



Capacity for Rail

***Towards an affordable, resilient, innovative
and high-capacity European Railway
System for 2030/2050***

Dissemination and training
activities (Final)

Submission date: 27/11/2017

Deliverable 61.4

*This project has received funding
from the European Union's
Seventh Framework Programme
for research, technological
development and demonstration
under grant agreement n° 605650*



Collaborative project SCP3-GA-2013-60560
Increased Capacity 4 Rail networks through
enhanced infrastructure and optimised operations
FP7-SST-2013-RTD-1

Lead contractor for this deliverable:

- UNEW

Project coordinator

- UIC

Executive Summary

CAPACITY4RAIL's work-package 61 (WP61) covers the dissemination, training and exploitation activities of the project. WP6 has been coordinated by UIC. Twelve of the partners have contributed specifically to the work-package activities and all forty-six partners have disseminated and implemented the results in their future activities as infrastructure managers, contractors, consultants or universities/institutes. All dissemination material has been approved in advance by the partners to ensure that the promised commitments have been fulfilled and that confidential information has been protected. However, CAPACITY4RAIL is a very open EU-project and nearly all scientific deliverables are public. Dissemination has been a carefully planned process. Workshops and dedicated presentations have been presented to standardisation bodies and have been targeted through groups existing under the UIC umbrella, such as TEG (Track Expert Group) and PoSE (Panel of Structural Experts).

After the project end in September 2017, the research in C4R project will be used by all partners to develop further the knowledge gained during the four-year duration of the project. It is and will of course be used in several Shift2Rail projects in which UIC and numerous partners of the project are deeply involved. UIC will also go on working on the developed issues in UIC groups. The high implication of universities in C4R project guarantees continuation of the research in all the fields developed by C4R.

As stated in the DoW, the project has organised three general public project workshops (at kick-off, mid-term and at the end of the project in September 2017). Additionally, several specific workshops were organized throughout the whole life of the project. These events have been organised with the main purpose of getting potential stakeholders directly involved in the work but also for gathering feedback about the activities performed by the Consortium.

Plans for the public website, leaflets, flyers and posters are also following what was described in the DoW. As a conclusion, WP61 objectives have been fulfilled and the technical and scientific results of CAPACITY4RAIL have been widely disseminated to have a real impact in the railway world, and it will continue afterwards.

Table of contents

Executive Summary	3
Table of contents.....	4
List of figures	5
List of tables	6
Abbreviations and acronyms.....	7
1. Introduction.....	8
2. Targeted audience.....	9
3. Dissemination material	10
3.1 Website and private area	10
3.2 Project flyer	10
3.3 C4R newsletters.....	11
4. Capacity4Rail workshops.....	13
5. Capacity4Rail technical workshops	16
Table 1: List of main project Workshops (M1-48).....	18
6. Participation in events and conferences	19
Table 2: List of scientific (peer reviewed) publications (M1-48)	20
Table 3: List of papers in proceedings of a conference/workshop (M1-48)	23
Table 4: List of dissemination activities (M1-48).....	27
9. Conclusion	39

List of figures

Figure 1 – Homepage of the Capacity4Rail website (www.capacity4rail.eu)	10
Figure 2 – Capacity4Rail flyer	11
Figure 3 – Page 1 Capacity4Rail Newsletters	12
Figure 4 – Capacity4Rail workshop banner	13
Figure 5 – Picture of the round table	14
Figure 6 – Capacity4Rail demonstrator carried out in the CEDEX track box.....	15

List of tables

Table 1: List of main project Workshops.....	18
Table 2: List of scientific (peer reviewed) publications.....	20
Table 3: List of papers in proceedings of a conference/workshop	23
Table 4: List of dissemination activities.....	276

Abbreviations and acronyms

Abbreviation / Accronym	Description
AIRO	Italian Association of Operations Research
C4R	Capacity4Rail
CEDEX	institution attached to the Ministry of Public Work of the Spanish Government
EFRTC	European Federation of Trackworks Contractor
F&L	The European Freight and Logistics Leaders
FFE	Spanish Railways Foundation
GSV	Austrian Association for Transport and Infrastructure
IRFC	The International Rail Freight Conference
PoSE	Panel of Structural Experts
TEG	Track Expert Group
TRA 2014 and 2016	Transport Research Arena 2014 and 2016
TRB 2017	Transportation Research Board 2017
UIC	International Union of Railways
WCRR 2016	World Congress of Rail Research 2016

1. Introduction

The objectives of the WP 61 were the preparation of the CAPACITY4RAIL dissemination platform and the undertaking of dissemination activities.

Main features of this task were the following:

- Preparing dissemination material,
- Representing the Capacity4Rail project in scientific events,
- Organising C4R technical workshops, and
- Organising C4R dissemination workshops (kick-off, intermediate and final).

During the first stage of the project, communication has been mainly aiming at raising awareness about CAPACITY4RAIL by presenting the objectives, processes and expected results of the project, as well as building the necessary networks to increase the efficiency of the project and its connexions to its environment.

At a final stage, dissemination activities have been focusing on promoting the results achieved and making the appropriate target audience aware and sensitive to their potential benefits, in order to facilitate implementation of the project results.

All along the project duration, ongoing communication activities have been necessary to keep dissemination active to continuously present, discuss and get feedback on the progress of the project.

With a global system view, CAPACITY4RAIL covers a wide range of technical areas, and a large variety of dissemination targets.

2. Targeted audience

Because of its fairly broad representativeness, both in terms of railway stakeholders and in terms of geographical scope, thanks to the worldwide membership of UIC, the international outreach of universities and the wide presence of major industrial partners and European associations, the consortium in itself is the primary base for dissemination. It covers countries of West to East and North to South of Europe and brings together a balanced combination of Infrastructure Managers, freight operators, international professional associations, large industrial groups as well as SMEs, with a strong support of universities.

Given her expertise in leading European rail projects and her position in rail transport, UIC has been a good asset to gain time in identifying and addressing the right people and to disseminate results efficiently.

3. Dissemination material

3.1 WEBSITE AND PRIVATE AREA

The Capacity4Rail website (<http://www.capacity4rail.eu/>) was established soon after the project started. It has been updated regularly during the project and is a complete site where it is easy to reach information and documents related to the C4R project.

