

# i4Driving Project Quality Handbook

D8.3 | October 2022



i4Driving

integrated 4D driver modelling under uncertainty

## Deliverable

Project Acronym	Grant Agreement #	Project Title
I4Driving	101076165	Integrated 4D Driver Modelling under Uncertainty

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### DISSEMINATION LEVEL

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## Version History

Revision	Date	Authors	Organisaton	Description
Vo.1	30.10.2022	Maria Rodrigues Lucia Schlemmer	Panteia	First draft

## Executive Summary

The present document is the deliverable D.8.3 - “Project Quality Handbook” of the i4Driving project, funded by the European Commission’s Climate, Infrastructure and Environment Executive Agency (CINEA), under its Horizon Europe programme.

The main objective of the deliverable is to provide a single point of reference for the quality assurance procedures applied to all internal and external results and deliverables during the project implementation. In this deliverable, the project quality assurance approach is presented and the procedures and tools that the consortium shall follow for deliverable production, reviewing, reporting and disseminating project outcomes are described. In addition, different roles and responsibilities of the project partners, and coordination between them, regarding quality assurance have been described. This deliverable also provides useful insights on performance indicators which are the basis to assess project activities and outcomes.

This Quality Assurance Plan is a complementary deliverable to the D8.2 “Project Management Handbook” and is intended to serve as a guideline to ensure quality assurance of project processes and outputs and to prevent possible deviations from the project work plan.

The Quality Assurance Plan will be updated again at the end of the project.

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# 1 Introduction

The vision of i4Driving is to lay the **foundation for a new industry-standard methodology** to establish a **credible and realistic human road safety baseline** for virtual assessment of CCAM systems. The two central ideas we propose are (1) a multi-level, modular and extendable simulation library that combines existing and new models for human driving behaviour; in combination with (2) an innovative cross-disciplinary methodology to account for the huge uncertainty in both human behaviours and use case circumstances. This rigorous treatment of the uncertainty is crucial to assess how much of our confidence in model inputs, parameters, and structure is justified. It also makes explicit how experts from different disciplines judge the outcomes and how justified the underlying assumptions really are.

**Our consortium combines all the expertise needed to develop this methodology** (e.g., traffic engineering, human factors, data & computer science). We have the *experimental means* to gather the evidence beyond the state-of-art needed to realistically simulate (near) accidents in multi-driver scenarios (**access to many data sources, advanced driving simulators, and field labs**). We have a strong international network to collaborate with and harmonize our approach with academic and professional partners in e.g., the **US** (NADS facility); **Australia** (UQ advanced driving simulator and TRACSLab connected driving simulator facilities), **China** (Tongji Univ. 8-dof driving simulator and large-scale field lab) and **Japan** (NTSEL). Finally, we have all the relevant partners on-board to test and apply the methodology (Universities and research labs, OEMs and Tier 1, vehicle regulators, type-approval authorities, standardization institutes, insurance companies). i4Driving offers a proposition for the short and the longer term: a set of building blocks that **pave the way for a driving license for AVs**.

## 1.1 Deliverable scope

Quality assurance is essential to effective research projects. It provides a means of ensuring consistency and quality of delivered outputs and can help avoid errors, improve the rigour of the research conducted and ensure normative standards are met. i4Driving is committed to delivering excellent project deliverables and outputs and therefore quality assurance will run throughout the duration of the project.

This Quality Assurance Handbook constitutes Deliverable 8.3 of the i4Driving project is developed as part of Task 8.3 “Quality Assurance and Ethics Management and security/GDPR”. Alongside other project documents (i.e., Grant and Consortium Agreements, as well as the Project Management Handbook), these guidelines are intended to provide a framework for the Project Coordinator (PC) to oversee the production of all deliverables and to act as a handbook for all project partners to carry out their tasks with a consistently high-level of quality assurance.

The guidelines have been designed to allow maximum flexibility for Task Leaders (TL) to develop appropriate quality assurance practices for each of their own tasks and deliverables, while adhering to the quality principles and review expectations involved.

Any guidance presented in this Handbook is supplementary to the Consortium Agreement and the Grant Agreement.

## 1.2 Deliverable structure

The structure of this deliverable consists of the following chapters:

- **Chapter 1;** introduction to the project and information about the deliverable;
- **Chapter 2;** Project general information;
- **Chapter 3;** The i4Driving quality assurance plan and all procedures, standards etc. to be followed;
- The final section of the deliverable contains the **Annexes** of the “Project Management Handbook”

### 1.3 Reference documents

This document is based on the following reference documents:

- I4Driving Grant Agreement No. 101076165
- I4Driving Consortium Agreement
- General Model Grant Agreement/Contract for the Horizon Europe Programme – [Annotated Model Grant Agreement](#)

### 1.4 Abbreviation list

Table 1 presents the main abbreviations used in this document.

