

# Project Final Report //

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| Project website address                                                                    | <a href="http://adaptive-ip.eu/">http://adaptive-ip.eu/</a>                                                                                          |

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by the European Union



**AdaptIVe**  
*Automated Driving Applications and  
Technologies for Intelligent Vehicles*

## Document information //

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## Version and history chart //

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|---------|------------|----------------------------------------------|
| 0.1     | 20.06.2017 | First draft                                  |
| 0.2     | 26.06.2017 | Sections 1.5, 2.1, 2.2 added                 |
| 0.3     | 24.07.2017 | Section 1.1 added, publications list updated |
| 0.4     | 28.08.2017 | Sections 1.4.1, 1.4.2 added                  |
| 0.5     | 05.09.2017 | Section 3 updated                            |
| 0.6     | 18.09.2017 | Section 3 updated                            |
| 1.0     | 12.10.2017 | Final check                                  |

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# 1 Final publishable summary report

## 1.1 Executive summary

During 42 months ending in June 2017, 28 partners from all over Europe collaborated in the large-scale project AdaptIVe to advance the performance of automated driving systems for cars and trucks. Taking automation to higher levels, the results of AdaptIVe support the goals of making driving safer and more comfortable, and of reducing congestion and fuel consumption.

The key result from the project is the development of several automated functions implemented into eight demonstrator vehicles - seven passenger cars and one truck. In parallel, the project investigated other important domains, as synthetically described in the following.

1. In the area of legal aspects, partners conducted an analysis on several legal topics like “civil liability”, “regulatory law”, “data protection” and the “rules of approval”. As a result, obstacles in the path towards the implementation of automated driving were identified, with a view on possible future trends. The project also investigated the appropriate terminology and classification of automation levels.

2. The activity on Human-Vehicle Integration provided insight into driver behaviour when exposed to new situations regarding an automated system. After defining suitable use cases, the project performed several experiments (mostly based on driving simulators) to address key research questions. The topics under examination included: driver in and out of the loop, driver state, secondary tasks, and changes between automation levels, shared control, and HMI. The results allowed to establish a set of design guidelines, and were also applied to the implementations in the demonstrator vehicles.

3. The application development concerned three basic situations: (i) closed-distance scenarios, with a focus on the reconstruction of the environment; (ii) urban scenarios, dealing with the complexity of traffic; and (iii) highway scenarios, addressing a full range of continuously operating functions, up to 130 km/h. The development of the demonstrator vehicles led to advances in many domains. To name just a few: a common architecture, perception, communication protocols, fail-safe solutions, and a minimum-risk manoeuvre able to bring the vehicle to a safe stop.

4. The work on evaluation started by developing a framework of methodologies, taking into account the new requirements connected to automated driving. The study considered a technical assessment, a user-related assessment and the interactions with other vehicles. Moreover, efforts were devoted to an impact analysis using simulation, with a focus on safety and energy efficiency. The evaluation showed that the automated system provides a control capability and variability that is very similar to human behaviour. The simulations of accident

scenarios demonstrated a good safety potential. The assessment of environmental impacts indicated that the travel time almost can be maintained while a reduction of energy demand due to acceleration behaviour. Areas requiring improvement were identified.

In summary, automated driving remains a field open to further developments, and a complete coherent picture will be clarified in the coming years, not forgetting applications for freight delivery. The results obtained in AdaptIVe provide an industrially oriented point of view, with relevant clues regarding all the key areas. A suitable route towards automation will require a close cooperation between all the stakeholders, as well as public understanding of the potentialities and limitations of automated vehicles. The project partners believe that legal issues will remain in the international scene for the coming years, especially regarding the needed steps for liability, type approval and data security.

## 1.2 Project overview and objectives

The objective of AdaptIVe is to develop and demonstrate new functionalities provided by partially-automated and highly-automated vehicles. These applications cover different speed regimes and driving scenarios and aim at improving safety, energy efficiency, dependability and user-acceptance of automated driving. In order to meet this general objective, AdaptIVe considered seven major tasks:

1. Extend the range of possible situations for the application of automated driving
  - Focus on supervised automated driving in highway scenarios, urban-traffic and close-range manoeuvres.
2. Enhance the perception and communication capabilities
  - Implement features regarding the sensor platform, communication to other vehicles or to the infrastructure.
  - Improve safety in potentially dangerous situations by cooperative manoeuvres.
3. Develop solutions for cooperative control addressing driver needs
  - Ensure continuous interaction between human and automation.
  - Obtain and evaluate guidelines for implementation.
4. Design and demonstrate resilient behaviour for the applications
  - Develop fail-safe architecture and an automated function to bring the vehicle on a halt.
  - Implement support functions according to the infrastructure and driver capabilities.
5. Improve the safety and adaptability of automated driving
  - Integrate solutions for driver status monitoring.
6. Develop and apply specific evaluation methods
  - Develop new methods for the technical and the user-related assessments.

- Evolve new methods for the analysis of safety and environmental impacts at European level.

#### 7. Provide guidelines on legal aspects

- Analyse the legal framework for an introduction of partially and highly automated system into the market.
- Establish requirements for the safety validation and specifying qualifications for system availability.

## 1.3 Results achieved

The results achieved are described in the Deliverable D1.0 (Final Project Results), chapter 12.2.

## 1.4 Potential impact

### 1.4.1 Main dissemination activities of AdaptIVe

Over the 42-month duration of AdaptIVe, the partners disseminated effectively and widely the AdaptIVe concept as well as the overall outcomes of the project. The dissemination efforts have been performed in accordance to the AdaptIVe Dissemination Plan (D1.3), which was developed at the first project year and updated periodically to maximise the project impact to relevant communities and selected target groups.

#### Project dissemination channels and materials

A variety of dissemination channels and means were identified at the Dissemination Plan and used during the project runtime. At the beginning of the project, a comprehensive project design was created, assuring a consistent and high quality appearance of the project. This included a project logo, brand colours, fonts, key visuals and illustrations. For a coherent appearance all partners had templates available for presentations, posters and reporting. Also a project standard presentation was generated and continually updated.

A number of promotional printed materials were created based to the AdaptIVe brand and distributed on different occasions. A project brochure summarised the main objectives and expected impacts of the project, and served as an extended calling card for the project. Two project factsheets - EU and general - gave an overview of the project facts. Also, roll-up posters were available. Furthermore, a number of give-aways such as stickers, pens, writing blocks and USB memory sticks were prepared.

Beside printed material, a project video was released and distributed through project website, AdaptIVe Youtube, <https://www.youtube.com/watch?v=L0IHSq5HkSQ>, and Vimeo, <https://vimeo.com/174184830>, channels. The video shows what makes the project unique and highlights the research achievements. It was displayed in several industry events such as

European Council for Automotive R&D (EUCAR) annual Reception and Conference and the first European conference 'Connected and Automated Driving' (EUCAD) as well as AdaptIVe Final Event.

### **Technical dissemination of the results**

Scientific publications and presentations are the main channels for sharing the knowledge and research findings among the experts. AdaptIVe partners made a great effort in disseminating the project technical results and thus in shaping the research field. The project succeeded in publishing four articles in scientific journals and two in books. Furthermore, two journal articles are being under review. Resulting from the conference papers, overall 38 papers were published in conference proceedings.

Partners were represented during the major international and national academic and industry events, such as the ITS World and European Congress, the TRA, Automated Vehicle Symposium, IEEE Intelligent Vehicles Symposium and Intelligent Transportation Systems Conference, giving in total 102 presentations and presenting four posters in the course of the project. In addition, four Special Interest Sessions presented the project progress and outputs in more detail.

AdaptIVe also collaborated with a number of other projects and initiatives. Examples include AutoNet2030, VRA, CARTRE/SCOUT, CityMobil2 and Trilateral Working Group on Automation. Cooperation included jointly organised workshops, webinars, special sessions and discussions.

Overall, the technical dissemination gave the project widespread reputation within the scientific and stakeholder communities, ensuring that the project results will be taken up.

### **Main Events**

AdaptIVe events provided an excellent opportunity to discuss on legal and technical aspects of the project with the main stakeholder groups and to promote the project final results. Over the course of the project, two project workshops were organised: Workshop on Legal Aspect of Automated Driving in Paris on September 17, 2015 and AdaptIVe Technical Workshop "Developing Automated Driving" in Athens on April 21 and 22, 2016. At the Technical Workshop the latest developments in sensor technologies and advanced sensor fusion, automated driving applications and human factors were presented and discussed. The Legal Aspect Workshop, in turn, outlined the challenges and solutions for legal questions related to automated driving.

Finally, during the AdaptIVe Final Event // Driving Automation, held in Aachen, Germany, on 28 and 29 June 2017, the project main findings were presented and demonstrated. More than 250 experts from 20 countries all over the world joined the event. The event offered automated driving demonstrations in and around Aachen, a dedicated conference and an exhibition showing 54 project posters and 13 videos. Additional event material and give-aways, such as event

brochure, conference bags, writing pads, neck cushions and umbrellas were produced and distributed for the participants. The event report, including links to the agenda, press release, media reports and presentations, is available on project website: [https://www.adaptive-ip.eu/index.php/reader/Final\\_Event\\_held.html](https://www.adaptive-ip.eu/index.php/reader/Final_Event_held.html).

### 1.4.2 Exploitation of results

#### 1.4.2.1 Methodological approach

The exploitation of the project's results was a key objective within AdaptIVe. In order to study the deployment potential of the project's outcomes, a holistic and integrated methodological approach was developed, starting with exploitation activities at the very beginning of the project. The research was made up of an in-depth analysis of *main challenges*, *key drivers*, and *implications for a market introduction* of automated driving functions. Based on these findings, *exploitation plans specific to stakeholder groups* and *deployment trends* for automated driving – explicitly focussing on market demands – were elaborated and discussed to finally come up with a *roadmap for market introduction* for the automated driving functions developed in AdaptIVe.

The AdaptIVe exploitation approach was essentially comprised of five main building blocks:

1. Survey on legal aspects
2. Partner survey on technical aspects
3. Expert survey on main challenges for market introduction of AD functions
4. Partner survey on deployment strategies
5. Expert panel on deployment trends and perspectives for AD functions

In addition to the project's exploitation activities, the partners significantly contributed to various research initiatives, working groups, and discussions rounds at the European and national levels on deployment challenges for automated driving (e.g. ERTRAC Roadmap on Automated Driving, 2015; 2017).

#### 1.4.2.2 Results

This section provides a brief overview of the main results. A detailed discussion of the results and explanation of the methodological approach applied in the project is given in D 1.0 Final Report.

### Key challenges and main drivers for market implementation

A major issue of the analysis was the question concerning major challenges for a successful market implementation of AD functions in Europe. Different challenge areas were identified based on the cross-survey analysis and regrouped into seven challenge clusters. These clusters reflect a variety of different challenges that in many aspects have been addressed and researched within the AdaptIVe project.