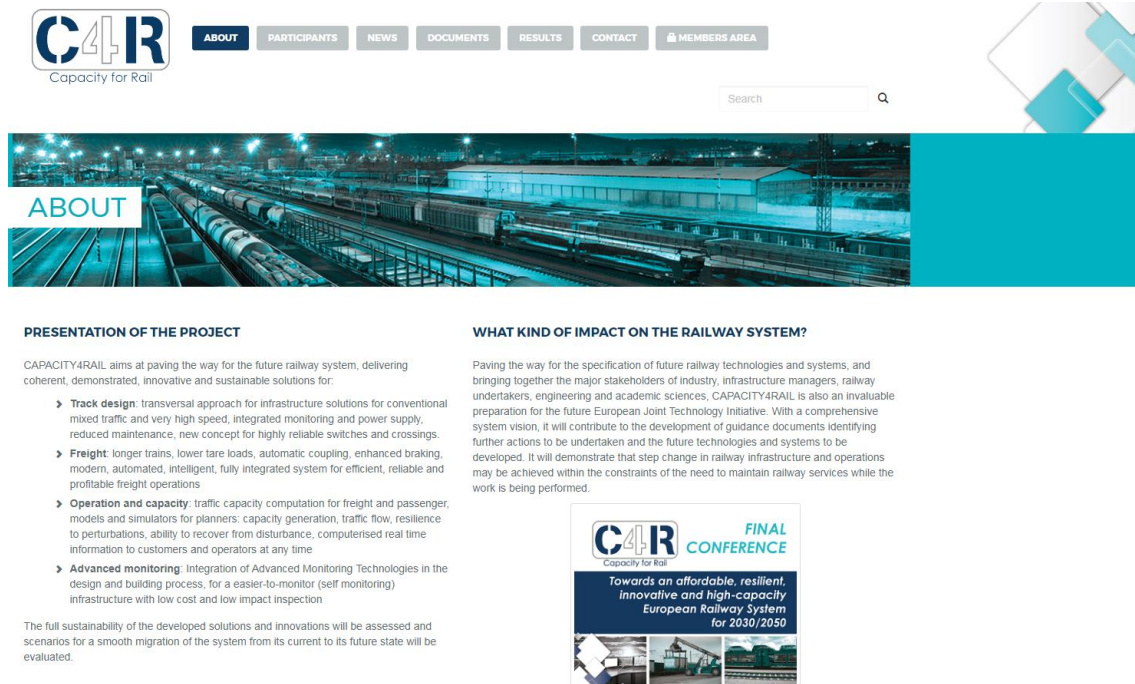


FIGURE 1 – HOMEPAGE OF THE CAPACITY4RAIL WEBSITE (WWW.CAPACITY4RAIL.EU)

3.2 PROJECT FLYER

The project flyer was prepared and produced for TRA 2014 (14-17 April 2014) and has been largely distributed in all events to reach as many people as possible in the targeted audiences.

It contains a synthetic description of the project background, objectives and expected outcomes as well as facts and figures and the list of partners at the kick off date.



FIGURE 2 – CAPACITY4RAIL FLYER

3.3 C4R NEWSLETTERS

Purpose

The main purpose of the newsletters is to provide up-to-date information to interested parties about the activities performed within the scope of the project. Along with presenting current achievements and the sections “News/Events” of the website, the newsletters announced events organised by Capacity4Rail, and other external events of relevance.

They were also made to communicate on the results of the project on a large scale during major rail events and to all UIC, UNIFE, EFRTC members...

Structure

The format chosen for the newsletters was composed of four sections, in a six pages format (four pages folder + one two-sided sheet). They all contained the following information:

- Foreword written by the project coordinator
- News from the consortium
- Short news, updates and forthcoming events
- Different sections dedicated to the detailed description of activities and results achieved; written by the partner responsible for the work done (i.e. the relevant WP Leader or Task Leader)
- Special focus on a particular Work package

The content of each newsletter has been agreed upon and commonly accepted by the Consortium and further selected on the basis of the most relevant results achieved during the considered period.



FIGURE 3 – PAGE 1 CAPACITY4RAIL NEWSLETTERS

Distribution

The newsletters have been distributed, in electronic format, to the members of the consortium. They were also made available on the webpage as downloads.

Also, paper copies of each issue have been prepared and distributed during the Capacity4Rail workshops, UIC groups and meetings and other relevant public events.

4. Capacity4Rail workshops

UIC has organised three C4R dissemination workshops throughout the whole life of the project. These workshops were all open to project members and external visitors.

To disseminate the project on a large scale, invitations have been sent widely to all kind of targeted audience. UIC Databases have been used to inform as many people from the rail sector as possible.

The C4R website has been regularly updated with the announcements, the detailed programmes of these events and also with all the presentations commented during these workshops to largely disseminate the results and inform potential targets of the work done so far.

First dissemination workshop

10-11 June 2015 – UIC PARIS

The first dissemination workshop was held on 10-11 June 2015 in the headquarters of UIC to promote the project's objectives and disseminate available results.

Second dissemination workshop

3-4 November 2016 - Brussels

The second dissemination workshop was held jointly with the NeTiRail-INFRA project and has been a good opportunity to point out the progress of the C4R project.



FIGURE 4 – CAPACITY4RAIL WORKSHOP BANNER

Final conference

21-22 September 2017 - Madrid

The Final Conference of Capacity4Rail was held on 21st September 2017 hosted by the Spanish Railways Foundation (Fundación de los Ferrocarriles Españoles, FFE) in Madrid.

Attended by more than 100 participants from 17 countries across the European railway community and beyond, the Capacity4Rail Final Conference was the opportunity to share the results of the four-year project to offer an affordable increase of capacity, availability and performance to the railway system by developing a holistic view on the railway as a system of interacting technical components driven by customer demand.

At the end of the first day, a round table was organised to reflect on the results achieved in C4R, to discuss their potential implementation and to discuss also what the railway community, can do -based on the knowledge and outcomes achieved in the project- in future collaborative research activities, for example, within the framework of S2R.



FIGURE 5 – PICTURE OF THE ROUND TABLE

In conclusion, the Capacity4Rail Final Conference has been able to demonstrate the innovations, prototypes, results achieved and scenarios of viability, configuring in this approach not only a separated sub-system view of future prospects, but a complete frame on the whole railway system, able to be used as a reality by all possible stakeholders, including IM's, RU's, industry, academia... and mostly directed to optimise it and facilitate their advantages to the railway customers and users.

