PROJECT PERIODIC REPORT

JU Grant Agreement number: **295364**

Project acronym: **DESERVE**

Project title: **Development platform for Safe and Efficient dRiVE**

Date of latest version of Annex I against which the assessment will be made:

Periodic report: **1st** ☐ **2nd** ☐ **3rd** ■ **4th** ☐ **5th** ☐ **6th** ☐

Period covered: **from 1 Sep 2014** **to 28 Feb 2015**

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[1] Usually the contact person of the coordinator as specified in Art. 8.1. of the grant agreement

[2] The home page of the website should contain the generic European Emblem and the Joint Undertaking's logo which are available in electronic format at the Europa website (logo of the European flag: http://europa.eu/abc/symbols/emblem/index_en.htm ; logo of the Joint Undertaking: ARTEMIS :). The area of activity of the project should also be mentioned.

Declaration by the scientific representative of the project coordinator[1]

I, as scientific representative of the coordinator[1] of this project and in line with the obligations as stated in Article II.2.3 of the JU Grant Agreement declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
- The project (tick as appropriate):
  - ■ has fully achieved its objectives and technical goals for the period;
  - ☐ has achieved most of its objectives and technical goals for the period with relatively minor deviations[3];
  - ☐ has failed to achieve critical objectives and/or is not at all on schedule[4].
- The public website is up to date, if applicable.
- All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 5 (Project Management) in accordance with Article III.2.f and IV.1.f of the JU Grant Agreement.

Name of scientific representative of the Coordinator[1]: Dr. **Riikka Virkkunen**, Head of Research Area

Date: 24 / 04 / 2015

Signature of scientific representative of the Coordinator[1]: .....

[3] If either of these boxes is ticked, the report should reflect these and any remedial actions taken.

[4] If either of these boxes is ticked, the report should reflect these and any remedial actions taken.

1 Publishable summary

The DESERVE project aims to develop the common software toolbox for reusing the existing software components and minimising complexity of the in-car hardware and software solutions. The project objectives goes beyond the automotive industry and the cross-platform will suitable also moving work machines, motorcycles and robotic application. The platform enables third party component suppliers to incorporate to automotive business if they follow the standardised interfaces.

The project originally selected the following ADAS applications to be further developed in the project:

- *Lane change assistance system*
- *Pedestrian safety systems*
- *Forward/Rearward looking system (distant range)*
- *Adaptive light control*
- *Park assistant*
- *Night vision system*
- *Cruise Control System*
- *Traffic sign and traffic light recognition*
- *Map supported systems (Note: only DAS scope, no driver information)*
- *Vehicle interior observation*

These functions have been further developed and adapted to the common software framework which has initially been described in D25.2 (ADAS platform development). The platform is intended to be common methodology and guideline for automotive industry to design their own tools by allowing third party developers to be interoperability with automotive software. The project has developed up to date three different demonstration vehicles to which the technology has been integrated:

- *Fiat: Passenger cars (Fiat 500L and Jeep Renegade): AEB pedestrian, AEB Interurban, Driver monitoring, Driver Intention, new HMI solutions*
- *Daimler: Luxury car (Mercedes S-class): Interurban traffic assistance*
- *Volvo: Truck (Volvo FH12): Environment perception and ADAS functions*
- *TTS: Truck (Iveco Stralis): Environment perception technologies and driver monitoring*

The next major step is to finalise the integrated demo vehicles to be ready for final event showcase in Ulm on 16-17 Dec 2015.

Figure 1. TTS demonstration truck for developing driver training technology

Figure 2. The automatic emergency braking is one of the Volvo case applications

Figure 3. The HMI design for the DESERVE ADAS functions

The project is coordinated by Dr. Matti Kutila from VTT Technical Research Centre of Finland. His phone number is +358 40 820 8334 and email address matti.kutila@vtt.fi. Further information concerning the project is available in the project web site: http://www.deserve-project.eu/

2 Project objectives for the period

Scientific and Technical objectives	Measurable and verifiable form	Objectives in the reporting period
The definition and implementation of a model-driven process for the compositional development of safety critical systems that allows the smoothly integration of existing components and functions in a new framework	By defining an analysis methodology to establish an industrially applicable process for exploration of design spaces and multi-criteria constraint satisfaction, with particular regard to safety properties. *Verification: 90% or more of the applications identified could be developed with the proposed platform*	Has been completed in the previous reporting period on 1 Sep 2013 – 31 Aug 2015
The development of an innovative embedded vehicle platform capable of supporting the fast and reliable development of ADAS and efficient Eco-driving functions	By implementing demonstrators for active and passive safety of drivers and all road users in the three macro-areas in the automotive domain such as: - Technical, safety and efficiency impact assessment of resulting prototypes following the evaluation methodologies identified in project PREVAL and in line with INTERACTIVE evaluation methodologies; - Cost-Benefits analysis - Evaluation of cost reduction in comparison with conventional Driver Assistance Systems. *Verification: 90% or more of the developed applications showed more than 15% of reduction in development time and cost.*	The integration of the embedded components to the prototypes is pending which allows assessment of the DESERVE functions. D61.2 (Validation plan) has been submitted including Key Performance Indicators of the project.
The integration of existing vehicle sensors and actuators in a unified SW framework for multiple safety and Eco-driving applications	Existence of a cost-effective and flexible SW platform, able to be used with available sensors/actuators. *Verification: 90% or more of the developed applications show more than 15% reduction in development duration and cost.*	Integration of the sensors to the common DESERVE platform is pending. Evaluation is intended to started in the next reporting period.
The adaptation of the current data fusion, HMI and driver's behaviour modules to provide suitable and harmonised middleware for the different safety and Eco-driving functions	By applying the V-model and developing high level services and Application Protocol Interface (API) that can be used in a wide range of safety-related use cases (also considering the possible emerging risk-prone use cases for the next generation vehicles) Via multi-modal HMI with user related and driver behaviour assessment through tests in driving simulator and	The D34.1 (HMI solution design) has been accepted and D61.2 (Validation Plan) has been submitted. The statistical evidence will be available when evaluation period under WP6.3 (Evaluation) has been carried out.

	in prototype vehicles By using EU project PELOPS simulation in the driver behaviour modules and providing benchmarking between PELOPS virtual driver and real driver. *Verification: Statistical evidence of improvement of driver acceptance between existing (on the market) and DESERVE-developed functions. Subjective evaluation through questionnaires.*	
The implementation of a new method and relative tools for ADAS functions development	Existence of new tools for development of Driver Assistance Systems, including data fusion visualisation, algorithm development, actuation simulation, etc. *Verification:* *Evidence that the method is suitable for effective ADAS developments:* *- Results of the test case development* *- Results of workshops with main stakeholders, OEMs and Automotive suppliers.*	The standalone application development has been completed and the project is in integration phase. The DESERVE workshop in SAMOS on 15th of July indicated that the developed ADAS functions are novel. This objective has been met in this reporting period.

The recommendations pointed out in the second review meeting in CRF, Turing on 9-10 Oct 2015:

- *SP 2 is in its final stage and this should be one of the most important realisations of the project, the DESERVE platform. However, it is not always clear what is meant with 'the platform'. Sometimes it is very tangible like rapid development system of dSPACE, the modified micro Autobox with PC and FPGA. This is even to such extent that it gives the impression that if dSPACE would withdraw from the consortium, the DESERVE platform would collapse. On the other hand, it is sometimes very vague, for example the perception layer. What will be finally available, C-code algorithms, description of inputs and outputs? It is recommended to put this clear in the deliverable D25.8, by explaining the final architecture of the DESERVE platform and being specific on:*
  - *PC based development framework*
  - *Embedded controller development framework*
  - *Hardware development framework*
- *How do these frameworks look like, which specific software tools are considered, what is disclosed to companies that want to integrate/connect their systems, tools or hardware to it. It should contain a kind of wizard that allows organisations to easily use the platform.*
  RESPONSE: The DESERVE white paper concerning content and outline of the DESERVE platform has been written and will be submitted the ECSEL for assessment soon. The article will also be submitted to the TRA 2016 conference in Warsaw on 18-21 Apr 2016. In addition the D25.8 (DESERVE platform – final release) has almost been finalised and will be submitted during next three weeks to the ECSEL portal.

- *An important part of the DESERVE project is about safety. However, given the required effort needed for the implementation phase, safety issues are not addressed at the same degree of detail. For example, CRF introduces (safety-related) functionality in the car, but it does not perform the corresponding safety analysis. The use of Fuzzy logic is not enough justified w.r.t. to the ISO26262.*

RESPONSE: The safety analysis of AEB applications is a relevant outcome of related innovation and product development activities and it has been performed outside DESERVE.
In DESERVE only the main phases of the analysis process can be shared.

- *In that respect, deliverable 24.4. about the arbitration control should motivate in an annexe how the selection of fuzzy logic fits to the requirement of safety, that the platform can be used in a safety process of ISO 26262.*
  RESPONSE: The project validation plan (D61.2) has been submitted and it contains the evaluation criteria's and key performance indicators (KPI) for assessing the DESERVE functions. One aspect is also safety which will be taken into account in the evaluation.
  The fuzzy logic is maybe slightly misunderstood and the main goal is not the safety improvements. Rather the idea is to have intelligence for vehicles controls in general level.

- *With respect to the deliverable vehicle modelling (D23.3), an annex should be provided that qualifies the model. Like for example which manoeuvres with what accuracy should be reproduced by the model, which frequency range should be covered by the model.*
  RESPONSE: The verification to the vehicle quality is under construction.

- *Part B of the Technical Annexe p. 9. describes hard quantifiable targets on reduction in development times, managing complexity, reduction of effort and time for re-validation and recertification. Key enablers for these reductions are pre-certification of the software modules through a conformity of the software development process at ISO 26262 and ISO 15504, compose-ability and scale-ability. In the current state of the project and with the currently available deliverables, it is not clear how this is addressed in the DESERVE platform. This can be attributed to the fact that no formal process was followed in the requirement and specification phase of the project. The project rather followed a bottom up approach. This choice is respected but at the end of the project, the deserve platform should be formalised. It is suggested to incorporate this formalisation step in WP 2.5 and the pending deliverable D25.8 of WP 2.5. On the other hand, the valorisation plan should be such that these high level objectives of part B of the Technical Annexe can be verified. Clear Key Performance Indicators should be defined in the valorisation plan to verify this.*
  RESPONSE: Key Performance Indicators are available in the D61.2 which has been submitted and D25.8 is under internal review process and will be submitted next few weeks. D25.8 describes the final DESERVE platform concept scenarios.

- *The applications are highly appreciated by the reviewers. Especially, the CRF demonstration with automatic braking for a pedestrian, shown the first day of the review and the work performed by Daimler and Bosch on Inter Urban Assist, were impressive. The fact that Daimler relied not only on the hardware in the development process of dSPACE but also on PC's shows that the development platform is not strictly dSPACE centric. In addition, Daimler should disclose to the consortium in what sense the heterogeneous specification of the platform is a burden to the realisation of the platform and maybe based on these observations, this specification should be revised.*
  RESPONSE: The platform will be explained in general level in D25.8 and the specific DAIMLER case in D51.2 (Passenger Car – Functions integrated on prototypes)

- *Dissemination is appropriate. However, the list of papers produced within the context of the project, should be made available on the project website. An important point in the dissemination is the 'white paper'. It should clearly explain the capabilities of the platform and provide supportive explanations to the 'wizard', discussed above.*
  RESPONSE: The list of papers is available in the project web page and the white paper is under review process and will be submitted soon to the TRA 2016 conference.

- *The exploitation plan should not only be restricted on how the platform will be used and which methodologies will be incorporated in the processes of the industrial partners. It should contain a quantitative calculation on how the use of the DESERVE platform will impact the development time and strengthen the market position of the companies.*
  RESPONSE: This is the topic of D71.2 (Exploitation plan) which intermediate version will be available soon.

3 Work progress and achievements during the period

3.1 *Work package progress reports*

3.1.1 SP2 ADAS Development Platform (INRIA)

Period objectives:	Development of the DESERVE methodology for ADAS. These activities were developed in framework of 6 different and complementary work Package.
Summary of progress:	SP2 is the core of DESERVE project. The results are being tested, integrated and validated in 3 vehicle demonstrators (Daimler, CRF and Volvo truck). Two main software tools (ADTF and RTMaps) have been selected to test the robustness and modularity of our approaches.
Major results:	DESERVE methodology was defined, and currently the partners are working on their assigned tasks, for all the use cases and platforms. Definition and development of the inputs and outputs of each module developed in the Perception, Application and IWI platforms. Contributions in the deliverable D25.8 and D24.4
Deviations from Annex I and planned corrective actions:	No technical or scientific deviations. Only annexe of D24.4 and last contributions in D25.8 are being completed.
Statement of used resources:	The expected human resources were almost respected.
Statement concerning interaction with other projects:	Some SP2 partners had important interaction with interactIVe-EU-FP7 project as well as the former EU-FP7-Have-IT project and CityMobil2 and the French ABV (Low Speed Automation) project.
Dissemination and exploitation:	There have been some dissemination efforts within SP2: • IEEE-ITSC 2014: Continuous curvature planning with obstacle avoidance capabilities in urban scenarios, October.
WP25 Platform System Architecture (INFINEON)	
Reporting period objectives:	main goal of year 2 was the completion of D25.8 (DESERVE platform – final release)
Summary of progress:	due to the complexity it was decided to split up activities and deliver D25.2 Platform System Architecture – Final Release; D25.4 Standard Interfaces definition – Final Release and D25.6 Guidelines for applications development – Final Release) first. In a next step, those results were brought into demonstrator development. Based on the experience gained by this process, all learnings will be integrated into D25.8
Major results:	the following documents have been delivered: • D25.2 Platform System Architecture – Final Release • D25.4 Standard Interfaces definition – Final Release • D25.6 Guidelines for applications development – Final Release
Deviations from Annex I and planned corrective actions:	D25.8 was delayed for the reasons above. It is expected that the delay will be justified by higher quality of D25.8
Statement of used resources:	resources are used according to plan
Statement concerning interaction	n/a

with other projects:	
Dissemination and exploitation:	There is no direct exploitation of the platform, however, based on the documentation, end users can derive their specific platform.

