



# Combined Requirements for Co-operative Systems

## Annex 6: Mapped FRAME User Needs

Issue 2

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	<b>Project References</b>	COMeSafety: COOPERS: FP6-2004-IST-4-026814-IP CVIS: FP6-2004-IST-4-027293-IP SAFESPOT: FP6-2004-IST-4-026963-IP
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## Control Sheet

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## Abbreviations and Definitions

<b>Abbreviation</b>	<b>Definition</b>
EC	European Commission
EVI	Electronic Vehicle Identification
FFM	Freight and Fleet Management
FRAME	The short name for the European ITS Framework Architecture
HOV	High Occupancy Vehicle (as applied to a type of lane in the roadway)
MoU	Memorandum of Understanding
TCC	Traffic Control Centre
VRU	Vulnerable Road User

## 1. Introduction

### 1.1 This Annex

This Annex provides a list of all the existing FRAME User Needs that have been mapped to Requirements in CVIS and SAFESPOT and Services in COOPERS. The descriptions of these mapped FRAME User Needs have been taken from the complete set of existing FRAME User Needs that is shown in Annex 4.

### 1.2 Notes about the mapped User Needs

The table of the mapped existing FRAME User Needs includes the identities of all the CVIS and SAFESPOT Requirements plus COOPERS Services for which a mapping has been found. The identities of the Sub-Projects within CVIS and SAFESPOT for each Requirement are as follows:

SPn... : is from one of the SAFESPOT Sub-Projects. Its identity is provided by the “n” which can be any of the following values:

- 1 – SAFEPROBE – Sensors on-board the Vehicle
- 2 – INFRASENSE – Sensors in the Infrastructure
- 3 – SINTECH – Vehicular Ad hoc networks, Positioning and Local Dynamic Maps
- 4 – SCOVA – Safety Applications in the Vehicle
- 5 – COSSIB – Safety Applications in the Infrastructure

CV-RQ-SP3.m... : is for one of the CVIS Sub-Projects. Its identity is provided by the “m” which can be any of the following values:

- 1 – Cooperative Urban Applications (CURB)
- 2 – Cooperative Inter-urban Applications (CINT)
- 3 – Cooperative Freight and Fleet Applications (CF&F)
- 4 – Cooperative Monitoring (COMO)<sup>1</sup>

All the mappings from each project and sub-project to each FRAME User Need are shown separately in the table. This also applies to those User Needs that are mapped to different Requirements in the same Project and is intended to show where the same User Need is used more than once.

### 1.3 Total number of mapped FRAME User Needs that have been identified

For each project and sub-project the numbers of mapped FRAME User Needs that have been identified are shown in Table 1.

<sup>1</sup> As well as 3.4, some COMO Requirements Identities start with 3.1. However the numbers that follow the “3.1” are in a different range to the Requirements for CURB, which are also 3.1.

**Table 1 Numbers of mapped FRAME User Needs for each Project and Sub-project**

Project Name	Sub-Project Name	Numbers of mapped FRAME User Needs
COOPERS		182
CVIS	CURB (3.1)	21
	CINT (3.2)	54
	CF&F (3.3)	6
	COMO (3.4)	10
SAFESPOT	SP1 (SAFEPROBE):	0
	SP2 (INFRASENSE)	70
	SP3 (SINTECH)	15
	SP4 (SCOVA)	2
	SP5 (COSSIB)	14

The above numbers **do** take account of multiple mapping of the same existing FRAME User Need within each sub-project. However they **do not** take account of the multiple use of the same new User Need in the different projects. So the total of the above numbers will overstate the actual number of existing FRAME User Needs across all of the projects. Taking into account the multiple uses of existing FRAME User Needs across projects, the total number is about **350**.

Note that the SAFESPOT SP1 sub-project does not have any mapped FRAME User Needs, as is shown in the table above. One reason for this is that SP1 is largely concerned with communications, which does not have many existing FRAME User Needs.

Table 2 Mapped Existing FRAME User Needs

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>1. General</b>		<i>This group contains the properties that either the Framework Architecture should possess, or that systems built in conformance to the Framework Architecture should possess.</i>	
<b>1.1 Architectural Properties</b>	1.1.1	The Framework Architecture description shall include functional, information, physical and communication perspectives.	COOPERS (All)
	1.1.3	The Framework Architecture description shall include a glossary to explain all the main concepts described in the architecture.	COOPERS (All)
	1.1.4	The Framework Architecture shall be provided in a form which enables it to be updated after delivery.	COOPERS (All)
	1.1.4	The Framework Architecture shall be provided in a form which enables it to be updated after delivery.	SP3_020_VANET_02_v1.0
	1.1.5	The Framework Architecture shall be technology independent.	COOPERS (All)
	1.1.6	The Framework Architecture shall facilitate the creation of modular and flexible designs, so that manufacturers can produce their own versions of equipment.	COOPERS (All)
	1.1.6	The Framework Architecture shall facilitate the creation of modular and flexible designs, so that manufacturers can produce their own versions of equipment.	SP3_020_VANET_02_v1.0
	1.1.6	The Framework Architecture shall facilitate the creation of modular and flexible designs, so that manufacturers can produce their own versions of equipment.	SP5_RQ21_36_v1.0

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	1.1.7	The Framework Architecture shall allow equipment performing the same service to be provided by various suppliers.	COOPERS (All)
	1.1.7	The Framework Architecture shall allow equipment performing the same service to be provided by various suppliers.	SP3_020_VANET_02_v1.0
	1.1.8	The Framework Architecture shall allow the same service to be provided by various service providers.	COOPERS (All)
	1.1.10	The Framework Architecture shall support interaction between services provided by private and public bodies.	COOPERS (All)
	1.1.11	The Framework Architecture shall allow current organisational responsibilities and legal liabilities to be retained.	COOPERS (All)
	1.1.12	The Framework Architecture shall, where possible, describe migration path(s) that can be followed to enable architectures defined for existing traffic and transport management, as well as other ITS control and information systems, to become compliant.	COOPERS (All)
	1.1.13	The Framework Architecture shall allow the use of existing and emerging communication infrastructures, or describe possible migration paths to explain how they can become compliant.	COOPERS (All)
	1.1.14	The Framework Architecture shall support the integration of Traffic Information Centres and Traffic Control Centres into national and international networks.	COOPERS (All)
<b>1.2 Data Exchange</b>	1.2.1	The Framework Architecture shall provide a high level description of the message sets and data communication protocols to be used in data transfers.	COOPERS (All)
	1.2.1	The Framework Architecture shall provide a high level description of the message sets and data communication protocols to be used in data transfers.	SP3_021_VANET_09_v1.0

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	1.2.2	The Framework Architecture shall provide a high level description of data stores and data flows, and shall have a single data dictionary.	COOPERS (All)
	1.2.3	Systems that conform to the Framework Architecture shall exchange information in a manner that permits a given geographic location to be understood by all parties.	COOPERS (All)
	1.2.4	Systems that conform to the Framework Architecture shall exchange information in a manner that permits road and traffic conditions to be understood by all parties.	COOPERS (All)
	1.2.5	The Framework Architecture shall provide a high level description of the message sets used to exchange data with external interfaces.	COOPERS (All)
	1.2.6	The Framework Architecture shall support the use of seamless communications. This shall mean that the use of different communication networks is transparent i.e. switches are made without the intervention of the final user.	COOPERS (All)
	1.2.6	The Framework Architecture shall support the use of seamless communications. This shall mean that the use of different communication networks is transparent i.e. switches are made without the intervention of the final user.	SP5_RQ40_19_v1.0
<b>1.3 Adaptability</b>	1.3.2	Systems that conform to the Framework Architecture shall be able to provide facilities to enable data about the travel network to be entered and updated.	COOPERS (All)
	1.3.5	The Framework Architecture shall not constrain user interfaces to be of a particular type, or from a particular manufacturer.	COOPERS (All)
	1.3.6	The Framework Architecture shall not require that each of its user interfaces must operate on a specific item of equipment, unless it is for safety reasons.	COOPERS (All)

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
1.4 Constraints	1.4.1	The Framework Architecture shall require all systems developed from it to comply with current European and National laws concerning data security, user anonymity and the protection of individual privacy.	COOPERS (All)
	1.4.1	The Framework Architecture shall require all systems developed from it to comply with current European and National laws concerning data security, user anonymity and the protection of individual privacy.	SP3_001_VANET_02_v1.0
	1.4.1	The Framework Architecture shall require all systems developed from it to comply with current European and National laws concerning data security, user anonymity and the protection of individual privacy.	SP3_002_VANET_02_v1.0
	1.4.1	The Framework Architecture shall require all systems developed from it to comply with current European and National laws concerning data security, user anonymity and the protection of individual privacy.	SP3_003_VANET_02_v1.0
	1.4.1	The Framework Architecture shall require all systems developed from it to comply with current European and National laws concerning data security, user anonymity and the protection of individual privacy.	SP3_013_VANET_02_v1.0
	1.4.1	The Framework Architecture shall require all systems developed from it to comply with current European and National laws concerning data security, user anonymity and the protection of individual privacy.	SP5_RQ25_19_v1.0
	1.4.2	The Framework Architecture shall require all systems developed from it to comply with the traffic laws and regulations that apply in Europe.	COOPERS (All)
	1.4.3	The Framework Architecture shall conform to relevant MoU, European directives and guidelines, and European (de facto-) standards.	COOPERS (All)

