UNIVERSITÄT SIEGEN

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Master of
Cyber Physical Systems

International Master of Science on Cyber Physical Systems

Conduct internal peer reviews in a timely manner
D4.2

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University of Hertfordshire UH   KTH VETENSKAP OCH KONST   GJU الجامعة الألمانية الأردنية German Jordanian University   AL-QUDS UNIVERSITY   Palestine Technical College   Université de Sfax   Université de Carthage

Version History

Version No.	Date	Change	Editor(s)
0.1	Jan 2019	Initial draft	
0.2	Feb 2020	First year report finalized	
0.3	Feb 2020	Review of the report	Hamidreza Ahmadian

Contributors

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Table of Contents

1   Introduction

1.1   Abstract

Conducting peer review and quality assurance for WP deliverables and activities is very essential to ensure high quality project progress and to guarantee that the project outcomes and outputs follow the highest quality standards and measures. Hence, WP4 in MS@CPS has the responsibility of running several assurance and review mechanisms such as, surveys, brainstorming and feedback sessions, quality standard compliance to ensure the correct and high-quality progress of the project. The main objective of this workpackage is to assess the project implementation using the following indicative measures:

- Good cooperation between the project partners and industrial experts.
- Project implementation goes according to the stated work plan.
- In case of revision of the work plan over project life-cycle, the budget and activities should be done on time

This assessment will be made via monitoring and progress reports, project meetings, seminars and conferences and the final report. D4.2 provides a report of these assessments during the first year of the project.

1.2   The purpose of this document

This document provides reports for conducting peer review process for various project activities and deliverables to ensure high quality project outputs and outcomes.

1.3   Relation to other WPs deliverables and activities

As seen in Figure 1, all WPs have several activities and deliverables. The main activities are projects' management and stakeholders meetings, workshops, visibility activities and seminars. Further, each WP has a predefined set of deliverables that should be revised and its quality should be assured.

1.4   Project activities review process

The project will have several activities, in which the planning, execution activities should be monitored and evaluated. In what follows, a brief description of the evaluation process for the project activities is provided.

1.4.1   Projects' management and stakeholders meetings

In order to ensure successful project implementation, the project participants and stakeholders should have regular meetings to discuss the project progress and activities, receive feedback and consultation on the under development courses' contents, meet with stakeholders from the industry and meeting with students who are expected to be the beneficiaries of the master program.

- o **Management meetings**: project participants have a set of face-to-face meetings throughout the project to discuss the project progress and work together toward achieving the project objectives. These meetings should be well organized to ensure the best utilizing of the meeting time. These meetings are normally evaluated after the meeting is finished from the

participants to give feedback about the meeting quality and organization to the organizers, such that they will consider the received feedback for future meetings.

Stakeholder meetings: in order to ensure that the project activities and curricula are well aligned with the industrial needs and requirements, the related industry will be involved in the project development process, which can be done by consulting them and sharing the study plan and courses and receive feedbacks from them to enhance the program. This process of industry engagement can be done by having meetings with stakeholders. The quality of these meetings should be evaluated to ensure high standards and quality. Further, during these meetings, questioner and surveys should be developed by the meeting organizer to address them to the stakeholders from the industry to receive their feedback and inputs.

o **Students meetings**: engagement of students is an integral action of the project development and curricula development. Hence, students are expected to be actively engaged during the project development life-cycle, which can be done by conducting meeting sessions with the students to discuss the project and listen for their feedback and opinions. It also can be done by asking them to fill a questioner that addresses the project objectives, outcomes and ask for the students' opinion and feedback to consider it while developing the project.

1.4.2   Workshops

Project participants and stakeholders are expected to arrange a set of training workshops where they meet together and project participants (who may include students) will receive training on various topics related to the project theme (workshops related to main courses of the under development Master program). These workshops should be well organized and taught by experts in the fields. The quality of the workshop participants are normally evaluated after the workshop or during it (at the end of each day) to give the organizers feedback on how it can be improved and be more successful.

1.4.3   Visibility activities

Visibility is an important aspect in any project, in which visibility actions can be organized that aim at informing the students and stakeholders (locally and globally) about the project and how they can be part of it. The quality of these visibility activities should be also monitored and evaluated.

1.4.4   Seminars

Another important project activity is having regular information seminars and sessions where the project overview and objectives are elaborated and discussed with the students and interested audience. These seminars should be highly organized and their quality should be evaluated.

1.5   WPs Deliverables:

The project is divided into six main Work Packages (WP), each of which has a set of deliverables. These deliverables should be revised and evaluated to ensure high quality and standard. To achieve that, as discussed in the Quality Plan (D4.1), a quality assurance committee has been established that has at least one member from each partner. Further, in order to arrange the deliverables review process, the set of all deliverables are listed with their review and delivering deadlines. For each deliverable, the partner responsible for reviewing and checking the deliverable quality is determined, thus the review process is distributed among all partners in a balanced way to ensure high quality review process.
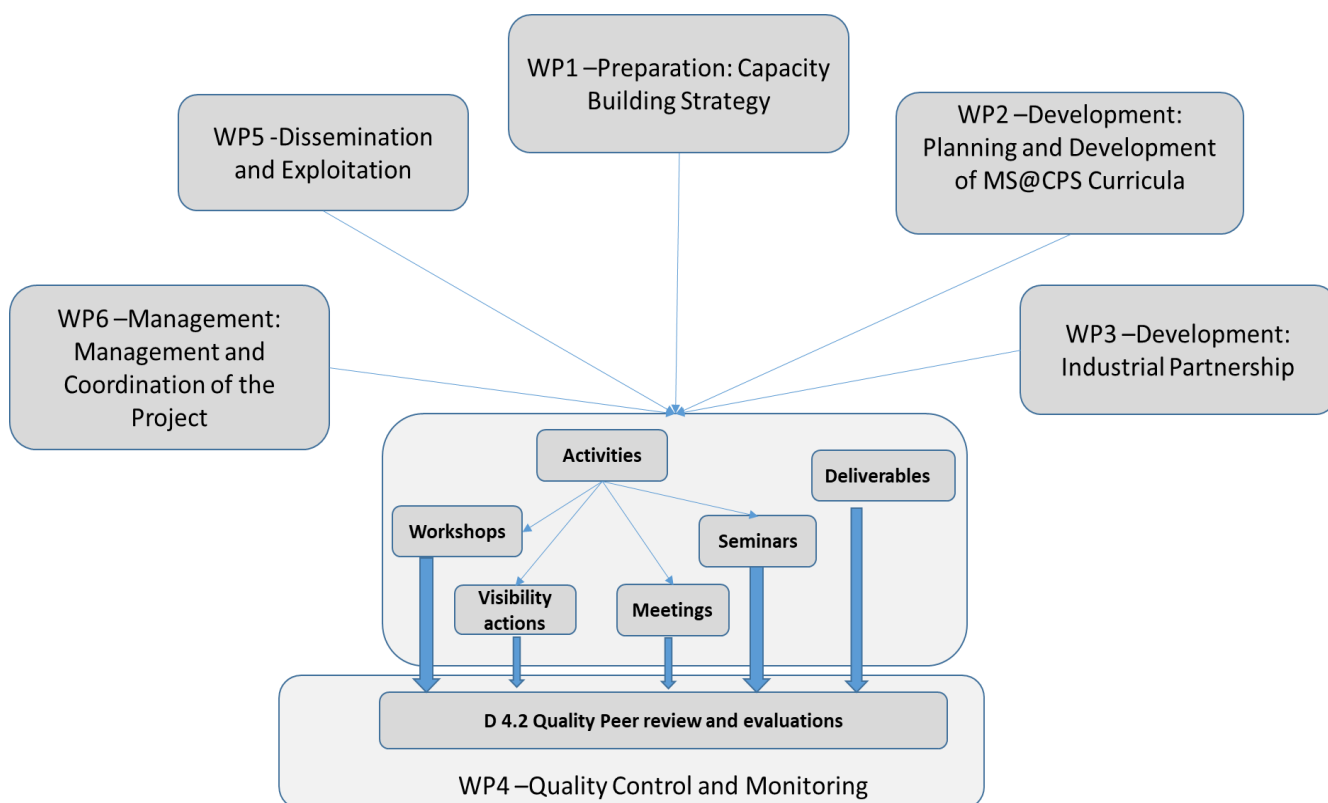
Figure 1 The relationship between the quality peer review and evaluation process to other WPs' activities with the other WP4 Deliverables

1.6   Deliverables Quality Check Schedule

To ensure a timely and high-quality deliverables to the Work Packages outcomes. Table 1 represents the project deliverables, the main responsible partner to conduct the quality monitoring and checking process, the initial deadline to submit the deliverable, the quality checking process deadline, and the final deadline for submitting the deliverables after taking into consideration the Quality Assurance Committee feedback and notes.

