

## HADRIAN:

# Holistic Approach for Driver Role Integration and Automation Allocation for European Mobility Needs



## Communication, Dissemination and Exploitation Plan

<b>Document Type</b>	Deliverable
<b>Document Number</b>	D8.6
<b>Primary Author(s)</b>	Michael Nöst   IESTA
<b>Document Version / Status</b>	2.0   Final
<b>Distribution Level</b>	PU (public)

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<b>Project Acronym</b>	HADRIAN
<b>Project Title</b>	Holistic Approach for Driver Role Integration and Automation Allocation for European Mobility Needs
<b>Project Website</b>	<a href="http://www.hadrianproject.eu">www.hadrianproject.eu</a>
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<b>JU Grant Agreement Number</b>	875597
<b>Date of latest version of Annex I against which the assessment will be made</b>	2019-10-16



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## DOCUMENT HISTORY

Revision	Date	Author / Organization	Description
0.1	2020-02-20	Michael Nöst / IESTA	Draft created
0.2	2020-03-06	Manuela Klocker / VIF	Update
0.3	2020-03-20 – 2020-05-11	Manuela Klocker / VIF	Update
1.0	2020-05-28	Manuela Klocker / VIF	Final version
2.0	2020-07-24	Manuela Klocker / VIF	Inserted Disclaimer excluding Agency responsibility

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# 1 EXECUTIVE SUMMARY

The deliverable D8.6 Communication, Dissemination and Exploitation Plan contains the communication, dissemination and exploitation plan for the project HADRIAN. It gives an overview of the strategic goals, the target groups and specific measures already defined in the proposal of the project as well as an outlook for future activities.

This document comprises the following topics: Identification of objectives & audiences; description of relevant stakeholders & identification of multipliers; description of dissemination methods and processes; and the respective responsibilities for dissemination, communication and exploitation activities.

The deliverable also provides a summary report on dissemination activities accomplished and planned within the first project months.

**The dissemination and exploitation plan is a living document. Goals, strategies and tools outlined below may be subject to change over the duration of the project and we remain open to alternative ways of publishing and disseminating our results.**

Keywords: Dissemination, communication, exploitation, target audience, dissemination material, exploitation measures

## Disclaimer excluding Agency responsibility

This document reflects only the author's view, the Innovation and Networks Executive Agency (INEA) is not responsible for any use that may be made of the information it contains.

## 2 OBJECTIVES

Each Work Package and task within HADRIAN have their related dissemination activities, but WP8 will deal with managing and coordinating these activities project-wide. Goal is to **increase the visibility and support the impact generation of HADRIAN** and its scientific results through necessary dissemination communication and exploitation activities planned and undertaken.

The overall aim of WP8 Project Communication, dissemination and exploitation is to ensure the visibility and awareness of the project beyond the scope of the consortium. This will be achieved by ensuring proper dissemination of the project objectives and its results as well as by exploitation and sustainability of the project results during and after the project. The main objectives of these external activities are to communicate/ disseminate the knowledge – while intellectual property is protected – to the international transportation community and beyond.

Consortium partners will further interact with international partnerships and counterparts and create positive public awareness through the website and through campaigns directed at social media.

To ensure the achievement of this aim, the necessary dissemination, communication and exploitation activities are planned and undertaken. In addition, a continuous evaluation of impact is to be conducted.

### 3 INTRODUCTION

It is clear that there is enormous potential for autonomous driving, the f-HMI and the transferability and scalability to L- and M1, M2-category vehicles. To reach the full potential of these markets, each stakeholder of the supply/value chain needs to be satisfied, i.e. supply a high number of parts, components and vehicles and earn a reasonable margin. Therefore, HADRIAN targets platform technologies that can be utilised in a broad spectrum of commercial vehicles. This should enable reaching high production volumes of parts, components & systems and vehicles and corresponding economies of scale advantages. Moreover, where possible, HADRIAN strives to utilise (adapt and/or integrate) available low-cost components and systems from the high-volume automotive market to speed-up the usage of HMI and driving assistant functionalities. This approach enables OEMs to use lower priced automotive components and systems and suppliers to benefit through opening up a new and growing market for their existing and/or slightly adapted products.

The dissemination and communication plan are built upon the project phases and the impact targets, shown below:

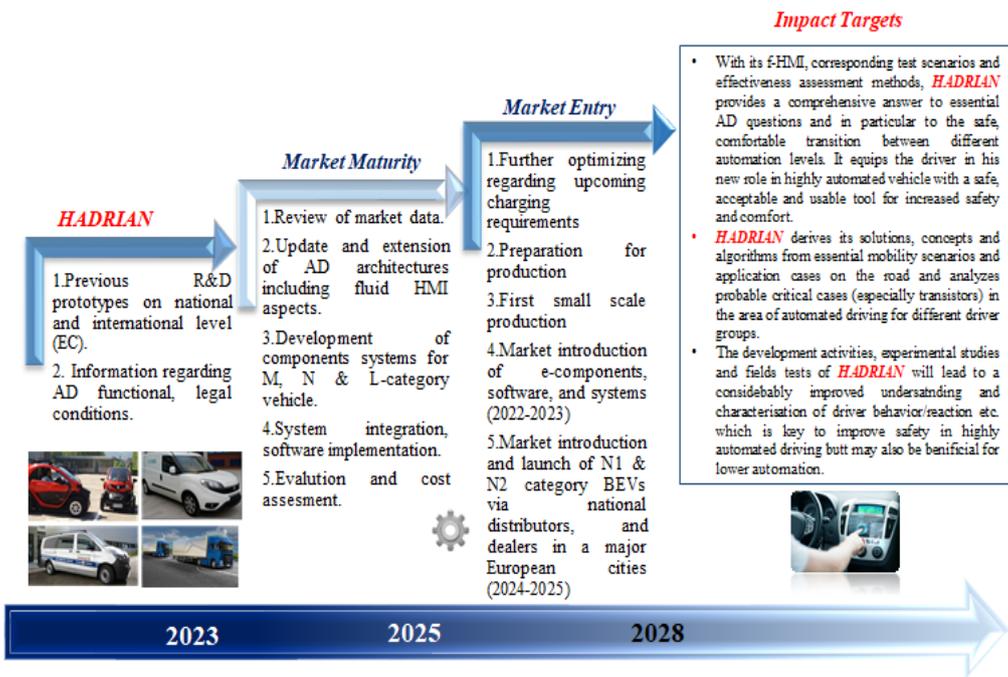


Figure 1 Dissemination and exploitation plan of results

## 4 DESCRIPTION OF WORK

### 4.1 Dissemination

The main aim of the dissemination activities in HADRIAN is to raise awareness, to inform and educate the community, to engage to get input and feedback from others, as well as to promote and sell the outputs and results of the HADRIAN project.