Important drivers and key decisions (orange boxes in Figure 1) needed for the realization of highly automated driving were identified for each cluster (blue boxes):



Figure 1: Challenge clusters and drivers for market implementation

### Deployment trends and strategies for AD functions - The technological perspective

The development of deployment perspectives and strategies for the project's results was a key objective within AdaptIVe. The stakeholder groups involved in the project – automotive manufacturers, automotive suppliers, research providers and academic partners –established unique deployment patterns that are summarized in Chapter 2.2 (*Exploitable foreground and plans for exploitation*).

### The market view

In addition to the more technology-oriented discussion of major exploitable results the exploitation activities within the project also considered market-related issues and customer demands. This took the specific form of a dedicated expert panel that was held at the final stage of the project when most of the results were available, where the market potential of the AD functions developed and tested in AdaptIVe was discussed. The discussion touched upon the issues of new business models and mobility concepts for AD systems and explicitly raised questions about customer needs and user acceptance.

A major part of the market analysis was the development of *roadmaps* for market introduction for the technical functions developed in the project. These roadmaps that are also presented in D1.0 Final Report refer to the three main traffic scenarios applied in AdaptIVe – highways, urban environment, and close distance.

## Outlook

The analysis of the deployment challenges for automated driving systems and the elaboration of implications for a broad application of the technology in Europe have shown there is still a need for great efforts in research, but also with regard to societal, political, and legal aspects, in order to find suitable solutions. To pave the way to automated driving, the European automotive community will address these issues and join forces in L3Pilot. The project starting in September 2017 will be the largest initiative on testing and piloting L3 and L4 functions in Europe. More than one hundred automated vehicles will drive on public roads across Europe, additionally providing the opportunity for about one thousand users to experience automated driving in real traffic situations.

## 1.5 Project website and contacts

### 1.5.1 Project website

The AdaptIVe website [www.adaptive-ip.eu](http://www.adaptive-ip.eu) was set online on July 22<sup>nd</sup>, 2014, as the main channel of communication. During the project lifetime, the website was updated with 51 news articles, including several articles on the WP progress and status. Besides, 8 project newsletters were published. All public deliverables as well as summaries of restricted deliverables, project information material and a list of presentations and papers are made available for downloading: [https://adaptive-ip.eu/index.php/deliverables\\_papers.html](https://adaptive-ip.eu/index.php/deliverables_papers.html). All together the website counted 25.633 visits. Project activities and news were also communicated to relevant stakeholders through social media channels: AdaptIVe twitter and LinkedIN account.



## Contacts:

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## 2 Use and dissemination of foreground

### 2.1 Section A (public)

#### 2.1.1 Publications

| Title of article                                                                                                               | Main author, other authors                                                                                                                | Title of the periodical or the series                   | Number, date or frequency                     | Publisher            | Place of publication | Year of publication | Open access provided? |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------------------------|----------------------|----------------------|---------------------|-----------------------|
| <b>Papers published in journals</b>                                                                                            |                                                                                                                                           |                                                         |                                               |                      |                      |                     |                       |
| On Curve Negotiation: From Driver Support to Automation                                                                        | Bosetti, P. (UNITN),<br>Da Lio, M.(UNITN),<br>Saroldi, A. (CRF)                                                                           | IEEE Transactions on Intelligent Transportation Systems | Volume: PP,<br>Issue: 99                      | IEEE                 | IEEE Xplore          | 2015                | Yes                   |
| <i>Were they in the loop during automated driving? Links between visual attention and crash potential</i>                      | Louw T. (LEEDS),<br>Madigan, R. (LEEDS),<br>Carsten, O. (LEEDS),<br>Merat, N. (LEEDS)                                                     | Injury Prevention                                       | Published Online First:<br>21 September 2016  | BMJ Publishing Group | Online First         | 2016                | Yes                   |
| Traffic coordination at road intersections: autonomous decision-making algorithms using model-based heuristics                 | de Campos, G. R. (DEIB, Politecnico di Milano),<br>Falcone, P. (CHAL),<br>Hult, R. (CHAL),<br>Wymeersch, H. (CHAL),<br>Sjöberg, J. (CHAL) | IEEE Intelligent Transportation Systems Magazine        | Volume: 9, Issue: 1, Spring 2017, Pages 8-12. | IEEE                 |                      | 2017                | Yes                   |
| Are you in the loop? Using gaze dispersion to understand driver visual attention during resumption of control from automation. | Louw, T. (LEEDS),<br>Merat, N. (LEEDS)                                                                                                    | Transportation Research Part C: Emerging Technologies   | Volume: 76,<br>March 2017,<br>pages 35-50     | ELSEVIER             |                      | 2017                | Yes                   |
| Longitudinal Jerk Estimation of Driver Intentions for Intelligent Vehicle Applications                                         | Bisoffi, A. (UNITN),<br>Biral, F.(UNITN),<br>Da Lio, M. (UNITN),<br>Zaccarian, L. (UNITN)                                                 | IEEE/ASME Transactions on Mechatronics                  | Under review                                  | IEEE                 |                      |                     | Yes                   |

|                                                                                                             |                                                                                                                                     |                                                                                                                |                                     |          |                       |      |    |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------|-----------------------|------|----|
| Coming Back into the Loop: Drivers' Perceptual-Motor Performance in Critical Events in Automated Driving    | Louw, T. (LEEDS),<br>Markkula, G. (LEEDS),<br>Boer, E. (LEEDS),<br>Madigan, R. (LEEDS),<br>Carsten, O. (LEEDS),<br>Merat, N (LEEDS) | Accident Analysis & Prevention                                                                                 | Under review                        | ELSEVIER |                       |      | No |
| <b>Articles in books</b>                                                                                    |                                                                                                                                     |                                                                                                                |                                     |          |                       |      |    |
| Technical Evaluation and Impact Assessment of Automated Driving.                                            | Fahrenkrog, F. (ika),<br>Rösener, C. (ika),<br>Zlocki, A. (FKA),<br>Eckstein, L. (ika)                                              | Meyer, G. & Beiker, S. (Eds.):<br>Road vehicle automation 3.                                                   |                                     | Springer | Switzerland           | 2016 | No |
| AdaptIVe: Automated Driving Applications and Technologies for Intelligent Vehicles                          | Etemad, A. (VW)                                                                                                                     | Watzenig, D. & Horn, M. (Eds.):<br>Automated Driving: Safer and More Efficient Future Driving                  |                                     | Springer | Switzerland           | 2016 | No |
| <b>Papers published in conference proceedings</b>                                                           |                                                                                                                                     |                                                                                                                |                                     |          |                       |      |    |
| <i>Autonomous Maneuvering with Radars</i>                                                                   | <i>Hahn, M. (DAI),<br/>Dickmann, J. (DAI)</i>                                                                                       | IWPC-Workshop: Towards Autonomous Vehicles: Active Safety, Perception and Connectivity, May 2014, Detroit, USA | Workshop date: 13 May, 2014         | IWPC     | IWPC Research Library | 2014 | No |
| Challenges on the way towards automated driving – Development, human factors and evaluation                 | Zlocki, A. (FKA),<br>Fahrenkrog, F. (ika),<br>Josten, J. (ika)<br>Eckstein, L. (ika)                                                | FISITA World Automotive Congress, Maastricht, Netherlands                                                      | Conference date: 02 – 06 June, 2014 |          |                       | 2014 | No |
| Evaluation methodology for supervised automated driving including impact analysis on safety and environment | Zlocki, A. (FKA),<br>Fahrenkrog, F. (ika),<br>Eckstein, L. (ika)                                                                    | TRBs Third Annual Workshop on Road Vehicle Automation, San Francisco, USA                                      | Workshop date: 14 – 18 July, 2014   |          |                       | 2014 | No |

|                                                                                                                |                                                                                            |                                                                                                                                                            |                                             |                                                                                                  |             |      |     |
|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------------------------------------------------------|-------------|------|-----|
| From Driving Assistance Systems to Automated Driving: A Robust Approach based on the Subsumption Architecture  | Da Lio, M. (UNITN)<br>Saroldi, A. (CRF)<br>Andreone, L. (CRF)                              | Proceedings of the 21 <sup>st</sup> ITS World Congress, Detroit, Michigan                                                                                  | Conference date: 7 – 11 September, 2014.    | ITS America                                                                                      |             | 2014 | No  |
| Effective Evaluation of ADAS and Automated Driving                                                             | Zlocki, A. (FKA),<br>Fahrenkrog, F. (ika),<br>Eckstein, L. (ika)                           | 12th International Symposium on Advanced Vehicle Control, Tokyo, Tokyo University of Agriculture and Technology. AVEC '14                                  | Conference date: September 22 - 26, 2014    | Tokyo University of Agriculture and Technology                                                   |             | 2014 | No  |
| Automated Driving Applications and Technologies for Intelligent Vehicles – AdaptIVe                            | Knapp, A. (DAI)<br>Fahrenkrog, F. (ika),<br>Zlocki, A. (FKA)                               | Proceedings of the 23rd Aachen Colloquium Automobile and Engine Technology 2014, Aachen, Germany                                                           | Conference date: 6 – 8 October, 2014        | Institute of Combustion Engines and Institute for Automotive Engineering. RWTH Aachen University |             | 2014 | No  |
| Combined Longitudinal and Lateral Control Design for String Stable Vehicle Platooning within a Designated Lane | Kianfar, R. (CHAL),<br>Ali, M. (VCC),<br>Falcone, P. (CHAL),<br>Fredriksson, J.(CHAL)      | Proceedings of the 17th International IEEE Conference on Intelligent Transportation Systems (ITSC)                                                         | Date Added to IEEE Xplore: 20 November 2014 | IEEE                                                                                             | IEEE Xplore | 2014 | Yes |
| Engaging with Highly Automated Driving: To Be Or Not To Be In The Loop?                                        | Louw, T. (LEEDS)<br>Merat, N. (LEEDS)<br>Jamson, H. (LEEDS)                                | Proceedings of the 8 <sup>th</sup> International Driving Symposium on Human Factors in Driver Assessment, Training and Vehicle Design, Snowbird, Utah, USA | Conference date: 23 – 25 June, 2015         |                                                                                                  |             | 2015 | Yes |
| Detection of arbitrarily rotated parked cars based on radar sensors                                            | Lombacher, J. (DAI),<br>Hahn, M. (DAI),<br>Dickmann, J. (DAI),<br>Wöhler, C. (TU Dortmund) | Proceedings of the 16th International Radar Symposium (IRS)                                                                                                | Date Added to IEEE Xplore: 27 August 2015   | IEEE                                                                                             | IEEE Xplore | 2015 | No  |