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
1.5 Continuity	1.5.1	The Framework Architecture shall provide functionality such that the quality of information content is continuous and consistent, both in time and space (i.e. as the traveller moves).	COOPERS (All)
	1.5.2	The Framework Architecture shall provide functionality that can accommodate environmental stress and infrastructure failures.	COOPERS (All)
1.6 Cost/Benefit	1.6.1	Whenever possible and practical, the Framework Architecture shall use the same data as input to several parts of its functionality.	COOPERS (All)
	1.6.2	The Framework Architecture shall avoid the need for unnecessary multiple data sources or redundant data management.	COOPERS (All)
	1.6.3	The Framework Architecture shall require all systems developed from it to be able to use the most cost-effective means of communication available.	COOPERS (All)
	1.6.4	The Framework Architecture shall require all systems developed from it to enable operating costs to be reduced whenever possible, when compared with the systems that they replace.	COOPERS (All)
1.7 Expandability	1.7.1	The Framework Architecture shall allow systems developed from it to have an evolutionary development strategy that enables their continuous upgrading.	COOPERS (All)
	1.7.1	The Framework Architecture shall allow systems developed from it to have an evolutionary development strategy that enables their continuous upgrading.	SP3_151_MAPS_09_v1.0
	1.7.1	The Framework Architecture shall allow systems developed from it to have an evolutionary development strategy that enables their continuous upgrading.	SP3_152_MAPS_09_v1.0
	1.7.2	The Framework Architecture shall provide services that are not constrained to operate in a particular geographic region.	COOPERS (All)

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>1.8 Maintainability</b>	1.8.1	The Framework Architecture shall require all systems developed from it to be capable of being repaired.	COOPERS (All)
	1.8.1	The Framework Architecture shall require all systems developed from it to be capable of being repaired.	SP2 1.02.01
	1.8.2	The Framework Architecture shall require all systems developed from it to be easily maintainable with minimum disturbance.	COOPERS (All)
	1.8.2	The Framework Architecture shall require all systems developed from it to be easily maintainable with minimum disturbance.	SP2 1.02.02
<b>1.9 Quality of Data Content</b>	1.9.1	The Framework Architecture shall enable all information systems developed from it to provide data with a stated accuracy, either as additional information or as part of the documentation, at all times.	COOPERS (All)
	1.9.1	The Framework Architecture shall enable all information systems developed from it to provide data with a stated accuracy, either as additional information or as part of the documentation, at all times.	SP2 1.03.01
	1.9.2	The Framework Architecture shall require all systems developed from it to check all input data for validity, whenever possible, and to report failures.	COOPERS (All)
	1.9.2	The Framework Architecture shall require all systems developed from it to check all input data for validity, whenever possible, and to report failures.	SP2 1.03.02
	1.9.2	The Framework Architecture shall require all systems developed from it to check all input data for validity, whenever possible, and to report failures.	SP3_010_VANET_02_v1.0
	1.9.2	The Framework Architecture shall require all systems developed from it to check all input data for validity, whenever possible, and to report failures.	SP3_024_VANET_09_v1.0

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	1.9.3	The Framework Architecture shall enable all systems developed from it to check data values by comparing different sources, when available, so as to ensure high-accuracy and completeness.	COOPERS (All)
	1.9.3	The Framework Architecture shall enable all systems developed from it to check data values by comparing different sources, when available, so as to ensure high-accuracy and completeness.	SP2 1.03.03
	1.9.4	The Framework Architecture shall require all systems developed from it to manage local/regional/national databases in a consistent way.	COOPERS (All)
<b>1.10 Robustness</b>	1.10.1	The Framework Architecture shall allow all systems developed from it to be able to detect errors in operation, when higher integrity is required, e.g. for financial, security or safety reasons.	COOPERS (All)
	1.10.1	The Framework Architecture shall allow all systems developed from it to be able to detect errors in operation, when higher integrity is required, e.g. for financial, security or safety reasons.	SP2 1.04.01
	1.10.1	The Framework Architecture shall allow all systems developed from it to be able to detect errors in operation, when higher integrity is required, e.g. for financial, security or safety reasons.	SP3_004_VANET_02_v1.0
	1.10.2	Systems that conform to the Framework Architecture shall be able to monitor each safety-related component (including software), warn the user in case of problems, and disable it, or reduce it to a safe state.	COOPERS (All)
	1.10.2	Systems that conform to the Framework Architecture shall be able to monitor each safety-related component (including software), warn the user in case of problems, and disable it, or reduce it to a safe state.	SP2 1.04.02

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	1.10.3	The Framework Architecture shall require all safety-related systems developed from it to be fault-tolerant.	COOPERS (All)
	1.10.3	The Framework Architecture shall require all safety-related systems developed from it to be fault-tolerant.	SP2 1.04.03
	1.10.4	The Framework Architecture shall require all systems developed from it to be reliable with respect to the legal and/or quality requirements necessary for each application.	COOPERS (All)
	1.10.4	The Framework Architecture shall require all systems developed from it to be reliable with respect to the legal and/or quality requirements necessary for each application.	SP2 1.04.04
	1.10.5	The Framework Architecture shall require all systems developed from it to be able to operate in all potential climatic and traffic conditions.	COOPERS (All)
	1.10.5	The Framework Architecture shall require all systems developed from it to be able to operate in all potential climatic and traffic conditions.	SP2 1.04.05
	1.10.5	The Framework Architecture shall require all systems developed from it to be able to operate in all potential climatic and traffic conditions.	SP5_RQ24_19_v1.0
<b>1.11 Safety</b>	1.11.1	The Framework Architecture shall provide functionality that operates in a manner that does not generate a safety hazard for its users.	COOPERS (All)
	1.11.1	The Framework Architecture shall provide functionality that operates in a manner that does not generate a safety hazard for its users.	SP2 1.05.02
	1.11.2	The Framework Architecture shall provide functionality that operates in a manner that does not encourage unsafe behaviour.	COOPERS (All)

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	1.11.2	The Framework Architecture shall provide functionality that operates in a manner that does not encourage unsafe behaviour.	SP2 1.05.03
	1.11.3	The Framework Architecture shall provide functionality that operates in a safe manner during degraded modes of operation.	SP2 1.05.04
	1.11.4	The Framework Architecture shall provide functionality that is ultimately under the control of the human operator.	COOPERS (All)
<b>1.12 Security</b>	1.12.1	The Framework Architecture shall require that systems developed from it are capable of surviving accidental and intentional attacks on their integrity.	COOPERS (All)
	1.12.1	The Framework Architecture shall require that systems developed from it are capable of surviving accidental and intentional attacks on their integrity.	SP2 1.06.01
	1.12.1	The Framework Architecture shall require that systems developed from it are capable of surviving accidental and intentional attacks on their integrity.	SP3_005_VANET_02_v1.0
	1.12.1	The Framework Architecture shall require that systems developed from it are capable of surviving accidental and intentional attacks on their integrity.	SP3_004_VANET_02_v1.0
	1.12.1	The Framework Architecture shall require that systems developed from it are capable of surviving accidental and intentional attacks on their integrity.	SP5_RQ38_19_v1.0
	1.12.2	The Framework Architecture shall require systems developed from it to provide protection against unauthorised access.	COOPERS (All)
	1.12.2	The Framework Architecture shall require systems developed from it to provide protection against unauthorised access.	SP2 1.06.02
	1.12.2	The Framework Architecture shall require systems developed from it to provide protection against unauthorised access.	SP3_018_VANET_02_v1.0

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	1.12.2	The Framework Architecture shall require systems developed from it to provide protection against unauthorised access.	SP3_005_VANET_02_v1.0
	1.12.2	The Framework Architecture shall require systems developed from it to provide protection against unauthorised access.	SP3_010_VANET_02_v1.0
	1.12.2	The Framework Architecture shall require systems developed from it to provide protection against unauthorised access.	SP5_RQ38_19_v1.0
<b>1.13 User Friendliness</b>	1.13.1	The Framework Architecture shall require all systems developed from it to have user interfaces with similar "look and feel" and similar end user assistance.	COOPERS (All)
	1.13.1	The Framework Architecture shall require all systems developed from it to have user interfaces with similar "look and feel" and similar end user assistance.	SP2 4.05.05
	1.13.2	The Framework Architecture shall require all systems developed from it to be simple and efficient for travellers to use, and easy to understand.	COOPERS (All)
	1.13.2	The Framework Architecture shall require all systems developed from it to be simple and efficient for travellers to use, and easy to understand.	SP2 1.07.01
	1.13.3	The Framework Architecture shall require all interactive systems developed from it to have a user interface syntax that is easy to learn and to remember (especially for users with specific needs).	COOPERS (All)
	1.13.4	Systems developed from the Framework Architecture shall produce their output within a time that is sufficient to be useful, and within normal expectations,	COOPERS (All)
	1.13.4	Systems developed from the Framework Architecture shall produce their output within a time that is sufficient to be useful, and within normal expectations,	SP2 4.05.04

