

# Safe4RAIL2

## D4.3 – Final report on Dissemination & Communication Activities – V1.1

<b>Project number:</b>	826073
<b>Project acronym:</b>	Safe4RAIL-2
<b>Project title:</b>	SAFE architecture for Robust distributed Application Integration in roLLing stock 2
<b>Start date of the project:</b>	1 <sup>st</sup> October 2018
<b>Duration:</b>	34 months
<b>Programme:</b>	H2020-S2RJU-OC-2018
<b>Deliverable type:</b>	Report
<b>Deliverable reference number:</b>	ICT-826073 / D4.3 / 1.1
<b>Work package</b>	WP 4
<b>Due date:</b>	July 2021 – M34
<b>Actual submission date:</b>	29 <sup>th</sup> July, 2021
<b>Responsible organisation:</b>	TEC
<b>Editor:</b>	Barbara Gaggl
<b>Dissemination level:</b>	Public
<b>Revision:</b>	1.1
<b>Abstract:</b>	This report includes updates of activities related to dissemination that have been undertaken since M16 until M34 as well as a report of completed communication activities.
<b>Keywords:</b>	Dissemination, communication



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 826073. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of Shift2Rail Joint Undertaking. The JU does not guarantee the accuracy of the data included in this article. Neither the JU nor any person acting on the JU's behalf may be held responsible for the use which may be made of the information contained therein.

## **Editor**

Barbara Gaggl (TEC)

## **Contributors** (ordered according to beneficiary numbers)

Aitor Arriola (IKL),

Marion Habernig, Martina Truskaller (TEC),

Mohammed Abuteir (TTT),

Alonso Martinez (MOXA),

Khawar Naeem (WES),

Jérôme Härrri (EUR),

Nuria Mata (ETAS),

Reinhard Aigner (LIEB)

## **Disclaimer**

Please note that this deliverable is undergoing Shift2Rail Joint Undertaking review and acceptance processes. The information in this document is provided “as is”, and no guarantee or warranty is given that the information is fit for any particular purpose. The content of this document reflects only the author’s view – the Joint Undertaking is not responsible for any use that may be made of the information it contains. The users use the information at their sole risk and liability.

## Executive Summary

This document is dedicated to Safe4RAIL-2's dissemination and communication activities that were performed since M16 (January 2020) until M34 (July 2021). It is an update of D4.3 "Initial report and updated plan on Dissemination & Communication Activities", which was an interim version submitted in M15, and the final deliverable on this front including an overview of the activities held during the second period of the project. It thus focuses on phase 2 (continuity of information flow) and phase 3 (result orientation). In a first step the main target audiences were identified and ways and means were described in order to properly reach them. During phase 2, which started approximately after the first project year, more than 20 targeted dissemination and communication activities were performed. They include both the attendance as well as the organization of conferences and workshops, press releases (e.g. newsletters, magazine articles), videos and podcasts. Besides that, by a strong and frequent interaction on social media the project kept up the interest of existing followers and attracted a considerable amount of new followers.

In the last couple of months the project entered the result orientation phase where the results of the project were promoted, exploitation activities were performed and the target groups were attracted. The highlights of phase 3 were the final dissemination video as well as the final conference that was jointly organized with the CONNECTA-2 project.

Even after the project end Safe4RAIL-2 partners have plans to further disseminate the project results by publishing articles.

# Contents

<b>Chapter 1</b>	<b>Introduction.....</b>	<b>1</b>
<b>Chapter 2</b>	<b>Dissemination and Communication Strategy .....</b>	<b>2</b>
2.1	Civil Society, Broad Public Society & Media .....	3
2.2	Policy Makers.....	3
2.3	Industry.....	4
2.4	Research and standardisation communities .....	4
<b>Chapter 3</b>	<b>Dissemination and Communication Targets .....</b>	<b>5</b>
<b>Chapter 4</b>	<b>Dissemination and Communication Report.....</b>	<b>6</b>
4.1	Phase 1: Awareness creation .....	6
4.2	Phase 2: Continuity of information flow .....	7
4.2.1	Past dissemination and communication activities .....	7
4.2.2	Highlights of Phase 2 .....	13
4.2.2.1	<i>Podcasts.....</i>	13
4.2.2.2	<i>Status update video .....</i>	13
4.2.2.3	<i>Social Media.....</i>	13
4.2.2.4	<i>Newsletters.....</i>	14
4.3	Phase 3: Result orientation .....	16
4.3.1	Highlights of phase 3 .....	18
4.3.1.1	<i>Final dissemination video .....</i>	18
4.3.1.2	<i>S4R-2/ CTA-2 Joint Final Conference.....</i>	18
4.3.1.3	<i>Planned activities after the project end .....</i>	19
<b>Chapter 5</b>	<b>Conclusion .....</b>	<b>20</b>
	<b>List of Abbreviations.....</b>	<b>21</b>

## List of Figures

Figure 1: Dissemination and communication phases .....	1
Figure 2: Safe4RAIL-2 dissemination and communication strategy .....	2
Figure 3: Safe4RAIL-2 targeted audiences and measures .....	3
Figure 4: Safe4RAIL-2 Newsletter - Fifth Issue/July 2021 (Pages 1-3).....	15
Figure 5: Safe4RAIL-2 Newsletter - Fifth Issue/July 2021 (Pages 4-5).....	15

## List of Tables

Table 1: Key performance indicators for dissemination and communication activities .....	5
Table 2: Past dissemination and communication activities - Phase 2 .....	7
Table 3: Past dissemination and communication activities - Phase 3 .....	16
Table 4: List of Abbreviations .....	21

# Chapter 1 Introduction

This deliverable provides a final report on the partners' **dissemination** and **communication** activities since M16 (January 2020) until M34 (July 2021). **Dissemination** and **communication** activities ensure the visibility and awareness of the project and support the widest adoption of its results among potential users. The Safe4RAIL-2 dissemination and communication plan prepares the way for successful exploitation by facilitating internal communication within the project from the outset. Dissemination and communication activities have been actively pursued from the beginning to the end of the project – engaging continuously with both internal and external audiences. The activities have been clustered into three main phases, which is shown in the figure below.