|                                                                                                                  |                                                                                                               |                                                                                                                        |                                                                                                                                              |                                      |               |      |     |
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| Please Takeover! An Analysis and Strategy for a Driver Take Over Request During Autonomous Driving               | Bahram, M. (BMW),<br>Aeberhard, M. (BMW),<br>Wollherr, D. (BMW)                                               | Proceedings of the Intelligent Vehicles Symposium (IV)                                                                 | Date Added to IEEE Xplore: 27 August 2015                                                                                                    | IEEE                                 | IEEE Xplore   | 2015 | No  |
| Interaction design for communicating system state and capabilities during automated highway driving              | Larsson, P. (VTEC),<br>Johansson, E. (VTEC),<br>Söderman, M. (VTEC),<br>Thompson, D. (VTEC)                   | Procedia Manufacturing                                                                                                 | Volume: 3, Issue: 6th International Conference on Applied Human Factors and Ergonomics (AHFE 2015) and the Affiliated Conferences, AHFE 2015 | ELSEVIER                             | ScienceDirect | 2015 | Yes |
| Connected Vehicles for Automated Functions: from Enhanced Perception to Negotiated Manoeuvres                    | Visintainer, F. (CRF),<br>Darin, M. (CRF),<br>Saroldi, A. (CRF),<br>Andreone, L. (CRF),<br>Da Lio, M. (UNITN) | Proceedings of the 22nd ITS World Congress, Bordeaux, France                                                           | Conference date: 5 - 10 October, 2015.                                                                                                       | ERTICO - ITS Europe                  |               | 2015 | No  |
| Traffic safety at intersections: a priority based approach for cooperative collision avoidance                   | de Campos, G. R. (DEIB, Politecnico di Milano),<br>Falcone, P. (CHAL),<br>Sjöberg, J. (CHAL)                  | Proceedings of the 3rd International Symposium on Future Active Safety Technology Towards zero traffic accidents, 2015 | Conference date: 9 -11 September, 2015.                                                                                                      |                                      |               | 2015 | Yes |
| Longitudinal Jerk Estimation for Identification of Driver Intention                                              | Bisoffi, A. (UNITN),<br>Biral, F. (UNITN),<br>Da Lio, M. (UNITN),<br>Zaccarian, L. (UNITN)                    | Proceedings of the 18th International IEEE Conference on Intelligent Transportation Systems - ITSC 2015                | Date Added to IEEE Xplore: 02 November 2015                                                                                                  | IEEE                                 | IEEE Xplore   | 2015 | Yes |
| Ambient light based interaction concept for an integrative driver assistance system - a driving stimulator study | Dziennus, M. (DLR),<br>Kelsch, J. (DLR),<br>Schieben, A. (DLR)                                                | Proceedings of the Human Factors and Ergonomics Society Europe Chapter 2015 Annual Conference                          | HFES conference publication series (ISSN 2333-4959)                                                                                          | Human Factors and Ergonomics Society |               | 2015 | Yes |

|                                                                                                        |                                                                                                                         |                                                                                                         |                                             |            |             |      |     |
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| Driver Inattention During Vehicle Automation: How Does Driver Engagement Affect Resumption Of Control? | Louw, T. (LEEDS), Kountouriotis, G. (LEEDS), Carsten, O. (LEEDS), Merat, N. (LEEDS)                                     | Proceedings of the 4th International Conference on Driver Distraction and Inattention (DDI2015), Sydney | Publication Date: November 2015             | ARRB Group |             | 2015 | Yes |
| Convex modeling of conflict resolution at traffic intersections                                        | Murgovski, N. (CHAL), de Campos G. R. (CHAL), Sjöberg, J. (CHAL)                                                        | Proceedings of the 54th IEEE Conference on Decision and Control                                         | Date Added to IEEE Xplore: 11 February 2016 | IEEE       | IEEE Xplore | 2015 | Yes |
| Impact Assessment Methods for Automated Driving with regards to Road Safety                            | Zlocki, A. (FKA), Fahrenkrog, F. (ika), Eckstein, L. (ika)                                                              | 2nd International VDI Conference Safety Systems, Düsseldorf, Germany                                    | Conference date: 29 – 30 June, 2016         |            |             | 2016 | No  |
| FSCD and BASD: Robust Landmark Detection and Description on Radar-Based Grids                          | Rapp, M. (Uni Ulm), Dietmayer, K. (Uni Ulm), Hahn, M (DAI), Schuster, F. (DAI), Lombacher, J. (DAI), Dickmann, J. (DAI) | Proceedings of the IEEE MTT-S International Conference on Microwaves for Intelligent Mobility (ICMIM)   | Date Added to IEEE Xplore: 08 August 2016   | IEEE       | IEEE Xplore | 2016 | No  |
| <i>Interesting Areas in Radar Gridmaps for Vehicle Self-Localization</i>                               | Werber, K. (DAI), Klappstein, J (DAI), Dickmann, J. (DAI), Waldschmidt, C. (Uni Ulm)                                    | Proceedings of the IEEE MTT-S International Conference on Microwaves for Intelligent Mobility (ICMIM)   | Date Added to IEEE Xplore: 08 August 2016   | IEEE       | IEEE Xplore | 2016 | No  |
| Potential of Radar for Static Object Classification using Deep Learning Methods                        | Lombacher, J. (DAI), Hahn, M. (DAI), Dickmann, J. (DAI), Wöhler, C. (TU Dortmund)                                       | Proceedings of the IEEE MTT-S International Conference on Microwaves for Intelligent Mobility (ICMIM)   | Date Added to IEEE Xplore: 08 August 2016   | IEEE       | IEEE Xplore | 2016 | No  |

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| Adaptive forward collision warning algorithm for automotive applications                                     | Hosseini, S. M. (CHAL), Murgovski, N. (CHAL), de Campos, G. R. (CHAL), Sjöberg, J. (CHAL)              | Proceedings of the 2016 American Control Conference (ACC)                                                  | Date Added to IEEE Xplore: 01 August 2016   | IEEE            | IEEE Xplore       | 2016 | Yes |
| Environmental Impact Assessment of Automated Driving                                                         | Fahrenkrog, F. (ika), Rösener, C. (ika), Klaudt, S. (ika), Zlocki, A. (FKA) Eckstein, L. (ika)         | 23rd ITS World Congress, Melbourne, Australia                                                              | Conference date: 10 – 14 October 2016       | ITS Australia   |                   | 2016 | No  |
| Ambient Light - An integrative, LED based interaction concept for different levels of automation             | Dziennus, M. (DLR), Kelsch, J. (DLR), Schieben, A. (DLR)                                               | 32. VDI/VW-Gemeinschaftstagung                                                                             | Conference Date: 08 – 09 November 2016      | VDI Verlag GmbH | VDI-Berichte 2288 | 2016 | No  |
| A Novel Target-Height Estimation Approach Using Radar-Wave Multipath Propagation for Automotive Applications | Laribi, A. (DAI), Hahn, M. (DAI), Dickmann, J. (DAI), Waldschmidt, C. (Uni Ulm)                        | U.R.S.I. Landesausschuss in der Bundesrepublik Deutschland e.V. Kleinheubacher Tagung, Miltenberg, Germany | Conference date: 26 – 28 September, 2016    | U.R.S.I.        |                   | 2016 | No  |
| <u>Temporal vs. spatial formulation of autonomous overtaking algorithms</u>                                  | Karlsson, J. (CHAL), Murgovski, N. (CHAL), Sjöberg, J. (CHAL)                                          | Proceedings of the IEEE 19th International Conference on Intelligent Transportation Systems (ITSC)         | Date Added to IEEE Xplore: 26 December 2016 | IEEE            | IEEE Xplore       | 2016 | No  |
| Centralized MPC for Autonomous Intersection Crossing                                                         | Riegger, L. (CHAL) Carlander, M. (CHAL), Lidander, N. (CHAL), Murgovski, N. (CHAL), Sjöberg, J. (CHAL) | Proceedings of the IEEE 19th International Conference on Intelligent Transportation Systems (ITSC)         | Date Added to IEEE Xplore: 26 December 2016 | IEEE            | IEEE Xplore       | 2016 | Yes |

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| A Scenario-Based Assessment Approach for Automated Driving by Using Time Series Classification of Human-Driving Behaviour | Rösener, C. (ika),<br>Fahrenkrog, F. (ika),<br>Uhlig, A. (RTWH),<br>Eckstein, L. (ika)                                                                                                                                 | Proceedings of the IEEE 19th International Conference on Intelligent Transportation Systems (ITSC) | Date Added to IEEE Xplore: 26 December 2016                                                                             | IEEE         | IEEE Xplore   | 2016 | No  |
| A Systematic Approach Based on STPA for Developing a Dependable Architecture for Fully Automated Driving                  | Abdulkhaleq, A. (Uni Stuttgart),<br>Lammering, D. (CONTIA),<br>Wagner, S. (Uni Stuttgart),<br>Röder, J. (CONTIA),<br>Balbierer, N. (CONTIA),<br>Ramsauer, L. (CONTIA),<br>Raste, T. (CONTIT),<br>Boehmert, H. (CONTIT) | Procedia Engineering                                                                               | Volume 179, 2017, Pages 41–51,<br>4th European STAMP Workshop 2016, ESW 2016, 13-15 September 2016, Zurich, Switzerland | ELSEVIER     | ScienceDirect | 2017 | Yes |
| Real-Time Radar SLAM                                                                                                      | Schoen, M. (DAI),<br>Horn, M. (DAI),<br>Hahn, M. (DAI),<br>Dickmann, J. (DAI)                                                                                                                                          | Uni-DAS 11. Workshop Fahrerassistenzsysteme und automatisiertes Fahren, FAS 2017, Walting, Germany | Conference date: 29 -31 March, 2017                                                                                     | Uni-DAS e. V |               | 2017 | Yes |
| Vertical digital beamforming versus multipath height finding                                                              | Laribi, A. (DAI),<br>Hahn, M. (DAI),<br>Dickmann, J. (DAI),<br>Waldschmidt, C. (Uni Ulm)                                                                                                                               | Proceedings of the International Conference on Microwaves for Intelligent Mobility (ICMIM)         | Date Added to IEEE Xplore: 04 May 2017                                                                                  | IEEE         | IEEE Xplore   | 2017 | No  |
| Object classification in radar using ensemble methods                                                                     | Lombacher, J. (DAI),<br>Hahn, M. (DAI),<br>Dickmann, J. (DAI).<br>Wöhler, C. (TU Dortmund)                                                                                                                             | Proceedings of the International Conference on Microwaves for Intelligent Mobility (ICMIM)         | Date Added to IEEE Xplore: 04 May 2017                                                                                  | IEEE         | IEEE Xplore   | 2017 | No  |

