

# INTERNATIONAL STANDARD

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**AMENDMENT 1**  
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## Electronic fee collection — Compliance check communication for autonomous systems

### AMENDMENT 1

*Perception du télépéage — Communication de contrôle de conformité  
pour systèmes autonomes*

*AMENDEMENT 1*

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Amendment 1 to ISO 12813:2015 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

## Document Preview

This amendment defines the electronic fee collection compliance check communication using the WAVE communication stack as defined in IEEE.

[ISO 12813:2015/Amd.1:2017](http://www.iso.org/iso/12813-2015-amd-1-2017)

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# Electronic fee collection — Compliance check communication for autonomous systems

## AMENDMENT 1

*Page 1*

Replace:

- use of the CEN-DSRC stack as specified in EN 15509, or other equivalent DSRC stacks as described in Annexes C, D and E

with:

- use of the CEN-DSRC stack as specified in EN 15509, or other equivalent DSRC stacks as described in Annexes C, D, E and I

*Page 6, 5.5.1, Table 1*

Add the following row before the last row of Table 1:

WAVE DSRC	IEEE 1609.11-2010 ISO 15628	IEEE 1609.3-2010 IEEE 1609.4-2016 IEEE 802.11	Implementation example in Annex I
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*Page 7, 6.1.1*

Replace:

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<https://standards.iten.it> Subclauses 6.1.2 to 6.1.7 define the functions for CEN-DSRC only. For other supported media, according to 5.5.1, equivalent functionality should be provided, see Annex C for ETSI/ES 200 674-1 5.8 GHz microwave DSRC, Annex D for CALM Infrared DSRC and Annex E for ARIB microwave DSRC.

with:

6.1.2 to 6.1.7 define the functions for CEN-DSRC only. For other supported media, according to 5.5.1 equivalent functionality should be provided; see Annex C for ETSI/ES 200 674-1 5.8 GHz microwave DSRC, Annex D for CALM Infrared DSRC, Annex E for ARIB microwave DSRC and Annex I for WAVE 5.9 GHz microwave DSRC.

*Page 9, 6.2.2*

Replace:

When using one of the other communication stacks described in Annex C, D or E, algorithms and the use of lower communication layer services shall be as specified in the corresponding annex.

with:

When using one of the other communication stacks described in Annex C, D, E or I, algorithms and the use of lower communication layer services shall be as specified in the corresponding annex.

*Page 21, Table B.8 and page 24, Table B.19*

Add the following row after item number 4 in Table B.8 and in Table B.19:

5	WAVE DSRC	Annex I	o	
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Insert new Annex I after Annex H.

**Annex I**  
(informative)  
**Using the WAVE communication stack for CCC applications**

### I.1 General

This annex specifies the use of the WAVE system based on the standards IEEE 1609.4, IEEE 802.11-2016, IEEE 1609.0, IEEE 1609.3 and IEEE 1609.11-2010 (see full references in the Bibliography).

### I.2 Communication requirements

The communication requirements are defined in IEEE 1609.11-2010, A.2.

The contents of the Beacon Service Table (BST), defined in ISO 12813:2015, 8.2.2, along with optional application-specific information, should be transmitted as the Provider Service Context (PSC) of a WAVE service advertisement (WSA) message, as defined in IEEE 1609.11-2010.

### I.3 CCC functions

#### I.3.1 General

The CCC functions are defined in IEEE 1609.11-2010, Clause A3.1, Table 1. [Table I.1](#) shows the correspondences between the WAVE primitives, the DSRC layer 7 primitives and the EFC functions.

**Table I.1 — CCC functions correspondence**

CCC function	DSRC Layer 7 primitive (ISO 15628)	EFC function (ISO 14906)	WAVE primitive(s) (IEEE 1609.3-2010)
Initialise communication	INITIALISATION		WME-ProviderService.request, WME-UserService.request
Data retrieval	GET		WSM-WaveShortMessage.request,
n.a.	SET		WSM-WaveShortMessage.indication
n.a.		GET_STAMPED	
n.a.		GET_INSTANCE	
Driver Notification		SET_MMI	
Test Communication		ECHO	
Secure data retrieval		GET_SECURE	
n.a.		SET_SECURE	
Terminate communication		RELEASE	WME-ProviderService.request

The WAVE communication stack provides a CCC function called “Secure data retrieval” as an alternative to “Authenticated data retrieval”.

#### I.3.2 Secure data retrieval

The function “Secure data retrieval” should be implemented by the EFC function GET\_SECURE as specified in ISO 14906 and with additional specification in IEEE 1609.11-2010, A.3.2.