Open Educational Resources Training Platform (OERTP)

User Manual

Release 1

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Raj Bharath Adamaram Seshadri

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# Risk Management Plan for OERTP

The role of this risk management procedure is to provide OERTP staff with guidance in how to apply consistent and comprehensive risk management. This procedure provides information on how to identify, analyze, evaluate and treat risks.

In addition, it identifies other key activities needed for an effective risk management approach. The risk management process contained in this procedure aligns with the International Standard for Risk Management (ISO 31000:2009).

Risk is the chance of something happening that will have an impact on objectives. It is important that we manage risks in order that the negative impact of risks upon achievement of our objectives is minimized and our ability to realize potential opportunities is maximized.

## 1.1 Essential risk management concepts

The risk management process is aligned with the definitions and principles set forward in "ISO 31000 Risk management — Principles and guidelines".

Following the standard's definition: **Risk is the effect of uncertainty on objectives.**

In this definition, **effects** are any deviation from the expected. Risk encapsulates both positive effects, possibilities/opportunities, as well as negative ones, leading to loss.

The **objectives** are any goal relevant for the project, such as quality, time, financial, health and safety, and environmental goals.

Doing **risk analysis** involves the identification of **events** where there are potential for risk, and determining the risk levels of these.

The **risk level** of an event is the combination of the estimated **likelihood**, the chance of something happening, and **consequence**, the outcome of an event affecting the objectives.

A **risk evaluation** compares the risk level with **risk criteria** to determine if risk is acceptable. If not, **risk treatment** is needed to modify the risk level. For example using **risk controls** to reduce the likelihood and/or consequence of risk.

## 1.2. List of definitions

AD Architectural Design

SDDP Software Design Descriptions Plan

AT Acceptance Test

Client Monitor, Agent or Submitter

CM Configuration Management

Customer UNESCO.

DD Detailed Design

Dispatcher Application that dispatches jobs to Agents

IT Integration Test

PM Project Manager

QAM Quality Assurance Manager

SCMP Software Configuration Management Plan

SM Senior Management

SPMP Software Project Management Plan (this document)

SQA Software Quality Assurance

SQAP Software Quality Assurance Plan

SA System Analyst

SR Software Requirements

SRSP Software Requirements Specification Plan

STD Software Transfer Document

Submitter Application that submits jobs to dispatchers

SUM Software User Manual

TL Team Leader

TR Transfer Phase

UNESCO United Nations Educational, Scientific and Cultural Organization

UT Unit Test

UR User Requirements

UM User Manual

RM Risk Management

SRMP Software Risk Management Plan

## 1.3. List of references

[SPMP] **Software Project Management Plan**

[SCMP] **Software Configuration Management Plan**

[SRSP] **Software Requirements Specification Plan**

[SDDP] **Software Design Descriptions Plan**

[SQAP] **Software Quality Assurance Plan**

[UM] **User Manual**

[SRMP] **Software Risk Management Plan**

# Purpose and Scope

The **purpose** of the risk management process is to **create and protect value**, and to **help decision makers** with relation to the project **to make informed choices, prioritize actions and distinguish among alternative causes of action**.

The objectives of a risk management framework are to:

* Provide a systematic approach to the early identification and management of risks;
* Provide consistent risk assessment criteria;
* Make available accurate and concise risk information that informs decision making including business direction;
* Adopt risk treatment strategies that are cost effective and efficient in reducing risk to an acceptable level; and
* Monitor and review risk levels to ensure that risk exposure remains within an acceptable level.

# Overview of the risk management process

The process of managing risk involves; identifying it, analysing it and then evaluating whether the risk should be modified by risk treatment in order to satisfy the risk criteria. This is the risk assessment workflow, which is repeated regularly during the execution phase of the project.

Throughout this process it's important to communicate and consult with stakeholders and monitor and review the risk and the controls that are modifying the risk in order to ensure that no further risk treatment is required. Hence, the risk management process consists of a number of tasks, which are:

Establish context

1. Risk assessment
   1. Risk identification
   2. Risk analysis
   3. Risk evaluation
2. Risk treatment

In addition to these tasks there are ongoing parallel activities related to:

* Communication and consultation
* Monitoring and review

Figure 2 shows how these parts fit together, and in combination makes up the risk management process.

Monitoring and review

**Risk assessment**

Risk analysis

Risk identification

Risk evaluation

Risk treatment

Communication and consultation

Establish context

Figure 1 Risk management process

The parts of the risk management process are described in more detail as following.

