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Interoperability framework requirement specification

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Spécification d'exigences cadre d'interopérabilité

Rahmenspezifikation für Interoperabilitätsanforderungen (IFRS)

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Foreword

This document (CLC/TS 50560:2014) has been prepared by CLC/TC 205, "Home and Building Electronic Systems (HBES)".

This document supersedes CWA 50560:2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

Introduction

The objective of this Technical Specification, the Interoperability Framework Requirements Specification (IFRS), is to specify a methodology that will give consumers the confidence to buy products from different companies both now and in the future, knowing that they will operate together.

Achieving this requires several phases of standardisation to ensure integration from the physical connectors to the way systems function. There are three phases of integration:

- **Co-existence** - where different systems can operate in the same environment without hindering each other's' operation;
- **Interworking** - where different technologies are connected together to transfer data end-to-end. It is primarily a technical solution encompassing connectors, protocols, bridges, etc. ;
- I**nteroperability** - where different application functions are able use the shared information in a consistent way. This requires interworking as a building block as well as coexistence, and adds business rules, processes, and security provisions that enable applications to be joined together.

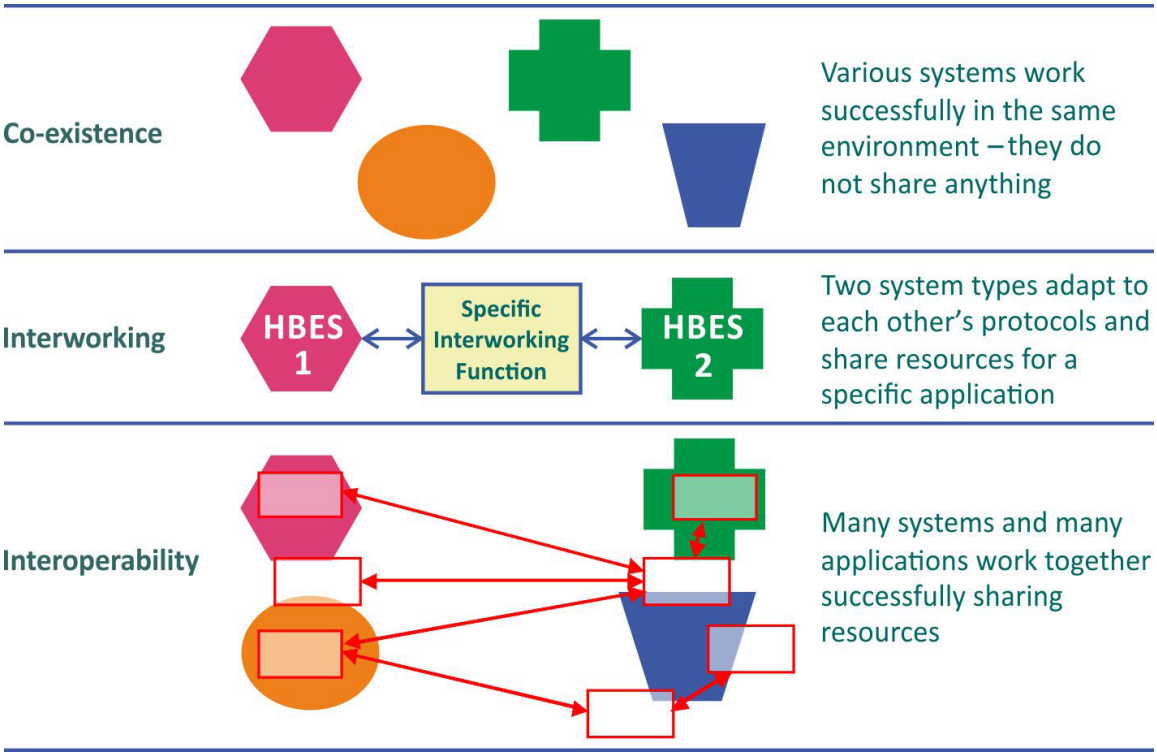

Figure 1

The Interoperability Framework Requirements Specification, IFRS, addresses the third of these terms. It provides a common set of rules to enable products that use different standards to interoperate when they are present in an installation.

This TS covers four high level functional activities: discovery, configuration, operations and system management. It puts forward a common set of requirements that if complied with, and if coexistence and interworking are assured, will enable interoperability. It does not address co-existence or interworking on the basis that this is achieved by technology standards.

Interoperability is provided by alliances of commercial businesses (and there are several such alliances), but to ensure interoperability customers are limited to purchasing products from members of the alliance. This TS acknowledges the work and the value of such alliances but specifically addresses the ability for customers to purchase products and services from competing alliances and still achieve interoperability. In doing so it expects to increase the market for those alliances that conform to the IFRS as customers will purchase their products with greater freedom of choice and confidence that they will work.

1 Scope

This Technical Specification contains a specification of an Interoperability Requirements Framework, specifying seven levels of interoperability, based on four groups of interoperability steps specified by five types of interaction, plus a methodology based on conformance clauses for satisfying requirements related to the claimed level of interoperability of devices installed in a Home and Building Electronic System (HBES, HES).

It is applicable to installations of a single type of HBES, or that interconnect two or more dissimilar HBESs. Within a HBES of a single type any of its capabilities for service, applications and connectivity topology can be used. Interconnection technologies used to interconnect dissimilar HBES are similarly unconstrained.

For applicable installations, the scope of its provisions applies to: the connection of devices to the various communications services to enable them to communicate end-to-end across internetworked media; the processes of discovery by which devices find out about each other and configuration to associate them with each other; and the generic aspects of application operation; and management.

This Technical Specification is not applicable to the interoperability required between devices to implement specific applications, such as heating or lighting control, energy management, or entertainment. The interoperability requirements defined in this Technical Specification are necessary for such application interoperability but not sufficient. This Technical Specification does not define how measurements are made; nor the algorithms that receive, process and respond to them; nor the interaction between users, service providers, and the HBES application(s). This is the responsibility of experts and organisations that specialise in particular application domains.

2 Normative References

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ETSI/TS 101 761-2, *Broadband Radio Access Networks (BRAN);HIPERLAN Type 2; Data Link Control (DLC) Layer;Part 2: Radio Link Control (RLC) sublayer*

ETSI/TS 300 406:1995, *Methods for testing and Specification (MTS); Protocol and profile, conformance testing specifications; Standardization methodology*.

ISO/IEC 9646-1, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts*.

ISO/IEC 9646-7, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 7: Implementation Conformance Statements*

ITU X.800, *Data communication networks: Open systems interconnection (OSI); Security structure and applications - Security architecture for open systems interconnection for CITT applications*

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