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| A Comprehensive Evaluation Approach for Highly Automated Driving                                    | Rösener, C. (ika)<br>Fahrenkrog, F. (BMW)<br>Wang, L. (BMW)<br>Varhélyi, A. (LUND)<br>de Gelder, E. (TNO)<br>Dufils, J. (TNO)<br>Niesen, S. (BAST)<br>Tango, F. (CRF)<br>Zlocki, A. (FKA) | Proceedings of the 25th Enhanced Safety of Vehicles 2017, Detroit, U.S.A., 05.06.2017 - 08.06.2017 | Conference date: 05 – 08 June, 2017 | NHTSA                                                                   |             | 2017 | No |
| A-Priori map information and path planning for automated valet parking (upcoming)                   | Klaudt, S. (ika),<br>Zlocki, A. (FKA),<br>Eckstein, L. (ika)                                                                                                                              | IEEE Intelligent Vehicles Symposium, Redondo Beach, CA, USA, 11 – 14 June, 2017                    | Conference date: 11 - 14 June, 2017 | IEEE                                                                    | IEEE Xplore | 2017 | No |
| Assessment of Automated Driving Systems Using Real-Life Scenarios (upcoming)                        | de Gelder, E. (TNO),<br>Paardekooper, J-P. (TNO)                                                                                                                                          | IEEE Intelligent Vehicles Symposium, Redondo Beach, CA, USA, 11 – 14 June, 2017                    | Conference date: 11 - 14 June, 2017 | IEEE                                                                    | IEEE Xplore | 2017 | No |
| Semantic Radar Grids (upcoming)                                                                     | Lombacher, J. (DAI),<br>Laudt, K. (DAI),<br>Hahn, M. (DAI),<br>Dickmann, J. (DAI),<br>Wöhler, C. (TU Dortmund)                                                                            | IEEE Intelligent Vehicles Symposium, Redondo Beach, CA, USA, 11 – 14 June, 2017                    | Conference date: 11 - 14 June, 2017 | IEEE                                                                    | IEEE Xplore | 2017 | No |
| Map information, path planning and vehicle control for an automated valet-parking system (upcoming) | Klaudt, S. (ika),<br>Zlocki, A. (FKA),<br>Eckstein, L. (ika)                                                                                                                              | 12th ITS European Congress, Strasbourg, France, 19 – 22 June, 2017                                 | Conference date: 19 – 22 June, 2017 | ERTICO – ITS Europe                                                     |             | 2017 | No |
| A Performance Comparison of RELAX and MODE for Multipath Height Finding (upcoming)                  | Laribi, A. (DAI),<br>Hahn, M. (DAI),<br>Dickmann, J. (DAI),<br>Waldschmidt, C. (Uni Ulm)                                                                                                  | International Radar Symposium 2017 (IRS 2017), Prague, Czech Republic                              | Conference date: 28 – 30 June, 2017 | the German Institute of Navigation (DGON) and the University of Defence |             | 2017 | No |

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| A New Height-Estimation Method Using FMCW Radar Doppler Beam Sharpening (upcoming)                                  | Laribi, A. (DAI),<br>Hahn, M. (DAI),<br>Dickmann, J. (DAI),<br>Waldschmidt, C. (Uni Ulm)   | European Signal Processing Conference 2017 (EUSIPCO 2017), Kos island, Greece                  | Conference date: 28 August – 2 September, 2017 | EURASIP             |  | 2017 | No  |
| Mapping and Evaluation for GPS Restricted Environments Used for Automated Parking Applications (upcoming)           | Drakoulis, R. (ICCS),<br>Bolovinou, A. (ICCS),<br>Tsogas, M. (ICCS),<br>Amditis, A. (ICCS) | Transport Research Arena (TRA) 2018, Vienna, Austria, 16-19 April 2018                         | Conference date: 16 – 19 April, 2018           | TRA                 |  | 2018 | No  |
| <b>Others</b>                                                                                                       |                                                                                            |                                                                                                |                                                |                     |  |      |     |
| Decision Making for Automated Vehicles in Merging Situations - Using Partially Observable Markov Decision Processes | Nilsson, M. (CHAL)                                                                         | Master's thesis in Systems Control and Mechatronics, Chalmers University of Technology, Sweden | ISSN 99-2747920-4; EX054/2014, 2014            | Chalmers University |  | 2014 | Yes |