Main target audiences include

- professional users in the automotive industry (OEMs, Tier1 / Tier2 etc. suppliers)
- academic communities (focusing on modelling, verification, testing, system engineering, HW and SW-development)
- transport organization
- municipalities and entities responsible for legal restrictions.

HADRIAN will make use of important stakeholders, who are able to take the role of opinion makers/leaders as well as a catalyst, and who may serve as “multipliers” regarding the efficient and effective dissemination of information on activities, results and deliverables.

The more than 10 tangible demonstrators for fluid interactions as well as the three field-tests with real passenger vehicles / light urban vehicles and freight vehicles / trucks will be a main means of dissemination and communication for HADRIAN.

HADRIAN will use several dissemination channels to promote the project as well as the results of the project. These channels include but are not limited to:

- Public HADRIAN website
- External (public) and internal HADRIAN newsletters
- HADRIAN presentation material (posters, presentations, etc.)
- Press releases – online, print media and radio
- Participation in conferences, workshops and exhibitions / in national and international events
- (Co-) Organization of conferences, dedicated workshops and exhibitions (and other events)
- H2020 Programme meetings (exchange with other projects)
- Provision of public deliverables and HADRIAN presentation material
- Social media presence (LinkedIn)
- Demonstrations using specific sets of living labs (e.g. ALP.Lab in Austria)
- Publications (Scientific journals, conference proceedings)
- Education and training activities (lectures, courses or training seminars)
- Academic dissemination and exploitation (supporting PhD or Master theses work, giving lectures from results)

Public deliverables will be published on the project website in order to be accessible to anyone interested according to the rules of European regulations. The following table summarizes the dissemination activities of HADRIAN:

Area	Specific dissemination measure	Potential users / target audiences	Potential use
Research	Disseminate scientific results in appropriate journals:	Other researchers and scientists	Progress on research fields of driver and driver state modelling, sensor data fusion, HMI

	<ul style="list-style-type: none"> <li>• Publication of the developed Fit2Drive model, sensor data fusion and decision logic</li> <li>• Publication of the developed f-HMI solutions and field test results as well as safety assessment results</li> </ul> <p><i>Quantification:</i> at least 5 journal paper(s) per project year planned</p>		development, simulation, and testing, not only but in particular in EU
	<p>Disseminate scientific results in appropriate conferences, e.g.:</p> <p>The Aachen Colloquium Automobile and Engine Technology, Germany; SIMVEC 2020ff, Germany; ERTS2 2020ff, 29-31th ITS World Congress, 17-19th ITS European Congress ff; FAS Workshop; TRA Conference 2020ff, Annual Meeting of the Human Factors and Ergonomics Society, Annual Meeting of the European Chapter of the Ergonomics Society, Automotive UI Conference, Driving Simulation Conference, CHI Automotive, World Usability Congress, Applied Human Factors and Ergonomics Conference</p> <p><i>Quantification:</i> 4 conference papers planned</p>	<p>Other researchers and scientists</p> <p>(approx. 800 person of scientific and industrial parties)</p>	Progress on research fields of driver and driver state modelling, sensor data fusion, HMI development, simulation, and testing, not only but in particular in EU
	<p>Involve or establish networks to disseminate public project findings, and exchange knowledge and experiences with other research entities</p>	<p>Research &amp; commercial</p>	Progress on research fields of driver and driver state modelling, sensor data fusion, HMI development, simulation, and testing, not only but in particular in EU; available for commercial and academic entities
	<p>Organize workshops</p> <p><i>Quantification:</i> &gt; 6 workshops</p>	<p>Other researchers and scientists</p>	
<p><b>Commercial</b></p>	<p>Prepare information flyers and presenting outputs for industrial and political decision makers.</p>	<p>European and national governments;</p>	<p>Raise public awareness of need for <b>HADRIAN</b> results.</p>

		<p>industrial decision makers; infrastructure providers;</p> <p>customers (e.g. OEMs) and stakeholders;</p> <p>automotive OEMs and suppliers; research &amp; commercial</p>	
	<p>Customer technical meetings for e.g. promotion of <i>f</i>-HMI, design recommendations for <i>f</i>-HMI, showcasing tool demonstrator, the co-simulation and test environment and integrated tools in further vehicle developments</p>	<p>Customers and prospective customers in the field of automotive industry (OEM, Tier1 suppliers, component suppliers) or other domains</p>	<p>Presale and sales promotion for series production.</p>
	<p>Establish a web-forum (on dedicated YouTube channel, Twitter or LinkedIn, customer lectures etc.) for dissemination of <b>HADRIAN</b> outcomes and experiences, and gather feedback from automotive community</p>	<p>Other researchers and scientists, potential customers</p>	<p>For gathering requirements from outside the project consortium;</p> <p>Presale and sales promotion for series production</p>
Skills and educational training	<p><b>HADRIAN</b> results will be used in academic curricula as well as advanced education.</p>	<p>Universities;</p> <p>technical colleges;</p> <p>advanced education;</p>	<p>Improves lecture quality;</p> <p>Updating curricula</p>
	<p>Education and support of Master/PhD theses.</p> <p><i>Quantification:</i> 8 PhD theses; &gt;6 master theses</p>	<p>Students and PHD of universities</p>	<p>Teaching, support of master and PhD theses</p>
After project activities	<p>All partners of <b>HADRIAN</b> will disseminate via brochures, their own homepages, brochures, new research projects, new customer projects and conferences</p>	<p>Customers, research audience, cities, EC, standardization bodies, regulation authorities</p>	<p>Transferring <b>HADRIAN</b> results as base for further developments, studies, new research projects, and base for new regulations</p>

