Grant Agreement Number: 723016

Project acronym: **INFRAMIX**

Project full title: INFRAMIX - Road INFRAstructure ready for MIXed vehicle traffic flows

D.1.1
Quality Management Plan

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Dissemination level		
PU	Public	X
PP	Restricted to other programme participants	
RE	Restricted to a group specified by the consortium	
CO	Confidential, only for members of the consortium	

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1.0	31.8.2017	Final version	ATE

Legal Disclaimer

Table of Contents

List of Figures

List of Tables

Executive Summary

The objectives of the INFRAMIX project are ambitious. An essential measure to reach the objectives is to have quality management procedures and rules in place. These procedures and rules are described in this document as a basis for all INFRAMIX project partners.

After a short abstract on the INFRAMIX project and the purpose of the project in Chapter 1, the organisational structure of the project is explained as a starting point for all processes in Chapter 2. Based on this structure it is highlighted how quality management is embedded in the project including the allocation of responsibilities to the different roles.

In Chapter 3 quality measures and related rules to assure a high quality for the project deliverables are defined. A clearly specified review process, the allocation of two reviewers for each deliverable and a checklist for carrying out the review will contribute to a high quality of the INFRAMIX deliverables.

The quality assurance processes for dissemination material and activities are described in Chapter 4. This includes the key performance indicators relevant for publications, procedures for publication as well as a style guide for promotional material. A high quality of dissemination activities and material will support broad visibility and easy uptake of INFRAMIX materials.

Risk management procedures are defined in Chapter 5. This includes the monitoring and identification of risks as well as risk assessment and mitigation measures. Proper risk management will contribute to decrease the impact of unforeseen events and to reach the objectives defined in the description of work.

Rules and conventions to support information exchange and communication in INFRAMIX are described in Chapter 6. The procedures and processes described in this document may also be updated if additional needs arise during the execution of the project.

1. Introduction

1.1 Aim of the project

INFRAMIX will help prepare road infrastructure to support the coexistence of conventional and automated vehicles.

Its main objective is to design, upgrade, adapt and test both physical and digital elements of the road infrastructure. The key outcome will be a “hybrid” road infrastructure able to handle the transition period and become the basis for future automated transport systems. The project developments will be assessed via simulation and on real stretches of advanced highways. This will help to ensure that the proposed adaptations will not jeopardize safety, quality of service, efficiency and will be appreciated by the users.

INFRAMIX builds on three traffic scenarios: *dynamic lane assignment, roadworks zones* and *bottlenecks*. INFRAMIX addresses mainly highways, as they are expected to be the initial hosts of mixed traffic, but the key results can also be transferred to urban roads.

1.2 Purpose of document

The objectives of the INFRAMIX project are ambitious. An essential measure to reach the objectives is to have quality management procedures and rules in place. These procedures and rules are described in this document as a basis for all INFRAMIX project partners. If necessary, this document will be updated to reflect any changes that may take place during the lifetime of the project. This might especially be necessary once the technical implementation of INFRAMIX have been further defined.

2. Quality management in INFRAMIX

2.1 Organisation of the project

To avoid management difficulties, the partners have agreed to follow a simple management hierarchy which will ensure fast decision taking and smooth project management, while at the same time providing the necessary control and participation mechanisms. Three bodies will be responsible for decision making, the Project Coordinator (PC), the Project Management Team (PMT) and the General Assembly (GA). The PMT consists of the PC and the six work package leaders (WPLs). In the GA each project partner is represented with one vote. The overall management structure of the project is presented in Figure 1.