### 2.1.2 Dissemination activities

| Type (presentations, exhibitions, technical paper, posters)                                    | Involved partners                                                                                                 | Title / scope                                                                                              | Location           | Date              | Other information            |
|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------|-------------------|------------------------------|
| Presentation                                                                                   | ICCS                                                                                                              | Transportation Research Board 93rd Annual Meeting                                                          | Washington, D.C.   | 12-16.01.2014     |                              |
| Presentation                                                                                   | VW                                                                                                                | Autonomous Driving 2014 conference                                                                         | Berlin, Germany    | 27-28.02.2014     | General project presentation |
| Poster                                                                                         | Ford                                                                                                              | Vehicle Interaction Summit                                                                                 | Stuttgart, Germany | 02.04.2014        |                              |
| Presentation                                                                                   | Angelos Amditis, ICCS                                                                                             | Workshop on the EU legal framework to certify automated road transport systems in urban areas (CityMobil2) | Athens, Greece     | 05.05.2014        |                              |
| Presentation                                                                                   | Andreas Knapp, DAI<br>Aria Etemad, VW                                                                             | VRA Workshop and Automation WG with Trilateral WG                                                          | Brussels, Belgium  | 07-08.05.2014     |                              |
| Technical paper                                                                                |                                                                                                                   | European conference on Human Centred Design for Intelligent Transport Systems                              | Vienna, Austria    | 05-06.06.2014     |                              |
| Special Interest Session (SIS 37)<br>'AdaptIVe - Challenges of Automated Driving Presentations | Aria Etemad, VW<br>Lali Ghosh, DEL<br>Angelos Amditis, ICCS<br>Felix Fahrenkrog, IKA<br>Katharina Wiedemann, UNIW | 10th ITS European Congress                                                                                 | Helsinki, Finland  | 16-19.06.2014     |                              |
| Presentation                                                                                   | Stefan Wolter, FORD                                                                                               | CAR HMI concepts & systems 2014                                                                            | Berlin, Germany    | 26-27.06.2014     |                              |
| Poster presentation                                                                            | Adrian Zlocki, IKA                                                                                                | July meeting of Transportation Research Board (TRB)                                                        |                    |                   |                              |
| Presentation                                                                                   | Amditis Angelos, ICCS                                                                                             | Automated Vehicles Symposium 2014                                                                          | California, USA    | 15-18.07.2014     |                              |
| Technical paper                                                                                | Stefan Wolter, FORD                                                                                               | Tagung Mensch & Computer 2014                                                                              | Munich, Germany    | 31.08.-03.09.2014 | Use Case Design for AdaptIVe |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners                                                                   | Title / scope                                         | Location           | Date          | Other information                                                                                                              |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                                             | Johann Kelsch, DLR                                                                  |                                                       |                    |               |                                                                                                                                |
| Technical paper                                             | Mauro Da Lio, UNITN<br>Andrea Saroldi , CRF<br>Luisa Andreone, CRF                  | 21st ITS World Congress                               | Detroit, USA       | 07-11.09.2014 | 'From driving assistance systems to automated driving: a robust approach based on the subsumption architecture'                |
| Presentation                                                | Felix Fahrenkrog, IKA                                                               | 21st ITS World Congress                               | Detroit, USA       | 07-11.09.2014 | presentation on evaluation results and approaches for the projects interactive and Adaptive (TS21 Traffic Safety Applications) |
| 'Towards Automation Deployment' (SIS50) Presentations       | Angelos Amditis, ICCS<br>Luisa Andreone, CRF<br>Aria Etemad, VW<br>Arne Bartels, VW | 21st ITS World Congress                               | Detroit, USA       | 07-11.09.2014 | 'General/ Adaptive evaluation methodologies' (SIS74 Towards Deployment of Automated Vehicles - Requirements for Road Testing)  |
| Presentation                                                | Natasha Merat, University of Leeds                                                  | 21st ITS World Congress                               | Detroit, USA       | 07-11.09.2014 |                                                                                                                                |
| Presentation                                                | Andreas Knapp, DAIFelix Fahrenkrog, IKA                                             | 23. Aachener Kolloquium Fahrzeug- und Motorentechnik  | Aachen, Germany    | 06-08.10.2014 |                                                                                                                                |
| Article for proceedings                                     | Jens Langenberg, VW<br>Arne Bartels, VW                                             | 30. VDI/VW-Gemeinschaftstagung Fahrerassistenzsysteme | Wolfsburg, Germany | 14-15.10.2014 |                                                                                                                                |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners         | Title / scope                                                                                                                                                          | Location                                                                             | Date          | Other information |
|-------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------|-------------------|
|                                                             | Aria Etemad, VW           |                                                                                                                                                                        |                                                                                      |               |                   |
| Presentation                                                | Jens Langenberg, VW       | 30. VDI/VW-Gemeinschaftstagung Fahrerassistenzsysteme                                                                                                                  | Wolfsburg, Germany                                                                   | 14-15.10.2014 |                   |
| Presentation                                                | Stefan Wolter, Ford       | International workshop: "Smart technologies for improving driver behavior: Technological, psychological, and ethical perspectives"; Eindhoven University of Technology | Eindhoven, the Netherlands                                                           | 30-31.10.2014 |                   |
| Presentation                                                | Panagiotis Lytrivis, ICCS | VRA Workshop                                                                                                                                                           | Brussels, Belgium                                                                    | 06.11.2014    |                   |
| Presentation                                                | Felix Fahrenkrog, IKA     | SIP adus Workshop on Connected and Automated Driving Systems                                                                                                           | Tokyo, Japan                                                                         | 17-18.11.2014 |                   |
| Presentation                                                | VW, ICCS                  | AdaptIVe Overview and Automated Functions for Highway Driving                                                                                                          | Transportation Research Board 94th Annual Meeting, Washington, D.C.                  | 11-15.01.15   |                   |
| Poster                                                      | LEEDS /SP3                | Human factors of vehicle automation: Preliminary insights from the AdaptIVe project                                                                                    | Transportation Research Board 94th Annual Meeting, Washington, D.C.                  | 11-15.01.15   |                   |
| Presentation                                                | IKa, FKA                  | Evaluation and Sign-off Methodology for Automated Vehicles Based on Relevant Driving Situations                                                                        | Transportation Research Board 94th Annual Meeting, Washington, D.C.                  | 11-15.01.15   |                   |
| Presentation                                                | ICCS                      | From Advanced Active Safety Systems to Automated Systems: From interactIVe to AdaptIVe and beyond                                                                      | VRA Webinar, Brussels, Belgium                                                       | 06.02.15      |                   |
| Legal Tutorial, Use of foreground                           | UNIW                      | Legal Aspects of Autonomous Driving                                                                                                                                    | Automotive Tech.AD Berlin 2015- The Road towards Autonomous Driving, Berlin, Germany | 26-27.02.15   |                   |
| Presentation                                                | CRF                       | About Automated Driving Functions, Scenarios & Challenges                                                                                                              | The ERTRAC 2015 Annual conference,                                                   | 03.03.15      |                   |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners | Title / scope                                                               | Location                                                                                               | Date        | Other information |
|-------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------|-------------------|
|                                                             |                   |                                                                             | Brussels, Belgium                                                                                      |             |                   |
| Presentation                                                | UNIW              | Regulatory Needs for Vehicle and Road Automation - Project Adaptive         | VRA workshop on Regulatory Needs for Vehicle and Road Automation, Brussels, Belgium                    | 23.03.15    |                   |
| Panel discussion                                            | VW                | How will autonomous cars and the internet of things affect future mobility? | "Berlin Future Mobility" Meetup, Berlin, Germany                                                       | 24.03.15    |                   |
| Participation to workshop / Liaison                         | ALC, ICCS         | Discussion during CityMobil2 Workshop                                       | CityMobil2: Workshop - Socio-economic impact of road automation, La Rochelle, France                   | 30-31.03.15 |                   |
| Participation to Workshop/ Presentation                     | VW, LEEDS         | Discussion during EU-US Symposium                                           | EU-US Symposium on "Road Vehicle Automation", Washington, D.C., USA                                    | 14-15.04.15 |                   |
| Presentation                                                | VW                | An Introduction to Automated Driving                                        | ITS conference 2015: A Digital Strategy for Mobility: from Capacity to Connectivity, Brussels, Belgium | 24.04.15    |                   |
| Presentation                                                | IKA               | Challenges and Concepts towards Automated Driving                           | 11th International Nanotechnology Conference on Communication and Cooperation (INC11), Fukuoka, Japan  | 11-13.05.15 |                   |
| Presentation                                                | FORD              | HMI Testing Methods                                                         | Autonomous Vehicle Test & Development Symposium, Stuttgart, Germany                                    | 16-18.06.15 |                   |
| Technical paper                                             | DAI               | Detection of Arbitrary Rotated Parked Cars Based on Radar Sensors           | International Radar Symposium IRS 2015,                                                                | 24-26.06.15 |                   |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners | Title / scope                                                                                                              | Location                                                                                                 | Date           | Other information    |
|-------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------|----------------------|
|                                                             |                   |                                                                                                                            | Dresden Germany                                                                                          |                |                      |
| Technical paper                                             | BMW               | Please Takeover! An Analysis and Strategy For a Driver Take Over Request During Autonomous Driving                         | IV2015 IEEE Intelligent Vehicles Symposium, Coex, Seoul, Korea                                           | 28.06-01.07.15 |                      |
| Plenary presentation                                        | DAI               | Legal Issues Addressed in the EU Adaptive Project                                                                          | Automated Vehicles Symposium 2015, Ann Arbor, USA                                                        | 21-23.07.15    |                      |
| Presentation and panel discussion                           | IKA               | Adaptive - Evaluation / Automated Vehicle Verification                                                                     | Automated Vehicles Symposium 2015, Ann Arbor, USA                                                        | 21-23.07.15    |                      |
| Poster                                                      | LEEDS             | Response to a Critical Situation During Automated Driving: Can We Take Drivers Out of the Loop?                            | Automated Vehicles Symposium 2015, Ann Arbor, USA                                                        | 21-23.07.15    |                      |
| Presentation                                                | DLR               | Joint driver-automation system design: Gradual action-oriented ambient stimuli                                             | 6th International Conference on Applied Human Factors and Ergonomics (AHFE) 2015, Las Vegas, Nevada, USA | 26-30.7.2015   |                      |
| Paper presentation                                          | WIVW              | Driver's monitoring behaviour and interaction with non-driving related tasks during driving on different automation levels | 6th International Conference on Applied Human Factors and Ergonomics (AHFE) 2015, Las Vegas, Nevada, USA | 26-30.7.15     |                      |
| Paper presentation                                          | VTEC              | Interaction design for communicating system state and capabilities during automated highway driving                        | 6th International Conference on Applied Human Factors and Ergonomics (AHFE) 2015, Las Vegas, Nevada, USA | 26-30.7.15     | Paper in Proceedings |
| Presentation                                                | DLR               | Joint driver-automation system design: Gradual action-oriented ambient stimuli                                             | 6th International Conference on Applied Human Factors and Ergonomics (AHFE) 2015, Las Vegas, Nevada, USA | 26-30.7.15     |                      |
| Technical paper                                             | CHAL              | Traffic safety at intersections: a priority based approach for cooperative collision                                       | Future Active Safety Technology Towards zero                                                             | 09-11.09.15    | Paper in Proceedings |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners                        | Title / scope                                                                                 | Location                                                                                                                | Date        | Other information                |
|-------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------|
|                                                             |                                          | avoidance                                                                                     | traffic accidents: Fast-zero 2015, Gothenburg, Sweden                                                                   |             |                                  |
| Technical paper                                             | UNITN                                    | Longitudinal Jerk Estimation for Identification of Driver Intention                           | 18th International IEEE Conference on Intelligent Transportation Systems - ITSC 2015, Las Palmas de Gran Canaria, Spain | 15-18.9.15  |                                  |
| Presentation                                                | VW                                       | AdaptIVe: Automated driving applications and technologies for intelligent vehicles            | AUTOCONTACT 2015, Graz, Austria                                                                                         | 29-30.09.15 |                                  |
| Presentation                                                | BMW                                      |                                                                                               | ROscon 2015 Hamburg, Germany                                                                                            | 03-04.10.15 |                                  |
| Presentation                                                | VW                                       | AdaptIVe: Automated driving applications and technologies for intelligent vehicles            | 24. Aachener Kolloquium Fahrzeug- und Motorentechnik, Aachen, Germany                                                   | 05.07.10.15 |                                  |
| Special Interest Session                                    | VW (org.), Speakers: IKA, DAI, UNIW, CRF | SIS31 - International perspectives on road vehicle automation                                 | 22nd ITS World Congress, Bordeaux , France                                                                              | 05-09.10.15 |                                  |
| Special Interest Session                                    | ICCS (org.), Speakers: VW                | SIS19 - An integrated approach towards automated transport systems                            | 22nd ITS World Congress, Bordeaux , France                                                                              | 05.09.10.15 |                                  |
| Technical paper                                             | CRF, UNITN                               | Connected Vehicles for Automated Functions: from Enhanced Perception to Negotiated Manoeuvres | 22nd ITS World Congress, Bordeaux, France                                                                               | 05-09.10.15 |                                  |
| Presentation                                                | DLR / SP3                                | Human-Vehicle Integration in EU-AdaptIVe                                                      | 22nd ITS World Congress, Bordeaux, France                                                                               | 05-09.10.15 |                                  |
| Paper presentation                                          | DLR                                      | Ambient light based interaction concept for an integrative driver assistance system           | HFES 2015 Europe Annual Meeting, Groningen, the Netherlands                                                             | 14-16.10.15 | Will be published in proceedings |
| Presentation                                                | LEEDS                                    | An Overview of European Activities in Human Factors and Vehicle Automation                    | 2nd SIP-adus Workshop on Connected and Automated Driving Systems,                                                       | 27-29.10.15 |                                  |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners | Title / scope                                                                                          | Location                                                                                | Date           | Other information                                          |
|-------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------|------------------------------------------------------------|
|                                                             |                   |                                                                                                        | Tokyo, Japan                                                                            |                |                                                            |
| Presentation                                                | LEEDS             | Exploring the Transition of Control: Understanding Driver-Automation Interaction                       | 2nd SIP-adus Workshop on Connected and Automated Driving Systems, Tokyo, Japan          | 27-29.10.15    |                                                            |
| AdaptIVe booth                                              | VW, CRF, EICT     | Motorway demonstrator presented<br>Moderation of discussion groups                                     | EUCAR Annual Reception & Conference, Brussels, Belgium                                  | 04.11.15       |                                                            |
| Paper Presentation                                          | LEEDS             | Driver Inattention During Vehicle Automation: How Does Driver Engagement Affect Resumption Of Control? | 4th International Conference on Driver Distraction and Inattention, Sydney, Australia   | 09-11.11.15    | Will be published in proceedings                           |
| Participation                                               | LEEDS             | Presentation of AdaptIVe                                                                               | Driverless Technology Conference and Exhibition 2015, London, UK                        | 23.11.15       |                                                            |
| Technical Paper                                             | CHAL              | Convex modelling of conflict resolution at traffic intersections                                       | The 54th IEEE Conference on Decision and Control, Osaka, Japan                          | 15.-18.12.15   | Paper in proceedings                                       |
| Exhibition booth                                            | ICCS              |                                                                                                        | Hellenic Intelligent Transport Systems – conference, Athens, Greece                     | 15.-16.12.15   | Dissemination material distributed at the exhibition booth |
| Discussion, working group activity                          | ICCS              | Trilateral Working Group meetings                                                                      | Transportation Research Board (TRB) 95th Annual Meeting<br>Washington, D.C.             | 10.-14.01.2016 |                                                            |
| Participation in Workshop                                   | REN               |                                                                                                        | FOT-Net Data Workshop: A common methodology for automation FOTs and pilots<br>Leeds, UK | 03.-04.02.2016 |                                                            |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners | Title / scope                                                                                             | Location                                                                                                                            | Date              | Other information |
|-------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|
| Presentation                                                | CONTIA            | Architectural design                                                                                      | PREEvision User Day<br>Germany, GER                                                                                                 | 18.03.2016        |                   |
| Newsletter                                                  | IKA               | Update on AdaptIVe                                                                                        | VRA newsletter                                                                                                                      | March 2016        |                   |
| Presentation                                                | VTEC, LEEDS       | Overview of SP3 activities in HF Auto -project<br>General Assembly                                        | HF Auto General Assembly                                                                                                            | April 2016        |                   |
| Presentation                                                | ICCS              |                                                                                                           | 6th European Transport<br>Research Conference –<br>Moving Forward:<br>Innovative Solutions for<br>Tomorrow's Mobility<br>Warsaw, PL | 18-21.04.2016     |                   |
| Presentation                                                | FORD              | Evaluation of a Smartphone App for Parking<br>Automation                                                  | Autonomous Vehicle Test<br>& Development<br>Symposium<br>Stuttgart, GER                                                             | 31.05.2016        |                   |
| Presentation                                                | OPEL              | Public presentation with reference to<br>AdaptIVe, highlighting deliverable D2.1<br>System Classification | SafetyWeek<br>Aschaffenburg,<br>Aschaffenburg, Germany                                                                              | 10.-12.05.2016    |                   |
| Technical Paper                                             | DAI               | Potential of Radar for Static Object<br>Classification using Deep Learning Methods                        | The Second International<br>Conference on Microwaves<br>for Intelligent Mobility,<br>San Diego, California, USA                     | 19.-20.05.2016    |                   |
| Paper presentation                                          | FORD              | Evaluation of a smartphone app for parking<br>automation                                                  | Autonomous Vehicle Test<br>& Development<br>Symposium 2016,<br>Stuttgart, German                                                    | 31.05.-02.06.2016 |                   |
| Participation to Final<br>Conference/ Liaison               | EICT              | Discussion during Final Conference                                                                        | Citymobil2 Final<br>Conference,<br>San Sebastián, Spain                                                                             | 01.-02.06.2016    |                   |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners                                           | Title / scope                                                                                                                       | Location                                                                                        | Date           | Other information |
|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------|-------------------|
| Project Dissemination Session                               | VW (org.)<br>ICCS (mod.)<br>Speakers: LEEDS, DAI, CRF, UNIW | PR08: European efforts on automated driving: findings from ongoing research                                                         | 11th ITS European Congress, Glasgow, Scotland                                                   | 06.-09.06.2016 |                   |
| Participation to event/ Liaison                             | VW                                                          | AdaptIVe dissemination material distributed                                                                                         | ERTRAC-EUCAR Innovation Demonstration Day Brussels, Belgium                                     | 14.06.2016     |                   |
| Technical Paper                                             | CHAL                                                        | AdaptIVe forward collision warning algorithm for automotive applications                                                            | The 2016 American Control Conference, Boston, USA                                               | 06.-08.07.2016 |                   |
| Presentation                                                | ICCS                                                        | European Activities on Connected and Automated Driving; the Present and Beyond - The ADAPTIVE and AUTONET2030 Use Cases             | Automated Vehicles Symposium 2016, San Francisco, USA                                           | 19.-21.07.2016 |                   |
| Presentation                                                | DLR                                                         | Human factors recommendations for highly automated driving in the EU project AdaptIVe                                               | Automated Vehicles Symposium 2016, San Francisco, USA                                           | 19.21.07.2016  |                   |
| Presentation                                                | LEEDS                                                       | A Methodology for Inducing the Out of the Loop Phenomenon in Highly Automated Driving                                               | International Conference for Traffic and Transport Psychology - ICTTP 2016, Brisbane, Australia | 02.-05.08.2016 |                   |
| Presentation                                                | LEEDS                                                       | Using a Comparative Time Window Analysis of Gaze to Understand Driver Visual Attention During Resumption of Control from Automation | International Conference for Traffic and Transport Psychology - ICTTP 2016, Brisbane, Australia | 02.-05.08.2016 |                   |
| Paper presentation                                          | CONTIA                                                      | A Systematic Approach Based on STPA for Developing a Dependable Architecture for Fully Automated Driving                            | 4th European STAMP Workshop Zürich, Switzerland                                                 | 13.-15.09.2016 |                   |
| Presentation                                                | VTEC                                                        | Project presentation focusing on SP3 topics.                                                                                        | Transport Safety Research Policy Cluster - Human Factors and Behaviour                          | 14.09.2016     |                   |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners             | Title / scope                                                                                                                                                | Location                                                                               | Date           | Other information |
|-------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------|-------------------|
|                                                             |                               |                                                                                                                                                              | Workshop<br>Brussels, Belgium                                                          |                |                   |
| Participation on panel discussion                           | VW                            | Panel discussion on 'Connected and Automated Driving'                                                                                                        | Digital Assembly 2016<br>Bratislava, Slovakia                                          | 28.-29.09.2016 |                   |
| Paper presentation                                          | IKA<br>RWTH Aachen University | A Scenario-Based Assessment Approach for Automated Driving by Using Time Series Classification of Human-Driving Behaviour                                    | IEEE Intelligent Transportation Systems Conference ITSC 2016<br>Rio de Janeiro, Brasil | 01.-04.11.2016 |                   |
| Paper presentation                                          | Ford<br>IKA                   | User Evaluation of Human-Machine Interface Concepts for Remote Parking Aid                                                                                   | Aachener Colloquium<br>Aachen, Germany                                                 | 10.-12.10.2016 |                   |
| Paper presentation                                          | FKA<br>IKA                    | Environmental Impact Assessment of Automated Driving                                                                                                         | 23rd ITS World Congress<br>Melbourne, Australia                                        | 10.-14.10.2016 |                   |
| Special session                                             | ICCS                          | SIS 47 Automated Transport Systems: How far are we?                                                                                                          | 23rd ITS World Congress<br>Melbourne, Australia                                        | 10.-14.10.2016 |                   |
| Presentation /Liaison                                       | VTEC                          | The AdaptIVe project                                                                                                                                         | Autonet2030 Final Workshop<br>Sandhult, Sweden                                         | 27.10.2016     |                   |
| Paper presentation                                          | LEEDS                         | Were they in the loop during automated driving? Links between visual attention and crash potential                                                           | HFES 2016 Europe Annual Meeting<br>Prague, Czech Republic                              | 26.-28.10.2016 |                   |
| Project booth & Group discussions                           | VW                            | AdaptIVe booth with the project video, poster, and information material.<br>Partners contributed to groups discussions on perspectives on automated driving. | EUCAR Annual Reception & Conference<br>Brussels, Belgium                               | 08.-09.11.2016 |                   |