3.1.2 SP3 Driver Behaviour – HMI (ICOOR)

Reporting period objectives:	The objectives of SP3 matched with the objectives of activities still open in the period (WP3.2 and WP3.4). A regards WP3.2, the objective was the definition of a general driver monitoring module and, by exploiting the software and hardware modules of the DESERVE platform, the development of the experimental driver monitoring module. The objective of WP3.4 for the period was instantiating the general solution defined in the WP3.3 to design a HMI overall concept that took into consideration all systems developed in the project, and finally develop a prototype solution.
Summary of progress:	
Major results:	
Deviations from Annex I and planned corrective actions:	SP3 has been impacted by the startup delays in DESERVE. As a consequence it is expected to take advantage of the planned 6 month extension, and its end will be now scheduled for M33 of the project rather than M27. No further delay of the activities is expected after M33.
Statement of used resources:	Adequate
Statement concerning interaction with other projects:	No specific interaction with other projects
Dissemination and exploitation:	
WP32 Driver Monitoring (FICOSA)	
Reporting period objectives:	Objectives were: • Definition of a general driver monitoring module that will be integrated into the DESERVE platform. • Development of the Driver Monitoring function prototypes that will use D32.1 General Driver Monitoring prototyping definition as reference. • Agreed with CRF the architecture for the integration of driver monitoring functions into CRF demo vehicle.
Summary of progress:	FICOSA defined in cooperation with CONTI the architecture of the Driver Monitoring Module. First deliverable completed in Sept 2013: D32.1 General driver monitoring module definition. The second deliverable D32.2 the actual module for driver monitoring will be installed on CRF demo vehicle in preparation in SP5.
Major results:	Currently FICOSA is completing the porting in RTMAPS of the different SW modules that will be part of the driver monitoring demonstrator installed in the CRF Demo car. Meanwhile, it was discussed and agreed with CRF the architecture for the integration of driver monitoring functions into CRF demo vehicle.
Deviations from Annex I and planned corrective actions:	Deliverable 32.2 was originally planned for month 26. It has been re-scheduled for M33, in time for the installation on CRF demo car.
Statement of used resources:	No significant deviation in the number of planned person-months
Statement concerning interaction with other projects:	None.
Dissemination and exploitation:	None.
WP34 Innovative Integrated HMI (CRF)	

Reporting period objectives:	The objective of WP3.4 for the period was instantiating the general solution defined in the WP3.3 to design a HMI overall concept that took into consideration all systems developed in the project, and finally develop a prototype solution.
Summary of progress:	In the current period 6 HMI overall concepts has been drafted and designed by RELAB, ICOOR and CRF. The concepts has been draft considering the usability guidelines defined in WP3.3. and in D3.4.1. In the concepts all the ADAS functions foreseen within the DESERVE project have been integrated in one single concept exploring different layout possibilities. The 6 HMI concepts will be object of a FOCUS GROUP carried out by CTAG in march and the winning solutions will be tested by RELAB and ICOOR with users using a driving simulator.
Major results:	D34.1 was delivered at the early beginning of this reporting period (1st of September) as major output of the previous period. The major results of this reporting period are the 6 HMI overall concepts covering the ADAS functions developed in the DESERVE project.
Deviations from Annex I and planned corrective actions:	Deliverable 34.2 was originally planned for month 26. It has been re-scheduled for M33, in time for the installation on CRF demo car.
Statement of used resources:	The use of resources is in line with expectations.
Statement concerning interaction with other projects:	The interectIVe project has been used as a starting point for this activity.
Dissemination and exploitation:	Future exploitation activities are planned once the overall concept will be finalized.

3.1.3 SP4 Test Case Functions (BOSCH)

Reporting period objectives:	In SP4 – Test case functions the main objective for the third year is to finalize the preparatory work on module level for the different DESERVE platform components that are implemented in the demonstrator vehicles built-up in SP5, namely the warning functions, the control functions, the vulnerable road user protection functions, the automated functions, the cooperative system functions and the Inter-urban Assist specific functions. Implementation and testing both on laboratory level and partially in vehicle sub-modules has finished or is already started. Some modules not intended for implementation in the demo cars are finalized for desk presentation in the final event. Officially SP4 ended with M26, but was extended to M32 in the amendment for some of the delayed deliverables (see updated DoW for new deliverable due-dates).
Summary of progress:	Work progress on WP-level for the individual modules advanced well. While some WPs succeeded to submit their second year deliverables in time (i.e. D43.2, D44.2 D45.2 and D45.3), some others (i.e. D41.2, 42.2, D45.4 and D46.2) needed a postpone of the due-date as stated in the amendment of Annex1 (DoW).
Major results:	The major results elaborated in the WP's are documented in the respective deliverables, namely D43.2 - VRU protection functions prototypes D44.2 - Automated functions prototypes D45.2 - Cooperative systems functions prototypes D45.3 - Initial V2X communication modules prototype D46.2 - Inter Urban assist prototype system description was submitted in Dec. 2014 (M28).
Deviations from Annex I and planned corrective actions:	The delay of some of deliverables (up to 6 month) led to an amendment of Annex1 (DoW) with updated due-dates and an overall project extension by 6 month (until Feb. 2016). No further corrective actions are planned or needed.
Statement of used resources:	Resources are used as planned with still some over- or under-spending by

	individual reasons, expressed in the respective partner section later in this document, where applicable
Statement concerning interaction with other projects:	Interaction with other projects was minor because the SP4 work is mainly focussed on the DESERVE demonstrators in SP5.
Dissemination and exploitation:	Dissemination activities were done on international conferences mainly on (sub)module level and documented in the DESERVE dissemination plan.
WP41 Warning Functions (ASL)	
Reporting period objectives:	Delivery of WP41.2 Prototypes.
Summary of progress:	WP41.2 deliverables delayed from M26 to M30, although in practice different partners delivered over an extended period with the first in M26, the last in M32, and some (CRF's) reassigned to be demonstrated on the WP5.1 cars.
Major results:	WP41.2 mostly delivered.
Deviations from Annex I and planned corrective actions:	WP41.2 not entirely delivered. As at M32, ASL's ROW has only just been completed, and we are awaiting clarification of CRF's schedule for their WP41.2 prototypes that are to be demonstrated on the WP5.1 cars: Report is drafted apart from these details.
Statement of used resources:	Less than planned, for most partners. None have overspent (based on PersonMonths available in repository 15th April 2015).
Statement concerning interaction with other projects:	None.
Dissemination and exploitation:	No activities related to this WP
WP42 Control Functions (IKA)	
Reporting period objectives:	In this period the prototypes (Deliverables D4.2.2) are finalized and a report was written. This report is delayed due to missing inputs and overlaps with other project tasks. Furthermore the partners work on the prototypes to be demonstrated in the demonstrators and lab demo systems.
Summary of progress:	• Prototypes implemented and ready for lab-testing: done • First tests done to ensure that deliverables are working: done • Deliverable finalized and sent for peer-review: done • Extensive lab-testing: pending • Preparation of the functions for the final review and final event as working functions in the demonstrators and lab demo systems
Major results:	The major results are documented in the deliverables D4.2.1 and D4.2.2
Deviations from Annex I and planned corrective actions:	The deliverable is delayed due to missing inputs. As the deliverable is the final document for the control functions in this WP the inputs are strictly necessary. The peer-review process is pending and the deliverable will be submitted within the first week of March.
Statement of used resources:	Most resources are used for personal costs
Statement concerning interaction with other projects:	No interaction with other projects in relation with this WP
Dissemination and exploitation:	No dissemination or exploitation activities related to this WP during this period
WP45 Cooperative Systems Functions (NXP)	
Reporting period objectives:	Finalize the DESERVE cooperative systems prototype based upon short range V2V and V2I IEEE 802.11p DSRC links including advanced reception quality improvement algorithms. Platform architecture utilizing software defined radio plus host-core, enabling flexible integration in ADAS architectures, as well as flexibility towards future evolution of IEEE 802.11p standards Implementation of ITS protocols according to latest ETSI requirements Development and Integration of drivers to interface into ADAS architecture Testing and Demonstration of cooperative systems functions in various ADAS prototype /simulation/test systems.

Summary of progress:	All objectives above accomplished. Final prototype designed and manufactured. Performance and ETSI standards tested in plugfests against 3rd companies and institutions. Flexible integration API's defined, with corresponding host-drivers developed and delivered to partners Platforms delivered to Deserve partners Irseem, dSpace, Technolution for embedding in their prototype systems and demonstrators, Use-case/test/simulation scenarios described and platforms integration performed. IRSEEM has developed a real-time, Hardware-In-The-Loop testbench which integrates the NXP communication subsystems controlled by RTMaps component, allowing broadcast and reception of messages of the virtual cars evolving in the virtual scene. A graphical HMI have been developed to illustrate the integration of the NXP communication subsystem with the virtual testing testbench.
Major results:	See above, the WP is finished; the progress describes the final major results
Deviations from Annex I and planned corrective actions:	Fully on time in revised Deserve schedule
Statement of used resources:	According to plan
Statement concerning interaction with other projects:	Design requirements, and implementation is checked checked vis-à-vis projects as TEAM, VRUITS, MOBINET and EIT ICTlabs
Dissemination and exploitation:	Cooperative system disseminated and exploited at CES Jan 2015 as part of distributed car architecture. at EU Cooperative Corridor demonstrations in Vienna and Helmond in the Stella solar-powered car by TU Eindhoven and NXP, winning the World Solar Challenge and the 8th Annual Crunchie award for Best Technology Achievement, ahead of runner-up Apple Pay
WP46 Inter-urban Assist (DAIMLER)	
Reporting period objectives:	The main objective for this reporting period is the detailed definition of the prototype system of the Inter-Urban Assist and its module decomposition.
Summary of progress:	The modules of the Inter-Urban assist are identified and classified as existing and thus reusable, and those, which need to be implemented. Additionally, a first layout of the final implementation of the Inter-Urban Assist was determined. Several modules are already working in laboratories and in parts already in the demonstrator.
Major results:	The major result of the 3rd reporting period is Deliverable *D46.2 – Prototype system description.*
Deviations from Annex I and planned corrective actions:	The delay of some of deliverables (up to 6 month) led to an amendment of Annex1 (DoW) with updated due-dates and an overall project extension by 6 month (until Feb. 2016). No further corrective actions are planned or needed.
Statement of used resources:	According to the updated DoW in plan.
Statement concerning interaction with other projects:	Main interaction happened within DESERVE project partners and some minor exchange with other projects working on similar topics.
Dissemination and exploitation:	There are no dissemination activities for this reporting period.

3.1.4 SP5 Integration and Tests (CRF)

Reporting period objectives:	-Integration of DESERVE platform and ADAS functions into vehicle demonstrators (DAIMLER; CRF; VOLVO; TTS/VTT)

	-Lab testing of integrated functions -Road testing of integrated functions
Summary of progress:	The Integration activities continued as stated in the amendment of Annex1 (DoW). The status WP51 is more advanced than WP52, where more changes were introduced with the project amendment.
Major results:	• Integration of sensors on vehicle demonstrators • Integration of a common prototyping framework according to the DESERVE platform concept • Software modules needed for the addressed applications • Preliminary tests for function optimisation
Deviations from Annex I and planned corrective actions:	Project delayed and extended 6 months, amendment agreed with ECSEL end 2014. Deliverable D512 and D522 postponed to M36.
Statement of used resources:	Number of planned person-months less than planned, but compensated by the project extension.
Statement concerning interaction with other projects:	No interaction with other projects in relation with this WP.
Dissemination and exploitation:	DESERVE presented at conference "Innovative software put into system", Stockholm, Feb 2015.
WP51 Passenger Car Applications (CRF)	
Reporting period objectives:	-Integration of DESERVE platform and ADAS functions into vehicle demonstrators: • Interurban Assist into DAIMLER democar • AEB pedestrian + Driver distraction /intention into CRF demo car -Lab testing of integrated functions -Road testing of integrated functions
Summary of progress:	-DAIMLER: Functional integration done separately on different levels (sensors, perception, HMI and the car infrastructure itself) -CRF: optimisation of control vehicle logics for different EUNCAP scenarios, preparation of RTMaps environment to integrate the software modules under development, test sessions on driver distraction and data analysis.
Major results:	DAIMLER democar: • Common prototyping framework according to the DESERVE platform concept (dSPACE Micro-Autobox with KINTEX FPGA) • ADTF and FPGA algorithms for Inter-urban Assist modules that are compliant with the DESERVE platform guidelines FIAT 500L: • Common prototyping framework according to the DESERVE platform concept (dSPACE Micro-Autobox) • Democar fully equipped • RTMaps environment ready to integrate further software modules • Tests on driver distraction
Deviations from Annex I and planned corrective actions:	Project delayed (also WP51) and extended 6 month, amendment agreed with ECSEL end 2014. Deliverable D512 postponed to M36.
Statement of used resources:	Number of planned person-months less than planned, but compensated by the project extension.
Statement concerning interaction with other projects:	No interaction with other projects in relation with this WP.
Dissemination and exploitation:	None
WP52 Commercial Vehicle Applications (VOLVO)	
Reporting period objectives:	-Integration of DESERVE platform and ADAS functions into vehicle demonstrators: • ACC and AEBS into VOLVO truck • AEB interurban + Driver distraction / drowsiness /intention into

	CRF demo car (passenger car and not commercial vehicle as originally planned) -Lab testing of integrated functions -Road testing of integrated functions
Summary of progress:	-VOLVO: Integration on Volvo truck of ACC and AEBS functions, development platform, sensors, actuators. -CRF: Planned demo-car Jeep Renegade available from Q4-'14, definition and integration of sensors (radars, cameras, processing hardware). -ASL: contribution from ASL (originally planned in WP5.1), installation of wide angle camera and sw development in Volvo truck. -VTT: Contribution from VTT (originally planned in WP5.3): installation of driver monitoring system and sw development (Driver training application) in TSS truck.
Major results:	Integration of system into truck: • Wide angle camera integrated and tested • Development platform integrated (rapid prototyping) Volvo system status demo during General Assembly in GOT Sept 2014. Integration of system into Jeep Renegade: • Frontal and lateral radars • Webcams for measurement purposes • Development platform integrated (rapid prototyping)
Deviations from Annex I and planned corrective actions:	Project delayed (also WP52) and extended 6 months, amendment agreed with ECSEL end 2014. Deliverable D522 postponed to M36.
Statement of used resources:	Number of planned person-months less than planned, but compensated by the project extension.
Statement concerning interaction with other projects:	No interaction with other projects in relation with this WP.
Dissemination and exploitation:	DESERVE presented at conference "Innovative software put into system", Stockholm, Feb 2015.

3.1.5 SP6 Validation and Evaluation (CRF)

Reporting period objectives:	SP5 is focused in the relevant period on WP6.2 dealing with the validation tests of the DESERVE platform to collect the data on the performance of the framework according to the performance indicators identified in WP6.1.
Summary of progress:	Definition of Performance indicator measures in the development platform and preliminary test execution.
Major results:	List of Performance indicator measures derived from D612
Deviations from Annex I and planned corrective actions:	Project delayed (also WP62 and WP63) and extended 6 months, amendment agreed with ECSEL end 2014. Deliverable D621 and D631 postponed respectively to M36 and M40.
Statement of used resources:	Number of planned person-months less than planned, but compensated by the project extension.
Statement concerning interaction with other projects:	No interaction with other projects in relation with this WP.
Dissemination and exploitation:	None
WP62 Validation Tests (CRF)	
Reporting period objectives:	The objective of WP6.2 is to perform the validation tests of the DESERVE platform to collect the data on the performance of the framework according to the performance indicators identified in WP6.1.
Summary of progress:	• Definition of Performance indicator measures in the development platform • Integration of logging systems • Preliminary test execution.

