

# ISO 15638-3:2013-06 (E)

Intelligent transport systems - Framework for collaborative telematics applications for regulated commercial freight vehicles (TARV) - Part 3: Operating requirements, 'Approval Authority' procedures, and enforcement provisions for the providers of regulated services

---

<b>Contents</b>		<b>Page</b>
Foreword .....		ix
Introduction .....		xi
1	Scope .....	1
2	Conformance .....	1
3	Normative references .....	2
4	Terms and definitions .....	2
5	Symbols (and abbreviated terms) .....	5
6	General overview and framework .....	6
7	Requirements .....	8
8	<b>DEFINITION OF THE ROLES AND RESPONSIBILITIES OF KEY ACTORS .....</b>	<b>8</b>
8.1	Generic service requirements .....	8
8.2	User .....	9
8.2.1	User specification US1: `Prime User' .....	9
8.2.2	User specification US2: `Secondary User' .....	9
8.2.3	User specification US3: Mandatory application service enrolment .....	9
8.2.4	User specification US4: Voluntary application service enrolment .....	10
8.2.5	User specification US5: Service provider engagement .....	10
8.3	Service provider .....	10
8.3.1	Service provider specification SP1 : Service provider definition .....	10
8.3.2	Service provider specification SP2: Service provider `Approval Authority' requirement ....	10
8.3.3	Regimes for regulated application service provision .....	10
8.3.4	Service provider specification SP3: Application service definition .....	11
8.3.5	Service provider specification SP4: Service provision .....	11
8.3.6	Service provider specification SP5: Service provider charging .....	11
8.3.7	Service provider specification SP6: Service provider charging fees on behalf of jurisdiction regulator .....	11
8.3.8	Service provider specification SP7: Service provider transmission of data to the jurisdiction and/or its agents .....	11
8.3.9	Service provider specification SP8: Provision of non-regulated commercial services .....	12
8.4	Wireless communications service provider .....	12
8.4.1	Service provider specification SP9: Wireless communications service provision .....	12
8.4.2	Service provider specification SP10: Responsibility for wireless communications service provision .....	12
8.5	IVS installer .....	12
8.5.1	Original equipment manufacturer specification OEM1: Responsibility where IVS is installed at time of vehicle manufacture .....	13
8.5.2	Service provider specification SP11: Responsibility where IVS is installed post manufacture of the vehicle .....	13
8.6	IVS maintainer .....	13

8.6.1	User responsibility US6: Responsibility to maintain the IVS .....	13
8.6.2	Service provider specification SP12: Responsibility of the service provider contracted to maintain an IVS .....	14
8.7	Jurisdiction .....	15
8.7.1	Jurisdiction specification JS1: Definition of regulated application services for TARV .....	15
8.7.2	Jurisdiction specification JS2: Definition of status of regulated application services for TARV .....	15
8.7.3	Jurisdiction specification JS3: Obtain supporting legislation/regulation for a regulated application service for TARV .....	15
8.7.4	Jurisdiction specification JS4: Manage and regulate the provision of the regulated application services .....	15
8.8	'Approval Authority' .....	15
8.8.1	Jurisdiction specification JS5: create or appoint a 'Approval Authority' .....	16
8.8.2	'Approval Authority' specification AA1: Consider and appoint candidates to be service providers .....	16
8.8.3	'Approval Authority' specification AA2: Test and approve service providers .....	16
8.8.4	'Approval Authority' specification AA3: Audit service providers .....	16
8.8.5	'Approval Authority' specification AA4: Type approve IVS .....	17
8.8.6	'Approval Authority' specification AA5: Test IVS functionality .....	17
8.9	Contract options .....	17
8.9.1	User requirement US6 : 'Service Provider - User Contract' .....	17
9	<b>IVS REQUIREMENTS .....</b>	<b>18</b>
9.1	Physical .....	18
9.1.1	IVS functional description .....	18
9.1.2	HMI aspects .....	18
9.2	Data .....	18
9.2.1	IVS essential data collection .....	18
9.2.2	IVS essential data processing .....	18
9.2.3	IVS identification .....	19
9.3	IVS specification IVS1: Robustness and suitability .....	19
9.3.1	Robustness .....	19
9.3.2	Suitability for use .....	19
9.4	IVS specification IVS2: Availability .....	20
9.5	IVS specification IVS3: Environmental .....	20
9.6	IVS specification IVS4: Secure data storage .....	20
9.7	IVS specification IVS5: Data storage means .....	21
9.8	IVS specification IVS6: Data input means .....	21
9.9	IVS specification IVS7: Central processing unit .....	21
9.10	IVS specification IVS8: Secure data processing .....	22
9.11	IVS specification IVS9: Connectivity means to/from auxiliary equipment .....	22
9.12	IVS specification IVS11: Communications means .....	22
9.13	IVS Classification .....	22
9.13.1	IVS specification IVS12: CLASS A - able to communicate with its attached trailers .....	22
9.13.2	IVS specification IVS13: CLASS B - not able to communicate with its attached trailers .....	23
9.14	IVS specification IVS14: IVS identification of attached trailers .....	23
9.15	IVS specification IVS15: Physical trailer marking .....	23
9.16	IVS specification IVS16: Equipped trailer identification (trailer ID) .....	23
9.17	IVS specification IVS17: Freight land conveyance content identification and communication .....	23
9.18	Equipped trailer identification devices .....	23
9.18.1	IVS specification IVS18: Equipped trailer identification devices .....	23
9.18.2	IVS specification IVS19: Trailer identification device requirements .....	24
9.18.3	IVS specification IVS20: Integrity of trailer identification .....	24
9.19	IVS specification IVS21: Power supply .....	24
9.20	IVS specification IVS 22: external power supply failure/shut down .....	25
9.21	IVS specification IVS23: Security seals .....	25
9.22	IVS specification IVS24: GNSS capability .....	25
9.23	IVS specification IVS25: Accelerometer capability .....	25
9.24	IVS specification IVS26: Gyroscope capability .....	26
9.25	IVS specification IVS27: Still camera data .....	26
9.26	IVS specification IVS28: Video data .....	26

