Power systems management and associated information exchange - Data and communications security - Part 3: Communication network and system security - Profiles including TCP/IP

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NATIONAL FOREWORD

See Eesti standard EVS-EN 62351-3:2014 sisaldab Euroopa standardi EN 62351-3:2014 ingliskeelset teksti.	This Estonian standard EVS-EN 62351-3:2014 consists of the English text of the European standard EN 62351-3:2014.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.12.2014.	Date of Availability of the European standard is 12.12.2014.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Power systems management and associated information exchange - Data and communications security - Part 3: Communication network and system security - Profiles including TCP/IP
(IEC 62351-3:2014)

Gestion des systèmes de puissance et échanges d'informations associés - Sécurité des communications et des données - Partie 3: Sécurité des réseaux et des systèmes de communication - Profils comprenant TCP/IP
(CEI 62351-3:2014)

Management von Systemen der Energietechnik und zugehöriger Datenaustausch - Daten- und Kommunikationssicherheit - Teil 3: Sicherheit von Kommunikationsnetzen und Systemen - Profile einschließlich TCP/IP
(IEC 62351-3:2014)

This European Standard was approved by CENELEC on 2014-12-02. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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Foreword

The text of document 57/1498/FDIS, future edition 1 of IEC 62351-3, prepared by IEC/TC 57 "Power systems management and associated information exchange" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62351-3:2014.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-09-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-12-02

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.

Endorsement notice

The text of the International Standard IEC 62351-3:2014 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC/TS 62351-1	2007	Power systems management and associated information exchange - Data and communications security - Part 1: Communication network and system security - Introduction to security issues	-	-
IEC/TS 62351-2	2008	Power systems management and associated information exchange - Data and communications security - Part 2: Glossary of terms	-	-
IEC/TS 62351-9	- [1)]	Power systems management and associated information exchange - Data and communications security - Part 9: Key management	-	-
ISO/IEC 9594-8	-	Information technology - Open Systems Interconnection - The Directory - Part 8: Public-key and attribute certificate frameworks	-	-
RFC 4492	2006	Elliptic Curve Cryptography (ECC) Cipher Suites for Transport Layer Security (TLS)	-	-
RFC 5246	2008	The Transport Layer Security (TLS) Protocol Version 1.2	-	-
RFC 5280	2008	Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile	-	-
RFC 5746	2010	Transport Layer Security (TLS) Renegotiation Indication Extension	-	-
RFC 6066	2011 [2)]	Transport Layer Security (TLS) Extensions: Extension Definitions	-	-
RFC 6176	2011	Prohibiting Secure Sockets Layer (SSL) Version 2.0	-	-

[1)] At draft stage.

[2)] Supersedes RFC 4366:2006, *Transport Layer Security (TLS) Extensions*.

CONTENTS

POWER SYSTEMS MANAGEMENT AND ASSOCIATED INFORMATION EXCHANGE – DATA AND COMMUNICATIONS SECURITY –

Part 3: Communication network and system security – Profiles including TCP/IP

1 Scope

1.1 Scope

This part of IEC 62351 specifies how to provide confidentiality, integrity protection, and message level authentication for SCADA and telecontrol protocols that make use of TCP/IP as a message transport layer when cyber-security is required.

Although there are many possible solutions to secure TCP/IP, the particular scope of this part is to provide security between communicating entities at either end of a TCP/IP connection within the end communicating entities. The use and specification of intervening external security devices (e.g. “bump-in-the-wire”) are considered out-of-scope.

This part of IEC 62351 specifies how to secure TCP/IP-based protocols through constraints on the specification of the messages, procedures, and algorithms of Transport Layer Security (TLS) (defined in RFC 5246) so that they are applicable to the telecontrol environment of the IEC. TLS is applied to protect the TCP communication. It is intended that this standard be referenced as a normative part of other IEC standards that have the need for providing security for their TCP/IP-based protocol. However, it is up to the individual protocol security initiatives to decide if this standard is to be referenced.

This part of IEC 62351 reflects the security requirements of the IEC power systems management protocols. Should other standards bring forward new requirements, this standard may need to be revised.

1.2 Intended Audience

The initial audience for this specification is intended to be experts developing or making use of IEC protocols in the field of power systems management and associated information exchange. For the measures described in this specification to take effect, they must be accepted and referenced by the specifications for the protocols themselves, where the protocols make use of TCP/IP security. This document is written to enable that process.

The subsequent audience for this specification is intended to be the developers of products that implement these protocols.

Portions of this specification may also be of use to managers and executives in order to understand the purpose and requirements of the work.

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.

IEC TS 62351-1:2007, *Power systems management and associated information exchange – Data and communications security – Part 1: Communication network and system security – Introduction to security issues*

IEC TS 62351-2:2008, *Power systems management and associated information exchange – Data and communications security – Part 2: Glossary of terms*