



Project Acronym:	FlexiGrid
Project Full Name:	Enabling flexibility for future distribution grid – FlexiGrid
Grant Agreement:	No 864048
Project Duration:	3,5 years (starting 1 November 2019)

Deliverable 1.4

Risk Management Plan

Work Package:	WP1
Task:	T1.3.2, T1.4.1
Lead Beneficiary:	IMCG
Due Date:	30/04/2020 (M6)
Submission Date:	24/06/2020(M8)
Deliverable Status:	Review
Deliverable Style:	Report
Dissemination Level:	Public
File Name:	D1.4 Risk Management Plan



This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 864048

Authors

Surname	First Name	Beneficiary	e-mail address
Edstrom	Annki	IMCG Sweden AB	annki.edstrom@imcg.se

Reviewers

Surname	First Name	Beneficiary	e-mail address
Le	Anh Tuan	CHALMERS	tuan.le@chalmers.se

Version History

Version	Date	Modifications made by
1	31 May 2020	First draft
2	03 June 2020	Internal review at IMCG
3	20 June 2020	Reviewed by Anh Tuan Le (Chalmers)
4	24 June 2020	Closed by PMO

Figures

Figure	Name
1	TQC Management
2	Organization and frequency of review of the FlexiGrid Risk management system
3	Reporting and reviewing scheme for FlexiGrid 42 months
4	Iterative process
5	Risk Matrix

List of abbreviations

Abbreviation	Definition
FlexiGrid	Enabling flexibility for future distribution grids with high penetration of variable renewable penetration– FlexiGrid
CA	Consortium Agreement
TPR	Technical Progress Report
GA	Grant Agreement

Contents

Authors	2
Reviewers.....	2
Version History	2
Figures.....	2
List of abbreviations.....	2
1. Introduction	4
2. Risk Management	4
3. Risk policy, principles and governance	5
3.1 Optimizing the ratio	5
3.2 Continuous process	5
3.3 Level of responsibility	5
3.4 Level of reviewing	5
4. Risk Management process.....	6
4.1 Work in progress.....	6
4.1.1 Foreseen risks – risks from GA.....	7
4.1.2 Unforeseen risks – planned risks	7
4.1.3 States of play for risk mitigation – risk occurrence.....	7
4.2 Methodology.....	7
4.2.1 Risk matrix	8

1. Introduction - Flexigrid

FlexiGrid will provide the operators of the electrical distribution systems, the DSOs, with a variety of advanced tools to meet the new demands that the transition into a fossil-free society brings and engage the lead actors in this changing market. To allow Europe into 100% renewable energy, the distribution grids need new flexibility to adapt to the variation in energy supply from weather-dependent sources like wind and solar.

2. Risk Management

This deliverable D1.4 presents the Risk Management Plan for FlexiGrid. It includes the risk management procedure, risk assessment and tools for how the risks are handled and monitored. A risk assessment of the project using the provided tool is appended to this report; the risk register.

D1.4 is a part of Task 1.3 where task objective is to: Review and assess quality of work as well as monitor the project progress and contingency plans on potential risks in order to cope with problems of specifying, integrating, developing and evaluating the concepts, methodologies and technologies in FlexiGrid.

This includes anticipation and assessment of risks and project deviations in order to implement and to apply contingency measures and conflict resolution procedures. This task includes constant monitoring and adaption of the project management procedures to improve its effectiveness. Together with WP leaders, quality of work will be reviewed and assessed, both related to delivering quality and replicability relevance.

Risk is defined as: *Any event that could occur and adversely impact the achievement of FlexiGrid project strategic and operational objectives. Lost opportunities are also considered as a risk.*

Risks (risk events) are about not be able to reach the projects objectives.

There are 3 important variables as shown in Fig. 1 that should be kept in mind when making decisions concerning risks. Will the risk affect costs, time-plan or quality of the project activities and deliveries?