| Type (presentations, exhibitions, technical paper, posters) | Involved partners | Title / scope                                                                      | Location                                                                              | Date              | Other information |
|-------------------------------------------------------------|-------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------|-------------------|
| Presentation                                                | VTEC              | HUMAN FACTORS IN VEHICLE AUTOMATION-Activities in the European project AdaptIVe    | 3rd SIP-adus Workshop on Connected and Automated Driving Systems 2016<br>Tokyo, Japan | 15.-17.11.2016    |                   |
| Presentation                                                | VW                | AdaptIVe: Automated driving applications and technologies for intelligent vehicles | 3rd SIP-adus Workshop on Connected and Automated Driving Systems 2016<br>Tokyo, Japan | 15.-17.11.2016    |                   |
| Presentation                                                | DEL               | EU Project AdaptIVe: Demonstrating Automated Functions on a European Level         | SAE 2016 From ADAS to Automated Driving Symposium<br>Munich, Germany                  | 29.11.-01.12.2016 |                   |

## 2.2 Section B: *exploitable foreground and plans for exploitation*

| Type of Exploitable Foreground <sup>1</sup> | Description of exploitable foreground | Confidential Click on YES/NO | Foreseen embargo date dd/mm/yyyy | Exploitable product(s) or measure(s)                                                                                               | Sector(s) of application <sup>2</sup> | Timetable, commercial or any other use | Patents or other IPR exploitation (licences) | Owner & Other Beneficiary(s) involved |
|---------------------------------------------|---------------------------------------|------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------|----------------------------------------------|---------------------------------------|
| General advancement of knowledge            | Parking spot detection                | No                           | N/A                              | Free parking spot detection                                                                                                        | R&D                                   | 2018                                   | -                                            | -                                     |
| General advancement of knowledge            | Trajectory planning                   | Yes                          | N/A                              | Trajectory planning for parking manoeuvre                                                                                          | R&D                                   | 2019                                   | -                                            | -                                     |
| Demonstrator                                | Tangible realization of a system      | No                           | N/A                              | Demonstrator that looks like a series car to experience functionality                                                              | R&D                                   | 2017 (end of project)                  | -                                            | -                                     |
| General advancement of knowledge            | Simulation tools                      | Partly confidential          | -                                | Simulation tool for investigating traffic safety impacts of technologies. Results also contribute to OpenPASS simulation framework | R&D                                   | 2018-19 (OpenPASS)                     | -                                            | -                                     |
| General advancement of knowledge            | System classification                 | No                           | N/A                              | System classification for AD technologies                                                                                          | R&D                                   | 2017                                   | -                                            | -                                     |

<sup>19</sup> A drop down list allows choosing the type of foreground: General advancement of knowledge, Commercial exploitation of R&D results, Exploitation of R&D results via standards, exploitation of results through EU policies, exploitation of results through (social) innovation.

<sup>2</sup> A drop down list allows choosing the type sector (NACE nomenclature) : [http://ec.europa.eu/competition/mergers/cases/index/nace\\_all.html](http://ec.europa.eu/competition/mergers/cases/index/nace_all.html)

| Type of Exploitable Foreground <sup>1</sup> | Description of exploitable foreground | Confidential Click on YES/NO | Foreseen embargo date dd/mm/yyyy | Exploitable product(s) or measure(s)                                                                                                   | Sector(s) of application <sup>2</sup> | Timetable, commercial or any other use | Patents or other IPR exploitation (licences) | Owner & Other Beneficiary(s) involved |
|---------------------------------------------|---------------------------------------|------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------|----------------------------------------------|---------------------------------------|
| General advancement of knowledge            | Common understanding / knowledge base | No                           | -                                | Overview of legal situation, challenges, barriers on ADAS and AD technologies                                                          | R&D, legal aspects                    | 2017                                   | -                                            | -                                     |
| General advancement of knowledge            | Overview / knowledge base             | Yes                          | N/A                              | Overview of challenges of safe-guarding automated technologies; outline of requirements for future Code of Practice on AD technologies | R&D                                   | 2017                                   | -                                            | -                                     |
| General advancement of knowledge            | HMI concept                           | No                           | N/A                              | HMI concept for vehicle automation for commercial vehicles (trucks)                                                                    | R&D                                   | >2017                                  | -                                            | -                                     |
| General advancement of knowledge            | Classification scheme                 | Yes                          | N/A                              | Classification scheme and methodologies for series development if AD functions                                                         | R&D                                   | -                                      | -                                            | -                                     |
| General advancement of knowledge            | Radar development                     | Yes                          | N/A                              | Radar tracking development for stationary targets to extend functionality of close distance parking                                    | R&D                                   | -                                      | -                                            | -                                     |
| General                                     | Sensor                                | Yes                          | N/A                              | Signal processing                                                                                                                      | R&D                                   | -                                      | -                                            | -                                     |

| Type of Exploitable Foreground <sup>1</sup> | Description of exploitable foreground                      | Confidential Click on YES/NO | Foreseen embargo date dd/mm/yyyy | Exploitable product(s) or measure(s)                                                                                                                                                                    | Sector(s) of application <sup>2</sup> | Timetable, commercial or any other use    | Patents or other IPR exploitation (licences) | Owner & Other Beneficiary(s) involved |
|---------------------------------------------|------------------------------------------------------------|------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------------|----------------------------------------------|---------------------------------------|
| advancement of knowledge                    | development                                                |                              |                                  | development for next generation sensors                                                                                                                                                                 |                                       |                                           |                                              |                                       |
| General advancement of knowledge            | Analysis of technical system limits for AD functionalities | No                           | None                             | Advancement of knowledge on system limits of current sensors, fusion techniques, actuators with focus on highway scenarios and definition of requirements for designing AD functions to preserve safety | R&D (design, validation)              | -                                         | -                                            | -                                     |
| Exploitation of R&D results via standards   | Functional safety analysis                                 | No                           | -                                | Functional safety architecture design pattern to be used as library pattern architecture design of functional safety critical systems                                                                   | R&D (architecture, design)            | -                                         | -                                            | -                                     |
| General advancement of knowledge            | Design recommendations                                     | No                           | None                             | Catalogue of recommendations and strategies for HMI design concepts for supervised AD use cases, functions                                                                                              | R&D (design)                          | 2017/18 (input to standardization bodies) | -                                            | -                                     |
| General advancement of knowledge            | Design recommendations                                     | Yes                          | N/A                              | Advancement of knowledge about effects of AD on                                                                                                                                                         | R&D (design)                          | 2018-19 (publications)                    | -                                            | -                                     |