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
2 Infrastructure Planning and Maintenance	1.13.6	The Framework Architecture shall ensure that the safety and security of systems developed from it are not compromised by their ease of use.	SP3_017_VANET_02_v1.0
		<i>This group contains the activities associated with long term planning, modelling and reporting as well as the maintenance of the infrastructure. These User Needs have links with Groups 6-10.</i>	
2.1 Transport Planning Support			
2.1.0 Objectives	2.1.0.1	The system shall be able to exchange traffic and travel information between adjacent TICs to enhance local information and to improve strategic planning.	COOPERS S8
	2.1.0.1	The system shall be able to exchange traffic and travel information between adjacent TICs to enhance local information and to improve strategic planning.	SP2 3.01.04
2.1.1 Information Management	2.1.1.2	The system shall be able to provide links to non-transport information systems using "open" communication protocols.	COOPERS S1a, S1b,S2 and S3
	2.1.1.2	The system shall be able to provide links to non-transport information systems using "open" communication protocols.	SP2 3.01.08
	2.1.1.3	The system shall be able to collect traffic data for road network use analysis and prediction calculations.	CV-RQ-SP3.2-0037
	2.1.1.3	The system shall be able to collect traffic data for road network use analysis and prediction calculations.	CV-RQ-SP3.4-0006
	2.1.1.3	The system shall be able to collect traffic data for road network use analysis and prediction calculations.	CV-RQ-SP3.1-0026

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	2.1.1.3	The system shall be able to collect traffic data for road network use analysis and prediction calculations.	CV-RQ-SP3.1-0340
<b>2.1.2 Planning</b>	2.1.2.1	The system shall be able to model the road network for strategic planning calculations.	CV-RQ-SP3.2-0027
	2.1.2.1	The system shall be able to model the road network for strategic planning calculations.	CV-RQ-SP3.1-0348
	2.1.2.2	The system shall be able to develop and implement traffic environmental management strategies based on current and predicted traffic conditions.	COOPERS S4a, S4b, S4c, S5, S7 and S11
	2.1.2.2	The system shall be able to develop and implement traffic environmental management strategies based on current and predicted traffic conditions.	CV-RQ-SP3.2-0036
	2.1.2.2	The system shall be able to develop and implement traffic environmental management strategies based on current and predicted traffic conditions.	CV-RQ-SP3.2-0027
	2.1.2.4	The system shall be able to simulate a demand management strategy on the road network.	COOPERS S3, S5, S6, S7, S9, S11 and S13
	2.1.2.5	The system shall be able to simulate potential capacity reduction, e.g. due to road works.	COOPERS S1a, S1b, S2, S3, S10 and S13
<b>2.1.3 Evaluation</b>	2.1.3.1	The system shall be able to measure the effect of a strategy, and to modify it when necessary.	COOPERS S4a, S4b, S4c, S5, S9 and S11
<b>2.1.4 Reporting</b>	2.1.4.1	The system shall collect and report data as required by legally appointed authorities.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>2.2 Infrastructure Maintenance Management</b>			
<b>2.2.0 Basic Services</b>	2.2.0.1	The system shall provide support for road maintenance and infrastructure management.	COOPERS S3, S4a, S4b, S4c, S5, S8 and S13
	2.2.0.5	The system shall be able to transmit current and future maintenance schedules to TCCs.	COOPERS S3, S4a and S11
<b>2.2.2 Monitoring</b>	2.2.2.1	The system shall be able to receive infrastructure equipment status data remotely.	COOPERS S4a, S4c and S5
	2.2.2.1	The system shall be able to receive infrastructure equipment status data remotely.	SP2 3.02.01
	2.2.2.2	The system shall be able to monitor the structural integrity of items of infrastructure, e.g. roads, bridges, tunnels, gantries, etc.	SP2 2.03.02
	2.2.2.3	The system shall be able to support a database of the road network, infrastructure and road-side equipment.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	2.2.2.3	The system shall be able to support a database of the road network, infrastructure and road-side equipment.	SP2 2.03.01
<b>3 Law Enforcement</b>		<i>This group contains the activities associated with the enforcement of traffic laws and regulations, and the collection of evidence. These User Needs have links with Groups 6-10.</i>	

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>3.1 Policing/Enforcing Traffic Regulations</b>			
<b>3.1.0 Objectives</b>	3.1.0.2	The system shall be able to collect the evidence of a violation of the traffic laws and regulations in a manner suitable to justify the application of a legal punishment	COOPERS S1c, S4a AND S5
	3.1.0.2	The system shall be able to collect the evidence of a violation of the traffic laws and regulations in a manner suitable to justify the application of a legal punishment	CV-RQ-SP3.1-0022
	3.1.0.4	The system shall not obstruct or slow down traffic in any way, except when it is part of access control.	SP2 1.5.5
	3.1.0.5	The system shall be able to collect the evidence of a violation of the traffic laws and regulations in a manner suitable to justify the application of a legal punishment	CV-RQ-SP3.1-0022
	3.1.1.3	The system shall be able to measure the characteristics (e.g. length, weight etc.) of a vehicle automatically, whilst the vehicle is in motion ("Weigh in Motion").	SP2 2.01.04
<b>4 Financial Transactions</b>		<i>This group contains the activities associated with the payment for traffic or travel services, and includes the manner of the transaction, its enforcement, and the sharing of revenues. These User Needs have links with Groups 6-10.</i>	
<b>4.1 Electronic Financial Transactions</b>			
<b>4.1.0 Objectives</b>	4.1.0.4	The system shall be able to manage tariff policies (define fares/fees according to selected criteria).	COOPERS S9

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>4.1.1 Traffic Management</b>	4.1.1.1	The system shall have a minimum impact on the traffic flow, e.g. a short transaction duration.	COOPERS S9
	4.1.1.2	The system shall have a minimum impact on the driving task.	COOPERS S9
	4.1.1.3	The system shall not do anything to reduce the safety of either the travellers in the vehicle, or the staff close to the equipment, e.g. in toll booths.	COOPERS S9
<b>4.1.3 Transaction</b>	4.1.3.1	The system shall be able to exchange information between a toll collection unit and a vehicle.	COOPERS S9
<b>5 Emergency Services</b>		<i>This group contains 'May Day' and stolen vehicle management (for any vehicle), the prioritising of emergency vehicles, and hazardous goods (i.e. goods that need to be tracked) incident management. These User Needs have links with Groups 6-10.</i>	
<b>5.1 Emergency Notification and Personal Security</b>			
<b>5.1.0 Basic Services</b>	5.1.0.2	The system shall be able to detect that the vehicle has been involved in an accident, identify its location, and initiate a 'May Day' call automatically.	SP2 2.02.01
	5.1.0.5	The system shall be able to identify the driver / vehicle making an emergency call.	SP2 4.03.06
	5.1.0.6	The system shall be able to provide two-way data and/or voice communications between the vehicle and the emergency control centre.	SP3_031_VANET_02_v1.0
<b>5.2 Emergency Vehicle Management</b>			

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>5.2.0 Basic Services</b>	5.2.0.2	The system shall inform traffic management about the route that is intended for each green wave before it is used.	SP5_RQ80_6_v1.1
	5.2.0.3	The system shall provide the identity of each traffic signal at which priority is needed to the traffic management, and the 'timing window' in which priority is to be given.	SP5_RQ80_6_v1.1
	5.2.0.4	The system shall receive an indication from the emergency vehicle of its need to be given priority at each set of traffic signals before its arrival in the immediate vicinity.	SP2 3.01.05
	5.2.0.4	The system shall receive an indication from the emergency vehicle of its need to be given priority at each set of traffic signals before its arrival in the immediate vicinity.	SP2 4.03.06
	5.2.0.5	The system shall enable emergency vehicles to pass through the road network without any priority at signalised junctions, e.g. during a return from an incident.	SP5_RQ80_6_v1.1
<b>5.3.2 Planning</b>	5.3.2.1	The system shall be able to support the planning (e.g. routes) and execution (e.g. authorisation) of the movement of hazardous goods.	CV-RQ-SP3.3-0107
<b>6 Travel Information and Guidance</b>		<i>This group contains all the activities concerned with the handling of pre-trip and on-trip information, including mode choice and change, and route guidance</i>	
<b>6.1 Pre-trip Information</b>			
<b>6.1.0 Objectives</b>	6.1.0.1	The system shall provide emergency, or urgent, information to all road users free of charge.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S8 and S9

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.1.0.2	The system shall be able to require payment for non-emergency, or non-urgent, information.	COOPERS S7, S10, S11 and S12
	6.1.0.3	The system shall be able to provide accurate, credible, timely, and easy to comprehend traffic and travel information where it may be of benefit to the user.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	6.1.0.3	The system shall be able to provide accurate, credible, timely, and easy to comprehend traffic and travel information where it may be of benefit to the user.	SP2 4.05.01
	6.1.0.4	The system shall be able to provide information on alternative routes, e.g. where they are quicker, cheaper, shorter, scenic, etc.	COOPERS S9, S10, S11 and S12
	6.1.0.4	The system shall be able to provide information on alternative routes, e.g. where they are quicker, cheaper, shorter, scenic, etc.	CV-RQ-SP3.2-0001
	6.1.0.5	The system shall enable travellers to plan their trip using their own travel criteria, e.g. modes of transport, time of departure/arrival, road selection criteria, etc.	CV-RQ-SP3.2-0012
	6.1.0.5	The system shall enable travellers to plan their trip using their own travel criteria, e.g. modes of transport, time of departure/arrival, road selection criteria, etc.	CV-RQ-SP3.1-0051
	6.1.0.5	The system shall enable travellers to plan their trip using their own travel criteria, e.g. modes of transport, time of departure/arrival, road selection criteria, etc.	CV-RQ-SP3.1-0052
	6.1.0.5	The system shall enable travellers to plan their trip using their own travel criteria, e.g. modes of transport, time of departure/arrival, road selection criteria, etc.	CV-RQ-SP3.1-0054
	6.1.0.6	The system shall enable travellers to plan their trip according to the needs of their disabilities	CV-RQ-SP3.2-0012