**Table 1 List of specific dissemination measures**

## 4.2 Communication

The communication activities ensure wide visibility and identification of the HADRIAN consortium. Activities are planned as a marketing-driven dissemination campaign to effectively disseminate the project results to target audiences with professionally crafted materials, with the objective to maximise the impact of the project.

**Objectives** of HADRIAN **internal** communication activities:

- Structure the communication flow within the HADRIAN project
- Establish efficient mutual networking and participation
- Actively engage the entire consortium

**Objectives** of HADRIAN **external** communication activities:

- Raise awareness in the stakeholder group on the activities within the HADRIAN project
- Get recognition for the research, technology development and innovation results
- Raise awareness among potential future customers of the products developed in the project

More specifically, the objectives are:

- To communicate/disseminate the knowledge to the international transport community and beyond
- To interact with international partnerships and counterparts
- To create positive public awareness through the website and through campaigns directed at social media.

Communication will be aimed at the following target audiences and groups, especially those that the HADRIAN consortium partners are members of. This will guarantee that the activities and results of the project will be communicated on strategic (S), technical (T) and operative (O) levels during workshops, conferences and WP meetings within the company. These communication activities will be extended beyond the duration of HADRIAN due to the composition of memberships and exploitation activities.

The following list shows memberships of HADRIAN partners, which will be used for communication of project activities, findings and results:

### Automotive:

- **AESAS** (Association of European Suppliers for Automotive Software, [www.aesas.org](http://www.aesas.org)) = S
- **SAE International** (Society of Automotive Engineers, [www.sae.org/](http://www.sae.org/)) = T
- **EARPA** (European Automotive Research Partners Association) = S
- **ERTRAC** (European Road Transport Research Advisory Council)
- **EGVIA** (European Green Vehicle Initiative Association) = S
- **EUCAR** (European Council for Automotive R&D) = O
- **CLEPA** (European Association of Automotive Suppliers) = S

The following **target groups** have been identified for the HADRIAN work:

- **Scientific communities**, especially in the domain of sensor and sensor data fusion, driver state models and HMI design. Needs for communication on main technical / scientific results and integration into expertise groups.
- **Technology users**: companies developing vehicle components for automated driving and especially HMI and safety assistants. Need for communication on technical and industrialized (or close before industrialization) project outcomes to ensure the transferability of results to the market.

- **Technology providers:** Automotive and automotive-related companies and institutions developing tools and methods for automated driving, real-time driver modelling, sensor & sensor data fusion. Needs for communication and synchronization on technologies.
- **R&D project ecosystem:** R&D projects related to the HADRIAN project, e.g., by similar targets, technology or interests. Needs for dedicated technical communication and synchronization on project results.
- **European Commission:** main stakeholder of the project, responsible for set-up of R&D projects in line with project call. Need for communication on project status as well as project impact on the community, legal aspects and on the market.
- **General Public:** public community, interested in project impact on public sector.

The following **communication channels** have been selected to address the different target groups identified:

- **Interactive project website:** Public website containing relevant information on the project and its findings. The project website is designed to direct the different stakeholders to the information respectively entry points to access further detailed information.
- **Press releases & social media:** Public communication on main project outcome having important impact on the society and / or dedicated community.
- **Presentations:** The content varies on the target group selected, applicable for all target groups.
- **Project deliverables (public report):** Providing overview on project findings and their impact as far as in line with the confidentiality inside the project.
- **Project deliverable (prototypical demonstrators):** Prototypical demonstrators of project outcome.
- **Scientific papers:** Detailed public description of selected project outcome – usually for a dedicated community. As defined by the Grant Agreement, the consortium will strive at least for “green access” for the publications generated by the project members. Where appropriate, “gold access” will be aimed for. The authoring organization will be taking into account the budget reserved and possible organizational rules in place and decide on the preferred model.

The more than **10 tangible prototypical demonstrators for fluid interactions as well as the three field-tests with real passenger vehicles / light urban vehicles and freight vehicles / trucks will be a main means of dissemination and communication for HADRIAN.**

Table 2 provides a mapping of the target groups to the communication channels envisaged in the project providing a main overview within and beyond. As the website is relevant for all target groups, it is not explicitly mentioned in this table. The level of technical detail provided via the communication channel is typically increasing from press release to the scientific publication.

	Press release & social media	Presentation	Project deliverable (public report)	Project deliverables (prototypes, demonstrators)	Publication
<b>Scientific Community</b>		Providing overview of project and results to enter detailed technical dialogue	Providing detailed aspect of a project outcome, not covered by scientific publication		Detailed public description of selected project outcome
<b>Technology User</b>	Raising awareness on the project to enter dialogue	Highlight the impact and end user benefit generated by project findings	Highlight the impact and end user benefit generated by the project findings	Highlight the impact and end user benefit generated by the project findings	
<b>Technology Provider</b>	Raising awareness on the project to enter dialogue	Show the market potential for solutions using or adopting the approach	Show the market potential for solutions using or adopting the <b>HADRIAN</b> approach	Show the market potential for solutions using or adopting the <b>HADRIAN</b> approach	
<b>R&amp;D project ecosystem</b>	Raising awareness on the project to enter dialogue	Support synchronisation of activities and exchange know-how	Support synchronisation of activities and exchange know-how, avoid duplication of efforts	Initiate dialogues regarding automated driving functions, sensor data fusion, Fit2Drive model and f-HMI	Detailed public description of selected project outcome
<b>European Commission &amp; national authorities</b>	Providing public communication on main project outcome(s) and their impact	Increase visibility of project	Increase visibility of project and get recommendations and guidelines for AD	Illustration of concepts applied to user stories and user groups (elderly people, cultural differences and IT know how)	Recommendations and guidelines