## Establish context

The context of the risk management process is the collection of characteristics that defines or constrains the project and the organization associated with the project. For this project, the context of the risk management process is comprised of:

* The organization's risk management policy and process has already been defined.
* Legal and regulatory requirements: If any stakeholder finds any risk, the approval of risk must be done by the Senior Management who is in the highest cadre of the organizational structure as per the SPMP.
* The scope for the risk management process and the risk criteria to be used for assessment (as provided elsewhere in this document).
* Standards and guidelines (internal or external) that govern the risk management process.
* Known internal and external limitations on the project and organization, including contracts, agreements, constrains on available resources, etc.
* Current project status, plan, budget, deadlines, couplings to other projects, etc. For further information please refer, SPMP.

The context of the risk management process, as listed above, is made available to everyone involved prior their participation in risk assessment. This ensures that participants are well-informed and prepared to contribute to the analysis.

## 3.2 Risk criteria

Risk criteria are used to evaluate the significance of risk, i.e. the risk level.

Risk levels with relation to the project objectives are evaluated using the risk matrices shown in Figure 1.

Risk level of events that may have a *negative impact* on the project's cost or time schedule is evaluated using the "Cost increase" or "Delay" risk matrices, respectively.

Risk level of events that may have a *positive impact* on the project's cost or time schedule is evaluated using the "Cost decrease" or "Advance" risk matrices, respectively.

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |

Figure 2 Risk matrices

Definition of **likelihood classes** in the risk matrices:

|  |  |
| --- | --- |
| **Possible** | Event is possible, but not expected to happen in the project period. |
| **Probable** | Event may happen in the project period. |
| **Likely** | Event is expected to happen in the project period. |

Definition of **consequence classes** in the risk matrices:

|  |  |
| --- | --- |
| **Negligible** | Event will have negligible impact on the objective.  Project cost: less than ± €1k, or less  Time schedule: about ±1 week, or less |
| **Serious** | Event will have a sizeable impact on the objective.  Project cost: about ± €5k  Time schedule: about ±1 month |
| **Major** | Event will have a large impact on the objective.  Project cost: about ± €10k, or more  Time schedule: about ±2 months, or more |

Table 1. Likelihood classes: Definition

The colors of the matrix fields indicate risk level:

|  |  |
| --- | --- |
|  | **High risk** |
|  | **Medium risk** |
|  | **Low risk** |

Table 2. Colors of risk level

The criteria for evaluation of risk levels are:

* If the risk level is *high*, risk treatment is required and implementation of risk controls is a *high priority*, to reduce the risk level to medium or low risk.
* If the risk level is *medium*, risk treatment is recommended, but not required. If risk controls are not implemented, it should be justified why this is acceptable.
* If the risk level is *low*, risk treatment is not required. Risk may be accepted without further justification.

## Risk assessment

Risk assessment is the overall process of risk identification, risk analysis and risk evaluation. With a continuous effort throughout the project, risk assessment is the main activity moving the risk management process forward.

The assessment will be based on the above explained in Risk criteria section of this document.

**Likelihood classes:**

|  |  |  |
| --- | --- | --- |
| **Level** | **Condition** | **Description** |
| 1 | Possible | Event is possible, but not expected to happen in the project period. |
| 2 | Probable | Event may happen in the project period. |
| 3 | Likely | Event is expected to happen in the project period. |

Table 3. Likelihood classes

**Consequence Classes:**

|  |  |  |
| --- | --- | --- |
| **Level** | **Consequence** | **Description** |
| 1 | Negligible | Event will have negligible impact on the objective.  Project cost: less than ± €1k, or less  Time schedule: about ±1 week, or less |
| 2 | Serious | Event will have a sizeable impact on the objective.  Project cost: about ± €5k  Time schedule: about ±1 month |
| 3 | Major | Event will have a large impact on the objective.  Project cost: about ± €10k, or more  Time schedule: about ±2 months, or more |

Table 4. Consequences classes

## 3.4 Risk identification

The most critical element of risk assessment is identification of risks. The aim is to identify all sources of risk, areas of impacts, events (including changes in circumstances) and their causes and their potential consequences.

A risk involves an event that have a positive or negative effect on the objectives. A positive effect is an opportunity for the improving project. But, it is important to also identify risks associated with not pursuing such opportunity, which can have a negative effect on the objectives.

Comprehensive identification is critical, because risks that are not identified, are not analyzed and assessed. Particularly as the project progresses the risk will change, and the initial analysis is no longer accurate. Repeating the risk identification activity at regular intervals throughout the project will significantly increase the coverage of identified risks. Though, it is not really feasible to attain a complete and accurate risk coverage at any given time.