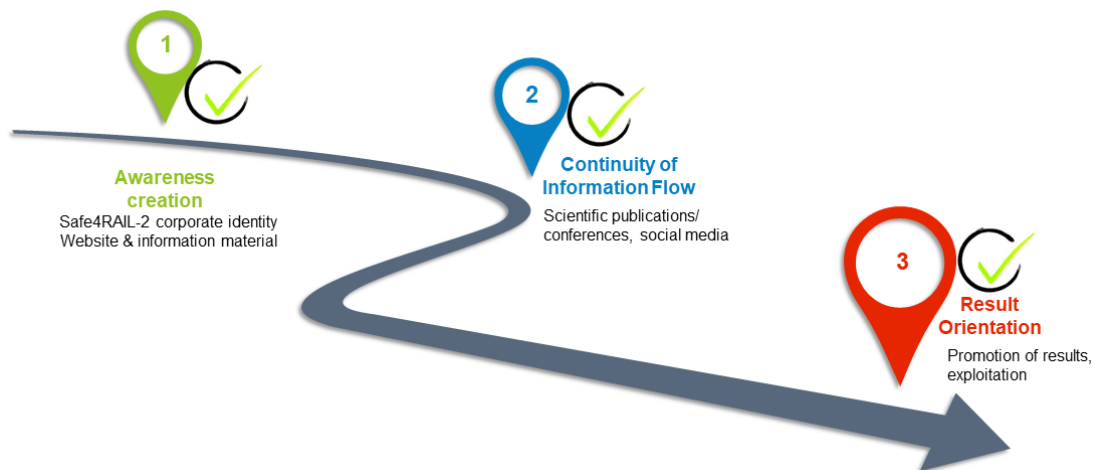


Figure 1: Dissemination and communication phases

The first phase is called **“awareness creation”** and consists of building up the Safe4RAIL-2 branding and corporate identity, as well as establishing the project website and additional project information material, like templates for documents as well as presentations. The Safe4RAIL-2 project has successfully passed this first phase.

In the second phase called **“continuity of information flow”**, scientific papers were written and submitted to conferences and journals as well as presentations at online conferences and workshops were given in order to further raise awareness among the scientific and industrial stakeholders. Furthermore, publications, whitepapers and certain deliverables were published on the project website in order to keep interested parties informed about the latest progress. In addition, engaging posts on Twitter & LinkedIn as well as on the website constituted an important part of keeping the information flow upright and increase the interest of multiple audiences. Besides that, newsletters, press releases, poster, information about workshops and conferences, etc. represented an integral part of this dissemination phase, allowing more interactive communication within and outside the consortium.

In the third phase **“Result orientation”**, in which the project was during the last few months, dissemination fed into **exploitation and standardisation**, which means using the results for commercial purposes or in public policymaking. There will be some ongoing dissemination activities after the project end (e.g. joint article between MOXA and CAF for WRCC 2022 Conference, journal article in Frontiers in Future Transportation) in order to promote the project results. The main focus will be to exploit those project results and attract the target audience groups.

## Chapter 2 Dissemination and Communication Strategy

A clear communication and dissemination strategy is essential and a forerunner for the execution of a dissemination and communication plan. Therefore, the Safe4RAIL-2 project has set out a clear strategy for dissemination and communication at the beginning of the project (Figure 2). The strategy defines the audiences the project aims at targeting, and defines why such audiences should be targeted and by which means.

While talking about communication the goal is to highlight the benefits of the Safe4RAIL-2 project for society, e.g. by showing the public society and media the impact of our project on everyday lives. When it comes to dissemination the goal is to transfer knowledge and make project results available to an audience that may take an interest.

