

5 ETSI TC ITS Content Release 1

The documents forming Release 1 are based on a list of features required for deployment of cooperative ITS. The following standards developed for interoperability in particular related to the Mandate M/453 together with supporting standards setting the framework or defining general requirements.

5.1 General standards

Standards developed for defining base requirements and procedures.

Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
Communications Architecture	EN 302 665	V1.1.1		Published
Framework for Public Mobile Networks in Cooperative ITS (C-ITS)	TR 102 962	V1.1.1		Published
Security Architecture	TS 102 731	V1.1.1		Published
Security architecture and management	TS 102 942			Apr 2012
Common data dictionary	TS 102 894-2			Nov 2012
Facility layer architecture	TS 102 894			Mid 2012
Application and facility layer common data dictionary	TS 102 894-2			Nov 2012
Network Architecture	TS 102 636	V1.1.1		Published
Network Architecture – revised TS	EN 302 636-3			May 2013
ITS testing framework	EG 202 798	V1.1.1		Published

5.2 Application requirements

Standards developed for vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) message sets and applications covering both safety and traffic efficiency applications as well as Value Added Services and other comfort applications.

The application and facility layer standards are based on the following general ITS features:

Vehicle safety

- Driver assistance information
- Driver assistance warning

Electric vehicles

Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
Road Hazard Signalling	TS 101 539-1		yes	May 2012
Longitudinal Collision Risk Warning	TS 101 539-3		yes	End 2012
Intersection Collision Risk Warning	TS 101 539-2		yes	End 2012
Electrical Vehicle charging spot notif.	TS 101 556-1		yes	Apr 2012
Basic Set of Applications	TR 102 638	V1.1.1		Published

5.3 Facilities

Facility layer standards include general message set standards and application supporting standards primarily on V2V and V2I communication.

Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
Cooperative awareness message (CAM)	TS 102 637	V1.1.1	yes	Published
Cooperative awareness message (CAM)	EN 302 637-2		yes	May 2012
Decentralized Environmental Notification Message (DENM)	TS 102 637	V1.1.1	yes	Published
Decentralized Environmental Notification Message (DENM)	EN 302 637-3		yes	May 2012
Local Dynamic Maps	EN 302 895			May 2013
ITS station position and time	TS 102 890-3		yes	Apr 2012

Testing Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
CAM (ATS, TSS&TP, PICS)	TS 102 859-1 TS 102 859-2 TS 102 859-3	V1.1.1 V1.1.1 V1.1.1	yes	Published
DENM (ATS, TSS&TP, PICS)	TS 102 869-1 TS 102 869-2 TS 102 869-3	V1.1.1 V1.1.1 V1.1.1	yes	Published
Validation of CAM	TR 103 061-1		yes	Oct 2012
Validation of DENM	TR 103 061-2		yes	Oct 2012

5.4 Network and Transport

Standards in the network and transport layer are based on features such as

- Basic transport protocols
- GeoNetworking
- IPv6

Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
Geonet Requirements and scenarios	TS 102 636	V1.1.1		Published
GeoNet Requirements and scenarios rev TS	EN 302 636-1/2			May 2013
GeoNetworking Media independent	TS 102 636-4-1	V1.1.1	yes	Published
GeoNetnetworking Media independent rev TS	EN 302 636-4-1		yes	May 2013
GeoNet Media dependent (G5A)	TS 102 636-4-2		yes	End 2012
Transmission IPv6 over GeoNetworking	TS 102 636-6-1	V1.1.1	yes	Published
Basic Transport protocols	TS 102 636-5-1	V1.1.1	yes	Published
Basic Transport protocols – Rev TS	EN 302 636-5-1		yes	May 2013

SAP (FAC-N&T)	TS 102 723-11			Mid 2012
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Testing Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
Basic Transport Protocol (ATS, TSS&TP, PICS)	TS 102 870-1 TS 102 870-2 TS 102 870-3	V1.1.1 V1.1.1 V1.1.1	yes	Published
GeoNetworking ITS G5 (ATS, TSS&TP, PICS)	TS 102 871-1 TS 10 2871-2 TS 102 871-3	V1.1.1 V1.1.1 V1.1.1	yes	Published
IP packets over Geonetworking (ATS, TSS&TP, PICS)	TS 102 859-1 TS 102 859-2 TS 102 859-3	V1.1.1 V1.1.1 V1.1.1	yes	Published
GeoNetworking Validation	TR 103 061-2		yes	Oct 2012
Basic Transport Protocol validation	TR 103 061-4		yes	Nov 2012
IPv6 over GeoNetworking validation	TR 103 061-5		yes	Nov 2012

