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Power systems management and associated information exchange Data and communications security - Part 11: Security for XML documents

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 07/17

Obsahuje: EN 62351-11:2017, IEC 62351-11:2016

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Podľa zákona č. 264/1999 Z. z. o technických požiadavkách na výrobky a o posudzovaní zhody a o zmene a doplnení niektorých zákonov v znení neskorších predpisov sa slovenská technická norma a časti slovenskej technickej normy môžu rozmnožovať alebo rozširovať len so súhlasom slovenského národného normalizačného orgánu.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 62351-11

February 2017

ICS 33.200

English Version

**Power systems management and associated information
exchange - Data and communications security - Part 11:
Security for XML documents
(IEC 62351-11:2016)**

Gestion des systèmes de puissance et échanges
d'informations associés - Sécurité des communications et
des données - Partie 11: Sécurité des documents XML
(IEC 62351-11:2016)

Energiemanagementsysteme und zugehöriger
Datenaustausch - IT-Sicherheit für Daten und
Kommunikation - Teil 11: Sicherheit für XML-Dateien
(IEC 62351-11:2016)

This European Standard was approved by CENELEC on 2016-11-02. 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.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 57/1753/FDIS, future edition 1 of IEC 62351-11, 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 62351-11:2017.

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) 2017-08-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-02-10

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

IEC 61850-6	NOTE	Harmonized as EN 61850-6.
IEC 61970-552	NOTE	Harmonized as EN 61970-552.
IEC 62351-1	NOTE	Harmonized as EN 62351-1.
IEC 62351-3	NOTE	Harmonized as EN 62351-3.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62351-9	-	Power systems management and-associated information exchange - Data and communications security - Part 9: Cyber security key management for power system equipment		-
IEC/TS 62351-2	-	Power systems management and-associated information exchange - Data and communications security - Part 2: Glossary of terms		-
IEC/TS 62351-8	-	Power systems management and-associated information exchange - Data and communications security - Part 8: Role-based access control		-
IETF RFC 6931	-	Additional XML Security Uniform Resource-Identifiers (URIs)		-
W3C Recommended Canonical XML 1.0	-		-	-
W3C Required- Canonical XML1.0	-		-	-
W3C XML 1.1	-	Signature Syntax and Processing_-- Version 1.1		-
W3C Signature	XML-	XML Signature Syntax and Processing	-	-



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NORME INTERNATIONALE



**Power systems management and associated information exchange – Data and communications security –
Part 11: Security for XML documents**

**Gestion des systèmes de puissance et échanges d'informations associés –
Sécurité des communications et des données –
Partie 11: Sécurité des documents XML**



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INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Power systems management and associated information exchange – Data and communications security –
Part 11: Security for XML documents**

**Gestion des systèmes de puissance et échanges d'informations associés –
Sécurité des communications et des données –
Partie 11: Sécurité des documents XML**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 11: Security for XML documents

FOREWORD

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International Standard IEC 62351-11 has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

The text of this standard is based on the following documents:

FDIS	Report on voting
57/1753/FDIS	57/1774/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62351 series, published under the general title *Power systems management and associated information exchange – Data and communications security*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

Part 11: Security for XML documents

1 Scope

This part of IEC 62351 specifies schema, procedures, and algorithms for securing XML documents that are used within the scope of the IEC as well as documents in other domains (e.g. IEEE, proprietary, etc.). This part is intended to be referenced by standards if secure exchanges are required, unless there is an agreement between parties in order to use other recognized secure exchange mechanisms.

This part of IEC 62351 utilizes well-known W3C standards for XML document security and provides profiling of these standards and additional extensions. The IEC 62351-11 extensions provide the capability to provide:

- Header: the header contains information relevant to the creation of the secured document such as the Date and Time when IEC 62351-11 was created.
- A choice of encapsulating the original XML document in an encrypted (Encrypted) or non-encrypted (nonEncrypted) format. If encryption is chosen, there is a mechanism provided to express the information required to actually perform encryption in an interoperable manner (EncryptionInfo).
- AccessControl: a mechanism to express access control information regarding information contained in the original XML document.
- Body: is used to contain the original XML document that is being encapsulated.
- Signature: a signature that can be used for the purposes of authentication and tamper detection.

The general structure is shown in Figure 1.

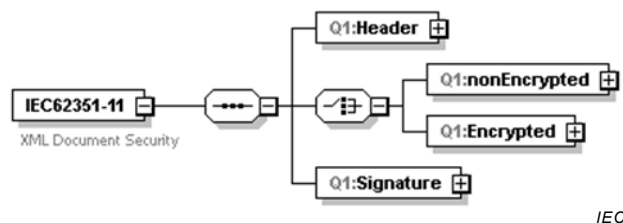


Figure 1 – Overview of IEC 62351-11 structure

For the measures described in this document to take effect, they must be accepted and referenced by the specifications themselves. This document is written to enable that process.

The subsequent audience for this part of IEC 62351 is intended to be the developers of products that implement these specifications.

Portions of this part of IEC 62351 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 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.

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

IEC TS 62351-8, *Power systems management and associated information exchange – Data and communications security – Part 8: Role-based access control*

IEC TS 62351-9, *Power systems management and associated information exchange – Data and communications security – Part 9: Cyber security key management for power system equipment*

Recommended Canonical XML1.0 with comments, W3C,
<http://www.w3.org/TR/2001/REC-xml-c14n-20010315#WithComments>

Required Canonical XML 1.0, Omits comments, W3C,
<http://www.w3.org/TR/2001/REC-xml-c14n-20010315>

RFC 6931, *Additional XML Security Uniform Resource Identifiers (URIs)*

XML Encryption Syntax and Processing Version 1.1 April 11, 2013,
<http://www.w3.org/TR/xmlenc-core1/>

XML Signature Syntax and Processing W3C Recommendation 10 June 2008,
<http://www.w3.org/TR/2008/REC-xmldsig-core-20080610/>

koniec náhľadu – text ďalej pokračuje v platenej verzii STN