Major results:	List of Performance indicator measures derived from D612
Deviations from Annex I and planned corrective actions:	Project delayed (also WP62) and extended 6 months, amendment agreed with ECSEL end 2014. Deliverable D621 postponed to M36.
Statement of used resources:	Number of planned person-months less than planned, but compensated by the project extension.
Statement concerning interaction with other projects:	No interaction with other projects in relation with this WP.
Dissemination and exploitation:	None

3.1.6 SP7 Dissemination and Exploitation (ICOOR)

Reporting period objectives:	As regards the dissemination, the overall objective was to ensure that the project results (i.e. research outcomes and developed products) are widely disseminated towards the identified target groups. For the exploitation, standardization and regulation, the objective of the period was to identify and analyse existing and new markets related to the DESERVEoutcomes and to perform a cost benefit analysis at the level of each project exploitable result to perform an evaluation of the project results from a cost-effectiveness perspective and develop and validate alternative business scenarios for the market introduction and diffusion of the DESERVE results.
Summary of progress:	During the period the project website has been updated, namely substitution of ARTEMIS logo with the new ECSEL logo, upload of all public deliverable submitted during year 2 on Deliverable page, update of "Conferences and journal articles "webpage with the list of all articles and material published within the first project years. A Dissemination Opportunities list has been distributed to project partners in order to highlights possible way to disseminate project activities. The following papers has been submitted during the period: • Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions. Submitted to the 2015 IEEE Intelligent Vehicles Symposium, Seoul, Korea, 28 Jun – 1 July 2015. • Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions. Will be submitted to the 2015 IEEE 11th International Conference on Intelligent Computer Communication and Processing (2015 IEEE ICCP). Cluj-Napoca, Romania. 3-5 Sep 2015. • Calefato, C., Kutila, M., Ferrarini, C., Landini, E. Baldi, M. N., Tadei, R. 2015. Development of cost efficient adas tool platform for automotive industry. Submitted to the 22nd ITS World Congress. Bordeaux, France. 5-9 Oct 2015. • Virtanen, A., Pyykönen, P. & Kyytinen, A. 2015. Intelligent dead spot detection system for heavy vehicles. Will be submitted to the 18th IEEE International Conference on Intelligent Transportation Systems (IEEE ITSC 2015). Las Palmas de Gran Canaria. 15-18 Sep 2015. • Klimke, J. et al. 2015. Concept of structuring a generic driver model with respect to the realistic information. 5. Berliner Fachtagung Fahrermodellierung flow. Berlin. 11 June 2015; • Several papers or presentations made by Phd students from IMS, Bosch and Daimler are currently pending for acceptance ion international congresses (i.e. EUMW2015). Furthermore the DESERVE project has been disseminated and exploited during the following events: • at CES Jan 2015 presentation of the Cooperative system as part of

	distributed car architecture; • at EU Cooperative Corridor demonstrations in Vienna and Helmond • in the Stella solar-powered car by TU Eindhoven and NXP, winning the World Solar Challenge and the 8th Annual Crunchie award for Best Technology Achievement, ahead of runner-up Apple Pay; • at conference "Innovative software put into system" held in Stockholm in Feb 2015; • the lessons learned in the field operational test have been presented on several BeterBenutten (programme of the Dutch Ministry of Infrastructure and Environment) events organised by the Dutch Ministry of Infrastructure and Environment;
Major results:	Submission of the following paper (waiting for a feedback): • Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions. Submitted to the 2015 IEEE Intelligent Vehicles Symposium, Seoul, Korea, 28 Jun – 1 July 2015. • Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions. Will be submitted to the 2015 IEEE 11th International Conference on Intelligent Computer Communication and Processing (2015 IEEE ICCP). Cluj-Napoca, Romania. 3-5 Sep 2015. • Calefato, C., Kutila, M., Ferrarini, C., Landini, E. Baldi, M. N., Tadei, R. 2015. Development of cost efficient adas tool platform for automotive industry. Submitted to the 22nd ITS World Congress. Bordeaux, France. 5-9 Oct 2015. • Virtanen, A., Pyykönen, P. & Kyytinen, A. 2015. Intelligent dead spot detection system for heavy vehicles. Will be submitted to the 18th IEEE International Conference on Intelligent Transportation Systems (IEEE ITSC 2015). Las Palmas de Gran Canaria. 15-18 Sep 2015. • Klimke, J. et al. 2015. Concept of structuring a generic driver model with respect to the realistic information. 5. Berliner Fachtagung Fahrermodellierung flow. Berlin. 11 June 2015; • Several papers or presentations made by Phd students from IMS, Bosch and Daimler are currently pending for acceptance ion international congresses (i.e. EUMW2015). Presentation of DESERVE project during several conferences as stated above.
Deviations from Annex I and planned corrective actions:	Some slight delays in D7.13 – Workshop report delivery and exploitation activities have been registered.
Statement of used resources:	In line with expectation.
Statement concerning interaction with other projects:	Preparation of a common speaker corner proposal in cooperation with the dissemination manager of HOLIDES- HOLISTIC HUMAN FACTORS AND SYSTEM DESIGN OF ADAPTIVE COOPERATIVE HUMAN-MACHINE SYSTEMS project for the ARTEMIS Co-Summit 2015.
Dissemination and exploitation:	-
WP71 Dissemination (ICOOR)	
Reporting period objectives:	The overall objective of the dissemination activities in the period was to ensure that the project results (that are almost completed at this stage of the project) are widely disseminated towards the identified target groups. A relevant objective of the period was also the organization of the DESERVE final event in December 2015.
Summary of progress:	Planning and participation to events and conferences and preparation of related dissemination materials. Publication of papers and articles. Update of project website, in particular the following actions has been

	achieved: • Substitution of ARTEMIS logo with the new ECSEL logo; • Upload of all public deliverable submitted during year 2 on Deliverable page; • Update of "Conferences and journal articles "webpage with the list of all articles and material published within the first project years. Partners have been encouraged to disseminate project outcomes and results circulating a list of Dissemination Opportunities.
Major results:	Delivery of the final version of D7.13 – Workshop report. Organization of Second project workshop (D71.4) Organization of DESERVE final event in December 2015. In the period the submission of the following paper has been achieved (waiting for a feedback): • Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions. Submitted to the 2015 IEEE Intelligent Vehicles Symposium, Seoul, Korea, 28 Jun – 1 July 2015. • Caterina Calefato, Matti Kutila, Chiara Ferrarini, Elisa Landini, Mauro Maria Baldi, Roberto, Development of cost efficient adas tool platform for automotive industry - 22nd ITS World Congress - Towards Intelligent Mobility Presentation of DESERVE project during a Swedish conference about "Innovative software put into system" by Nordin Erik-Volvo.
Deviations from Annex I and planned corrective actions:	Slight delay of delivery of D7.13 – Workshop report.
Statement of used resources:	
Statement concerning interaction with other projects:	Preparation of a common speaker corner proposal in cooperation with the dissemination manager of HOLIDES- HOLISTIC HUMAN FACTORS AND SYSTEM DESIGN OF ADAPTIVE COOPERATIVE HUMAN-MACHINE SYSTEMS project for the ARTEMIS Co-Summit 2015.
Dissemination and exploitation:	Update of project website, in particular the following actions has been achieved: • Substitution of ARTEMIS logo with the new ECSEL logo; • Upload of all public deliverable submitted during year 2 on Deliverable page; • Update of "Conferences and journal articles "webpage with the list of all articles and material published within the first project years. Circulation of a Dissemination Opportunities list to project partners in order to highlights possible way to disseminate project activities. Submission of a paper named Development of cost efficient adas tool platform for automotive industry within 22nd ITS World Congress - Towards Intelligent Mobility in collaboration with RE:Lab and VTT:
WP72 Exploitation, Standardisation and Regulatory Issues (CRF)	
Reporting period objectives:	The main objective of WP7.2 is to identify and analyse existing and new markets related to the DESERVE developments and outcomes and to perform a cost benefit analysis at the level of each project exploitable result. Major focus in the third year is on the preparation of a draft of D72.1 Exploitation Plan and D722 Standardisation report.
Summary of progress:	In the relevant period D723 Regulatory report was finalised, whilst D721 Exploitation plan was started. Preliminary data collection was performed for the exploitation plan: • List of applications for patents, trademarks, registered designs • List of exploitable foreground • Supply chains
Major results:	D723 Regulatory report (M25)

Deviations from Annex I and planned corrective actions:	D721 Exploitation plan postponed to month 40 D722 Standardisation report planned to be postponed at month 40 in order to collect and harmonise the standardisation proposals deriving from the OEM application developments (already discussed at the review meeting but not integrated in the amended DoW).
Statement of used resources:	Number of planned person-months less than planned, but compensated by the project extension.
Statement concerning interaction with other projects:	None
Dissemination and exploitation:	None

3.2 *Partners progress reports*

3.2.1 Finland (VTT)

Reporting period objectives:	The aim was to integrate the environment perception and driver monitoring systems to the Finnish demonstration vehicle. Moreover, validation plan (D61.2) was intended to finished and start preparation to the validation.
Summary of progress:	The driver monitoring system was finalised in this reporting period and the demonstration vehicle was received for starting implementation of sensors. The driver monitoring system and stereo camera has been installed to the vehicle.
Major results:	• Driver monitoring application • 2nd grant agreement amendment of the project
Deviations from Annex I and planned corrective actions:	No deviations after changing development focus to truck instead of motorcycle.
Statement of used resources:	One technical expert have been added to follow the sensor implementation. The resource usage follows the original plan.
Statement concerning interaction with other projects:	Interaction with the TEAM-EU-FP7 project has been done in the areas of driver assistance services.
Dissemination and exploitation:	Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions. Submitted to the 2015 IEEE Intelligent Vehicles Symposium, Seoul, Korea, 28 Jun – 1 July 2015.
VTT TECHINCAL RESEARCH OF FINLAND	
Partner number:	1
Reporting period objectives:	Finalise the driver monitoring application and start building framework for the environment perception setup. Finalise the 2nd project contract and budget amendment with ECSEL and TEKES Prepare to the 2nd annual review meeting
Summary of progress:	The driver monitoring application has been finalised and the amendment to the Grant Agreement have been finalised in this period. In addition, contribution to D25.8. (Final DESERVE platform) have been prepared.
Major results:	• Driver monitoring application
Deviations from Annex I and planned corrective actions:	No deviations after changing development focus to truck instead of motorcycle.
Statement of used resources:	One technical expert has been added to follow the sensor implementation.
Statement concerning interaction with other projects:	Interaction with the TEAM-EU-FP7 project has been done in the areas of driver assistance services.
Dissemination and exploitation:	Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions.

	Submitted to the 2015 IEEE Intelligent Vehicles Symposium, Seoul, Korea, 28 Jun – 1 July 2015.
TYÖTEHOSEURA RY (TTS)	
Partner number:	22
Reporting period objectives:	Prepare to demonstrator role with truck instead of role of evaluator with motorcycle. Update all plans for demonstration by the truck. Start implementation of sensors to demonstration vehicle. Obtain demonstration vehicle and all technical equipment's for it.
Summary of progress:	Demonstration truck is obtained. Implementation of sensors is started. Plan for demonstration functionalism is ready.
Major results:	Demonstration plan finalised Three separate camera systems implemented to demonstration vehicle. Outlook of demonstration vehicle is ready
Deviations from Annex I and planned corrective actions:	No deviations after changing role from evaluator of motorcycle demonstration to demonstrator by truck.
Statement of used resources:	No change for used resources, three person are working with project.
Statement concerning interaction with other projects:	No interactions with other active projects
Dissemination and exploitation:	Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions. Submitted to the 2015 IEEE Intelligent Vehicles Symposium, Seoul, Korea, 28 Jun – 1 July 2015.

3.2.2 France (INRIA)

Reporting period objectives:	All the French partners are collaborating in WPs in SP2, SP4, SP5 and SP6, and some of them in SP3. There is a direct cooperation with the passenger cars of the CRF (driving monitoring, vehicle control and software integration). The integration of all the functions and solutions proposed are tested in the RTMaps software (from Intempora).
Summary of progress:	Different work groups are collaborating in different functions and applications around both CRF demonstrators.
Major results:	Contributions in the database of applications, arbitration and control, Perception platform, platform needs and requirements for different platforms, specifically CRF passenger cars have been done. All the French partners have participated in the development of the architecture and their assigned tasks, for all the use cases and platforms.
Deviations from Annex I and planned corrective actions:	No technical or scientific deviations.
Statement of used resources:	The person-months of the French partner were redefined. There are still some problems in the amendment budget for some French partners.
Statement concerning interaction with other projects:	Some partners have direct collaboration, e.g.: INRIA has interaction with ARMINES and INTEMPORA, related to common works, projects and students. In last year, INRIA and Continental are collaborating in national project CoCoVeA.
Dissemination and exploitation:	There have been some dissemination efforts within SP2 and SP4.
CONTINENTAL AUTOMOTIVE (CONTINENTAL)	
Partner number:	2
Reporting period objectives:	Continental has progressed with SP3, SP4 and SP5. Continental's main focus is driver monitoring for passenger car applications in SP3 and SP5. Continental worked in close cooperation with Intempora, Ficosa, Inria and CRF in order to improve the driver monitoring application for the passenger car application inside the RtMaps tools, and the hardware

	integration) inside the first demonstrator vehicle of CRF.
Summary of progress:	Participation to plenary meetings: • General Assembly • Review meeting, Driver Monitoring demonstration Participation to SP meetings: • SP4 definition of the warning strategies (Inria, CRF) , definition of task repartition between partners, inputs/outputs, Components improvement: driver monitoring algorithm, camera control and lights management (nIR lights) (integrated into RTMAPS) . Improvement of algorithms module for face tracking, distraction and drowsiness and integration in RTMAPS). Implementation definition and integration Definition of functional architecture with CRF for CRF demo cars Fiat 500L. Implementation definition of functional architecture with CRF for CRF demo car Jeep Renegade. Specification, Integration and Support of the Driver Monitoring camera into CRF passenger car. Gateway integration, integration of camera inside the instrumental cluster. Calibration of camera devices. Components integration inside the embedded PC under RtMaps. Validation of the set-up integration. Support to CRF during the Fiat 500L tests.
Major results:	WP3/5: improvement of the DM components on RTMAPS. WP3/5: integration of Driver Monitoring camera on CRF demo car (Fiat 500 L) and support WP6: support to CRF about the distraction Tests : Fiat 500L WP4: First definition of the warning strategies with Inria and CRF
Deviations from Annex I and planned corrective actions:	No major deviation from the plan.
Statement of used resources:	Since the second period, 2 PM are transferred from the task 2.2 to task 4.1.2 to participate to warning strategy task following CRF request.
Statement concerning interaction with other projects:	NA
Dissemination and exploitation:	
INSTITUT DE RECHERCHE EN SYSTEMES ELECTRONIQUES EMBARQUES (IRSEEM)	
Partner number:	14
Reporting period objectives:	Improve Virtual testing testbench with cooperation platform from NXP. Define and test multiple scenarios (highway & urban) for virtual testing.
Summary of progress:	The virtual testing test bench is fully functional. 2 scenarios have been tested; more are under development. The cooperation platform from NXP has been integrated on the virtual testing platform and is now part of the scenarios.
Major results:	An improved VeHIL system which includes cooperation platform in both urban and highway environment.
Deviations from Annex I and planned corrective actions:	No deviations
Statement of used resources:	2 people hired in this period.
Statement concerning interaction with other projects:	The virtual testing platform is co-developed with another project (SERBER, funded by Institute Carnot ESP).
Dissemination and exploitation:	
INSTITUT NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE (INRIA)	
Partner number:	16
Reporting period objectives:	INRIA is the SP2 leader. To finish the pending deliverables 25.8 and 24.4

