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Aeronavtika - Vodenje programov - Priporočila za obvladovanje tveganja in upravljanje priložnosti

Aerospace series - Programme Management - Recommendations to implement risk management and opportunity management

Luft- und Raumfahrt - Programm-Management - Empfehlungen zur Umsetzung für Risikomanagement und Gelegenheitsmanagement

Série aérospatiale - Management de Programme - Recommandations pour la mise en œuvre du management des risques et du management des opportunités

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49.020	Letala in vesoljska vozila na splošno	Aircraft and space vehicles in general

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Série aérospatiale - Management de programme -
Recommandations pour la mise en œuvre du
management des risques et du management des
opportunités

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und Gelegenheitsmanagement

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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EN 9239:2024 (E)**European foreword**

This document (EN 9239:2024) has been prepared by ASD-STAN.

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2025, and conflicting national standards shall be withdrawn at the latest by February 2025.

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

This document supersedes EN 9239:2016.

The main changes with respect to the previous edition are as follows:

- EN 9239 (P1), 05/2016:
 - separation of risk management and opportunity management and the explanation of this choice in the introduction.
 - terms and definitions clause:
 - addition of terms and definitions associated with opportunity management (including “amplitude”, “benefit” and “opportunity”);
 - update of the list of defined terms with the addition of new terms (including “detectability”, “sheet”, “list of typical risks”, “matrix”, “portfolio” and “register”).
 - modification of the overall structure of the document:
 - Clause 4: principles added, common to risks and opportunities;
 - Clause 5: description of the organizational framework and process for risk management;
 - Clause 6: description of the organizational framework and process for opportunity management (which mirrors the risk management process);
 - compared to the risk management process described in the previous edition:
 - choice to describe the process steps with the following construction: input data/actors/processes/output data;
 - addition of a step 3 – *analysing* (between *identifying* and *assessing*), a step 5 – *producing scenarios* (risk reduction and undertaking opportunity control actions) and a step 6 – *selecting the scenarios*. Communication is no longer described as a step because it is meant to be transverse at all steps;
 - addition/removal of some annexes:
 - new Annex B “List of typical opportunities by category” added;
 - former Annex D: “Example of 3-colour code criticality and acceptability matrix: general risk mapping” deleted (addressed in the body of the document);
 - new Annex C and Annex D: “Example of risk/opportunity sheet” added;

- former Annex F “Risk assessment report” deleted;
- former Annex G “Maturity of programme risk management: assessment criteria” deleted.
- update of the references cited and in the bibliography.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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EN 9239:2024 (E)**Introduction**

Risk management and opportunity management form an integral part of programme management. They are implemented right from the start of the project feasibility stage and continue until material disposal. This document is intended to be used as a basis, for any given programme, for negotiating the requirements and relationships between customers and suppliers for risk management and opportunity management. EN 9239 complements EN 9200 on programme management.

This document describes the processes to be followed in order to:

- identify and manage risks and opportunities within the programmes;
- maximize benefits for the programme, and also for any associated transverse function;
- construct and implement appropriate action plans.

In this document, risks and opportunities are addressed separately in two different clauses. This is because the contractual, organizational, and financial impacts of risk management and of opportunity management may be different. Separate documentation for risk management and opportunity management is recommended, as the respective responsibilities may be entrusted to the same or different people.

The ultimate goal of this document is to contribute to an appropriate definition of programme objectives (including costs, schedules and performances) and to continuously ensure that they are met or enhanced, despite or thanks to events likely to have a negative or positive impact on its progress. The programme director can manage risks and opportunities through the application of methods.

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1 Scope

This document enables the specific needs of the aeronautical, space and defence fields to be met. It can also apply to other fields.

However, the specificity of some fields can lead to the use of existing sectorial standards such as EN 16601-80, *Space project management — Risk management* (derived from ECSS-M-80).