Identification should include risks whether or not their source is under the control of the project or organization, even though the risk source or cause may not be evident. Identification should also include study of possible cascading or cumulative effects of particular consequences. All significant causes and consequences should be included, even when the event source or cause are not evident, and when the possible consequences of events are not well-understood.

Risk identification is performed throughout the project. The process is initiated with a risk workshop in the very early stage of the project, and followed up with regularly meetings to update and supplement the risk list. The workshop format is described in a Appendix A.

The result of risk identification is a comprehensive list of risks, covering all those events that might create, enhance, prevent, degrade, accelerate or delay the achievement of objectives.

It is important that a risk owner is assigned to each risk. This person has the accountability and authority to manage a risk, and approve risk treatment (as described later).

The identified risks are recorded in the risk register at UNESCO, and through this platform made available to the whole project team.

## 3.5 Risk analysis and risk evaluation

Risk analysis is about developing an understanding of the identified risk. It is the basis for risk evaluation and for decisions on whether risks need to be treated.

For each identified risk and for each relevant objective (time and/or cost) the consequences and likelihood are expressed using the semi-quantitative classes defined in the risk criteria section, earlier in this document.

It is often the case that the consequences of a risk are not defined for all objectives. For example, a risk may lead to a loss, but it doesn't affect the time schedule of the project.

The risk level is determined by combining the likelihood and consequence classes using the risk matrix of the objective. Risk matrices for time and cost are defined in the risk criteria section, earlier in this document.

The (lack of) confidence in determination of the risk level, due to known factors such sensitivity to preconditions and assumptions, should documented in the analysis, and communicated effectively to decision makers and, as appropriate, other stakeholders.

It is not unusual that there is a divergence of opinion among experts, or problems with uncertainty, availability, quality, quantity and ongoing relevance of information, or limitations on modeling. Any such known factor should be stated with the analysis documentation.

The risks for each category are listed below. For each risk, a description, a probability to occur, the action associated and the impact of the risk are given for OERTP project at UNESCO.

Strategic Risks – Effectiveness of strategic planning:

* Usability model
* Commission structure
* Marketing/Branding
* Databases/IT

Operational Risks – business operations:

* Safety : client & staff functions
* Reputation : social media, current affairs
* Legal compliance
* Client satisfaction : service levels
* Ethics & Professionalism : confidentiality, misrepresentation
* Knowledge & Skills

## 3.6 Risk treatment

After risk levels are determined, it has to be decided whether risks need treatment, for example by implementing or modifying risk controls. The decision is made by comparing risk levels to the risk criteria given earlier in this document.

Risk treatment options are not necessarily mutually exclusive or appropriate in all circumstances.

The **treatment options** can include the following:

* **Avoiding the risk** by deciding not to start or continue with the activity that gives rise to the risk,
* **Taking or increasing the risk** in order to pursue an opportunity,
* **Removing the risk source**,
* **Changing the likelihood**,
* **Changing the consequences**,
* **Sharing the risk** with another party or parties (including contracts and risk financing), and
* **Retaining the risk** by informed decision.

Selecting the most appropriate risk treatment option involves balancing the costs and efforts of implementation against the benefits derived, with regard to legal, regulatory, and other requirements.

For any treatment option, the urgency for implementation should be reflected in a priority or deadline for implementation.

The available treatment options vary with factors such as risk type, project stage, available resources, etc. Therefore it is necessary to also review risk treatment when updating and reviewing risk identification, risk analysis and risk evaluation.

Regular review is also necessary as the effectiveness of the treatment may change over time, or it may turn out to not be as effective as expected. In which case, the residual risk levels are not tolerable, and other treatment options has to be implemented.

In addition, risk treatment itself can introduce risks. A significant risk can be the failure or ineffectiveness of the risk treatment measures. Monitoring implementation status and effectiveness of treatment is therefore an integral part of the day-to-day work with the risk register.

Risk treatment can also introduce secondary risks that need to be assessed, treated, monitored and reviewed. These secondary risks should be incorporated into the same analysis as the original risk and not treated as a new risk. The link between the two risks should be identified and maintained on a common level.

Some risks have severe (high negative consequence) but rare (low likelihood), and risk treatment may not be justifiable on economic grounds. Special treatment should be considered in these cases.

Risk treatment is documented in the risk register, together with the risk description and analysis. The risk owner is ultimately accountable for approving the risk treatment, but other people may be responsible for implementing individual controls and actions.

The risk treatment documentation in the risk register should include:

* the controls to be implemented,
* proposed actions,
* those responsible for implementing the controls and actions, and
* Deadlines for implementation or completion.