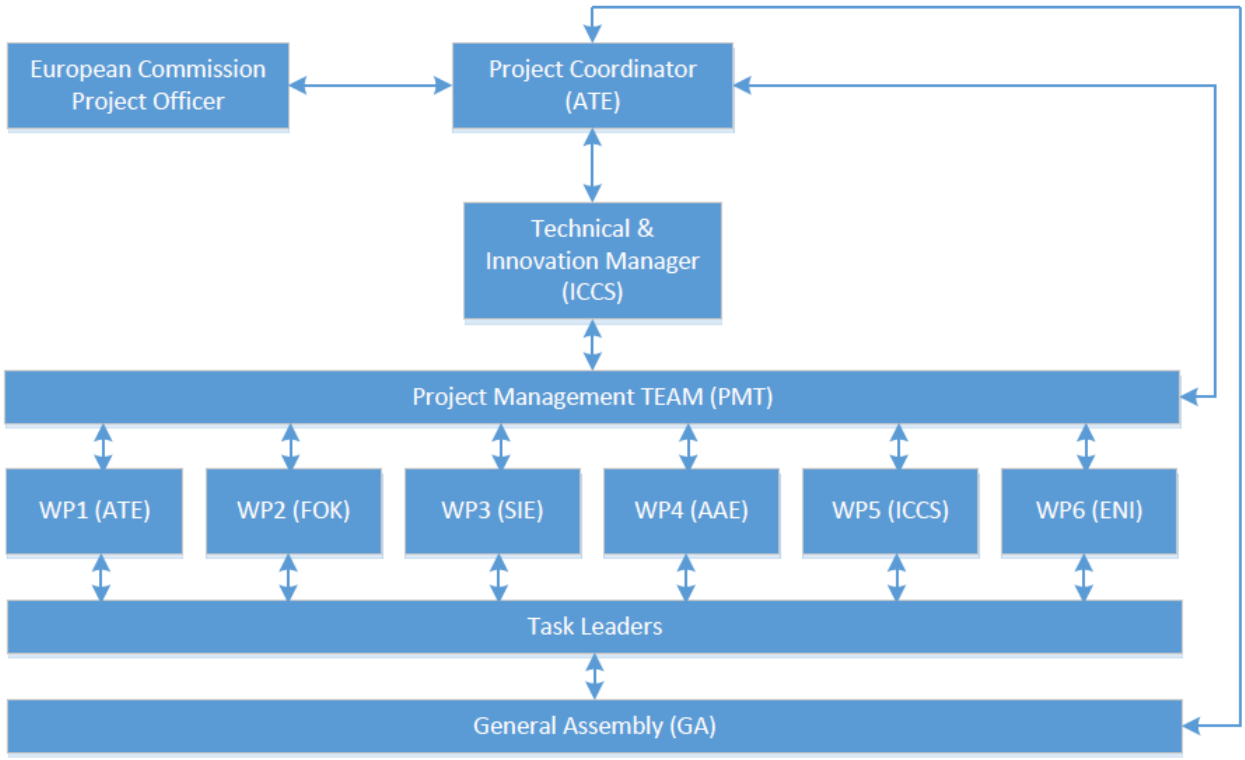

Figure 1 - INFRAMIX Management structure

The Project Coordinator (ATE)

The Project Coordinator (PC) is responsible for the overall coordination and management of INFRAMIX and will chair the PMT and GA. The main responsibilities of the PC are:

- Administrative, financial and contractual management of the project;
- Setting up of consortium agreement;
- Scientific coordination of the project;
- Point of contact for the EC and the project officer regarding all issues related to the project;
- Chair Project Management Team and General Assembly;
- Ensure timely delivery of deliverables to the EC;
- Ensure ethical standards within the project;
- Lead WP1.

The Technical and Innovation Manager (ICCS)

The Technical and Innovation Manager (TIM) will take care of all technical and innovation management activities in INFRAMIX. The main responsibilities of the TIM are:

- Implementation of the overall technical coordination strategy and management;
- Coordination of technical activities between Work Packages and test sites;
- Work with PC and WPLs to plan, monitor and direct all technical aspects of the project;
- Coordinate all relevant technical development partners to ensure that technical milestones are achieved on time and according to specifications laid down in the workplan;
- Moderate on technical decisions and moderate in case of conflicting choices with regards to technical developments;
- Manage the knowledge produced during the project lifecycle with the goal of successfully implementing innovative ideas, assess the opportunity for applying for patents or declaring copyrights and allow the consortium to respond to an external or internal opportunity;
- Monitor the project to guarantee consistency between technical and marketing choices;
- Assure the successful implementation of innovative ideas by the design and implementation of an effective innovation management system.

The General Assembly

The General Assembly (GA) is the main decision making body of INFRAMIX. Each partner has one vote in the GA which is chaired by the PC. The GA reviews the general project progress and decides on actions in case of major deviation, takes final decisions on policy and contractual issues. The GA meets physically at least once per year. Between these meetings, additional meetings can be requested by any member of the GA and should, if possible, be held virtually using online tools. Decisions should be made by consensus. If a consensus cannot be reached decisions are made by majority voting. Details for voting are laid down in the Consortium Agreement.

The Project Management Team

The Project Management Team (PMT) is the project steering group composed of the PC, the TIM and the WPLs. The PMT supports the PC in project management and supervision of progress of the project. It will be in charge of implementing the general decisions taken by the GA. The PMT will meet twice a year (next to an event) and will hold monthly telephone conferences. The PMT is chaired by the PC.

The Work Package Leaders

The Work Package Leaders (WPLs) are responsible for coordinating the technical work within their respective workpackages. They do this in close liaison with the TIM. WPLs set objectives, oversee milestones and are responsible for monitoring progress. Each task within the work package has a defined leader and it is up to the WPL to coordinate between task leaders (TLs). TLs report directly to the WPLs who in turn reports to the PC, PMT and GA. WPLs are responsible for:

- Coordinating activities of task leaders;
- Presenting progress reports at meetings and contributing to management reports;
- Documenting any major decisions to a deviation of the work plan;
- Reporting to PC any partner whose contributions are considered insufficient.

The Task Leaders

The Task Leaders (TLs) have to supervise their tasks and respective deliverables associated with theirs tasks. They are responsible for the timely delivery of their tasks and

support the work package leader in their task of managing the workpackage by contributing to annual reports, adhering to budget guidelines and informing the WPLs of any deviations from the workplan.

This lean structure is considered sufficient to manage INFRAMIX, with clear roles and responsibilities for each partner and project body. It allows cost-effective management of the project while ensuring timely delivery of high quality results and early warning if any deviations from the work plan should occur.

Decision Making

The project management structure has clear levels of decision making, with defined roles and responsibilities. All strategic decisions are made by the general assembly which also monitors the performance. The overall administration and coordination of the project is carried out by the project coordinator with support from the technical and innovation manager and the project management team. On work package level, management is carried out by the workpackage leaders and the task leaders. In case of disagreement on any level, the decision will be deferred to the next level. In case that no decision can be reached on the level of the general assembly, the conflict will be presented to the EC project officer by the project coordinator. The full mechanism of decision making and resolving of conflicts will be described in the Consortium Agreement.