	Press release & social media	Presentation	Project deliverable (public report)	Project deliverables (prototypes, demonstrators)	Publication
<b>General Public</b>	Providing public communication on main project outcome(s) and their impact	Increase visibility of project		Show the progress and usability of AD	
<b>European Associations (ERTRAC, ERTICO, ...)</b>	Providing public communication on main project outcome(s) and their impact	Increase visibility of project			Recommendations and guidelines

**Table 2 Mapping of target groups versus communication channels**

## 4.3 Dissemination and Communication Methods & Processes

### 4.3.1 SharePoint: project-wide repository

SharePoint is the main repository and communication platform within HADRIAN project.

The repository is mainly managed within WP7 (Project Management). However, WP8 supports dissemination and exploitation for all partners with the collections/pages listed in Table 3.

Content	Reasoning	Reference
Collection of dissemination activities (planned and done)	List and reference	[3]
Collection of project-related publications of partners	List and reference	[4]
Collection of project-related patents of partners	Collect and make available for further use	[5]
Collection of exploitable foreground	Collect and make available results for further exploitation	[6]

**Table 3 Support for dissemination activities**

### 4.3.2 Dissemination methods

#### 4.3.2.1 Supporting Material

To support both dissemination and communication activities, a project website [10] has been developed right at the start of the project.

The project website is technically state of the art and ensures that a general description of the project including strategy and goals is well communicated to the three target groups (industry, academia and general public).

In the following screenshots you find the landing page with the menu in the header and the news section.

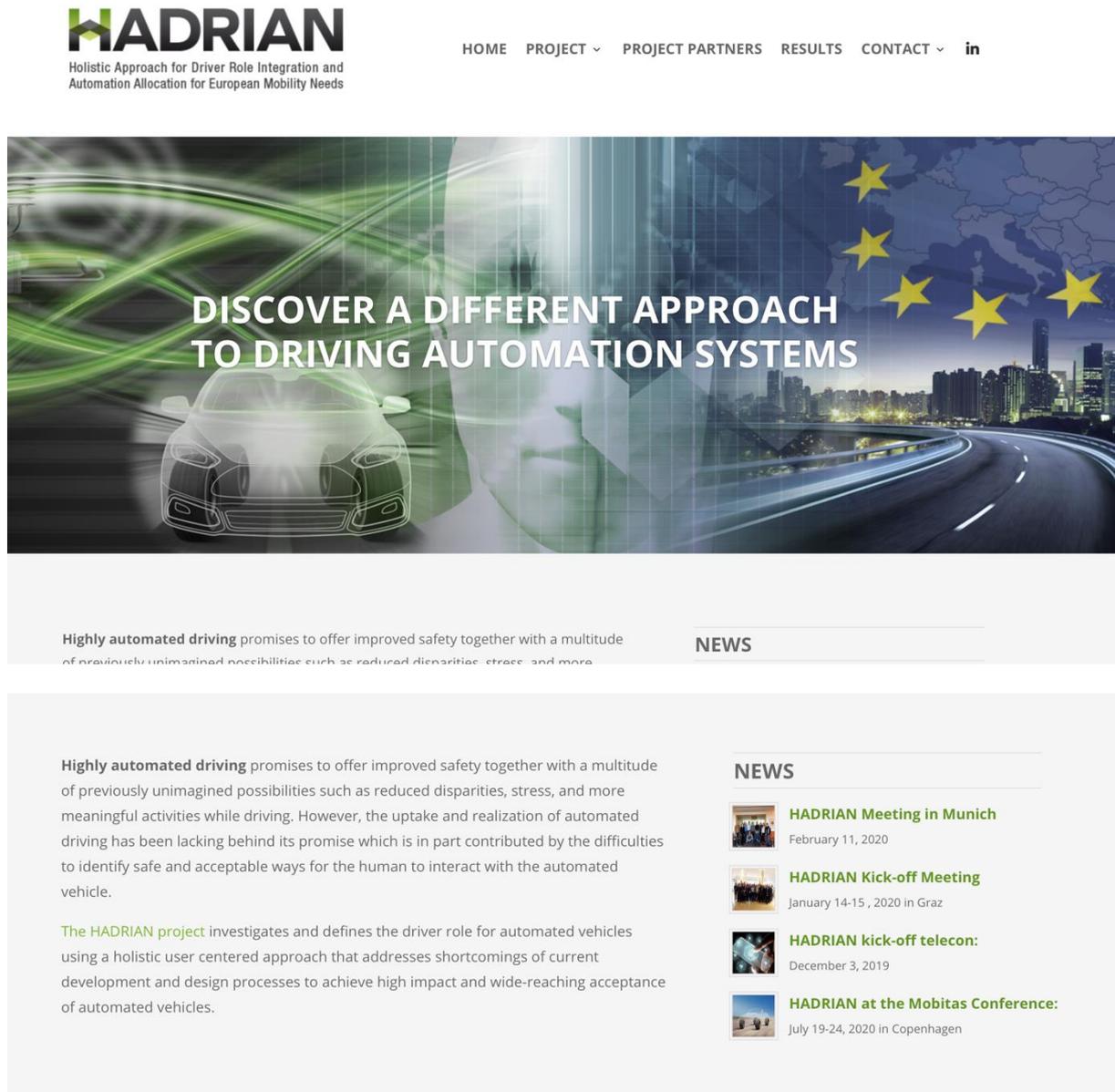


Figure 2 HADRIAN landing page

As a next step, posters as flexible print-outs for all partners, as well as designs for illustrating the different use cases will be developed in the project. More details on the website is available in D8.1 [12]

#### 4.3.2.2 HADRIAN cooperate design and dissemination material

The corporate design of HADRIAN was developed at the very beginning of the project for internal communication as well as for external audiences and stakeholders. The goal was to establish and transport a joint image of the project to ensure uniform appearance to the external community on all levels (regional, national, European, international). It aims to give a clear, homogeneous and appealing image to the project in all its communication and disseminations activities. [12]. Figure 3 shows the logo that has been developed.