This document:

- proposes a framework for implementing organization of risk management and opportunity management within programme management; this framework may serve as a basis for writing risk management specifications and opportunity management specifications;
- describes a process for keeping programme risks within the defined limitations that are considered tolerable; this standard process can be used as a methodological guide for writing the programme risk control plan;
- describes a process for addressing and developing opportunities that have positive consequences on the execution of a programme; this standard process can be used as a methodological guide for writing the strategic programme opportunity control plan;
- recognizes the need for knowledge management in order to capitalise and to share lessons learned with other programmes, as well as the maturity assessment of the risk management and opportunity management processes;
- identifies useful documents for risk management and opportunity management;
- proposes an example of a typical list of risks and opportunities.

2 Normative references

[SIST EN 9239:2024](https://standards.iteh.ai/catalog/standards/sist/77fbd0f-d524-45e2-90d4-bc5c6b5ed93c/sist-en-9239-2024)

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There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

amplitude

level of importance of the opportunity allowing prioritization

Note 1 to entry: The amplitude of an opportunity is often the combination of the consequence in terms of expected benefit and the likelihood (or probability) of occurrence of the opportunity, and possibly other attributes (defined in the opportunity management plan) such as detectability.

EN 9239:2024 (E)**3.2****target amplitude**

level of importance of the opportunity after implementation of the proposed action plan

Note 1 to entry: The target amplitude is characterized by a target likelihood (probability), a target consequence index, and possibly detectability or another target attribute.

3.3**benefit**

significance of the impact of an opportunity

3.4**library of risks and opportunities**

set of information documented by the risk management and opportunity management processes

EXAMPLE Standard sheets or lessons learned.

3.5**mapping of risks and opportunities**

summary of the register obtained by consolidation of risks or of opportunities with the aim of presenting them to aid strategic decision-making

3.6**cause**

set of events and situations that are at the origin of the risk or opportunity

3.7**criticality**

level of importance of the risk allowing prioritization

Note 1 to entry: The criticality of a risk is often the combination of the severity and the likelihood (or probability) of occurrence of the risk, and possibly other attributes (defined in the risk management plan) such as detectability.

3.8**detectability**

capacity to detect the direct manifestation of a risk or the appearance of one of the causes of a risk or opportunity

Note 1 to entry: Detectability includes the capacity to provide an appropriate response to mitigate the risk or seize the opportunity.

3.9**opportunity sheet**

documentation of the characteristics and other parameters of an identified opportunity

Note 1 to entry: An example is available in Annex D.

3.10**risk sheet**

documentation of the characteristics and other parameters of an identified risk

Note 1 to entry: An example is available in Annex C.

3.11**severity**

significance of the impact of a risk

3.12**impact**

effect of a risk or opportunity when it occurs

3.13**list of typical opportunities**

identification of generic opportunities to assist with construction of the opportunity register for a programme

Note 1 to entry: The list of consolidated typical opportunities at the company level is based on feedback from the company, from previous or current programs and on the best practices identified in the normative repositories.

Note 2 to entry: See Annex B.

3.14**list of typical risks**

identification of generic risks to assist with construction of the risk register for a programme

Note 1 to entry: The list of consolidated typical risks at the company level is based on feedback from the company, from previous or current programs and on the best practices identified in the normative repositories.

Note 2 to entry: See Annex A.

3.15**programme opportunity management**

coordinated activities in order to take advantage of the opportunities for a programme

3.16**programme risk management**

coordinated activities in order to mitigate the risks for a programme

3.17**opportunity matrix**

presentation of the mapping of opportunities characterised according to their amplitude

Note 1 to entry: The amplitude may be represented by a colour code with 3 or 4 values, see Figure 5 in subclause 6.2.5.4.

3.18**risk matrix**

presentation of the mapping of risks characterised according to their criticality

Note 1 to entry: The criticality is often represented by a colour code with 3 or 4 values, see Figure 3 in 5.2.5.4.

EN 9239:2024 (E)**3.19****level of risk tolerance**

criticality value beyond which specific risk mitigation actions are implemented

3.20**opportunity consideration level**

amplitude value beyond which specific actions for the opportunity are implemented

3.21**occurrence of a risk or of an opportunity**

fact of a risk or of an opportunity occurring

3.22**opportunity**

uncertain event or circumstance which can have a positive impact on the achievement of the objectives of the programme

3.23**typical opportunity**

generic set of characteristics of opportunities

Note 1 to entry: The definition of typical opportunities supports the identification of the opportunities of a programme.

