QUALITY ASSURANCE PLAN OF WAMPPP

Document control sheet

Title of Document:	Quality Assurance Plan
Work Package:	
Deliverable:	D6.1
Last version date:	20/01/2016
Document Version:	Initial Draft
File Name:	QAP.WaMPPP_v.0.1
Number of pages:	20
Dissemination Level	Public
Responsible Author	Quality Board of WamPPP project
Project Coordinator	Aleksandra Boricic

Change history

Date	Version	Change Made	Reviewer	Approved by:
20/01/2016	0.1	Initial Draft	Consortium Board of Wimps	Quality Board
20/01/2016	0.1	Final Draft	Consortium Board of WamPPP	Quality Board

Definitions, acronyms and abbreviations

Acronym	Title
CB	Consortium Board
CCB	Change Control Board
CO	Confidential, only for members of the Consortium (including the Commission Services)
eCR	Change Request
D	Demonstrator
DL	Deliverable Leader
DM	Dissemination Manager
DMS	Document Management System
DoW	Description of Work
Dx	Deliverable (where x defines the deliverable identification number e.g. D1.1.1)
EU	European Union
FM	Financial Manager
LFM	Logical Framework Matrix
MS	Microsoft Corporation
MSx project	Milestone (where x defines a project milestone e.g. MS3)
Mx	Month (where x defines a project month e.g. M10)
O	Other
P	Prototype
PC	Project Coordinator
PM	partner Project Manager
PO	Project Officer
PP	Restricted to other programme participants (including the Commission Services)
PU	Public
QB	Quality board
QAP	Quality Assurance Plan
QM	Quality Manager
R	Report

1

INTRODUCTION

1.1. INTRODUCTION

Quality Assurance Plan (QAP) presents a set of quality procedures that will be implemented/applied during the WamPPP project.) The deliverable at hand defines the project organization, roles and responsibilities with emphasis on the quality control and quality assurance activities that will be carried out. It describes how the project will execute its day-to-day activities from a quality perspective, and ensures that standards, processes, and procedures are defined and their execution is continuously monitored and improved. A reference to all the necessary mechanisms and structures for the management and administrative coordination of the project capitalizing on the governance, change management, communication plan, project calendar, stages, milestones and reporting roles, as well as responsibilities for all the partners.

The QAP is mandatory material for each project team member to read. Adherence of processes and procedures, set out in this plan, are mandatory for all activities carried out within the project.

On the project-wide level, the quality control will be conducted by self-evaluation process of the Project Management Team, whose evaluation reports will be submitted for Consortium meetings. During the Kick-off Consortium Meeting, the Quality Committee will be elected. It will contain staff of P1, P2, P3, P6, P9, P10, P12, with Chair from P2, Co-Chair from P6 and Steering Chair from P12.

Quality control will focus on the content of the projects, objectives, adopted methodological models, timely realization of the activities, dissemination, exploitation, coordination within and among working groups and effectiveness of the whole process. This will provide the basis for a critical overview of the project progress (in every activity and overall progress), achieved outcomes in the past project year or. The overview will allow to plan smooth implementation of future activities, envisage problems and suggest/define (if any) changes in planned project execution in order to reach the objectives in the best possible way.

It is planned that the Quality Board will meet twice a year, once at and once between the Consortium meetings. At all meetings an interim assessment of 6-month activities/results will be carried out. Interim reports will be written and disseminated internally to the project partners.

On the next level, quality control will be performed by Chairs and co-Chairs of Work group, working on specific outcomes of the project. On this level, quality control will focus on the contents of the outcome, timely realization of the WP-wide activities, coordination within the WP and effectiveness of task groups within WP. The WG chairs, as leaders of particular activities, will provide interim reports and reviews on each completed activity for Consortium and Quality Board meetings.

On the next level, staff members of project partners will provide feedback questionnaires for every activity they participate in. These will be passed either to the corresponding WG chair or to the contact person of the institution.

