied and customized to any type of vertical. Our 5G devices will be a core technology within this project to be validated in several test-beds from a large-scale trial perspective, with main focus on manufacturing. The current version of this component has been validated in the context of H2020 EU 5G-PPP projects 5G-RECORDS, FUDGE-5G and 5G-INDUCE. Due to the nature of the component, specific details about its design and development and integration will be potentially protected under IPR.

MARPOSS Monitoring Solutions GmbH (MMS)	MARPOSS Monitoring Solutions GmbH (MMS) develops, manufactures and distribute through the MARPOSS sales network systems for tool, process- and machine condition monitoring, which are used in different production processes including amongst others metal machining, cold forming, hot forging and presswork. MMS is based in Egestorf, Erkrath and Hannover, Germany. The MMS (www.artis.de) products and applications provide for the optimization and control of different production processes aiming at increasing the final quality whilst reducing production costs. The strength of MMS is an effective development department consisting of more than 15 hard- and software developers between researcher and well-trained staff members. MMS is part of the MARPOSS Group (www.marposs.com) having it´s headquarter in Bentivoglio, Italy. Thanks to the MARPOSS Group worldwide presence, the MMS products and applications have been finding a wide acceptance in different countries, by different customers and in different market segments such but not limited to automotive and aerospace. Currently MMS is investing heavily in new technologies addressing and responding to the needs generated by the digitization of processes typical of the Industry 4.0 paradigm and the resulting data management and analysis. MMS is already partner in the 5G-SMART and 5G SensPro project. MMS wants to use the 5G technology for tool and machine condition monitoring and energy management. The monitoring systems from MMS will be use 5G and in combination with TSN to create added values for the customers. The systems will be managed via network, the computing from clouds or servers can be used for the monitoring.
Neutroon (NEU)	Neutroon will leverage on its participation to TARGET-X to enhance its current platform to orchestrate multiple and multi-vendor private networks by integrating the private 5G infrastructure present at IDIADA, while offers edge processing in a virtualized and controlled environment, fully manageable from the same platform. This platform can help the execution of the open calls by providing the perfect testbench to test the onboarding of different third-party applications and gather feedback to improve the user experience. In terms of the dissemination plan, the project findings will be shown in all the pertinent events in which Neutroon will actively participate such as Hannover Messe. Likewise, the data gathered will be included in multiple marketing assets to be published on Neutroon's website and Linkedin account.
Mitsubishi Electric (MEE)	Mitsubishi Electric Europe B.V. distributes the wide range of industrial automation and many other products and solutions of Mitsubishi Electric Corporation, offers sample solutions and technical support to customers. As a result, Mitsubishi has a broad application knowledge of automation applications in which, among others, the offered industrial controllers, industrial communication technology or robotics are used. This, as well as direct access to components, will be used in the project to demonstrate successful deployment of converged communication via TSN and 5G (and following) in industrial automation. The powerful real-time control i.e., of mobile robots from local cloud systems that is possible in this way enables new application scenarios for industrial automation, which are to be worked out. It will be used to respond to requirements coming up with flexible manufacturing considered in Industrie 4.0.

Qualcomm (QCOM)	Qualcomm is the world's leading wireless technology provider with a wide portfolio of chipsets and technology components for wireless communications. In Europe, Qualcomm has a significant presence covering semiconductor manufacturing, engineering services, customer integration, testing and validation, standardization and R&D, and training & education. Within TARGET-X, Qualcomm intends to deploy advanced 5G-NR prototype devices (Mobile Test Platforms, MTPs) supporting cutting edge features of 3GPP standards such as TSN (synchronization, time-aware scheduling) and integrate these into the targeted use cases as well as the cascaded funding projects. With that, Qualcomm will significantly contribute to the capabilities to use advanced 5G features in TARGET-X, also for sub-sequent cascaded funding projects. The learnings from these pilots and trials will allow Qualcomm to mature its standards-compliant implementations of advanced 5G features in devices and, therefore, will accelerate the availability of commercial 5G-NR radio & processing modules targeting industrial use cases and supporting advanced 5G features such as TSN. Qualcomm offers education and training programs in Europe for experts interested to deploy 5G technologies in various industry segments. TARGET-X will help QCOM to better understand the needs in the various vertical industry segments and can adjust its programs so that the transfer of know-how on the usage of 5G and beyond in vertical industry segments in Europe can be more focused and will accelerate digital transformation in these areas. Qualcomm is a strong leader in standardization of 5G advanced technology in 3GPP. The results of TARGET-X will help Qualcomm and other 3GPP members active as partners in this project to develop contributions to enhance 5G and define a roadmap towards 6G. Results of TARGET-X will enable Qualcomm to focus its R&D efforts for evolving 5G in the area of industrial communications on new needs in industrial communications and define requirements for 6G. Through its active participation in organizations such as 5G-ACIA, Qualcomm will help to disseminate results of TARGET-X which will then help a broader audience to benefit from the learnings.

6 Summary and conclusions

The previously outlined activities aim at integrating 5G and beyond technology in the verticals energy, manufacturing, automotive and construction and ultimately strengthening Europe's pioneering role in 5G/6G. A detailed description of the communication channels to the different target audiences is provided as they enable the dissemination activities. The dissemination activities, including demonstration and validation events as well as identified journals and conferences, show how TARGET-X will reach scientific and industry communities. The exploitation plan of the whole project and the individual exploitation plans per partner are given. Further, the deliverable describes potential risks and barriers with their respective countermeasures. The aim of the activities will basically be to underline the pioneering role of European stakeholders in 5G and 6G. In addition, the activities and the Cascade Funding are intended to build up a lively community that stimulates and drives each other and strengthens Europe as a location across borders. Results of the project will be made publicly available via platforms and scientific publications and will also drive standardization processes.

Overall, the strategies and plans given in this deliverable will ensure the maximum impact in the research and the commercial domain through facilitating the acceleration of 5G/6G adoption using the large-scale trial evaluation of 5G/6G.