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Information technology — Telecommunications and information exchange between systems — Coexistence mechanism for broadband powerline communication technologies

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Foreword

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

ISO/IEC 12139-1 was published in July 2009. There were also standardization activities on high speed powerline communication in other standards development organizations; IEEE P1901 WG and ITU-T SG15. IEEE Std 1901-2010 was approved in October 2010, and G.hn(G.9960/G.9961) consented in ITU-T in June 2010.

Since powerline is a shared medium of frequency, the different-standard-devices which use powerline could cause harmful interference to each other when used in the same vicinity. Therefore, it is important to study harmonized coexistence to prevent possible harmful interference between devices that adopt standards from different standards organizations.

An IEC SMB decision 135/18 in June 2009 requested that ISO/IEC JTC1/SC 6 initiate maintenance work rapidly to solve any coexistence problems with the G.hn(G.9960) series of ITU-T Recommendations and any other relevant standards from the IEC or elsewhere.

To solve the coexistence problem, ISO/IEC JTC1/SC 6 established a Study Group on High Speed PLC Harmonization (SGPLC) among High Speed PLC International Standards at their meeting in January 2010. The final goal of SGPLC was to achieve harmonized coexistence not only between ISO/IEC 12139-1 and ITU-T G.9960 but between ISO/IEC 12139-1 and IEEE Std 1901-2010. The study report was presented and was approved for its results.

In this document, to guarantee backward compatibility with the ISP (Inter System Protocol) of IEEE Std 1901-2010, time domain multiplex general resource allocation is extended to support another non-interoperable in-home system such as ISO/IEC 12139-1 based powerline communication system while the maximum number of non-interoperable systems supported at the same time remains unchanged as four.

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Information technology — Telecommunications and information exchange between systems — Coexistence mechanism for broadband powerline communication technologies

1 Scope

This document specifies the coexistence mechanism for various broadband powerline communication systems. By using the coexistence mechanism, possible harmful interference between different standard-based high-speed powerline communication systems can be avoided.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEEE Std 1901-2010, *IEEE Standard for Broadband over Power Line Networks: Medium Access Control and Physical Layer Specifications*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Abbreviation

CP	coexistence protocol
FDM	frequency domain multiplex
IH	in-home
ISP	inter-system protocol
TDM	time domain multiplex

5 Coexistence protocol

5.1 General

This Clause specifies the coexistence protocol, which is part of the coexistence mechanism. The coexistence protocol (CP) is meant to share time or frequency domain resources for different non-interoperable systems, up to four on the same powerline at a time. Except for the number of non-interoperable systems and its related changes (see IEEE Std 1901-2010, 16.5.2), the rest of the CP is the same as the inter-system protocol (ISP) as specified in IEEE Std 1901-2010, 16 and ITU-T

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