Summary of progress:	As SP2 leaders, we coordinated the activities and some developments for the platforms. We are working closely to Intempora in the dissemination of RTMaps as useful tool for the integration of the perception and control algorithms in the projects. We are working in the implementation of the use case of the CRF demonstrators. We are working in the Annexe of deliverable D24.4. We have been working in the definition of validation plan for WP61.
Major results:	Integration of the partners in the SP2. Integration of the control functions in the CRF demonstrator. Definition of the validation plan (D61.2). Integration of the different sub-modules with RTMaps.
Deviations from Annex I and planned corrective actions:	No deviations from the objectives
Statement of used resources:	The Persons-month of INRIA has been changed. Still some problems in the last amendment proposed.
Statement concerning interaction with other projects:	INRIA has interaction with the French partners, especially with ARMINES, INTEMPORA and CONTINENTAL, who has some common works and students.
Dissemination and exploitation:	
ASSOCIATION POUR LA RECHERCHE ET LE DEVELOPPEMENT DES METHODES ET PROCESSUS INDUSTRIELS - ARMINES (ARMINES)	
Partner number:	21
Reporting period objectives:	
Summary of progress:	
Major results:	
Deviations from Annex I and planned corrective actions:	
Statement of used resources:	
Statement concerning interaction with other projects:	
Dissemination and exploitation:	
INTEMPORA SA (INT)	
Partner number:	23
Reporting period objectives:	Work package leader WP2.6 virtual testing + RTMaps development for DESERVE and support for the platform integrators
Summary of progress:	All deliverables accepted. The dSPACE bridge has been completed with success
Major results:	CRF has successfully integrated RTMaps and dSPACE bridge. VISLAB, INRIA, CTAG, IRSEEM, VTT and TTS are using the RTMaps middleware to integrate their algorithm with success.
Deviations from Annex I and planned corrective actions:	None
Statement of used resources:	
Statement concerning interaction with other projects:	None
Dissemination and exploitation:	

3.2.3 Spain (FICOSA)

Reporting period objectives:	CTAG as leader of WP4.3 Vulnerable users protections and FICOSA leader of WP3.2 Driver Monitoring and Task 5.1.3 Laboratory and virtual testing, have coordinated the different activities developed within these Work Packages and tasks. Additionally FICOSA is now leader of WP6.2.2 for test execution and data

	collection. The tests will be hold in CRF and/or Ficosa facilities.
Summary of progress:	CTAG and FICOSA have participated in all the active Work packages of the project: WP2, WP3, WP4, WP5 and WP6, attending to the personal meetings and conference calls in which they were involved.
Major results:	• WP4: Ongoing the adaptation to the DESERVE architecture and construction of prototypes for drowsiness detection through the analysis of the biological data using a camera. As the tuning of the camera algorithm demonstrated to require longer times than the one available in the project, it has been added an inductive band system, too. This band system is a proven one for drowsiness detection through the analysis of respiration and it will be used for the architecture validation purposes in the demo car. Consequently some extra work has been done for the adaptation of the algorithm for drowsiness detection to DESERVE architecture using the inductive band, adding a Bluetooth connection. • WP5: Agreed with CRF the architecture for the integration of driver monitoring functions into CRF demo vehicle. • WP6: Delivered a draft validation plan for Driver Monitoring functions.
Deviations from Annex I and planned corrective actions:	For validation in real car, integration in DESERVE architecture of drowsiness detection algorithm using an inductive band.
Statement of used resources:	See table 4.3 Personnel, subcontracting and other major Direct cost items for Beneficiary FicoMirrors.
Statement concerning interaction with other projects:	None.
Dissemination and exploitation:	Planned several dissemination activities after testing of the systems in simulator and real car.
FICOMIRRORS SA (FICOSA)	
Partner number:	3
Reporting period objectives:	Participate to SP3 - SP4 –SP5 -SP6 activities • Adaptation of the drowsiness detection function through the analysis of the biological data to the DESERVE architecture. Added inductive band system for drowsiness detection for validation purposes. Adaptation of the algorithm for drowsiness detection to DESERVE architecture using an inductive band. • Ficosa Task leader of WP 5.1.3 Laboratory and virtual testing. • Ficosa Task leader of WP 6.2.2 for test execution and data collection. The tests will be hold in CRF and/or FICOSA facilities.
Summary of progress:	FICOSA has assisted to several conference calls and physical meetings: Steering committee meeting: 10 December 2014: the meeting was held remotely. Technical Meetings: On September 16th and 17th 2014 was held a General Assembly meeting in Gothenburg at Volvo premises. Ficosa participated to the General Meeting of October 9th and 10th 2014 at CRF offices in Orbassano (Turin). WP5 Participation to several conference calls. Ficosa Task leader of 5.1.3 Laboratory and virtual testing. Agreed with CRF the architecture for the integration of driver monitoring functions into CRF demo vehicle.
Major results:	WP4: Contributions to the deliverable D41.1 Warning functions solution design regarding Task 4.1.1.1 Establish functional requirements and 4.1.1.4 Design of warning functions. Ongoing the studies for drowsiness

	detection through the analysis of the biological data adapted to the DESERVE architecture, for installation in the CRF demo car. WP5: Definition of passenger car scenarios and assignation for task leader's roles. FICOSA Task leader of 5.1.3 Laboratory and virtual testing. Agreed with CRF the architecture for the integration of driver monitoring functions into CRF demo vehicle. WP6: Delivered a draft validation plan for Driver Monitoring functions.
Deviations from Annex I and planned corrective actions:	For validation in real car, integration in DESERVE architecture of drowsiness detection algorithm using an inductive band.
Statement of used resources:	See table 4.3 Personnel, subcontracting and other major Direct cost items for Beneficiary FicoMirrors.
Statement concerning interaction with other projects:	None
Dissemination and exploitation:	Planned several dissemination activities after testing of the systems in simulator and real car.

FUNDACION PARA LA PROMOCION DE LA INNOVACION, INVESTIGACION Y DESARROLLO TECNOLOGICO EN LA INDUSTRIA DE AUTOMOCION DE GALICIA (CTAG)	
Partner number:	19
Reporting period objectives:	• Contribution to the finalization of the Deliverable 2.2.3 • Contribution to the finalization of the Deliverable 2.4.4 • Involvement in WP3.4 within tasks T3.4.3 Integrated HMI Virtual Testing. • Coordination and finalization of tasks related to WP4.3 – Vulnerable Road user protection functions, as CTAG is WP leader. • Contribution to the elaboration of Deliverable 4.3.2 and coordination of the tasks related to the document composition. • Contribution to the finalization of the Deliverable 4.4.2 • Contribution to the Deliverable 4.5.4
Summary of progress:	<u>SP2 - ADAS Development platform:</u> WP 2.2 Perception layer: • CTAG has supported the elaboration of Deliverable D2.2.3 – Perception Layer Final release. <u>WP 2.4 Arbitration/Control:</u> • CTAG has contributed in tasks stated in the Deliverable 2.4.4 – Generic ADAS Control Final Release. In this sense, CTAG has worked, together with INRIA, in the final submission of Deliverable 2.4.4. <u>SP3 – Driver Behaviour/HMI</u> WP 3.4 Innovative integrated HMI • CTAG has attended several phone conferences organized by CRF, together with ICOOR and ReLab. During these phone conferences a schedule of the main tasks was established. Currently CTAG is preparing a Focus Group on the different HMI solutions. <u>SP4 – Tests case functions</u> WP 4.3 Vulnerable road user protection functions • During this period regular phone conference has been arranged in order to coordinate the different activities carried out together with VISLAB. • The RtMaps modules for the detection of Vulnerable Road Users were tested in a set of video sequences recorded by VisLab. Also, a very brief performance evaluation of these modules was carried out. • Finally, CTAG has submitted Deliverable 4.3.2 – VRU Protection functions prototypes. WP 4.4 Automated functions

	• In relation with this WP, CTAG has contributed on the Deliverable 4.4.2 – Automated functions prototypes. WP 4.5 Cooperative System functions • CTAG has been collaborated in the Deliverable 4.5.4 – Final V2X Communication modules prototype. In this document, it was explained the evaluation methodology for cooperative systems in controlled scenarios. The document focused on experimental design and subjective and objective data.
Major results:	WP 3.4: Preparing a proposal for a Focus Group on the different HMI solutions. WP 4.3: Performance evaluation of the VRU module and submission of Deliverable 4.3.2. WP4.4: Collaboration in the finalization of the Deliverable 4.4.2 and in the simulation of some of the Automated
Deviations from Annex I and planned corrective actions:	No major deviations from the plan
Statement of used resources:	See corresponding table of Personnel, subcontracting and other major Direct cost items for Beneficiary CTAG
Statement concerning interaction with other projects:	No iteration with other projects.
Dissemination and exploitation:	No dissemination activities have been carried out by CTAG during this period

3.2.3.1 Austria

AVL LIST GMBH	
Partner number:	5
Reporting period objectives:	Identification and specification of appropriate use- and test cases, in order to validate the platform-tool-implementations from first research year.
Summary of progress:	In the third research period the identification of a proper ADAS-related component and hence the identification of parameters that can be optimized was a focus. After thorough investigations it was decided to choose one of the steering functions – motor driven power steering function, which is the actor for several ADAS-functions – as the component to be optimized. Further investigations were made to select XCU functions and parameters. As further Use case to show the methodology benefit and the flexibility of the toolchain the calibration of the "safe-passing" function within the "Inter-Urban ACC with advanced lane keeping" of the IKA is under investigation.
Major results:	The toolchain developed was demonstrated during the 2nd Annual Review, CRF, Turin, 9-10 Oct 2014 Manoeuvres for the test cases, which adapts the test online according to reactions of the system. Identification of appropriate measurement channels that are necessary for the optimization of the entire system-behaviour, which includes ADAS functions. Setup for virtual testing environment of ADAS-functions (steering system) available.
Deviations from Annex I and planned corrective actions:	The decision in the first year to concentrate on optimization rather than on in-vehicle measurement is still valid. Hence, the setup for a virtual simulation and testing environment has been enhanced.
Statement of used resources:	The budget and efforts are slightly higher than planned in the first two years. Therefore AVL has requested a complete budget shift of the initial planned consumables budget to the personnel costs, since the initial planned HW will not be needed, but the personnel research work is higher than planned.

Statement concerning interaction with other projects:	Collaboration with IKA started for the third year.
Dissemination and exploitation:	In case of the desired success a common publication (IKA and AVL together) shall be done.

3.2.3.2 Germany (BOSCH)

Summary of progress:	The German project partners advanced very well in the concept and development of components and tools to be used and applied in the German Demonstrator "Inter-Urban Assist" . Three national face-to-face meetings in 2014, one in Feb. 2015, and several conference calls and e-mail correspondence took place.
Reporting period objectives:	Implementation and ongoing iterations on the specific Inter-Urban Assist demonstrator components and modules, aligned with the general DESERVE platform recommendations and guidelines. Finalization of IuA democar and table demonstrators for final event.
Major results:	Toolchain and HW components according to the DESERVE sub-layer modules for the inter-urban assist (IUA) are under work and partially ready for integration in the Inter-Urban Assist democar. ADTF framework is used as SW development toolchain by all the partners. Common HW architecture is exemplarily realized in the dSPACE MicroAutoBox.
Deviations from Annex I and planned corrective actions:	No deviation or corrective action in this reporting Reporting period
Statement of used resources:	Resources used according to planning with minor deviations for some of the partners.
Statement concerning interaction with other projects:	No specific interaction with other projects
Dissemination and exploitation:	Phd students from IMS, Bosch and Daimler have submitted international conference papers on their specific topics. All dissemination activites are documented in the dissemination plan.
ROBERT BOSCH GMBH	
Partner number:	6
Reporting period objectives:	SP4 Leader and project partner in WP4.6 – Inter-urban Assist Implementation of DESERVE platform concept in a MIMO (Multiple input, multiple output) prototype radar.
Summary of progress:	Contribution to the DESERVE Second annual Review in Orbassano/Italy on Oct. 10th, 2014 SP4-leader in several WP/steering group telecons. Coordination of three DESERVE national face-to-face meetings in Germany. Finalization of SP2 work and continuation of project work in SP4, SP5 and SP6. Dissemination activities on international conferences with topic embedded computing for MIMO vehicular radars.
Major results:	Within the German Inter-Urban Assist project cooperation: • Realization of a common prototyping framework according to the DESERVE platform concept (dSPACE Micro-Autobox with KINTEX FPGA) • Development of ADTF and FPGA algorithms for MIMO radar operation that are compliant with the DESERVE platform guidelines With the European partners on the general DESERVE platform concept: • Definition of DESERVE perception layer interface descriptors in WP2 • Specification of general platform concepts and HW/SW architectures
Deviations from Annex I and planned corrective actions:	No major deviation from DoW/Annex1 that would need corrective actions

Statement of used resources:	Planned resources now almost as planned. Redistribution of some resources under work due to project extension until Feb. 2016
Statement concerning interaction with other projects:	Main interaction took place with DESERVE project partners and a few exchange with other research projects working on similar topics.
Dissemination and exploitation:	Several papers or presentations are currently pending for acceptance ion international congresses (i.e. EUMW2015).
INFINEON TECHNOLOGIES AG	
Partner number:	8
Reporting period objectives:	main goal was to deliver D25.8: DESERVE Platform – Final Release
Summary of progress:	work towards the DESERVE Platform is ongoing
Major results:	the following documents have been delivered: • D25.2 Platform System Architecture – Final Release • D25.4 Standard Interfaces definition – Final Release • D25.6 Guidelines for applications development – Final Release
Deviations from Annex I and planned corrective actions:	D25.8 is delayed
Statement of used resources:	according to plan
Statement concerning interaction with other projects:	n/a
Dissemination and exploitation:	is described in the WP2.5 section
DAIMLER AG	
Partner number:	9
Reporting period objectives:	Project leader of WP4.6 – Inter-urban Assist Implementation of DESERVE platform concept of the – Inter-urban Assist in cooperation with partners.
Summary of progress:	Participation in the 6th national meeting in Gothenburg on 16 Sep 2014, 9h-12h. Participation in the 2nd General Assembly in Gothenburg on 16-17 Sep 2014 Contribution to the 2nd year review in Orbassano on 9-10 Oct 2014 via teleconferencing. Contribution as SP1-leader,in several WP/steering group teleconferences Participation on two national face-to-face meetings in Germany Several teleconferences and e-mail correspondences with German partners (IMS)
Major results:	Within the German Inter-Urban Assist project cooperation: • Realization of a common prototyping framework according to the DESERVE platform concept (dSPACE Micro-Autobox with KINTEX FPGA) • Development of ADTF and FPGA algorithms for Inter-urban Assist modules that are compliant with the DESERVE platform guidelines
Deviations from Annex I and planned corrective actions:	After project extension no major deviation from updated DoW/Annex1 that require corrective actions.
Statement of used resources:	Used resources now almost as planned according to DoW of project extension until Feb. 2016
Statement concerning interaction with other projects:	Main interaction took place with DESERVE project partners and a few exchange with other research projects working on similar topics.
Dissemination and exploitation:	No disseminations and exploitations in reporting period.
DSPACE DIGITAL SIGNAL PROCESSING AND CONTROL ENGINEERING GMBH (dSPACE)	
Partner number:	15

Reporting period objectives:	Finalization of WP2.1 and the associated deliverables. Contribution to WP2.5 and WP4.5 and the associated deliverables. Support of DESERVE partners concerning the MicroAutoBox based DESERVE development platform, e.g. CRF, Daimler, IMS, and Bosch.
Summary of progress:	dSPACE has participated in the 6th meeting of German project partners in Gothenburg on 16 Sep 2014, 9h-12h and the 2nd General Assembly in Gothenburg on 16-17 Sep 2014. Further on dSPACE has contributed to the 2nd year review in Orbassano on 9-10 Oct 2014 by providing a sample DESERVE development platform and a video illustrating implementation details. dSPACE participated in the meeting of German DESERVE project partners in Hannover, Germany, on February 03, 2015. The DESERVE development platform has been coupled to the NXP V2X communication unit. The specification of the final demonstrator has been started. First concepts has been developed.
Major results:	Coupling V2X communication unit from NXP to DESERVE development platform Support of DESERVE partners to implement a common prototyping framework according to the DESERVE platform concept Support of project partners to integrate the MicroAutoBox based DESERVE development platform into their final demonstrators.
Deviations from Annex I and planned corrective actions:	No major deviations from DoW/Annex1 that would need corrections
Statement of used resources:	Resources have been used almost as planned.
Statement concerning interaction with other projects:	Main interaction took place with DESERVE project partners and a few exchange with other research projects working on similar topics.
Dissemination and exploitation:	No disseminations and exploitations in reporting period.
RHEINISCH-WESTFAELISCHE TECHNISCHE HOCHSCHULE AACHEN (IKA)	
Partner number:	18
Reporting period objectives:	Implementation of a driver model for WP3.1. Algorithms and driver behaviour analysis is done. The implementation requires a lot of tuning to match and reduce the driver parameters and ensure the correct work of the single modules. Implementation of the control function in WP4.2. Control function prototype is finalized. The final demonstration will be done as lab demo. Therefore the demo system has to be prepared and the control function has to be changed to work on the system (Interfaces etc.).
Summary of progress:	The driver model works for pre-defined intersections. Each module has its own parameters to be individually settable. In the period a strategy for matching and reducing the parameters is done. The control function is checked for running on the HiL Solution for the final preview and final event. Therefore the simulation tool PELOPS has to be updated and the function has to be integrated.