9.27	Alarm status data and records .....	26
9.27.1	IVS specification IVS29: Alarm types and data .....	26
9.27.2	IVS specification IVS30: Independent movement sensing .....	27
9.28	IVS specification IVS31: Vehicle location .....	27
10	PROCEDURES FOLLOWING POWER-UP OF THE VEHICLE .....	28
10.1	IVS specification IVS32: When vehicle is powered up (ignition status ON) .....	28
10.2	IVS specification IVS33: Communication set-up .....	28
10.2.1	Application service provider generates request for `Core Application Data' .....	29
10.2.2	IVS generates send of `Core Application Data' (CAD) .....	29
10.2.3	Data compression .....	29
10.2.4	Data acknowledgement .....	29
10.2.5	In the event of failure to receive the `DATA-ACK' .....	29
10.3	IVS specification IVS34: Communication session clear-down .....	29
10.4	CAD not received correctly .....	30
11	RECORDS TRANSFER AND BACKUP PROCEDURES .....	30
11.1	Periodicity determined by the jurisdiction .....	30
11.2	Frequency of records transfer .....	30
11.3	Records to be transferred .....	30
11.4	Procedures for transfer of `stored data' .....	30
11.4.1	IVS specification IVS35: `stored data' Communication set-up .....	30
11.4.2	IVS generates send of `stored data' .....	30
11.4.3	Data compression .....	31
11.4.4	Stored data acknowledgement .....	31
11.4.5	In the event of failure to receive the `SD-ACK' .....	31
11.5	Deletion of data stored in the non-volatile memory of the IVS .....	31
11.5.1	IVS data records deleted only after fulfilment of conditions .....	31
11.6	Data testing .....	31
11.7	Data backup and archiving .....	32
12	IVS - VEHICLE .....	32
12.1	`Core Application Data' .....	32
12.1.1	Jurisdiction specification JS6: `Core Application Data' .....	33
12.2	`Basic Vehicle Data' .....	33
12.2.1	Jurisdiction specification JS7: `Basic Vehicle Data' .....	33
12.3	OEM installed IVS .....	34
12.3.1	Regulation regime .....	34
12.3.2	Physical installation aspects .....	34
12.3.3	Vehicle data bus .....	34
12.3.4	Initial set-up .....	34
12.4	Aftermarket installed IVS .....	35
12.4.1	Regulation regime .....	35
12.4.2	Physical installation aspects .....	35
12.4.3	Vehicle data bus .....	36
12.4.4	Initial set-up .....	36
12.5	Interoperability certificate .....	37
12.6	Non-TARV functionality in IVS .....	37
12.6.1	Complementary access and use .....	37
12.6.2	Reporting to jurisdiction regulator .....	37
12.6.3	IVS specification IVS36: Shall not interfere with TARV application service provision .....	37
12.6.4	IVS specification IVS37: Shall demonstrate complementariness .....	37
12.7	Post installation events .....	37
12.7.1	Service provider requirement SP23: Replacement of IVS .....	37
12.7.2	Service provider requirement SP24: Upgrade of the IVS .....	38
12.7.3	Service provider requirement SP25: Repair of the IVS .....	38
12.7.4	Service provider requirement SP26: Service of the IVS .....	38
12.8	Change of regulated commercial freight vehicle properties .....	38
12.8.1	User responsibility US7: Change of regulated commercial freight vehicle properties .....	38
12.8.2	Service provider responsibility SP27: Change of regulated commercial freight vehicle properties .....	38
12.9	Activation .....	39

