

# DIN EN 15876-1:2016-12 (E)

## Electronic fee collection - Evaluation of on-board and roadside equipment for conformity to EN 15509 - Part 1: Test suite structure and test purposes

---

<b>Contents</b>	<b>Page</b>
European foreword.....	7
Introduction .....	8
1 Scope.....	9
2 Normative references.....	9
3 Terms and definitions.....	9
4 Abbreviations.....	11
5 Conformance.....	12
6 Test Suite Structure.....	12
6.1 Structure.....	12
6.2 Reference to Conformance Specifications.....	13
6.3 Test Purposes .....	13
6.3.1 TP Definition Conventions.....	13
6.3.2 TP Naming Conventions.....	14
Annex A (normative) Test Purposes for On-Board Units.....	16
A.1 Introduction.....	16
A.2 Physical Layer.....	16
A.2.1 BV Test Purposes.....	16
A.2.2 BI Test Purposes.....	18
A.3 MAC.....	18
A.3.1 BV Test Purposes.....	18
A.3.2 BI Test Purposes.....	19
A.4 LLC.....	24
A.4.1 BV Test Purposes.....	24
A.4.2 BI Test Purposes.....	25
A.5 Application Layer .....	27
A.5.1 Introduction and general conventions.....	27
A.5.2 Structure of BST and VST.....	28
A.5.2.1 BST.....	28
A.5.2.2 VST.....	29
A.5.3 PDUs Parameters .....	32
A.5.3.1 Parameters of request PDUs (security level 0) .....	32
A.5.3.2 Parameters of request PDUs (security level 1) .....	33
A.5.3.3 Parameters of response PDUs .....	35
A.5.4 Application I-kernel test purposes for On-Board Unit, security level 0 (AP-OBAS) .....	36
A.5.4.1 Data Structures .....	36

- A.5.4.2 BV test purposes ..... 36**
- A.5.4.3 BI test purposes..... 39**
- A.5.5 Application T-kernel test purposes for On-Board Unit, security level 0 (AP-0FUN)..... 40**
- A.5.5.1 General ..... 40**
- A.5.5.2 BV test purposes ..... 40**
- A.5.5.3 BI test purposes..... 45**
- A.5.6 Application data attributes test purposes, security level 0 (AP-0DAT)..... 46**
- A.5.6.1 General ..... 46**
- A.5.6.2 Data attributes definition ..... 46**
- A.5.6.3 BV test purposes ..... 47**
- A.5.6.4 BI test purposes..... 59**
- A.5.7 Application security test purposes, security level 0 (AP-0SEC)..... 62**
- A.5.7.1 General information ..... 62**
- A.5.7.2 BV test purposes ..... 62**
- A.5.7.3 BI test purposes..... 64**
- A.5.8 Application transaction test purposes, security level 0 (AP-0TRA)..... 64**
- A.5.8.1 General ..... 64**
- A.5.8.2 BV test purposes ..... 64**
- A.5.8.3 BI test purposes..... 64**
- A.5.9 Application I-kernel test purposes, security level 1 (AP-1BAS) ..... 64**
- A.5.9.1 General ..... 64**
- A.5.9.2 BV test purposes ..... 64**
- A.5.9.3 BI test purposes..... 66**
- A.5.10 Application T-kernel test purposes, security level 1 (AP-1FUN)..... 66**
- A.5.10.1 General..... 66**
- A.5.10.2 BV test purposes ..... 66**
- A.5.10.3 BI test purposes ..... 68**
- A.5.11 Application data attributes test purposes, security level 1 (AP-1DAT)..... 69**
- A.5.11.1 General ..... 69**
- A.5.11.2 BV test purposes ..... 69**
- A.5.11.3 BI test purposes ..... 71**
- A.5.12 Application security test purposes, security level 1 (AP-1SEC)..... 72**
- A.5.12.1 General ..... 72**
- A.5.12.2 BV test purposes ..... 72**
- A.5.12.3 BI test purposes ..... 73**
- A.5.13 Application transaction test purposes, security level 1 (AP-1TRA)..... 73**
- A.5.13.1 General..... 73**