Major results:	• Driver model works in lab mode:
	  • Parameter list is created and analysed
	  • Driver behaviour is analysed to find parameter matching
	• Control function is implemented with full functionality:
	  • The function runs on a test system
	  • HiL Solution design is done
	  • Update to workable demo is in process
	• National consortium: The tool chains used in the function in SP4 have been discussed and specified. The dSPACE Micro-Autobox II is the central common platform in the consortium. Ika develops with Matlab/Simulink while the other partners use embedded code and ADTF.

Deviations from Annex I and planned corrective actions:	No deviations from plan.

Statement of used resources:	Recources mainly used for personal costs.
Statement concerning interaction with other projects:	No interactions with other projects.
Dissemination and exploitation:	No disseminations within this period
GOTTFRIED WILHELM LEIBNIZ UNIVERSITAET HANNOVER (IMS)	
Partner number:	26
Reporting period objectives:	Finish software implementation and continue hardware implementation of the Inter Urban Assist building blocks. Architecture analysis and design space exploration of hardware modules. Derive first quantitative cost models for hardware blocks.
Summary of progress:	• In face-to-face meeting in Germany (Hannover), revision of algorithms and general structure of the Inter Urban Assist. Definition of interfaces between IMS and DAIMLER. • Finalized software implementations of the Inter Urban Assist building blocks. • Ongoing work in implementing hardware modules for the building blocks of the Inter Urban Assist. • First quantitative cost models for Inter Urban Assist and additional ADAS building blocks hardware modules were derived.
Major results:	• Finalized (revised) algorithm software reference implementations • First FPGA implementations of Inter Urban Assist building blocks
Deviations from Annex I and planned corrective actions:	No deviations from plan
Statement of used resources:	Most resources used as personal costs in SP2 and SP4
Statement concerning interaction with other projects:	No interaction with other projects
Dissemination and exploitation:	No Dissemination

3.2.4 The Netherlands (TECHNOLUTION B.V.)

Reporting period objectives:	The Dutch project partners have defined a “dynamic lane guidance” as a service that should be designed and developed following the DESERVE process and should make use of an instantiation of the DESERVE platform. The design and development of this service follows three steps: 1. Design and development of a connected service including an online traffic state estimation in the backend and a lane guidance app as overlay over a navigation app at the frontend (smartphone), both connected via 3G; 2. Design and development of the cooperative V2V element for the service necessary for collision avoidance and merge assistance; 3. Merging of the cooperative element into the connected service to upgrade the service to a full cooperative service The objective for year three was to finalise step 3.
Summary of progress:	Step 1 has been finalised in the 2nd period and were operational on the A67 in the Netherlands, used by a group of about 300 vehicle drivers. Additionally the platform has been implemented on the A58 in the Netherlands to enlarge the scope of the field operational test. Step 2 has been enriched in the 3rd period to lane based cooperative collision and additional test have been conducted with two cooperative vehicles. For step 3 the ITS protocols have been implemented according to latest

	ETSI requirements in a new prototype of the G5 element. In addition a new, highly modularised cooperative element (G5 – GPS) has been developed, to be able to scale up within the period of DESERVE from 2 to 10 or more test vehicles and embed security in the cooperation.
Major results:	Major additional results within step 2 are: • Implementation of the platform on the A58 in the Netherlands, were Rijkswaterstaat is enclosing the induction loop data with a significantly lower delay in delivery time • Viewer over the different sets of data (induction loop data, floating car data from TomTom, floating car data from individual participants in the field operational test and (for the 4th and last period) Cooperative Awareness Messages (CAM) from individual participants in the field operational test. Major additional results within step 2 are: • Lane based cooperative collision warning. Major results in step 3 are: • Implementation of ITS protocols according to latest ETSI requirements Integration of drivers to interface to ADAS systems; • Testing and Demonstration of cooperative systems functions in miscellaneous ADAS prototype /simulation/test systems; • Final prototype for the G5 element designed and manufactured; • Performance and ETSI standards tested in plug tests against 3rd companies and institutions. • Highly modularised cooperative element (G5 – GPS) (following the DESERVE philosophy) that connects to a smartphone and as such can be added to the fleet of participants in the field operational test of step 1.
Deviations from Annex I and planned corrective actions:	The extra time in DESERVE is used to build the highly modularised cooperative element to enable scaling up from 2 to 10 or more cooperative vehicles in step 3 (in addition to the prototype developed by NXP).
Statement of used resources:	The Dutch partners mainly used the resources as planned.
Statement concerning interaction with other projects:	The DESERVE methodology and concept has been brought in into the Spookfiles A58 project in the Netherlands (first serious implementation of a cooperative service) and the Artemis (Ecsel) project EMC2. Main interaction with: • TomTom (not a partner in DESERVE) on the usage of a test version of the navigation App for Android and the instantiation of the LBDO; • Delft University of Technology on the online traffic state estimator (bringing it from Mathlab to Java and the configuration for the A67 and in the 3rd period the A58).
Dissemination and exploitation:	V2X technology design and architecture has been discussed and validated with road operators, tier 1 suppliers and OEMs. Further dissemination activities have been restricted to the Dutch situation, where the lessons learned in the field operational test have been presented on several BeterBenutten (programme of the Dutch Ministry of Infrastructure and Environment) events organised by the Dutch Ministry of Infrastructure and Environment.
NXP SEMICONDUCTORS NETHERLANDS BV	
Partner number:	7
Reporting period objectives:	Finalize the DESERVE cooperative systems prototype based upon short range V2V and V2I IEEE 802.11p DSRC links including advanced reception quality improvement algorithms. Platform architecture utilizing software defined radio plus host-core,

	enabling flexible integration in ADAS architectures, as well as flexibility towards future evolution of IEEE 802.11p standards Implementation of ITS protocols according to latest ETSI requirements Integration of drivers to interface to ADAS systems. Testing and Demonstration of cooperative systems functions in miscellaneous ADAS prototype /simulation/test systems.
Summary of progress:	All objectives above accomplished. Final prototype designed and manufactured. Performance and ETSI standards tested in plug tests against 3rd companies and institutions. Flexible integration API's defined, with corresponding host-drivers developed and delivered to partners Platforms delivered to Deserve partners Irseem, dSpace, Technolution for embedding in their prototype systems and demonstrators, Use-case/test/simulation scenarios described and platforms integration performed
Major results:	See above.
Deviations from Annex I and planned corrective actions:	None
Statement of used resources:	In agreement
Statement concerning interaction with other projects:	Design requirements, and implementation is checked vis-à-vis projects as TEAM, VRUITS, MOBINET and EIT ICTlabs
Dissemination and exploitation:	Cooperative system disseminated and exploited • at CES Jan 2015 as part of distributed car architecture. • at EU Cooperative Corridor demonstrations in Vienna and Helmond • in the Stella solar-powered car by TU Eindhoven and NXP, winning the World Solar Challenge and the 8th Annual Crunchie award for Best Technology Achievement, ahead of runner-up Apple Pay
TECHNOLUTION B.V. (TECHNO)	
Partner number:	25
Reporting period objectives:	Overall objectives for the third year were: • Merging the cooperative element in the instantiation of the DESERVE platform as enabling platform for the dynamic lane guidance service
Summary of progress:	• Implementation of the platform on the A58 in the Netherlands, were Rijkswaterstaat is enclosing the induction loop data with a significantly lower delay in delivery time (30 s instead of 2 – 3 minutes); • Viewer over the different sets of data (induction loop data, floating car data from TomTom, floating car data from individual participants in the field operational test and (for the 4th and last period) Cooperative Awareness Messages from individual participants in the field operational test; • Based on the design from the 2nd period, a highly modularised cooperative element (G5 – GPS – Bluetooth light) has been developed that connects to a smartphone and as such can be used in pre-deployment projects and added to the fleet of participants in the field operational test of step 1.
Major results:	Major results within step 1 are: • Enrichment of the Dynamic Lane Guidance service, so it can run with induction loop data, GPS-based floating car data, G5-based probe vehicle data (CAM) and fused data.

	Major results within step 2 are: • The designed cost-efficient instantiation of the DESERVE platform that merges the Mobiboxx and the V2X unit of NXP / Cohda Wireless has been implemented. Major results within step 3 are: • All the preparation have been done to scale up from test drives with 2 vehicles to a small field operational test with at least 10 vehicles over longer time (at least the fourth period of DESERVE).
Deviations from Annex I and planned corrective actions:	The extra time in DESERVE is used to build the highly modularised cooperative element to enable scaling up from 2 to 10 or more cooperative vehicles in step 3 (in addition to the prototype developed by NXP).
Statement of used resources:	Most resources used as personal costs in SP 1, SP 2, SP 4 and SP 5 and technical coordination.
Statement concerning interaction with other projects:	Main interaction with: • TomTom (not a partner in DESERVE) on the usage of a test version of the navigation App for Android and the instantiation of the LBDO; • Delft University of Technology on the online traffic state estimator (bringing it from Mathlab to Java and the configuration for the A67 and in the 3rd period the A58). The DESERVE methodology and concept has been brought in into the Spookfiles A58 project in the Netherlands (first serious implementation of a cooperative service) and the Artemis (Ecsel) project EMC2.
Dissemination and exploitation:	V2X technology design and architecture has been discussed and validated with road operators. Further dissemination activities have been restricted to the Dutch situation, where the lessons learned in the field operational test have been presented on several BeterBenutten (programme of the Dutch Ministry of Infrastructure and Environment) events organised by the Dutch Ministry of Infrastructure and Environment.

3.2.4.1 Sweden

VOLVO TECHNOLOGY AB (VOLVO)	
Partner number:	10
Reporting period objectives:	-Integration of DESERVE platform and Volvo test functions (ACC and AEBS) in Volvo truck. -Lab testing of Volvo test functions. -Road testing of Volvo test functions.
Summary of progress:	- ASL wide angle cameras and DESERVE platform integrated in Volvo truck. -Lab testing of Volvo test functions in PC platform. -Initial road testing of Volvo test functions.
Major results:	Integration of system into Volvo truck: • Wide angle cameras from project partner ASL • Development platform (rapid prototyping)
Deviations from Annex I and planned corrective actions:	Project delayed and extended 6 month, amendment agreed with ECSEL end 2014.
Statement of used resources:	Number of planned person-month less than planned.
Statement concerning interaction with other projects:	Minor collaboration with MBAT, CRYSTAL and SafeCer related to dissemination event (conference “Innovative software put into system”, Feb 2015).
Dissemination and exploitation:	Volvo presented DESERVE at conference “Innovative software put into system”, in Stockholm, Feb 2015.

3.2.5 Italy (CRF)

Reporting period objectives:	SP coordination (SP3>ICOOR; SP5, SP6, SP8>CRF; SP7>ReLAb) WP coordination (1.3, 2.3, 3.1, 3.3, 3.4, 5.1, 6.2, 7.1, 7.2) Task coordination Submission of deliverable of own responsibility Coordination of the participation to events (ICOOR), attending meetings and webconferences. Technical contribution as planned.
Summary of progress:	The Italian project partners coordinated five subprojects and several workpackages organising physical / webconference / call meetings. They submitted deliverables of own responsibility. The italian partners contributed to the following main technical results: • SP2 - Integration of the tool chain (PreSCAN/Simulink, RTMaps, CarMaker) to be used for the DESERVE development platform. Simulation of AEB pedestrian in additional scenarios by PreScan. Finalisation of Generic Vehicle Model – Final Release (D232) in accordance with Review meeting feedback. • SP3 – WP31: collaboration among CRF, ICOOR, ReLAL to develop the driver intention model. WP3.4: Collaboration among Italian partners for the development of an innovative concept of HMI. • SP4 - Design of test case functions (warning, control, cooperative) to be integrated on the target vehicle demonstrators. Use of PreScan/Simulink, RTMaps, CarMaker tools in MiL, SiL and HiL simulations by CRF. Performance evaluation of the VRU module and submission of Deliverable 4.3.2 by VISLAB. • SP5 - Preparation of RTMaps environment to integrate the software modules under development. Development of obstacle selection software module based on radar data. Tests with external users on FIAT 500L to validate driver distraction and to collect the data needed by INRIA to develop the sharing & arbitration controller module. Setting up of Jeep Renegade vehicle, integration of sensors (radars, cameras, ..) and processing units, tests of network communication, preliminary functional tests at component level. • SP6 - Contribution to the finalisation of the validation plan. • SP7 - ICOOR as responsible of all WPs has coordinated the project participation to several dissemination events. Furthermore the project website has been updated. The final version of D7.1.3 - Workshop Report (1) has been delivered. The preparation of the final event has started. Preparation of draft of D721 Exploitation Plan.
Major results:	D31.2 final version Contribution to the preparation of D34.2 HMI Prototype. Contribution to the deliverable D41.2. D61.2 Validation Plan (R) D71.3 - Workshop Report (1) Update of Project Website Writing of paper to disseminate project activities. D71.4.