On the target-audience level, quality control and monitoring will be facilitated through feedback questionnaires. Surveys on quality of teaching are already done for the UG students on every subject they attend. This will be expanded to the PG teaching and trainees from all target groups, in a similar format.

2

QAP APPROACH

2.1. OVERALL QAP APPROACH

WamPPP QAP approach is founded on the project plan. As we mentioned in PMP, Quality and risk management (QM, RM), are the external walls of Project management (fig 1). They permeate all activities of the project and act as safeguards. Quality is assured and risks are assessed for both project products and project management practices. All quality activities end with the communication of decisions, changes and actions to Consortium members.

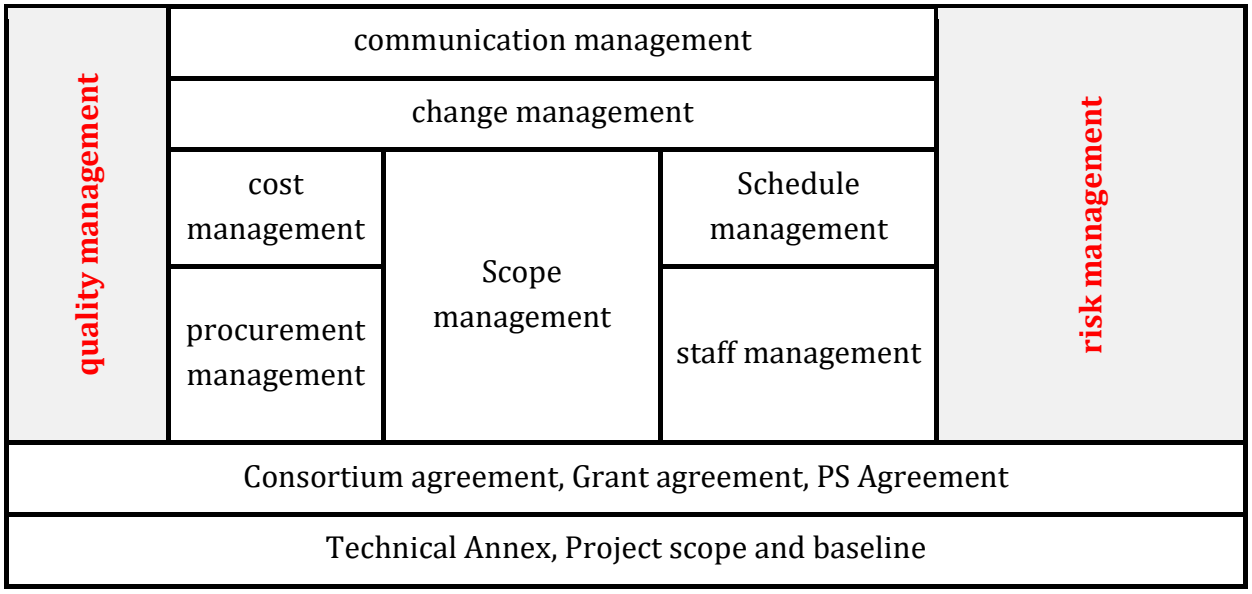

Figure 1. The position of QM and RM in Management structure of WamPPP

The QAP contributes in establishing the relevant to the project quality control and quality assurance activities for ensuring an efficient collaboration among the Consortium partners and delivery of project results, whereas the risk management is necessary for providing the process and techniques for the evaluation and control of potential project risks, focusing on their precautionary diagnosis and handling. Generally QAP of WamPPP is focused on reaching of defined the wider WamPPP objectives such as:

1. Enhancment of education and training of current and future workforce in Serbia in the field of waste management (WM), thus contributing to the capacities of both vocational HE and the growing WM industry,
2. Raising the awareness in society about the importance of the overall WM process and its possibilities in the development of society and reduction of poverty,

Also, QAP is focused to provide the highest qulity levels outcomes, that enable reaching of defined specific objectives of WamPPP, such as:

1. Development of modern curricula and syllabi, based on real needs for a competent workforce in the WM sector.
2. Development/improvement a teaching material in the field of WM for new curricula and modules in both Bachelor and postgraduate study programmes.

