



SLOVENSKI STANDARD
oSIST prEN ISO 17666:2016
01-februar-2016

Vesoljski sistemi - Obvladovanje tveganja (ISO/DIS 17666:2015)

Space systems - Risk management (ISO/DIS 17666:2015)

Systèmes spatiaux - Management des risques (ISO/DIS 17666:2015)

Ta slovenski standard je istoveten z: prEN ISO 17666

[oSIST prEN ISO 17666:2016](https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016)

<https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016>

ICS:

03.100.01	Organizacija in vodenje podjetja na splošno	Company organization and management in general
49.140	Vesoljski sistemi in operacije	Space systems and operations

oSIST prEN ISO 17666:2016

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN ISO 17666:2016](https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016)

<https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016>

DRAFT INTERNATIONAL STANDARD

ISO/DIS 17666

ISO/TC 20/SC 14

Secretariat: ANSI

Voting begins on:
2015-11-19Voting terminates on:
2016-02-19

Space systems — Risk management

Systèmes spatiaux — Management des risques

ICS: 49.140

iTeh STANDARD PREVIEW (standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016>

ISO/CEN PARALLEL PROCESSING

This draft has been developed within the International Organization for Standardization (ISO), and processed under the **ISO lead** mode of collaboration as defined in the Vienna Agreement.

This draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel five month enquiry.

Should this draft be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month approval vote in ISO and formal vote in CEN.

To expedite distribution, this document is circulated as received from the committee secretariat. ISO Central Secretariat work of editing and text composition will be undertaken at publication stage.

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.



Reference number
ISO/DIS 17666:2015(E)

© ISO 2015

iTeh STANDARD PREVIEW (standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	Error! Bookmark not defined.
Introduction	Error! Bookmark not defined.
1 Scope	1
2 Terms, definitions and abbreviated terms	1
3 Principles of risk management	3
4 The risk management process	4
5 Risk management implementation	10
6 Risk management requirements	12
Annex A (informative) Risk register example and ranked risk log example	16
Annex B (informative) Risk Management Plan (DRD)	18
Bibliography	20

iTeh STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016>

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17666 was prepared by the Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 14, *Space systems and operations*.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[oSIST prEN ISO 17666:2016
https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016](https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016)

Introduction

Risks are a threat to the project success because they have negative effects on the project cost, schedule and technical performance, but appropriate practices of controlling risks can also present new opportunities with positive impact.

The objective of project risk management is to identify, assess, reduce, accept, and control space project risks in a systematic, proactive, comprehensive, and cost-effective manner, taking into account the project's technical and programmatic constraints. Risk is considered tradable against the conventional known project resources within the management, programmatic (e.g. cost, schedule), and technical (e.g. mass, power, dependability, safety) domains. The overall risk management in a project is an iterative process throughout the project life cycle, with iterations being determined by the project progress through the different project phases, and by changes to a given project baseline influencing project resources.

Risk management is implemented at each level of the customer-supplier network.

Known project practices for dealing with project risks, such as system and engineering analyses, analyses of safety, critical items, dependability, critical path, and cost, are an integral part of project risk management. Ranking of risks according to their criticality for the project success, allowing management attention to be directed to the essential issues, is a major objective of risk management.

The project actors agree on the extent of the risk management to be implemented into a given project depending on the project definition and characterization.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[oSIST prEN ISO 17666:2016](https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016)

<https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016>

1 Scope

This Standard defines, extending the requirements of ISO 14300-1, the principles and requirements for integrated risk management on a space project; it explains what is needed to implement a project-integrated risk management policy by any project actor, at any level (i.e. customer, first-level supplier, or lower-level suppliers).

This Standard contains a summary of the general risk management process, which is subdivided into four (4) basic steps and nine (9) tasks. The implementation can be tailored to project specific conditions.

The risk management process requires information exchange among all project domains and provides visibility over risks, with a ranking according to their criticality for the project; these risks are monitored and controlled according to the rules defined for the domains to which they belong.

The fields of application of this standard are all the space project phases. A definition of project phasing is given in ISO 14300-1.

When viewed from the perspective of a specific programme or project context, the requirements defined in this Standard should be tailored to match the genuine requirements of a particular profile and circumstances of a programme or project.

NOTE Tailoring is a process by which individual requirements or specifications, standards, and related documents are evaluated and made applicable to a specific programme or project by selection, and in some exceptional cases, modification and addition of requirements in the standards.

2 Terms, definitions and abbreviated terms

2.1 Terms and definitions

[oSIST prEN ISO 17666:2016](https://standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016)

standards.iteh.ai/catalog/standards/sist/93d44b86-2fc6-42c5-9b17-81ee95836017/osist-pren-iso-17666-2016

For the purposes of this Standard, the following terms and definitions apply.