Table 1. Main acronyms

Acronym	Full Name
CINEA	European Climate, Infrastructure and Environment Executive Agency
EC	European Commission
GA	Grant Agreement
PC	Project Coordinator
WP	Work Package
WPL	Work Package Lead
TL	Task Leader
SC	Steering Committee
AB	Advisory Board
QA	Quality Assurance
QAO	Quality Assurance Officer
QAP	Quality Assurance Processes

## 2 Project General Information

Table 2 presents some useful information about the i4Driving project.

Table 2. Project general information

Project number	101076165
Responsible Unit	CINEA
Call	HORIZON-CL5-2022-D6-01
Topic	HORIZON-CL5-2022-D6-01-03 - Human behavioural model to assess the performance of CCAM solutions compared to human driven vehicles (CCAM Partnership)
Type of Action	Research and Innovation action
Duration	36 months
Project Start Date	01 October 2022
Project End Date	30 September 2025

### 2.1 Budget

The total eligible project cost amounts to € 6 766 958,75. The maximum EU funding is 5,903,474.39 €, which counts for the 100% of the total costs.

### 2.2 Participants

The i4Driving consortium is composed of 12 beneficiaries and five associated partners from five European countries and five non-European countries. Table 3 provides an overview of the participants:

Table 3. Project participants

No	ORGANISATION FULL NAME	ACRONYM	COUNTRY
<b>Beneficiaries</b>			
1	Panteia B.V.	PAN	NL
2	UNINA	UNINA	IT
3	Aimsun	AIM	ES
4	TU Delft	TU Delft	NL



5	Statens vag- och transportforskningsinstitut	VTI	SE
6	CTAG	CTAG	ES
7	ZF FRIEDRICHSHAFEN AG	ZF	DE
8	RDW	RDW	NL
9	TU Munich	TUM	DE
10	TH Aschaffenburg	TH-AB	DE
11	Consiglio Nazionale delle Ricerche - CNR	CNR	IT
12	DENSO	DENSO	DE
<b>Associated partners</b>			
13	Tongji University (China)	TJU	CN
14	University of Iowa	NADS	US
15	University of Queensland (AU)	UQ	AU
16	SwissRE	SWRE	CH
17	University of Warwick	WMG	UK

## 3 i4Driving Quality Assurance Plan

This chapter includes the elements of the quality assurance plan. Specifically, it defines the objectives of the QAP, quality criteria, responsibilities and control procedures which need to be followed by the partners involved to ensure that all activities, deliverables, milestones and related aspects of the project adhere to the defined set of quality criteria.

### 3.1 Quality Assurance Objectives

Quality assurance is a key element of the project undertaken by the Project Coordinator (PC) to ensure that project is progressing in accordance with the Grant Agreement and the objectives of the project are meeting the desired quality. Specific objectives are to:

- Provide clarity and direction to partners and activities by setting out quality principles to be followed and establishing and monitoring quality assurance procedures;
- Establish an internal and external review process to drive continual improvement across tasks;
- Ensure all procedures are properly documented and regularly reviewed, to enable project assessment;
- Establish internal action plans with measurable outcomes (KPIs and metrics) per Work Package (WP) to verify the project quality;
- Identify potential deviations early on and communicate these to the Consortium to initiate remedial actions as soon as possible (if required).

However, it is important to note that quality assurance should be implemented by all partners while working on their respective tasks. It is thus also the objective of the Quality Assurance Handbook to ensure that all partners:

- Maintain conformity in work methods throughout the project activities, in accordance with established policies, procedures, regulations and codes of practice of the project;
- Check that all procedures are effective and properly adjusted to the i4Driving project needs;
- Regularly monitor and measure the quality of methods and expected outputs per task or WP, to ensure these are of a high quality, the best value and continually improved upon.

### 3.2 Quality Assurance Officer

The PC is responsible for the quality of work during project development, to ensure that the project satisfies its requirements and achieves its full objectives. The PC thus acts as the Quality Assurance Officer (PAN, represented by Maria Rodrigues), who operates at the project level and is responsible for assessing the Key Performance Indicators (KPIs), applying the Quality Assurance standards set out in this handbook and proposing preventive or corrective measures to mitigate quality-related risks.

