

# INTERNATIONAL STANDARD



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



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INTERNATIONAL  
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

**Part 4: Profiles including MMS and derivatives**

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FDIS	Report on voting
57/2032/FDIS	57/2053/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.

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

## Part 4: Profiles including MMS and derivatives

### 1 Scope

#### 1.1 General

This part of IEC 62351 extends the scope of IEC TS 62351-4:2007 [1]<sup>1</sup> by specifying a compatibility mode that provides interoperability with implementation based on IEC TS 62351-4:2007 and by specifying extended capabilities referred to as native mode.

This part of IEC 62351 specifies security requirements both at the transport layer and at the application layer. While IEC TS 62351-4:2007 primarily provided some limited support at the application layer for authentication during handshake for the Manufacturing Message Specification (MMS) based applications, this document also provides support for extended integrity and authentication both for the handshake phase and for the data transfer phase. It provides for shared key management and data transfer encryption at the application layer and it provides security end-to-end (E2E) with zero or more intermediate entities. While IEC TS 62351-4:2007 only provides support for systems based on the MMS, i.e. systems using an Open Systems Interworking (OSI) protocol stack, this document also provides support for application protocols using other protocol stacks, e.g. an Internet protocol suite (see 4.1). This support is extended to protect application protocols using XML encoding. This extended security at the application layer is referred to as E2E-security.

In addition to E2E security, this part of IEC 62351 also provides mapping to environmental protocols carrying the security related information. Only OSI and XMPP environments are currently considered.

It is intended that this part of IEC 62351 be referenced as a normative part of standards that have a need for using application protocols, e.g., MMS, in a secure manner.

It is anticipated that there are implementations, in particular Inter-Control Centre Communications Protocol (ICCP) implementations that are dependent on the IEC TS 62351-4:2007 specifications of the T-profile and the A-security-profile. The specifications from IEC TS 62351-4:2007 are therefore included in this part of IEC 62351. Implementations supporting these specifications will interwork with implementation based on IEC TS 62351-4:2007.

NOTE The A-security-profile is in the strict sense not a profile, but the term is here kept for historical reasons.

This document represents a set of mandatory and optional security specifications to be implemented to protect application protocols.

The initial audience for this document is the members of the working groups developing or making use of protocols. For the measures described in this part of IEC 62351 to take effect, they shall be accepted and referenced by the specifications for the protocols themselves.

The subsequent audience for this document is the developers of products that implement these protocols and the end user that want to specify requirements for its own environment.

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<sup>1</sup> Numbers in square brackets refer to the bibliography.