**Figure 3 HADRIAN logo**

For presentations the HADRIAN **PowerPoint template** was prepared and must be used by all partners to ensure a unique appearance, available at HADRIAN SharePoint. In addition, a **Word template for deliverables** and for **meeting minutes** is available, all to be found at HADRIAN SharePoint [7].

The according document style is defined in the HADRIAN Project Handbook [8]. The handbook also details the “Rules for dissemination and exploitation” in more detail (in chapter 8). They are consistent with the rules defined in the project consortium agreement [9]. The logo of the project is shown in the front of each document. It is used throughout the project and is available for all on SharePoint [11].

A **LinkedIn profile** was established. LinkedIn is a social media platform most often used for business-to-business communication and to create a professional image for both individuals and corporations. Aiming to reach experts and professionals, the project has established a group “HADRIAN H2020 Project”. The project LinkedIn page is already active, see also the link: HADRIAN LinkedIn: <https://www.linkedin.com/groups/13826468/> [13].

### 4.3.3 Approval process for dissemination

The approval process for dissemination activities is described in the HADRIAN Project Handbook [8] (in chapter 8.1 General dissemination).

All partners are invited to perform dissemination activities. For this purpose, WP8 provides general presentations and posters that can be used for ad-hoc presentations of the project.

Three essential elements should be considered:

- All dissemination material needs to include the following acknowledgement: *“HADRIAN has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 875597”*.
- Any dissemination of results (in any form, including electronic) must display the EU emblem. When displayed together with another logo, the EU emblem must have appropriate prominence.
- Continuously report your dissemination activity on SharePoint. This will help us a lot to generate the reports on that topic. Simply go to the “Dissemination” database on SharePoint”: <https://v2c2.sharepoint.com/sites/hadrian-site/Lists/Dissemination%20Activities/AllItems.aspx> and create a new entry. Please describe your dissemination activity as precise as possible.

All dissemination (and publication) activities must be documented at HADRIAN SharePoint, see [3] and [4]. In the HADRIAN Consortium Agreement [9] the specific processes for dealing with publications, press, releases, contributions to standards and reports to the EU are described.

As required by Horizon 2020, all HADRIAN partners will ensure open access to their scientific publications done throughout the project. Those publications will be made available (PDF) via the HADRIAN website based on self-archiving (also called '**green**' **open access**) rules. Support will be offered to HADRIAN partners if needed, to select appropriate publishers and ensure compliance. Public access to research data will be made on a case-by-case basis by partners in each WP. While the open access model for data is encouraged throughout HADRIAN, it cannot be enforced in the whole project and for all partners, as in some cases other obligations (licensing, trade secrets, and external stakeholders) might forbid to publish all available data. If public access can be granted, data will be made accessible via the HADRIAN website.

#### 4.3.4 Responsibilities

IESTA as WP8 lead is responsible for coordinating dissemination activities. Communication with the external world is a shared task of the WP8 Lead (IESTA) and the other WP leader. This includes all external inquiries about the project, contact with related projects, and active communication about the project with the external world (e.g. via press releases, presentations or articles).

Eventually, dissemination is an issue of concern for every partner of HADRIAN and all partners were encouraged to contribute. A preliminary list with dissemination activities so far from all partners can be found in section 4.3.6 and 4.3.7. Within Steering Board (SB) Meetings issues regarding dissemination, communication and exploitation are discussed at each meeting.

##### 4.3.4.1 Identification of dissemination opportunities

Typically, opportunities or events for dissemination (e.g., scientific conferences or journals) are specific to domains and markets, and are therefore identified and tracked by individual partners, or at the WP level.

WP8 will support those activities by distributing such information, whenever possible, within the consortium, e.g. by using SharePoint, reporting in SB meetings, reports at F2F meetings etc.

#### 4.3.5 Dissemination and Communication Reporting

Both dissemination and communication communities will be prioritized, reviewed and evaluated on a regular basis at the Steering board meetings of the consortium. As there are synergies between dissemination and external communication, we will report the activities in one table including:

- Target groups (see above section 4.1 and 4.2)
- Detailed measure
- Description of event (Name, Place, Date of event or Title and Volume of publication)
- Partner level

Concerning partner level, we differentiate between dissemination by one partner (OPD), by multi-partners (MPD) and by the whole consortium (WPD).

#### 4.3.6 Planned / done activities

In addition to the activities mentioned in table 1 in chapter 2, we have planned the first year of the project in more details:

Target Group(s)	Specific measure	Dissemination / Communic. event	Partner Level	Status
all	Launching of Project Website Linking all partners' homepages to project homepage	Launch of Project Website, January 2020	WPD	done
all	Preparing dissemination and communication material	Logo, QR Code, presentation template	OPD	done
all	Social media	LinkedIn launched	OPD	done
all	Presentation for external communication	Presentation prepared	OPD	done
all	HCI International 2020, MOBITAS, 2 <sup>nd</sup> International Conference on HCI in Mobility, Transport and Automotive Systems, 19-24 July, Copenhagen, Denmark	Participation to a Conference; Presentation Publication in conference proceedings / Workshop Supporting PhD or Master theses work	MPD	planned
all	SOCO 2020, 15th International Conference on Soft Computing Models in Industrial and Environmental Applications, 16-18 September 2020, Burgos, Spain	Participation to a Conference Supporting PhD or Master theses work	OPD	planned
all	Go Mobility 2020 Tradeshow - The new mobility Exhibition of southern Europe, 11-12 March 2020, Ficoba, San Sebastian	Exhibition/booth;#Participation to an event other than a conference or a workshop	OPD	done