No.	Deliverable WP	Quality check responsibility	Initial Deliverable deadline	Quality revision deadline	Deliverable Final deadline	WP Leading
1	1.1	GJU, TTU	1/4/2019	7/4/2019	14/4/2019	AQU
2	1.2	GJU, TTU	1/7/2019	7/7/2019	14/07/2019	AQU
3	1.3	GJU, TTU	1/10/2019	7/10/2019	14/10/2019	AQU
4	1.4	GJU, TTU	1/1/2020	7/1/2020	14/1/2020	AQU
5	1.5	GJU, TTU	1/1/2020	7/1/2020	14/1/2020	AQU
6	2.1	USF, KTH	1/2/2020	7/2/2020	14/2/2020	USI
7	2.2	USF, KTH	1/5/2020	7/5/2020	14/05/2020	USI
8	2.3	USF, KTH	1/8/2020	7/8/2020	14/08/2020	USI
9	2.4	USF, KTH	1/11/2020	7/11/2020	14/11/2020	USI
10	2.5	USF, KTH	1/1/2021	7/1/2021	14/1/2021	USI
11	2.6	USF, KTH	1/7/2019	7/7/2019	14/07/2019	USI
12	2.7	USF, KTH	1/9/2020	7/9/2020	14/09/2020	USI
13	2.8	USF, KTH	1/1/2021	7/1/2021	14/1/2021	USI
14	2.9	USF, KTH	1/7/2020	7/7/2020	14/07/2020	USI
15	2.1	PTC,USF	1/1/2021	7/1/2021	14/1/2021	USI
16	2.11	PTC, USF	1/6/2021	7/6/2021	14/06/2021	USI
17	2.12	PTC, USF	28/12/2020	3/1/2021	10/01/2021	USI
18	2.13	PTC, TTU	1/7/2021	7/7/2021	14/07/2021	USI
19	2.14	PTC, TTU	18/12/2021	25/12/2021	01/01/2022	USI
20	3.1	PTC, TTU	1/9/2020	7/9/2020	14/09/2020	KTH
21	3.2	PTC, TTU	1/1/2021	7/1/2021	14/1/2021	KTH
22	3.3	GJU, TTU	1/3/2020	7/3/2020	14/03/2020	KTH

23	3.4	GJU, TTU	1/7/2020	8/7/2020	15/07/2020	KTH
24	4.1 report 1	AQU, USI	1/1/2020	7/1/2020	14/1/2020	GJU
25	4.1 report 2	AQU, CU	1/1/2021	7/1/2021	14/1/2021	GJU
26	4.1 report 3	AQU, CU	1/1/2022	7/1/2022	14/1/2022	GJU
27	4.2 report 1	AQU, USI	1/1/2020	7/1/2020	14/1/2020	GJU
28	4.2 report 2	AQU, CU	1/1/2021	7/1/2021	14/1/2021	GJU
29	4.2 report 3	AQU, USI	1/1/2022	7/1/2022	14/1/2022	GJU
30	4.3	AQU, CU	1/7/2021	7/7/2021	14/07/2021	GJU
31	5.1	CU, KTH	1/7/2019	7/7/2019	14/07/2019	PTC
32	5.2	CU, KTH	1/7/2020	7/7/2020	14/07/2020	PTC
33	5.3	USI, CU	1/9/2020	7/9/2020	14/09/2020	PTC
34	5.4	USI, CU	1/7/2020	7/7/2020	14/07/2020	PTC
35	5.5	USI, CU	1/1/2021	7/1/2021	14/1/2021	PTC
36	5.6 report 1	USI, CU	1/1/2020	7/1/2020	14/1/2020	PTC
37	5.6 report 2	USI, CU	1/1/2021	7/1/2021	14/1/2021	PTC
38	5.6 report 3	USI, CU	1/1/2022	7/1/2022	14/1/2022	PTC
39	5.7	USI, CU	18/12/2021	25/12/2021	01/01/2022	PTC
40	6.1	PTC, GJU	1/1/2019	8/1/2019	15/1/2019	USI
41	6.2	PTC, GJU	1/11/2019	8/11/2019	15/11/2019	USI
42	6.3	PTC, GJU	1/7/2020	7/7/2020	14/07/2020	USI
43	6.4	PTC, GJU	1/1/2022	7/1/2022	14/1/2022	USI

Table 1: WP Deliverables quality checking schedule

1.7   The Deliverables Quality Checking Process

In order to demonstrate how the review process for the deliverables happens, the following example demonstrates the entire process. First, the WP leader who is responsible for the deliverable will send an announcement about the finished deliverable via the project mailing list. Then the QA committee leader will send an email to the WP4 mailing list (which includes the emails of the QA committee) asking the partners in charge of reviewing this deliverable (according to the Deliverables review table) to review the deliverable and remind them with the review date. After that, the partner in charge of the review process will accomplish the task and send the comments directly to the WP leader who will in return will reflect these comments on the deliverables and re-submit a revised version for the final approval process.

In what follows, a concrete example for the review process of the deliverable D1.2 is demonstrated. Deliverable D1.2 (Identification of the current and Future Market Requirements) was submitted for review by the WP leader (AlQudus university) to the QA committee for feedback and review, who reads the document, send their suggestions pertaining the deliverable contents, format, writing, clearance, etc., AlQudus university has reacted to the submitted comments and improved the deliverable contents according to the QA comments and feedbacks. The review process took place 1 week before the final submission deadline, which allowed AlQudus University enough time to address the submitted comments and improve the deliverable content and quality.

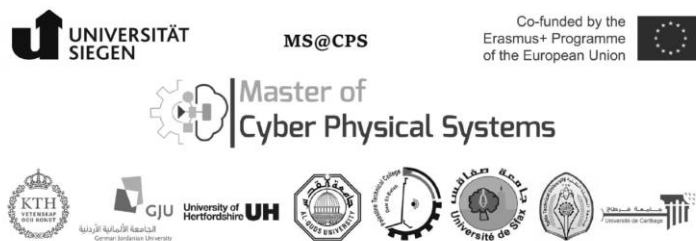## 2   Face-to-Face Management Meeting Surveys

Quality evaluation surveys were distributed after the face-to-face meetings to ensure high quality meetings and outcomes. In what follows the survey structure is mentioned followed by the survey results of the conducted management meetings.

2.1   Survey structure

In what follows, an example of the survey used to evaluate the meetings quality is presented. The survey shows the main points that need to be commented by the participants which reflect the quality of the meeting organization, its efficiency, and whether the meeting achieved its objectives or not.

MSCPS project - Amman meeting evaluation
* Required

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Master of Cyber Physical Systems

KTH VETENSKAP OCH KONST   GJU   University of Hertfordshire UH   Al-Quds University   Université de Sfax   Université de Carthage

EVALUATION QUESTIONNAIRE

Dear Participant,
Thank you for filling out this evaluation form about RENES meeting in Berlin, your opinion will help us to develop next activities.

1.   Name and Surname (will only be shown to administrators of the form; names are removed before distribution of results) *

_____

2. Gender *

    Mark only one oval.

    ◯ Male

    ◯ Female

3. Age

    _____

4. Country *

    Mark only one oval.