### 3.3 Quality principles

To assure quality for the i4Driving project, it is important to first clarify what is meant by ‘quality’, which is the purpose of the current section. The quality principles outlined below are a non-exhaustive list; Task Leaders (TLs) may have their own additional expectations of quality. However, this is intended to provide a guide to all partners of the principles that should be considered when carrying out tasks, developing their deliverables and other outputs for the project.

### 3.3.1 Quality Criteria

Quality criteria have been set out to ensure the review process is consistent across deliverables and that the reviewers have a clear understanding of, and comply with, the process. These criteria will be shared with all WPLs by the QAO. The WPLs will then provide clear instructions to all partners involved in the preparation of deliverables for their respective WP (Deliverable Leader, Task Leader, Authors and Reviewers). The quality criteria are set out below in Table 4:

Table 4. Quality Criteria

Criteria	Description
Clear	The purpose of the deliverable is clear, smart and in line with project/deliverable objectives All deliverables should ensure general readability. This means that the language of the text is clear (proper sentence structure is used and all terminology, including acronyms, is thoroughly explained), concise and repetitions are avoided. The text is in English. Any potentially sensitive information is appropriately worded.
Accurate	There are no errors in the deliverable (i.e., spelling errors, data errors etc.). All fact-based information used in the deliverable is supported by the respective references A complete bibliography should be added at the end of the document where appropriate.
Complete	All aspects of the deliverable are fully addressed.
Adds Value	Scientific and/or policy value, as envisaged by the project. The language of the text is beneficial to the target audience.
Compliant	The deliverable complies with the description of the deliverable. The deliverable follows the template. The file follows the standard file format and naming convention.
Timely	All deliverables should be produced in accordance with the schedule defined in the project proposal document. Timing should respect the need for appropriate review and quality assurance in advance of formal delivery to the EC.

### 3.3.2 General Standards

These general standards apply to all activities and deliverables.

#### Nomenclature

To assist with folder organisation and version tracing of documents, project partners should follow the nomenclature:

**i4Driving\_WPX\_Dx.y\_DDMMYYYY\_status\_vo.X\_Partner**

With the status being: draft, review, or final.

As an example, the Project Quality Handbook will have the following name:

i4Driving\_WP8\_D8.3\_Project Quality Handbook\_30102022\_DRAFT\_Vo.1\_PAN

Version numbers should start at 0.1, where the second review will be 0.2 (and so on). v.1.0 will refer to the first final delivery to the EC. Any further requested revisions by the European Commission will be given subsequent numbering, i.e. v2.0... etc.

## Publication of results

As per Article 17 of the GA, all project partners must disseminate their results as soon as feasible, in a publicly available format, subject to any restrictions due to the protection of intellectual property, security rules or legitimate interests.

A partner that intends to disseminate its results must give at least 15 days advance notice to the other beneficiaries (unless agreed otherwise), together with sufficient information on the results it will disseminate. Any other partner may object within (unless agreed otherwise) 15 days of receiving this notification if it can show that its legitimate interests in relation to the results or background would be significantly harmed. In such cases, the results may not be disseminated unless appropriate steps are taken to safeguard those interests.

In addition, all partners must ensure open access to peer-reviewed scientific publications relating to their results, following the open science specifications (under Article 17 of the GA).

## Presentation

All deliverables should be well structured and presented. This entails that all deliverables have a uniform appearance and all necessary logos and disclaimers. Specifically:

- A front page with all the necessary logos and project/document information;
- Table of contents and lists of figures and tables;
- An executive summary of the document;
- A uniform formatting template;
- Appropriate headers and footers providing useful document and document navigation information;
- All necessary disclaimers and copyright information;
- A concise overview of all document information;
- A table presenting all document history from initial draft to final document; and
- A table with all the acronyms and abbreviations used in the document.

## Acknowledgements

In all deliverables, the Deliverable Lead must ensure that it is made clear that the i4Driving project has received funding from the European Union by including the following statement together with a high-resolution EU flag, which should be given appropriate prominence when displayed with the project logo or any other logos.

*“This project has received funding from the European Union’s Horizon Europe programme under grant agreement No 101076165.”*

In addition, all reports should include the following statement:

*“This <PUBLICATION\_TYPE> and the content included in it does not represent the opinion of the European Union, and the European Union is not responsible for any use that might be made of its content.”*

## Logos

All deliverables, where appropriate, should include a high-resolution version of the EU Flag, available at: [https://europa.eu/european-union/about-eu/symbols/flag\\_en](https://europa.eu/european-union/about-eu/symbols/flag_en) and a high-resolution version of the i4Driving Logo, which is on the project SharePoint.