**Table 4 Planned dissemination and communication activities until May 2020**

### 4.3.7 Planned publications

Titel	Company short	Authors	Title of the Journal/Proceedings/ Books series/Book (for book chapters)	Place, Year	Open access	Peer-reviewed	Status	Dissemination Type	Link
Effects of non-driving related tasks performed during SAE Level 3 automated driving phases on following manual driving behaviour	BASt	Elisabeth Shi Klaus Bengler	The 27th World Congress of International Traffic Medicine Association	Shanghai, China, 2020			Draft	Technical Paper (Conference)	<a href="https://www.traffmedicine.org/news/the-27th-world-congress/">https://www.traffmedicine.org/news/the-27th-world-congress/</a>
Human-Systems Integration for Driving Automation Systems: Holistic Approach for Driver Role Integration and Automation Allocation for European Mobility Needs	VIF	Peter Moertl	Proceedings of the HCI International 2020 Conference	Copenhagen, DK, 2020	YES	YES	Draft	Technical Paper (Conference)	<a href="http://2020.hci.international/MobiTAS">http://2020.hci.international/MobiTAS</a>
Fluid interface concept for automated driving	VIF	Paolo Pretto Peter Mörtl Norah Neuhuber	Proceedings of the HCI International 2020 Conference	Copenhagen, DK, 2020	YES	YES	Draft	Technical Paper (Conference)	<a href="http://2020.hci.international/MobiTAS">http://2020.hci.international/MobiTAS</a>

A fluid-HMI approach for Haptic Steering Shared Control for the HADRIAN Project	TECNALIA	Myriam E. Vaca-Recalde Mauricio Marcano Joseba Sarabia Leonardo Gonzalez Joshue Perez Sergio Diaz	Lecture Notes in Computer Science (LNCS) and Lecture Notes in Artificial Intelligence (LNAI)	Copenhagen, DK, 2020	YES	YES	Final	Technical Paper (Conference)	<a href="http://2020.hci.international/">http://2020.hci.international/</a>
Shared Control Framework and Application for European Research Projects	TECNALIA	Mauricio Marcano Sergio Diaz Myriam Vaca Joshue Perez Eloy Irigoyen	Advances in Intelligent Systems and Computing Series	Burgos, ES, 2020		YES	Final	Technical Paper (Conference)	<a href="http://2020.socconference.eu/">http://2020.socconference.eu/</a>

Table 5 Planned publications until May 2020

## 4.4 Exploitation

HADRIAN aims to serve as a key market enabler for autonomous vehicles. The results of HADRIAN are applicable from passenger vehicle to heavy duty vehicles. Within the first project stage the exploitation plan – on basis of the exploitation plans already provided within this FPP - will be refined. The main exploitable knowledge, products or measures, the timetable for commercial use and the possibilities for IPR protection (together with task 7.6) will be refined by HADRIAN partners on the basis of the performed work.

The HADRIAN consortium sees high potential for exploitation of the results. As presented in the previous section, the market for AD vehicles, components and systems (innovative HMI, real-time driver models and sensor data fusion) is expected to grow very fast in the coming years. Additionally, this technology is expected to be migrated to other transport vehicle segments like busses, and therefore further increase the impact of HADRIAN. With the expertise of the single partners as well as the complementarity of the consortium, the HADRIAN project provides the necessary pre-requisite to improve innovation capacity and strengthen competitiveness and growth of companies.

HADRIAN consortium members are involved in a large number of EU Platforms such as ERTRAC, which involves a wide range of industries and services from vehicle manufacturers and suppliers to infrastructure providers, mobility management, communication technologies, energy companies, and many others. AVL, ASF, IKA and NTUA are direct Members of ERTRAC, many other members of HADRIAN are connected to ERTRAC via further platforms, like EARPA (AVL, CEA, IESTA, VIF, NTUA, TUD, USR...), CLEPA, EPoSS, or ARTEMIS. These platforms offer the possibility to bring in/back achievements of HADRIAN to enable possible high impact (e.g. by contributing the roadmaps; see e.g. [1]) in the above-mentioned fields.

### 4.4.1 Approval process for exploitation

The general approval process for exploitation and dissemination activities is described in the HADRIAN Project Handbook [8], chapter 8 *Rules for dissemination and exploitation*. According to the Grant Agreement [14] each participant must use its own foreground (or ensure that it is used) and disseminate it as swiftly as possible. All partners are invited to perform dissemination and exploitation activities

### 4.4.2 Reporting of exploitation activities

According to the Grant Agreement [14] “...*must each beneficiary — up to four years after the period set out in Article 3 — take measures aiming to ensure ‘exploitation’ of its results (either directly or indirectly, in particular through transfer or licensing; see Article 30) by:*

- (a) *using them in further research activities (outside the action);*
- (b) *developing, creating or marketing a product or process;*
- (c) *creating and providing a service, or*
- (d) *using them in standardisation activities.*

Exploitation activities have to be reported via a database on HADRIAN Sharepoint. Each partner needs to report exploitable foreground [6] and IP protection measures pursued such as patents or trademarks [6]. The lists need to be maintained continuously to show the impact of HADRIAN and

to ensure proper handling of the rules stated in the consortium agreement [9] and feed the lists needed for the project reporting.

Publications as an important part also of exploitation activities have to be reported on HADRIAN Sharepoint [4] as well..

#### 4.4.3 Steering/Responsibilities for exploitation activities

First, it has been clearly agreed among the HADRIAN partners that all project partners have to take care about exploitation by using existing communication channels for individual communication of the HADRIAN project on relevant platforms (i.e. conferences, publications, events, etc.) as well as exploitation on OEM/Tier supplier/scientific/infrastructure provider level.