Project meetings and communication procedures and tools

Regular communication through both physical and virtual meetings is vital for the project. The general assembly, which is the main decision body of the project, will meet physically once per year and virtual meetings can be requested by any partner if there is a need. The project management team will meet twice a year (next to an event) and will hold monthly telephone conferences. In order to reduce travel costs, the aim is to have one of these meetings coinciding with the annual general assembly meeting. In addition, kick-off and final meeting will also be physical meetings, although one of them could also be combined with a general assembly meeting. Technical meetings on work package level will be carried out in regular intervals, both physical and virtual, whatever is deemed most appropriate by the respective workpackage leaders. E-mail, web-conferencing and telephone will be the primary means for internal communication and document exchange. A web conference tool (GoToMeeting) is used for online meetings. At each meeting minutes will be kept and made available within the consortium. The project uses a web-based tool (Redmine) as a document repository and file exchange system, ensuring both safe storage of documents and supporting collaboration among partners.

2.2 How quality management is embedded in the project

Each project partner is responsible to contribute to the overall quality of the project outputs. In addition specific roles and responsibilities have been clearly assigned to ensure effective quality management for all key aspects of the project (see Table 1).

Table 1 - Roles and responsibilities in INFRAMIX

Role in Project	Responsible for
Project coordinator, ATE	Overall responsibility
Technical and innovation manager, ICCS	Technical developments and outputs
Leader of Work package Communication, Dissemination and Exploitation, ENI	Coordination of all communication and dissemination activities
Work package leaders	Responsible to carry out the assigned work package in sufficient quality and in the expected time frame.
Task leaders	Responsible to carry out the assigned tasks in sufficient quality and in the expected time frame.
Reviewers of deliverables	Responsible to assure that only high-quality deliverables are handed over.
Project partners	Must ensure that all ethical requirements (as described in D7.1-3) are met. In case of doubts the partner must inform the coordinator in order to solve open issues. In any case, is ethical issues are encountered, these must be communicated to the coordinator who will document on how these issues were addressed in the project.

Tracking of progress and use of resources is based on a half year reporting. This reporting consists of two parts, information on resources used and activities carried out including any deviations to the work plan. The templates for this reporting will be provided to the project partners. Each partner must send this information two weeks before the semi-annual project management team meetings to the coordinator and to the technical manager. In case of major deviations the coordinator and the technical manager must be informed as soon as they become apparent.

3. Quality assurance of deliverables

Deliverables are a key element of the project. They are used to provide information on project developments and results to the public but also to hand over definitions, results, etc. to other work packages and tasks in the project. Therefore processes to ensure a high quality of deliverables are vital. In this chapter available templates and naming conventions as well as the detailed review process is described.

3.1 Templates and naming of deliverables

In order to ensure consistency a template for all INFRAMIX deliverables is available at internal document repository. The filename of deliverables must adhere to the following convention: D<X.X>_<Title of deliverable>_v<X.X>_<date yyyymmdd> (e.g. D1.1_Quality management plan_v0.13_20170817). The version number of the deliverable will be set to 1.0 after the deliverable has been approved.

3.2 Review process and timeline

Review process will be carried out as follows:

1. Draft version (the deliverable is considered ready for submission by the partner responsible for the deliverable): the deliverable is handed over to the internal reviewers and at the same time to all partners 30 calendar days before the due date (this follows the dissemination rules defined in the consortium).
2. Internal review: Internal reviewers carry out a review of the deliverable and must send their comments to the authors for the deliverable and a copy to the technical manager and to the coordinator ((10 days after receipt). Partners wishing to comment on the deliverable can do so within 10 days by sending the comments directly to the authors. For each deliverable two reviewers are assigned. Criteria for the selection of reviewers are that they are not the main authors of the document and, if applicable, reviewers' organisation is a user of the output of the deliverable in a later stage of the project. For the review the provided checklist must be used.
3. Within 10 days after receipt of comments a new draft based on comments from reviewers and project partners have to be provided to the internal reviewers and the project coordinator and to the technical manager. In case of disagreement between authors and reviewers the technical manager and the coordinator must be involved.
4. If all comments have been addressed properly the deliverable is uploaded to the EC portal by the project coordinator. Otherwise an additional review cycle has to be carried out (step 3).

4. Quality assurance of dissemination material and activities

4.1 Key performance indicators

The effectiveness of INFRAMIX strategic approach and planning for communication and dissemination will be constantly evaluated through dedicated performance indicators that are shown in Table 2 and will be thoroughly reported in the D6.1 and its periodic updates.

Table 2 - INFRAMIX Key Performance Indicators for Communication & Dissemination

Activity and criteria (KPI)		Expected performance		
		Year 1	Year 2	Year 3
Definition of Communication Strategy and Tools *(Task 6.1)*	**Communication Strategy & plan**: Annual project review	Positive	Positive (update)	Positive (update)
	Website – number of visitors (unique, returning)	250/month	400/month	400/month
	Twitter – total number of followers	100	150	200
	LinkedIn – total members of group members	80	120	180
	Social Media Campaigns –total number	1	1	
	No of project videos – total number	≥ 0	≥ 1	≥ 1 (Updated)
	Quantity of **media coverage** achieved	≥ 10	≥ 10	≥ 20
Dissemination and communication to community *(Task 6.2)*	No of peer reviewed **publications**	≥ 3	≥ 7	≥ 8
	Readership results	150	200	350
	No of **End Users** attending INFRAMIX workshops		≥ 40	≥ 40
	No of **project events** in conferences/congresses	≥ 1	≥ 2	≥ 2
	No of presentations	≥10	≥18	≥20
	No of **demonstrations/exhibitions**		≥1	≥2
	No of **final event attendees**			≥ 100
	No of **public & Media** attending Final event			≥ 10
Networking/ User engagement activities *(Task 6.3)*	No of **End User Group participants**	≥ 20	≥ 60	≥ 100
	No of **industry representatives** involved	≥ 5	≥ 10	≥ 15
	No of **associations & organisations** involved	≥ 3	≥ 5	≥6
	No of **projects** contacted	≥ 8	≥ 8	≥ 10
	No of **liaison activities** performed	≥ 5	≥ 10	≥ 10
	No of **discussions in fora, committees & organisations**	≥ 5	≥ 5	≥ 5
	No of **Standardisation bodies** reached	≥2	≥2	≥2