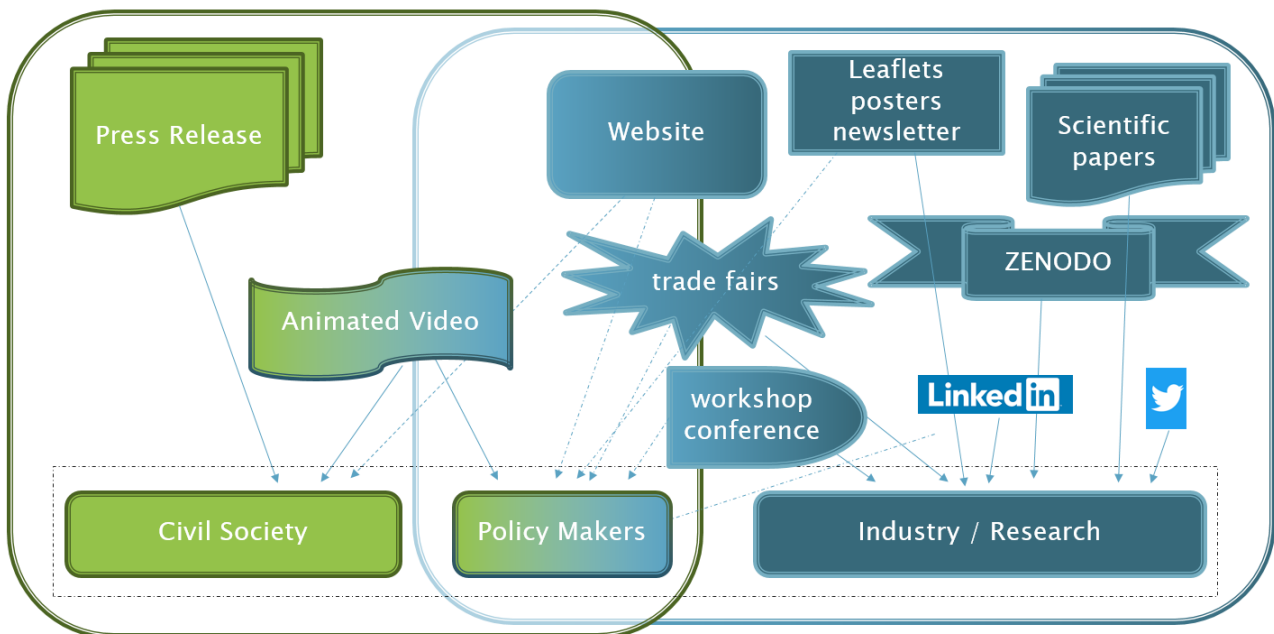


Figure 2: Safe4RAIL-2 dissemination and communication strategy

Within Safe4RAIL-2, four main audience groups can be defined:

For communication:

- **Civil Society, Broad Public Society & Media**
- **Policy Makers,**

For dissemination:

- **Policy Makers** and
- **Industry** and
- **Research Community.**

The project results can be used specifically to reach different audiences, by using various channels from Figure 3. The channels and forms of their application are described in the following.



Figure 3: Safe4RAIL-2 targeted audiences and measures

## 2.1 Civil Society, Broad Public Society & Media

Citizens are taxpayers and pay large amounts to the European Commission yearly. It is only fair that they expect to see that the resources they commit serve a meaningful purpose. Without funding from taxpayers, there would be no funding for H2020 projects. With different communication activities we show to the society the impact and benefits of the Safe4RAIL-2 project, and how they will benefit from the project results in their everyday life.

Within the Safe4RAIL-2 project, there are many means defined to reach the public. One of the main ones is the [project website](#), on which it is possible to find a compact, foldable, 4-pages [leaflet](#). Further channels that are emerging is the [introductory video](#), a [status update video](#), and a [final dissemination video](#), which are all available on the project website and Vimeo. Furthermore, two podcast series, one focusing on the technical work packages and the other focusing on project external experts' views. Also, the Safe4RAIL-2 Twitter (<https://twitter.com/SAFE4RAIL>) and LinkedIn (<https://www.linkedin.com/company/safe4rail-2>) account give an overview of the EU funded R&I activities.

## 2.2 Policy Makers

It is important to bring the research and its outcome to policymakers in order to support them while fostering collaboration and innovation. There are several benefits in presenting the work and the results of the Safe4RAIL-2 project to policymakers.

First, it increases the visibility of our research and enhances the project partner's reputation. Further, it helps to gain understanding and support, also financially. Additionally, we attract potential end-users of the project results and by outlining the broader socio-economic and policy context of our project. Future policymaking will be positively influenced. The scientific evidence of Safe4RAIL-2 additionally support the grounds for European policymaking.



For instance, the Wireless Train Backbone (WLTB) requires wireless spectrum and the Safe4RAIL-2 project emphasized an incompatibility between the restricted LTE V2X spectrum (5.9GHz) and the allowed spectrum for railways (GSM-R spectrum). The need for WLTB spectrum has been brought to ITU and ETSI TC ERM policy makers, but a solution is only envisioned for 5G V2X. Results from the Safe4RAIL-2 project have also been brought to 3GPP policy makers by lobbying for TCMS and more generally railway use cases for future 5G V2X technologies (it was too late to influence policy makers for LTE V2X).

## **2.3 Industry**

In order for the innovation developed within the Safe4RAIL-2 project to have any value, it is essential to show it and its applicability to industry needs. Within the industry, a large potential of stakeholders can be found which will eventually enhance the general exploitation of the innovation, thus also benefitting the global European economy.

The Safe4RAIL-2 project foresees several ways to reach the industry. Whereas the main channel is the attendance of trade fairs, the industry is also reached by attending conferences, workshops and further by publishing newsletters and keeping the website up to date. Furthermore, in the Safe4RAIL-2 Joint Advisory Board nine of its members work in the industry (*Huawei, Nokia, Marvell, Men, Luetze, Leroy Automation, Qualcomm, VDS Rail, Kontron*). Not to forget, key stakeholders are the railway manufacturers and operators that are represented in the CONNECTA-2 consortium.

## **2.4 Research and standardisation communities**

Reaching the research and standardisation communities is crucial to innovation within the European Union: in order to have a real impact in further research, and to help the standardisation path, it is essential to reach and gain the interest of the said communities.

Standardisation is an important aspect of the Safe4RAIL-2 project. A key strategic objective of the project is to contribute to standardization efforts at EU level within ISO/IEC. With this purpose, Safe4RAIL-2 partners have participated in IEC 61375 TC9 WG43/46.

In order to connect with the scientific community, the Safe4RAIL-2 project was very active on social media (Twitter and LinkedIn). Partners were also encouraged to share the project results with their peers and followers. The regular project newsletter, with the information on the project progresses, was made available on the project website, as well as on social media and was shared by project partners with their colleagues and partners.

Moreover, Safe4RAIL-2's consortium members attended conferences – due to Covid-19 mostly virtually, where the project's results were presented. The main aim was the dissemination at conferences of European significance at least. However, lectures can be further disseminated at national levels in national languages for border scope of impacts.

## Chapter 3 Dissemination and Communication Targets

During the proposal phase of the Safe4RAIL-2 project, a detailed communication and dissemination plan was set up and updated continuously during the project lifetime. The communication and dissemination plan states different audiences, what the objective of reaching the audience is and what the impact of reaching them would be. The very initial plan can be found in D4.1 “Internal and external IT communication infrastructure and project website”<sup>1</sup> and an updated plan was presented in the interim version of D4.3 “Initial report and updated plan on Dissemination & Communication Activities”<sup>2</sup>.