A.5.13.2	BV test purposes.....	73
A.5.13.3	BI test purposes.....	73
<b>Annex B (normative) Test Purposes for Roadside Equipment.....</b>		<b>74</b>
B.1	Introduction.....	74
B.2	Physical layer.....	74
B.2.1	BV test purposes.....	74
B.2.2	BI test purposes.....	76
B.3	MAC Sublayer.....	76
B.3.1	BV test purposes.....	76
B.3.2	BI test purposes.....	78
B.4	LLC Sublayer.....	83
B.4.1	BV test purposes.....	83
B.4.2	BI test purposes.....	84
B.5	Application Layer Test Purposes.....	85
B.5.1	Introduction and general conventions.....	85
B.5.2	Application initialization phase test purposes, security level 0 (AP-0BAS).....	86
B.5.2.1	Introduction.....	86
B.5.2.2	BV test purposes.....	88
B.5.2.3	BI test purposes.....	88
B.5.3	Application GET-rq PDU test purposes, security level 0 (AP-0GET).....	88
B.5.3.1	General.....	88
B.5.3.2	BV test purposes.....	88
B.5.3.3	BI test purposes.....	89
B.5.4	Application SET-rq PDU test purposes, security level 0 (AP-0SET).....	90
B.5.4.1	General.....	91
B.5.4.2	BV test purposes.....	91
B.5.4.3	BI test purposes.....	94
B.5.5	Application GET-STAMPED-rq PDU test purposes, security level 0 (AP-0STA).....	94
B.5.5.1	General.....	94
B.5.5.2	BV test purposes.....	94
B.5.5.3	BI test purposes.....	95
B.5.6	Application SET-MMI-rq PDU test purposes, security level 0 (AP-0MMI).....	97
B.5.6.1	General.....	97
B.5.6.2	BV Test Purposes.....	97
B.5.6.3	BI Test Purposes.....	98
B.5.7	Application ECHO-rq PDU test purposes, security level 0 (AP-0ECH).....	98
B.5.7.1	General.....	98

B.5.7.2 BV test purposes .....	98
B.5.7.3 BI Test Purposes .....	99
B.5.8 Application EVENT-REPORT-rq PDU test purposes, security level 0 (AP-0REL) .....	99
B.5.8.1 General .....	99
B.5.8.2 BV Test Purposes .....	99
B.5.8.3 BI Test Purposes .....	100
B.5.9 Application initialization phase test purposes, security level 1 (AP-1BAS).....	100
B.5.9.1 General .....	100
Table B.4 — VST8, (security level 1) - valid VST .....	101
B.5.9.2 BV Test Purposes .....	102
B.5.9.3 BI Test Purposes .....	102
B.5.10 Application GET-rq PDU test purposes, security level 1 (AP-1GET) .....	102
B.5.10.1 General.....	102
B.5.10.2 BV Test Purposes.....	102
B.5.10.3 BI Test Purposes .....	103
B.5.11 Application SET-rq PDU test purposes, security level 1 (AP-1SET) .....	103
B.5.11.1 General.....	103
B.5.11.2 BV Test Purposes.....	103
B.5.11.3 BI test purposes .....	104
B.5.12 Application GET-STAMPED-rq PDU test purposes, security level 1 (AP-1STA) .....	104
B.5.12.1 General.....	104
B.5.12.2 BV test purposes .....	105
B.5.12.3 BI test purposes .....	105
B.5.13 Application SET-MMI-rq PDU test purposes, security level 1 (AP-1MMI).....	105
B.5.13.1 General.....	105
B.5.13.2 BV test purposes .....	105
B.5.13.3 BI test purposes .....	106
B.5.14 Application ECHO-rq PDU test purposes, security level 1 (AP-1ECH) .....	106
B.5.14.1 General.....	106
B.5.14.2 BV test purposes .....	106
B.5.14.3 BI test purposes .....	106
Annex C (normative) PCTR Proforma for On-Board Units.....	107
C.1 Introduction.....	107
C.2 Identification summary.....	107
C.2.1 Protocol conformance test report .....	107
C.2.2 DUT identification .....	107
C.2.3 Testing environment.....	108

**C.2.4 Limits and reservation ..... 108**

**C.2.5 Comments ..... 108**

**C.3 DUT Conformance status ..... 109**

**C.4 Static conformance summary ..... 109**

**C.5 Dynamic conformance summary..... 109**

**C.6 Static conformance review report ..... 110**

**C.7 Test campaign report ..... 111**

**C.8 Observations..... 120**

**Annex D (normative) PCTR Proforma for Roadside Equipment..... 121**

**D.1 Introduction..... 121**

**D.2 Identification summary ..... 121**

**D.2.1 Protocol conformance test report..... 121**

**D.2.2 DUT identification..... 121**

**D.2.3 Testing environment ..... 122**

**D.2.4 Limits and reservation ..... 122**

**D.2.5 Comments ..... 122**

**D.3 DUT Conformance status ..... 123**

**D.4 Static conformance summary ..... 123**

**D.5 Dynamic conformance summary..... 123**

**D.6 Static conformance review report ..... 124**

**D.7 Test campaign report ..... 125**

**D.8 Observations..... 129**

**Bibliography..... 130**