The project coordinator VIF is responsible for Task 8.2 Exploitation and takes care for preparative exploitation activities, giving support to all partners in the consortium in this respect. Also, activities like presenting the overall project, Major changes in the exploitation strategy needs to be approved by the General Assembly.

The HADRIAN Steering Board (consisting of the WP leaders, project coordinator) keeps track of exploitation activities. To keeping the Steering Board up to date on exploitation is a key topic in the monthly web meetings.

#### 4.4.4 Intellectual property rights management (IPR)

All partners agreed upon main guidelines concerning IPR management and responsible bodies, which subsequently have been detailed in the HADRIAN Consortium Agreement [9].

- Access rights to background and results for implementation, for exploitation purposes and for affiliates;
- Background, and specific limitations and/or conditions for implementation (if any) and for exploitation;
- Results, (joint) ownership and transfer of results;
- Publications, procedures for dissemination of results and research data and open access

#### 4.4.5 Exploitation at partner level

The proposed unique value proposition is clearly mapped to well implemented industry partners and in line with their respective company strategies. HADRIAN is designing f-HMI and corresponding technology innovation technologies fitting both mid- and long-term market evolution in line with European association roadmaps like ERTRAC, EUCAR, and EARPA provides a quantification of the current market presence of the HADRIAN consortium.

Considering the expected fast growth of the automated driving market (on L, M and N-category vehicles), the expected impact of HADRIAN at business level (strengthening industrial competitiveness of companies) is huge. It is important to note that HADRIAN will support strengthening the competitiveness of both major European players (6 companies) as well as European Research Entities (10 partners).

**OEMs:** The commercial vehicle market provides a potential of about 400,000 vehicles per year targeted by FORD Otosan (for heavy duty vehicles on domestic market and export) generating about 11% of the company turnover [2]. So, the overall potential for FORD can clearly be derived by the vehicle production and shows the great market potential for them. It can be estimated that

FORD Otosan will increase the turnover by 6% and FORD Otosan have market access to passenger cars and light duty vehicles all over the world.

**Tier-2 suppliers:** At tier-level, one important pre-requisite for exploitation relies on the capability for innovation – especially with respect to innovation speed and market acceptance. Hence, the market for AD is not consolidated yet, and the capability to position oneself on the correct technology will be a key success factor. The path for exploitation combines the capability to detect and create the correct innovation, to reduce the development and production costs, combined with the ability to cooperate tightly with the main car manufacturers. NVT as Tier-2 supplier will benefit from greater visibility and competitiveness on the market. With several high-tech solutions developed in HADRIAN related primarily to driving simulation and driver state monitoring, NVT expects a higher added value of its products, which not only helps gain new customers, but more importantly, has been identified as a key feature for retaining customers. The enhancement of NVT's portfolio as well as utilization and evaluation of their solution with the support of the respective vehicle manufacturer, will play an important role for exploitation. For NVT as potential Tier 2 supplier for Tier 1 suppliers, an increase of produced and delivered systems is the main driving force for an increased turnover by 5 to 10%.

**Engineering partners:** From the perspective of an engineering partner, the main customers and therefore the main market are the OEM and the Tier 1 or Tier 2 suppliers. Looking at the OEM, the numbers of more than 70 million produced passenger cars give an indication of the market potential for engineering solutions. Since not every passenger car gets an individual f-HMI, but every segment within an OEM, the turnover will be estimated about 100 to 200 million Euros for the next decade starting with the market introduction in 2027. Additionally, for AVL, participation in HADRIAN marks the first step into objective assessment of vehicle-driver interaction in general, and effectiveness as well as user acceptance of human-machine interfaces in particular. AVL-DRIVE ADAS is without competition on the market for target specification for driving attributes and benchmarking of ADAS functions at the moment, but transitions between SAE levels with and without driver involvement have not been covered so far, although they are a significant factor for safe driving. In order to maintain competitiveness in this field, the new relationship between driver and vehicle has to be considered and implemented into the DRIVE ADAS system.

**Infrastructure provider:** ASF will not generate direct revenues of the HADRIAN project results. But introducing the f-HMI and the additional information which can be provided via V2I communication, ASF can improve their C-ITS services for road safety purposes and traffic management. This will lead to a lower number of traffic congestions, a higher traffic flow and to an increase in safety on Austrian highways. Also, the local environmental pollutions in the field of CO<sub>2</sub> and NO<sub>x</sub> can be lowered and will support the Austrian Roadmap for CO<sub>2</sub>-reduction. The ASFINAG motorway network around Graz (A2 between Graz West and Laßnitzhöhe, approx. 20 kilometres) is used as a test area for CCAD activities in the context of the ALP.Lab (Austrian Light Vehicle Proving Region for Automated Driving). In an effort to strengthen the digital infrastructure in that region, 12 ITS-G5 pre-pilot installations based on national ECo-AT specifications have been realized in 2018, used for early Day 1 / Day 2 C-ITS tests in regard to the needs of the aforementioned INFRAMIX, ICT4CART and ALP.Lab projects. With HADRIAN, this test area will be further enhanced in the field of available information from the driver as well as from the vehicle and can help to improve further infrastructure services and can support further vehicle (component) developments in the field of AD.

**Scientific partners (universities and research organizations):** The exploitation of the HADRIAN results from a scientific point of view is more focused on the impact created in the scientific community. This will be therefore focused on scientific dissemination to reviewed journals and conferences (see next section) as well as integration of the knowledge in the courses. Further, tight cooperation with the industry partners has already been identified and planned in order to increase

bi-lateral transfer between industry needs and scientific solutions. Therefore, the research partners IKA, USR, TUD, UGR, NTUA, VIF, PLUS, TEC, CEA and IESTA will (1) develop links further with vehicle industry and provide support in new research areas of sustainable vehicle and mobility solutions, (2) extend the knowledge base on driver state modelling, decision findings, sensor data fusion and simulation methods, (3) strengthen the link between research and teaching by incorporating latest research results in teaching activities in the area of commercial electric vehicles, energy management, regenerative braking, at undergraduate and postgraduate levels, (4) updating the syllabuses and thus directly influencing the teaching, enriching the material of relevant courses (5) protecting new knowledge of commercial interests by patent applications and exploited via IPRs licensing, (6) discussing and disseminating in scientific journals and international conferences, and (7) establishing and strengthening links to industrial partners in the field of security and safety institutions and the transport authorities.

