

New EMCIP Risk Assessment

Appendix N to EMSA/OP/15/2016 “Development of the New European Marine Casualty Information System (NEW EMCIP)”

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RISK ANALYSIS

This document introduces the Risk Analysis performed by EMSA, which includes quantitative and qualitative risk analysis criteria. It includes a complete list of prioritised risks related to the New EMCIP implementation and the recommended actions that could mitigate and minimize the risks.

1. Introduction

This Risk Analysis aims at supporting the bidder/contractor identify the projects risks concerning the development and implementation of the New EMCIP. Project risks could have a cost impact, could affect time scales or could impact on product technical characteristics. Risks are classified by category and severity, and are characterised by the probability of occurrence.

Different Risks are classified according to the following criteria:

▪ Risk category

It defines the project area affected by the risk and is classified in:

- Technical - including all those risks which may cause the system to fail to meet the applicable requirements (mainly functional and performance);
- Schedule - including all those risks which may cause significant deviations with respect to the work program in particular schedule;
- Cost - including all those risks that are likely to have an impact on the overall cost of the project.

▪ Risk Probability

This defines the likelihood that a risk may occur. The following three categories are identified:

- High - when the probability of occurrence is higher than 20%;
- Medium - when the probability of occurrence is between 2% and 20%;
- Low - when the probability of occurrence is lower than 2%.

▪ Risk Severity

It measures the impact according to the following classification:

- Major;
- Average;
- Minor.

The classification matrix between risks' category and severity is shown in the table below:

Table 1 - Classification of Risks' Severity

Severity → Category ↓	Minor	Average	Major
Technical	No relevant impact on functionalities or performance	Functional and performance impact that can be mitigated	Functional and performance impact that cannot be mitigated
Schedule	No impact or only on internal milestones	Delay of internal milestones or final milestones < 2 ¹ month	Delays of final milestone > 2 months
Cost	Impact negligible	Increase in costs for <5%	Increase in costs for > %5

Information on risks includes:

- Risk Identification (code);
- Risk Description;
- Risks Classification, according to the above mentioned criteria, namely:
 - o Risk Category;
 - o Risk Probability;
 - o Risk Severity.

2. Risk Identification

It is important to determine the risks that may affect the project since the very first stages of the project.

Risks could be classified as internal (under the control of the contractor implementing the EMCIP platform and/or EMSA) and external (beyond the control of the contractor implementing the EMCIP platform and/or EMSA).

Causes as well as consequences of each risk are identified below.

The following kinds of risk causes have been analysed:

- Maturity of suppliers;
- Short timescales;
- Technical novelty;
- Maturity and suitability of methods;
- Maturity and efficiency of tools;
- Quality of commercial software;
- Stability of requirements;
- Definition and stability of external interfaces;
- Quality and availability of external systems;
- Risks have to be initially identified including both the description (origin of the risk) and the potential impact.

¹ These figures assume projects between 1 and 6 years. For other durations, figures are adapted.

The following risks have been identified for the implementation of the New EMCIP:

Table 2 – List of Risks

Id	Description	Type	Causes	Consequences
CMS.RSK.01	The Content Management System (CMS) commercial software selected for the implementation of the New EMCIP portal does not provide the necessary management tools	Internal	Quality of commercial software	The New EMCIP portal management tools should be implemented by the contractor from scratch
CMS.RSK.02	No possibility to migrate the current information of the EMCIP database to the New EMCIP system in an automatic way	Internal	Maturity and efficiency of tools	The migration of the information of the current EMCIP data base should be made manually
CMS.RSK.03	The Content Management System (CMS) commercial software selected for the implementation of the New EMCIP portal does not provide enough interface customization	Internal	Quality of commercial software	The customization of the user interface should be made by the contractor using the APIs / Portlets provided by the CMS commercial software or should be implemented from scratch.
CMS.RSK.04	No technical support (or 5 years warranty extension) provided from the supplier of the CMS commercial software selected for the implementation of the New EMCIP software	External	Maturity of suppliers	The contractor would need enough experience in selected CMS to solve the bugs by itself.
IDM.RSK.05	Restrictions with the integration of the EMSA IdM system for New EMCIP user management & user Authentication	Internal	Technical novelty	Additional Authorization Layer should be implemented by the contractor to integrate the CMS authorization mechanism with the EMSA IdM.
INT.RSK.06	Restrictions in the connection with interfaces of existing EMSA application	Internal	Quality of commercial software	An Integration Interface layer should be developed by the contractor if the commercial CMS software does not provide additional API's to get / provide information from/to external systems.