In order to assess the effect of the dissemination and communication activities on the target audience, a number of Key Performance Indicators (KPI) have been selected, allowing to measure progress towards fixed goals for dissemination activities. These KPIs are repeatedly referenced in the document. The following table collects the selected KPI:

Table 1: Key performance indicators for dissemination and communication activities

Dissemination activity/channel	KPI
Project website	<ul style="list-style-type: none"> <li>• Number of visits/page views</li> <li>• Number of unique visitors</li> <li>• Number of new and returning visitors</li> </ul>
Newsletter/press release	<ul style="list-style-type: none"> <li>• Number of contacts</li> <li>• Number of downloads</li> </ul>
Social Media	<ul style="list-style-type: none"> <li>• Number of postings</li> <li>• Number of follower/contacts</li> <li>• Engagement/impression rate</li> </ul>
Scientific journals and conferences	<ul style="list-style-type: none"> <li>• Number of publications per year</li> <li>• Number of views per publication</li> <li>• Number of attendees</li> <li>• Number of citations</li> <li>• Feedback received</li> </ul>
Presentation/workshops	<ul style="list-style-type: none"> <li>• Number of attendees</li> <li>• Number of events</li> </ul>

<sup>1</sup> <https://safe4rail.eu/downloads/deliverables/Safe4RAIL-2-D4.1-Internal-and-external-IT-Infrastructure-PU-M04.pdf>

<sup>2</sup> <https://safe4rail.eu/downloads/deliverables/Safe4RAIL-2-D4.3-Initial-report-on-Dissemination-and-Communication-PU-M15.pdf>

# Chapter 4 Dissemination and Communication Report

## 4.1 Phase 1: Awareness creation

The goal of the “awareness creation” phase was to build up the Safe4RAIL-2 branding and corporate identity, as well as to establish the website and other useful information material. The Safe4RAIL-2 consortium successfully finished this first phase. Details can be found in D4.3 “Initial report and updated plan on Dissemination & Communication Activities”. This chapter provides a short summary of phase 1, but the main focus of this deliverable is on phase 2 and 3.

In the first phase of the project several communication activities were planned and executed. First, the project was announced by an official [announcement letter](#), which was published on TEC’s website and on the project website. It was made available for all project partners in order to encourage partners to make their own internal announcements. Further, the project logo of Safe4RAIL was slightly adapted and together with the colour scheme adopted to be used for all communication and dissemination activities in order to maintain and further ensure a recognisable visual identity. Also, a project [leaflet](#) was created and the project website built-up, which has been constantly updated. One of the highlights of phase 1 was the [introductory video](#) explaining how the Safe4RAIL-2 project is improving trains in Europe.

Here is a short overview of the dissemination material/activities of the first phase:

- Announcement Letter
- Visual Identity (logo, colour scheme, project templates)
- Project website
- Press releases
- Radio Interview
- Leaflet
- General Presentation
- Newsletter
- Social Media (LinkedIn, Twitter)
- Introductory video

## 4.2 Phase 2: Continuity of information flow

The goal of the “continuity of information flow” phase, which started approximately after the first year of the project, is to further raise awareness among our different target groups and industrial stakeholders as well as to address multiple audiences and to promote project results.

### 4.2.1 Past dissemination and communication activities

The goal towards the broad public society, media as well as towards the policy makers and industry, is to communicate the benefits of Safe4RAIL-2 for example by explaining the impact of our project on everyday lives. Furthermore, we foster to disseminate knowledge and results with the research community as well as with policy makers and the industry. Therefore, scientific papers and articles were written and submitted to conferences and journals, presentations at workshops and conferences were given. Project partners were attending several conferences and workshops to spread information about the project. Certain public deliverables are published on the project website. In addition to that frequent posts on social media channels were an important dissemination instrument to keep the information flow upright.

Table 2: Past dissemination and communication activities - Phase 2

#	Type of activities	Main lead	Title	Date	Place	Type and goal of the activity and target audience <sup>3</sup>	Link to dissemination material (photos, blog entries...)	Countries addressed
1	Conference/ Workshop Attendance	TTT	IEEE WG meeting	20-24/01/2020	Geneva, Switzerland	Standardization Workshop at interim IEEE 802.1 TSN WG meeting <i>Target audience: (A), (B)</i>	<a href="https://1.ieee802.org/tsn/">https://1.ieee802.org/tsn/</a>	International
2	Conference/ Workshop Organisation	IKL	Technical Seminar on Advanced Architectures and Components for Next-Generation TCMS	21/01/2020	Brussels, Belgium	Inform key stakeholders proactively about the project results, discuss with stakeholders in an open context about evaluation and directions, and assure project impact. This event was organized jointly with the CFM project, and S2R-CFM-IP2-01-2018, S2R-OC-IP2-01-2018 and S2R-CFM-CCA-01-2018 consortiums were invited. <i>Target audience: (A), (B), (D)</i>	N/A	International

<sup>3</sup> (A) Scientific community & higher education, (B) Industry, (C) Civil Society, (D) Policy makers, (E) Customers/Investors, (F) Media