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.1.0.6	The system shall enable travellers to plan their trip according to the needs of their disabilities	CV-RQ-SP3.1-0051
	6.1.0.6	The system shall enable travellers to plan their trip according to the needs of their disabilities	CV-RQ-SP3.1-0054
<b>6.1.1 Modal Choice</b>	6.1.1.4	The system shall be able to provide extensive multi-modal trip information, e.g. prices, fares, routes, forecast & current traffic situations, traffic control, demand mgt measures, local warnings, special events, weather conditions, hotels etc.	CV-RQ-SP3.2-0038
	6.1.1.4	The system shall be able to provide extensive multi-modal trip information, e.g. prices, fares, routes, forecast & current traffic situations, traffic control, demand mgt measures, local warnings, special events, weather conditions, hotels etc.	CV-RQ-SP3.2-0039
	6.1.1.4	The system shall be able to provide extensive multi-modal trip information, e.g. prices, fares, routes, forecast & current traffic situations, traffic control, demand mgt measures, local warnings, special events, weather conditions, hotels etc.	CV-RQ-SP3.2-0040
<b>6.1.2 Information Handling</b>	6.1.2.1	The system shall inform the User when changes occur to the criteria upon which the pre trip information had been given.	COOPERS S9, S10, S11 and S12
	6.1.2.3	The system shall be able to provide route information to all drivers, e.g. restrictions, travel times, etc.	COOPERS S9, S10 and S11
	6.1.2.3	The system shall be able to provide route information to all drivers, e.g. restrictions, travel times, etc.	SP2 4.01.01
	6.1.2.4	The system shall be able to support a database of events with links between events that occur concurrently and at the same or adjacent locations.	CV-RQ-SP3.1-0361

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.1.2.4	The system shall be able to support a database of events with links between events that occur concurrently and at the same or adjacent locations.	SP2 4.05.03
	6.1.2.5	The system shall be able to analyse, process and retrieve data from different combinations of sources (including floating car).	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S5, S6, S7, S9, S10, S11 and S13
	6.1.2.5	The system shall be able to analyse, process and retrieve data from different combinations of sources (including floating car).	CV-RQ-SP3.2-0037
	6.1.2.5	The system shall be able to analyse, process and retrieve data from different combinations of sources (including floating car).	CV-RQ-SP3.1-0052
	6.1.2.5	The system shall be able to analyse, process and retrieve data from different combinations of sources (including floating car).	CV-RQ-SP3.1-0360
	6.1.2.5	The system shall be able to analyse, process and retrieve data from different combinations of sources (including floating car).	SP2 3.01.01
	6.1.2.6	The system shall be able to provide road and traffic information adapted to different classes of users, e.g. travellers, radio broadcasters, service operators.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S5, S6, S9, S10, S11 and S13
	6.1.2.6	The system shall be able to provide road and traffic information adapted to different classes of users, e.g. travellers, radio broadcasters, service operators.	CV-RQ-SP3.2-0038
	6.1.2.6	The system shall be able to provide road and traffic information adapted to different classes of users, e.g. travellers, radio broadcasters, service operators.	CV-RQ-SP3.1-0386
	6.1.2.7	The system shall provide information using graphical representation or text. Graphical form shall include the use of maps as well as text.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10 and S11

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.1.2.8	The system shall provide information in the native language at the output location, and/or from a user selected choice of other appropriate foreign languages.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10 and S12
	6.1.2.9	The system shall provide Information Management tools for the operator.	COOPERS S4a, S4b, S4c, S5 and S11
	6.1.2.9	The system shall provide Information Management tools for the operator.	CV-RQ-SP3.2-0064
	6.1.2.9	The system shall provide Information Management tools for the operator.	CV-RQ-SP3.2-0065
	6.1.2.9	The system shall provide Information Management tools for the operator.	CV-RQ-SP3.2-0066
<b>6.1.3 Traveller Interaction</b>	6.1.3.9	The system shall communicate with other information systems using "open" standard protocols.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	6.1.3.9	The system shall communicate with other information systems using "open" standard protocols.	SP2 3.01.08
	6.1.3.10	The system shall provide information for fixed and mobile terminals using "open" standard communication protocols.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
<b>6.2 On-trip Information</b>			
<b>6.2.0 Objectives</b>	6.2.0.1	The system shall provide emergency, or urgent, information to all users free of charge.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S8 and S9

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.2.0.2	The system shall be able to require payment for non-emergency, or non-urgent, information.	COOPERS S7 S10, S11 and S12
	6.2.0.3	The system shall be able to be activated automatically by another system, e.g. traffic management.	COOPERS S1a, S1b, S1c, S2, S4a, S4b, S4c, S5, S6, S8, S9 and S11
	6.2.0.3	The system shall be able to be activated automatically by another system, e.g. traffic management.	CV-RQ-SP3.2-0010
	6.2.0.4	The system shall provide traffic information (e.g. travel conditions on roads and other modes, accidents, special events, car park status, etc.) to the traveller during his/her trip in a timely manner. .	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	6.2.0.4	The system shall provide traffic information (e.g. travel conditions on roads and other modes, accidents, special events, car park status, etc.) to the traveller during his/her trip in a timely manner. .	CV-RQ-SP3.2-0015
	6.2.0.4	The system shall provide traffic information (e.g. travel conditions on roads and other modes, accidents, special events, car park status, etc.) to the traveller during his/her trip in a timely manner. .	CV-RQ-SP3.2-0016
	6.2.0.4	The system shall provide traffic information (e.g. travel conditions on roads and other modes, accidents, special events, car park status, etc.) to the traveller during his/her trip in a timely manner. .	CV-RQ-SP3.2-0017
	6.2.0.5	The system shall be able to provide urban and inter-urban traffic and travel information to drivers about the domain they are not currently in.	CV-RQ-SP3.2-0016
	6.2.0.6	The system shall inform the User when changes occur to the criteria upon which the trip information had been given.	COOPERS S8, S9, S10 and S11

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.2.0.7	The system shall be able to know where it is in the transport network, and hence provide the position of vehicle or person carrying it.	SP3_006_VANET_02_v1.0
<b>6.2.2 Information Handling</b>	6.2.2.1	The system shall be able to inform travellers on the current average travel time between fixed points.	COOPERS S8, S9 and S10
	6.2.2.4	The system shall provide road and traffic safety advice based on current weather and traffic conditions.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7 and S11
	6.2.2.4	The system shall provide road and traffic safety advice based on current weather and traffic conditions.	SP2 4.01.03
	6.2.2.5	The system shall be able to provide all drivers with information on current road travel conditions, e.g. route restrictions, travel times, etc.	CV-RQ-SP3.2-0011
	6.2.2.5	The system shall be able to provide all drivers with information on current road travel conditions, e.g. route restrictions, travel times, etc.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S9, S10 and S11
	6.2.2.5	The system shall be able to provide all drivers with information on current road travel conditions, e.g. route restrictions, travel times, etc.	CV-RQ-SP3.1-0055
	6.2.2.7	The system shall be able to support a database of events with links between events that occur concurrently and at the same or adjacent locations.	CV-RQ-SP3.1-0361
	6.2.2.8	The system shall be able to provide road information according to different geographic scales, e.g. local, regional, national, and international.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11 and S12

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.2.2.9	The system shall be able to adapt the information to different classes of users, e.g. travellers, radio broadcasters, service operators.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4c, S5, S6, S8, S9, S10, S11 and S13
	6.2.2.10	The system shall be able to collect data from a variety of different sources, e.g. road/traffic management, police, weather services, floating car etc.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	6.2.2.10	The system shall be able to collect data from a variety of different sources, e.g. road/traffic management, police, weather services, floating car etc.	CV-RQ-SP3.2-0037
	6.2.2.10	The system shall be able to collect data from a variety of different sources, e.g. road/traffic management, police, weather services, floating car etc.	CV-RQ-SP3.1-0360
	6.2.2.11	The system shall be able to provide operators with an overall view of all active events in an area.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	6.2.2.12	The system shall provide Information Management tools for the operator.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
<b>6.2.3 Traveller Interaction</b>	6.2.3.1	The system within the vehicle, or in the centre, shall support various types of presentation to the user, e.g. text, graphics, symbols, speech, etc.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10 and S11
	6.2.3.1	The system within the vehicle, or in the centre, shall support various types of presentation to the user, e.g. text, graphics, symbols, speech, etc.	CV-RQ-SP3.2-0019

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.2.3.2	The system shall normally provide messages from a finite set of well defined message texts.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S9, S10 and S11
	6.2.3.2	The system shall normally provide messages from a finite set of well defined message texts.	SP2 4.05.07
	6.2.3.3	The system shall provide information in the native language at the output location, and/or from a user selected choice of other appropriate foreign languages, when applicable.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11 and S12
	6.2.3.4	The system shall provide information using "open" standard communication protocols.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	6.2.3.8	The system shall be able to provide road and traffic information using road-side equipment, e.g. VMS.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4c, S5, S6, S10 and S11
	6.2.3.8	The system shall be able to provide road and traffic information using road-side equipment, e.g. VMS.	CV-RQ-SP3.1-0357
<b>6.4 Route Guidance and Navigation</b>			
<b>6.4.0 Objectives</b>	6.4.0.3	The system shall know where it is within the road network.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	6.4.0.3	The system shall know where it is within the road network.	SP2 1.1.5