Id	Description	Type	Causes	Consequences
EDB.RSK.07	The external interfaces of the EMSA existing applications are not well defined or not documented	External	Definition and stability of external interfaces	No possibility of data exchange between exiting EMSA application and the New EMCIP
EDB.RSK.08	Continuous changes in the New EMCIP requirements or Database Taxonomy.	External	Stability of requirements	No possibility to make a good analysis of the New EMCIP system and to determine the New EMCIP data entities and attributes
CMS.RSK.09	CMS commercial software no flexible enough to accept changes in the current Taxonomy	Internal	Quality of commercial software	Any change in the taxonomy implies changes in the EMCIP system
EDB.RSK.10	Errors during the data migration from the existing EMCIP to the New EMCIP system	Internal	Maturity and suitability of methods	The new EMCIP will contain wrong information
CMS.RSK.11	Access restrictions to the current EMCIP system (Database and Portal)	External	Maturity and suitability of methods	No data migration could be made.
EDB.RSK.12	Excessive time in migrating and starting up the new EMCIP system	Internal	Short timescales	The longer two systems coexist, the greater the probability of generating inconsistencies in the database

3. Risk Assessment and Analysis

The following assessment includes the analysis of different elements associated to each risk and that were identified in section “Risk Classification” covering in particular:

- The identification of the nature of the cause originating the risk, i.e. the investigation on whether the causes of the risk are reasonably within contractor & EMSA control, or beyond it.
- The analysis of the risk category, bearing in mind that the same cause may give rise to different categories of risks (e.g. technical, cost and schedule).
- The assessment of the likelihood in which the risk may occur.
- The quantification of the impact of the risk (severity). This requires a detailed cost estimation of the effects of the risk, the investigation of the impact of the risk in the critical path for the project and the determination of any possible side effect which may stem from it.

The following table contains the assessment of the risks identified in the section 2:

Table 3 - Risk assessments

Id	Description	Nature of the cause	Risk category	Probability	Severity
CMS.RSK.01	The Content Management System (CMS) commercial software selected for the implementation of the New EMCIP portal does not provide the necessary management tools	Within contractor & EMSA control	Technical / Cost	Low	Major
CMS.RSK.02	No possibility to migrate the current information of the EMCIP database to the New EMCIP system in an automatic way	Within contractor & EMSA control	Technical / Cost	Medium / High	Major
CMS.RSK.03	The Content Management System (CMS) commercial software selected for the implementation of the New EMCIP portal does not provide enough interface customization	Within contractor & EMSA consortium control	Technical / Cost	Medium / Low	Major
CMS.RSK.04	No technical support (or 5 years warranty extension) provided from the supplier of the CMS commercial software selected for the implementation of the New EMCIP software	Beyond contractor & EMSA consortium control	Cost	Medium / Low	Average
IDM.RSK.05	Restrictions with the integration of the EMSA IdM system for New EMCIP user management & user Authentication	Within contractor & EMSA consortium control	Technical / Cost	Medium / High	Major
INT.RSK.06	Restrictions in the connection with interfaces of existing EMSA application	Within contractor & EMSA consortium control	Technical / Cost / Schedule	Medium / High	Major
EDB.RSK.07	The external interfaces of the EMSA existing applications are not well defined or not documented	Within contractor & EMSA consortium control	Technical	Low	Major

Id	Description	Nature of the cause	Risk category	Probability	Severity
EDB.RSK.08	Continuous changes in the New EMCIP requirements or Database Taxonomy.	Within contractor & EMSA consortium control	Cost / Schedule	Medium	Major
CMS.RSK.09	CMS commercial software no flexible enough to accept changes in the current Taxonomy	Within contractor & EMSA consortium control	Technical / Cost / Schedule	Low	Major
EDB.RSK.10	Errors during the data migration from the existing EMCIP to the New EMCIP system	Within contractor & EMSA consortium control	Technical / Schedule	Medium / High	Major
CMS.RSK.11	Access restrictions to the current EMCIP system (Database and Portal)	Beyond contractor & EMSA consortium control	Technical / Schedule	Medium	Major
EDB.RSK.12	Excessive time in migrating and starting up the new EMCIP system	Within contractor & EMSA consortium control	Technical / Schedule	Medium / High	Major

On the basis of the assessment presented in table 3, the risk and risk interactions across the project areas were evaluated, to assess the range of possible programme outcomes.

