

ISO/TS 15638-12:2013-08 (E)

Intelligent transport systems - Framework for collaborative Telematics Applications for Regulated commercial freight Vehicles (TARV) - Part 12: Vehicle mass monitoring (VMM)

| Contents | Page |
|-----------------|---|
| 1 | Scope 1 |
| 2 | Conformance 1 |
| 3 | Normative references 2 |
| 4 | Terms and definitions 2 |
| 5 | Symbols (and abbreviated terms) 8 |
| 6 | General overview and framework requirements 9 |
| 7 | Requirements for services using generic vehicle data 9 |
| 8 | Application services that require data in addition to basic vehicle data 10 |
| 8.1 | General 10 |
| 8.2 | Quality of service requirements 10 |
| 8.3 | Test requirements 10 |
| 8.4 | Marking, labelling and packaging 10 |
| 9 | Common features of regulated TARV application services 10 |
| 9.1 | General 10 |
| 9.2 | Common role of the jurisdiction, approval authority, service provider and user 11 |
| 9.3 | Common characteristics for instantiations of regulated application services 11 |
| 9.4 | Common sequence of operations for regulated application services 11 |
| 9.5 | Quality of service 12 |
| 9.6 | Information security 12 |
| 9.7 | Data naming content and quality 12 |
| 9.8 | Software engineering quality systems 12 |
| 9.9 | Quality monitoring station 12 |
| 9.10 | Audits 12 |
| 9.11 | Access control to data policy 12 |
| 9.12 | Approval of IVSs and service providers 12 |
| 10 | Vehicle mass monitoring (VMM) 12 |
| 10.1 | TARV VMM service description and scope 12 |
| 10.1.1 | TARV VMM use case 12 |
| 10.1.2 | Description of TARV VMM regulated application service 13 |
| 10.1.3 | Description of TARV 'Vehicle mass monitoring' (TARV VMM) application service 14 |
| 10.2 | Concept of operations for TARV VMM 14 |
| 10.2.1 | General 14 |
| 10.2.2 | Statement of the goals and objectives of the TARV VMM system 15 |
| 10.2.3 | Strategies, tactics, policies, and constraints affecting the TARV VMM system 15 |
| 10.2.4 | Organisations, activities, and interactions among participants and stakeholders for TARV VMM 16 |
| 10.2.5 | Clear statement of responsibilities and authorities delegated for TARV VMM 17 |
| 10.2.6 | Equipment required for TARV VMM 17 |
| 10.2.7 | Calibration of mass sensors 24 |
| 10.2.8 | Alarm Records for TARV VMM 25 |

| | | |
|--|---|----|
| 10.2.9 | Operational processes for the TARV VMM system | 26 |
| 10.2.10 | Role of the jurisdiction for TARV VMM | 26 |
| 10.2.11 | 1Role of the TARV VMM prime service provider | 26 |
| 10.2.12 | Role of the TARV VMM application service provider | 27 |
| 10.2.13 | Role of the TARV VMM user | 27 |
| 10.2.14 | Generic characteristics for all instantiations of the TARV VMM application service | 27 |
| 10.3 | Sequence of operations for TARV VMM | 27 |
| 10.3.1 | General | 27 |
| 10.4 | TARV VMM service elements | 29 |
| 10.4.1 | TARV VMM service element (SE) 1: Establish `Vehicle mass monitoring' regulations, requirements, and Approval arrangements | 29 |
| 10.4.2 | TARV VMM SE2: Request system approval | 29 |
| 10.4.3 | TARV VMM SE3: User (operator) contracts with prime service provider | 29 |
| 10.4.4 | TARV VMM SE4: User (operator) equips vehicle with a devices to provide load information | 29 |
| 10.4.5 | TARV VMM SE5: User contracts with application service provider | 29 |
| 10.4.6 | TARV VMM SE6: application service provider uploads software into the TARV equipped vehicles of the operator | 29 |
| 10.4.7 | TARV VMM SE7: Time series or application service instigated recording of vehicle load . | 29 |
| 10.4.8 | TARV VMM SE8: `Interrogated' request for vehicle mass monitoring data | 30 |
| 10.5 | Generic TARV VMM data naming content and quality | 31 |
| 10.6 | TARV VMM application service specific provisions for quality of service | 32 |
| 10.6.1 | General | 32 |
| 10.6.2 | Tamper evidency | 33 |
| 10.7 | TARV VMM application service specific provisions for test requirements | 33 |
| 10.8 | TARV VMM application specific rules for the Approval of IVSs and `Service Providers' | 33 |
| 11 | Declaration of patents and intellectual property | 33 |
| Annex A (Informative) Independent testing of the protocols defined in this Part of ISO 15638 | | 34 |
| A.1 | Objectives | 34 |
| A.2 | TEST SCRIPT 6 SERVICE: VMM VEHICLE MASS MONITORING | 36 |
| CTP 6.1.1 | Instigated Vehicle Mass Monitoring using 2G | 38 |
| CTP 6.1.2 | Interrogated Vehicle Mass Monitoring using 2G | 40 |
| CTP 6.1.3 | Interrogated Vehicle Mass Monitoring using 5.9GHz and responding using 2G or 3G | 42 |
| CTP 6.2.1 | Instigated Vehicle Mass Monitoring using 3G | 44 |
| CTP 6.2.2 | Interrogated at 5.9 GHz and send of Vehicle Mass Monitoring using 3G | 46 |
| CTP 6.3.1 | Instigated Vehicle Mass Monitoring using 802.11p (WAVE) 5.9 GHz | 48 |
| CTP 6.3.2 | Interrogated Vehicle Mass Monitoring using 802.11p (WAVE) 5.9 GHz | 50 |
| CTP 6.4.1 | Instigated Vehicle Mass Monitoring using Mesh WiFi | 52 |
| CTP 6.4.2 | Interrogated Vehicle Mass Monitoring using Mesh WiFi | 54 |
| Bibliography | | 56 |