3. Creating opportunities for continuous professional development of employees in the budding WM sector, through realization of relevant training courses.
4. Improvement a cooperation between project partners in order to modernize teaching and training processes on novel technical and technological solutions, exploiting the application of ICT
5. Creation a sustainable model of students' professional practical placement through partnerships with business entities.
6. To conduct campaigns targeted at several levels of society (general, deprived, unemployed), in order to inform on problems of waste generation and opportunities in the WM, industry sector that must grow in Serbia.

2.2 Quality of project deliverables

The deliverables of WamPPP have to be formatted into appropriate deliverables such as reports, publications, plans, printed and electronically available promotional material, as well as deliverables in the form of organized events (trainings, conference, seminar, info days, etc.), developed and launched innovation platforms, established laboratories, etc. The relevance of deliverables is most important issue. Time agenda and outcomes have to follow project work plan according the Application Form.

2.2.1. Quality of promotional materials

Communication and dissemination activities of the project will adhere to the Dissemination and Exploitation Plan (D5.1) of the project. All promotional materials will reflect the visual identity of the project and the Erasmus+ Programme. The project coordinator P1 and partner P5 are responsible for design of all promotional material. The draft version has to be approved by all partners before printing, publishing and distribution. Also, the materials will be disseminated by all project partners at events which are relevant to reach the project's objectives (generally all tangible events).

2.2.2. Quality of websites and other electronic tools

The project envisages setting up the public WamPPP web-site (www.wamppp.com). The web site has to be optimized and build on the interactive, friendly- user platform. All representation tools have to be continuously updated by the partners and are intended to effectively communicate the results of the project. All partners are asked to promote WamPPP project on their websites and other electroning tools (such as: Facebook, Twitter and LinkedIn profiles/groups, newsletters, etc.) by providing short description of the project, logo and link to WamPPP website.
VTSNIS will be responsible for setting up and maintaining the project web-site with all information and materials received from project partners. Moreover, all tools will be implemented with high performance, good functionality and stability, emphasizing the maximum reach and awareness of the target audience.

2.2.3. Quality of Project Management

The project management structure and procedures are presented and adopted at the project's Kick-off meeting. The Quality of Project management realize through activities of the following bodies: Consortium board (13 members), a National Consortium board (NCB, 8 members) and Quality Board (QB, 13 members), Quality manager, and Project manager. The CB will review the quality report submitted by Quality board and decide on any necessary contingency measures in reorganization tasks and resources – as usual with a strong focus on the project impact. The project management will be transparent and flexible but also strict enough to ensure the implementation of the project activities in order to achieve the project's objectives.

Each partner is equally and independently responsible for assigned activities, money use and reporting. Contact persons have the responsibility for the local management. In order to ensure better visibility as well as dissemination within the WaMPPP staff, the monitoring and quality control reports will be published on the project Website.

3

MONITORING

Internal monitoring will be carried out by all partners, including self-evaluation by using the LFM, Work plan, budget and cash flow tables, CB meetings, monitoring visits of the QAP and questionnaires/satisfaction surveys of target groups (e.g. participants of dissemination and training events).

3.1. Project Quality Assurance Strategy

The WamPPP quality assurance includes four levels of quality control (1) Deliverable authors, Task-, and WP-leaders, (2) Deliverable reviewers, (3) Coordinator level, and (4) Steering Committee level and final approval:

1. Deliverable authors, task and WP leaders:
The 1st level corresponds to the activity level. The presentation of deliverables and activities of the project are a joint responsibility of the associated Task Leader and his/her team, partners involved in the activity and corresponding WP leader. It shall guarantee the quality and timeliness of the deliverable as identified in Application Form and action plan (modified and agreed by the CB on six-month basis). They present a "final draft deliverable" to the QAP (i.e. the deliverable reviewers).