This evaluation includes the identification of the risk criticalities as a function of the likelihood and impact. In order to prioritize the mitigation strategy and action plan, risks are categorized as “acceptable” or “not acceptable” according to the following table.

Table 4 - Risk Matrix

		SEVERITY		
		Minor	Average	Major
PROBABILITY	High	Not Acceptable	Not Acceptable	Not Acceptable
	Medium	Acceptable	Not Acceptable	Not Acceptable
	Low	Acceptable	Acceptable	Not Acceptable

Based on the risk matrix in table 4, all the identified risks are considered “Not acceptable”. The following section proposes a mitigation plan for the identified risks.

4. Risk Mitigation Plan

Risk Mitigation plan defines the strategy and associated actions to be taken to overcome the identified risk and therefore constitute a key part of the risk management process. This may involve:

- Avoidance (when it is possible to eliminate or avoid the risk);
- Mitigation (reducing the criticality of the risk);
- Acceptance of consequences.

The following table shows the mitigation actions proposed for the risks identified in previous sections:

Table 5 - Risk Mitigation Plan

Id	Description	Strategy	Mitigation Action
CMS.RSK.01	The Content Management System (CMS) commercial software selected for the implementation of the New EMCIP portal does not provide the necessary management tools	Mitigation	Compare several CMS commercial software and select the one the better fit the EMSA requirements.
CMS.RSK.02	No possibility to migrate the current information of the EMCIP database to the New EMCIP system in an automatic way	Mitigation	Ensure that the selected CMS commercial software has a data migration tool and/ or and open data base access. Ensure that the selected commercial CMS for the implementation of the new EMCIP portal has a well-documented database model
CMS.RSK.03	The Content Management System (CMS) commercial software selected for the implementation of the New EMCIP portal does not provide enough interface customization	Mitigation	Assets with EMSA the user interface before select the CMS in charge of the New EMCIP portal.
CMS.RSK.04	No technical support (or 5 years warranty extension) provided from the supplier of the CMS commercial software selected for the implementation of the New EMCIP software	Mitigation	Ensure that the CMS supplier provides enough technical support. If necessary, ask for an extension of 5 years of warranty to the CMS supplier.
IDM.RSK.05	Restrictions with the integration of the EMSA IdM system for New EMCIP user management & user Authentication	Mitigation	Ensure that the selected CMS commercial software for the implementation of the new EMCIP portal does the general authorization through JAAS.
INT.RSK.06	Restrictions in the connection with interfaces of existing EMSA application	Mitigation	Ensure that the selected CMS commercial software for the implementation of the new EMCIP portal provides a well-documented API and the API follows SOA

Id	Description	Strategy	Mitigation Action
			recommendations (web services, JMS, etc....).
EDB.RSK.07	The external interfaces of the EMSA existing applications are not well defined or not documented	Mitigation	Ensure with EMSA that the interfaces of all applications to be connected to the New EMCIP portal are well documented and follows SOA recommendations (web services, JMS, etc....).
EDB.RSK.08	Continuous changes in the New EMCIP requirements or Database Taxonomy.	Mitigation	Assets with EMSA and end users the database taxonomy of the new EMCIP before the data migration.
CMS.RSK.09	CMS commercial software no flexible enough to accept changes in the current Taxonomy	Mitigation	Compare several CMS commercial software and select the one the better fit the EMSA requirements.
EDB.RSK.10	Errors during the data migration from the existing EMCIP to the New EMCIP system	Mitigation	Define a quality assurance plan for the data migration and pass the data migration plan in test environments.
CMS.RSK.11	Access restrictions to the current EMCIP system (Database and Portal)	Mitigation	Ensure with EMSA that there is good communication with ECCARIS and JRC. Try to get an VPN connection to the current EMCIP servers (Database and Portal)
EDB.RSK.12	Excessive time in migrating and starting up the new EMCIP system	Mitigation	Define and pass Load and stress test to ensure the migrating time of one system to the other.

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