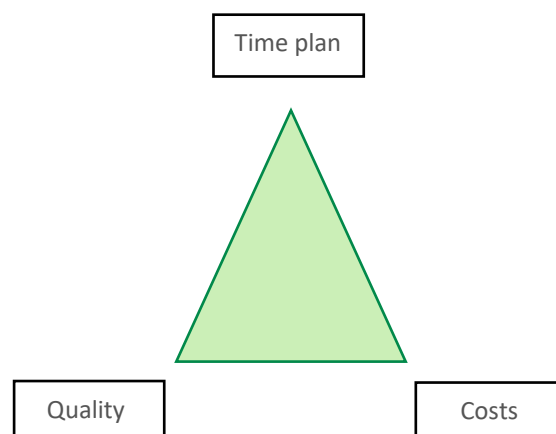


Figure 1. TQC management¹

3. Risk policy, principles and governance

Risk management is about optimizing the ratio between the level of acceptable risk and the use of resources. It is a continuous process and risk management ensures that risks are managed at the appropriate level of responsibility.

3.1 Optimizing the ratio

The ratio will be a consequence on which method one uses to evaluate the risks. If all risks are red, i.e., immediate attention is needed, too much time will be spent. Therefore, the risk assessment is not an activity without limitations.

3.2 Continuous process

Risk management is a continuous process and as such it is important to formalize to have a clear understanding how and when risks are identified, analyzed, quantified, monitored, and reported. The reporting cycle is a part of risk management process and is synchronized with the technical progress report which is a part of the technical periodic report.

3.3 Level of responsibility

Risks should be handled at the right level of responsibility (see Table 2). Risks that concerns the overall level of the project handles on Level 1. Risks associated with specific tasks is handled on Level 2.

Risk Layer	Risk Level	Risk Manager	Supporting Group	Frequency of Review	Report
1	Management	Project Coordinator	Management Board	Once a year	Management Board
2	Project	Project Manager	WP Leaders	Quarterly	Project Coordinator

Table. 2 Organisation and frequency of review of the FlexiGrid Risk management system

3.4 Level of reviewing

According to Consortium Agreement section 6.2.2.1 meeting schedule for Management Board meetings (see Table 3).

Quarterly meetings			Yearly face-to-face
Feb	May	Aug	Nov
2020	2020	2020	2020
2021	2021	2021	2021
2022	2022	2022	2022
2023			

Table 3 Reporting and reviewing scheme for FlexiGrid 42 months

¹ Quality: Some term quality with "performance" and/or "reputation"

Risk is always a part of the agenda for Management Board meetings. There are risks that could lead to decisions that is bound to be held in Management board meetings concerning content, finances, intellectual property rights and evolution of the consortium.²

Risk is also present every 6 week on the WP leader meetings.

4. Risk Management process

To establish a context a clear Risk policy is communicated to the partners and staff involved in the project and what level of uncertainty is willing to accept in respect to the achievement of FlexiGrid objectives.

The process is built on different steps and it is iterative, Figure 2 gives a clear idea.