## Confidentiality

There are four levels of confidentiality to be assigned to the i4Driving project deliverables and outputs, namely:

- PU: Public Usage. No restrictions on access (in secured PDF format);

- PP: Restricted to other programme participants (including the Commission Services);
- RE: Restricted to a group specified by the consortium (including the Commission Services); and
- CO: Confidential, only for members of the consortium (including the Commission Services).

The level of confidentiality must be specified on all deliverables and adhered to.

### Deliverable History

The project partners should use versioning history to trace contributions on all formal deliverables (see Table 5). The following table can be used by Task Leaders and will also be included in the template document for deliverables.

Table 5. Document version history

Revision	Date	Authors	Organisaton	Description
V0.1	30.10.2022	Name Surname	Organisation Name	First draft

## 3.4 Quality Assurance Procedures

This chapter sets out the quality assurance procedures that will be followed to ensure that high standards are achieved across all project elements.

### 3.4.1 Preparation and review of deliverables

Project deliverables act as both key inputs to various WPs and represent the main outputs of the i4Driving project. They are thus integral for the EC's evaluation of the project progression and achievements, as they are the technical documents that contain the produced results of the project.

Therefore, each deliverable will be submitted to the EC according to the schedule contained in the Proposal. There are a total of 56 deliverables that need to be submitted across the lifespan of the project. The following sections describe in detail the roles and responsibilities of the partners, the quality criteria and the review process pertaining to deliverable development.

#### 3.4.1.1 Deliverable preparation roles and responsibilities

Table 6 below sets out the roles and responsibilities for the preparation and submission of deliverables.

Table 6. Roles and responsibilities for deliverable submission

Role	Responsibility
Author(s)	Typically, the author is the Deliverable Leader (DL) but in cases where there are additional people working on the deliverable, they will cooperate with the Task Lead and Work Package Lead to collect all information required to prepare the deliverable.
Deliverable lead	Responsible for supervising the authors and monitoring the deliverable preparation, ensuring that it is submitted in a timely manner (taking into account the deadline and the time required by the review team to review). The deliverable lead is also responsible for organising the review process.
Task lead	The Task Leader is responsible for appointing the Deliverable Leader (can be the same person).

Work package lead	The Work Package Leader is responsible for the WP as a whole and all related deliverables. They communicate with the PC to provide information regarding the production of the deliverable.
Review team	Responsible for evaluating the deliverable and for proposing amendments or improvements to it before the deliverable is submitted to the Quality Assurance Officer for a formal approval.
Quality Assurance Officer	The Quality Assurance Officer performs the quality check and assesses the content adherence of the deliverable. Following approval, the Quality Assurance Officer forwards the deliverable to the PC for the final check and approval.
Project Coordinator	The Project Coordinator evaluates the deliverable as a whole and, after approval, submits it to the EC.

### 3.4.1.2 Deliverable submission process

Deliverable development is comprised of a series of stages prior to finalisation and before it can be submitted to the EC. To ensure that these phases are followed, a strict timeline has been outlined per phase. These phases are shown by Figure 1 and Table 7 below and includes:

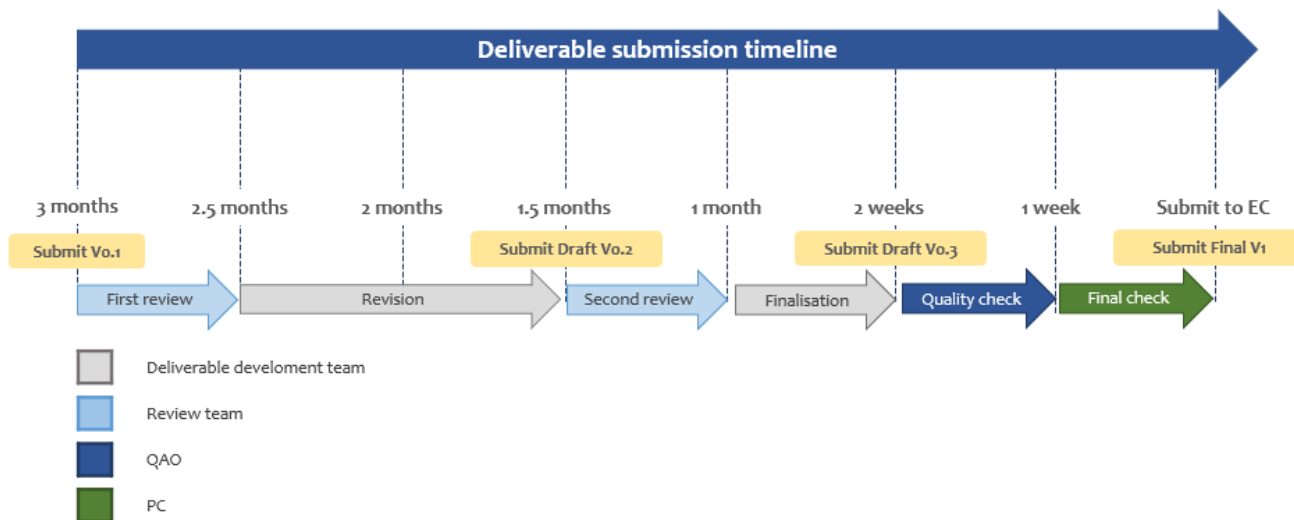


Figure 1. Deliverable submission timeline

Table 7. Deliverable submission phases

Phase	Description	Timeline
<b>Phase 1 – Deliverable development</b>	During this phase, the author(s), DL and WPL prepare the first version of the deliverable. This may be comprised of a series of internal development/review rounds, to ensure that the deliverable meets the quality criteria set out above, before it is submitted for review.	First submission - 3 months prior

<b>Phase 2 - First review</b>	The review team undertakes a first review of the deliverable and provide feedback and suggested improvements within two weeks of receipt. These comments will be provided in tracked changes (in the document).	Return the reviewed document – 2.5 months prior
<b>Phase 3 – Deliverable amendments</b>	The author(s), DL and WPL consider the reviewer comments and make the appropriate amendments.  In case the DL does not agree with any comments, they should contact the reviewers, explain the reasons of disagreement propose the rejection of such changes and agree upon an amendment.	Second submission - 1.5 months prior
<b>Phase 4 – Second review</b>	The review team undertakes a second, final review of the deliverable.	Return the reviewed document - 1 month prior
<b>Phase 5 – Finalise</b>	The author(s), DL and WPL will implement all the agreed changes and finalise the document (at least two weeks prior to the submission), after which they will forward the deliverable to the Quality Assurance Officer for approval.	Submit final document - 2 weeks prior
<b>Phase 6 - Quality check</b>	At least 5 days before the submission deadline, the Quality Assurance Officer will complete the quality check and submit the deliverable to the Project Coordinator for the final approval.	1 week prior
<b>Phase 6 – Submission</b>	Once the deliverable is accepted, the PC submits it to the EC	Submit

In addition to the abovementioned phases, at least four months before the submission deadline the DL should notify the assigned reviewers about the deliverable production progress and ask for other voluntary reviewers. In addition, the DL should contact the WPL and the PC to confirm the delivery date or report any unexpected delay to the submission of the document. Any identified or potential delays regarding a deliverable submission should be communicated as soon as possible. If necessary, the PC will then communicate this to the EC.

#### 3.4.1.3 Deliverable review template

To better facilitate the review process, a deliverable review template has been developed to help the reviewers organise their feedback. In addition, it provides information about the reviewing schedule so that the reviewers can manage their time and effort and adhere to the submission deadline. The deliverable review template is provided to reviewers by QAO, but it is also accessible through the project repository. The deliverable review template is attached in Annex 4.1 of this deliverable.

#### 3.4.1.4 Software and data deliverables

It is also important to mention some specific quality assurance procedures related to the software and data artifacts (“data”/“other”) to be developed as part of the project. These are generally anticipated to be publicly available via the respective means of publications mentioned in deliverable D8.4 “Research Data

Management Plan” (forthcoming). GitHub is considered as the main platform for such publications and, therefore, i4Driving software artifacts will be uploaded in the project profile in this platform (e.g., open-source code versions produced).

Prior to publication, i4Driving partners should ensure that the software produced meets the quality standards and specifications set out in their respective reports, providing information related to the software operation and use. This is to help ensure that all software and data deliverables are functional and submitted in a timely manner, that they fulfil all specifications, are fully functional and have user-friendly interfaces.