2. Deliverable reviewers (QB):
This level of control is elaborated by at least two assigned reviewers of the QB, who are not authors of the deliverable. The reviewers have 10 working days to respond by sending comments using the appropriate template the deliverable authors have one week more to conform to the reviewer comments or send their written objections. In this case the reviewers will have another week to send back their final comments.
In case profound disagreements between reviewers and Task leaders arise, the next control level of the deliverables will allow the project coordinator to have a final say – with the possibility to involve the rest of the consortium if deemed necessary.

3. Coordinator level:
This level of control is carried out by the Project Coordinator. If a draft deliverable has not passed the level below control and there are disagreements between the deliverable authors and the reviewers, the Coordinator will take the necessary corrective actions in order to come up with acceptable deliverables. If necessary the Coordinator may involve the rest of the consortium. A draft deliverable that has passed the previous level of control will still be checked by the Coordinator for final comments and when accepted it will be forwarded to the CB for formal approval (if required).

4. Steering Committee level and final approval:
The highest level of control is done at the CB level. The CB is the highest decision making body of the partnership that takes the final decision for the approval of major deliverables.

It shall be possible to include a deliverable in the project reports even if its formal approval is still pending, if it has passed the previous levels of control without profound disagreements as then no major alterations are to be expected.
It is expected that the partners will also establish internal quality control mechanisms, i.e. the contact persons will always check the output of his/her project team before sending documents to the review or before uploading them on the WamPPP web site.

3.2. Quality responsibilities

Different roles are identified with reference to the development of the project activities and in particular the project quality assurance procedures. Different responsibilities are associated with the different roles.

3.2.1. Task Leader (main author of the deliverable)

- Is responsible for coordinating the development of the deliverable(s) according to the deliverable template,
- Is responsible for assigning parts of the work to other partners involved in the activity,
- Is responsible for coordinating the work of other partners involved in the activity, providing guidance when necessary,
- Is responsible for aligning the contributions of the other partners involved in the activity, in order to produce the deliverable,
- Is responsible for the submission of the draft deliverable to the WP leader, QB and the PC
- Is responsible for implementing the suggestions of the QB assigning certain amendments as appropriate,
- Is responsible for sending the amended draft deliverable,
- Reports to the WP Leader for any problems occurring during the implementation of the activity,

Cooperates with the WP Leader and other partners in the same WP in order to ensure the activity's progress in conformity with other activities and that any cross- activity inputs and outputs are being delivered as foreseen by the WP description (respecting any changes approved by the Steering Committee as recorded in the respective minutes).

3.2.4 Quality Board and Quality manager (QB, QM)

Quality Board

- Is coordinated by the QM, as agreed by the CB at the Kick-off meeting,
- Is responsible for the Quality Assurance of deliverables,
- Receives each draft deliverable from the Task Leader and provides feedback using the Checklist for review of deliverable (Annex A),
- Sends the Checklist for review of deliverable to the Task Leader and the Coordinator,

- Verifies the satisfactory implementation of the recommendations included in the Checklist for review of deliverable, in co-operation with the WP Leader,
- Cooperates with the Project Coordinator on general issues related to the level of quality of the project's deliverables as appropriate

Quality Managers (QM)

- Is responsible for assessing the deliverables' quality, super-vising the testing phases,
- Is responsible to scheduling appropriate evaluation scenarios and verifying compliance with all quality evaluation policies and procedures
- Is responsible to detect risks as early as possible and plan systematic activities to ensure achievement of quality objectives.
- Is responsible to assess the technical deliverables and approve their release guaranteeing the highest possible quality. Is responsible for creation and maintenance of the Quality Plan, defining processes, rules, standards, success/risk criteria and project metrics are in the responsibilities of the QM

3.2.5. Project Coordinator

- Cooperates with the QB and the Task Leaders on all matters arising relevant to ensuring the quality of the project's deliverables,
- Accepts the deliverable or provides final comments to the TL and WPL
- Cooperates with the WP Leaders in order to ensure that all WPs are progressing in conformity with each other and that any cross-WP inputs and outputs are being delivered as foreseen by the WP description,

Informs the QB, the WPL and the TL of any changes in the Partnership Agreement and the related Work Plan or any implicit changes in the implementation of the project that may affect the timing or the content of the relevant deliverables,

Officially submits all approved deliverables after their approval at 4th level control.