The conference was followed on the next day by a technical visit to CEDEX (Centro de Estudios y Experimentación de Obras Públicas, institution attached to the Ministry of Public Work of the Spanish Government) facilities in Madrid, focused on structure monitoring activities, the Rail Interoperability Lab (RIL), the geotechnical laboratory and in particular on activities of "Track and Infrastructure Testing and Assessment".



FIGURE 6 – CAPACITY4RAIL DEMONSTRATOR CARRIED OUT IN THE CEDEX TRACK BOX

5. Capacity4Rail technical workshops

Several workshops open to project members and external visitors have been organised for the C4R project. They have contributed in disseminating results regularly on a large scale.

Task 6.1.2: Freight dissemination workshops

10-11 September 2015 – UIC - Paris

The first freight dissemination workshop was held in Paris on 10-11 September 2015. It aimed at promoting the project's objectives and disseminating available results. The audience was composed of the partners of the WP22 and WP23 and of shippers, wagon manufacturers, railway undertakings, forwarders, combined transport operators and equipment providers.

There have been intense discussion and debate on WP2.2 and 2.3. State of the art, together with innovations, discoveries and findings. Two technical sessions were undertaken, Novel vehicle and connectivity session and Terminals Session followed by a structured discussion with stakeholders in the audience wherein they could provide feedback on the technical suggestions which had been presented.

It has given an interesting input to go further in the research.

26 June 2017 – Brussels

The second freight dissemination workshop was held in Brussels on 26 June 2017. It focused on innovations in wagon design, in connectivity, in terminal design and operations to match the changing needs of the logistics market in order to allow rail freight transport to find its right place in the supply chains.

It was shown how both, railway undertakings and infrastructure managers have ahead challenges to increase capacity, through the use of longer, heavier and more demanding loading gauge freight trains. Multi-body wagons, use of draw bars, and the installation of pneumatic brakes with End of Train (EoT) devices and electropneumatic brakes can also help to achieve that task, increasing the volume transported per train unit, and thus, decreasing overall costs of transport.

Automation was pointed out as another game-changing factor, both in wagons/trains (automatic couplers and operations), and in its appliance for terminals. Several real case studies were presented, including rail-rail, with the help of identification of a set of Key Performance Indicators (KPI's) by terminal typology, were able to represent the operational modes of the terminal and the assessment of future terminal performances including the effects of introduction of innovative technologies and operational measures.

The innovations were suitable to increase the global efficiency of logistic chains. This work was finally transferred to the catalogue of Rail Freight Systems of the Future, to study and design new concepts for network-based services for fully integrated rail freight systems to meet requirements of the

European Commission for scenarios 2030/2050. The newly designed systems will be market-driven ensuring seamless low-cost operations for service providers and customers alike.

Task 6.1.3: Training platform infrastructure

15 March 2017 – Paris

The training platform infrastructure has been held in Paris on 15 March 2017. It has been a good opportunity to focus on planning & management of railway operations and has showcased the key outputs from the EC FP7 funded project Capacity4Rail.

The main challenges for Infrastructure Managers with the shift to the 4th industrial revolution with a system from the 19th century have been highlighted. The need of traceability, quality, environmental consciousness and safety when managing the railway infrastructures was pointed out, respecting the internal and European regulations and, while at the same time, maintaining a sound financial balance.

The need for the involvement of the Universities and Research Institutes in a long-term partnership with the railway community to continue working in innovative research activities and implement the results of the EU Research efforts in the railway system was also emphasized.

The current challenging situation in the EU-railway research, the technologies competitiveness coming from outside Europe and the difficulties to implement in the sector the innovations coming out from EU projects was largely commented. The PPP (public-private partnership) can be a good instrument to introduce the innovations in railway infrastructures.

Task 6.1.4: Training platform Digital Operations

27-28 April, 2017 – Olomouc

The training platform Digital Operations was organised in Olomouc on April 25-26, 2017. It has been an excellent opportunity to hear about the latest developments in advanced tools for railway planning, simulation of railway operations, railway traffic management and innovative data architectures to enable the digitalisation of railway systems.

There has been interesting discussions on how to uptake these innovations and future directions for European Railway research. The outcome was that we should get a shared European procedure to favour the development of innovations at a higher TRL, since the way railway technology is progressing is definitely not going to meet on time the EC strategy set up with the White paper on Transportation.

TABLE 1: LIST OF MAIN PROJECT WORKSHOPS (M1-48)

Date	Venue	Title	Meeting objective	Participants
10-11/06/2015	Paris	1 st Dissemination workshop	Presentation of the achievements, work progress and issues encountered	European Rail experts, Industry and Academia
10-11/09/2015	UIC, Paris	First Freight dissemination workshop	Promote the project's objectives and disseminate available results	Project members and external visitors
03-04/11/2016	Brussels	Second dissemination workshop	Progress of work and next steps	European Rail experts, Industry and Academia
15/03/2017	Paris	Training Platform Infrastructure	Innovations for Increasing Track Performance & Capacity	European Rail experts, Industry and Academia
27-28/04/2017	Olomouc, czech Republic	Training Digital Operations workshop	Digital operations for enhanced performance and capacity in European railways	European Rail experts, Industry and Academia
26/06/2017	Brussels	Second Freight dissemination workshop	New Concepts for Efficient Freight systems	European Rail experts, Industry and Academia
21-22/09/2017	Madrid	Final conference	Project achievements and perspectives	European Rail experts, Industry and Academia

6. Participation in events and conferences

Capacity4Rail was presented in numerous conferences and events during the whole life of the project (see table 2, 3 and 4).

Among them, we can list the following events:

1. TRA 2014 in Paris and TRA 2016 in Warsaw;
2. Innotrans 2014 and Innotrans 2016 in Berlin;
3. RailNewcastle conference 2015 in Great Britain;
4. Third International Conference on Railway Technology: Research, Development and Maintenance in 2016;
5. WCRR 2016 in Milano;
6. TRB 2017 conference in Washington DC;
7. Several UIC international conferences, such as UIC World Congress on High Speed Rail 2015 in Tokyo,...
8. and all UIC Track Expert Group Meetings and Train Track Interaction and Rails System Forum meetings, etc.

During the first two years of the project, important events such as TRA and Innotrans 2014 gave many C4R partners the opportunity to announce the launching of the project, present its scope, objectives and progress. The C4R flyer was largely distributed and several presentations were made to present the different aspects of the project. These big events gave a good opportunity to gain visibility and better identify the targeted audience. They showed a large interest for the ambition of the project.