Depending on the extent of the work involved with the controls and actions, additional documentation may developed to capture:

* details on expected benefits to be gained from the chosen treatment option,
* resource requirements including contingencies,
* performance measures and constraints,
* reporting and monitoring requirements, and
* Detailed timing and schedule.

Decision makers and other stakeholders should be aware of the nature and extent of the residual risk after risk treatment. The residual risk should be documented and subjected to monitoring, review and, where appropriate, further treatment.

## 3.7 Monitoring and review

Both monitoring and review is a planned part of the risk management process and involve regular checking or surveillance.

The monitoring and review processes encompass all aspects of the risk management process. Project management and risk owners perform the activities in shared collaboration for the purposes of:

* Ensuring that controls are effective and efficient in both design and operation,
* Obtaining further information to improve risk assessment,
* Analyzing and learning lessons from events (including near-misses), changes, trends, successes and failures,
* Detecting changes in the external and internal context, including changes to risk criteria and the risk itself which can require revision of risk treatments and priorities, and
* Identifying emerging risks.

In order to ensure that risk management is effective and continues to support the project's performance, the project management will:

* Measure the risk management status and performance (looking at factors such as number of risks identified, risk status, risk levels, implementation status of risk controls), and report the risk status to stakeholders,
* Measure the progress of the risk management process (looking at progress on risk management related tasks, use of the risk register, and results of the communication and consultation activities),
* Periodically review whether the risk management plan is still appropriate and effective, and report to senior management how well the risk management policy is being followed.

Based on this, and to ensure continual improvement, project management should modify and improve the risk management process and plan, as needed.

## 3.8 Communication and consultation

The project is using an online risk register with UNESCO to support and encourage accountability and ownership of risk. The risk register is also a tool for enabling internal and communication and reporting mechanisms. Everybody involved in the project can access the risk register, and thereby keep up-to-date, contribute, and compile custom reports.

External stakeholders are engaged in the risk management process via status reports, meetings, email and phone communication.

The external reporting requirements, to comply with legal, regulatory, and governance requirements, are:

The risks should be notified to other members of team and collective decision should be taken before reporting to Senior Management. For organizational hierarchy, please refer SPMP of OERTP.

Risk management reporting process supports a formalized, structured and comprehensive approach by UNESCO to the monitoring and review of its risks, thereby enhancing its risk management process.

# Recording the risk management process

The project's risk register on UNESCO serves as the main entrance for risk documentation, with references to supporting documentation, where relevant.

The risk management activities in the risk register are fully traceable. The records of the risk management process can provide a foundation for improvement in methods and tools, as well as in overall process.

A Risk Register is a log of all risks identified by the organisation, how those risks are rated and the treatments and controls which will be implemented to manage the risks.

A Risk Register should record the “Inherent Risk Rating” and the “Residual Risk Rating”

Any “Residual Risk Rating” of “High” should be addressed by implementing a Risk Management Action Plan.

# Tasks and responsibilities

The following table lists the tasks to be done as part of the risk management process. For each task the timing and responsible are given.

|  |  |  |
| --- | --- | --- |
| **What to do** | **When to do this** | **Who's responsible** |
| Risk workshop | Start of project, and repeated during the project. | Project management |
| Monitoring and review, incl. updating of risk register. | Weekly/Monthly | Project management in collaboration with risk owners |
| Day-to-day monitoring of risk status, including  follow-up on risk treatment implementation status and effectiveness | Weekly/Monthly | Risk owners |
| Report the risk status to stakeholders | Every month | Project management |
| Measure the risk management performance | Every month | Project management |
| Measure and review the progress of the risk management process | Every month | Project management |

Table 5. Tasks and Responsibilities

# Appendix A

Risk workshop

The risk workshop is scheduled for the initial phase of the project, and will be repeated one or more times during the project, to get the best foundation for the risk management process.

The risk workshop involves a brainstorming method for identifying risks. This method is best employed in a joint session of people having experience with the subject of the project and project management in general. The workshop is kept informal, and people join or leave the workshop, depending on when their expertise is required.

The workshop is structured around topics representing different subjects, phases or parts of the project, like: Planning, procurement, design, implementation, execution, installation, test, etc. The detailed project plan is used as basis for selecting topics, supplemented with a list of physical entities or locations related to the project.

The workshop participants need no prior training, but use the topic list of as basis for brainstorming.

For each topic the workshop leader ask the participants to think of potential problems and things that may hinder the project, or make it fail.