3.3. Quality feedback by the target groups

The satisfaction of stakeholders, beneficiaries and end users will also be investigated. It will take into account a variety of information from different sources using visits, interviews, questionnaires to target groups and consultation with the project beneficiaries.
In order to allow the impact assessment of the project activities, a template for feedback for different meetings / events was developed. It needs to be adapted to the specific needs but the main items shall not be deleted.

4

RISK MANAGEMENT

4.1. METODOLOGY

As the work package 6 of the project, which means the quality control, it will be necessary to apply mechanisms of statistical approach for:

- Develop and adopt the quality control mechanisms and
- Conduct internal and external peer reviews in a timely manner.

Besides the standard statistical methods, it will be implemented:

- Test the dependence of two categorical variables using a Chi-square test of independence;
- Estimate the difference of two means in a paired comparison study using a t-statistic;
- Test to compare several population means;

In data processing will be used packages Excel and Statistical to provide statistical visualization and statistical quality improvement.

This approach it will certainly contribute to quality control and monitoring content of the whole project, objectives, adopted methodological models, timely realization of the activities, dissemination, exploitation, coordination within and among working groups and effectiveness of the whole process. This will provide the basis for a critical overview of the project progress (in every activity and overall progress), achieved outcomes in the past project year.

4.2. WamPPP Risk Management Methodology

4.2.1. Introduction

As it is well known, the risk is defined as the possibility of the occurrence of an event associated with a damaging impact on the project. The risk can be measured by the probability of the event to occur and the intensity of the damage to the project in case the event actually occurs.

The process of risk management starts at the begin, i.e. in planning stage. Than process follows the project throughout its lifecycle.

Generally, when we talk about the planning process, we analyses the following three activities:

1. identification,
2. assessment and
3. response

Risk control is a process that follows the project until its completion. The project manager is responsible to monitor and perform the risk management activities.

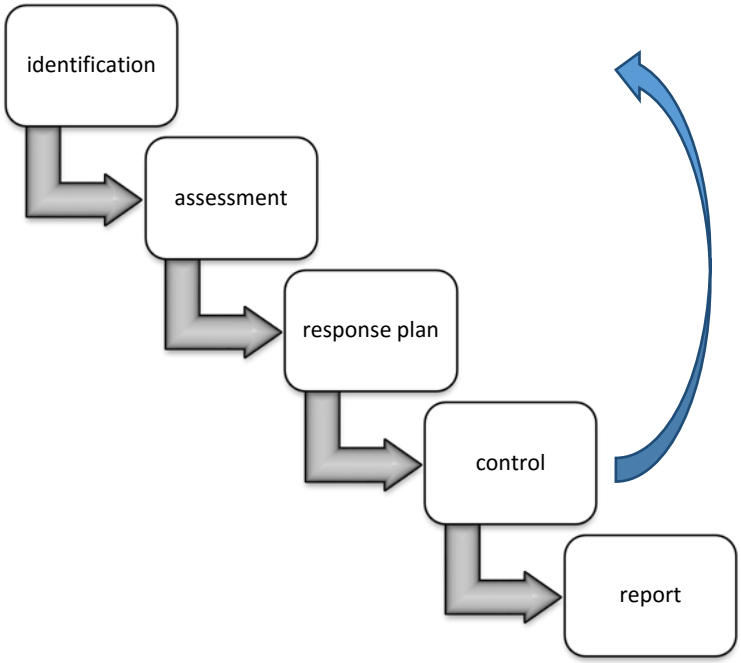

Fig 2: Risk control process

4.2.2. Risk Management Methodology

The methodology of the risk management consists the following four phases:

Identification – detect the events that may impair the success of the project. The occurrence of these events might be estimated and identified by brainstorming, questionnaires, professional checklists, analysis of related literature and articles or by drawing on the experience of the project manager and other team members.