4.2 Procedures for publications

Dissemination activities conditions are described in INFRAMIX Corsortium Agreement. Among other obligations and conditions agreed, the following excerpts has to be highlighted:

- During the Project and for a period of 1.5 years after the end of the Project, the dissemination of own Results by one or several Parties including but not restricted to publications and presentations, shall be governed by the procedure of Article 29.1 of the Grant Agreement subject to the following provisions.

Prior notice of any planned publication shall be given to the other Parties at least 30 calendar days before the publication. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the Coordinator and to the Party or Parties proposing the dissemination within 15 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

- A Party shall not include in any dissemination activity another Party's Results or Background without obtaining the owning Party's prior written approval.
- The Parties undertake to cooperate to allow the timely submission, examination, publication and defence of any dissertation or thesis for a degree which includes their Results or Background subject to the confidentiality and publication provisions agreed in this Consortium Agreement.

Developing this framework, we will use the following rules:

- For articles, papers and similar publications, WP6 leader will follow a specific procedure adjusted to the CA rules that will be described in D6.1. This procedure will ensure 1) the quality and correctness of the information about INFRAMIX being communicated; 2) the confidentiality aspects.
- For participations at events (workshops, congresses, conferences, etc.), in a similar way, WP6 leader will follow a specific procedure concerning the materials to be used during the event. Concerning the publication of information in INFRAMIX electronic tools (as website, newsletter, twitter or Linkedin groups), given its agile nature, the Project Coordinator, Project Technical Coordinator and WP6 leader will analyse if a given piece of information could have a confidentiality issue; if so, it will be decided either to check for agreement with partners or to cancel the publication in these means.

4.3 Style guide for INFRAMIX promotional material

Different templates will be provided to be used as layout for the dissemination materials, related to the logo and project identity. They will be available in the project document repository, WP6 folder. For example:

- Presentation template as a screenshot (title, intermediate, contact)
- Agenda and minutes templates

5. Risk management

In INFRAMIX, the recognition of risks is considered as an integral part of the project management. The complexity of the problem being addressed and the trans-disciplinary nature of the consortium, add to the number of challenges that may cause issues in the project execution lifecycle. However, all these issues will be resolved by exploiting the accumulated project implementation experience of the partners and by applying a well laid-out management scheme. Potential risks and related risk mitigation measures have been identified and elaborated already. In this chapter, the risk management procedures in INFRAMIX are explained.

Starting point for the risk management are the objectives that the consortium wants to reach with the execution of INFRAMIX and which might be affected by risks. The relevance of the single risks is determined by the combination of two parameters, by the *probability of occurrence* and by the *severity of the impact*. Aim of the risk management in INFRAMIX is to identify risks early and to avoid, or at least decrease, the impact on the project. Assessment and mitigation of project risks is carried out as follows:

Monitoring and identification of risks:

- Based on half year internal financial and technical reports the mid-term reports and deliverables the coordinator (administrative part) and the technical manager (technical part) monitor progress in order to identify as early as possible any deviations from the work plan.
- Potential risks defined in the risk matrix are evaluated regularly and updated based on the half year internal reports
- Work package leaders, task leaders and project partners must report any problems to (depending on the specific problem) work package leader, technical manager and/or coordinator.

Assessment risks and mitigation measures:

- Based on the risk matrix proper measures are elaborated and are implemented (according to the concrete measure, directly with single partners, with work package leaders, via the PMT or via the GA or the EC)
- If changes have to be made to the risk assessment this will be communicated and discussed in the PMT and GA and the risk matrix updated accordingly.

6. Information management in INFRAMIX

In order to support information exchange and communication within INFRAMIX the following rules and conventions have been defined. In addition tools have been provided.

Document repository

The project uses a web-based tool as a document repository and file exchange system, ensuring both safe storage of documents and supporting collaboration among partners. This document repository is based on the redmine tool.

File naming conventions

Filenames must adhere to the following convention: <Title of file>_v<X.X>_<date yyyymmdd> (e.g. Quality management procedures_v0.13_20170817). For deliverables see Section 3.1..

E-mail conventions
In order to allow efficient use of e-mail the subject must start with “INFRAMIX”.

Language conventions
For deliverables and all publication British English must be used.

Confidentiality
Confidentiality is a very important aspect for the work in INFRAMIX. Rules and processes concerning confidentiality are described in the Consortium Agreement.

Gender neutral
All communications must be formulated in a gender neutral fashion.

