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Power systems management and associated information exchange – Data and communications security –
Part 100-3: Conformance test cases for IEC 62351-3, the secure communication extension for profiles including TCP/IP

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC TS 62351-100-3, which is a technical specification, has been prepared by IEC technical committee 57: Power systems management and associated information exchange.

The text of this technical specification is based on the following documents:

Enquiry draft	Report on voting
57/2090/DTS	57/2130/RVDTS

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

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

This document is to be read in conjunction with IEC 62351-3:2014, IEC 62351-3/AMD1:2018 and IEC62351-3/AMD2:2019.

A list of all parts in 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 document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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- withdrawn,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

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INTRODUCTION

This technical specification describes test cases for conformance testing of telecontrol equipment or systems integrating the IEC 62351-3 security extension for profiles including TCP/IP.

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

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1 Scope

This part of IEC 62351, which is a technical specification, describes test cases of data and communication security for telecontrol equipment, Substation Automation Systems [SAS] and telecontrol systems, including front-end functions of SCADA.

The goal of this document is to enable interoperability by providing a standard method of testing protocol implementations to verify that a device fulfils the requirement of IEC 62351-3. Note that conformity to IEC 62351-3 does not guarantee interoperability between devices using different implementations. It is expected that using this specification during testing will minimize the risk of non-interoperability. A basic condition for this interoperability is a passed conformance test of both devices.

The scope of this document is the specification of common available procedures and definitions for conformance and/or interoperability testing to ensure conformity to IEC 62351-3. The conformance test cases defined here are focused to verify the conformant integration of the underlying authentication/encryption protocol (TLS), as specified in IEC 62351-3, to protect TCP/IP based communications.

This document is not intended to test the underlying authentication/encryption protocol required by IEC 62351-3 to be implemented over TCP/IP (TLS). The conformance testing of the authentication/encryption protocol over TCP/IP is outside the scope of this document.

This document deals with data and communication security 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 is done according to these standards.

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.[1]

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

IEC 62351-3:2014, *Power systems management and associated information exchange – Data and communications security – Part 3: Communication network and system security – Profiles*

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[1] The base standard always takes precedence. In case of ambiguity between this technical specification and the base standards (IEC 62351-3), this part of IEC 62351 needs to be clarified or amended.

When testing, negative behavior is not described in the base standard, the behavior described in this document prevails and should be observed. The conformance statement produced after testing indicates any lack of conformance to either the test plan or the base standard.

including TCP/IP
IEC 62351-3:2014/AMD1:2018, IEC 62351-3:2014/AMD2:2019