Assessment – evaluation should be performed using quantitative procedures and qualitative methods in order to define a scale for the magnitude of the risk. Every risk event is assessed by two parameters: its probability to happen and the impact onto the project. The risk scale is based on a weighted processing of these two parameters.

Response Plan – the risk management team, in cooperation with the relevant parties, initiates a program for response that includes responsibility assignment, strategy of response and the time for implementation.

Control – during the lifecycle of the project, a predefined monitoring system must be implemented, in order to maintain full control over the development of the risk events. Since there might be risk events that were not identified during the planning process, the procedures of identification and assessment should be re-initiated.

The risk management methodology recommends ongoing continuous control and reports to monitor new risks and to update the partners regarding the status of identified risks.

1.2. Risk Identification by WPs

The risks identification list in WamPPP is taken from the LFM, regarding the project work packages. The WamPPP consortium decided to collect and compile all assumed/supposed risks and to make an action plan for their eventual appearance. Also, some risks appeared during the later analysis of the project plan.

The following tables displays the WaMPPP project risk events, derived from the analysis of the project plan.

Table 1: Potential WamPPP risks

ID	RISK	DESCRIPTION
1	Problem with starting the professional (vocational) master study programmes	At the moment there are some legal obstacles for the accreditation of vocational master in the sense that there are certain accompanying legislation that have to be published in the Serbian Official Gazette
2	Inertia of CAQA and slow changes in Serbian HE Laws	General problem of burocracy in Serbia and restricted time windows for submitting material for accreditation (twice per year).
3	Some employers may be reluctant to divulge their issues/problems with waste.	In certain companies, the problems encountered during the implementation of the work packages will be solved in accordance with company procedures and will be kept confidential.
4	Reluctance of industrial partners to actively contribute in the develop. of teaching and training scripts.	The possibility that industrial partners, because of their commitments, do not provide a sufficient contribution to, the achievement of these objectives.
5	Trainers from industrial partners may not be talented teachers - training in teaching methods will be provided.	The lack of methodical/pedagogical skills of lecturers from the industrial sector, to a large extent can create resentment towards workers offered the training courses.
6	Procedural problems during the equipment purchase	The problem of large-scale public procurement procedures, time limits , as the weak capacity of the market for laboratory equipment in Serbia
7	Resistance of the industrial trainers to accept novel methodological approaches	Poor cooperation of economy and high education in a previous period is a constant threat to the implementation of the project results, such as new training methods based on ICT assistance.
8	Poor cooperation between the EU professionals and Serbian colleges' staff.	The interaction between the EU professionals and the academic and administrative staff at the colleges is a cornerstone in this project. The different cultural background, priorities, and points of view might cause ineffective implementation of advices
9	Organizational changes in partner institutions.	Organizational changes in partner institutions might change the willingness to take part in this project, the priority of the project in the institution portfolio, and the people involved in the project.
10	Conflict between the different managers of the work packages	Managers of various tasks, with different interests and points of view, might be reluctant to exchange relevant information, thus damaging the overall progress.

4.3. Risk Assessment

4.3.1. Tools to Assess Risks

Risk assessment is normally performed using tools such as: team brainstorming, distribution of questionnaires, analysis of historical data and professional consulting services. In the current project we used for the preliminary assessment phase several tools:

Brainstorming – Members of the project management team and an expert from the project management field attended a brainstorming session, in which everyone provided his/her estimation for the project risk events.

Historical data – The project management team at P1 evaluated the experience of the previous project in which P1 and P2 participated and historical data information

Qualitative risk method is applied in order to present the Risk Index (RI) values that can be calculated and arranged in a prioritized list.