Annex (not for publication)

- Annex A – Template for half year reporting – Deliverables
- Annex B – Template for half year reporting - Milestones
- Annex C – Template for half year reporting – Work progress
- Annex D – Template for half year reporting - Financial
- Annex E – Template for Deliverables
- Annex F – Deliverables and assigned reviewers
- Annex G - Critical risks for implementation
- Annex H - INFRAMIX Review Form

Annex A – Template for half year reporting – Deliverables

Project partner please select
Reporting period please select

Del. No.	Deliverable name	WP No.	Short name of lead part.	Type	Diss. level	Del. date	Status	Explanation of any dealys
D1.1	Quality Management Plan	1	ATE	R	PU	M03		
D1.2	Internal Website and Collaborative Tool	1	ATE	DEC	CO	M04	Finished	
D1.3	Data Management Plan	1	ICCS	R	CO	M06		
D2.1	Requirements catalogue from the status quo analysis	2	ICCS	R	PU	M06		
D2.2	Architecture and interface specification of the co-simulation environment	2	FOK	R	CO	M09		
D2.3	Specification of sub-microscopic modelling for intelligent vehicle behaviour	2	VIF	OTH	CO	M18		
D2.4	Specification of advanced microscopic traffic flow modelling	2	FOK	OTH	CO	M18		
D2.5	Traffic state estimation and traffic control algorithms for mixed vehicle traffic	2	TUC	OTH	CO	M18		
D3.1	Design and development of infrastructure elements	3	SIE	OTH	PU	M24		
D3.2	Communication between Infrastructure and end users	3	SIE	OTH	CO	M24		
D3.3	HD maps and electronic road horizon	3	TOM	OTH	CO	M24		
D3.4	Implementation of traffic management strategies	3	TUC	OTH	CO	M24		
D3.5	New visual signs and elements	3	AAE	R	PU	M24		
D4.1	INFRAMIX plan for systems interaction, integration and testing	4	ICCS	R	PU	M18		
D4.2	Demonstration phase and data delivery report	4	AAE	DEM	CO	M30		
D5.1	Plan for evaluation and users' engagement	5	ENI	R	CO	M14		
D5.2	Users' appreciation results	5	ICCS	R	PU	M36		
D5.3	Evaluation results, impact analysis and new safety performance criteria for the road infrastructure	5	ICCS	R	PU	M36		
D5.4	Infrastructure classification scheme	5	ICCS	R	PU	M26		
D6.1	Communication strategy and Plan (incl. periodic updates)	6	ENI	R	PU	M06		
D6.1	*Communication strategy and Plan periodic update)*	*6*	*ENI*	*R*	*PU*	*M18*		
D6.1	*Communication strategy and Plan (periodic update)*	*6*	*ENI*	*R*	*PU*	*M36*		
D6.2	Communications kit (incl. periodic updates)	6	ICCS	DEC	PU	M12		
D6.2	Communications kit (periodic update)	6	ICCS	DEC	PU	M24		
D6.2	Communications kit (periodic update)	6	ICCS	DEC	PU	M36		
D6.3	Networking and Engagement activities plan (incl. an intermediate version)	6	ATE	R	PU	M09		
D6.3	Networking and Engagement activities plan (incl. an intermediate version)	6	ATE	R	PU	M34		
D6.4	Roadmap towards fully automated transport systems	6	AAE	R	PU	M36		
D6.5	Exploitation plans (intermediate version)	6	AAE	R	CO	M18		
D6.5	Exploitation plans	6	AAE	R	CO	M36		
D7.1	H - Requirement	7	ATE	Ethics	CO	M03		
D7.2	GEN - Requirement No. 2	7	ATE	Ethics	CO	M03		
D7.3	EPQ Requirement	7	ATE	Ethics	CO	M03		

Annex B – Template for half year reporting - Milestones

Project partner please select
Reporting period please select

Milestone number	Milestone name	WP	Short name of lead part.	Due date (in month)	Means of verification	Status	Explanation of any dealys
MS1.1	Kick-off Meeting	1	ATE	M01	Kick-off meeting took place	Finished	
MS1.2	Risk and Quality Procedures established	1	ATE	M03	Risk and quality manual ready (D1.1 published)		
MS1.3	Annual progress reports	1	ATE	M23	Annual progress reports submitted		
MS1.3	Annual progress reports	1	ATE	M24	Annual progress reports submitted		
MS1.4	Project successfully completed	1	ATE	M36	Final report submitted		
MS2.1	Simulations tools and relevant models ready	2	FOK	M18	Sub-microscopic models, intelligent vehicle behaviour, traffic flow models and co-simulation environment ready (D2.3 and D2.4)		
MS2.2	Traffic state estimation and traffic control algorithms available	2	TUC	M18	Relevant algorithms developed and ready to be integrated at the test sites (D2.5 published)		
MS3.1	Digital and physical infrastructure elements designed and developed	3	SIE	M24	Communication, HD maps, visual and electronic signals, electronic horizon available to be integrated at the test sites (D3.1-D3.5 published)		
MS4.1	Plan for demonstrations and testing finalised	4	ICCS	M18	D4.1 published		
MS4.2	Aggregated data available for evaluation	4	AAE	M30	Data collected and processed at the test sites (D4.2 available)		
MS5.1	Evaluation plan and engagement process ready	5	ENI	M14	D5.1 published		
MS5.2	Infrastructure classification scheme available	5	ICCS	M26	D5.4 published		
MS5.3	Evaluation, impact analysis and users' appreciation results	5	ICCS	M36	Final project results available (D5.2 and D5.3 published)		
MS6.1	Communication Strategy and Plan established	6	ENI	M06	Communication Strategy and Plan defined (1st version of D6.1)		
MS6.2	Communication kit available	6	ICCS	M12	Project brochure, newsletter, presentation and video ready (1st version of D6.2)		
MS6.3	Intermediate dissemination and exploitation activities report	6	ENI	M18	A list of dissemination activities performed (2nd version of D6.1); initial exploitation plans defined (1st version of D6.5)		
MS6.4	Overall dissemination activities and completed exploitation plans	6	ENI	M36	A list with all the dissemination activities (final version of D6.1); final exploitations plans available (final version of D6.5)		