#	Type of activities	Main lead	Title	Date	Place	Type and goal of the activity and target audience <sup>3</sup>	Link to dissemination material (photos, blog entries...)	Countries addressed
3	Trade Fair Participation (Booth)	ETAS	Embedded World 2020	25-27/02/2020	Nurnberg, Germany	Participation and representation of Safe4RAIL-2 (flyers and demo) at the Embedded World 2020 conference <i>Target audience: (B)</i>	N/A	International
4	Press release	IKL	Safe4RAIL-2, for safer and more efficient European trains	24-27/02/2020	EI Economista	General article on Safe4RAIL-2 on 'El Economista' magazine Description of goals and activities of Safe4RAIL-2 project, aimed at a non-specialized/non-technical audience. It has been included in Special Issue about ICTs of a wide-scope economy magazine. <i>Target audience: (B), (C)</i>	<a href="https://marcas.eleconomista.es/tic-innova/noticias/10383795/02/20/Safe4RAIL2-for-safer-and-more-efficient-European-trains.html">https://marcas.eleconomista.es/tic-innova/noticias/10383795/02/20/Safe4RAIL2-for-safer-and-more-efficient-European-trains.html</a>	International
5	Website	ETAS	ETAS is the AUTOSAR partner for Safe4Rail-2	19/05/2020	online	Safe4RAIL-2 reference on the (sub)page of the RTA-VRTE AUTOSAR platform software framework for vehicle computer <i>Target audience: (B), (C), (E)</i>	<a href="https://www.etas.com/en/company/realtimes_2019_2020-etas-is-the-autosar-partner-for-safe4rail-2.php">https://www.etas.com/en/company/realtimes_2019_2020-etas-is-the-autosar-partner-for-safe4rail-2.php</a>	International
6	Press release	TEC	Safe4RAIL-2 Newsletter Issue 3 (June 2020)	15/06/2020	online	Third issue of the Safe4Rail-2 Newsletter with a focus on the functional distribution framework & simulation framework <i>Target audience: (A), (B), (C), (D), (E)</i>	<a href="https://safe4rail.eu/downloads/Safe4RAIL-2-Newsletter-Issue-3-June-2020.pdf">https://safe4rail.eu/downloads/Safe4RAIL-2-Newsletter-Issue-3-June-2020.pdf</a>	International
7	Video/Film	TEC	Safe4RAIL-2 status update video	22/06/2020	online	Short project video giving an update of the status and the aim of the project. <i>Target audience: (A), (B), (C), (D), (E)</i>	<a href="https://vimeo.com/technikon/s4r2status">https://vimeo.com/technikon/s4r2status</a>	International
8	Press release	LIEB	Liebherr Plays Major Role in European Development Project Safe4RAIL-	22/07/2020	per Email to trade press and online	Information to trade press, wide public and business target group about project and involvement of Liebherr <i>Target audience: (A), (B), (C), (D),</i>	<a href="https://www.liebherr.com/shared/media/corporate/news/news-2020/07/22/liebherr-press-information-safe4rail2-participation-">https://www.liebherr.com/shared/media/corporate/news/news-2020/07/22/liebherr-press-information-safe4rail2-participation-</a>	International

#	Type of activities	Main lead	Title	Date	Place	Type and goal of the activity and target audience <sup>3</sup>	Link to dissemination material (photos, blog entries...)	Countries addressed
			2			(E), (F)	<a href="#">july2020.pdf</a>	
9	Conference/ Workshop Article	EUR	Prototyping V2X Applications in Large-Scale Scenarios using OpenAirInterface	16/12/2020	online	IEEE VNC present the mac-emulator on OAI <i>Target audience: (A)</i>	<a href="https://ieee-vnc.org/">https://ieee-vnc.org/</a>	International
10	Other dissemination activity	TEC	Podcast series with project partners	04/03/2021	online	<b>Episode 1</b> with Aitor Arriola from Ikerlan informing about the project objectives and how Europe benefits from the developed technology. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://omny.fm/shows/euvation/safe4rail-2-1-h2020-project-smart-trains-the-ticke">https://omny.fm/shows/euvation/safe4rail-2-1-h2020-project-smart-trains-the-ticke</a>	International
11	Press release	TEC	Safe4RAIL-2 Newsletter Issue 4 (March 2021)	22/03/2021	online	Fourth issue of the Safe4Rail-2 Newsletter with a focus on the different components that have been developed by the Safe4RAIL-2 team and are being integrated in CONNECTA-2 urban and regional demonstrators. <i>Target audience: (A), (B), (C), (D), (E)</i>	<a href="https://safe4rail.eu/images/Safe4RAIL-2-Newsletter-Issue-4-March-2021.pdf">https://safe4rail.eu/images/Safe4RAIL-2-Newsletter-Issue-4-March-2021.pdf</a>	International
12	Conference/ Workshop Article	IKL	Applicability of 5G on WLTB	22/03/2021	online	Paper presentation at EuCAP <i>Target audience: (A)</i>	N/A	International
13	Other dissemination activity	TEC	Podcast series with project partners	31/03/2021	online	<b>Episode 2</b> with Mohammed Abuteir from TTT discussing WP1, its major achievements and challenges. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://omny.fm/shows/euvation/safe4rail-2-2-h2020-project-focus-on-work-package">https://omny.fm/shows/euvation/safe4rail-2-2-h2020-project-focus-on-work-package</a>	International

#	Type of activities	Main lead	Title	Date	Place	Type and goal of the activity and target audience <sup>3</sup>	Link to dissemination material (photos, blog entries...)	Countries addressed
14	Other dissemination activity	TEC	5G Reveals Wireless Options for Improving Safety and Reliability of Trains in Europe Podcast series with 5G experts (T2.7)	15/04/2021	online	Experts talk in a special video series about 5G communications in trains. As part of the Safe4RAIL-2 project, our industry experts weigh in on the advantages and challenges of replacing wired infrastructures with new wireless technologies. <b>Episode 1</b> with Julián Andrade from Huawei speaking about his role as advisory board member for Safe4RAIL. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://vimeo.com/513280182">https://vimeo.com/513280182</a>	International
15	Other dissemination activity	TEC	5G Reveals Wireless Options for Improving Safety and Reliability of Trains in Europe Podcast series with 5G experts (T2.7)	15/04/2021	online	<b>Episode 2</b> with Liesbet Van der Perre from KU Leuven, a professor of Electrical Engineering Department of the KU Leuven. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://vimeo.com/516699852">https://vimeo.com/516699852</a>	International
16	Other dissemination activity	TEC	5G Reveals Wireless Options for Improving Safety and Reliability of Trains in Europe Podcast series with 5G experts (T2.7)	15/04/2021	online	<b>Episode 3</b> with Raymond Knopp from Eurecom, a professor in digital communications from project partner Eurecom. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://vimeo.com/524910156">https://vimeo.com/524910156</a>	International
17	Conference/ Workshop Organisation	EUR	Workshop on wireless communication technologies for future railway	25/04/2021	online	IEEE VTC conference fully on-demand, presentations were recorded and presented <i>Target audience: (A), (B), (D)</i>	N/A	International