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	6.4.0.5	The system shall be able to provide a driver with a suitable alternative route, when the original planned route becomes unavailable.	CV-RQ-SP3.2-0004
	6.4.0.5	The system shall be able to provide a driver with a suitable alternative route, when the original planned route becomes unavailable.	CV-RQ-SP3.2-0006
	6.4.0.5	The system shall be able to provide a driver with a suitable alternative route, when the original planned route becomes unavailable.	CV-RQ-SP3.1-0368
<b>6.4.1 Information Handling</b>	6.4.1.3	The system shall be able to compute the total predicted journey time over the route selected.	COOPERS S10 and S11
	6.4.1.4	The system shall enable travellers to plan their trip using their own travel criteria, e.g. modes of transport, time of departure/arrival, road selection criteria, etc.	CV-RQ-SP3.1-0054
	6.4.1.6	The system shall provide information which is consistent with any other information being presented about the road.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10 and S11
	6.4.1.6	The system shall provide information which is consistent with any other information being presented about the road.	SP2 4.05.02
	6.4.1.7	The system shall be able to provide reports on the effectiveness of the navigation instructions that have been provided.	CV-RQ-SP3.1-0338
	6.4.1.7	The system shall be able to provide reports on the effectiveness of the navigation instructions that have been provided.	CV-RQ-SP3.1-0339
<b>6.4.2 Traveller Interaction</b>	6.4.2.1	The system shall provide route guidance using visual and voice instructions.	COOPERS S4a, S4b, S4c, S5 and S11
	6.4.2.1	The system shall provide route guidance using visual and voice instructions.	CV-RQ-SP3.2-0019

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>7 Traffic, Incidents and Demand Management</b>	6.4.2.2	The system shall contain menus which are structured in a logical manner and oriented towards the requirements of the driver (e.g. the most frequently used function shall be the easiest to select).	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4c, S5, S6, S10 and S11
	6.4.2.3	The system shall enable bi-directional voice and data communication with the vehicle.	SP2 3.01.03
	6.4.2.4	The system shall enable the use of portable equipment to provide route guidance.	COOPERS S10 and S12
		<i>The activities associated with traffic control, incident management and demand management, including monitoring, planning, flow control, exceptions management, speed management, lane and parking management, HOV, road pricing and zoning, and VRUs</i>	
<b>7.1 Traffic Control</b>			
<b>7.1.0 Objectives</b>	7.1.0.1	The system shall support the existing and new traffic management needs of authorities by providing a flexible yet comprehensive approach to determine traffic management strategies (including bridge and tunnel control).	COOPERS S4a, S4b, S4c, S5, S7 and S11
	7.1.0.1	The system shall support the existing and new traffic management needs of authorities by providing a flexible yet comprehensive approach to determine traffic management strategies (including bridge and tunnel control).	CV-RQ-SP3.2-0023
	7.1.0.1	The system shall support the existing and new traffic management needs of authorities by providing a flexible yet comprehensive approach to determine traffic management strategies (including bridge and tunnel control).	CV-RQ-SP3.2-0024
	7.1.0.2	The system shall be able to implement identified control strategies that conform with specified policy.	COOPERS S4a and S5

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.0.3	The system shall not do anything to reduce road safety.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	7.1.0.3	The system shall not do anything to reduce road safety.	SP2 1.5.1
	7.1.0.4	The system shall manage road traffic in such a way that levels of environmental (i.e. atmospheric and noise) pollution may be reduced.	COOPERS S5, S7, S9 and S11
	7.1.0.5	The system shall manage road traffic in such a way that congestion (travel time) may be reduced.	COOPERS S4a, S4b, S4c, S5, S9 and S11
	7.1.0.6	The system shall be able to help co-ordinate the activities of TICs and TCCs.	COOPERS S8
	7.1.0.6	The system shall be able to help co-ordinate the activities of TICs and TCCs.	CV-RQ-SP3.2-0033
	7.1.0.6	The system shall be able to help co-ordinate the activities of TICs and TCCs.	CV-RQ-SP3.2-0035
	7.1.0.6	The system shall be able to help co-ordinate the activities of TICs and TCCs.	CV-RQ-SP3.2-0049
	7.1.0.6	The system shall be able to help co-ordinate the activities of TICs and TCCs.	CV-RQ-SP3.2-0052
	7.1.0.6	The system shall be able to help co-ordinate the activities of TICs and TCCs.	CV-RQ-SP3.2-0058
	7.1.0.6	The system shall be able to help co-ordinate the activities of TICs and TCCs.	CV-RQ-SP3.2-0059
	7.1.0.6	The system shall be able to help co-ordinate the activities of TICs and TCCs.	CV-RQ-SP3.2-0071
	7.1.0.7	The system shall be able to exchange information between TICs and TCCs, including across national boundaries.	COOPERS S8
	7.1.0.7	The system shall be able to exchange information between TICs and TCCs, including across national boundaries.	CV-RQ-SP3.2-0033

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.0.7	The system shall be able to exchange information between TICs and TCCs, including across national boundaries.	CV-RQ-SP3.2-0035
	7.1.0.7	The system shall be able to exchange information between TICs and TCCs, including across national boundaries.	CV-RQ-SP3.2-0049
	7.1.0.7	The system shall be able to exchange information between TICs and TCCs, including across national boundaries.	CV-RQ-SP3.2-0052
	7.1.0.7	The system shall be able to exchange information between TICs and TCCs, including across national boundaries.	CV-RQ-SP3.2-0058
	7.1.0.7	The system shall be able to exchange information between TICs and TCCs, including across national boundaries.	CV-RQ-SP3.2-0059
	7.1.0.7	The system shall be able to exchange information between TICs and TCCs, including across national boundaries.	CV-RQ-SP3.2-0071
	7.1.0.8	The system shall enable the data that it stores to be extracted by an operator onto a variety of media and used for other purposes, or by other organisations.	COOPERS S1a, S1b, S1c, S2, S3, S6, S9, S10 and S13
	7.1.0.8	The system shall enable the data that it stores to be extracted by an operator onto a variety of media and used for other purposes, or by other organisations.	SP2 1.1.6
	7.1.0.9	The system shall ensure that traveller information service providers are aware of the traffic management strategy, so that they can provide information that conforms to it.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S9, S10, S11 and S13
	7.1.0.9	The system shall ensure that traveller information service providers are aware of the traffic management strategy, so that they can provide information that conforms to it.	CV-RQ-SP3.2-0038
	7.1.0.10	The system shall be able to control urban roads and traffic.	CV-RQ-SP3.2-0025

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.0.10	The system shall be able to control urban roads and traffic.	CV-RQ-SP3.2-0028
	7.1.0.11	The system shall be able to control inter-urban roads and traffic.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	7.1.0.11	The system shall be able to control inter-urban roads and traffic.	CV-RQ-SP3.2-0034
	7.1.0.11	The system shall be able to control inter-urban roads and traffic.	CV-RQ-SP3.2-0025
	7.1.0.11	The system shall be able to control inter-urban roads and traffic.	CV-RQ-SP3.2-0028
	7.1.0.12	The system shall be able to use different traffic management techniques to control separate areas of the road network.	COOPERS S4a, S4b, S4c, S5, S7, S9 and S11
<b>7.1.1 Monitoring</b>	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S9, S10, S11 and S13
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.2-0037
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.4.0037
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0024

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0028
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0222
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0373
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0374
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0375
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0376
	7.1.1.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	SP2 2.01.01
	7.1.1.2	The system shall monitor urban roads and traffic.	SP2 1.1.4

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.1.3	The system shall monitor inter-urban roads and traffic.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	7.1.1.3	The system shall monitor inter-urban roads and traffic.	CV-RQ-SP3.2-0037
	7.1.1.4	The system shall be able to monitor traffic flow at, and the operation of, the road intersections of the network over which it has the control.	COOPERS S1a, S1b, S2, S3, S4a, S4b, S4c, S5, S6, S7, S9, S10, S11 and S13
	7.1.1.4	The system shall be able to monitor traffic flow at, and the operation of, the road intersections of the network over which it has the control.	SP5_RQ08_19_v1.0
	7.1.1.5	The system shall be able to monitor the entire road network (network state surveillance tool).	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S9, S10, S11 and S13
	7.1.1.5	The system shall be able to monitor the entire road network (network state surveillance tool).	CV-RQ-SP3.2-0037
	7.1.1.5	The system shall be able to monitor the entire road network (network state surveillance tool).	CV-RQ-SP3.1-0223
	7.1.1.6	The system shall be able to monitor and record weather conditions, e.g. wind, fog, rain level, ice, etc.	COOPERS S2, S5, S7, S11 and S13
	7.1.1.6	The system shall be able to monitor and record weather conditions, e.g. wind, fog, rain level, ice, etc.	CV-RQ-SP3.2-0139
	7.1.1.6	The system shall be able to monitor and record weather conditions, e.g. wind, fog, rain level, ice, etc.	SP5_RQ48_36_v1.0