    ◯ Jordan

    ◯ Palestine

    ◯ Germany

    ◯ UK

    ◯ Sweden

    ◯ Tunisia

5. What is your present position? *

    _____

6. I found the meeting useful [Scale 1–5: 1=poor/negative, 5=excellent] *

    Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

7. The meeting was on the right duration *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

8. The meeting has answered many of my doubts about the project *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

9. I know where to achieve further information *

Mark only one oval.

◯ Yes

◯ No

10. Were you involved in the organization of the Meeting for the better definition of your needs? *

Mark only one oval.

◯ Yes

◯ No

11.   I have a better understanding on how the project will be deployed *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

12.   How satisfied are you with the quality of the information/instruction about the project and activities in this meeting *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

13.   How satisfied are you with the quality of the information/instruction about the project and activities in this meeting *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

14.   I understand how my tasks and responsibilities contribute to the project success *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

15. I know where my contribution is required, when and how *

Mark only one oval.

◯ Yes

◯ No

16. How satisfied are you with the quality of the information/instruction from this meeting? *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

17. Do you consider the meeting venue appropriate? *

Mark only one oval.

◯ Yes

◯ No

18. How satisfied are you with the meeting materials and information? *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

19.   How satisfied are you with the overall quality of this meeting? *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

20.   How useful was the information you received? *

Mark only one oval.

	1	2	3	4	5
	◯	◯	◯	◯	◯

21.   What were the strengths and weaknesses of the Meeting? Why? *

_____

_____

_____

_____

_____

22.   What general improvements would you recommend to the next meetings? *

_____

_____

_____

_____

_____

This feedback form has been prepared to understand better your satisfaction level of the coordination meeting carried out in order to understand which where the very positive aspects but also the aspects for improvement and thus, to prepare the next meeting better according to your suggestions.

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2.2   Survey results of the first management meeting

The first management meeting was the Kick off meeting, which took place in Siegen- Germany, on the 6th to 7th of Feb. 2019. The following is the summary of the survey results. Please note that the survey participants belonged to different partner universities.

MSCPS project - Siegen Kick off meeting evaluation
5 responses

Publish analytics

EVALUATION QUESTIONNAIRE

Name and Surname (will only be shown to administrators of the form; names are removed before distribution of results)
5 responses

Isam Ishaq

Raimund Kirner

Zaid Alhalhouli

Rashid Jayousi

Khalid alemerien

Gender
5 responses

- Male
- Female

100%
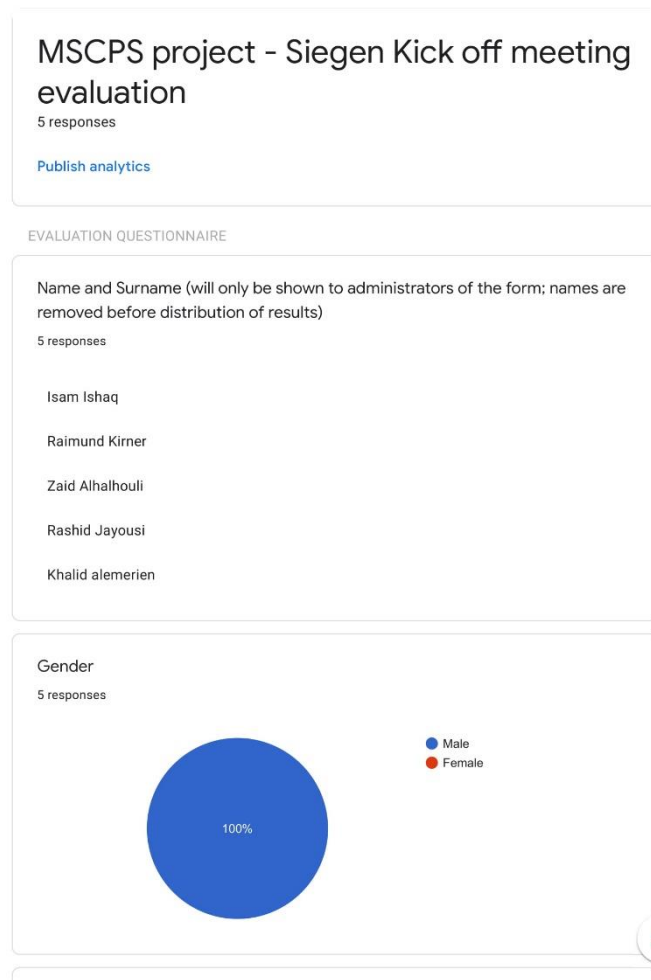
Age

5 responses

50

47

41

58

40

Country

5 responses

- Jordan
- Palestine
- Germany
- UK
- Sweden
- Tunisia
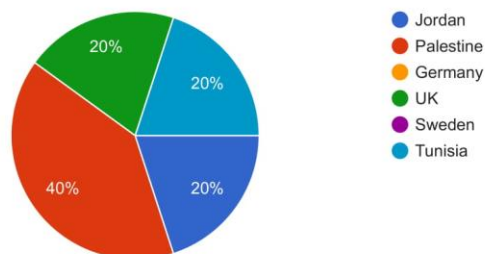
What is your present position?

5 responses

Assistant Prof.

Reader

Head of IT Department

Coordinator of thr joint Ph.D program

Assistant professor

I found the meeting useful [Scale 1–5: 1=poor/negative, 5=excellent]

5 responses

The meeting was on the right duration

5 responses

The meeting has answered many of my doubts about the project

5 responses

3

3 (60%)

2

2 (40%)

I know where to achieve further information

5 responses

● Yes
● No

100%

Were you involved in the organization of the Meeting for the better definition of your needs?

5 responses

● Yes
● No

60%

40%

I have a better understanding on how the project will be deployed

5 responses

4

3

2

1   4 (80%)

0   0 (0%)   0 (0%)   0 (0%)   1 (20%)

I understand how my tasks and responsibilities contribute to the project success

5 responses

4   4 (80%)

3

2

1   1 (20%)

0   0 (0%)   0 (0%)   0 (0%)

     1   2   3   4   5

I know where my contribution is required, when and how

5 responses

● Yes
● No

100%
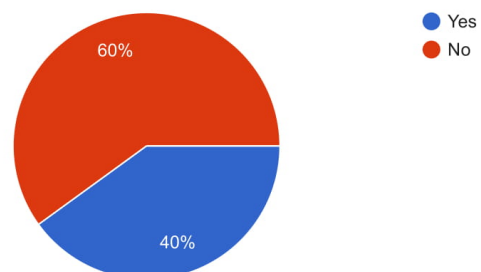
How satisfied are you with the quality of the information/instruction from this meeting?

5 responses

Do you consider the meeting venue appropriate?

5 responses

How satisfied are you with the overall quality of this meeting?

5 responses

How useful was the information you received?

5 responses

What were the strengths and weaknesses of the Meeting? Why?

5 responses

This was an essential meeting as it it was the first f2f meeting and we got the chance to meet everyone and understand the details of the project.

Strong point was to better network the partners due to the physical meeting.

Strength: Organizations

Well organised and good timing for the different session.

I would be happy to be able to visit the research labs in embedded systems

---

What general improvements would you recommend to the next meetings?

5 responses

-

Provide photo session to have named photos of each participant. This makes the initial networking even more effective.

Increase the meeting duration

None

It was very nice

This feedback form has been prepared to understand better your satisfaction level of the coordination meeting carried out in order to understand which where the very positive aspects but also the aspects for improvement and thus, to prepare the next meeting better according to your suggestions.

2.3   Survey results of the second management meeting

The second management meeting took place in Amman- Jordan on 25th – 27th of Jun 2019. The following is the summary of the survey results. Please note that the survey participants belonged to different partner universities.