At the time of the editions 2016, C4R was at mid-term. These events enabled Capacity4Rail partners to present not only the project objectives but also the ongoing initiatives and innovations. Scientific papers were produced regularly.

TABLE 2: LIST OF SCIENTIFIC (PEER REVIEWED) PUBLICATIONS (M1-48)

No	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Year of publication	Relevant pages	Permanent identifiers (if available) - DOI	Open access provided?	Internet link to the publication
1	Looking towards 2030-2050 for an affordable, automated, adaptable, resilient and high-capacity railway	UIC	European Railway Review	Vol. 3, 2014	European Railway Review	Kent, United Kingdom	2014	20		Yes	https://www.globalrailwayreview.com/digital/err-issue-3-2014/index.html
2	Assessment Methods for Innovative Operational Measures and Technologies for Intermodal Freight Terminals	Stefano Ricci, Luigi Capodilupo, Barbara Mueller, Juergen Karl, Jens Schneberger	Transportation Research Procedia	Vol. 14, 01/01/2016	Elsevier	Netherlands	2016	2840-2849	10.1016/j.trpro.2016.05.351	Yes	http://www.sciencedirect.com/science/article/pii/S235214651630357X
3	How to make modal shift from road to rail possible in the European transport market, as aspired to in the EU Transport White Paper 2011	Dewan Md Zahurul Islam, Stefano Ricci, Bo-Lennart Nelldal	European Transport Research Review	Vol. 8/Issue 3, 01/09/2016	Springer Verlag	Germany	2016	janv-14	10.1007/s12544-016-0204-x	Yes	https://link.springer.com/article/10.1007/s12544-016-0204-x

No	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Year of publication	Relevant pages	Permanent identifiers (if available) - DOI	Open access provided?	Internet link to the publication
4	Datenformate, Datenmodelle und Datenkonzepte für den Eisenbahnbetrieb	Suzanne Wunsch-TUD	Der Eisenbahningenieur	Issue 11 (November 2016)	Eurail Press	Hamburg, Germany	2016	pp 8-14		yes	http://www.eurailpress.de/archiv/fachartikel/archiv/ergebnisliste/artikelansicht.html?tx_it24archiv_list%5Barticle%5D=12880&tx_it24archiv_list%5Baction%5D=show&tx_it24archiv_list%5Bcontroller%5D=Article&cHash=65a4f8203aca6811728b903153e3ce1a
5	Train Delay Prediction Systems: A Big Data Analytics Perspective	Luca Oneto Emanuele Fumeo, Giorgio Clerico, Renzo Canepa, Federico Papa, Carlo Dambra, Nadia Mazzino, Davide Anguita	Big Data & Society	Vol 9, 01/05/2017	SAGE Publications		2017	in Press	10.1016/j.bdr.2017.05.002	Yes	http://www.sciencedirect.com/science/article/pii/S2214579617300060?via%3Dihub
6	A microscopic evaluation of railway timetable robustness and critical points	Emma Solinen, Gemma Nicholson, Anders Peterson	Journal of Rail Transport Planning and Management	in Press	Elsevier BV	Netherlands	2017	in Press	10.1016/j.jrtpm.2017.08.005	Yes	https://www.researchgate.net/publication/319439500_A_microscopic_evaluation_of_railway_timetable_robustness_and_critical_points

No	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Year of publication	Relevant pages	Permanent identifiers (if available) - DOI	Open access provided?	Internet link to the publication
7	Dynamic Delay Predictions for Large-Scale Railway Networks: Deep and Shallow Extreme Learning Machines Tuned via Thresholdout	Luca Oneto, Emanuele Fumeo, Giorgio Clerico, Renzo Canepa, Federico Papa, Carlo Dambra, Nadia Mazzino, Davide Anguita	IEEE Transactions on Systems, Man and Cybernetics	Vol. 47/Issue 10, 01/10/2017	IEEE	United States	2017	2754-2767	10.1109/TSMC.2017.2693209	Yes	http://ieeexplore.ieee.org/document/7917288/
8	Big Data Analytics for Train Delay Prediction	Emanuele Fumeo, Luca Oneto, Giorgio Clerico, Renzo Canepa, Federico Papa, Carlo Dambra, Nadia Mazzino, Davida Anguita	Innovative Applications of Big Data in the Railway Industry	Bookchapter on "Innovative Applications of Big Data in the Railway Industry"	IGI Global		2017		10.4018/978-1-5225-3176-0.ch014	yes	https://doi.org/10.1016/j.bdr.2017.05.002
9	Delay Prediction System for Large-Scale Railway Networks Based on Big Data Analytics	Luca Oneto, Emanuele Fumeo, Giorgio Clerico, Renzo Canepa, Federico Papa, Carlo Dambra, Nadia Mazzino, Davide Anguita	Advances in Big Data	Vol. 529	Springer International Publishing, Cham	Cham	2017	139	10.1007/978-3-319-47898-2_15	Yes	https://link.springer.com/chapter/10.1007/978-3-319-47898-2_15

TABLE 3: LIST OF PAPERS IN PROCEEDINGS OF A CONFERENCE/WORKSHOP (M1-48)

No	Title	Main author	Number, date or frequency	Publisher	Start Date of Conference/ Workshop	End Date of Conference/ Workshop	Permanent identifiers (if available) - DOI	Publisher	Open access provided?	Internet link to the publication
1	C4R: The wagon load activity technology innovations: new freight wagons and trains. How the various innovative concepts developed around wagon technology in the C4R "Freight" subproject are expected to improve the rail freight transport competitiveness, reliability and attractiveness.	New Opera, Trafikverket	30/06/2014	Transport Research Arena 2014,	14/04/2014	17/04/2014		TRA 2014, Paris, France	Yes	http://www.capacity4rail.eu/IMG/pdf/tra2014_-_capacity4rail_project_the_wagon_load_activity_technology_innovations_-_new_freight_wagons_and_trains.pdf
2	State-of-the-art of European rail freight system and future needs	NewRail	14/07/2015	RailNewcastle conference 2015	14/07/2015	17/07/2015		NewRail, Newcastle, Great Britain	No	
3	Designing future turnouts - where research capabilities meet industry needs	Bezin, Yann / University of Huddersfield	26/04/2016	Rail Technology Conferences 2016	26/01/2016	28/01/2016		University of Huddersfield Repository, Huddersfield, UK	Yes	http://eprints.hud.ac.uk/id/eprint/28132/