#	Type of activities	Main lead	Title	Date	Place	Type and goal of the activity and target audience <sup>3</sup>	Link to dissemination material (photos, blog entries...)	Countries addressed
			systems					
18	Journal Article	MOXA	Time-sensitive Networking (TSN) Technology in the Next Generation of Train Communication Networks (TCN)	30/04/2021	online	Concept level S4R-2 related audience to appeal to a wider audience within the rail industry about the benefits and key technologies that support them. Paper published on the Safe4RAIL-2 project website. <i>Target audience: (E)</i>	<a href="https://safe4rail.eu/images/TSN-article.pdf">https://safe4rail.eu/images/TSN-article.pdf</a>	International
19	Other dissemination activity	TEC	Podcast series with project partners	12/05/2021	online	<b>Episode 3</b> with Iñigo Odriozola from IKL discussing WP3, which is dedicated to technological developments producing dedicated project outcomes such as deliverables and implementations. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://omny.fm/shows/euvation/safe4rail-2-4-h2020-project-focus-on-work-package">https://omny.fm/shows/euvation/safe4rail-2-4-h2020-project-focus-on-work-package</a>	International
20	Journal Article	MOXA	TSN - Rolling Towards Safer Train Networks	26/05/2021	online	Slightly amended version of the article that was published on the Safe4RAIL-2 project website. This paper is published on MOXA's website. <i>Target audience: (E)</i>	<a href="https://www.moxa.com/en/articles/tsn-rolling-towards-safer-train-networks">https://www.moxa.com/en/articles/tsn-rolling-towards-safer-train-networks</a>	International
21	Other dissemination activity	TEC	Podcast series with project partners	24/06-2021	online	<b>Episode 4</b> with Jérôme Härri from EUR (WP2). <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://omny.fm/shows/euvation/safe4rail-2-3-h2020-project-focus-on-work-package">https://omny.fm/shows/euvation/safe4rail-2-3-h2020-project-focus-on-work-package</a>	International
22	Other dissemination activity	TEC	5G Reveals Wireless Options for Improving Safety and Reliability of Trains in Europe Podcast series with	15/06/2021	online	<b>Episode 4</b> with Iñaki Val, a principal research scientist at IKERLAN. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://vimeo.com/561208856">https://vimeo.com/561208856</a>	International



#	Type of activities	Main lead	Title	Date	Place	Type and goal of the activity and target audience <sup>3</sup>	Link to dissemination material (photos, blog entries...)	Countries addressed
			5G experts (T2.7)					
23	Other dissemination activity	TEC	5G Reveals Wireless Options for Improving Safety and Reliability of Trains in Europe Podcast series with 5G experts (T2.7)	15/06/2021	online	<b>Episode 5</b> with Jesús Alonso-Zárate, the deputy director of EC Research and Innovation Policies & Strategies at i2CAT. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://vimeo.com/560348044">https://vimeo.com/560348044</a>	International
24	Press release	TEC	Safe4RAIL-2 Newsletter Issue 5 (July 2021)	23/07/2021	online	Fifth issue of the Safe4Rail-2 Newsletter with a focus on the Safe4RAIL-2 results in CONNECTA-2 demonstrators and the final conference <i>Target audience: (A), (B), (C), (D), (E)</i>	<a href="https://safe4rail.eu/images/Safe4RAIL-2-Newsletter-Issue-5-July-2021.pdf">https://safe4rail.eu/images/Safe4RAIL-2-Newsletter-Issue-5-July-2021.pdf</a>	International

## 4.2.2 Highlights of Phase 2

During phase 2, the continuity of information flow, the Safe4RAIL-2 consortium has undertaken several participation to events, such as conferences, workshops and training activities. Due to Covid-19 some of the planned industrial events (e.g. Innotrans) were cancelled, and most of the events took place virtually. The project was successfully disseminated in various press releases and magazine articles, by means of different communication channels and dedicated project newsletters were created. Below we are highlighting the two podcast series – one focusing on the technical WPs, and the other elaborating opportunities with project external experts – the gained interest on our social media channels and presenting the project newsletters, which were created.

We were able to reach the targeted audience by means of the above-listed and performed dissemination activities. Several magazine articles, press releases, website articles as well as (online) participations to relevant conferences helped a lot to keep up the interest in Safe4RAIL-2 and to increase the awareness of the project.

### 4.2.2.1 Podcasts

During phase 2 we created two dedicated podcast series:

- 5G Reveals Wireless Options for Improving Safety and Reliability of Trains in Europe
- Podcast series with project partners

#### **5G Reveals Wireless Options for Improving Safety and Reliability of Trains in Europe**

This is a podcast series with 5G experts that was conducted within WP2, contributing to T2.7. Experts talk in this special video series about 5G communications in trains. As part of the Safe4RAIL-2 project, our industry experts weigh in on the advantages and challenges of replacing wired infrastructures with new wireless technologies. In total, 5 episodes have been recorded and published.

#### **Podcast series with project partners**

In order to keep interested stakeholders up-to-date about the project progress and to give a more in-depth insight into the individual technical WPs, we created dedicated podcasts. This series, composed of 4 episodes, is also targeted at non-experts and was aimed to attract new interested parties. An introductory podcast with the Coordinator, Aitor Arriola from IKL, presenting the project objectives and how Europe benefits from the developed technology, helps digging into the project work.