Annex C – Template for half year reporting – Work progress

Project partner: please select
Reporting period: please select

Task #	Task	Lead	Work carried out by project partner in Task	Status	Explanation of any deviations from workplan
1	Project Management	ATE			
1.1	Project Management	ATE			
1.2	Technical and innovation manager	ICCS			
1.3	Data Management	ICCS			
2	Modelling, simulation and control for mixed traffic	FOK			
2.1	Status quo analysis	ICCS			
2.2	Development of the co-simuation environment	FOK			
2.3	Sub-microscopic Modelling and simulation	VIF			
2.4	Adapted microscopic traffic simulation	FOK			
2.5	Traffic control strategies for mixed traffic	TUC			
2.6	Traffic state estimation for mixed traffic	TUC			
3	Integrated Infrastructures and traffic management capabilities	SIE			
3.1	Design and development of infrastructure elements	SIE			
3.2	Communication	SIE			
3.3	Electronic road horizon (mobile users) / MAP generation	TOM			
3.4	Traffic management (implementation of traffic control strategies)	TUC			
3.5	Definition of visual "new" signs and elements	AAE			
4	Systems integration and demonstrations	AAE			
4.1	Methodology for demonstrations and testing	ICCS			
4.2	Demonstration site Spain (Girona), integration and testing	AAE			
4.3	Demonstration site Austria (Vienna), integration and testing	ASF			
4.4	Hybrid Testing	VIF			
4.5	Data collection and aggregation	ASF			
5	Evaluation, users' appreciation and safety performance	ICCS			
5.1	Evaluation methodology and users' engagement process	ENI			
5.2	Users' appreciation in INFRAMIX developments	ICCS			
5.3	Evaluation and new safety performance criteria	ICCS			
5.4	Evaluation, impact analysis and new safety performance criteria	ICCS			
6	Communication, Dissemination and Exploitation	ENI			
6.1	Definition of Communication Strategy and Tools	ENI			
6.2	Dissemination and communication to community	ICCS			
6.3	Networking/ User engagement activities	ATE			
6.4	Business ecosystem definition and Exploitation of results	AAE			

Annex D – Template for half year reporting – Financial

Project partner please select
Reporting period please select

WP	Title	Direct personnel costs (€)	Direct costs for subcontracting (€)	Other direct costs (travel, etc.) (€)
WP 1	Project Management			
WP 2	Modelling, simulation and control for mixed traffic			
WP 3	Integrated infrastructures and traffic management capabilities			
WP 4	Systems integration and demonstrations			
WP 5	Evaluation, users' appreciation and safety performance			
WP 6	Communication, Dissemination and Exploitation			

Annex E – Template for Deliverables

Grant Agreement Number: 723016

Project acronym: **INFRAMIX**

Project full title: INFRAMIX - Road INFRAstructure ready for MIXed vehicle traffic flows

D.X.X

TITLE

Due delivery date: 25/08/2017
Actual delivery date: 25/08/2017
Organization name of lead participant for this deliverable: **XXX**

Project co-funded by the European Commission within Horizon 2020		
Dissemination level		
PU	Public	
PP	Restricted to other programme participants	
RE	Restricted to a group specified by the consortium	
CO	Confidential, only for members of the consortium	

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INFRAMIX

Document Control Sheet

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Author(s) – in alphabetical order		
Name	Organisation	E-mail

Document Revision History			
Version	Date	Modifications Introduced	

Legal Disclaimer

INFRAMIX

Abbreviations and Acronyms

Acronym	Definition
EC	European Commission
PO	Project officer
GA	Grant Agreement
WP	Work Package

INFRAMIX

Table of Contents

INFRAMIX

List of Figures

List of Tables

Executive Summary

Text

INFRAMIX

1. Introduction

1.1 Purpose of Document

Text

1.2 Intended audience

Text

2. Chapter 1

2.1 Sub-heading 1

Text

2.2 Sub-heading 2

Text

Table 1 - Title

Table 2 - Title

INFRAMIX

Figure 1 – Title

3. Chapter 2
3.1 Sub-heading 1

Text

3.2 Sub-heading 2

4. Conclusion

INFRAMIX

Annexes

Annex F – Deliverables and assigned reviewers

Nr.	Deliverable Title	WP nr.	Lead	Type	Dissemina-tion level	Reviewers	Due Date
D1.1	Quality Management Plan	WP 1	ATE	Report	Public	ICCS, ENI	3
D1.2	Internal Website and Collaborative Tool	WP 1	ATE	Websites, patents filling, etc.	Confidential, only for members of the consortium (including the Commission Services)	n/a	4
D1.3	Data Management Plan	WP 1	ICCS	Report	Confidential, only for members of the consortium (including the Commission Services)	ATE, ASF	6
D2.1	Requirements catalogue from the status quo analysis	WP 2	ICCS	Report	Public	VIF, TUC	6
D2.2	Architecture and interface specification of the co-simulation environment	WP 2	Fraun hofer	Report	Public	TUC, SIE	9
D2.3	Specification of submicroscopic modelling for intelligent vehicle behaviour	WP 2	VIF	Other	Confidential, only for members of the consortium (including the Commission Services)	FOKUS, BMW	18
D2.4	Specification of advanced microscopic traffic flow modelling	WP 2	Fraun hofer	Other	Confidential, only for members of the consortium (including the Commission Services)	ICCS, TOM	18
D2.5	Traffic state estimation and traffic control algorithms for mixed vehicle traffic	WP 2	TUC	Other	Confidential, only for members of the consortium (including the Commission Services)	AAE, VIF	18
D3.1	Design and development of infrastructure	WP 3	SIE	Other	Public	FOKUS, ATE	24