3.24**risk portfolio**

set of identified risk sheets for the programme

3.25**opportunity portfolio**

set of identified opportunity sheets for the programme

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3.26**programme**

coordinated set of technical, administrative and financial tasks, intended to design, develop, manufacture and use a product or a system, satisfying a need under the best performance, cost and time conditions as well as ensuring the support of it and finally the disposal

Note 1 to entry: All or part of a programme can be designated also in the industrial world and in some normative texts by words such as “project” or “contract”.

Note 2 to entry: When the notion of programme is associated with an overall system, the notion of sub-programme or project is frequently used when addressing the constituents of this system.

3.27**opportunity promoter**

person or entity responsible for promoting an opportunity and with the authority to manage it

3.28**risk owner**

person or entity responsible for a risk and with the authority to manage it

[SOURCE: ISO/IEC 27000]

3.29**opportunity register**

list of identified opportunities in the portfolio, accompanied by their associated key information

Note 1 to entry: An example register is available in Annex F, subclause F.2.

3.30**risk register**

list of identified risks in the portfolio, accompanied by their associated key information

Note 1 to entry: An example register is available in Annex F, subclause F.1.

3.31**opportunity lessons learned**

retrospective analysis of each opportunity managed during the programme, aiming to determine the knowledge that is reusable for opportunity management for the current programme and/or other programmes

3.32**risk lessons learned**

retrospective analysis of each risk managed during the programme, aiming to determine the knowledge that is reusable for risk management for the current programme and/or other programmes

3.33**risk**

uncertain event or circumstance which can have a negative impact on the achievement of the objectives of the programme

3.34**residual risk**

risk remaining after implementation of mitigation actions

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Note 1 to entry: The residual risk is characterized by a residual criticality determined by a residual likelihood (probability), a residual severity, and possibly detectability or another residual attribute.

3.35**likelihood of a risk or of an opportunity**

assessment of the probability or frequency of a risk or of an opportunity occurring

4 Principles**4.1 Integral part of management of the entire programme**

Risk management and opportunity management are an integral part of programme management. The risk management and opportunity management success criteria cannot be dissociated from the programme and programme management success criteria.

Risk management and opportunity management require a risk culture and an opportunity culture within the organization. They rely on the involvement of all personnel and the deployment of suitable practices.

Risk management and opportunity management cover each stage of the programme and of the product life cycle.

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4.2 Incorporation of risks and opportunities

4.2.1 Apprehension of risks and opportunities

The risks and opportunities can be apprehended by all stakeholders of the programme, organization or their environments. This apprehension of a risk or opportunity is expressed in a statement.

Processes [such as monitoring and alert system, lessons learned or comparative studies of the competition (“benchmarking”)] are to be implemented to apprehend risks and opportunities. This apprehension may be intuitive and based on listening, observation, critical thinking and openness.

The apprehended statement is then compared with risks and opportunities that have already been identified. If it is new, it is reformulated as a risk or opportunity, and enters into the assessment process.

4.2.2 Assessment of the risk or opportunity

This risk or opportunity is then assessed by the programme team’s risk and opportunity managers, in three steps: identification, analysis and assessment.

As the managers and processes for risk management and for opportunity management are technically different, risks and opportunities are addressed separately in this document.

NOTE See Clause 5 for risk management, Clause 6 for opportunity management and Annex G to compare risk and opportunity terminologies and approaches.

4.2.3 Treatment of the risk or opportunity

The risk manager for the programme determines the roles and responsibilities in the treatment of each risk, and the opportunity manager for the programme determines the roles and responsibilities in the treatment of each opportunity.

The treatment is articulated in three steps: elaboration of scenarios, selection of scenarios and implementation.

4.2.4 Control and monitoring

All of the risk management processes and the opportunity management processes are iterative. This entails assessing the effectiveness and efficiency of the scenarios and actions and making necessary updates.

4.2.5 Capitalization

The purpose of capitalization is to take into account the lessons learned, in order to make risk management and opportunity management for current or future programmes more effective.

In particular, capitalization involves the consolidation of these lessons learned.

It is initiated at each step of the risk management and opportunity management processes and finalised at the closure of the programme or of each of its stages.