12.9.1	Service provider responsibility SP28: IVS activation .....	39
12.10	Maintenance and continuity of application service provider systems .....	39
12.10.1	Update and installation of applications .....	39
12.10.2	Introduction of new applications .....	39
12.10.3	Service provider responsibility SP29: System modifications, upgrades and changes .....	39
12.10.4	Service provider responsibility SP30: Minimisation of on board processing and memory demands .....	39
12.10.5	Service provider responsibility SP31: Responsibility for design, development, testing ...	40
12.10.6	'Approval Authority' specification AA8: Approve new applications .....	40
12.11	Deactivation .....	40
12.12	End of life provisions .....	40
12.12.1	User responsibility US8: End of life notification .....	40
12.12.2	Service provider responsibility SP32: End of life notification .....	40
13	<b>PROVISIONS TO ENABLE MONITORING AND ENFORCEMENT OF REGULATED COMMERCIAL FREIGHT VEHICLES .....</b>	<b>41</b>
13.1	Jurisdiction specification JS8: Definition of regulated commercial freight vehicle .....	41
13.2	Jurisdiction specification JS9: Provision of regulations to monitor and enforce .....	41
14	<b>'Approval Authority' PROCEDURES .....</b>	<b>41</b>
14.1	General 'Approval Authority' process .....	41
14.2	Jurisdiction specification JS10: Provision of 'Approval Authority' test regime .....	42
14.3	Jurisdiction specification JS11: Provision of 'Approval Authority' test suites .....	42
14.4	IVS 'Approval Authority' .....	43
14.4.1	IVS specification IVS1: Robustness and suitability .....	43
14.4.2	IVS specification IVS2: Availability .....	44
14.4.3	IVS specification IVS3: Environmental .....	44
14.4.4	IVS specification IVS4: Secure data storage .....	44
14.4.5	IVS specification IVS6: Data input means .....	44
14.4.6	IVS specification IVS7: Central processing unit .....	44
14.4.7	IVS specification IVS8: Secure data processing .....	45
14.4.8	IVS specification IVS9: Connectivity means to/from auxiliary equipment .....	45
14.4.9	IVS specification 10: IVS clock .....	45
14.4.10	IVS specification IVS11: Communications means .....	45
14.4.11	IVS Classification (IVS12, IVS13, IVS 14) .....	46
14.4.12	IVS specification IVS21: Power supply .....	46
14.4.13	IVS specification IVS 22: external power supply failure/shut down .....	46
14.4.14	IVS specification IVS24: GNSS capability .....	46
14.4.15	IVS specification IVS25: Accelerometer capability .....	46
14.4.16	IVS specification IVS26: Gyroscope capability .....	46
14.4.17	IVS specification IVS27: Still camera data .....	46
14.4.18	IVS specification IVS28: Video data .....	46
14.4.19	IVS specification IVS29: Alarm types and data .....	46
14.4.20	IVS specification IVS30: Independent movement sensing .....	47
14.4.21	IVS specification IVS31: Vehicle location .....	47
14.4.22	IVS specification IVS32: When vehicle is powered up (ignition status ON) .....	47
14.4.23	IVS specification IVS33: Communication set-up (1) .....	48
14.4.24	IVS specification IVS33: Communication set-up (2) SEND 'Core Application Data' .....	48
14.4.25	IVS specification IVS34: Communication session clear-down .....	48
14.4.26	IVS specification IVS35: Communication set-up : transfer of 'stored data' .....	49
14.4.27	IVS data records deleted only after fulfilment of conditions .....	49
14.4.28	IVS unique identification .....	49
14.4.29	Identification code of the registered commercial freight vehicle .....	49
14.4.30	Non-TARV functionality in IVS: Complementary access and use .....	49
14.4.31	Change of regulated commercial freight vehicle properties .....	50
14.5	IVS 'Approval Authority' .....	50
14.5.1	Unique unambiguous identifier (IVS ID) .....	50
14.5.2	Affixation .....	50
14.5.3	Test mechanical capability .....	50
14.5.4	Test connection to prime mover/rigid truck .....	50
14.5.5	Test durability .....	50
14.5.6	Test vibration .....	51