MSCPS project - Amman meeting evaluation

5 responses

EVALUATION QUESTIONNAIRE

Name and Surname (will only be shown to administrators of the form; names are removed before distribution of results)

5 responses

Khalid alemerien

Raimund Kirner

Zaid Alhalhouli

Rashid Jayousi

Isam Ishaq

Gender

5 responses

● Male
● Female

100%
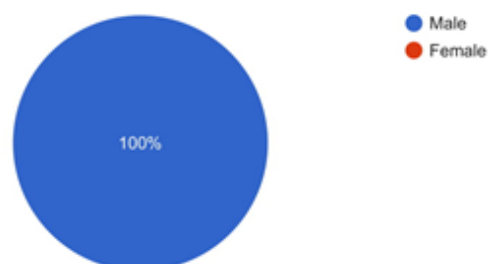
Age
5 responses

40

47

41

58

51

Country

5 responses

- Jordan
- Palestine
- Germany
- UK
- Sweden
- Tunisia

40%   20%

40%
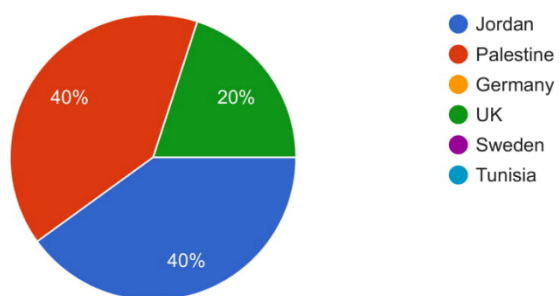
What is your present position?

5 responses

Assistant professor

Reader

Head of IT Department

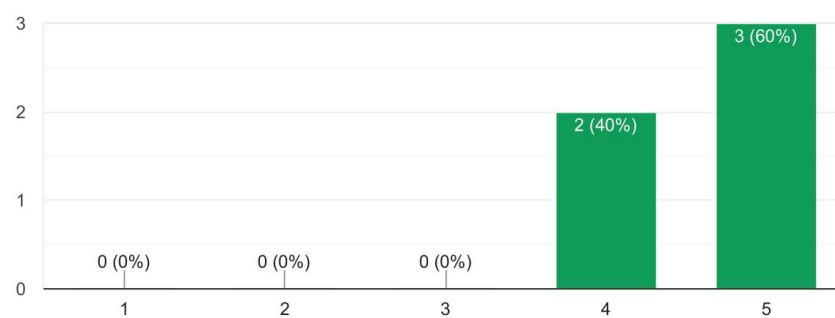Coordinator of the joint Ph.D. project

Assistant Prof.

I found the meeting useful [Scale 1–5: 1=poor/negative, 5=excellent]
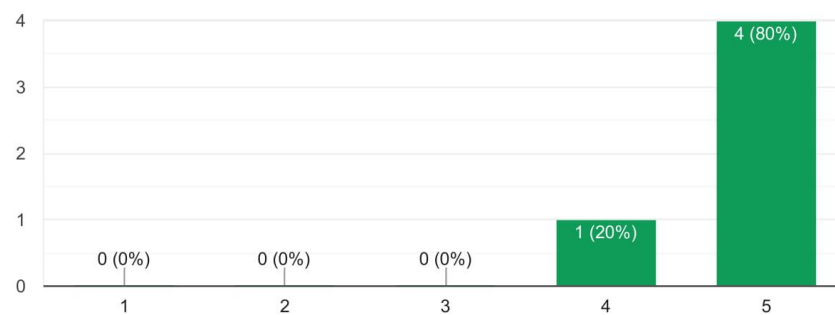
5 responses

The meeting was on the right duration

5 responses

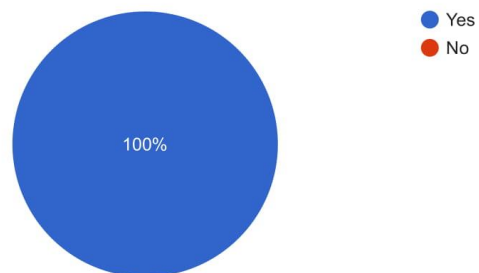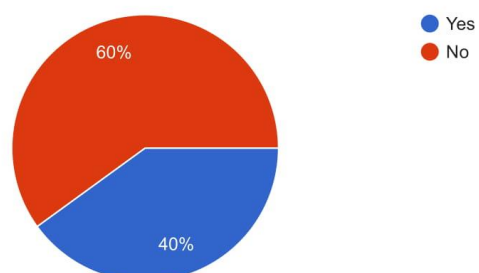
The meeting has answered many of my doubts about the project

5 responses

4

4 (80%)

3

I know where to achieve further information

5 responses

- Yes
- No

100%

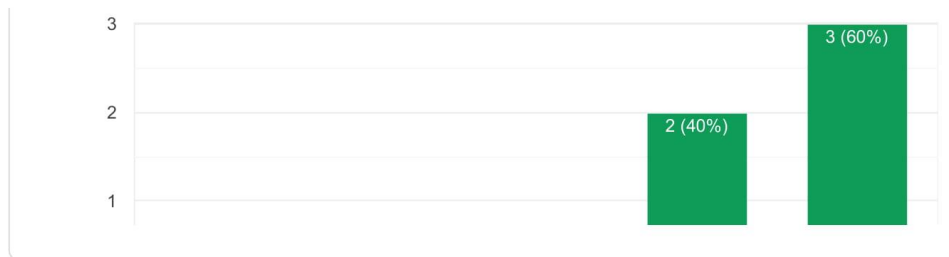## Were you involved in the organization of the Meeting for the better definition of your needs?

5 responses

- Yes
- No

60%

40%

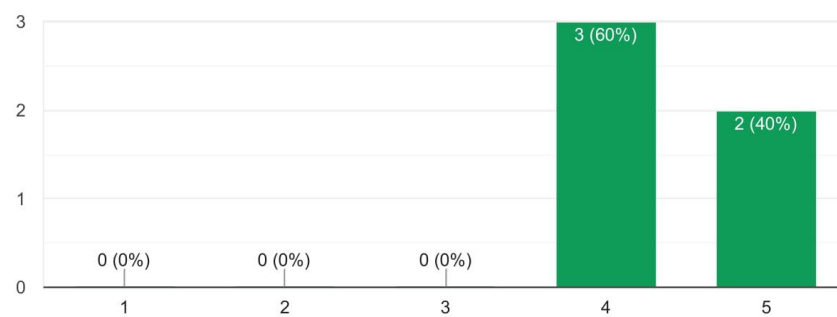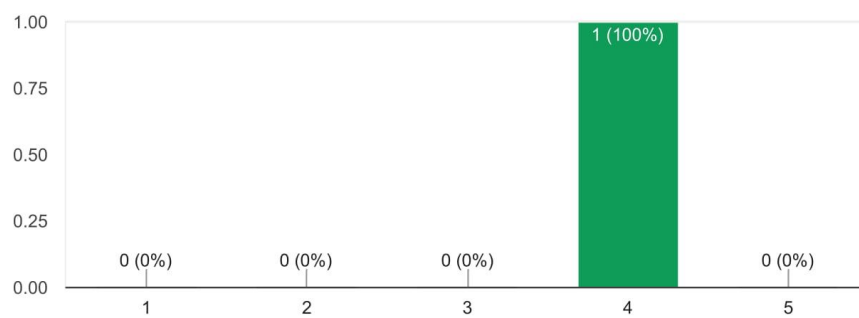## I have a better understanding on how the project will be deployed

5 responses

How satisfied are you with the quality of the information/instruction about the project and activities in this meeting
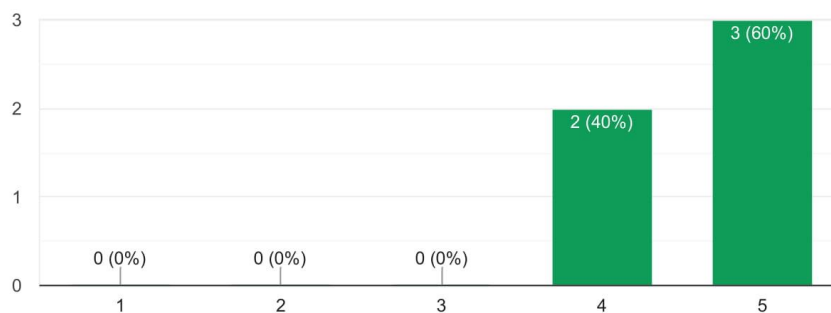
5 responses