When potential problems or risks are identified, the workshop leader ask the team to make a preliminary risk assessment (using risk matrices). If the risk is assessed to be medium or high, consider what risk controls can be put in place.

For each identified risk keep note of the following data:

* **Risk title**
* A **short description** of what's the potential problem, possible causes and expected consequences, if the risk manifests itself.
* **Risk assessment : Probability and Impact**
* **Risk controls** (existing, and new recommended controls)
* **Actions**

For risks that can be accepted or discarded without treatment, the status is noted, and the information is retained as part of the risk documentation.

Before the workshop an agenda is distributed together with description of the risk identification method, topics to be analyzed, and risk matrices to be used.

After the workshop the identified risks are reviewed, and for each risk:

* Assign a **risk owner**
* Set a **risk status**: Identified, Open, Closed or Discarded
* Update the risk assessment, as needed

# Appendix B: Possible Risks identified and recorded using “Risk Register”

This section mentions a number of possible risks for the project. Also, actions or measures are described to prevent or to reduce the risks.

We only discuss the most important risks.

**1. Risk Title: Miscommunication**

**Risk Description**: Due to various backgrounds and situations during the project implementation there may be miscommunication occurring

**Risk Control**: After a meeting, one group member creates an interview report. Every participant and every person who should have been a participant of the meeting should get a copy of this report. Team members should not hesitate to ask and re‐ask questions if things are unclear.

**Risk Action**: When it becomes clear that miscommunication or unavailability is causing problems, the team members involved and the stake holders are gathered in a meeting to clear things up.

**Probability**: Probable (Points: 2)

**Impact**: Major (Points: 3)

**2. Risk Title: Time shortage**

**Risk Description**: Practically the time shortage of project is present due to the temporary availability of human resources the project has to be managed on time and the risk of failure of project is high if not managed well.

**Risk Control**: Care is taken to plan enough spare time.

**Risk Action**: When tasks fail to be finished in time or when they are finished earlier than planned the project planning is adjusted. If time shortage becomes severe, user requirements, which have low priority, are dropped after consultation with the SM and the customer.

**Probability**: Likely (Points: 3)

**Impact**: Major (Points: 3)

**3. Risk Title: Design Errors**

**Risk Description**: Since the project is new of its kind, the design is itself unknown by the stakeholders and there may be scope creep during the project.

**Risk Control:** The design should be reviewed very critically. The advisor should be consulted frequently on his opinion about the feasibility and the correctness of certain design decisions.

**Risk Action**: When errors in the design are noticed the advisor should be consulted to help correct the design errors as soon as possible. Also all the work, that depends on the faulty design, should be halted until the error is corrected.

**Probability**: Probable (Points: 2)

**Impact**: Major (Points: 3)

1. **Risk Title: Illness or absence of team members**

**Risk Description:** If there is any absence of team members for personal reasons

**Risk Control**: Team members should warn their team leader or the PM timely before a planned period of absence.

**Risk Action**: By ensuring that knowledge is shared between team members, work can be taken over quickly by someone else if a person gets ill. When work needs to be taken over by someone are division is made of his other tasks so that the workload does not get too high. Planned absence is dealt with in the planning.

**Probability**: Likely (Points: 3)

**Impact**: Major (Points: 3)

1. **Risk Title: Server or OS / Software loss**

**Risk Description:** There may be corruption of software or loss of software temporarily due to technical difficulties.

**Risk Control**: All products are stored in the project repository, which is backed up regularly by the CM.

**Risk Action**: When a product gets lost from its working store it is recovered from the most recent backup. The steps as explained in SCMP is executed.

**Probability**: Possible (Points: 1)

**Impact**: Serious (Points: 2)

**6. Risk Title: The customer changes his mind about the requirements**

**Risk Description**: Frequent scope creep during implementation of project.

**Risk Control**: It is obviously explained to the customer, that after he has accepted a version of the UR, the UR cannot be changed by the customer’s wish only.

**Risk Action**: If the customer changes his mind during the UR phase his new requirements can be incorporated in the UR only after acceptance from necessary stake holders.

**Probability**: Likely (Points: 3)

**Impact**: Negligible (Points: 1)

It is obvious that problems will occur during the project. To avoid problems the following rules should be followed by all team members:

* Try to signal problems as early as possible and report them to the PM, so that action can be taken;
* Pay attention to communication and make sure everybody understands the things the same way;
* Focus on the agreed user requirements, which express the wishes of the customer;
* Minimize friction between people by helping and supporting each other;

Follow guidelines that are posed in SPMP, SQAP and SCMP to aid coordination and to ensure product quality.