| Type of Exploitable Foreground <sup>1</sup>                                 | Description of exploitable foreground   | Confidential Click on YES/NO                         | Foreseen embargo date dd/mm/yyyy | Exploitable product(s) or measure(s)                                                                                                       | Sector(s) of application <sup>2</sup> | Timetable, commercial or any other use | Patents or other IPR exploitation (licences) | Owner & Other Beneficiary(s) involved |
|-----------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------|----------------------------------------------|---------------------------------------|
|                                                                             |                                         |                                                      |                                  | driver's behaviour and mental models, (interactions with non-driving related tasks), in take-over situations and in case of system failure |                                       |                                        |                                              |                                       |
| General advancement of knowledge                                            | Software system development             | Yes                                                  | N/A                              | Artificial driving agent for different levels of automation                                                                                | R&D                                   | -                                      | -                                            | -                                     |
| General advancement of knowledge and commercial exploitation of R&D results | Assessments for automotive applications | No (general framework)<br>Yes (specific application) | End of project                   | Framework for in-traffic assessment of AD functions                                                                                        | R&D, automotive                       | 2018                                   | -                                            | -                                     |
| General advancement of knowledge                                            | Methodology for impact assessment       | No                                                   | -                                | New methodology for impact assessment of AD functions                                                                                      | R&D                                   | >2021                                  | -                                            | -                                     |
| General advancement of knowledge                                            | Mapping evaluation methodology          | No                                                   | -                                | Mapping evaluation methodology for simultaneous localization and mapping vehicle algorithms in GPS-restricted environments                 | R&D                                   | 2017 (End of project)                  | -                                            | -                                     |
| General advancement of                                                      | Construction of digital                 | -                                                    | -                                | Custom OpenStreetMap (OSM) elements for                                                                                                    | R&D                                   | -                                      | -                                            | -                                     |

| Type of Exploitable Foreground1  | Description of exploitable foreground   | Confidential Click on YES/NO | Foreseen embargo date dd/mm/yyyy | Exploitable product(s) or measure(s)                                                                                                                                | Sector(s) of application2 | Timetable, commercial or any other use | Patents or other IPR exploitation (licences) | Owner & Other Beneficiary(s) involved |
|----------------------------------|-----------------------------------------|------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------------------------|----------------------------------------------|---------------------------------------|
| knowledge                        | map                                     |                              |                                  | parking areas                                                                                                                                                       |                           |                                        |                                              |                                       |
| General advancement of knowledge | Glossary, clarification of legal issues | No                           | None                             | Glossary of legal terms for higher AD functions to provide legal security                                                                                           | R&D, legal aspects        | -                                      | -                                            | -                                     |
| General advancement of knowledge | Analysis of product liability           | -                            | -                                | Analysis of product liability issues for AD functions; relevant changes and discussion of possible solutions                                                        | R&D, legal aspects        | -                                      | -                                            | -                                     |
| General advancement of knowledge | Data security, data privacy             | -                            | -                                | Clear understanding of how AVs will be influenced by needs of data privacy/security                                                                                 | R&D, legal aspects        | -                                      | -                                            | -                                     |
| General advancement of knowledge | Road traffic law / regulatory law       | -                            | -                                | Analysis of contradictions of various EU Member States' road traffic laws; comparative analysis of markets, measures to be taken by legislators to make AD possible | R&D, legal aspects        | -                                      | -                                            | -                                     |

Due to the large number of exploitable results of the AdaptIVe project a further detailed explanation of each exploitable foreground would go beyond the scope of this report. A comprehensive description of deployment trends and strategies for AD functions – including major exploitable results – is provided in the Final Report of the project (Deliverable D1.0: Final project results, chapter 11 Deployment Perspective for Automated Driving).

### 3 Report on societal implications

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>A General Information</b> <i>(completed automatically when Grant Agreement number is entered.)</i>                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |
| <b>Grant Agreement Number:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 610428                                                                              |
| <b>Title of Project:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AdaptIVe - Automated Driving Applications and Technologies for Intelligent Vehicles |
| <b>Name and Title of Coordinator:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Hr. Aria Etemad                                                                     |
| <b>B Ethics</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
| <b>1. Did your project undergo an Ethics Review (and/or Screening)?</b> <ul style="list-style-type: none"> <li>If Yes: have you described the progress of compliance with the relevant Ethics Review/Screening Requirements in the frame of the periodic/final project reports?</li> </ul> <p>Special Reminder: the progress of compliance with the Ethics Review/Screening Requirements should be described in the Period/Final Project Reports under the Section 3.2.2 'Work Progress and Achievements'</p> | No                                                                                  |
| <b>2. Please indicate whether your project involved any of the following issues (tick box) :</b>                                                                                                                                                                                                                                                                                                                                                                                                              | No                                                                                  |
| <b>RESEARCH ON HUMANS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                     |
| • Did the project involve children?                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No                                                                                  |
| • Did the project involve patients?                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No                                                                                  |
| • Did the project involve persons not able to give consent?                                                                                                                                                                                                                                                                                                                                                                                                                                                   | No                                                                                  |
| • Did the project involve adult healthy volunteers?                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No                                                                                  |
| • Did the project involve Human genetic material?                                                                                                                                                                                                                                                                                                                                                                                                                                                             | No                                                                                  |
| • Did the project involve Human biological samples?                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No                                                                                  |
| • Did the project involve Human data collection?                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No                                                                                  |
| <b>RESEARCH ON HUMAN EMBRYO/FOETUS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                     |
| • Did the project involve Human Embryos?                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No                                                                                  |
| • Did the project involve Human Foetal Tissue / Cells?                                                                                                                                                                                                                                                                                                                                                                                                                                                        | No                                                                                  |
| • Did the project involve Human Embryonic Stem Cells (hESCs)?                                                                                                                                                                                                                                                                                                                                                                                                                                                 | No                                                                                  |
| • Did the project on human Embryonic Stem Cells involve cells in culture?                                                                                                                                                                                                                                                                                                                                                                                                                                     | No                                                                                  |
| • Did the project on human Embryonic Stem Cells involve the derivation of cells from Embryos?                                                                                                                                                                                                                                                                                                                                                                                                                 | No                                                                                  |
| <b>PRIVACY</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                     |
| • Did the project involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?                                                                                                                                                                                                                                                                                                                             | No                                                                                  |
| • Did the project involve tracking the location or observation of people?                                                                                                                                                                                                                                                                                                                                                                                                                                     | No                                                                                  |
| <b>RESEARCH ON ANIMALS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                     |
| • Did the project involve research on animals?                                                                                                                                                                                                                                                                                                                                                                                                                                                                | No                                                                                  |
| • Were those animals transgenic small laboratory animals?                                                                                                                                                                                                                                                                                                                                                                                                                                                     | No                                                                                  |
| • Were those animals transgenic farm animals?                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | No                                                                                  |
| • Were those animals cloned farm animals?                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | No                                                                                  |
| • Were those animals non-human primates?                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | No                                                                                  |
| <b>RESEARCH INVOLVING DEVELOPING COUNTRIES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                     |
| • Did the project involve the use of local resources (genetic, animal, plant etc)?                                                                                                                                                                                                                                                                                                                                                                                                                            | No                                                                                  |
| • Was the project of benefit to local community (capacity building, access to healthcare, education etc)?                                                                                                                                                                                                                                                                                                                                                                                                     | No                                                                                  |
| <b>DUAL USE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                     |
| • Research having direct military use                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No                                                                                  |
| • Research having the potential for terrorist abuse                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No                                                                                  |

| <b>C Workforce Statistics</b>                                                                                                                             |                 |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|
| <b>3. Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).</b> |                 |               |
| Type of Position                                                                                                                                          | Number of Women | Number of Men |
| Scientific Coordinator                                                                                                                                    | 0               | 1             |
| Sup-project leaders                                                                                                                                       | 2               | 5             |
| Experienced researchers (i.e. PhD holders)                                                                                                                | 10              | 26            |
| PhD Students                                                                                                                                              | 8               | 18            |
| Other                                                                                                                                                     |                 |               |
| <b>4. How many additional researchers (in companies and universities) were recruited specifically for this project?</b>                                   |                 | 15            |
| Of which, indicate the number of men:                                                                                                                     |                 | 9             |

| <b>D Gender Aspects</b>                                                                                                                                                                                                                |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|---|--------------------------------------|-------------------------|-----------------------|
| 5. Did you carry out specific Gender Equality Actions under the project?                                                                                                                                                               |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      | X<br>○                  | Yes<br>No             |
| 6. Which of the following actions did you carry out and how effective were they?                                                                                                                                                       |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      | Not at all<br>effective | Very<br>effective     |
|                                                                                                                                                                                                                                        |  | <input type="checkbox"/> | Design and implement an equal opportunity policy                                                                  |                                                                                                   |  |   | <input type="radio"/>                | <input type="radio"/>   | <input type="radio"/> |
|                                                                                                                                                                                                                                        |  | <input type="checkbox"/> | Set targets to achieve a gender balance in the workforce                                                          |                                                                                                   |  |   | <input type="radio"/>                | <input type="radio"/>   | <input type="radio"/> |
|                                                                                                                                                                                                                                        |  | <input type="checkbox"/> | Organise conferences and workshops on gender                                                                      |                                                                                                   |  |   | <input type="radio"/>                | <input type="radio"/>   | <input type="radio"/> |
|                                                                                                                                                                                                                                        |  | <input type="checkbox"/> | Actions to improve work-life balance                                                                              |                                                                                                   |  |   | <input type="radio"/>                | <input type="radio"/>   | <input type="radio"/> |
|                                                                                                                                                                                                                                        |  | X                        | Other:                                                                                                            | Gender Equality Actions were carried out by the individual partner organisations (i.e. girls day) |  |   |                                      |                         |                       |
| 7. Was there a gender dimension associated with the research content – i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed? |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | X                        | Yes- please specify<br>For experiments in driving simulators female proportion of test persons was considered.    |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | ○                        | No                                                                                                                |                                                                                                   |  |   |                                      |                         |                       |
| <b>E Synergies with Science Education</b>                                                                                                                                                                                              |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
| 8. Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?                                                         |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | X                        | Yes- please specify<br>Master and PhD theses in project context                                                   |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | ○                        | No                                                                                                                |                                                                                                   |  |   |                                      |                         |                       |
| 9. Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)?                                                                                                                          |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | X                        | Yes- please specify<br>Scientific publications, general brochure and explanatory video, journal publications etc. |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | ○                        | No                                                                                                                |                                                                                                   |  |   |                                      |                         |                       |
| <b>F Interdisciplinarity</b>                                                                                                                                                                                                           |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
| 10. Which disciplines (see list below) are involved in your project?                                                                                                                                                                   |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | X                        | Main discipline <sup>3</sup> : natural sciences, engineering and technology, social sciences                      |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | ○                        | Associated discipline <sup>3</sup> :                                                                              |                                                                                                   |  | ○ | Associated discipline <sup>3</sup> : |                         |                       |
| <b>G Engaging with Civil society and policy makers</b>                                                                                                                                                                                 |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
| 11a Did your project engage with societal actors beyond the research community? (if 'No', go to Question 14)                                                                                                                           |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      | X<br>○                  | Yes<br>No             |
| 11b If yes, did you engage with citizens (citizens' panels / juries) or organised civil society (NGOs, patients' groups etc.)?                                                                                                         |  |                          |                                                                                                                   |                                                                                                   |  |   |                                      |                         |                       |
|                                                                                                                                                                                                                                        |  | ○                        | No                                                                                                                |                                                                                                   |  |   |                                      |                         |                       |

