

# **IEC TS 62775**

Edition 1.0 2016-05

# TECHNICAL SPECIFICATION



Application guidelines – Technical and financial processes for implementing asset management systems

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 03.120.01; 03.120.10

ISBN 978-2-8322-3391-7

Warning! Make sure that you obtained this publication from an authorized distributor.

– 2 – IEC TS 62775:2016 © IEC 2016

# CONTENTS

F	OREWC	RD	4		
IN	ITRODU	ICTION	6		
1	Scop	e	7		
2	2 Normative references				
3	3 Terms and definitions				
4	Mana	agement systems environment	10		
	4.1	Overview	10		
	4.2	Benefits to asset management from integrating financial and technical			
		processes	10		
	4.3	ISO 5500x suite – Asset management	11		
	4.4	Systems engineering	11		
	4.4.1	Overview	11		
	4.4.2	Characteristics of a system	11		
	4.4.3	Application of ISO/IEC/IEEE 15288	12		
	4.4.4	System life cycle processes	12		
	4.5	IFRS and IAS standards	15		
	4.5.1	Overview	15		
	4.3.2	JEC dependebility quite	15		
	4.0		10		
	4.0.1	Dependability principles	10		
	4.0.2	Dependability management	10		
5	Tech	nical and financial standards for an AMS	10		
5	E 1	Integration of technical and financial standards for easet management			
	5.1 5.2	Relating AMS to systems anging oring			
	5.2 5.3	Mapping system life cycle processes to dependability standards and IEPS			
	5.5	and IAS standards	18		
6	Inten	ded use of the information provided in this Technical Specification	20		
Aı	nnex A (	(informative) International IERS and IAS information	21		
۸. ۸		(informative) Mapping ISO 55001 AMS requirements to ISO/IEC/IEEE 15288			
sy	stem lif	e cycle processes	23		
Ai	nnex C	(informative) Mapping ISO/IEC/IEEE 15288 processes to IEC dependability			
ar	nd IFRS	and IAS standards	24		
Bibliography					
	0 1				
Fi	aure 1 -	- System life cycle processes – ISO/IEC/IEEE 15288:2015	14		
 Ei	guro 1		18		
Figure 2 – Elements of an Amo					
FI	gure 3 -	- Set of technical processes used for managing assets	19		
Та	able A.1	– International IFRS and IAS information	21		
Table B.1 – Mapping ISO 55001 AMS requirements to ISO/IEC/IEEE 15288 system life					
су	cle pro	Cesses	23		
Та	able C.1	– Agreement processes	24		
Table C.2 – Organizational project enabling processes			25		
			-		

IEC TS 62775:2016 © IEC 2016

## - 3 -

Table C.3 – Technical management processes	26
Table C.4 – Technical processes (continued)	28

- 4 -

IEC TS 62775:2016 © IEC 2016

#### INTERNATIONAL ELECTROTECHNICAL COMMISSION

#### APPLICATION GUIDELINES – TECHNICAL AND FINANCIAL PROCESSES FOR IMPLEMENTING ASSET MANAGEMENT SYSTEMS

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a Technical Specification when

- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- 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 62775, which is a Technical Specification, has been prepared by IEC technical committee 56: Dependability.

IEC TS 62775:2016 © IEC 2016

- 5 -

The text of this Technical Specification is based on the following documents:

Enquiry draft	Report on voting
56/1644/DTS	56/1675/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.

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

- 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.

- 6 -

IEC TS 62775:2016 © IEC 2016

#### INTRODUCTION

Asset management is a multi-disciplinary business activity comprising financial, technical and risk components. Effective control and governance of assets by organizations is essential to realizing value from their use through the management of risk. The value derived through the use of assets is determined by the organization.

The organization's decision-making processes are effective when they address technical and financial risks together and when those processes achieve a 'desired balance of cost, risk and performance'- as required by the ISO 5500x asset management suite. Thus, the processes developed within the asset management system (AMS) need to integrate financial and accounting procedures with technical and management activities, using risk based decision making.

The ISO 5500x asset management suite of standards defines the principles of asset management and documents the requirements for an AMS that implements those principles. However, ISO 55001 explicitly excludes information necessary to implement the technical and financial processes in support of the management of assets.

The IEC dependability suite of standards provide guidance on technical processes and techniques that achieve desired availability, reliability, maintainability and supportability of assets, products and systems. Systems engineering standards describe the life cycle of systems and define the processes needed for the engineering management of a system while the International Financial Reporting Standards (IFRS) provides a suite of globally accepted international financial reporting standards and a suite of supporting accounting standards in the form of the International Accounting Standards (IAS).

This Technical Specification demonstrates the relationship between the ISO AMS standards, the ISO/IEC/IEEE systems engineering standards, the IEC dependability standards and the IFRS and IAS financial standards.

IEC TS 62775:2016 © IEC 2016

- 7 -

### APPLICATION GUIDELINES – TECHNICAL AND FINANCIAL PROCESSES FOR IMPLEMENTING ASSET MANAGEMENT SYSTEMS

#### 1 Scope

IEC 62775, which is a Technical Specification, shows how the IEC dependability suite of standards, systems engineering and the IFRS and IAS standards can support the requirements of asset management, as described by the ISO 5500x suite of standards.

This Technical Specification therefore provides

- a brief introduction to asset management and the requirements for an AMS,
- a description of the benefits from the use of an established and common set of AMS processes and procedures, tools and techniques to manage assets, and
- a description of the relationships between the AMS and the tools and techniques, processes and procedures of
  - ISO/IEC/IEEE 15288:2015, Systems and software engineering System lifecycle processes,
  - IEC dependability standards in particular IEC 60300-3-15, and
  - relevant IFRS and supporting IAS standards.

This Technical Specification is intended for

- asset managers who wish to identify and implement technical and financial processes within an AMS, using dependability techniques and IFRS and IAS standards respectively, and
- systems and dependability engineers who need to apply their technical processes and techniques within an AMS.

#### 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.

ISO 55001:2014, Asset management – Management systems – Requirements