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.1.8	The system shall be able to measure the range of visibility and detect reductions caused by adverse weather and pollution conditions (but not darkness).	COOPERS S2, S5, S7, S11 and S13
	7.1.1.8	The system shall be able to measure the range of visibility and detect reductions caused by adverse weather and pollution conditions (but not darkness).	CV-RQ-SP3.2-0139
	7.1.1.8	The system shall be able to measure the range of visibility and detect reductions caused by adverse weather and pollution conditions (but not darkness).	SP2 2.04.01
<b>7.1.2 Planning</b>	7.1.2.1	The system shall be able to use consistent historical data to complement real-time data, when necessary.	COOPERS S6, S10 and S12
	7.1.2.2	The system shall be able to predict short, medium, and long-term traffic conditions, e.g. for minutes, hours and days ahead.	COOPERS S10 and S11
	7.1.2.2	The system shall be able to predict short, medium, and long-term traffic conditions, e.g. for minutes, hours and days ahead.	CV-RQ-SP3.4.0034
	7.1.2.3	The system shall be able to use historical data to complement predicted data, when necessary.	COOPERS S6, S10 and S12
	7.1.2.4	The system shall be able to analyse road and traffic data to predict possible critical situations.	COOPERS S2, S10 and S11
	7.1.2.4	The system shall be able to analyse road and traffic data to predict possible critical situations.	CV-RQ-SP3.4.0034
	7.1.2.5	The system shall be able to predict weather conditions, in particular the formation of fog and/or ice.	COOPERS S2

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.2.6	The system shall be able to predict short, medium and long-term (e.g. for minutes, hours and days ahead) road travel produced environmental (atmospheric and noise) pollution conditions based on traffic and weather conditions.	COOPERS S5, S9 and S11
	7.1.2.7	The system shall be able to provide historical and predicted data.	COOPERS S2, S4c, S5, S6, S9, S10 and S11
<b>7.1.3 Traffic Control Centres</b>	7.1.3.1	The system shall enable a TCC operator to control, possibly remotely, infrastructure elements (e.g. traffic lights, VMS).	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S6 and S11
	7.1.3.1	The system shall enable a TCC operator to control, possibly remotely, infrastructure elements (e.g. traffic lights, VMS).	CV-RQ-SP3.2-0045
	7.1.3.1	The system shall enable a TCC operator to control, possibly remotely, infrastructure elements (e.g. traffic lights, VMS).	CV-RQ-SP3.2-0026
	7.1.3.1	The system shall enable a TCC operator to control, possibly remotely, infrastructure elements (e.g. traffic lights, VMS).	CV-RQ-SP3.1-0357
	7.1.3.3	The system shall be able to provide a graphical representation of the road network which includes relevant features (e.g. equipment, events, traffic condition etc.) to TCC operators.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	7.1.3.3	The system shall be able to provide a graphical representation of the road network which includes relevant features (e.g. equipment, events, traffic condition etc.) to TCC operators.	CV-RQ-SP3.2-0041
	7.1.3.3	The system shall be able to provide a graphical representation of the road network which includes relevant features (e.g. equipment, events, traffic condition etc.) to TCC operators.	CV-RQ-SP3.2-0043

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.3.3	The system shall be able to provide a graphical representation of the road network which includes relevant features (e.g. equipment, events, traffic condition etc.) to TCC operators.	CV-RQ-SP3.2-0044
	7.1.3.3	The system shall be able to provide a graphical representation of the road network which includes relevant features (e.g. equipment, events, traffic condition etc.) to TCC operators.	CV-RQ-SP3.2-0047
	7.1.3.3	The system shall be able to provide a graphical representation of the road network which includes relevant features (e.g. equipment, events, traffic condition etc.) to TCC operators.	CV-RQ-SP3.2-0048
	7.1.3.3	The system shall be able to provide a graphical representation of the road network which includes relevant features (e.g. equipment, events, traffic condition etc.) to TCC operators.	CV-RQ-SP3.2-0070
	7.1.3.3	The system shall be able to provide a graphical representation of the road network which includes relevant features (e.g. equipment, events, traffic condition etc.) to TCC operators.	CV-RQ-SP3.2-0045
	7.1.3.4	The system shall be able to activate control devices (e.g. traffic lights, VMS), either individually or in groups.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4c, S6 and S11
	7.1.3.4	The system shall be able to activate control devices (e.g. traffic lights, VMS), either individually or in groups.	CV-RQ-SP3.2-0034
	7.1.3.4	The system shall be able to activate control devices (e.g. traffic lights, VMS), either individually or in groups.	CV-RQ-SP3.1-0358
	7.1.3.4	The system shall be able to activate control devices (e.g. traffic lights, VMS), either individually or in groups.	CV-RQ-SP3.1-0357

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.3.4	The system shall be able to activate control devices (e.g. traffic lights, VMS), either individually or in groups.	SP2 4.05.06
	7.1.3.5	The system shall enable TCC operators to make temporary changes to the normal control strategy in real-time.	COOPERS S4a, S4b, S4c, S5, S7, S9 and S11
	7.1.3.5	The system shall enable TCC operators to make temporary changes to the normal control strategy in real-time.	CV-RQ-SP3.2-0046
	7.1.3.5	The system shall enable TCC operators to make temporary changes to the normal control strategy in real-time.	CV-RQ-SP3.2-0026
	7.1.3.5	The system shall enable TCC operators to make temporary changes to the normal control strategy in real-time.	CV-RQ-SP3.2-0045
	7.1.3.5	The system shall enable TCC operators to make temporary changes to the normal control strategy in real-time.	CV-RQ-SP3.1-0349
	7.1.3.6	The system shall be able to implement planned control strategies for planned events, e.g. sport, cultural, etc.	COOPERS S4a, S4b, S4c, S5, S9 and S11
<b>7.1.4 Traffic Flow Control</b>	7.1.4.3	The system shall provide Tidal Flow Control (reservation of lanes for exclusive use in one direction for a period, then the other direction for another period, on parts of the road network).	COOPERS S4a and S4c
	7.1.4.6	The system shall be able to provide control measures for bridges so that warnings of weather conditions, vehicle restrictions and closure can be provided.	SP2 4.04.01
	7.1.4.7	The system shall be able to provide control measures for "tunnel" environments i.e. vehicle restrictions, fire detection, atmospheric pollution and closure.	SP2 4.04.02

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.4.8	The system shall be able to provide co-ordinated traffic management operations during periods of mass movement across (many) regions.	COOPERS S4a, S4b, S4c, S5, S8, S9 and S11
<b>7.1.5 Exceptions Management</b>	7.1.5.2	The system shall be able to command drivers to change lanes on multi-lane roads.	COOPERS S4a and S4c
	7.1.5.2	The system shall be able to command drivers to change lanes on multi-lane roads.	SP2 4.03.03
	7.1.5.3	The system shall be able to change the direction of traffic flow on a carriageway in an orderly manner so that it does not create a safety hazard to any road user.	COOPERS S4a and S4c
	7.1.5.5	The system shall be able to close roads and advise drivers of a suitable diversionary route for a period of time.	COOPERS S4a and S11
	7.1.5.6	The system shall be able to command certain classes of vehicle (e.g. heavy vehicles or tourist traffic) to take an alternative route for a period of time.	COOPERS S11
	7.1.5.7	The system shall be able to recommend re-routing strategies to reduce congestion or atmospheric pollution.	COOPERS S11
	7.1.5.8	The system shall request confirmation of all exceptional measures before they are executed.	COOPERS S4a, S4b, S4c, S5 and S11
<b>7.1.7 Speed Management</b>	7.1.7.1	The system shall be able to show the maximum authorised speed of vehicles on selected carriageways to be shown to drivers, and to detect violators.	COOPERS S5 and S11
	7.1.7.1	The system shall be able to show the maximum authorised speed of vehicles on selected carriageways to be shown to drivers, and to detect violators.	CV-RQ-SP3.2-0077
	7.1.7.1	The system shall be able to show the maximum authorised speed of vehicles on selected carriageways to be shown to drivers, and to detect violators.	CV-RQ-SP3.2-0078

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.7.1	The system shall be able to show the maximum authorised speed of vehicles on selected carriageways to be shown to drivers, and to detect violators.	CV-RQ-SP3.2-0094
	7.1.7.1	The system shall be able to show the maximum authorised speed of vehicles on selected carriageways to be shown to drivers, and to detect violators.	CV-RQ-SP3.2-0094
	7.1.7.2	The system shall be able to set variable speed limits on parts of the road network.	COOPERS S5
	7.1.7.2	The system shall be able to set variable speed limits on parts of the road network.	CV-RQ-SP3.2-0131
	7.1.7.2	The system shall be able to set variable speed limits on parts of the road network.	SP2 4.01.04
	7.1.7.3	The system shall be able to calculate recommended speed limits for given traffic and weather conditions, and road network characteristics.	COOPERS S7 S10, S11 and S12
	7.1.7.3	The system shall be able to calculate recommended speed limits for given traffic and weather conditions, and road network characteristics.	CV-RQ-SP3.2-0130
	7.1.7.3	The system shall be able to calculate recommended speed limits for given traffic and weather conditions, and road network characteristics.	CV-RQ-SP3.2-0131
	7.1.7.3	The system shall be able to calculate recommended speed limits for given traffic and weather conditions, and road network characteristics.	SP2 4.01.04
	7.1.7.4	The system shall be able to transmit recommended speed limits to equipped vehicles.	COOPERS S5 and S7
	7.1.7.5	The system shall be able to support a database of all speed limits on the road network.	COOPERS S5 and S7
	7.1.7.5	The system shall be able to support a database of all speed limits on the road network.	CV-RQ-SP3.2-0077