Deviations from Annex I and planned corrective actions:	WP3.4, like other WPs, has been impacted by the startup delays in DESERVE. As a consequence WP3.4 is expected to take advantage of the planned 6 month extension, and its end will be now scheduled for M33 of the project rather than M27. No further delay of the activities is expected after M33. CRF is not coordinating the project as originally planned, and VTT will continue to lead it till the end of the project (M40 after the second project amendment).
Statement of used resources:	VISLAB still experienced an under spending due to unavailability of personnel that led to reduce personnel involved in the project. Minor efforts performed by CRF during the second year, but corrective actions have been implemented by CRF. The project extension is beneficial to recover the activity progress.
Statement concerning interaction with other projects:	CRF managed the official link with interactIVe EU project during the requirement and specification definition phase. Interaction with HoliDes representatives led to identifying complementarities between the experimental activity to be carried out within the framework of the two projects. Preparation of a common speaker corner proposal in cooperation with the dissemination manager of HOLIDES.
Dissemination and exploitation:	Coordination of dissemination activities have been performed by ICOOR as responsible of WP71. Delivery of D7.1.3 - Workshop Report Update of Project Website Participation to conf calls and meetings. Writing of paper to disseminate project activities. Delivery of D71.4.
CONSORZIO INTERUNIVERSITARIO PER L'OTTIMIZZAZIONE E LA RICERCA OPERATIVA (ICOOR)	
Partner number:	11
Reporting period objectives:	Cooperation with RELAB, CRF and CTAG for the design of the HMI overall concept, its implementation and test (in a focus group and on a driving simulator) and the corresponding preparation of D34.2 HMI Prototype. By starting from the analysis and the design conducted in the previous periods, in WP4.1 the objective was the development and virtual testing (with a simulator in lab conditions) of a prototype solution of a Lane Change Assistant System. This activity was also meant to provide a preliminary result for the tests conducted on the passenger cars in WP5.1 and the data collection in WP6.2.
Summary of progress:	SP3: Within WP3.1 (Driver Modelling) ICOOR cooperated with CRF to organize a test with users aimed at collecting data for the creation and validation of the Driver Intention Model for the Lane Change Manoeuvre. ICOOR has taken part to a face-to-face meeting in January 2014 with RELAB and CRF in Orbassano to organize the test, and a dry run test was conducted in order to identify the most appropriate itinerary and the concrete issue to be solved for the actual conduction of the test. Within WP3.4 (Innovative Integrated HMI) ICOOR worked in collaboration with CRF, RELAB and CTAG for the development of an innovative concept of HMI for the project. In particular ICOOR took part to several conference calls for the organization of the activities and results sharing. Furthermore, the first draft of 6 HMI concept has been produced in order to test them during the focus group conducted by CTAG and during a simulation (using the driving simulator of RELAB).

	SP4: By starting from the analysis and the design conducted in the previous periods, in WP4.1 ICOOR has been developing and testing (with a simulator in lab conditions) a prototype solution of a Lane Change Assistant System. The preliminary description of the activity has been included in D4.1.2. SP5: Continuous dialogue with SP5 leader, in particular for the CRF demo vehicle. SP6: Continuous dialogue with SP6 leader for the evaluation of the Lane Change Assistant System. SP7: as responsible of all WPs ICOOR has carried out all of the Dissemination activities planned in the first month of PY3 and have coordinated the project participation to several events. Furthermore the project website has been updated as described below. The final version of D7.1.3 - Workshop Report (1) has been delivered. The preparation of the final event has started within the 5th steering group meeting conf call and with the definition of a first draft of final event agenda. Participation to Project Review Meeting in October in Orbassano and to the 5th steering group meeting conf call held in December.
Major results:	Delivery of the final version of D31.2. Contribution to the preparation of D34.2 HMI Prototype. Contribution to the deliverable D4.1.2. Delivery of D7.1.3 - Workshop Report (1) Update of Project Website Participation to conf calls and meetings. Writing of paper to disseminate project activities. Delivery of D71.4.
Deviations from Annex I and planned corrective actions:	Some delays has been registered in SP3 but they will not affect others SP activities
Statement of used resources:	Adequate
Statement concerning interaction with other projects:	Preparation of a common speaker corner proposal in cooperation with the dissemination manager of HOLIDES- HOLISTIC HUMAN FACTORS AND SYSTEM DESIGN OF ADAPTIVE COOPERATIVE HUMAN-MACHINE SYSTEMS project for the ARTEMIS Co-Summit 2015.
Dissemination and exploitation:	Update of project website, in particular the following actions has been achieved: • Substitution of ARTEMIS logo with the new ECSEL logo; • Upload of all public deliverable submitted during year 2 on Deliverable page; • Update of “Conferences and journal articles ”webpage with the list of all articles and material published within the first project years. Circulation of a Dissemination Opportunities list to project partners in order to highlights possible way to disseminate project activities. Submission of a paper named Development of cost efficient adas tool platform for automotive industry within 22nd ITS World Congress - Towards Intelligent Mobility in collaboration with RE:Lab and VTT:
RE:LAB S.R.L.	
Partner number:	12
Reporting period objectives:	Cooperation with ICOOR, CRF and CTAG for the design of the HMI

	overall concept, its implementation and test (in a focus group and on a driving simulator) and the corresponding preparation of D34.2 HMI Prototype. Collaboration with other SPs for the management of the project, including participation to conf calls and meetings. Writing of articles to disseminate project activities.
Summary of progress:	Wp3.4 RELAB worked in collaboration with ICOOR, CRF and CTAG for the design of an innovative concept of HMI for the ADAS' developed in the project. Several conference calls and e-mail correspondence took place for the organization of the activities in the WP. Furthermore the first draft of 6 HMI concepts is being finalized and implemented as a mock-up in order to be tested during the focus group that will be conducted by CTAG and the final tests with the simulator of RELAB to identify the most suitable HMI concept for the systems developed in the project. Wp8.2: Participation to Project Review Meeting in October in Orbassano.
Major results:	Analysis of the characteristics of the ADAS developed in the projects in terms of information provided and interactions with the driver. By starting from this analysis, the definition of 6 HMI concepts has been completed, as well as the implementation of the corresponding mock-ups to be tested by CTAG in a focus group.
Deviations from Annex I and planned corrective actions:	WP3.4, like other WPs, has been impacted by the startup delays in DESERVE. As a consequence WP3.4 is expected to take advantage of the planned 6 month extension, and its end will be now scheduled for M33 of the project rather than M27. No further delay of the activities is expected after M33.
Statement of used resources:	Adequate
Statement concerning interaction with other projects:	No specific interaction with other projects
Dissemination and exploitation:	Contribution to the draft of a paper named Development of cost efficient adas tool platform for automotive industry within 22nd ITS World Congress - Towards Intelligent Mobility in collaboration with ICOOR and VTT.
UNIVERSITA DEGLI STUDI DI PARMA (VISLAB)	
Partner number:	13
Reporting period objectives:	Development of VRU detection system
Summary of progress:	Main activities have been focused on WP 4.3 Vulnerable road user protection functions: • During this period regular phone conference has been arranged in order to coordinate the different activities carried out together with CTAGS and CRF • We developed a low layer SW for detection of VRUs • A specific RTMaps modules has been developed as well to output results and images especially for CTAGS requirements and following development. • Contribution to deliverbale 4.3.2 – VRU Protection functions prototypes.
Major results:	WP 3.4: Preparing a proposal for a Focus Group on the different HMI solutions. WP 4.3: Performance evaluation of the VRU module and submission of Deliverable 4.3.2. WP4.4: Collaboration in the finalization of the Deliverable 4.4.2 and in the simulation of some of the Automated
Deviations from Annex I and planned corrective actions:	No relevant deviations
Statement of used resources:	We still experienced an underspending due to unavailability of personnel that led to reduce personnel involved in the project.
Statement concerning interaction with other projects:	No specific interaction with other projects

Dissemination and exploitation:	No specific or relevant dissemination activities.
CENTRO RICERCHE FIAT SCPA (CRF)	
Partner number:	20
Reporting period objectives:	SP coordination (SP5, SP6, SP8) WP coordination (2.3, 3.4, 5.1, 6.2, 7.2) Task coordination Submission of deliverable of own responsibility Attending meetings and webconferences Technical contribution as planned.
Summary of progress:	CRF coordinated three subprojects (SP5, SP6, SP8) and five workpackages (2.3, 3.4, 5.1, 6.2, 7.2) organising physical / webconference / call meetings. CRF contributed to the following main technical results: • SP2 - Integration of the tool chain (PreSCAN/Simulink, RTMaps, CarMaker) to be used for the DESERVE development platform. Simulation of AEB pedestrian in additional scenarios by PreScan. Finalisation of Generic Vehicle Model – Final Release (D232) in accordance with Review meeting feedback. • SP3 – Collaboration with ICOOR to develop the driver intention model. A preliminary test run was performed in Orbassano with external users to define the methodology and the itinerary. Collaboration with ICOOR, ReLab and CTAG to design an innovative concept of HMI targeting the ADAS developed in the project. The HMI implemented on the CRF vehicle demonstrators will be derived from this general concept. • SP4 - Design of test case functions (warning, control, cooperative) to be integrated on the target vehicle demonstrators. Use of PreScan/Simulink, RTMaps, CarMaker tools in MiL, SiL and HiL simulations. • SP5 - Preparation of RTMaps environment to integrate the software modules under development. Development of obstacle selection software module based on radar data. Tests with external users on FIAT 500L to validate driver distraction and to collect the data needed by INRIA to develop the sharing & arbitration controller module. Setting up of Jeep Renegade vehicle, integration of sensors (radars, cameras, ..) and processing units, tests of network communication, preliminary functional tests at component level. • SP6 - Contribution to the finalisation of the validation plan. • SP7 - Contributions for dissemination events. Preparation of draft of D721 Exploitation Plan.
Major results:	Submission of the following deliverables of responsibility: D612 Validation Plan (R)
Deviations from Annex I and planned corrective actions:	CRF is not coordinating the project as originally planned, and VTT will continue to lead it till the end of the project (M40 after the second project amendment).
Statement of used resources:	Minor efforts performed by CRF during the second year too, but corrective actions have been implemented by CRF. The project extension is beneficial to recover the activity progress.
Statement concerning interaction with other projects:	CRF managed the official link with interactIVe EU project during the requirement and specification definition phase.
Dissemination and exploitation:	Exploitation of the project results by internal company meetings focused on: AEB pedestrian, Driver monitoring, HMI concept and warning strategies, tool chain to develop and simulate ADAS applications

3.2.6 United Kingdom

APPLICATION SOLUTIONS (ELECTRONICS AND VISION) LTD (ASL)

Partner number:	17
Reporting period objectives:	Completion of ASL's DESERVE platform (SP 2), delivery of WP4.2 both ASL's own and the other partners (ASL being WP4.1 lead). Progress on WP5.2 Commercial Vehicle Demonstrator (this was a formal change from our original allocation to WP5.1).
Summary of progress:	Significant progress on ASL's DESERVE platform, although not fully "completed", it is now in service at ASL. WP41.2 deliverables delayed from M26 to M30, although in practice different partners delivered over an extended period with the first in M26, the last in M32, and some reassigned to be demonstrated on the WP5.1 cars. Cameras, recording and display system integrated on Volvo's WP5.2 truck.
Major results:	ASL DESERVE platform entering service. WP41.2 mostly completed.
Deviations from Annex I and planned corrective actions:	Delays on one of ASL's two WP41.2 prototypes ROW, finally completed M31. Delays on front obstacle detection for WP5.2. ASL will withdraw from DESERVE early, in April 2015.
Statement of used resources:	Less than intended.
Statement concerning interaction with other projects:	Nothing specific.
Dissemination and exploitation:	No specific activities, although we will exploit our implementation of the platform.

4 Deliverables and milestones tables

Deliverables

Delivery in the 2nd reporting period (1 Sep 2013 – 31 Aug 2014)

WP no.	Del. no.	Deliverable name	Lead beneficiary	Nature	Dissemination level	Expected delivery	Actual delivery	Notes
SP2 ADAS Development platform (INRIA)								
2.3	3	**Generic Vehicle Model – Final Release**	CRF	Other	PU	M24		Rejected in the 2nd review
2.4	4	**Generic ADAS Control – Final Release**	INRIA	Other	PP	M24		Rejected in the 2nd review
SP4 Test Case Functions (BOSCH)								
4.6	2	**Inter urban assist prototype system description**	DAIMLER	Report	RE	M24		
SP5 Integration and Tests (CRF)								
SP6 Validation and Evaluation (CRF)								
6.1	2	**Validation Plan**	INRIA	Report	PP	M18	M31	
SP7 Dissemination and Exploitation (ReLab)								
7.2	2	**Standardisation Report**	CRF	Report	PU	M24		

Delivery in the 3rd reporting period (1 Sep 2014 – 28 Feb 2015)

WP n°	Del N°	Title	Lead beneficiary	Nature	Dissemination level	Expected delivery	Actual delivery	Notes
SP2 ADAS Development platform (INRIA)								
25	8	**DESERVE Platform ‼ Final Release**	INFINEON	Other	PU	M30		
SP3 Driver behaviour - HMI (ICOOR)								

32	2	**Experimental module for driver monitoring**	FICOMIRRORS	Other	PP	M30		
SP4 Test Case Functions (BOSCH)								
41	2	**Warning functions prototypes**	ASL Vision	Prototype	RE	M28		
42	2	**Control functions prototypes**	IKA	Prototype	RE	M28	M31	

Milestones

MILESTONES							
Milestone no.	Milestone name	Work package no	Lead beneficiary	Delivery date from Annex I	Achieved Yes/No	Actual / Forecast achievement date	Comments
5	DESERVE platform Final Version	25	INFINEON TECHNOLOGIES AG	30	No	32	The final platform releases (D25.8) is under internal review process

5 Project management

VTT has approved to be the coordinator until end of the project which has clarified the coordination responsibilities between VTT and CRF. VTT will be in full response concerning all administrative issues of the project and will be the main project driver. CRF will support steering of the technical development and dissemination activities.

The third grant agreement amendment was signed in this reporting period and there the updated DoW came in force on 6th of Jan 2015. The major change in this amendment was the six months extension to the project. Moreover, the amendment included budget adaptation of the partners and withdrawal of Ramboll from the consortium. Due to Ramboll withdrawal the WP5.2 (Commercial vehicle) development was strengthened and WP5.3 (Motorcycle application) was terminated.

The project meetings during 1st of Sep – 28th of Feb:

- 2nd general assembly in Volvo, Gothenburg on 16-17 Sep 2014
- 2nd review meeting in CRF, Orbassano on 9-10 Oct 2014
- Finnish steering group meeting, TTS, Vantaa on 13 Nov 2014
- 5th steering group meeting on 10 Dec 2014

Dissemination activities:

- Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. Towards Autonomous Vehicles with Advanced Sensor Solutions. Submitted to the 2015 IEEE Intelligent Vehicles Symposium, Seoul, Korea, 28 Jun – 1 July 2015.
- Kutila, M., Pyykönen, P. Lybeck, A., Niemi, P. & Nordin E. 2015. **Towards Autonomous Vehicles with Advanced Sensor Solutions**. Will be submitted to the 2015 IEEE 11th International Conference on Intelligent Computer Communication and Processing (2015 IEEE ICCP). Cluj-Napoca, Romania. 3-5 Sep 2015.
- Calefato, C., Kutila, M., Ferrarini, C., Landini, E. Baldi, M. N., Tadei, R. 2015. **Development of cost efficient adas tool platform for automotive industry.** Submitted to the 22nd ITS World Congress. Bordeaux, France. 5-9 Oct 2015.
- Virtanen, A., Pyykönen, P. & Kyytinen, A. 2015. **Intelligent dead spot detection system for heavy vehicles**. Will be submitted to the 18th IEEE International Conference on Intelligent Transportation Systems (IEEE ITSC 2015). Las Palmas de Gran Canaria. 15-18 Sep 2015.
- Klimke, J. et al. 2015. **Concept of structuring a generic driver model with respect to the realistic information**. 5. Berliner Fachtagung Fahrermodellierung flow. Berlin. 11 June 2015;
- Several papers or presentations made by Phd students from IMS, Bosch and Daimler are currently pending for acceptance ion international congresses (i.e. EUMW2015).