No	Title	Main author	Number, date or frequency	Publisher	Start Date of Conference/ Workshop	End Date of Conference/ Workshop	Permanent identifiers (if available) - DOI	Publisher	Open access provided?	Internet link to the publication
4	Discrete Events Simulation of Intermodal Terminals Operation: Modelling Techniques and Achievable Results	S. Ricci, L. Capodilupo, E. Tombesi	05/04/2016	Proceedings of the Third International Conference on Railway Technology: Research, Development and Maintenance	01/04/2016	08/04/2016	10.4203/cc.p.110.288	Civil-Comp Press, Stirlingshire, UK	No	http://www.ctresources.info/ccp/paper.html?id=9179
5	Understanding Track Loading Requirements to achieve Better Track Design	Y. Bezin, S. Neves, I. Grossoni, A. Kaushal	26/04/2016	Proceedings of the Third International Conference on Railway Technology: Research, Development and Maintenance	01/04/2016	08/04/2016	10.4203/cc.p.110.230	Civil-Comp Press, Stirlingshire, UK	Yes	http://www.ctresources.info/ccp/paper.html?id=9121

No	Title	Main author	Number, date or frequency	Publisher	Start Date of Conference/ Workshop	End Date of Conference/ Workshop	Permanent identifiers (if available) - DOI	Publisher	Open access provided?	Internet link to the publication
6	Optimization of support stiffness at a railway crossing panel	Grossoni, Ilaria, Bezin, Yann and Neves, Sérgio	19/04/2016	Railways2016, Cagliari (Italy).	05/04/2016	08/04/2016		University of Huddersfield Repository, Huddersfield, UK	Yes	http://eprints.hud.ac.uk/id/eprint/28063/
7	Analytical methods and simulation models to assess innovative operational measures and technologies for rail port terminals: the case of Valencia Principe Felipe terminal	Stefano Ricci	07/06/2016	Libro de Actas CIT2016. XII Congreso de Ingeniería del Transporte	01/06/2016	09/06/2016	10.4995/CIT2016.2016.3398	Universitat Politècnica València, Valencia, Spain	Yes	http://ocs.editorial.upv.es/index.php/CIT/CIT2016/paper/viewFile/3398/1645
8	Railway turnout damage prediction and design implications	Yann Bezin, University of Huddersfield	24/10/2017	International Conference on Train/Track Interaction & Wheel/Rail Interface, Hall of Railway Sciences (CARS), Beijing, China.	20/06/2016	22/06/2016		University of Huddersfield Repository, Huddersfield, UK	Yes	http://eprints.hud.ac.uk/id/eprint/28063/

No	Title	Main author	Number, date or frequency	Publisher	Start Date of Conference/ Workshop	End Date of Conference/ Workshop	Permanent identifiers (if available) - DOI	Publisher	Open access provided?	Internet link to the publication
9	Advanced Analytics for Train Delay Prediction Systems by Including Exogenous Weather Data	Luca Oneto, Emanuele Fumeo, Giorgio Clerico, Renzo Canepa, Federico Papa, Carlo Dambra, Nadia Mazzino, Davide Anguita	01/10/2016	2016 IEEE International Conference on Data Science and Advanced Analytics (DSAA)	01/10/2016	19/10/2016	10.1109/DSAA.2016.57		Yes	http://ieeexplore.ieee.org/document/7796932/

TABLE 4: LIST OF DISSEMINATION ACTIVITIES (M1-48)

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
1	Press releases	UNION INTERNATIONALE DES CHEMINS DE FER	Grant Agreement signed for Capacity4Rail	17/09/2013	Paris	Scientific community (higher education, Research) - Industry - Medias	5000	Worldwide
2	Web sites/Applications	UNION INTERNATIONALE DES CHEMINS DE FER	Set up of C4R website and private platform	01/10/2013	Paris, France	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias		Worldwide
3	Oral presentation to a wider public	EUROPEAN FEDERATION OF RAILWAYS TRACKWORKS CONTRACTORS	General Information on C4R project to EFRTC members in the framework of DG activity report	11/10/2013	EFRTC General Meeting in London	Industry	65	UK, France, Italy, Germany, Spain, Netherlands, Switzerland, Luxembourg, Belgium, Sweden
4	Press releases	UNION INTERNATIONALE DES CHEMINS DE FER	Announcement of Capacity4Rail project launch	22/10/2013	Paris, France	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	5000	Worldwide
5	Flyers	UNION INTERNATIONALE DES CHEMINS DE FER	Issuing of the project flyer	01/04/2014	Paris, France	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias		Worldwide
6	Press releases	UNION INTERNATIONALE DES CHEMINS DE FER	Looking towards 2030-2050 for an affordable, automated, adaptable, resilient and high-capacity railway	08/04/2014	European Railway Review vol.2, 3, 2014	Scientific community (higher education, Research) - Industry - Policy makers		Worldwide

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
7	Posters	NEWOPERA Aisbl	Poster C4R	14/04/2014	Transport Research Arena 2014	Scientific community (higher education, Research), Industry, Civil society, Policy makers, Medias	2900	Worldwide
8	Oral presentation to a scientific event	UNION INTERNATIONALE DES CHEMINS DE FER	Capacity4Rail: towards a resilient, innovative and high capacity European railway system for 2030/2050	15/04/2014	Transport Research Arena 2014, Paris, France	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	2100	Worldwide
9	Oral presentation to a wider public	UNION INTERNATIONALE DES CHEMINS DE FER	SIAFI	16/04/2014	Paris, France	Scientific community (higher education, Research)	25	Worldwide
10	Flyers	UNION DES INDUSTRIES FERROVIAIRES EUROPEENNES - UNIFE	Distribution of C4R flyers	23/04/2014	Innotrans 2014, Berlin, Germany	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	150000	Worldwide
11	Oral presentation to a scientific event	OLTIS GROUP AS	Ways to optimize the utilisation of the railway infrastructure"? Ways to meet the requirements imposed on the railway transport of future towards the year 2030 and 2050: the FP7 project C4R	22/05/2014	Colloquium ZelAktuel 2014	Scientific community (higher education, Research) - Industry	70	Czech Republic, Slovak Republic
12	Oral presentation to a scientific event	UNIVERSITY OF NEWCASTLE UPON TYNE	Scope, objectives and progress (in general and in particular of WP21) of the C4R project	01/10/2014	European Transport Conference 2014, Frankfurt, Germany	Scientific community (higher education, Research) - Industry - Policy makers - Medias	70	European