The Software Quality Assurance (SQA) process will respect and act supplementary to the overall Quality Assurance standards and procedures, while it is intended to set a common basis of good practices for all partners and towards achieving the project QA goals. The quality control, however, will mainly rely on individual partner policies, as the type of software and the development techniques are mostly related to the partner expertise. The SQA process in i4Driving will involve partners in all stages of software/data development. It includes the:

- Harmonized, annotated, and processed data in usable format (WP1);
- Open-source library of data mining techniques (WP1);
- Suite of unit tests for model development (WP2);
- Incremental versions of i4Driving / software library (WP2);
- Demo integration in CommonRoad and OTS/AIMSUN/CARLA (WP2);
- Experimental setup for the driving simulator experiments (WP3);
- Open-source library of techniques to encode drivers’ heterogeneity into models (WP4);
- Open-source library of validated probabilistic human driver behavioural models (WP4);
- Experimental data relevant to model development (WP5);
- Experimental data relevant to model validation (WP5);
- Open-source GitHub evaluation software toolchain (WP6); and
- Demonstrator of five target applications (WP6).

Therefore, the SQA process will run during the whole duration of the project.

All software / data development teams shall provide functional prototypes for interface and integration validation three months ahead of the respected due dates. This is to prevent any delays that might occur based on the parallel production of software and/or data, etc. In all cases, the progress of the teams will also be regularly monitored within the context of the project progress meetings and appropriate modifications proposed where necessary.

### 3.4.2 Monitoring and reporting of milestones

All milestones in the i4Driving project should be continuously monitored and their progress documented into the internal reports that are submitted by the WPLs to the PC on a three-month basis.

After reaching a milestone, the responsible partner, in cooperation with the TL, must create a short report using the template provided by the PC to document the achievement of the milestone. This report should be sent to the WPL for review. Once the approved, the WPL is then responsible for notifying the PC and submit the document on the milestone achievement. The milestones achievement report template is provided in Annex 4.2.

To determine when and where key quality reviews need to take place, the project plan identifies ten major key milestones with relevant dependencies between different work packages, as listed in Table 8.

Table 8. i4Driving Project Milestones

No.	Title	WP	Lead	Due	Means of verification
-----	-------	----	------	-----	-----------------------



1	Website and social media profiles created	7	PAN	M3	Website is up and running, first post published on social media
	Dissemination and communication plan finalized (WMG, WP7).	7	WMG	M3	Project leaflets are printed and disseminated. Roll-up posters are available to all partners
2	i4Driving framework, modelling and coding principles defined	2	TUD	M6	Report published on GitHub public repository and website
	Ethics approval for experiments obtained	3, 5	VTI, TUM		Validated Data Protection Impact Assessment document available
3	i4Driving use-cases, scenarios and experiments setup	1, 3,5	WMG, VTI, TUM	M12	Equipment/technology acquired, installed, and tested. Data accuracy meets requirements
4	Drivers' heterogeneity data collected and processed at all DSE facilities	3	VTI	M18	Raw and processed data collected during experiments published on GitHub public repository and website
5	Library of techniques for encoding driver heterogeneity into models available	4	UNINA	M21	Validated by the extended peer community and published on GitHub public repository and website
6	Sensitivity Auditing and stakeholders' meetings completed. Global Sensitivity Analysis, Calibration & Validation of i4Driving models	2	CNR, UNINA	M28	Reports validated by the extended peer community and published on GitHub public repository and website
7	Final software release of the open-source i4Driving library of models published	2	TUD, AIM	M28	Open-source software release published on GitHub public repository with documentation, validated by the extended peer community, and certified according to IEEE/ISO standards on software testing, verification, and validation
	Software demos	2	TUD, AIM		
8	i4Driving demonstrators (WMG, WP6) and summer schools held	7	UNINA, RDW	M30	Video material published in website and YouTube
9	i4Driving validation completed	3, 4	VTI, UNINA	M33	Reports published on GitHub public repository and website
	Exploitation plan per partner available	7	WMG		Exploitation plan available
10	Final event and dissemination material	6,7	PAN, WMG	M36	Video material, final booklet and White Paper published on website

### 3.4.3 Meeting procedures

Most progress meetings will be held virtually via secure video conferencing software (Microsoft Teams). Key meetings, on the other hand, will take place in-person (safety considerations permitting<sup>1</sup>). As part of the quality assurance plan, common procedures have been established regarding adding items to the meeting agenda, sharing the agenda items and documenting the meeting minutes, set out below.

#### 3.4.3.1 Meeting agenda

Each meeting will have a chairperson, who together with the PC, is responsible for preparing and distributing an agenda no later than 30 days prior to the meeting.

<sup>1</sup> For example, in the event that in-person events are restricted due to the Covid-19 pandemic, key meetings will also take place virtually.

Any member of the consortium may add an item to the original agenda by written notification to all other members up to the minimum number of days preceding the meeting - 15 days.