Furthermore the DESERVE project has been disseminated and exploited during the following events:

- at CES Jan 2015 presentation of the Cooperative system as part of distributed car architecture;
- at EU Cooperative Corridor demonstrations in Vienna and Helmond
- in the Stella solar-powered car by TU Eindhoven and NXP, winning the World Solar Challenge and the 8th Annual Crunchie award for Best Technology Achievement, ahead of runner-up Apple Pay;
- at conference “Innovative software put into system” held in Stockholm in Feb 2015;
- the lessons learned in the field operational test have been presented on several BeterBenutten (programme of the Dutch Ministry of Infrastructure and Environment) events organised by the Dutch Ministry of Infrastructure and Environment;

6 Explanation of the use of the resources

Error! Reference source not found. shows the project aggregated costs against the expected ones. The cumulative costs are about 6 M€ behind the original plan. The major reason are delays in the integration of the components to the demonstration vehicles and effort of project management in which CRF role is not as high as originally expected. However, CRF budget will be used for final event arrangements which were not originally planned.

The project is currently in the heavy integration phase to realise and validate the project outcomes in the demonstration vehicles. Due to validation and obvious need of adaptation the DESERVE platform realisation the cost consumption will raise during the last project year. Thus it is quite likely that the budget will completely be used by end of the project.

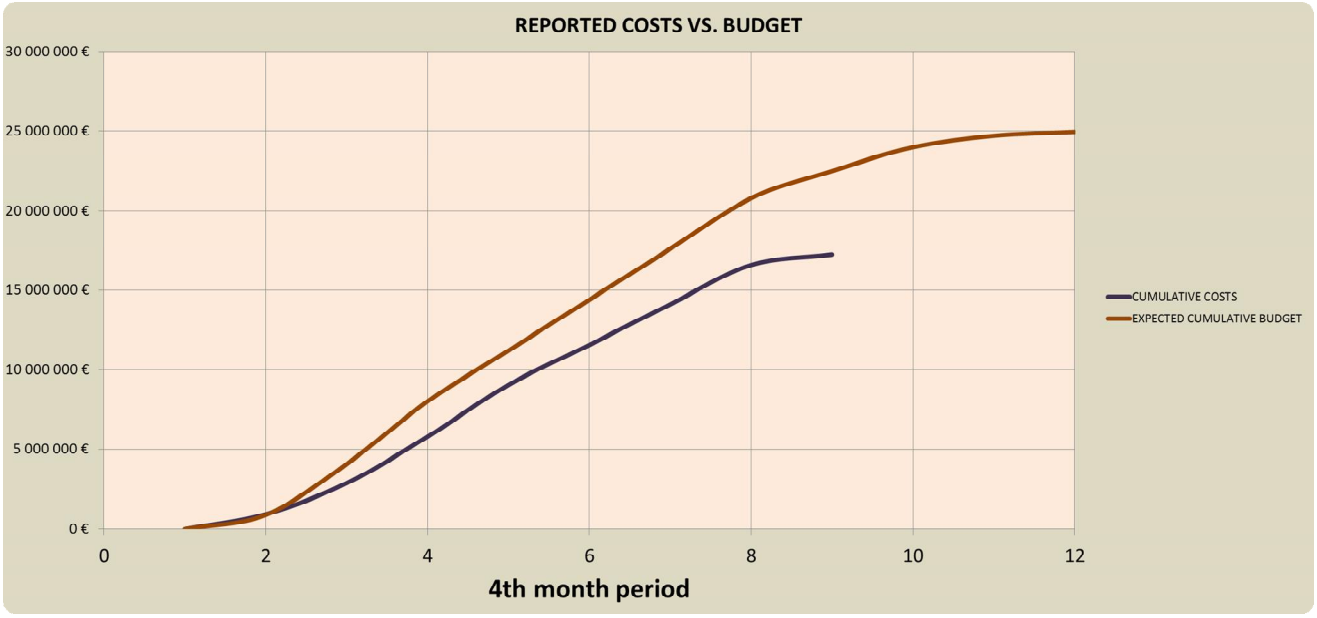

Figure 1. Comparison between expected costs of the DESERVE project against the cumulative ones.

Table 1.Costs reported during the reporting period (M25-M30) and cumulative from begin of the project

	Budget	Cumulative	M1-M12	M13-M24	M25-M30
FINLAND					
VTT	721 784 €	360 220 €	118 516 €	131 875 €	109 829 €
TTS	360 205 €	226 838 €	46 651 €	127 360 €	52 827 €
FRANCE					
INRIA	459 867 €	392 494 €	80 250 €	212 413 €	99 831 €
Continental	861 542 €	846 861 €	303 382 €	354 568 €	188 911 €
IRSEEM	231 456 €	77 080 €	20 904 €	34 551 €	21 624 €
ARMINES	72 003 €	51 023 €	18 746 €	32 277 €	0 €
INT	728 699 €	676 102 €	168 715 €	447 785 €	59 603 €
SPAIN					
Ficosa	770 313 €	537 559 €	243 457 €	259 085 €	35 017 €
CTAG	284 908 €	221 406 €	88 697 €	107 725 €	24 984 €
AUSTRIA					
AVL	469 218 €	381 218 €	171 542 €	170 818 €	38 858 €
Bosch	1 926 408 €	1 279 588 €	424 220 €	687 788 €	167 579 €
INFINEON	2 200 525 €	1 646 354 €	452 221 €	944 856 €	249 277 €
DAIMLER	2 746 449 €	2 269 509 €	940 961 €	909 500 €	419 048 €
dSPACE	960 054 €	760 797 €	218 660 €	433 011 €	109 126 €
IKA	295 549 €	182 049 €	64 403 €	56 066 €	61 580 €
IMS	411 753 €	380 873 €	141 997 €	176 782 €	62 094 €
THE NETHERLANDS					
NXP	3 024 000 €	2 741 388 €	1 263 775 €	1 153 500 €	324 114 €
Technolution	1 462 255 €	86 127 €	86 127 €	0 €	0 €
SWEDEN					
Volvo	509 000 €	385 051 €	100 543 €	203 716 €	80 792 €
ITALY					
ICOOR	992 250 €	763 766 €	379 366 €	307 828 €	76 571 €
ReLab	181 125 €	143 434 €	25 009 €	77 749 €	40 675 €
VISLAB	527 750 €	67 549 €	15 651 €	36 566 €	15 332 €
CRF	3 608 196 €	1 873 920 €	282 269 €	1 059 122 €	532 529 €
UK					
ASL	1 003 486 €	625 144 €	0 €	229 506 €	330 839 €

Table 2.The person month consumption in the reporting period (M25-M30) and the cumulative ones

		VTT			CONTI			FICOSA			AVL			BOSCH			NXP			INFINEON			DAIMLER			VOLVO		
		Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30
Total:		42,5	24,2	6,7	63,0	55,7	10,3	141,0	90,0	9,0	38,0	31,5	3,5	116,0	84,1	11,2	198,0	191,9	21,3	141,0	114,2	17,5	150,0	115,5	18,6	34,0	26,1	5,3
SP1 Requirements		4,0	1,8	0,0	4,0	4,0	0,0	3,0	3,0	0,0	4,0	5,8	0,0	12,0	12,0	0,0	7,0	7,0	0,0	10,0	10,0	0,0	20,0	20,4	0,0	5,5	5,5	0,0
Workpackage 11:	**Applications Needs**	**0,0**	0,0	0,0	**1,0**	1,0	0,0	**1,0**	1,0	0,0	**0,0**	0,0	0,0	**4,0**	4,0	0,0	**1,0**	1,0	0,0	**2,0**	2,0	0,0	**8,0**	8,0	0,0	**0,5**	0,5	0,0
Workpackage 12:	**Requirements**	**1,0**	1,1	0,0	**1,0**	1,0	0,0	**1,0**	1,0	0,0	**1,0**	2,7	0,0	**4,0**	4,0	0,0	**3,0**	3,0	0,0	**4,0**	4,0	0,0	**8,0**	8,0	0,0	**2,0**	2,0	0,0
Workpackage 13:	**Specifications**	**3,0**	0,7	0,0	**2,0**	2,0	0,0	**1,0**	1,0	0,0	**3,0**	3,1	0,0	**4,0**	4,0	0,0	**3,0**	3,0	0,0	**4,0**	4,0	0,0	**4,0**	4,4	0,0	**3,0**	3,0	0,0
SP2 ADAS Development Platform		0,0	0,0	0,0	12,0	12,0	0,0	44,0	29,0	0,0	18,0	9,9	0,0	54,0	34,4	0,0	22,0	22,0	0,0	109,0	101,2	14,5	58,0	56,3	2,6	0,0	0,0	0,0
Workpackage 21:	**Tools and Development Systems**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**3,0**	3,0	0,0	**18,0**	9,9	0,0	**10,0**	7,3	0,0	**3,0**	3,0	0,0	**24,0**	19,4	0,0	**10,0**	11,2	0,0	**0,0**	0,0	0,0
Workpackage 22:	**Perception Layer**	**0,0**	0,0	0,0	**10,0**	10,0	0,0	**41,0**	26,0	0,0	**0,0**	0,0	0,0	**36,0**	21,7	0,0	**8,0**	8,0	0,0	**45,0**	26,5	4,5	**34,0**	34,0	1,2	**0,0**	0,0	0,0
Workpackage 23:	**Vehicle Modelling**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 24:	**Arbitration/Control**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 25:	**Platform System Architecture**	**0,0**	0,0	0,0	**2,0**	2,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**8,0**	5,4	0,0	**11,0**	11,0	0,0	**40,0**	55,3	10,0	**14,0**	11,1	1,4	**0,0**	0,0	0,0
Workpackage 26:	**Virtual Testing**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP3 Driver Behaviour - HMI		14,0	14,1	2,9	21,0	24,0	5,1	40,0	36,0	6,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	2,0	2,4	1,6
Workpackage 31:	**Driver Modelling**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 32:	**Driver Monitoring**	**11,0**	14,1	2,9	**12,0**	13,5	2,5	**24,0**	27,0	5,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 33:	**Integrated HMI Needs and Specifications**	**3,0**	0,0	0,0	**3,0**	3,0	0,0	**4,0**	3,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**1,0**	0,1	0,0
Workpackage 34:	**Innovative Integrated HMI**	**0,0**	0,0	0,0	**6,0**	7,5	2,6	**12,0**	6,0	1,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**1,0**	2,3	1,6
SP4 Test Case Functions		0,0	0,0	0,0	4,0	2,5	0,5	18,0	8,0	0,0	0,0	0,0	0,0	26,0	26,1	8,0	148,0	150,9	21,3	6,0	0,0	0,0	39,0	29,0	8,8	8,0	7,0	0,0
Workpackage 41:	**Warning Functions**	**0,0**	0,0	0,0	**2,0**	0,5	0,5	**18,0**	8,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 42:	**Control Functions**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**8,0**	7,0	0,0
Workpackage 43:	**Vulnerable Road User Protection Functions**	**0,0**	0,0	0,0	**2,0**	2,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 44:	**Automated Functions**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 45:	**Cooperative Systems Functions**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**148,0**	150,9	21,3	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 46:	**Inter-urban Assist**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**26,0**	26,1	8,0	**0,0**	0,0	0,0	**6,0**	2,9	0,0	**39,0**	29,0	8,8	**0,0**	0,0	0,0
SP5 Integration and Tests		8,0	0,3	1,2	9,0	7,5	3,0	20,0	9,0	0,0	10,0	8,8	2,5	8,0	5,0	1,6	11,0	8,0	0,0	2,0	0,0	0,0	15,0	5,3	5,2	12,0	10,0	2,5
Workpackage 51:	**Passenger Car Applications**	**0,0**	0,0	0,0	**9,0**	7,5	3,0	**20,0**	9,0	0,0	**10,0**	8,8	2,5	**8,0**	5,0	1,6	**11,0**	8,0	0,0	**2,0**	0,0	0,0	**15,0**	5,3	5,2	**0,0**	0,0	0,0
Workpackage 52:	**Commercial Vehicle Applications**	**4,0**	0,0	0,9	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**12,0**	10,0	2,5
Workpackage 53:	**Motorcycle Applications**	**4,0**	0,3	0,3	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP6 Validation and Evaluation		4,0	0,1	0,2	8,0	2,7	0,8	10,0	4,0	3,0	4,0	6,7	0,5	6,0	0,6	0,0	9,0	3,0	0,0	7,0	3,0	3,0	6,0	0,9	0,9	5,0	1,2	0,9
Workpackage 61:	**Validation Plan**	**1,0**	0,0	0,0	**2,0**	1,4	0,0	**2,0**	2,0	0,0	**0,0**	2,9	0,0	**2,0**	0,3	0,0	**3,0**	3,0	0,0	**2,0**	0,0	0,0	**2,0**	0,9	0,9	**2,0**	0,1	0,0
Workpackage 62:	**Validation Tests**	**1,0**	0,1	0,2	**3,0**	1,3	0,8	**6,0**	2,0	3,0	**2,0**	3,1	0,5	**4,0**	0,3	0,0	**6,0**	0,0	0,0	**5,0**	3,0	3,0	**4,0**	0,0	0,0	**3,0**	1,1	0,9
Workpackage 63:	**Evaluation**	**2,0**	0,0	0,0	**3,0**	0,0	0,0	**2,0**	0,0	0,0	**2,0**	0,7	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP7 Dissemination and Exploitation		2,5	0,2	0,1	5,0	3,0	0,9	6,0	1,0	0,0	2,0	0,5	0,5	6,0	3,4	1,1	1,0	1,0	0,0	7,0	0,0	0,0	8,0	1,4	1,0	1,5	0,0	0,3
Workpackage 71:	**Dissemination**	**2,5**	0,2	0,1	**3,0**	2,1	0,3	**4,0**	1,0	0,0	**2,0**	0,5	0,5	**2,0**	1,5	0,2	**1,0**	1,0	0,0	**3,0**	0,0	0,0	**2,0**	1,4	1,0	**1,0**	0,0	0,3
Workpackage 72:	**Exploitation, Standardisation and Regulatory**	**0,0**	0,0	0,0	**2,0**	0,9	0,6	**2,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	1,9	0,9	**0,0**	0,0	0,0	**4,0**	0,0	0,0	**6,0**	0,0	0,0	**0,5**	0,0	0,0
SP8 Project Management		10,0	5,6	2,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	4,0	2,6	0,5	0,0	0,0	0,0	0,0	0,0	0,0	4,0	2,2	0,2	0,0	0,0	0,0
Workpackage 81:	**Project Management**	**10,0**	5,6	2,3	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 82:	**Technical Coordination**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	2,6	0,5	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	2,2	0,2	**0,0**	0,0	0,0

