

STN	Inteligentné dopravné systémy (ITS). Vozidlové komunikácie. Geosieťovanie. Časť 4: Geografické riešenie a smerovanie pre komunikácie bod-bod a bod-viac bodov. Oddiel 1: Funkcie nezávislé od médií.	STN EN 302 636-4-1 V1.2.1 87 2636
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Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 4: Geographical addressing and forwarding for point-to-point and point-to-multipoint communications; Sub-part 1: Media-Independent Functionality

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/15

Obsahuje: EN 302 636-4-1 V1.2.1:2014

120089

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2015
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

ETSI EN 302 636-4-1 V1.2.1 (2014-07)



**Intelligent Transport Systems (ITS);
Vehicular Communications; GeoNetworking;
Part 4: Geographical addressing and forwarding for
point-to-point and point-to-multipoint communications;
Sub-part 1: Media-Independent Functionality**

ReferenceREN/ITS-0030035

Keywordsautonomic networking, ITS, network, safety

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Intelligent Transport Systems (ITS).

The present document is part 4, sub-part 1 of a multi-part deliverable. Full details of the entire series can be found in part 1 [2].

National transposition dates	
Date of adoption of this EN:	21 July 2014
Date of latest announcement of this EN (doa):	31 October 2014
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 April 2015
Date of withdrawal of any conflicting National Standard (dow):	30 April 2016

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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Introduction

The GeoNetworking protocol is a network layer protocol that provides packet routing in an ad hoc network. It makes use of geographical positions for packet transport. GeoNetworking supports the communication among individual ITS stations as well as the distribution of packets in geographical areas.

GeoNetworking can be executed over different ITS access technologies for short-range wireless technologies, such as ITS-G5 and infrared. The ITS access technologies for short-range wireless technologies have many technical commonalities, but also differences. In order to reuse the GeoNetworking protocol specification for multiple ITS access technologies, the specification is separated into media-independent and media-dependent functionalities.

Media-independent functionalities are those which are common to all ITS access technologies for short-range wireless communication to be used for GeoNetworking. The media-dependent functionalities extend the media-independent functionality for a specific ITS access technology. Therefore, the GeoNetworking protocol specification consists of the standard for media-independent functionality and at least one standard for media-dependent functionality. However, it should be noted that the media-dependent extensions do not represent distinct protocol entities.

1 Scope

The present document specifies the media-independent functionality of the GeoNetworking protocol.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ETSI EN 302 665: "Intelligent Transport Systems (ITS); Communications Architecture".
- [2] ETSI EN 302 636-1: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 1: Requirements".
- [3] ETSI EN 302 636-2: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 2: Scenarios".
- [4] ETSI TS 102 636-3: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 3: Network architecture".
- [5] ETSI EN 302 636-5-1: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 5: Transport Protocols; Sub-part 1: Basic Transport Protocol".
- [6] ETSI EN 302 636-6-1: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 6: Internet Integration; Sub-part 1: Transmission of IPv6 Packets over GeoNetworking Protocols".
- [7] ETSI EN 302 931: "Intelligent Transport Systems (ITS); Vehicular Communications; Geographical Area Definition".
- [8] Annex to ITU Operational Bulletin No. 741 - 1.VI.2001: "Complement to Recommendation ITU-T E.212 (11/98)".

NOTE: Available at: <http://www.itu.int/ITU/>.

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI EN 302 663: "Intelligent Transport Systems (ITS); Access layer specification for Intelligent Transport Systems operating in the 5 GHz frequency band".
- [i.2] ETSI TS 102 636-4-2: "Intelligent Transport Systems (ITS); Vehicular Communications; GeoNetworking; Part 4: Geographical addressing and forwarding for point-to-point and point-to-multipoint communications; Sub-part 2: Media-dependent functionalities for ITS-G5".

- [i.3] ETSI TS 102 731: "Intelligent Transport Systems (ITS); Security; Security Services and Architecture".
- [i.4] ETSI TS 102 723-8: "Intelligent Transport Systems (ITS); OSI cross-layer topics; Part 8: Interface between security entity and network and transport layer".
- [i.5] ETSI TS 103 097: "Intelligent Transport Systems (ITS); Security; Security header and certificate formats".
- [i.6] ETSI TS 102 890-3: "Intelligent Transport System (ITS); Facilities layer function; Position and time facility specification".
- [i.7] ETSI TS 102 894-2: "Intelligent Transport Systems (ITS); Users and applications requirements; Part 2: Applications and facilities layer common data dictionary".
- [i.8] ISO/IEC 8802-2:1998: "Information technology-Telecommunications and information exchange between systems-Local and metropolitan area networks-Specific requirements - Part 2: Logical link control".
- [i.9] IETF RFC 2578: "Structure of Management Information Version 2 (SMIPv2)".
- [i.10] National Imagery and Mapping Agency (NIMA), US Department of Defense: "World Geodetic System 1984 - Its Definition and Relation with Local Geodetic Systems", Third Edition - Amendment 1, NIMA TR 8350.2.
- [i.11] IETF RFC 2579: "Textual Conventions for SMIPv2".
- [i.12] IEEE 802.3:2008: "IEEE Standard for Information Technology - Telecommunications and information exchange between systems-Local and metropolitan area networks - Specific requirements - Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications".

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