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.1.7.5	The system shall be able to support a database of all speed limits on the road network.	SP2 1.1.7
	7.1.7.6	The system shall be able to provide vehicles with information about the road network, e.g. speed limits, road hazards, junctions etc.	COOPERS S5, S7 and S12
	7.1.7.6	The system shall be able to provide vehicles with information about the road network, e.g. speed limits, road hazards, junctions etc.	CV-RQ-SP3.2-0078
<b>7.1.8 Roadside-Vehicle Communications</b>	7.1.8.1	The system shall be able to transmit information to a vehicle to update its on-board database.	COOPERS S12
<b>7.1.9 Adaptive Traffic Control</b>	7.1.9.2	The system shall be able to minimise delays of all vehicles using adaptive signal control	COOPERS S4a, S4b, S4c, S5, S10 and S11
<b>7.1.10 Lane Management</b>	7.1.10.1	The system shall be able to reserve certain traffic lanes exclusively to specific classes of vehicles (e.g. high occupancy vehicles, or buses) and to detect violators.	COOPERS S4a and S12
<b>7.2 Incident Management</b>			
<b>7.2.0 Objectives</b>	7.2.0.1	The system shall detect and respond to various incidents on the road network.	COOPERS S1a, S1b, S1c, S2, S4a, S4b, S4c, S5, S6, S9, S11 and S13
	7.2.0.1	The system shall detect and respond to various incidents on the road network.	CV-RQ-SP3.2-0029
	7.2.0.1	The system shall detect and respond to various incidents on the road network.	CV-RQ-SP3.2-0063
	7.2.0.1	The system shall detect and respond to various incidents on the road network.	CV-RQ-SP3.2-0134
	7.2.0.1	The system shall detect and respond to various incidents on the road network.	CV-RQ-SP3.2-0135

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.2.0.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0373
	7.2.0.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0374
	7.2.0.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0375
	7.2.0.1	The system shall be able to monitor sections of the road network to provide the current traffic conditions (e.g. flows, occupancies, speed and travel times etc.) as real time data.	CV-RQ-SP3.1-0376
	7.2.0.2	The system shall not do anything to reduce road safety.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	7.2.0.2	The system shall not do anything to reduce road safety.	SP2 1.5.1
	7.2.0.3	The system shall not do anything that might aggravate, or cause, an incident.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S8, S9, S10, S11, S12 and S13
	7.2.0.3	The system shall not do anything that might aggravate, or cause, an incident.	SP2 1.5.1
	7.2.0.5	The system shall collect and filter emergency calls from travellers in the road network using a variety of types of communication, e.g. road-side telephones, mobile phones, (automatic) on-board 'MayDay' etc.	CV-RQ-SP3.2-0142

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.2.0.6	The system shall minimise the time between the occurrence of an incident and its detection.	COOPERS S1a, S1b, S1c, S2, S6 and S13
	7.2.0.6	The system shall minimise the time between the occurrence of an incident and its detection.	CV-RQ-SP3.2-0134
	7.2.0.6	The system shall minimise the time between the occurrence of an incident and its detection.	CV-RQ-SP3.2-0135
	7.2.0.6	The system shall minimise the time between the occurrence of an incident and its detection.	SP2 2.02.04
	7.2.0.7	The system shall be able to validate that an incident has occurred in order to avoid false alarms.	COOPERS S1a, S1b, S1c, S6 and S13
	7.2.0.7	The system shall be able to validate that an incident has occurred in order to avoid false alarms.	CV-RQ-SP3.2-0063
	7.2.0.7	The system shall be able to validate that an incident has occurred in order to avoid false alarms.	CV-RQ-SP3.2-0134
	7.2.0.7	The system shall be able to validate that an incident has occurred in order to avoid false alarms.	CV-RQ-SP3.2-0135
	7.2.0.7	The system shall be able to validate that an incident has occurred in order to avoid false alarms.	SP2 2.02.03
	7.2.0.8	The system shall be able to suggest one or more responses for dealing with an incident.	COOPERS S4a, S4b, S4c, S5 and S11
	7.2.0.8	The system shall be able to suggest one or more responses for dealing with an incident.	CV-RQ-SP3.2-0031

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.2.0.8	The system shall be able to suggest one or more responses for dealing with an incident.	CV-RQ-SP3.2-0133
	7.2.0.8	The system shall be able to suggest one or more responses for dealing with an incident.	CV-RQ-SP3.2-0029
	7.2.0.8	The system shall be able to suggest one or more responses for dealing with an incident.	CV-RQ-SP3.2-0135
	7.2.0.9	The system shall be able to run (pre-) defined incident mitigation strategies automatically.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S5 and S6
	7.2.0.9	The system shall be able to run (pre-) defined incident mitigation strategies automatically.	CV-RQ-SP3.2-0030
	7.2.0.9	The system shall be able to run (pre-) defined incident mitigation strategies automatically.	CV-RQ-SP3.2-0133
	7.2.0.9	The system shall be able to run (pre-) defined incident mitigation strategies automatically.	CV-RQ-SP3.2-0135
<b>7.2.1 Emergency Services</b>	7.2.1.1	The system shall be able to locate and identify emergency vehicles on the road network.	SP5_RQ11_33_v1.0
<b>7.2.2 Information Management</b>	7.2.2.1	The system shall be able to collect and store data on each incident, e.g. location, type, severity, number & type of vehicles involved, the emergency/rescue vehicles needed etc.	COOPERS S1a, S1b and S1c
	7.2.2.1	The system shall be able to collect and store data on each incident, e.g. location, type, severity, number & type of vehicles involved, the emergency/rescue vehicles needed etc.	CV-RQ-SP3.2-0063

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.2.2.1	The system shall be able to collect and store data on each incident, e.g. location, type, severity, number & type of vehicles involved, the emergency/rescue vehicles needed etc.	SP2 2.02.06
	7.2.2.1	The system shall be able to collect and store data on each incident, e.g. location, type, severity, number & type of vehicles involved, the emergency/rescue vehicles needed etc.	SP5_RQ62_10_v1.0
	7.2.2.1	The system shall be able to collect and store data on each incident, e.g. location, type, severity, number & type of vehicles involved, the emergency/rescue vehicles needed etc.	SP5_RQ65_10_v1.0
	7.2.2.2	The system shall be able to identify and classify all incidents on the road network.	COOPERS S1a, S1b, S1c, S2, S3, S6 and S13
	7.2.2.2	The system shall be able to identify and classify all incidents on the road network.	CV-RQ-SP3.2-0132
	7.2.2.2	The system shall be able to identify and classify all incidents on the road network.	CV-RQ-SP3.2-0063
	7.2.2.2	The system shall be able to identify and classify all incidents on the road network.	CV-RQ-SP3.2-0134
	7.2.2.2	The system shall be able to identify and classify all incidents on the road network.	CV-RQ-SP3.2-0135
	7.2.2.2	The system shall be able to identify and classify all incidents on the road network.	SP5_RQ65_10_v1.0
	7.2.2.2	The system shall be able to identify and classify all incidents on the road network.	SP2 2.02.02
	7.2.2.3	The system shall be able to provide information on each incident to TICs for onward transmission to travellers.	COOPERS S1a, S1b, S1c, S2, S3 and S13
	7.2.2.3	The system shall be able to provide information on each incident to TICs for onward transmission to travellers.	CV-RQ-SP3.1-0386

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.2.2.3	The system shall be able to provide information on each incident to TICs for onward transmission to travellers.	SP2 3.01.04
<b>7.2.3 Reporting</b>	7.2.3.1	The system shall be able to produce incident data statistics, e.g. frequencies of occurrence, by time, type and location; identification of "high risk" locations on the road network; performance of the incident detection system.	COOPERS S1a, S1b, S1c and S6
	7.2.3.1	The system shall be able to produce incident data statistics, e.g. frequencies of occurrence, by time, type and location; identification of "high risk" locations on the road network; performance of the incident detection system.	SP2 2.02.06
<b>7.2.4 Post-Incident Management</b>	7.2.4.1	The system shall be able to minimise the consequences of an incident on the road network for those travellers who are not involved.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S4b, S4c, S5, S6, S7, S11 and S13
	7.2.4.1	The system shall be able to minimise the consequences of an incident on the road network for those travellers who are not involved.	CV-RQ-SP3.2-0030
	7.2.4.1	The system shall be able to minimise the consequences of an incident on the road network for those travellers who are not involved.	SP2 1.1.1
	7.2.4.2	The system shall be able to monitor the aftermath of an incident.	COOPERS S1a, S1b, S1c, S6 and S13
	7.2.4.2	The system shall be able to monitor the aftermath of an incident.	SP2 2.02.05
<b>7.2.5 Pre-Incident Management</b>	7.2.5.1	The system shall be able to detect "non-vehicle" incidents before they can escalate into traffic accidents, e.g. bad weather conditions, objects on the road, ghost drivers, etc.	COOPERS S1a, S1b, S1c, S2, S6 and S13

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.2.5.1	The system shall be able to detect "non-vehicle" incidents before they can escalate into traffic accidents, e.g. bad weather conditions, objects on the road, ghost drivers, etc.	CV-RQ-SP3.2-0136
	7.2.5.1	The system shall be able to detect "non-vehicle" incidents before they can escalate into traffic accidents, e.g. bad weather conditions, objects on the road, ghost drivers, etc.	SP2 2.01.03
	7.2.5.2	The system shall be able to provide local warnings on dangerous sections of the road network.	COOPERS S1a, S1b, S1c, S2, S3, S6 and S13
	7.2.5.2	The system shall be able to provide local warnings on dangerous sections of the road network.	CV-RQ-SP3.2-0030
	7.2.5.2	The system shall be able to provide local warnings on dangerous sections of the road network.	SP2 4.01.03
<b>7.3 Demand Management</b>			
<b>7.3.0 Objectives</b>	7.3.0.1	The system shall provide information that will influence travellers' decisions regarding aspects of their journey, e.g. destinations, time, mode of travel, route etc.	COOPERS S1a, S1b, S1c, S2, S3, S6, S8, S9, S10 and S11
	7.3.0.2	The system shall receive up-to-date information on those factors that will influence the demand management strategy, e.g. traffic levels, car park usage, other modes usage, fares, tolls, etc.	COOPERS S9 and S10
	7.3.0.3	The system shall be able to recommend a strategy to reduce demand.	COOPERS S9 and S10
	7.3.0.4	The system shall be able to simulate a demand management strategy on the road network.	COOPERS S9 and S10

