

TECHNICAL SPECIFICATION



**Framework for energy market communications –
Part 503: Market data exchanges guidelines for the IEC 62325-351 profile**



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Part 503: Market data exchanges guidelines for the IEC 62325-351 profile**

INTERNATIONAL
ELECTROTECHNICAL
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –**Part 503: Market data exchanges guidelines for the IEC 62325-351 profile**

FOREWORD

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- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

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

IEC/TS 62325-503, 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:

DTS	Report on voting
57/1370/DTS	57/1401/RVC

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

A list of all parts in the IEC 62325 series, published under the general title *Framework for energy market communications*, 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 web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This Technical Specification is part of the IEC 62325 series which defines protocols for deregulated energy market communications.

The principal objective of the IEC 62325 series is to produce standards which facilitate the integration of market application software developed independently by different vendors into a market management system, between market management systems and market participant systems. This is accomplished by defining message exchanges to enable these applications or systems access to public data and exchange information independent of how such information is represented internally.

The common information model (CIM) specifies the basis for the semantics for the message exchange. The European style market profile specifications that support the European style design electricity markets are defined in IEC 62325-351. These electricity markets are based on the European regulations, and on the concepts of third party access and zonal markets. The IEC 62325-451-n International standards specify the content of the messages exchanged.

The purpose of this technical specification is to provide the guidelines to exchange the above mentioned messages. A European market participant (trader, distribution utilities, etc.) could benefit from a single, common, harmonized and secure platform for message exchange with the European Transmission System Operators (TSOs); thus reducing the cost of building different IT platforms to interface with all the parties involved.

This Technical Specification represents an important step in facilitating parties entering into electricity markets other than their national ones; they could use the same or similar information exchange system to participate in more than one market all over Europe.

This Technical Specification was originally based upon the work of the European Network of Transmission System Operators (ENTSO-E) Working Group EDI.

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FRAMEWORK FOR ENERGY MARKET COMMUNICATIONS –

Part 503: Market data exchanges guidelines for the IEC 62325-351 profile

1 Scope

This technical specification is for European electricity markets.

This document specifies a standard for a communication platform which every Transmission System Operator (TSO) in Europe may use to reliably and securely exchange documents for the energy market. Consequently a European market participant (trader, distribution utilities, etc.) could benefit from a single, common, harmonized and secure platform for message exchange with the different TSOs; thus reducing the cost of building different IT platforms to interface with all the parties involved. This also represents an important step in facilitating parties entering into markets other than their national ones.

From now on the acronym “MADES” (MArket Data ExchangeS) will be used to designate these Technical Specifications.

MADES is a specification for a decentralized common communication platform based on international IT protocol standards:

- From a business application (BA) perspective, MADES specifies software interfaces to exchange electronic documents with other BAs. Such interfaces mainly provide means to send and receive documents using a so-called “MADES network”. Every step of the delivery process is acknowledged, and the sender can request about the delivery status of a document. This is done through acknowledgement, which are messages returned back to the sender. This makes MADES networks usable for exchanging documents in business processes requiring reliable delivery.
- MADES also specifies all services for the business application (BA); the complexities of recipient localisation, recipient connection status, message routing and security are hidden from the connecting BA. MADES services include directory, authentication, encryption, signing, message tracking, message logging and temporary message storage.

The purpose of MADES is to create a data exchange standard comprised of standard protocols and utilizing IT best practices to create a mechanism for exchanging data over any TCP/IP communication network, in order to facilitate business to business information exchanges as described in IEC 62325-351 and the IEC 62325-451 series.

A MADES network acts as a post-office organization. The transported object is a “message” in which the sender document is securely repackaged in an envelope (i.e. a header) containing all the necessary information for tracking, transportation and delivery.

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 61970-2, *Energy management system application program interface (EMS-API) – Part 2: Glossary*

IETF RFC 1738, *Uniform resource locators (URL)*, <http://www.ietf.org/rfc/rfc1738.txt>

IETF RFC 3110, *RSA/SHA-1 SIGs and RSA KEYS in the domain name system (DNS)*, <http://www.ietf.org/rfc/rfc3110.txt>

IETF RFC 4122, *A universally unique identifier (UUID) URN namespace*, <http://www.ietf.org/rfc/rfc4122.txt>

ITU-T Recommendation X.509, *Information technology - Open systems interconnection - The directory: Public-key and attribute certificate frameworks*, <http://www.itu.int/rec/T-REC-X.509/en>

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61970-2 apply, as well as the following.

NOTE General glossary definitions can be found in IEC 60050, *International Electrotechnical Vocabulary*.

3.1

advanced encryption standard

AES

symmetric cryptographic algorithm

3.2

distinguish encoding rule

DER

format for X.509 digital certificates

3.3

European style market profile

ESMP

European style market profile for which this Technical Specification is designed

3.4

market data exchange standard

MADES

standard described in this document for the European market style market profile

3.5

profile

basic outline of all the information that is required to satisfy a specific environment

3.6

transmission system operator

TSO

company responsible for operating, maintaining and developing the transmission system for a control area and its interconnections