How satisfied are you with the quality of the information/instruction about the project and activities in this meeting
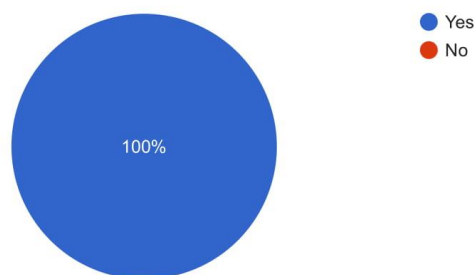
1 response

I understand how my tasks and responsibilities contribute to the project success

5 responses

I know where my contribution is required, when and how

5 responses

● Yes
● No

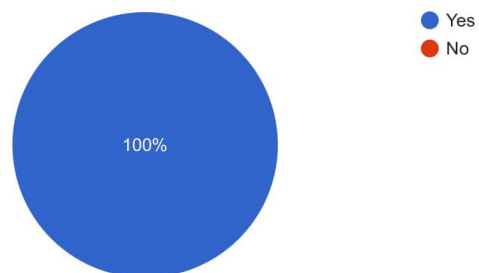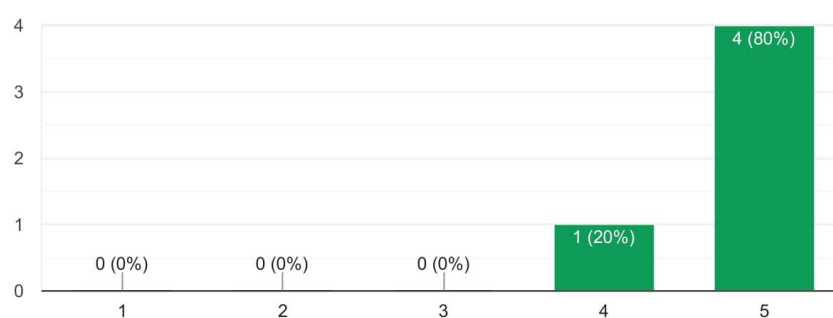How satisfied are you with the quality of the information/instruction from this meeting?

5 responses

3 (60%)

2 (40%)

3

2

Do you consider the meeting venue appropriate?

5 responses

● Yes
● No

100%

How satisfied are you with the meeting materials and information?

5 responses

4 (80%)

4

3

2

1

0 (0%)   0 (0%)   0 (0%)   1 (20%)

0
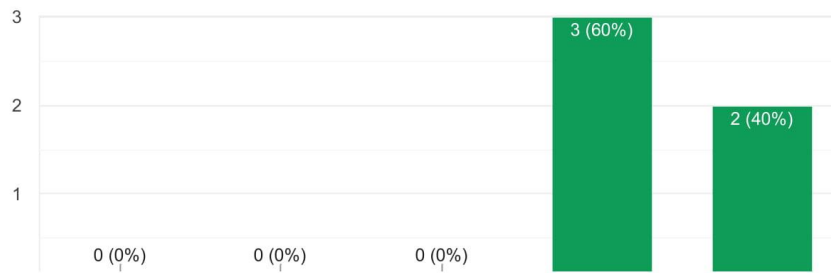
1   2   3   4   5

How satisfied are you with the overall quality of this meeting?
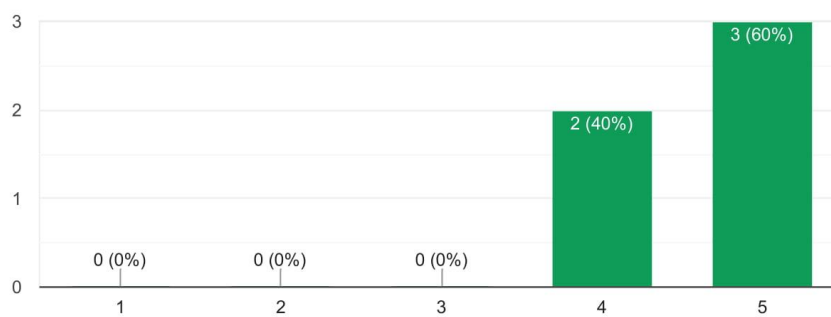
5 responses

How useful was the information you received?

5 responses

What were the strengths and weaknesses of the Meeting? Why?

5 responses

It was well-organized

The meeting was very smooth, additional rooms were available for smaller group work to not disturb each other.

Well Organized

Very well organised

-

What general improvements would you recommend to the next meetings?

5 responses

Invite more professors and students from GJU

Nothing

None

-

This feedback form has been prepared to understand better your satisfaction level of the coordination meeting carried out in order to understand which where the very positive aspects but also the aspects for improvement and thus, to prepare the next meeting better according to your suggestions.

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Google Forms

2.4   Survey results of the third management meeting

The third management meeting took place in Sfax- Tunisia from 5-7 Nov 2019. The following is the summary of the survey results. Notice that the survey participants belonged to different partner universities.

MSCPC - Sfax Meeting Evalutation

Questions   **Responses**   10

This feedback form has been prepared to understand better your satisfaction level of the coordination meeting carried out in order to understand which where the very positive aspects but also the aspects for improvement and thus, to prepare the next meeting better according to your suggestions.
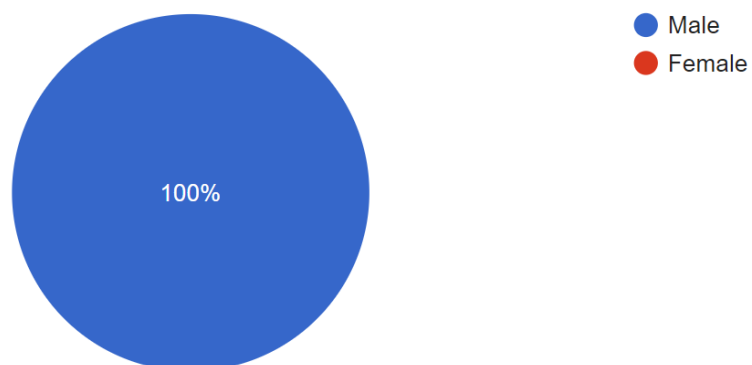
EVALUATION QUESTIONNAIRE

Name and Surname (will only be shown to administrators of the form; names are removed before distribution of results)

10 responses

| Yazid M. |
| Madjid Fathi |
| Ali Qtamin |
| Tarek ZLITNI |
| Aiman Ayyal Awwad |
| Khalid alemerieb |
| Rashid Jayousi |
| Zaid Alhalhouli |
| Hamidreza Ahmadian |
| Raimund Kirner |

Gender

10 responses

Legend:
- Male
- Female

100%

Age

9 responses

Age	Count
33	1 (11.1%)
36	1 (11.1%)
37	1 (11.1%)
40	1 (11.1%)
41	2 (22.2%)
42	1 (11.1%)
47	1 (11.1%)
57	1 (11.1%)

Country

10 responses

Legend:
- Jordan
- Palestine
- Germany
- UK
- Sweden
- Tunisia

Jordan 40%, Palestine 20%, Germany 10%, UK 10%, Tunisia 20%
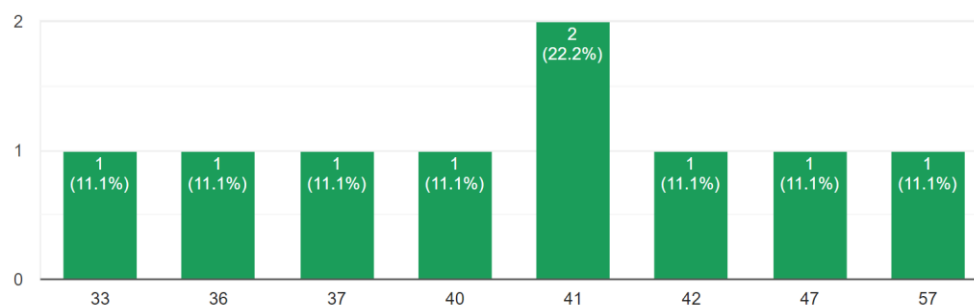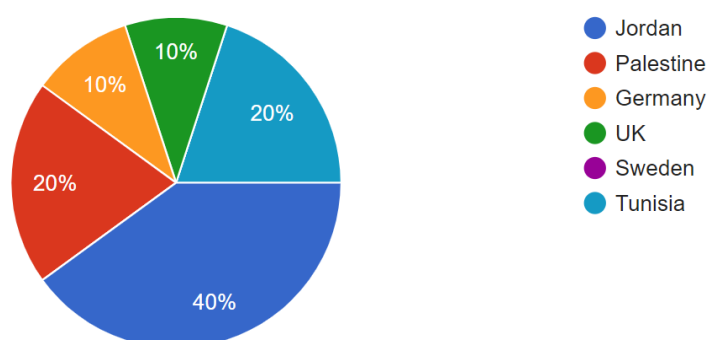
What is your present position?

