ETSI TR 101 612 V1.1.1 (2014-09)

Intelligent Transport Systems (ITS);
Cross Layer DCC Management Entity for operation in the ITS G5A and ITS G5B medium;
Report on Cross layer DCC algorithms and performance evaluation

Reference
DTR/ITS-0020055

Keywords
ITS, Spectral Management

ETSI

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Contents

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Intelligent Transport Systems (ITS).

Modal verbs terminology

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1 Scope

The present document provides a preliminary technical overview of the cross-layer decentralized congestion control (DCC) architecture to be implemented in the ITS-S. It describes DCC functions and testable DCC limits and includes initial performance evaluation results based on simulations. In addition, reference scenarios and parameters used for performance evaluation purposes and the corresponding evaluation metrics are summarized. It will be completed by a Technical Report with validation set-up and results. Both will serve as a basis for the Technical Specification of the Cross Layer DCC control entity in the ITS G5A and ITS G5B media.

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 reference 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.

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2.1 Normative references

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

Not applicable.

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] IEEE 802.11-2012: "IEEE Wireless Local Access Network - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications".

[i.2] ETSI TS 102 687: "Intelligent Transport Systems (ITS); Decentralized Congestion Control Mechanisms for Intelligent Transport Systems operating in the 5 GHz range; Access layer part".

[i.3] ETSI EN 302 636-4-1: "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".

[i.4] 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.5] ETSI TS 102 723-3: "Intelligent Transport Systems (ITS); OSI cross-layer topics; Part 3: Interface between management entity and access layer".

[i.6] ETSI TS 102 723-4: "Intelligent Transport Systems (ITS); OSI cross-layer topics; Part 4: Interface between management entity and networking & transport layer".

[i.7] ETSI TS 102 723-5: "Intelligent Transport Systems (ITS); OSI cross-layer topics; Part 5: Interface between management entity and facilities layer".

[i.8] ETSI TS 102 723-10: "Intelligent Transport Systems (ITS); OSI cross-layer topics; Part 10: Interface between access layer and networking & transport layer".