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
13	Oral presentation to a wider public	TECHNISCHE UNIVERSITAET DRESDEN	Update from the EU projects ON-TIME and Capacity4Rail with focus on railML	08/10/2014	RailML conference in Paris, France	Scientific community (higher education, Research) - Industry	70	Austria, Belgium, Czech, France, Germany, Great Britain, Japan, Netherlands, Norway, Spain, Switzerl
14	Flyers	EUROPEAN FEDERATION OF RAILWAYS TRACKWORKS CONTRACTORS	Overall Information on the progress of C4R project to EFRTC members in the framework of Secretary General's activity report,	10/10/2014	EFRTC General Meeting in Luxembourg	Industry	80	UK, France, Italy, Germany, Spain, Netherlands, Switzerland, Luxembourg, Belgium, Sweden
15	Oral presentation to a scientific event	EUROPEAN FEDERATION OF RAILWAYS TRACKWORKS CONTRACTORS	Information on the outcome of C4R and presentation of SP1 proposals of innovative non-conventional slab and frame tracks	04/02/2015	EFRTC Policy and Research Committee meeting, London,	Industry - Policy makers	80	UK, France, Italy, Germany, Spain, Netherlands, Switzerland, Luxembourg, Belgium, Sweden
16	Oral presentation to a scientific event	INGENIERIA Y ECONOMIA DEL TRANSPORTE S.A.	Project FP7 Capacity4Rail (C4R): Vision for the European Rail of 2030 and 2050	19/03/2015	International Rail Freight Conference 2015, Prague, Czech Republic	Scientific community (higher education, Research) - Industry - Policy makers - Medias	300	Worldwide
17	Press releases	FUNDACION DE LOS FERROCARRILES ESPANOLES	Promotion of participation at the CAPACITY4RAIL Dissemination Workshop	24/04/2015	Spanish Railways Technological Platform weekly bulletin	Scientific community (higher education, Research) - Industry	400	Spain
18	Oral presentation to a scientific event	UNION INTERNATIONALE DES CHEMINS DE FER	Capacity4Rail objectives, structure and achievements to date	28/04/2015	UIC Track & Structure sector experts, Paris, France	Scientific community (higher education, Research) - Industry	50	Worldwide

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
19	Organisation of Workshops	UNION INTERNATIONALE DES CHEMINS DE FER	Productivity Increase with Heavier & Longer Trains	22/05/2015	Workshop UIC Asia Pacific, Saint Petersburg, Russia	Scientific community (higher education, Research) - Industry	100	Worldwide
20	Organisation of Workshops	UNION INTERNATIONALE DES CHEMINS DE FER	First dissemination workshop	10/06/2015	UIC, Paris	Scientific community (higher education, Research) - Industry	50	Belgium, France, Germany, Italy, Switzerland, Sweden, UK, Spain, Austria, Luxembourg, Czech Republic
21	Organisation of Workshops	UNIVERSITY OF NEWCASTLE UPON TYNE	Key parameters for an intermodal rail-road terminal-Dissemination of the C4R project	30/06/2015	Three multimodal terminals in Antwerp, Belgium	Scientific community (higher education, Research) - Industry	20	Belgium
22	Oral presentation to a scientific event	FUNDACION DE LOS FERROCARRILES ESPANOLAS	Methodology to determine the optimal design speed in a High-Speed Line	07/07/2015	9th UIC World Congress on High Speed Rail 2015, Tokyo, Japan	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	1000	Worldwide
23	Organisation of Conference	UNIVERSITY OF NEWCASTLE UPON TYNE	State-of-the-art of European rail freight system and future needs	14/07/2015	RailNewCastle conference 2015, Newcastle University	Scientific community (higher education, Research) - Industry - Policy makers - Medias	70	Worldwide
24	Organisation of Workshops	NEWOPERA Aisbl	Freight Dissemination workshop	10/09/2015	Brussels, Belgium	Scientific community (higher education, Research) - Industry	40	Belgium, France, Germany, Italy, Switzerland, Sweden, UK
25	Oral presentation to a scientific event	IFFSTAR	RECIFE-MILP for real-time railway traffic optimization: main results and open issues	10/09/2015	Airo 2015 conference in Pisa, Italy	Scientific community (higher education, Research) - Industry - Civil	150	European

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
						society - Policy makers - Medias		
26	Oral presentation to a wider public	CHALMERS TEKNISKA HOEGSKOLA AB	Presentation of C4R	28/09/2015	GOTHENBURG, SWEDEN	Scientific community, Industry	25	Sweden
27	Oral presentation to a wider public	NEWOPERA Aisbl	Perspektive wasserstoff als kraftstoff. Intense discussion on the developments of the rail transport of chemical material, with possible applicability of C4Rail solutions	14/10/2015	Meeting at Vienna chamber of commerce, Austria	Scientific community (higher education, Research) - Industry - Policy makers	70	Austria, Germany
28	Oral presentation to a wider public	NEWOPERA Aisbl	C4Rail project presented and discussed, with applicability of the founded solutions to the Austrian situation	28/10/2015	Meeting at Vienna chamber of commerce with Harald Bollman	Civil society - Policy makers	20	Austria
29	Oral presentation to a wider public	NEWOPERA Aisbl	C4Rail project presented and discussed, with applicability of the founded solutions to the Austrian situation	28/10/2015	Meeting at Vienna chamber of commerce with Harald Bollman	Civil society - Policy makers	20	Austria
30	Oral presentation to a scientific event	TRAFIKVERKET - TRV	Increasing capacity by improving tactical planning and operational Traffic	17/11/2015	KAJT network expert group, Stockholm, Sweden	Scientific community (higher education, Research) - Industry	70	Sweden
31	Oral presentation to a wider public	NEWOPERA Aisbl	C4Rail project presented and discussed, interoperability topics treated and intensely discussed, questions on C4R answered	04/12/2015	EU Rail freight days 2015, Vienna, Austria	Scientific community (higher education, Research) - Industry - Policy makers - Medias	200	European