### 4.2.2.2 Status update video

After the first half of the project, TEC created a short project video giving an update of the status and the aim of the project. The video explains that Safe4RAIL-2 project partners continue to build the smart train control and moderning system that will wirelessly combine critical systems like breaks with non-critical systems like lighting and climate control. The work will be tested in a simulated environment for the first time. The video is available under the following link: <https://vimeo.com/technikon/s4r2status>

### 4.2.2.3 Social Media

Social media is a very powerful tool to communicate and disseminate information and to effectively let people know about the activities we carry out in our project in a brief form. Both, the LinkedIn

and Twitter accounts have been updated frequently to keep up the interest and to gain new followers. In order to schedule the postings and tweets, we have created a posting plan, which helped us to plan and organize upcoming content. In addition to that, TEC who is leading several H2020 projects, established an internal social media project benchmark and the Safe4RAIL-2 project is doing very well, being among the top three best performing projects.

**Twitter:** Twitter, an online social networking service and micro blogging service, enables its users to send and read text-based messages of up to 280 characters, known as "tweets". Since the beginning of the project, there were 119 tweets (status 23<sup>rd</sup> July 2021) made on the Safe4RAIL-2 Twitter page. Twitter is mainly used for communication activities, including the announcement of press releases, newsletter publications, podcast and video publications, the promotion of events (e.g. final conference with Connecta-2) and different meetings. But also technical work progress, e.g. the achievement of important project milestones has been promoted via Twitter. The Safe4RAIL-2 Twitter account is accessible via: <https://twitter.com/SAFE4RAIL>. During phase 2, as a result of a very active push of twitter activities, we managed to considerably increase the number of followers (by 233%). Further, our posts have achieved a wide reach, which means that our messages are travelling far and are seen by many people. During the second period we achieved more than 30,000 impressions. Impressions indicate how many times a post showed up in someone's newsfeed or timeline, either because they are already following the Safe4RAIL-2 project or because someone they know has liked or shared our content.

**LinkedIn:** LinkedIn is a social networking site for people in professional occupations or simply a social network for business. The Safe4RAIL-2 project has a public account (set up as a company page), which can be accessed via: <https://www.linkedin.com/company/safe4rail-2/>. The [Safe4RAIL-2](#) team has established a good network on this social media platform and made 160 interesting and professional contacts (status 23<sup>rd</sup> July 2021). Information (publications, deliverables, conferences, workshops, podcasts, videos, etc.) on the project has been posted on a regular basis. We can report that also via LinkedIn we have achieved a wide reach with approximately 25,000 impressions, which is quite good, and shows that our followers are interested in the posted content. In our opinion a wide reach is more important than just the number of followers.

We are satisfied with the number of contacts, as we can say that all are interesting contacts for the project and work in related fields.

#### 4.2.2.4 Newsletters

Newsletters are an efficient communication channel in order to provide news on the project progress and to discuss ongoing topics towards internal and external project partners, stakeholders and other interested bodies. Newsletters are amongst other tools part of the common dissemination strategy. Since M16 three further newsletters were created and they are all available on our website: <https://safe4rail.eu/news/press-news>.

- Newsletter Issue 3, June 2020: <https://safe4rail.eu/downloads/Safe4RAIL-2-Newsletter-Issue-3-June-2020.pdf>
- Newsletter Issue 4, March 2021: <https://safe4rail.eu/images/Safe4RAIL-2-Newsletter-Issue-4-March-2021.pdf>
- Newsletter Issue 5, July 2021: <https://safe4rail.eu/images/Safe4RAIL-2-Newsletter-Issue-5-July-2021.pdf>

The third issue of the newsletter focused on the functional distribution framework & simulation framework, whereas the fourth issue was dedicated to the Safe4RAIL-2 components for

CONNECTA-2 demonstrators. The fifth and final issue of the newsletter presents the results we have achieved within the Safe4RAIL-2 project.



Figure 4: Safe4RAIL-2 Newsletter - Fifth Issue/July 2021 (Pages 1-3)



Figure 5: Safe4RAIL-2 Newsletter - Fifth Issue/July 2021 (Pages 4-5)

### 4.3 Phase 3: Result orientation

The result orientation phase consisted of three main goals, which Safe4RAIL-2 reached successfully:

- Promotion of project results
- Exploitation activities (see D4.4 “Final report on Exploitation & Standardisation activities”)
- Attraction of the target group

The Safe4RAIL-2 consortium has performed the following activities in phase 3 (see table below).

Table 3: Past dissemination and communication activities - Phase 3

#	Type of activities	Main lead	Title	Date	Place	Type and goal of the activity and target audience <sup>4</sup>	Link to dissemination material (photos, blog entries...)	Countries addressed
1	Video/Film	TEC	S4R-2/CTA-2 final dissemination video	31/05/2021	online	The video shows the impact and results from the Safe4RAIL-2 project which has examined ways of utilizing wireless (5G), interoperable, on-board communication as well as universal integration of the Train Control and Monitoring System. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>	<a href="https://vimeo.com/555669548">https://vimeo.com/555669548</a>	International
2	Conference/ Workshop Organisation	IKL	S4R-2/ CTA-2 Joint Final Conference	30/06/2021	online	The event gave an insight into Next-Generation TCMS (NG-TCMS) solutions, established a proactive and instructive dialogue with both projects partners and attendees participated in the demonstrators. The Final Conference welcomed participants from railway undertakings, technology suppliers and manufacturers, safety experts, and authorities as	<a href="https://vimeo.com/573861177/bff0b4367a">https://vimeo.com/573861177/bff0b4367a</a>	International