10 responses

Lecturer

prof.

Assistant Manager

assistant Professor

Assistant Proffesor

Assistant professor

Coordinator of the joint Ph.D. program

Head of IT Department
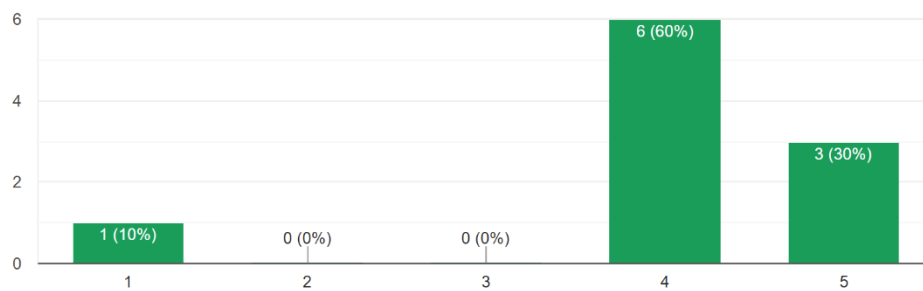
Reserach assistance

Reader
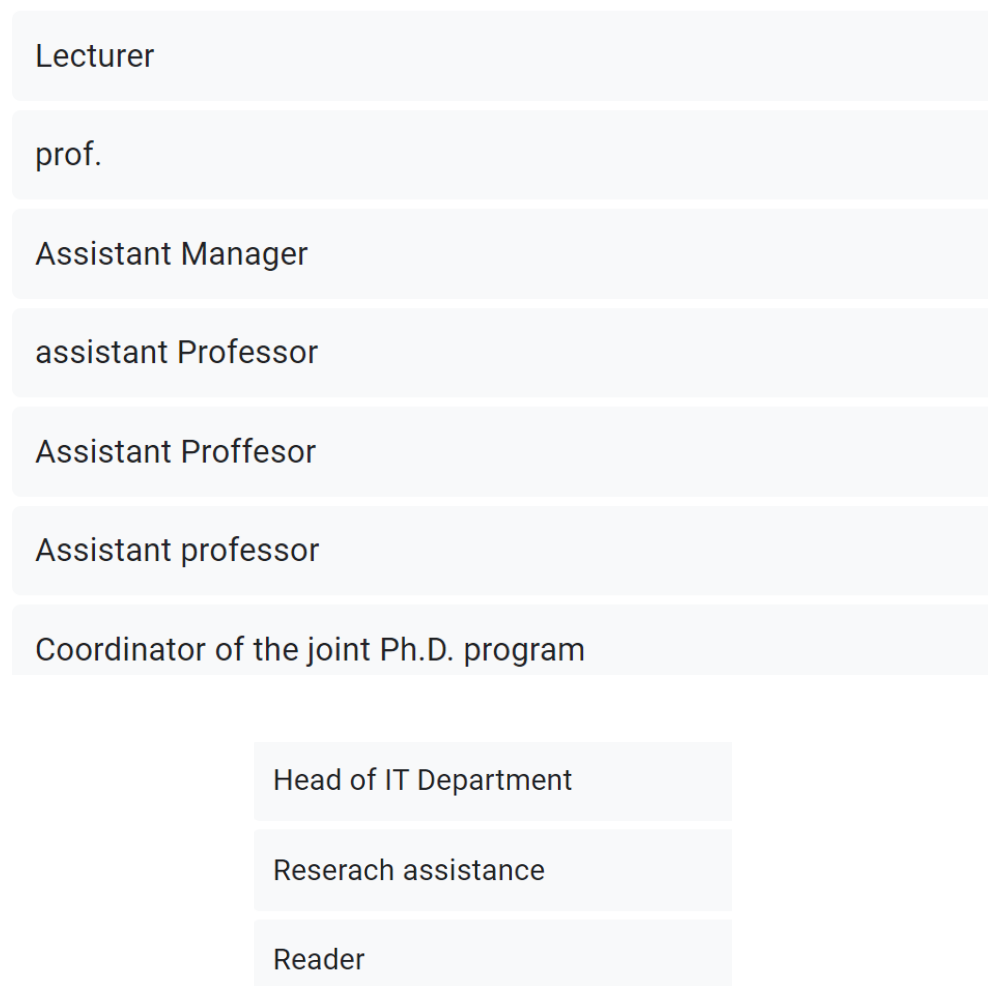
I found the meeting useful [Scale 1–5: 1=poor/negative, 5=excellent]
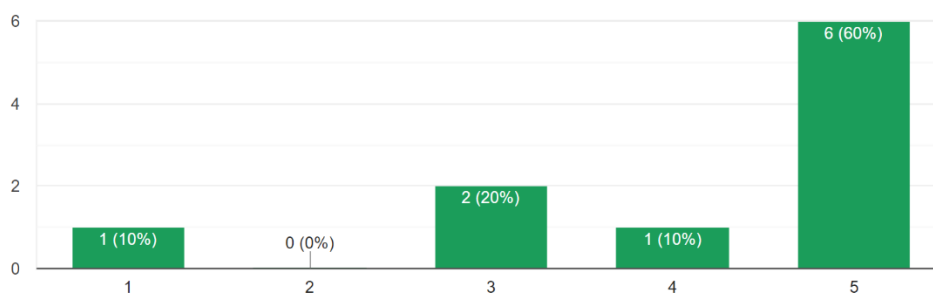
10 responses
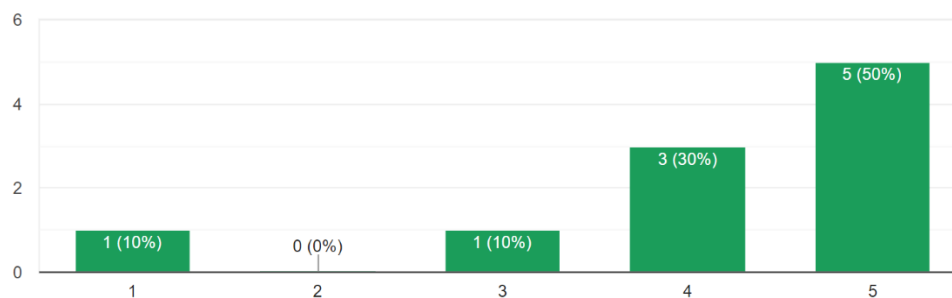
The meeting was on the right duration

10 responses

The meeting has answered many of my doubts about the project

10 responses

I know where to achieve further information

10 responses
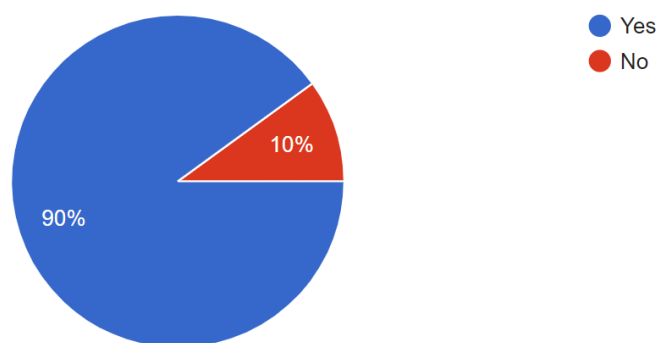
Were you involved in the organization of the Meeting for the better definition of your needs?