The agenda should include all planned meeting activities as well as the order in which they are to be taken up. Any agenda item requiring a decision by the Members of a Consortium Body must be identified as such in the agenda.

See Annex 4.3 for the template.

### 3.4.3.2 Meeting minutes

The chairperson of the meeting will produce written minutes of each meeting which will serve as a formal, written record of all discussions held and decisions made. In addition, the minutes will contain an attendance list, including the names of the attendees and the partner whom they are associated with. The draft minutes will be sent to all partners within 10 days of the meeting and will be considered accepted if no partner has sent an objection to the chairperson regarding the accuracy of the draft minutes.

Thereafter, the chairperson will send the accepted minutes to all the partners and to the PC, who will safeguard them. The minutes will be stored in the i4Dricving Project Folder, under the 'Meetings' folder.

The minute template is provided on Annex 4.4 of this deliverable.

### 3.4.4 Quality assessment procedures and reporting

An important function of the quality assessment procedure is the identification of areas of non-conformity among partners, tasks or deliverables using the pre-defined Key Performance Indicators (Chapter 3.5 of the present deliverable). If non-conformities are identified, they should be documented by the QAO in the appropriate form (Annex 4.5) and recommended corrective actions described and uploaded to the project document repository.

Proposals on corrective actions should be suggested by the QAO and be approved by the PC. After the approval is acquired, the QAO should contact all involved partners, deliver the Quality Assurance Assessment Report on their task and inform them about the recommended corrective measures to be taken. Corrective actions should ensure:

- Effective handling of all complaints/ non-conformities;
- Reporting of non-conformities;
- Investigation of the causes of non-conformities with reference to the quality system;
- Recording the results of the investigation;
- Determining the preventive/corrective actions intended to eliminate the causes of the non-conformity;
- Specification and application of the control tools for effective implementation of corrective actions; and
- Information communication with the Partners on actions taken and results accomplished.

## 3.5 Quality Assurance Key Performance Indicators

Key Performance Indicators (KPIs) have been outlined to support high quality project outcomes. These KPIs are used as a means of implementing quality planning in relation to processes, roles and responsibilities that have been reported in previous deliverables. The KPIs will be used as an instrument for the internal quality assessment of various project procedures conducted by Quality Assurance Officers. Any noteworthy issue

arising from the quality assessment or quality control implementation will be promptly notified to all relevant partners.

### 3.5.1 Dissemination/communication related KPIs

KPIs related to dissemination and communication activities are outlined in Table 9 below:

Table 9. Dissemination and communication KPIs

KPI #	Description	Metric
1	<b>Visual Identity</b> – A coherent and catchy logo to be used in all project materials and after the project.	Development of the logo and templates
2	<b>Project Website</b> – The website will be the most important source of information on activities within the project. It will serve as the main point of reference for detailed information on the project’s activities, progress and outputs	50k visits
3	<b>Printed materials</b> – Leaflets and roll-up posters describing the project will be distributed in events and conferences or digital materials of the project such as infographics.	2k leaflets and 2 roll-up posters
4	<b>Social Media</b> – They have a great outreach to target audiences and help communicating key objectives and results. Strong Twitter and LinkedIn accounts to distribute e.g., visual media, videos, infographics	2k Twitter + LinkedIn followers
5	<b>Project videos</b> – Targeted to the technology providers and the research community, they will be shared in the project media and uploaded to YouTube. Videos will also be created for every demonstrator	10k views
6	<b>Press releases</b> – A series of press releases that highlight the most important project results	Min 4 releases
7	<b>Newsletters</b> – Every 6 months, with project latest updates published and distributed via project channels	2 per year
8	<b>Event based communication and networking</b> – Awareness of the project results is expected to increase via the participation in conferences, workshops and European events (see table below for an indicative target list). The impact for the participation of these events can be quantified by increased website visits, increased social media engagement and interactions with the TGs	Participation in 10 confer. & events
9		Organization of events in 2 conferences
10	<b>Webinars</b> – Interested researcher and industry professionals can be introduced to project models, results and frameworks	3 webinars, min 10 participants each
11	<b>Summer School</b> – Organized with EURO NCAP community and other CCAM stakeholders, project results will be presented through technical speeches, live demonstration and applications	1 school with min 20 participants
12	<b>Journal publications</b> – Most innovative research results will be published in leading top-rank international journals in the field and presented at conferences (see below).	Min 8 journal publications
13	<b>GitHub repository</b> – All codes, sources, data reports and demonstrators will be available	Min 10 forks
14	<b>Final Event</b> - A final event will be held towards the end of the project to present the main findings	Min 100 participants