2.1.1

acceptance of (risk)

decision to cope with consequences, should a risk scenario materialise

NOTE 1: A risk can be accepted when its magnitude is less than a given threshold, defined in the risk management policy.

NOTE 2: In the context of risk management, acceptance can mean that even though a risk is not eliminated, its existence and magnitude are acknowledged and tolerated.

2.1.2

(risk) communication

all information and data necessary for risk management addressed to a decision maker and to relevant actors within the project hierarchy

2.1.3

(risk) index

score used to measure the magnitude of the risk; it is a combination of the likelihood of occurrence and the severity of consequence, where scores are used to measure likelihood and severity

2.1.4

individual (risk)

risk identified, assessed, and mitigated as a distinct risk items in a project

2.1.5

(risk) management

ISO/DIS 17666

systematic and iterative optimisation of the project resources, performed according to the established project risk management policy

2.1.6**(risk) management policy**

describes the organisation's attitude towards risks, how it conducts risk management, the risks it is prepared to accept and defines the main requirements for the risk management plan

2.1.7**(risk) management process**

consists of all the project activities related to the identification, assessment, reduction, acceptance, and feedback of risks

2.1.8**overall (risk)**

risk resulting from the assessment of the combination of individual risks and their impact on each other, in the context of the whole project

NOTE: Overall risk can be expressed as a combination of qualitative and quantitative assessment.

2.1.9**(risk) reduction**

implementation of measures that leads to reduction of the likelihood or severity of risk

NOTE: Preventive measures aim at eliminating the cause of a problem situation, and mitigation measures aim at preventing the propagation of the cause to the consequence or reducing the severity of the consequence or the likelihood of the occurrence.

iteh STANDARD PREVIEW
(standards.iteh.ai)

2.1.10**residual (risk)**

risk remaining after implementation of risk reduction measures

2.1.11**resolved (risk)**

risk that has been rendered acceptable

2.1.12**risk**

undesirable situation or circumstance that has both a likelihood of occurring and a potentially negative consequence on a project

NOTE: Risks arise from uncertainty due to a lack of predictability or control of events. Risks are inherent to any project and can arise at any time during the project life cycle; reducing these uncertainties reduces the risk.

2.1.13**(risk) scenario**

sequence or combination of events leading from the initial cause to the unwanted consequence

NOTE: The cause can be a single event or something activating a dormant problem.

2.1.14**(risk) trend**

evolution of risks throughout the life cycle of a project

2.1.15**unresolved (risk)**

risk for which risk reduction attempts are not feasible, cannot be verified, or have proven unsuccessful: a risk remaining unacceptable

2.2 Abbreviated terms

The following abbreviated terms are defined and used within this Standard.

ECSS	European Cooperation for Space Standardization
IEC	International Electrotechnical Commission

3 Principles of risk management

3.1 Risk management concept

Risk management is a systematic and iterative process for optimising resources in accordance with the project's risk management policy. It is integrated through defined roles and responsibilities into the day to day activities in all project domains. Risk management assists managers and engineers when including risk aspects in management and engineering practices and judgement throughout the project life cycle. It is performed in an integrated, holistic way, maximising the overall benefits in areas such as:

- design, construction, testing, operation, maintenance, and disposal, together with their interfaces;
- control over risk consequences;
- management, cost, and schedule.

This process adds value to the data that is routinely developed, maintained, and reported.

3.2 Risk management process

The entire spectrum of risks is assessed. Tradeoffs are made among different, and often competing, goals. Undesired events are assessed for their severity and likelihood of occurrence. The assessments of the alternatives for mitigating the risks are iterated, and the resulting measurements of performance and risk trend are used to optimise the tradable resources.

Within the risk management process, available risk information is produced and structured, facilitating risk communication and management decision making. The results of risk assessment and reduction and the residual risks are communicated to the project team for information and follow-up.

3.3 Risk management implementation into a project

Risk management requires corporate commitment in each actor's organisation and the establishment of clear lines of responsibility and accountability from corporate level downwards. Project management has the overall responsibility for the implementation of risk management, ensuring an integrated, coherent approach for all project domains.

Risk management is a continuous, iterative process. It constitutes an integral part of normal project activity and is embedded within the existing management processes. It utilises the existing elements of the project management processes to the maximum extent possible.

3.4 Risk management documentation

The risk management process is documented to ensure that the risk management policies are established, understood, implemented, and maintained, and that they are traceable to the origin and rationale of all risk-related decisions made during the life of the project.