		ICOOR			ReLab			VISLAB			IRSEEM			dSPACE			INRIA			ASL			IKA		
		Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30
Total:		143,0	121,6	18,5	19,0	27,7	7,0	66,0	18,4	3,3	68,0	28,0	3,1	95,0	60,3	1,0	86,0	60,3	1,0	81,0	43,1	32,5	64,0	48,7	9,1
SP1 Requirements		12,0	6,5	0,0	0,0	0,0	0,0	4,0	4,0	0,0	6,0	6,0	0,0	6,0	5,6	0,0	6,0	5,6	0,0	4,0	0,8	0,0	4,0	0,0	0,0
Workpackage 11:	**Applications Needs**	**4,0**	3,1	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**2,0**	2,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	0,0	0,0
Workpackage 12:	**Requirements**	**4,0**	2,6	0,0	**0,0**	0,0	0,0	**2,0**	2,0	0,0	**4,0**	4,0	0,0	**3,0**	2,8	0,0	**3,0**	2,8	0,0	**2,0**	0,8	0,0	**0,0**	0,0	0,0
Workpackage 13:	**Specifications**	**4,0**	0,8	0,0	**0,0**	0,0	0,0	**2,0**	2,0	0,0	**0,0**	0,0	0,0	**3,0**	2,8	0,0	**3,0**	2,8	0,0	**2,0**	0,1	0,0	**0,0**	0,0	0,0
SP2 ADAS Development Platform		0,0	0,0	0,0	5,0	5,3	0,0	18,0	7,3	0,0	33,0	11,0	1,5	64,0	52,4	0,0	49,0	52,4	0,0	42,0	26,6	27,2	0,0	0,0	0,0
Workpackage 21:	**Tools and Development Systems**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**5,0**	2,3	0,0	**10,0**	4,5	0,5	**29,0**	24,1	0,0	**16,0**	24,1	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 22:	**Perception Layer**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**13,0**	5,0	0,0	**18,0**	2,0	0,0	**20,0**	14,8	0,0	**6,0**	14,8	0,0	**36,0**	20,4	23,9	**0,0**	0,0	0,0
Workpackage 23:	**Vehicle Modelling**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 24:	**Arbitration/Control**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**12,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 25:	**Platform System Architecture**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**15,0**	13,5	0,0	**4,0**	13,5	0,0	**6,0**	6,2	3,3	**0,0**	0,0	0,0
Workpackage 26:	**Virtual Testing**	**0,0**	0,0	0,0	**5,0**	5,3	0,0	**0,0**	0,0	0,0	**5,0**	4,5	1,0	**0,0**	0,0	0,0	**11,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP3 Driver Behaviour - HMI		68,0	81,4	11,9	10,0	12,0	5,8	7,0	2,0	2,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	25,0	23,7	1,0
Workpackage 31:	**Driver Modelling**	**48,0**	61,3	6,9	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**25,0**	23,7	1,0
Workpackage 32:	**Driver Monitoring**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 33:	**Integrated HMI Needs and Specifications**	**8,0**	11,7	0,0	**4,0**	2,8	0,0	**5,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 34:	**Innovative Integrated HMI**	**12,0**	8,4	5,0	**6,0**	9,1	5,8	**2,0**	2,0	2,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP4 Test Case Functions		13,0	12,1	1,0	0,0	4,2	0,0	6,0	3,7	0,0	23,0	6,5	1,6	15,0	2,3	0,0	12,0	2,3	0,0	26,0	4,6	2,0	35,0	24,9	8,1
Workpackage 41:	**Warning Functions**	**12,0**	8,0	1,0	**0,0**	0,0	0,0	**2,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**26,0**	4,6	2,0	**0,0**	0,0	0,0
Workpackage 42:	**Control Functions**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**12,0**	2,5	0,5	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**35,0**	24,9	8,1
Workpackage 43:	**Vulnerable Road User Protection Functions**	**0,0**	0,0	0,0	**0,0**	2,4	0,0	**4,0**	3,7	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 44:	**Automated Functions**	**1,0**	4,1	0,0	**0,0**	1,8	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**12,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 45:	**Cooperative Systems Functions**	**0,0**	0,0	0,0	**0,0**	2,1	0,0	**0,0**	0,0	0,0	**11,0**	4,0	1,1	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 46:	**Inter-urban Assist**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**15,0**	2,3	0,0	**0,0**	2,3	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP5 Integration and Tests		16,0	5,0	0,5	0,0	0,0	0,0	17,0	1,3	1,3	0,0	3,0	0,0	10,0	0,0	1,0	5,0	0,0	1,0	4,0	5,0	2,0	0,0	0,0	0,0
Workpackage 51:	**Passenger Car Applications**	**16,0**	5,0	0,5	**0,0**	0,0	0,0	**17,0**	1,3	1,3	**0,0**	0,0	0,0	**10,0**	0,0	1,0	**5,0**	0,0	1,0	**2,0**	1,7	0,0	**0,0**	0,0	0,0
Workpackage 52:	**Commercial Vehicle Applications**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	3,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**2,0**	3,3	2,0	**0,0**	0,0	0,0
Workpackage 53:	**Motorcycle Applications**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP6 Validation and Evaluation		14,0	1,2	0,5	0,0	0,0	0,0	10,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	12,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Workpackage 61:	**Validation Plan**	**4,0**	0,7	0,0	**0,0**	0,0	0,0	**3,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 62:	**Validation Tests**	**6,0**	0,5	0,5	**0,0**	0,0	0,0	**4,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 63:	**Evaluation**	**4,0**	0,0	0,0	**0,0**	0,0	0,0	**3,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP7 Dissemination and Exploitation		12,0	14,1	4,1	0,0	0,0	0,0	4,0	0,0	0,0	2,0	1,5	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,0	0,0	0,0	0,0
Workpackage 71:	**Dissemination**	**12,0**	14,1	4,1	**0,0**	0,0	0,0	**2,0**	0,0	0,0	**2,0**	1,5	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,1	0,0	**0,0**	0,0	0,0
Workpackage 72:	**Exploitation, Standardisation and Regulatory**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**2,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP8 Project Management		8,0	1,4	0,5	4,0	6,2	1,2	0,0	0,0	0,0	4,0	0,0	0,0	0,0	0,0	0,0	2,0	0,0	0,0	5,0	6,0	1,3	0,0	0,0	0,0
Workpackage 81:	**Project Management**	**4,0**	1,4	0,5	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 82:	**Technical Coordination**	**4,0**	0,0	0,0	**4,0**	6,2	1,2	**0,0**	0,0	0,0	**4,0**	0,0	0,0	**0,0**	0,0	0,0	**2,0**	0,0	0,0	**5,0**	6,0	1,3	**0,0**	0,0	0,0

		CTAG			CRF			ARMINES			TTS			INT			RAMB			TECHNO			IMS		
		Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30	Budget	Cumulative	M25-M30
Total:		72,0	58,7	7,5	414,0	162,5	0,0	6,0	4,4	0,0	31,0	18,0	8,0	45,0	48,6	4,5	16,0	8,0	0,0	94,0	6,0	0,0	72,0	56,0	9,0
SP1 Requirements		4,0	4,0	0,0	28,0	28,0	0,0	0,0	0,0	0,0	2,0	2,0	0,0	4,0	4,0	0,0	4,0	3,0	0,0	12,0	3,0	0,0	4,0	4,0	0,0
Workpackage 11:	**Applications Needs**	**4,0**	4,0	0,0	**6,0**	6,0	0,0	**0,0**	0,0	0,0	**1,0**	1,0	0,0	**0,0**	1,5	0,0	**1,0**	1,0	0,0	**4,0**	1,0	0,0	**0,0**	0,0	0,0
Workpackage 12:	**Requirements**	**0,0**	0,0	0,0	**12,0**	12,0	0,0	**0,0**	0,0	0,0	**1,0**	1,0	0,0	**2,0**	1,5	0,0	**2,0**	1,0	0,0	**4,0**	1,0	0,0	**2,0**	2,0	0,0
Workpackage 13:	**Specifications**	**0,0**	0,0	0,0	**10,0**	10,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**2,0**	1,0	0,0	**1,0**	1,0	0,0	**4,0**	1,0	0,0	**2,0**	2,0	0,0
SP2 ADAS Development Platform		17,0	17,0	1,5	102,0	68,0	0,0	4,0	3,0	0,0	0,0	7,0	0,0	37,0	42,0	2,5	2,0	1,0	0,0	20,0	1,0	0,0	42,0	35,0	5,0
Workpackage 21:	**Tools and Development Systems**	**0,0**	0,0	0,0	**16,0**	16,0	0,0	**0,0**	0,0	0,0	**0,0**	2,0	0,0	**24,0**	27,0	1,8	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**30,0**	23,0	4,0
Workpackage 22:	**Perception Layer**	**9,0**	9,0	0,3	**30,0**	12,0	0,0	**4,0**	3,0	0,0	**0,0**	2,0	0,0	**0,0**	0,0	0,0	**2,0**	1,0	0,0	**0,0**	0,0	0,0	**6,0**	6,0	0,0
Workpackage 23:	**Vehicle Modelling**	**0,0**	0,0	0,0	**24,0**	24,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 24:	**Arbitration/Control**	**8,0**	8,0	1,2	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 25:	**Platform System Architecture**	**0,0**	0,0	0,0	**16,0**	9,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**1,0**	1,0	0,0	**0,0**	0,0	0,0	**20,0**	1,0	0,0	**6,0**	6,0	1,0
Workpackage 26:	**Virtual Testing**	**0,0**	0,0	0,0	**16,0**	7,0	0,0	**0,0**	0,0	0,0	**0,0**	3,0	0,0	**12,0**	14,0	0,7	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP3 Driver Behaviour - HMI		12,0	9,4	1,0	48,0	29,0	0,0	0,0	0,0	0,0	0,0	1,0	0,0	2,0	2,0	2,0	3,0	0,3	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Workpackage 31:	**Driver Modelling**	**0,0**	0,0	0,0	**12,0**	12,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 32:	**Driver Monitoring**	**0,0**	0,0	0,0	**8,0**	4,0	0,0	**0,0**	0,0	0,0	**0,0**	1,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 33:	**Integrated HMI Needs and Specifications**	**6,0**	6,0	0,0	**8,0**	8,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**1,0**	1,0	1,0	**1,0**	0,3	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 34:	**Innovative Integrated HMI**	**6,0**	3,4	1,0	**20,0**	5,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**1,0**	1,0	1,0	**2,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP4 Test Case Functions		27,0	26,0	5,0	66,0	18,0	0,0	0,0	0,0	0,0	10,0	4,0	1,0	0,0	0,0	0,0	3,0	0,9	0,0	38,0	1,0	0,0	26,0	17,0	4,0
Workpackage 41:	**Warning Functions**	**0,0**	0,0	0,0	**22,0**	7,0	0,0	**0,0**	0,0	0,0	**5,0**	2,5	1,0	**0,0**	0,0	0,0	**3,0**	0,9	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 42:	**Control Functions**	**0,0**	0,0	0,0	**22,0**	7,0	0,0	**0,0**	0,0	0,0	**5,0**	1,5	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	0,5	0,0	**0,0**	0,0	0,0
Workpackage 43:	**Vulnerable Road User Protection Functions**	**12,0**	12,0	0,8	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 44:	**Automated Functions**	**9,0**	9,0	2,2	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**4,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 45:	**Cooperative Systems Functions**	**6,0**	5,0	2,0	**22,0**	4,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**30,0**	0,5	0,0	**0,0**	0,0	0,0
Workpackage 46:	**Inter-urban Assist**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**26,0**	17,0	4,0
SP5 Integration and Tests		0,0	0,0	0,0	96,0	8,5	0,0	0,0	0,0	0,0	11,0	4,0	7,0	0,0	0,0	0,0	2,0	1,1	0,0	5,0	0,0	0,0	0,0	0,0	0,0
Workpackage 51:	**Passenger Car Applications**	**0,0**	0,0	0,0	**48,0**	7,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**5,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 52:	**Commercial Vehicle Applications**	**0,0**	0,0	0,0	**48,0**	1,5	0,0	**0,0**	0,0	0,0	**10,0**	2,0	7,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 53:	**Motorcycle Applications**	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**1,0**	2,0	0,0	**0,0**	0,0	0,0	**2,0**	1,1	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP6 Validation and Evaluation		8,0	2,0	0,0	34,0	3,0	0,0	0,0	0,0	0,0	8,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	6,0	0,0	0,0	0,0	0,0	0,0
Workpackage 61:	**Validation Plan**	**2,0**	2,0	0,0	**10,0**	3,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**2,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 62:	**Validation Tests**	**2,0**	0,0	0,0	**24,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**2,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 63:	**Evaluation**	**4,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**8,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**2,0**	0,0	0,0	**0,0**	0,0	0,0
SP7 Dissemination and Exploitation		4,0	0,4	0,0	12,0	3,0	0,0	2,0	1,4	0,0	0,0	0,0	0,0	2,0	0,6	0,0	2,0	1,7	0,0	1,0	0,0	0,0	0,0	0,0	0,0
Workpackage 71:	**Dissemination**	**4,0**	0,4	0,0	**4,0**	1,0	0,0	**2,0**	1,4	0,0	**0,0**	0,0	0,0	**2,0**	0,6	0,0	**2,0**	0,8	0,0	**1,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 72:	**Exploitation, Standardisation and Regulatory**	**0,0**	0,0	0,0	**8,0**	2,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,9	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
SP8 Project Management		0,0	0,0	0,0	28,0	5,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	12,0	1,0	0,0	0,0	0,0	0,0
Workpackage 81:	**Project Management**	**0,0**	0,0	0,0	**20,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0
Workpackage 82:	**Technical Coordination**	**0,0**	0,0	0,0	**8,0**	5,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**0,0**	0,0	0,0	**12,0**	1,0	0,0	**0,0**	0,0	0,0

7 Certificates

Beneficiary	Organisation short name	Certificate on the financial statements provided? yes / no	Any useful comment, in particular if a certificate is not provided
1	VTT	no	Expenditure threshold not reached
2	Conti	no	Expenditure threshold not reached
3	FICOSA	no	Expenditure threshold not reached
5	AVL	no	Expenditure threshold not reached
6	Bosch	no	Expenditure threshold not reached
7	NXP-NL	no	To be provided before the final payment
8	Infineon	no	Expenditure threshold not reached
9	Daimler	no	To be provided before the final payment
10	Volvo	no	Expenditure threshold not reached
11	ICOOR	no	Expenditure threshold not reached
12	ReLab	no	Expenditure threshold not reached
13	VISLAB	no	Expenditure threshold not reached
14	IRSEEM	no	Expenditure threshold not reached
15	dSPACE	no	Expenditure threshold not reached
16	INRIA	no	Expenditure threshold not reached
17	ASL	no	Expenditure threshold not reached
18	IKA	no	Expenditure threshold not reached
19	CTAG	no	Expenditure threshold not reached
20	CRF	no	Expenditure threshold not reached
21	ARMINES	no	Expenditure threshold not reached
22	TTS	no	Expenditure threshold not reached
23	INTEMPORA	no	Expenditure threshold not reached
24	Ramboll	no	Expenditure threshold not reached
25	Technolution	no	Expenditure threshold not reached
26	IMS	no	Expenditure threshold not reached