	elements						
D3.2	Communication between Infrastructure and end users	WP 3	SIE	Other	Confidential, only for members of the consortium (including the Commission Services)	TOM, BMW	24
D3.3	HD maps and electronic road horizon	WP 3	TOM	Other	Confidential, only for members of the consortium (including the Commission Services)	VIF, AAE	24
D3.4	Implementation of traffic management strategies	WP 3	TUC	Other	Confidential, only for members of the consortium (including the Commission Services)	VIF, FOKUS	24
D3.5	New visual signs and elements	WP 3	AAE	Report	Public	ENI, TOM	24
D4.1	INFRAMIX plan for systems interaction, integration and testing	WP 4	ICCS	Report	Public	VIF, TUC	18
D4.2	Demonstration phase and data delivery report	WP 4	AAE	Demonstrator	Confidential, only for members of the consortium (including the Commission Services)	FOKUS, ATE	30
D5.1	Plan for evaluation and users' engagement	WP 5	ENI	Report	Public	VIF, SIE	14
D5.2	Users' appreciation results	WP 5	ICCS	Report	Public	ASF, BMW	36
D5.3	Evaluation results, impact analysis and new safety performance criteria for the road infrastructure	WP 5	ICCS	Report	Public	ATE, SIE	36
D5.4	Infrastructure classification scheme	WP 5	ICCS	Report	Public	TUC, SIE	26
D6.1	Communication strategy and	WP 6	ENI	Report	Public	ATE, AAE	6, 18,

	Plan						36
D6.2	Communications kit	WP 6	ICCS	Websites, patents filling, etc.	Public	FOKUS, ATE	12, 24, 36
D6.3	Networking and Engagement activities plan	WP 6	ATE	Report	Public	ICCS, ASF	9, 34
D6.4	Roadmap towards fully automated transport systems	WP 6	AAE	Report	Public	ATE, ICCS	36
D6.5	Exploitation plans	WP 6	AAE	Report	Confidential, only for members of the consortium (including the Commission Services)	ICCS, SIE	18, 36
D7.1	H - Requirement No. 1	WP 7	ATE	Ethics	Confidential, only for members of the consortium (including the Commission Services)	n/a	3
D7.2	GEN - Requirement No. 2	WP 7	ATE	Ethics	Confidential, only for members of the consortium (including the Commission Services)	n/a	3
D7.3	EPQ - Requirement No. 3	WP 7	ATE	Ethics	Confidential, only for members of the consortium (including the Commission Services)	n/a	3

Annex G - Critical risks for implementation

WP	Description of Risk	Risk-Mitigation measures	P	D [1]
1	Wrong strategic decisions; Diverts developments from major to minor issues due to status misconception	Periodic interim reports where the coordinator asks from all partners and WP leaders an updated status of technical activities and resource consumption; Frequent information exchange in a WP level and also in a consortium-level (plenary meetings, project management teleconferences).	L	H
1	Major strategic decision cannot be resolved by, or within, the project	Risk management identifies risks early to leave sufficient time for resolution; Communication management: discussion and conflict resolution culture; Project management: clearly defined escalation hierarchy, use of a mediator if conflict not resolved.	L	M
1	A slow start-up phase may endanger the timing of outcomes expected	A kick-off meeting held early in the project. Shorter duration milestones to make project manageable. In case risk occurs, tasks split into smaller more manageable sub-tasks to push project developments and aid project be on schedule.	L	L
1	Project plans abandoned under pressure, resulting in inefficient development	WP leaders and the Technical Manager will be following the project activities very closely to ensure that project plans are precisely followed by the relevant partners in WP level.	L	H
1	Project related decisions are unduly delayed	Implementation of an effective project management structure with clearly defined responsibilities and escalation hierarchies.	L	H
1	Project risks are neglected or not adequately managed	Implementation of a project risk management with a Risk Registry and regular review of project risks.	M	H
2	Requirements catalogue and detailed specification of the scenarios is not ready on time	A lot of preparatory work has been carried out to select the three scenarios and this will be used as a basis. Even in the case the final requirements and specifications are not available on time the work will start considering the core items of the three scenarios and will be revised as soon as the final ones will be ready.	M	M
2	Simulation environment not available on time for testing and fine tuning the developed estimation and control algorithms	Dedicated simulation tools owned by the consortium members (e.g. AIMSUN simulator) could be used in the beginning to perform preliminary and simple simulation tasks till the INFRAMIX simulation environment will be available.	L	M
2,4	Estimation and	Work on estimation and control starts quite early	L	H