14.5.7	Test bump/impact/shock .....	51
14.5.8	Test fall .....	51
14.5.9	Test humidity .....	51
14.5.10	Test temperature .....	51
14.5.11	Test dust and water ingress protection (1) .....	51
14.5.12	Test dust and water ingress protection (2) .....	51
14.5.13	Test radio frequency and electrical interference .....	51
14.5.14	Electromagnetic emissions .....	51
14.5.15	IVS specification IVS9: Connectivity means to/from auxiliary equipment .....	51
14.5.16	Equipped trailer identification devices .....	52
14.5.17	IVS specification IVS23: Security seals .....	53
14.6	Application service provider `Approval Authority' .....	53
14.6.1	General requirements .....	53
14.6.2	In the event of malfunction .....	54
14.6.3	Service provider specification SP4: Service provision .....	54
14.6.4	Service provider specification SP5: Service provider charging regime .....	55
14.6.5	Service provider specification SP6: Service provider charging fees on behalf of jurisdiction regulator .....	55
14.6.6	Service provider specification SP7: Service provider transmission of data to the jurisdiction and/or its agents .....	55
14.6.7	Service provider specification SP8: Provision of non-regulated commercial services .....	55
14.6.8	Service provider specification SP9: Wireless communications service provision .....	55
14.6.9	Service provider specification SP12/SP18/SP19/SP20/SP23/SP24/SP25/SP26/SP28: Responsibility of the service provider contracted to maintain an IVS .....	55
14.6.11	Service provider specification SP17/SP22: `Core Application Data' .....	55
14.6.13	Service provider responsibility SP27: Change of regulated commercial freight vehicle properties .....	56
14.7	Application service `Approval Authority' .....	56
14.7.1	General requirements .....	56
14.7.2	Application service `Approval Authority' tests .....	56
14.7.2	Service provider specification SP3: Application service definition .....	57
14.7.3	HMI aspects .....	57
14.7.4	Documentation .....	57
14.7.4	Service provider specification SP5: Service provider charging regime .....	57
14.8	Maintenance and continuity of application service provider systems .....	57
14.8.1	Service provider responsibility SP30: Minimisation of on-board processing and memory demands .....	58
14.8.2	Service provider responsibility SP31: Responsibility for design, development, testing (continued monitoring of the IVS performance) .....	58
15	Auditing .....	58
16	Privacy .....	58
16.1	Business privacy .....	58
16.1.1	General .....	58
16.1.2	Explicit and legitimate and must be determined at the time of collection of the data .....	58
16.1.3	Not further processed in a way incompatible with the purposes for which it was originally collected .....	59
16.1.4	Not be disclosed without the consent of the data subject .....	59
16.2	Driver privacy .....	59
17	Interoperability .....	59
18	Legal, regulatory and enforcement aspects .....	60
19	Quality of service requirements .....	60
19.1	General .....	60
19.2	IVS and TID type approvals and monitoring .....	60
19.3	Application service provider system specifications .....	61
20	Marking, labelling and packaging .....	61

21	<b>Declaration of patents and intellectual property .....</b>	<b>61</b>
A.1	<b>General .....</b>	<b>62</b>
A.2	<b>Jurisdiction .....</b>	<b>62</b>
A.3	<b>'Approval Authority' .....</b>	<b>62</b>
A.4	<b>Service provider .....</b>	<b>62</b>
A.5	<b>IVS .....</b>	<b>63</b>
A.6	<b>User .....</b>	<b>64</b>
A.7	<b>OEM .....</b>	<b>64</b>
B.1	<b>General .....</b>	<b>65</b>
B.2	<b>Countries with existing unambiguous vehicle identification schema .....</b>	<b>65</b>
B.3	<b>Countries without an existing unambiguous vehicle identification schema .....</b>	<b>65</b>
	<b>Bibliography .....</b>	<b>67</b>