The value of the risk index is calculated by multiplying the probability (P) value by the Impact (I) value:

*Risk Index= Probability*impact*

The possibility of an event occurrence is defined by an ordinal scale method, ranging from low (1) to high (3).

Table 2. Estimate of Risk Event Probability

VALUE	PROBABILITY	Details
1	**Low** (Normal or Unlikely)	The event actually occurred in the past, but it never happened in this type of projects
2	**Medium** (Likely)	The event seldom occurs in this type of project
3	**High** (Very likely)	Very common event that actually happened in most projects

The impact value is based on three parameters: performance cost and time. It is defined by an ordinal scale method, ranging from low (1) to high (3).

Table 3: Estimate of Risk Event Impact

VALUE	IMPACT	Details
1	**Low** (Light)	The event might cause minor changes in the project plan
2	**Medium** (Moderate)	The event will probably cause changes in the project plan that will require some changes in the project schedule and budget plans
3	**High** (Extreme)	The event will cause fatal damage to the project and might cause its termination ahead of time

Performance is of extreme importance in the Wimps, since it indicates the level of compatibility between the project goals and specific objectives as defined in the formal application and the actual deliverables.

Cost is important in this project because the budget allocated for the project represents a meaningful investment of the EU aimed to promote higher education in Serbia. In the current project there is no option for budget overruns, thus the tasks must be performed in budget.

Time is defined as a solid framework, which requires that all the project activities will be executed during the 36 months between October 2015 and October 2018.

4.3.3 Risk Assessment Evaluation

The method of evaluation is based on three steps: an evaluation of the probability of the event to occur, an assessment of the impact, and a calculation of the risk index values, (Table 4.)

Table 4: Risk Matrix

IMPACT		PROBABILITY		
		Low	***Medium***	***High***
		1	**2**	**3**
Low	**1**	Insignificant risk 1	Low risk 2	Medium risk 3
Medium	**2**	Low risk 2	Medium risk 4	High risk 6
High	**3**	Medium risk 3	High risk 6	Extreme risk 9

The following table presents the assessment values for the risk events:

Table 5: Risk Events Matrix

ID	RISKS	Probability	Impact	Risk Index
1	Problem with starting professional master	1	2	2
2	Inertia of CAQA and slow changes in Serbian HE Laws	2	1	2
3	Some employers may be reluctant to divulge their issues/problems with waste	1	1	1
4	Reluctance of industrial partners to actively contribute in the development of teaching and training scripts	2	3	6
5	Trainers from industrial partners may not be talented teachers - training in teaching methods will be provided	2	2	4
6	Procedural problems during the equipment purchase	2	2	4
7	Resist of the industrial trainers to accept a novel methodological approach	1	2	2

8	Poor cooperation between the EU professionals and Serbian colleges' staff	2	3	6
9	Organizational changes in partner institutions	1	2	2
10	Conflict between the different managers of the work packages	2	2	4

4.3.5. Priority of Risk Events Responses

The response priority plan is divided into three level indicators that are defined by the risk index of the event.

High-Risk Index – High-risk index is a combination of extreme impact and high or very high probability. An occurrence with a high-risk index requires immediate response, since it might endanger the success of the entire project.

Medium-Risk Index – Medium-risk index is a combination of one parameter with a high value and the other with a low value. Although these are not events with fatal implication on the project, they must be closely monitored and adjusted throughout the project.

Low-Risk Index – Low-risk index is a combination of two low value parameters. Events of this nature create only a local impact on the project and can be corrected by the working teams, close to the occurrence.

4.4. Risk Response

The risk management team prepares a plan to avoid significant project performance deficiencies due to risk occurrences. The team monitors each of the high-risk index events and the medium-risk index events. Mitigation plan is discussed on a bi-weekly basis and in every case that partners' involvement is required, the project management team contacts the parties and updates them about required actions.