Telecontrol equipment and systems - Part 5-6: Guidelines for conformance testing for the IEC 60870-5 companion standards

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60870-5-6:2009 sisaldab Euroopa standardi EN 60870-5-6:2009 ingliskeelset teksti.	This Estonian standard EVS-EN 60870-5-6:2009 consists of the English text of the European standard EN 60870-5-6:2009.
Standard on kinnitatud Eesti Standardikeskuse 31.07.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.07.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 25.06.2009.	Date of Availability of the European standard text 25.06.2009.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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English version

Telecontrol equipment and systems - Part 5-6: Guidelines for conformance testing for the EN 60870-5 companion standards

(IEC 60870-5-6:2006)

Matériels et systèmes de téléconduite - Partie 5-6: Recommandations pour les essais de conformité des normes compagnons de la EN 60870-5 (CEI 60870-5-6:2006)

Fernwirkeinrichtungen und -systeme - Teil 5-6: Richtlinien zur Konformitätsprüfung für die anwendungsbezogenen Normen der Reihe EN 60870-5 (IEC 60870-5-6:2006)

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

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Foreword

The text of the International Standard IEC 60870-5-6:2006, prepared by IEC TC 57, Power systems management and associated information exchange, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 60870-5-6 on 2009-06-01 without any modification.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2010-06-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2012-06-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60870-5-6:2006 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60870-5-101	NOTE	Harmonized as EN 60870-5-101:2003 (not modified).
IEC 60870-5-103	NOTE	Harmonized as EN 60870-5-103:1998 (not modified).
IEC 60870-5-104	NOTE	Harmonized as EN 60870-5-104:2006 (not modified).
ISO 9000	NOTE	Harmonized as EN ISO 9000:2005 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60870-5-1	-[1)]	Telecontrol equipment and systems - Part 5: Transmission protocols - Section 1: Transmission frame formats	EN 60870-5-1	1993[2)]
IEC 60870-5-2	-[1)]	Telecontrol equipment and systems - Part 5: Transmission protocols - Section 2: Link transmission procedures	EN 60870-5-2	1993[2)]
IEC 60870-5-3	-[1)]	Telecontrol equipment and systems - Part 5: Transmission protocols - Section 3: General structure of application data	EN 60870-5-3	1992[2)]
IEC 60870-5-4	-[1)]	Telecontrol equipment and systems - Part 5: Transmission protocols - Section 4: Definition and coding of application information elements	EN 60870-5-4	1993[2)]
IEC 60870-5-5	-[1)]	Telecontrol equipment and systems - Part 5: Transmission protocols - Section 5: Basic application functions	EN 60870-5-5	1995[2)]
ISO/IEC 9646	Series	Information technology - Open Systems Interconnection - Conformance testing methodology and framework	-	-

[1)] Undated reference.

[2)] Valid edition at date of issue.

CONTENTS

INTRODUCTION

This part of IEC 60870-5 specifies methods and procedures for conformance testing of Telecontrol equipment or systems using IEC 60870-5 standard(s).

This part of IEC 60870-5 contains general subjects and guidelines for the test environment. Detailed test cases, mandatory and optional mandatory test cases for the companion standards will become available as technical specifications (IEC 60870-5-60x).

Tests according to EMC requirements or related to environmental and organisational conditions are beyond the scope of this part of IEC 60870-5. This part of IEC 60870-5 only focuses on the protocol implementation and the related system functionality necessary to validate the protocol implementation.

TELECONTROL EQUIPMENT AND SYSTEMS –

Part 5-6: Guidelines for conformance testing for the IEC 60870-5 companion standards

1 Scope

This part of the IEC 60870-5 series specifies methods for conformance testing of telecontrol equipment, amongst Substation Automation Systems (SAS) and telecontrol systems, including front-end functions of SCADA.

The use of this part of IEC 60870-5 facilitates interoperability by providing a standard method of testing protocol implementations, but it does not guarantee interoperability of devices. It is expected that using this part of IEC 60870-5 during testing will minimize the risk of non-interoperability.

The goal of this part of IEC 60870-5 is to enable unambiguous and standardised evaluation of IEC 60870-5 companion standard protocol implementations. The guidelines and conditions for the testing environment are described in this part of IEC 60870-5. The detailed test cases per companion standard, containing among others mandatory and optional mandatory test cases per Basic Application Function, ASDU and transmission procedure, will become available as technical specifications (IEC 60870-5-60x). Other functionalities may need test cases, but this is beyond the scope of this part of IEC 60870-5.

This part of IEC 60870-5 deals mainly with communication conformance testing; therefore other requirements, such as safety or EMC are not covered. These requirements are covered by other standards (if applicable) and the proof of compliance for these topics should be done according to those standards.

2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60870-5-1, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section One: Transmission frame formats*

IEC 60870-5-2, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 2: Link transmission procedures*

IEC 60870-5-3, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 3: General structure of application data*

IEC 60870-5-4, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 4: Definition and coding of application information elements*

IEC 60870-5-5, *Telecontrol equipment and systems – Part 5: Transmission protocols – Section 5: Basic application functions*

ISO/IEC 9646 (all parts), *Information technology – Open Systems Interconnection – Conformance testing methodology and framework*