15	<b>i4Driving booklet</b> – Available at GitHub and website, distributed through partner network channels	Min 1k downloads
16	<b>i4Driving White Paper</b> – Available at GitHub and website, distributed through partner network channels	Min 1k downloads
17	<b>EU participatory meetings</b> with stakeholders from all target groups for cross-fertilization	2 EU meet., min 80 participants each

## 4 Annexes

### 4.1 Annex 1: Deliverable review template



Integrated 4D driver modeling under uncertainty

#### **I4DRIVING – Deliverable Internal Review Template**

<b>Deliverable No</b>			
<b>Title</b>			
<b>Deliverable Lead</b>			
<b>Deliverable Authors</b>			
<b>Work Package</b>			
<b>Work Package Leader</b>			
<b>Review Schedule</b>	<b>Date planned</b>	<b>Date received</b>	<b>Date returned</b>
Reviewer 1			
Reviewer 2			

<b>Review method (mark with an "x")</b>	
Track changes	
Comment sheet (below)	

<b>Review</b>		
Please assess the deliverable according to the criteria (a full overview is provided on the page below).		
1 - The deliverable is not yet at an acceptable standard – major revisions required		
2 - The deliverable is not yet at an acceptable standard – some revisions required		
3 - The deliverable is at an acceptable standard - minor revisions required		
<b>Criteria</b>	<b>Rating</b>	<b>Comments</b>
Clear		
Accurate		
Complete		
Adds Value		
Compliant		
Timely		

<b>Other feedback</b>
[Insert any other relevant information here]



## 4.2 Annex 2: Milestone completion report template



i4Driving  
Integrated 4D driver modelling under uncertainty

### i4DRIVING – Milestone completion Internal Report Template

<b>Milestone No</b>			
<b>Title</b>			
<b>Milestone Lead</b>			
<b>Milestone Authors</b>			
<b>Related Work Package(s)</b>			
<b>Work Package Leader</b>			
<b>Due Date (planned)</b>	DDMMYYYY	<b>Due date (actual)</b>	DDMMYYYY

#### Milestone Overview

Provide an overview of the milestone and its importance in relation to the project.


#### Means of Verification

Provide an overview of how the milestone has been reached and the means to verify this.



HORIZON-CL5-2022-D6-01-03: Human behavioural model to assess the performance of CCAM solutions compared to human driven vehicles.

## 4.3 Annex 3: Meeting agenda template


  
 i4Driving  
 Integrated 4D driver modelling under uncertainty

### I4DRIVING – [Meeting Title] Agenda

Date of meeting	
Location	
Start time	
End time	
Meeting facilitator	
Minute taker	

---

**Meeting Objective**

[Insert objective here]

---


**Agenda items**

Topic	Responsible	Time allocated

**Other information**

[Insert any other relevant information here]

|



HORIZON-CL5-2022-D6-01-03: Human behavioural model to assess the performance of CCAM solutions compared to human driven vehicles.

## 4.4 Annex 4: Meeting minutes template



i4Driving  
Integrated 4D driver modelling under uncertainty

### I4DRIVING – [Meeting Title]: Minutes

Date of meeting	
Location	
Start time	
End time	
Meeting facilitator	
Minute taker	

#### Attendance list

No	Attendee	Affiliation
1	Name	Company/organisation name

#### Meeting Objective

[Insert objective here]

#### Meeting Minutes

Topic	Discussion/Notes

#### Actions

No.	Action	Responsible	Due date



HORIZON-CL5-2022-D6-01-03: Human behavioural model to assess the performance of CCAM solutions compared to human driven vehicles.



## 4.5 Annex 5: Quality Assurance Assessment Report Template



i4Driving  
Integrated 4D driver modelling under uncertainty

### I4DRIVING – Quality Assurance Assessment Report Template

Quality Assurance Assessment Report	
<b>No.</b>	<b>Date</b>
<b>Issue</b>	
<b>Raised by</b>	
<b>Affiliation</b>	
<b>Related Work Package (if applicable)</b>	
<b>Related task (if applicable)</b>	
<b>Related deliverable (if applicable)</b>	

Description of the issue
[Include an overview of the quality assurance issue being raised and risks to the project]

Actions required		
Action	Implementation Date	Responsible Partner
Action 1		
Action 2		
Action 3		

Other recommendations for quality improvements
[Insert any other relevant information here]

Follow up assessment – actions taken		
Assessor	Date	
<b>Status</b>	Addressed	Further action required
[Include an overview of the effectiveness of the actions taken and whether further action is required]		