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
32	Oral presentation to a wider public	NEWOPERA Aisbl	C4Rail project presented and discussed with high level politicians. Applicability of the founded solutions to the Austrian situation (particularly on connectivity and wagon design issues)	20/01/2016	Conference transport infrastructure in Vienna, Austria	Industry - Policy makers	20	Austria
33	Oral presentation to a wider public	NEWOPERA Aisbl	C4Rail project presented and discussed. Information on future developments of logistics in Europe collected, with particular attention to Austrian & German situation.	21/01/2016	Conference logistic life in Vienna, Austria	Scientific community (higher education, Research) - Industry - Policy makers	80	Austria, Germany
34	Oral presentation to a wider public	NEWOPERA Aisbl	C4Rail project presented and discussed. Material regarding the innovations foreseen and developed was distributed. Questions on C4R answered and a lot of information regarding the last mile distribution and safety/ sustainability issues collected.	02/02/2016	Meeting in Vienna, Austria	Scientific community (higher education, Research) - Industry	120	European
35	Oral presentation to a wider public	CHALMERS TEKNISKA HOEGSKOLA AB	Presentation of C4R	08/02/2016	GOTHENBURG, SWEDEN	Scientific community (higher education, Research) - Industry	25	Sweden
36	Oral presentation to a scientific event	NEWOPERA Aisbl	C4Rail project presented and discussed in a dedicated workshop with professors and students of Innsbruck university. Information on future developments of logistics in Europe collected, with particular attention to Austrian situation	22/02/2016	Meeting at university of Innsbruck, Austria	Scientific community (higher education, Research) - Industry - Policy makers	60	Austria
37	Flyers	UNION INTERNATIONALE DES CHEMINS DE FER	Issuing of the 2nd newsletter	04/04/2016	UIC, Paris	Scientific community (higher education, Research) - Industry - Policy makers - Medias		Worldwide

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
38	Oral presentation to a scientific event	NEWOPERA Aisbl	Presentation of the innovative train design studied in C4R	19/04/2016	SMART RAIL 2016, Amsterdam, Netherlands	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	350	Worldwide
39	Oral presentation to a scientific event	NEWOPERA Aisbl	Project objectives, findings, ongoing initiatives and innovations of C4R project	19/04/2016	SMART RAIL 2016, Amsterdam, Netherlands	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	350	Worldwide
40	Oral presentation to a scientific event	NEWOPERA Aisbl	Rail transport subsidized optimally	11/05/2016	Conference at Vienna Hafen	Industry	20	Austria
41	Oral presentation to a scientific event	NEWOPERA Aisbl	Objectives and Innovations in C4Rail project, with particular regards to the topics of connectivity and digitalization in rail transport	17/05/2016	GSV Forum Vienna, Austria	Scientific community (higher education, Research) - Industry - Policy makers	80	European
42	Posters	UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA	Analytical and simulation based methods for assessing measures and technologies capable to improve operation in railway freight terminals	30/05/2016	WCRR 2016, Milano, Italy	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	1000	Worldwide
43	Oral presentation to a wider public	UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA	Analytical and simulation based methods for assessing measures and technologies capable to improve operation in railway freight terminals	30/05/2016	WCRR 2016, Milano, Italy	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	1000	Worldwide
44	Oral presentation to a wider public	ISTITUTO SUPERIOR TECNICO	Optimization algorithm applied to VHS track design towards enhanced track dynamic performance and reduced settlement	30/05/2016	WCRR 2016, Milano, Italy	Scientific community (higher education, Research) - Industry - Civil	1000	Worldwide

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
						society - Policy makers - Medias		
45	Oral presentation to a wider public	NEWOPERA Aisbl	Innovations, objectives and goals in C4Rail project presented and discussed	30/05/2016	WCRR 2016, Milano, Italy	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	1000	Worldwide
46	Oral presentation to a wider public	NEWOPERA Aisbl	Innovations foreseen in C4R project, with possible applicability of C4Rail solutions in real operating conditions.	31/05/2016	Meeting at University, Vienna, Austria	Scientific community (higher education, Research)	20	Austria
47	Oral presentation to a wider public	NEWOPERA Aisbl	Presentation of objectives and innovations in C4Rail project	02/06/2016	Freight and Logistics Leaders? Forum	Scientific community (higher education, Research) - Industry	120	European
48	Oral presentation to a wider public	UNIVERSITA DEGLI STUDI DI ROMA LA SAPIENZA	Assessment of operational performances of rail freight terminals	16/06/2016	RailNewcastle Talks 2016, Newcastle, UK	Scientific community (higher education, Research) - Industry	20	Great Britain
49	Flyers	UNIVERSITY OF NEWCASTLE UPON TYNE	Promotion and dissemination of C4R project through the distribution of project flyers and project newsletters at the beginning of numerous sessions	01/09/2016	Royal Geographical Society Conference 2016, London, UK,	Scientific community (higher education, Research) - Industry	80	European
50	Flyers	UNION INTERNATIONALE DES CHEMINS DE FER	Issuing of the 3rd newsletter	05/09/2016	UIC, Paris	Scientific community (higher education, Research) - Industry - Civil society - Policy makers		Worldwide
51	Oral presentation to a wider public	NETWORK RAIL INFRASTRUCTURE LIMITED	Latest developments of the different work packages of SP3 and illustration of the prototypes delivered	21/09/2016	INNOTRANS 2016, Berlin, Germany	Scientific community (higher education, Research) - Industry - Civil	150000	Worldwide

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
						society - Policy makers - Medias		
52	Organisation of Workshops	UNION INTERNATIONALE DES CHEMINS DE FER	Second dissemination workshop	03/11/2016	Brussels, Belgium	Scientific community (higher education, Research) - Industry	50	European
53	Organisation of Workshops	NEWOPERA Aisbl	Second dissemination workshop	03/11/2016	Brussels, Belgium	Scientific community (higher education, Research) - Industry	50	European
54	Web sites/Applications	TECHNISCHE UNIVERSITAET DRESDEN	Datenformate, Datenmodelle und Datenkonzepte für den Eisenbahnbetrieb	08/11/2016	Der Eisenbahningenieur	Scientific community (higher education, Research) - Industry		German speaking countries
55	Oral presentation to a wider public	CHALMERS TEKNISKA HOEGSKOLA AB	Presentation of C4R	23/11/2016	Alvesta, Sweden	Industry	10	Sweden
56	Posters	TECHNISCHE UNIVERSITAET DRESDEN	A SysML formalization of the disruption management process in European railway	01/01/2017	Transportation Research Board 96th Annual Meeting - TRB	Scientific community (higher education, Research) - Industry		Worldwide
57	Oral presentation to a wider public	CHALMERS TEKNISKA HOEGSKOLA AB	How to use D11.4 when upgrading the Iron Ore line to 32.5 tonnes	16/02/2017	Lulea and by video	Industry	6	Sweden, Norway
58	Oral presentation to a wider public	TRAFIKVERKET - TRV	Presentation of C4R results	27/02/2017	KAJT network expert group, Borlänge, Sweden	Industry	25	Sweden
59	Organisation of Workshops	UNION INTERNATIONALE DES CHEMINS DE FER	Training Platform infrastructure: Increasing Track Performance & Capacity	15/03/2017	Paris, France	Scientific community (higher education, Research) - Industry	50	European