10 responses
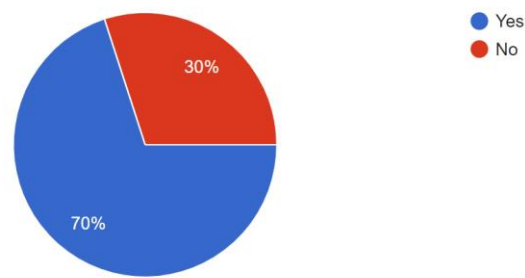
I have a better understanding on how the project will be deployed

10 responses
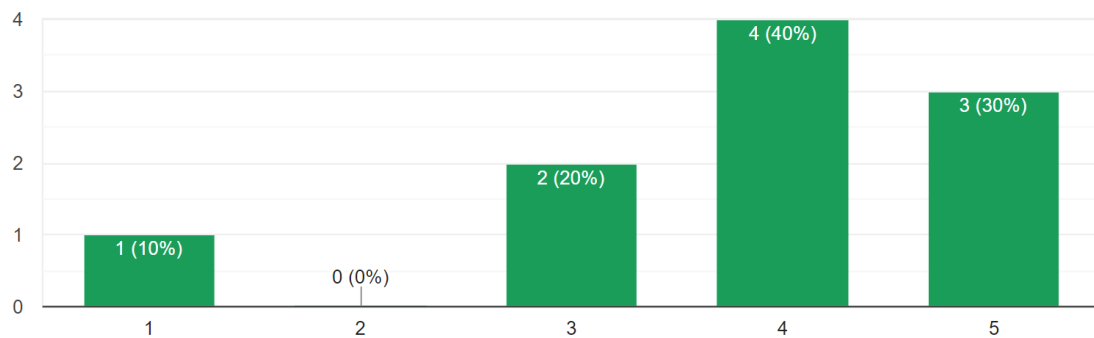
How satisfied are you with the quality of the information/instruction about the project and activities in this meeting

10 responses
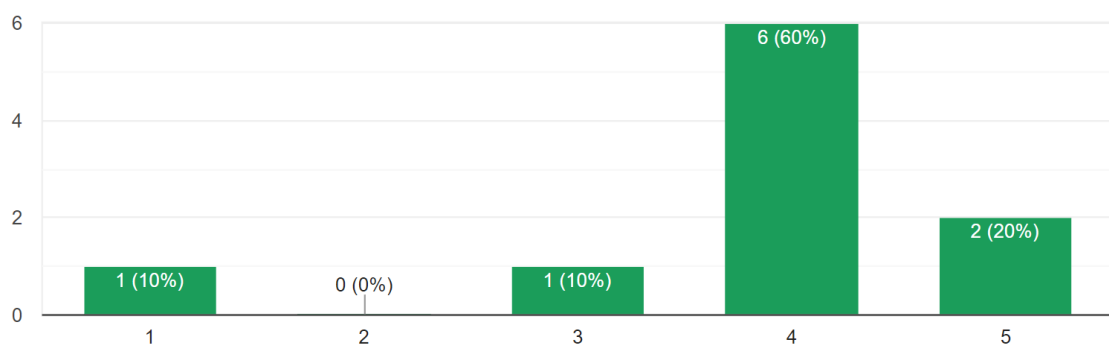
I understand how my tasks and responsibilities contribute to the project success

10 responses
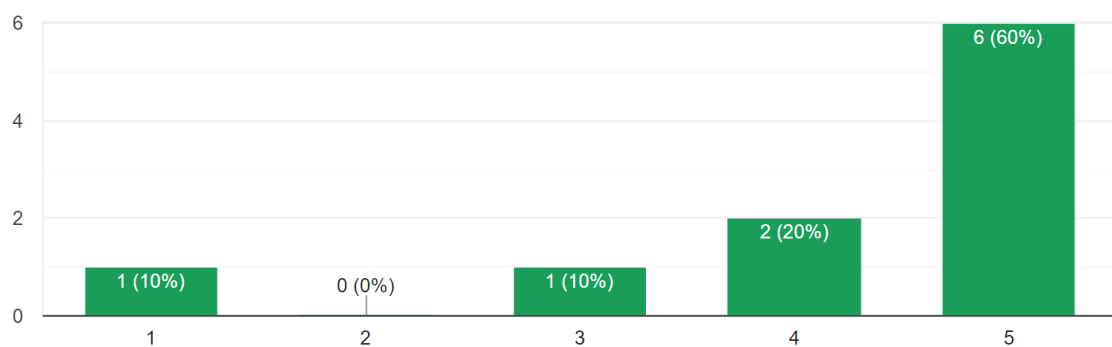
I know where my contribution is required, when and how

10 responses
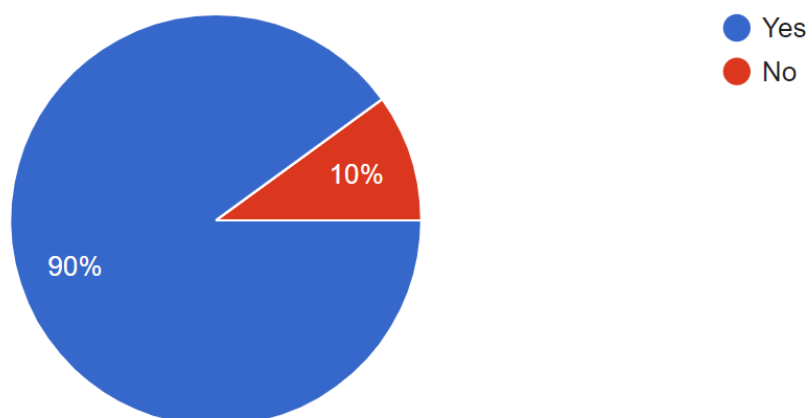
Do you consider the meeting venue appropriate?

10 responses
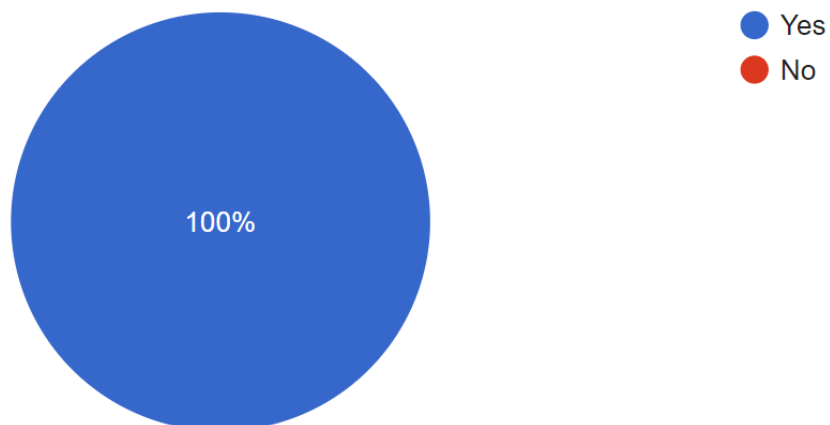
How satisfied are you with the meeting materials and information?

10 responses
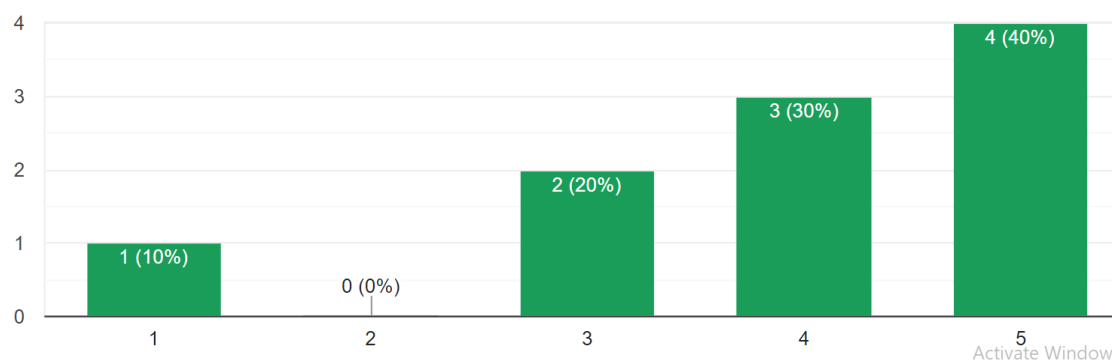
How satisfied are you with the overall quality of this meeting?