**Other organizations:** BAST acts as a scientific adviser to the German government and to state highway authorities on technical matters and transport policy. It plays a leading role in the formulation of specifications and standards. In HADRIAN, BAST is involved in infrastructure and HMI issues. Insights derived from the HADRIAN project can contribute to the knowledge base drawn on to advise the federal government. BAST's overall objective is to improve road safety as well as economic and operational road efficiency while paying attention to environmentally sound solutions.

Focus of our partner VDI/VDE are the support of standardization activities, as well as strategy and roadmap development for automated driving, mobility and electronics, ICTs and smart systems together with academia, industry and public authorities. Insights derived from HADRIAN will feed into that work and thus be used to advise relevant networks as e.g. ETP EPoSS and national industry cluster as well as federal governments.

Thus, the impact of HADRIAN will not only be on the business side, but also on supporting law, restriction or certification procedures by getting in contact with transport authorities and help paving the way for the introduction of AD and in longer terms to reach the national and European goals in the field of traffic safety and environmental aspects.

#### 4.4.6 Outlook

The first draft exploitation plan (after 6 months of the project) will evolve and become more precise and substantial during the lifespan of the project and will then reflect the exploitation of the generated results. The initial plans delivered in this document will be updated based on technical project progress and resulting new exploitable foreground.

Each partner of HADRIAN project has vital interest to exploit HADRIAN results and achievements on individual level. Thus, the upcoming the intermediate Exploitation report D8.4, available in month 18 will provide a comprehensive description of individual exploitation plans for all HADRIAN partners. It will take into consideration their generally different focus of exploitation addressing different "markets".

Therefore, besides their plans and measures for exploitation, a) industrial research partners describe their relevant markets, market opportunities and competitors, and b) academic / research partners describe their relevant position in the academic environment, research and educational opportunities. All partners clarify the target audience (potential users and stakeholder) of their exploitation activities on partner level.

## 5 RESULTS AND DISCUSSION

With this deliverable a solid basis for dissemination, communication and exploitation activities has been set in the beginning of HADRIAN project. This deliverable gives an overview of activities dedicated to information, engagement, awareness and promotion of the project. With the existing set up of a database and the definition of all the relevant processes for management of the dissemination and exploitation activities, a sound basis for the implementation and further measures has been set already in the beginning of HADRIAN project. The lists and databases used guarantee an optimal transfer of knowledge and information between all the project partners. All the processes also consider the requirements for documentation already in the beginning of the project – a fact that will save time and energy in later phases of the project.

The described strategy as well as the implementation of dissemination and exploitation activities and their exact timing is in its beginning and will be reviewed and updated, see Table 6:

Deliverable Number	Deliverable Title	Lead beneficiary	Dissemination level	Due date (in months)
D8.2	Intermediate Dissemination & Communication Report	IESTA	Confidential	18
D8.4	Intermediate Exploitation Report	VIF	Confidential	18
D8.5	Final Communication & Dissemination Report	IESTA	Confidential	42
D8.6	Final Exploitation Report	VIF	Confidential	42

**Table 6 Continuous updates on dissemination, communication and exploitation reports**

The described activities focusing on HADRIAN results clearly will support both overall EC (European Commission) goals, incl. modularity, reusability, cost reduction etc., as well as overall HADRIAN goals, aiming at comprehensively delivering HADRIAN results to the market.

The next steps will start with actively involving all partners in developing the next steps for the dissemination, communication and exploitation strategy to ensure successful dissemination and exploitation of the project results. As already mentioned, all partners have committed to contributing in dissemination and exploitation activities to achieve HADRIAN objectives. Due to the early stage of the project (6 months) the current version of the dissemination, communication and exploitation plan is not completely elaborated yet, but that will be done in the coming months. It can be expected that most partners will be more prepared to contribute to developing the dissemination,

communication and exploitation strategy and plan towards the end of the project. At this time the concepts and guidelines are more mature.

To encourage all partners to think in more detail and strategic about these topics it will be made to a fixed point at the upcoming face to face meetings. Workshops on dissemination and exploitation where partners can reflect their own input will take place. Questions to be discussed within the consortium will be: What are appropriate dissemination and exploitation activities and how can we scale them up? Main focus will be to discuss and analyse their approaches and to develop more mature and in-depth approaches to all aspects related to dissemination and exploitation. Results from these workshops will be validated and discussed in the monthly web meetings and written down the deliverables quoted in Table 6. This will then be used as a check point to see if the objectives were met. If required, corrective actions will be suggested and discussed in the Steering Board.

One of the lessons learned from previous projects is that it is crucial to open up the discussion on dissemination, communication and exploitation with partners early in the project. It takes time to develop a profound understanding of the full spectrum of activities to be done in this respect and to formulate a take on it. It is therefore important to encourage partners to start thinking about their stance as early as possible.

## 6 CONCLUSIONS

In this document, a basic roadmap was given for activities planned regarding Dissemination, Communication and Exploitation. At the time of writing (month 6), only first, initial steps can be reported as finished:

- Project internal SharePoint
- Project Website
- LinkedIn profile
- Cooperate Identity
- Dissemination and Communication Material prepared
- Regular Meetings / Reports of WP8 integrated in Steering Board Meetings

Planned activities have started and will be maintained throughout the project. As a first evaluation of work, deliverable D8.2 Intermediate Dissemination & Communication Report and D8.4 Intermediate Exploitation Report will report the results after 18 months of project execution. This will be used as a check point (to see if the objectives were met). If required, corrective actions will be suggested and discussed in the core team.

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