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Power systems management and associated information exchange – Data and communications security

Part 90-3: Guidelines for network and system management

National foreword

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TECHNICAL REPORT



**Power systems management and associated information exchange – Data and communications security –
Part 90-3: Guidelines for network and system management**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**POWER SYSTEMS MANAGEMENT AND ASSOCIATED INFORMATION
EXCHANGE – DATA AND COMMUNICATIONS SECURITY –****Part 90-3: Guidelines for network and system management**

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57/2255/DTR	57/2337/RVDTR

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

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

A list of all parts of the IEC 62351 series, 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

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- withdrawn,
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POWER SYSTEMS MANAGEMENT AND ASSOCIATED INFORMATION EXCHANGE – DATA AND COMMUNICATIONS SECURITY –

Part 90-3: Guidelines for network and system management

1 Scope

This part of IEC 62351, which is a technical report, provides guidelines for efficiently handling both IT and OT data in terms of their monitoring, classification and correlations on time to deduce any possible useful outcomes about the state of the power system.

The convergence of information technologies (IT) and operational technologies (OT) refers to the integration of the systems, processes and data associated with the domains of IT and OT. This document provides guidelines for a comprehensive security monitoring for power grid components based on IT/OT convergent systems. The emphasis is about the development of a methodology and a set of recommendations for utility operators to build a general monitoring framework based on the analysis of the data collected from different IT and OT systems through network management, traffic inspection, and system activity reading. As such, the monitoring framework that this document introduces relies on the integration of management and logging information obtained using IEC 62351-7 and IEC 62351-14, respectively. Further systems and data sources from IT and OT would be considered such as the data obtained, for instance, through the IT network management using the Simple Network Management Protocol (SNMP), the passive network monitoring, and the functional characterization of control and automation processes.

This document's recommendations include the implementation of data collection, filtering and correlation mechanisms. The development of data analytics algorithms is out of the scope of this document and would be left to utility operators and owners. Finally, applications of the general monitoring framework guidelines and recommendations are provided for different power grid environments, namely for IEC 61850 substations and for Distributed Energy Resources (DER) systems.

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 for 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 62351-1, *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, *Power systems management and associated information exchange – Data and communications security – Part 2: Glossary of terms*

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

IEC 62351-4, *Power systems management and associated information exchange – Data and communications security – Part 4: Profiles including MMS and derivatives*