ISO/TR 17783:2024-04 (E)

Intelligent transport systems - Mobility integration - Role and functional model for mobility services using low Earth orbit (LEO) satellite systems

Contents

Page

Foreword ..... **iv**

Introduction ..... **v**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Abbreviated terms **2**

5 Advantages of low latency in LEO satellite constellation **2**

6 Disadvantages of using satellites and LEO **3**

7 Private 5G/6G **3**

8 Mobility role model example **3**

9 Definition of service domains suited to utilizing LEO satellite systems **3**
9.1 General 3
9.2 Referenced target use cases 4
9.3 Infrastructure operation management 6
9.4 Traffic management 6
9.5 Road traffic management 6
9.6 Enforcement 7
9.7 The role of service providers 7

10 General communication functions **9**
10.1 Overview 9
10.2 Cyber security in ITS service applications 9
10.3 Moving data between actors 9
10.4 Connected vehicle/device environment 10
10.4.1 General 10
10.4.2 Low latency 10
10.4.3 Multi-device access capability 10
10.4.4 Network slicing 10
10.4.5 Carrier aggregation 10
10.4.6 Propagation speed difference between wired and wireless environment 10
10.4.7 Radio frequency spectrum sharing 11

11 Role and function model of mobility service framework **11**
11.1 Objective 11
11.2 National variations 11
11.3 Basic role model architecture 11
11.3.1 General 11
11.3.2 Smart city sensor data (probe data) 12
11.3.3 3D HD map 12
11.3.4 Digital infrastructure 12
11.3.5 Mobility supporting facility 13
11.3.6 Physical infrastructure platform 13
11.3.7 ITS service providers 13
11.3.8 Communication (communication service provider) 13
11.4 Application layer role and functional model for ITS service application 13
11.4.1 Overview 13

11.4.2 Role and functional model options 14
11.4.3 Certification of service providers 14
11.5 Mobility service role and functional model 14
11.5.1 General 14
11.5.2 Role model and functional model of digital infrastructure servicer 15
Bibliography **16**