[1] P: Probability, D: Potential Damage, L: Low, M: Medium, H: High

	control algorithms are not ready as scheduled to be integrated and tested at the test sites	in the project (M06) in order to be ready for the test sites. Major and important components needed for the scenarios that will took place at the test sites will be tagged with high priority and developed first. In addition the reference test site in Germany could be used to support early development/testing.		
3	Interfaces and messages needed for bidirectional communication between infrastructure and vehicles within INFRAMIX are not available on time	The test sites are already equipped with state-of-the-art V2X units (integrating also LTE capabilities), thus they could be used for the needs of INFRAMIX even if the final interfaces and message sets are not yet specified. In addition, proposed V2X messages from previous initiatives (e.g. AutoNet2030) will be exploited for speeding up this process.	L	M
3	Digital infrastructure elements and electronic horizon development is delayed	Major elements and key components of both digital infrastructure and electronic horizon will be designed first. Already in the test sites the identified stretches of road to be used are heavily equipped with C-ITS units and n HD map is available.	L	H
3	Definition of the new visual signs and elements is time consuming and challenging	The intention of INFRAMIX is to follow well established norms and guidelines for the new road signs needed in mixed traffic situations with the active support of the two road operators (ASF and AAE). In case this is not feasible within the timeframe of the project, simple and comprehensible visual elements will be produced after consultation with key stakeholders and the end users.	M	L
4	The integration activities in one or more test sites takes more time than planned	The selected parts of the road networks in Austria and Spain are quite advanced in terms of equipment and digital infrastructure and taking into account that SIE is an experienced integrator this is highly improbable. In case this risk will be realised the co-simulation environment will be used for initial testing activities to identify also potential challenges during the integration.	L	M
2, 5	Simulation setup delayed for the evaluation	Simulator tools used in the project, namely VSimRTI and ICOS, are quite mature and minimum targeted adaptations are needed within INFRAMIX. Even today their functionality can support testing of some use cases of the three scenarios, so in case of such a delay the testing will start with what is available and will become more intense as soon as everything is ready.	L	M
4, 5	Problems with data collection from the test sites	This is highly improbable since the test sites operators (ASF and AAE) are consortium partners and will grant access to all the needed data. In case, for whatever reason, some data are not available, extended simulations will be exploited as well as the hybrid testing system (coupling simulations with reality).	L	M

3,4, 5	One of the INFRAMIX test sites cannot be realised	If for whatever reason one of the test sites should not be available for the project, it would be possible to exploit further the German test site as an INFRAMIX test site. In addition, extended realistic simulations, employing the co-simulation environment and the hybrid testing method, will be pursuit to provide credible findings at the end.	L	L
5	Evaluation plan or users' engagement process is not ready by the deadline	Task 5.1 starts well in advance compared to the rest of WP5 tasks which leaves space for a small delay. Several competent partners have been allocated in this task making the probability of realisation of that risk low. Main key performance indicators and methodologies (incl. questionnaires and online forms) have been already identified from the proposal phase so they may be refined as soon as the actual design of the INFRAMIX developments is ready.	L	L
6	Failure to properly disseminate the results of the project among the decision making stakeholders	Several partners are in a good position to approach relevant European actors, while others have a wide technical dissemination background. Road operators are participating at the consortium (ASF and AAE) and will disseminate INFRAMIX to key stakeholders through their contacts and related associations (e.g. ASECAP, CEDR, ERF).	L	M
6	Low penetration of INFRAMIX brand name to the national and EU audience	Development of a precise strategy for the INFRAMIX; design of an INFRAMIX brand story (incl. a memorable tagline) and identity (logo) to support dissemination.	M	M
6	Exploitation plan: exploitation targets not clear, measureable or achievable in the given time frame	Clear exploitation goals set out early in the project and supported by a concise IPR review; exploitation plan covers and balances both incremental improvements as well as significant/revolutionary development steps - must be realistic, measureable and achievable.	M	H
6	Not enough critical mass for the End Users' Group	Developing specific actions (e.g. workshops, awareness campaigns) to attract interest and enhance opportunities and benefits of stakeholders involved in INFRAMIX. Partners will also utilise their network of contacts to mobilise them for their active participation.	L	M
6	Confrontation among partners for IPR issues	Signature, before starting the project of a Consortium Agreement taking into account the IPR issues for the whole duration of the project and after the end of the Project; Strict application of the rules defined in the Consortium Agreement.	L	M
All	Poor performance of a partner	In INFRAMIX there will be a close interaction between coordinator, technical management, risk management, and work package leaders. Therefore it is possible to identify problems with the quality or timing of the work of single partners early and to react in short time. If a partner does not deliver to work agreed on in the work plan,	L	M

		respective measures are set by the INFRAMIX general assembly (e.g. support of this partner, shift of tasks and related resources).		
All	Project partner leaves the INFRAMIX project	If a partner should leave the project, the General Assembly will examine, if partners of the consortium are willing and able to take over the affected tasks. If this should not be the case, it will be decided if the tasks will be taken over by a new partner or if they can be subcontracted. In any case the resources, which have not been used by the leaving partner, will be available to cover the open tasks.	L	M

Annex H - INFRAMIX Review Form

Title of document:

Deliverable Author(s):

Reviewer:

Date of review:

Comments
1) Correspondence to task and project objectives **Have the objectives as presented in Annex 1 of the Grant Agreement been addressed in an adequate manner?** ***Reviewer's comments:*** ***Author's response:***
2) Quality of results **Are the results substantial and of high value?** ***Reviewer's comments:*** ***Author's response:***
3) Transferability to other project activities **Can the information contained in the deliverable be easily used in subsequent or parallel project activities? Are the results adequately explained?** ***Reviewer's comments:*** ***Author's response:***
4) Readability, clarity and succinctness **Does the deliverable include all necessary elements, is it readable, in comprehensive language, short and clear, etc.? What about the methodology followed?** **Check spelling, literature list, referencing of tables and figures in the text. Check if figures and tables are readable and relevant for understanding the text.** ***Reviewer's comments:*** ***Author's response:***

Further comment(s) A list of concrete suggestions for updating the deliverable which are not covered above. ***Reviewer's comments:*** ***Author's response:***
Final Ranking of the Deliverable Following this review the Reviewer must conclude whether the deliverable is accepted or not. Put an "X" next to the final rating of the Deliverable: • Fully accepted • Accepted with comments • Accepted with reservation • Rejected unless modified as suggested