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
60	Organisation of Workshops	EUROPEAN FEDERATION OF RAILWAYS TRACKWORKS CONTRACTORS	Training Platform infrastructure: Increasing Track Performance & Capacity	15/03/2017	Paris, France	Scientific community (higher education, Research) - Industry	50	European
61	Organisation of Workshops	UNIVERSITY OF NEWCASTLE UPON TYNE	Training Platform infrastructure: Increasing Track Performance & Capacity	15/03/2017	Paris, France	Scientific community (higher education, Research) - Industry	50	European
62	Organisation of Workshops	OLTIS GROUP AS	Training Digital operations workshop	27/04/2017	Olomouc, Czech Republic	Scientific community (higher education, Research) - Industry	30	France, Germany, Italy, Sweden, UK, Czech Republic, Ireland, Netherlands
63	Oral presentation to a wider public	CHALMERS TEKNISKA HOEGSKOLA AB	How C4R results about upgrading can reduce costs for long distance freight traffic in Sweden	19/06/2017	Swedish Ministry of Enterprise, Energy and Communications	Policy makers	12	Sweden
64	Organisation of Workshops	ARTTIC	Second freight dissemination workshop	26/06/2017	Brussels, Belgium	Scientific community (higher education, Research) - Industry	50	Belgium, France, Turkey, Italy, Austria Germany, Sweden Spain, UK, Netherlands, Poland
65	Oral presentation to a scientific event	NEWOPERA Aisbl	Dissemination of C4R	06/07/2017	Graz, Austria	Scientific community (higher education, Research) - Industry	100	European
66	Press releases	INGENIERIA Y ECONOMIA DEL TRANSPORTE S.A.	Presentation of the C4R project	06/09/2017	internal INECO bulletin, Spain	Industry	2500	Spain
67	Organisation of Workshops	CHALMERS TEKNISKA HOEGSKOLA AB	Presentation of C4R results	06/09/2017	Trafikverket, Stockholm and by video, Sweden	Industry	25	Sweden

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
68	Organisation of Conference	UNION INTERNATIONALE DES CHEMINS DE FER	Final conference	21/09/2017	FFE, Madrid, Spain	Scientific community (higher education, Research) - Industry - Policy makers	100	European
69	Press releases	FUNDACION DE LOS FERROCARRILES ESPANOLAS	C4R final conference	22/09/2017	Vía Libre Magazine + online	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	7000	Spain
70	Press releases	FUNDACION DE LOS FERROCARRILES ESPANOLAS	C4R final conference	22/09/2017	Spanish Railways Technological Platform weekly bulletin + FFE's website	Scientific community (higher education, Research) - Industry	500	Spain
71	Press releases	UNION INTERNATIONALE DES CHEMINS DE FER	C4R final conference	26/09/2017	E-NEWS	Scientific community (higher education, Research) - Industry - Civil society - Policy makers - Medias	5000	Worldwide
72	Oral presentation to a scientific event	UNION INTERNATIONALE DES CHEMINS DE FER	Presentation of C4R aim, structure and results	25/10/2017	2nd International Conf. on Train-Track Interaction and Wheel-Rail interface organised by CARS i	Scientific community (higher education, Research) - Industry - Policy makers - Medias	150	Worldwide
73	Articles published in the popular press	INSTITUTO SUPERIOR TECNICO	Railway track design optimization for enhanced performance at very high speeds: experimental measurements and computational estimations	16/11/2017	Taylor & Francis (under review process)	Scientific community (higher education, Research)		Worldwide

No	Type of activities	Main leader	Title	Date	Place	Type of audience	Size of audience	Countries addressed
74	Articles published in the popular press	THE UNIVERSITY OF HUDDERSFIELD	Optimisation of support stiffness at railway crossings	16/11/2017	Vehicle System Dynamics NVSD-2017-0248 (accepted for publication)	Scientific community (higher education, Research) - Industry - Policy makers - Medias		Worldwide
75	Posters	CENTRO DE ESTUDIOS DE MATERIALES Y CONTROL DE OBRA SA	Presentation of C4R	21/11/2017	Madrid, Spain	Scientific community (higher education, Research) - Industry	80	Spain
76	Oral presentation to a wider public	CHALMERS TEKNISKA HOEGSKOLA AB	Upgrading of freight railways to meet operational and market demands	16/04/2018	TRA 2018	Scientific community (higher education, Research) - Industry - Policy makers - Medias	2100	Worldwide

9. Conclusion

This Dissemination Report provides the complete overview of the dissemination activities implemented in the scope of the Capacity4Rail project, in accordance with the provision of the Dissemination Plan issued at the beginning of the project.

The effectiveness of dissemination activities has been ensured by defining appropriate target groups, allowing the most relevant audience to be reached with the most appropriate dissemination tools. The main aim has been to keep them constantly updated about project findings and most relevant results. The dissemination tools developed during project lifetime included:

- a public website set-up at the beginning of the project and regularly updated to disseminate the most recent news and provide information concerning the project results and activities;
- project newsletters to provide information and results on the project to be distributed during public events;
- regular publication of press releases made in the partners bulletins or E-newsletters;
- specific dissemination tools used and distributed at external conferences, i.e. flyer, banners, newsletters, ...

Furthermore, members of Capacity4Rail target groups have been invited to attend the various workshops as a mean to provide with more detailed information concerning Capacity4Rail activities and results. Their participation to workshops has also been regarded as an important measure for gathering their opinion and suggestions ensuring that the final project outcomes reflect the real needs of major stakeholders in the railway sector.

In addition to the target groups identified, a wider audience has been reached through the participation of Capacity4rail representatives to international conferences, as well as the publication of papers based on project results on specialised publications and dedicated internet portals.

Finally, the latest Capacity4rail results have been presented by all partners during the Final Conference, held in Madrid on 21-22 September 2017.