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	7.3.0.5	The system shall be able to simulate potential capacity reduction, e.g. due to road works.	COOPERS S10 and S11
<b>7.3.1 Zoning</b>	7.3.1.2	The system shall be able to recommend alternative routes (e.g. that take into account the needs of heavy vehicles (and hazardous goods)) when required.	COOPERS S11
<b>7.3.2 Pricing Management</b>	7.3.2.1	The system shall be able charge for the use of a section of road, or facility (e.g. bridge, tunnel etc.), based on given policy decisions, e.g. duration, distance, congestion etc.	COOPERS S9
	7.3.2.2	The system shall be able to adjust toll fees according to a given pricing strategy.	COOPERS S9
<b>8 Intelligent Vehicle Systems</b>		<i>This group contains the functions found within a vehicle, including vision enhancement, longitudinal and lateral collision avoidance, lane keeping, platooning, speed control, driver alertness, 'May Day' initiation, etc.</i>	
<b>8.2 Automated Vehicle Operation</b>			
<b>8.2.4 Short Range Communications</b>	8.2.4.1	The system shall be able to communicate with other equipped vehicles, and/or the infrastructure, to exchange data for automatic vehicle control.	SP2 3.01.02
	8.2.4.1	The system shall be able to communicate with other equipped vehicles, and/or the infrastructure, to exchange data for automatic vehicle control.	SP2 3.01.03
<b>8.2.5 Speed Control</b>	8.2.5.1	The system shall be able to provide support to limit the speed of a vehicle automatically to the a given, but variable, maximum (intelligent speed adaptation)	COOPERS S7
	8.2.5.2	The system shall be able to receive (variable) mandatory speed limits from outside the vehicle.	COOPERS S5 and S7

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
	8.2.5.2	The system shall be able to receive (variable) mandatory speed limits from outside the vehicle.	CV-RQ-SP3.2-0103
	8.2.5.2	The system shall be able to receive (variable) mandatory speed limits from outside the vehicle.	CV-RQ-SP3.2-0122
	8.2.5.2	The system shall be able to receive (variable) mandatory speed limits from outside the vehicle.	CV-RQ-SP3.2-0094
	8.2.5.2	The system shall be able to receive (variable) mandatory speed limits from outside the vehicle.	CV-RQ-SP3.2-0094
	8.2.5.4	The system shall be able to display continuously to the driver the current mandatory speed limit.	COOPERS S5
<b>8.3 Longitudinal Collision Avoidance</b>			
<b>8.3.1 Collision Avoidance</b>	8.3.1.2	The system shall be able to provide support to warn the driver when the vehicle in front is too close.	SP2 2.01.02
	8.3.1.2	The system shall be able to provide support to warn the driver when the vehicle in front is too close.	SP2 4.01.08
<b>8.4 Lateral Collision Avoidance</b>			
<b>8.4.0 Objectives</b>	8.4.0.1	The system shall provide support to monitor for hazards involved in lane keeping, lane changing, entering and leaving high speed roads, and overtaking.	SP2 1.1.2

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>8.4.2 Lane Keeping</b>	8.4.2.1	The system shall be able to provide support to detect the position of the vehicle relative to lane boundaries and/or roadway shoulders.	COOPERS S7 and S13
	8.4.2.1	The system shall be able to provide support to detect the position of the vehicle relative to lane boundaries and/or roadway shoulders.	SP2 2.01.05
	8.4.2.1	The system shall be able to provide support to detect the position of the vehicle relative to lane boundaries and/or roadway shoulders.	SP3_006_VANET_02_v1.0
	8.4.2.1	The system shall be able to provide support to detect the position of the vehicle relative to lane boundaries and/or roadway shoulders.	SP4-REQ_01_03
	8.4.2.2	The system shall be able to provide support to warn the driver when the vehicle approaches or exceeds the lane boundaries.	SP4-REQ_01_04
<b>8.5 Safety Readiness</b>			
<b>8.5.0 Basic Services</b>	8.5.0.1	The system shall minimise the risk of an accident due to the impaired alertness of the driver.	COOPERS S1a, S1b, S1c, S2, S3 and S6
	8.5.0.4	The system shall be able to warn surrounding drivers that this driver has a problem.	SP2 4.03.01
<b>8.5.1 May Day</b>	8.5.1.2	The system shall be able to detect that the vehicle has been involved in an accident, identify its location, and initiate a 'May Day' call automatically.	SP2 2.02.01
	8.5.1.4	The system shall be able to detect that the driver is impaired, identify its position, and initiate a 'May Day' call automatically.	SP3_006_VANET_02_v1.0
<b>8.5.2 Automatic Parking</b>	8.5.2.1	The system shall be able to manoeuvre the vehicle to the roadside automatically, when the driver does not respond.	CV-RQ-SP3.2-0084

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
8.5.3 Environmental Monitoring	8.5.3.4	The system shall be able to collect information about the vehicle and its environment for other organisations to use, i.e. probe or floating car data.	CV-RQ-SP3.2-0021
	8.5.3.4	The system shall be able to collect information about the vehicle and its environment for other organisations to use, i.e. probe or floating car data.	CV-RQ-SP3.2-0037
8.5.5 Traffic Information & Signs	8.5.5.1	The system shall provide "copies" of the traffic signs that are relevant to the current section of the road (e.g. speed limit, road hazards, and junctions) to the driver at all times.	COOPERS S1a, S1b, S1c, S2, S3, S4a, S5 and S6
	8.5.5.2	The system shall be able to send to following vehicles "copies" of the traffic signs, or information about the local traffic (e.g. sudden congestion), that it may be useful to receive in advance	COOPERS S1a, S1b, S1c, S2, S3, S4a, S5 and S6
	8.5.5.2	The system shall be able to send to following vehicles "copies" of the traffic signs, or information about the local traffic (e.g. sudden congestion), that it may be useful to receive in advance	CV-RQ-SP3.2-0099
	8.5.5.2	The system shall be able to send to following vehicles "copies" of the traffic signs, or information about the local traffic (e.g. sudden congestion), that it may be useful to receive in advance	CV-RQ-SP3.2-0104
8.5.6 Vehicle Information	8.5.6.1	The system shall be able to provide a unique ID to an authorised authority on request (i.e. electronic vehicle identification EVI)).	CV-RQ-SP3.1-0043
9 Freight and Fleet Management		<i>This group contains all the activities associated with FFM, including statutory data collection and reporting; orders and document mgt; planning, scheduling, monitoring, reporting &amp; operations mgt; vehicle and cargo safety; mgt of inter-modal interfaces.</i>	

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
<b>9.4 Commercial Vehicle On-Board Safety Monitoring</b>			
<b>9.4.0 Basic Services</b>	9.4.0.4	The system shall be able to detect that the vehicle has been involved in an incident, identify its location, and initiate a 'May Day' call to the emergency services automatically.	CV-RQ-SP3.3-0115
	9.4.0.4	The system shall be able to detect that the vehicle has been involved in an incident, identify its location, and initiate a 'May Day' call to the emergency services automatically.	SP2 2.02.01
<b>9.5 Commercial Fleet Management</b>			
<b>9.5.2 Road Freight Fleet Management</b>	9.5.2.9	The system shall be able to provide suitable routes for 'abnormal' vehicles (e.g. oversized, overweight, hazardous cargo etc.) when requested.	CV-RQ-SP3.3-0107
	9.5.2.11	The system shall be able to communicate with other systems, e.g. workshop, customs, road operator, police, etc.	SP2 3.01.04
	9.5.2.13	The system shall be able to locate, identify and monitor the status of a vehicle, equipment or cargo at any time.	CV-RQ-SP3.3-0103
<b>9.5.3 Road Vehicle, Driver, Equipment and Cargo Management</b>	9.5.3.13	The system shall be able to report when a substantial deviation from the intended route has been used (e.g. to detect a possible theft of the vehicle).	CV-RQ-SP3.3-0114

Combined mapped FRAME User Needs			COOPERS Services plus CVIS and SAFESPOT Requirements Identities
Group, Service and Topic Number	ID	Description	
10 Public Transport Management	9.5.3.16	The system shall be able to detect when the status of the cargo (e.g. changes in temperature or humidity) exceeds a given limit during the transport cycle, and trigger an alarm.	CV-RQ-SP3.3-0113
		<i>This group contains the activities associated with public transport (PT), demand responsive PT, Shared PT, on-trip PT Information and Traveller Security. It includes management, scheduling, monitoring, information handling, communications and PT priority.</i>	
10.1 Public Transport Management			
10.1.2 Monitoring	10.1.2.1	The system shall be able to receive information about the identity, location, status and occupancy all vehicles in the fleet in real time.	CV-RQ-SP3.1-0002
	10.1.2.1	The system shall be able to receive information about the identity, location, status and occupancy all vehicles in the fleet in real time.	CV-RQ-SP3.1-0024
10.1.5 Communications	10.1.5.1	The system shall be able to provide two-way data and voice communication between PT vehicles and a central location.	CV-RQ-SP3.1-0001