<sup>3</sup> Insert number from list below (Frascati Manual).

|                                                                                                                                                                                                              |                                                                                                                                                                                                            |                                                                                                                                                                                                         |                                                                                                                                                                                                                                                       |           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input type="radio"/>                                                                                                                                                                                   | Yes- in determining what research should be performed                                                                                                                                                                                                 |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input type="radio"/>                                                                                                                                                                                   | Yes - in implementing the research                                                                                                                                                                                                                    |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input checked="" type="radio"/>                                                                                                                                                                        | Yes, in communicating /disseminating / using the results of the project                                                                                                                                                                               |           |
| <b>11c</b>                                                                                                                                                                                                   | In doing so, did your project involve actors whose role is mainly to organise the dialogue with citizens and organised civil society (e.g. professional mediator; communication company, science museums)? |                                                                                                                                                                                                         | <input type="radio"/><br><input checked="" type="radio"/>                                                                                                                                                                                             | Yes<br>No |
| <b>12. Did you engage with government / public bodies or policy makers (including international organisations)</b>                                                                                           |                                                                                                                                                                                                            |                                                                                                                                                                                                         |                                                                                                                                                                                                                                                       |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input type="radio"/>                                                                                                                                                                                   | No                                                                                                                                                                                                                                                    |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input type="radio"/>                                                                                                                                                                                   | Yes- in framing the research agenda                                                                                                                                                                                                                   |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input checked="" type="radio"/>                                                                                                                                                                        | Yes - in implementing the research agenda                                                                                                                                                                                                             |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input checked="" type="radio"/>                                                                                                                                                                        | Yes, in communicating /disseminating / using the results of the project                                                                                                                                                                               |           |
| <b>13a Will the project generate outputs (expertise or scientific advice) which could be used by policy makers?</b>                                                                                          |                                                                                                                                                                                                            |                                                                                                                                                                                                         |                                                                                                                                                                                                                                                       |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input type="radio"/>                                                                                                                                                                                   | Yes – as a <b>primary</b> objective (please indicate areas below- multiple answers possible)                                                                                                                                                          |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input checked="" type="radio"/>                                                                                                                                                                        | Yes – as a <b>secondary</b> objective (please indicate areas below - multiple answer possible)                                                                                                                                                        |           |
|                                                                                                                                                                                                              |                                                                                                                                                                                                            | <input type="radio"/>                                                                                                                                                                                   | No                                                                                                                                                                                                                                                    |           |
| <b>13b If Yes, in which fields?</b>                                                                                                                                                                          |                                                                                                                                                                                                            |                                                                                                                                                                                                         |                                                                                                                                                                                                                                                       |           |
| Agriculture<br>Audiovisual and Media<br>Budget<br>Competition<br>Consumers<br>Culture<br>Customs<br>Development Economic and Monetary Affairs<br>Education, Training, Youth<br>Employment and Social Affairs |                                                                                                                                                                                                            | Energy<br>Enlargement<br>Enterprise<br>Environment<br>External Relations<br>External Trade<br>Fisheries and Maritime Affairs<br>Food Safety<br>Foreign and Security Policy<br>Fraud<br>Humanitarian aid | Human rights<br>Information Society<br>Institutional affairs<br>Internal Market<br>Justice, freedom and security<br>Public Health<br>Regional Policy<br>Research and Innovation<br>Space<br>Taxation<br><input checked="" type="checkbox"/> Transport |           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                  |                          |                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|-------------------------------------------------|
| <b>13c If Yes, at which level?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |                          |                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="radio"/>                            | Local / regional levels  |                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="radio"/>                            | National level           |                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input checked="" type="radio"/>                 | European level           |                                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="radio"/>                            | International level      |                                                 |
| <b>H Use and dissemination</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                  |                          |                                                 |
| <b>14. How many Articles were published/accepted for publication in peer-reviewed journals?</b>                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                  |                          | 5                                               |
| <b>To how many of these is open access<sup>4</sup> provided?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |                          | 1                                               |
| <b>How many of these are published in open access journals?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                  |                          | 1                                               |
| <b>How many of these are published in open repositories?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                  |                          | 1                                               |
| <b>To how many of these is open access not provided?</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                  |                          | 4                                               |
| <b>Please check all applicable reasons for not providing open access:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                  |                          |                                                 |
| <input type="checkbox"/> publisher's licensing agreement would not permit publishing in a repository<br><input type="checkbox"/> no suitable repository available<br><input type="checkbox"/> no suitable open access journal available<br><input checked="" type="checkbox"/> no funds available to publish in an open access journal<br><input type="checkbox"/> lack of time and resources<br><input type="checkbox"/> lack of information on open access<br><input type="checkbox"/> other <sup>5</sup> : ..... |                                                  |                          |                                                 |
| <b>15. How many new patent applications ('priority filings') have been made?</b><br><i>("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).</i>                                                                                                                                                                                                                                                                  |                                                  |                          | 0                                               |
| <b>16. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).</b>                                                                                                                                                                                                                                                                                                                                                                                              |                                                  | Trademark                | 0                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                  | Registered design        | 0                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                  | Other                    | 0                                               |
| <b>17. How many spin-off companies were created / are planned as a direct result of the project?</b>                                                                                                                                                                                                                                                                                                                                                                                                                |                                                  |                          | 0                                               |
| <i>Indicate the approximate number of additional jobs in these companies:</i>                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                  |                          |                                                 |
| <b>18. Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:</b>                                                                                                                                                                                                                                                                                                                                                                         |                                                  |                          |                                                 |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Increase in employment, or                       | <input type="checkbox"/> | In small & medium-sized enterprises             |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Safeguard employment, or                         | <input type="checkbox"/> | In large companies                              |
| <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Decrease in employment,                          | <input type="checkbox"/> | None of the above / not relevant to the project |
| <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Difficult to estimate / not possible to quantify |                          |                                                 |

<sup>4</sup> Open Access is defined as free of charge access for anyone via Internet.

<sup>5</sup> For instance: classification for security project.

|                                                                                                                                                                                                       |                                     |                             |  |                                     |                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------|--|-------------------------------------|---------------------------------------------------------------------------------|
| <b>19. For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (FTE = one person working fulltime for a year) jobs:</b> |                                     |                             |  | Indicate figure:                    |                                                                                 |
| Difficult to estimate / not possible to quantify                                                                                                                                                      |                                     |                             |  | X                                   |                                                                                 |
| <b>I Media and Communication to the general public</b>                                                                                                                                                |                                     |                             |  |                                     |                                                                                 |
| <b>20. As part of the project, were any of the beneficiaries professionals in communication or media relations?</b>                                                                                   |                                     |                             |  |                                     |                                                                                 |
|                                                                                                                                                                                                       | <input checked="" type="radio"/>    | Yes                         |  | <input type="radio"/>               | No                                                                              |
| <b>21. As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?</b>                             |                                     |                             |  |                                     |                                                                                 |
|                                                                                                                                                                                                       | <input checked="" type="radio"/>    | Yes                         |  | <input type="radio"/>               | No                                                                              |
| <b>22 Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?</b>                                              |                                     |                             |  |                                     |                                                                                 |
|                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | Press Release               |  | <input checked="" type="checkbox"/> | Coverage in specialist press                                                    |
|                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | Media briefing              |  | <input checked="" type="checkbox"/> | Coverage in general (non-specialist) press                                      |
|                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | TV coverage / report        |  | <input checked="" type="checkbox"/> | Coverage in national press                                                      |
|                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | Radio coverage / report     |  | <input checked="" type="checkbox"/> | Coverage in international press                                                 |
|                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | Brochures /posters / flyers |  | <input checked="" type="checkbox"/> | Website for the general public / internet                                       |
|                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | DVD /Film /Multimedia       |  | <input checked="" type="checkbox"/> | Event targeting general public (festival, conference, exhibition, science café) |
| <b>23 In which languages are the information products for the general public produced?</b>                                                                                                            |                                     |                             |  |                                     |                                                                                 |
|                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | Language of the coordinator |  | <input checked="" type="checkbox"/> | English                                                                         |
|                                                                                                                                                                                                       | <input checked="" type="checkbox"/> | Other language(s)           |  |                                     |                                                                                 |

## 4 Final report on the distribution of the European Union financial contribution

(P3 cost claims have not be approved by the EC, yet)

| No.          | Name of beneficiary | Final amount of EU contribution per beneficiary in Euros |
|--------------|---------------------|----------------------------------------------------------|
| 1            | VW                  |                                                          |
| 2            | BMW                 |                                                          |
| 3            | BMWFT               |                                                          |
| 4            | CRF                 |                                                          |
| 5            | DAI                 |                                                          |
| 6            | OPEL                |                                                          |
| 7            | PSA                 |                                                          |
| 8            | REN                 |                                                          |
| 9            | VCC                 |                                                          |
| 10           | VTEC                |                                                          |
| 10a          | VTC                 |                                                          |
| 11           | FORD                |                                                          |
| 12           | BOSCH               |                                                          |
| 13           | CONTIT              |                                                          |
| 14           | DEL                 |                                                          |
| 15           | CONTIA              |                                                          |
| 16           | BAST                |                                                          |
| 17           | DLR                 |                                                          |
| 18           | ICCS                |                                                          |
| 19           | TNO                 |                                                          |
| 20           | CTAG                |                                                          |
| 21           | CHAL                |                                                          |
| 22           | IKA                 |                                                          |
| 22a          | FKA                 |                                                          |
| 23           | LEEDS               |                                                          |
| 24           | LUND                |                                                          |
| 25           | UNITN               |                                                          |
| 26           | UNIW                |                                                          |
| 27           | WIVW                |                                                          |
| 28           | ALC                 |                                                          |
| 29           | EICT                |                                                          |
| <b>Total</b> |                     |                                                          |