<sup>4</sup> (A) Scientific community & higher education, (B) Industry, (C) Civil Society, (D) Policy makers, (E) Customers/Investors, (F) Media

#	Type of activities	Main lead	Title	Date	Place	Type and goal of the activity and target audience <sup>4</sup>	Link to dissemination material (photos, blog entries...)	Countries addressed
						well as academic participants in the domain of train control and communication systems. <i>Target audience: (A), (B), (C), (D), (E), (F)</i>		
3	Attendance to other events	IKL	Wireless Technologies for Train Backbone and Intra-Train Communications	14/07/2021	online	Invited Talk at "Webinar on Enabling Technologies and Requirements for Future Rail Transport Vertical" organized by NetWorld Europe	<a href="https://www.networldeurope.eu/webinar-on-enabling-technologies-and-requirements-for-future-rail-transport-vertical-14-july-2021/">https://www.networldeurope.eu/webinar-on-enabling-technologies-and-requirements-for-future-rail-transport-vertical-14-july-2021/</a>	International
4	Journal Article	EUR	Emulation architecture for V2X (proxy)	31/07/2021	online	Elsevier Journal on Vehicular Communication Dissemination of D2.3 <i>Target audience: (A) (B)</i>	<a href="https://www.journals.elsevier.com/vehicular-communications">https://www.journals.elsevier.com/vehicular-communications</a>	International

### 4.3.1 Highlights of phase 3

During phase three, which is the result orientation, we heavily promoted our project results by using various means and channels which are highlighted below. We also used the results for commercial purposes (exploitation and standardisation). For more information about exploitation and standardisation, please refer to D4.4 “Final report on Exploitation & Standardisation activities”.

#### 4.3.1.1 Final dissemination video



Together with the CONNECTA-2 project, we created a final dissemination video. This video shows the impact and results from our Safe4RAIL-2 project, which has examined ways of utilizing wireless (5G), interoperable, on-board communication as well as universal integration of the Train Control and Monitoring System (TCMS). In collaboration with its complementary action project CONNECTA-2, Safe4RAIL-2 has developed railway demonstrators where next-generation architectures and components for TCMS will be integrated. To eliminate costly field testing, Safe4RAIL-2 has performed testing in a simulated environment. The video shows that the results from Safe4RAIL-2 will define new train standards and pave the way for deterministic communications as well as secure and interoperable interconnections while increasing efficiency and safety of the TCMS.

The video was published on 31<sup>st</sup> May and is available here: <https://vimeo.com/555669548>

#### 4.3.1.2 S4R-2/ CTA-2 Joint Final Conference

The Final Conference of Safe4RAIL-2 and Connecta-2 offered a great opportunity to receive an insight into Next Generation Train Control Monitoring System (NG-TCMS) solutions, to establish a proactive and instructive dialogue with both projects partners and to participate in the demonstrations. The second edition of Safe4RAIL and CONNECTA initiatives continued the specification activities started in previous projects, covering the implementation of key technologies for NG-TCMS, such as Drive-by-Data, Functional Distribution Framework, and Wireless TCMS to achieve TRL-5. Technologies were also deployed in relevant urban and regional laboratory scenarios. During the successful event project partners presented an overview on the NG-TCMS solutions developed by both projects and also demonstrations that showed key technologies test

cases. The Final Conference welcomed participants from railway undertakings, technology suppliers and manufacturers, safety experts, and authorities as well as academic participants in the domain of train control and communication systems and counted 117 attendees from all over Europe and Asia.

#### 4.3.1.3 Planned activities after the project end

Even after the project end the Safe4RAIL2 partners are committed to further disseminate the project. Here are some concrete plans:

- Journal Article “**Performance evaluation of WLTB in challenging environments**” (planned for September 2021 in Frontier Future Transportation)
- Conference/Workshop Article “**Applicability of 5G on WLCN**” (planned for November 2021 at Nets4Trains)
- Conference/Workshop Article “**Role of wireless communications in future TCMS: Case study of Wireless Train Backbone**” (planned for 2022 at WRCC 2022)
- Journal Article “**Wireless Communication Technologies for Future Railway Systems**” (planned for 2021/2022 in Frontier Future Transportation)



## Chapter 5 Conclusion

Dissemination and communication are besides the technical and R&D work key areas of activity for the members of the consortium and for the success of the whole project.

Within Safe4RAIL-2 and its second project period, a large effort was devoted to dissemination and communication activities. Two tasks are devoted to dissemination of the project and its results. The target audiences, comprising civil society, policy makers, industry and research community, were addressed by a range of different communication channels. In particular, the project website, social media and related communications received considerable attention.

The project was disseminated through a large number of various activities, using different channels. Safe4RAIL-2 was disseminated by means of press releases and newspaper articles, and related dissemination activities. The project was presented in various events including presentations, conferences, exhibitions as well as workshops and training activities by consortium members. Due to Covid-19 most of the events took place virtually. Our project website attracted a lot of interest during the project lifetime, being visited by almost 6,000 unique visitors in the second period, which generated more than 15,000 page views.

By means of two podcast series, several videos – including the final dissemination video – newsletters, as well as paper presentations, the project attracted interest and increased the awareness of stakeholders and the civil society. Social media was helpful for dissemination as well. By means of Twitter, our tweets generated more than 30,000 impressions. The final conference of Safe4RAIL-2 and Connecta-2 offered participants a great opportunity to receive an insight into NG-TCMS solutions, to establish a proactive and instructive dialogue with both projects partners and to participate in the demonstrations. It was a great success, attracting 117 participants, and a good opportunity to disseminate the final project results.

## List of Abbreviations

Table 4: List of Abbreviations

Abbreviation	Translation
C2C	Consist-2-consist
EU	European Union
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
KPI	Key Performance Indicator
R&I	Research and Innovation
TCMS	Train Control and Monitoring System
WLTB	Wireless Train Backbone