5.5 Access and media

Standards developed for the access and media layer are based on features such as

- 5,9 GHz spectrum usage
- Multichannel operation
- Decentralised congestion control
- Coexistence of ITS and DSRC services in the 5,8/5,9 GHz band

Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
European Profile on ITS G5	ES 202 663	V1.1.1	yes	Published
Profile standard on ITS G5 – rev ES	EN 302 663		yes	Mid 2012
PHY/MAC Congestion control	TS 102 687	V1.1.1	yes	Published
Mitigation DSRC 5,8/5,9 GHz	TS 102 792		yes	Apr 2012
ITS G5 channel configuration	TS 102 724		yes	Mid 2012
SAP (N&T-Access)	TS 102 723-10			Mid 2012

Testing Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
Channel congestion 5,9 GHz (ATS, TSS&TP, PICS)	TS 102917-1 TS 102917-2 TS 102917-3		Yes Yes Yes	Mid 2012
Coexistence methods DSRC/ITS G5 (ATS, TSS&TP, PICS)	TS 102916-1 TS 102916-2 TS 102916-3		Yes Yes Yes	Mid 2012

5.6 Management

Standards developed for management and cross layer issues.

Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
ITS station internal management				
ITS Object Identifier Tree	TR 102707	V1.1.1	yes	Published
Classification of applications	TS 102 860	V1.1.1	yes	Published
Addressing schemes	TS 102 723-1		yes	Mid 2012
Management information base	TS 102 723-2	V1.1.1	yes	Published
ETSI TC ITS Registration list	TS 102 965			Nov 2012
Facility communication management	TS 102 890-1		yes	Nov 2012
Facility Service announcement	TS 102 890-2		yes	Nov 2012
SAP (Man – Access)	TS 102 723-3			Mid 2012
SAP (Man-N&T)	TS 102 723-4			Mid 2012
SAP (Man – FAC)	TS 102 723-5			Mid 2012
SAP (Man-SEC)	TS 102 723-6			Mid 2012

5.7 Security

Standards developed for security and privacy.

Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
Threat Vulnerability and Risk Analysis	TR 102 893			Published
Security mapping for IEEE 1609.2	TS 102 867		yes	approved
Identity management and identity protection in ITS	ES 202 910		yes	Nov 2012
Confidentiality Services	TS 102 943		yes	May 2012
Identity, trust and privacy	TS 102 943		yes	May 2012
Access control, secure and privacy-preserving services	TS 102 942		yes	Apr 2012
SAP (SEC-Access)	TS 102 723-7			Mid 2012
SAP (SEC-N&T)	TS 102 723-8			Mid 2012
SAP (SEC-FAC)	TS 102 723-9			Mid 2012

5.8 Test specifications for ISO standards in relation to Mandate M/453

Testing Standard title	Standard number	Version	Standard addressing interoperability	Status/est. approval
CALM – Medium service access points	TS 102760-1	v1.1.1	Yes	Published
	TS 102760-2	v1.1.1	Yes	Published
	TS 102760-3		Yes	Mid 2012
CALM – Architecture	TS 102 984-1		Yes	Mid 2012
	TS 102 984-2		Yes	Mid 2012
CALM – Management	TS 102797-1		Yes	Mid 2012
	TS 102797-2		Yes	Mid 2012
	TS 102797-3		Yes	Mid 2012
CALM – Non-IP Geonetworking	TS 102985-1		Yes	Mid 2012
	TS 102985-2		Yes	Mid 2012
	TS 102985-3		Yes	Mid 2012
CALM – M5	TS 102983-1		Yes	Mid 2012
	TS 102983-2		Yes	Mid 2012

	TS 102983-3		Yes	Mid 2012
CALM – Infra-red	TS 102982-1		Yes	Mid 2012
	TS 102982-2		Yes	Mid 2012
	TS 102982-3		Yes	Mid 2012
CALM – IPv6 Networking	TS 102981-1		Yes	Mid 2012
	TS 102981-2		Yes	Mid 2012
	TS 102981-3		Yes	Mid 2012