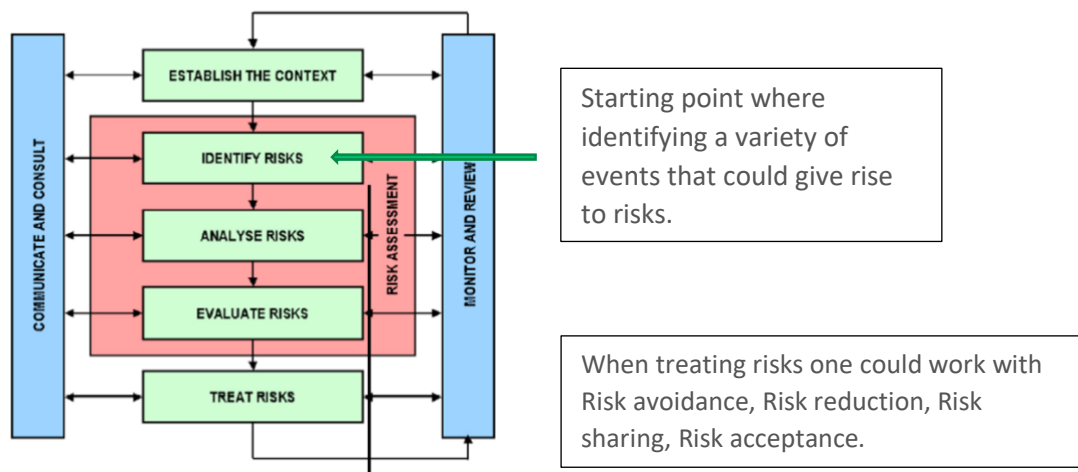


Figure 2. The iterative process³

4.1 Work in progress

The technical progress report (TPR) is updated every 6 months and submitted to EC according to Article 20 as a part of the periodic report. This report presents an overview of the progress towards the objectives of the action, including milestones and deliverables identified in Annex 1. As such it must include explanations justifying the differences between work expected to be carried out in accordance with Annex 1 and that actually carried out. Risk template is found in project handbook.

In the space between the objectives and the results, there is an ongoing risk identification process.

- Foreseen risks
- Unforeseen risks
- States of play for risk mitigation

² Please see Consortium Agreement 6.3.1.2

³ Picture from Shift2Rail (S2R) Joint Undertaking

4.1.1 Foreseen risks – risks from GA

Foreseen risks are stated in WT5 1.3.5 Critical implementation risks and mitigation actions in GA. These are the starting points from application phase. These risks are addressed to a work package i.e. the WP leader is responsible to handle the risk, i.e. value the risk and suggest actions in the TPR.

4.1.2 Unforeseen risks – planned risks

Unforeseen risks are events that can lead to missing out on deadlines. It can hurt the quality and affect costs. When these occur actions should be taken to either mitigate the effects, avoid the risks, or solve the cause of the risk event.

Update risk template with any new risks.

And use the methodology below when judging risk events.

4.1.3 States of play for risk mitigation – risk occurrence

Always report on the states of play for each risk you are responsible for or a part of. A continuous risk perspective is a healthy way of being alert and it demands adequate space for discussion. Follow up on the standing agenda every 6 week on WP-leader meeting and quarterly management board meetings.

Explanations:

- Risk number: the number in the foreseen and unforeseen risk template.
- Period: the period that the risk occurred.
- Did your risk materialize: Reflect if the risk is still adequate for risk mitigation.
- Comments: e.g. what kind of mitigation did you apply, effect of mitigations used.

4.2 Methodology

The criticality of a risk is the result of the combination of the severity (consequence i.e. impact) of the risk and the probability (likelihood) that the risk actually occurs.

Is the impact on:

- Costs
- Time plan
- Quality

The severity will be evaluated on a scale 1-3

1. **Low:** The impact of the risk can be mitigated through the redistribution of cost and/or scheduling (time plan) within the Work Package that detects or causes the Risk. It will not impact tasks, milestones and/or deliverables from other Work Packages. It will not impact the quality of project deliverables.
2. **Medium:** The impact of the risk may impact the cost and/or timeliness of tasks, milestones and/or deliverables from a number of Work Packages. It will not impact the quality of project deliverables. It can be mitigated through the redistribution of cost and/or scheduling (time plan) across a number of Work Packages in the Project.

3. **High:** The impact of the risk may impact the quality, cost and/or timeliness of tasks, milestones and/or deliverables from a number Work Packages. Mitigated will require actions to be taken across a number of Work Packages in the Project.

The probability will be evaluated on a scale 1-3

1. **Low:** Unlikely to occur
2. **Medium:** Few occurrences may happen during the execution of the project
3. **High:** Will very likely happen during project execution

4.2.1 Risk matrix

Risks can be unforeseen and uncertain to judge, therefore scrutiny and evaluation of risks should be on the right level of details when analyzing them and their effect on the project objectives. This means that the level of uncertainty affects the possibility to evaluate the outcome especially on likelihood. Therefore 3 levels give us the right platform for judging, as shown in Figure 3.

		1	2	3
Likelihood	3	3	6	9
	2	2	4	6
	1	1	2	3
		1	2	3
		Severity		

Figure 3. Risk Matrix

Red	Eliminate - serious risk needs immediate action.
Amber	Avoid/limit – needs attention and monitoring.
Green	Accept – progress in hand.

All project change requests will be analyzed for their possible impacts to the project.