10 responses
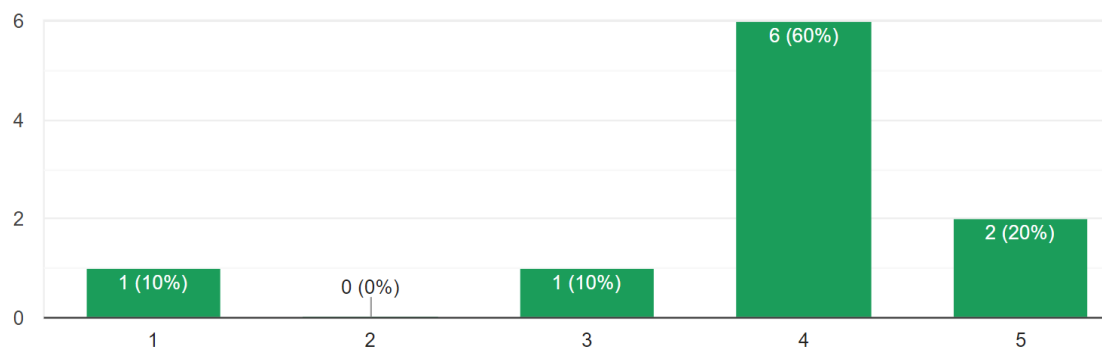
How useful was the information you received?

10 responses
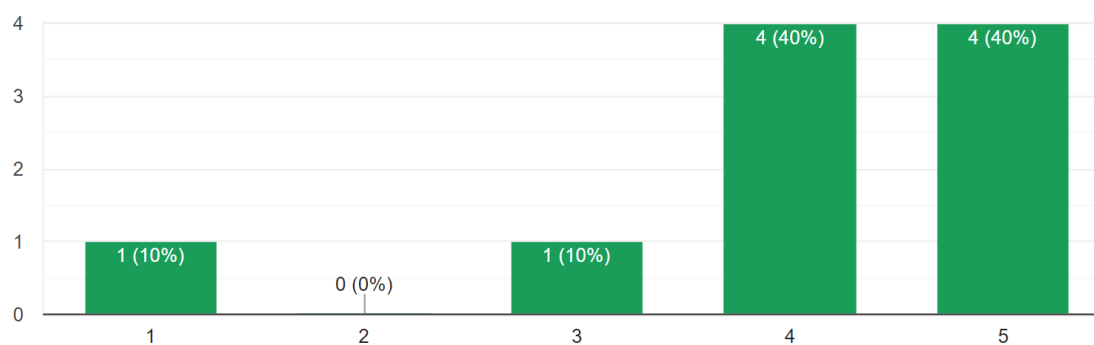
What were the strengths and weaknesses of the Meeting? Why?

10 responses

The distance was an issue.

the strengstes participate of all the members

Strengths: The meeting schedule is achieved in a wright way. Weakness: the meeting agenda should be received earlier.

the useful informations about the project. Some points must be discussed in more details, mainly courses outcomes

Strengths :Material and Information , weaknesses : all meetings are on the same hall, we did not receive the meeting Agenda earlier.

The agenda should be sent early (2-3 weeks in advance)

Sessions were on time. Some session did not achieve its set Goals

What general improvements would you recommend to the next meetings?

10 responses

The Agenda should be sent 2 weeks before the next the consortium meeting

trip-arragment should be better organized

The meeting agenda should be send to the partner before the meeting.

I recommend to organize participants in different teams according to their specialties to discuss min more details courses content and the eventual courses overlaps

Change the style of introducing the material by using different techniques.

All partners from the same country should arrange the trips together

Better preparation before the meeting.

A lot of things

3   Students Surveys and Feedback

Students involvement in the project is very essential to make sure that the developed master program will fully fulfil the expectations and needs of students. hence, the following survey was designed and disseminated among at the project partner universities to receive their feedback and reflect it while developing the master degree program.

3.1   Survey structure

Students' questionnaire and feedback

Student name	
Gender	
Specialization/field	
Year/ Level	
Contact person email/mob	

About the project

MS@CPS is a collaborative effort among EU and MENA countries for the establishment of an International Master of Computer Systems on Cyber Physical Systems. The envisioned master program will focus on the contemporary recent technologies in the fields of Embedded Systems (ES) and Knowledge-based Systems (KBS) that provide the needed expertise for a CPS education and tremendous economic opportunities and furthermore span various important applications in our daily life such as: Internet of Things (IoT), autonomous cars, smart phones, embedded systems, big data, semantic computing, cloud computing, etc.

The curriculum of MS@CPS program will be designed by analyzing the existing curricula in the area of embedded and knowledge-based systems, then a field study of market requirements and needs in the MENA region will be conducted. In parallel, the consortium members will review and examine pedagogical teaching and learning methods to fulfil the program objectives. Further, the curriculum of MS@CPS will be strongly aligned with the special requirements of the industry in the MENA countries in order to establish the skills of the students for strengthening the economy. In particular, MS@CPS will arrange several activities in cooperation with the industry partners to provide an open platform for students and industry, which will strengthen the students' skills and establish joint internships and master thesis. By providing solid skills in entrepreneurship and adopting proven mechanisms from program countries, the graduated students of MS@CPS will be able to establish their own start-ups.

By enrolling in this program, the students will benefit from the multi-cultural experience and contact with different teaching styles responding to labor market needs, foster innovation and create top talents as the mobility readiness and complex system solution handling are highly valued skills for technology-driven companies.

Q1. If you want to pursue a Master degree program, then what are the main characteristics/features you like to have in the program?

……

……

……

……

Q2. What is your main motivation behind pursuing a master degree program? Please chose the most important factor to you.

   a. Career motivation
   b. b. Research and development
   c. To pursue PhD afterward
   d. Gain more experience and build up knowledge

Q3. Will you prefer to conduct projects or the MS Thesis in collaboration with the industry

   a. Very desirable
   b. Desirable
   c. Not necessary

Q4. Did you hear before about "Cyber Physical Systems" or any other similar programs?

   a. Yes   b. No

Q5. If you were enrolled in this program, then will you have plans to start a company (startup) after finishing it?

   a. Yes   b. No

Q6. Put your evaluation (from 1 to 5) for the below courses that will be offered in the Cyber Physical Systems program, where mark 5 indicates that this course is very important, while grade of 1 means it is least important.

Note: In the interview, you can ask about the course description and content o give you a better understanding about the courses.

➢ Common Core Courses

No.	Courses	Importance evaluation score (from 1 to 5)
1	Internet of Things	
2	Machine learning	
3	Human Computer Interaction	
4	Security & Privacy in CPSs	
5	Data Analytics for Engineers	
6	Embedded Systems	

➢ Elective courses

No.	Courses	Importance evaluation score (from 1 to 5)	No.	Courses	Importance evaluation score (from 1 to 5)
1	Advanced Computational Modelling and Analysis		14	Introduction To Robotics	
2	Basics of SCADA Systems		15	Knowledge Management	
3	Cloud Computing and Semantic Web		16	Microcontrollers	
4	Control Theory		17	Microelectronics	
5	Data Analytics for Engineers		18	Mobile Computing	
6	Digital Systems Architecture		19	Nano Systems: Devices And Design	
7	Estimation Theory		20	Optimization For Cps	
8	Heterogeneous Multicore Architectures		21	Reliability And Risk Analysis	
9	Image Processing		22	Risk Management	
10	Image Processing and Computer Vision		23	Sensors, Actuators and Sensor Networks	
11	Smart Grids		24	Transportation System Design	

| 12 | Smart Health Technology | | 25 | Ubiquitous Computing | |
| 13 | Systems Theory | | 26 | Virtual Reality /Augmented Reality | |

3.2 Survey results

Q1. If you want to pursue a Master degree program, then what are the main characteristics/features you like to have in the program?

Response 1

- To get the material from specialized instructors.
- To have more practical material than theoretical material.
- To have in depth material

Response 2

- Add new courses that are related to the industry.
- To include exchange activities with other countries.
- To offer courses related to the society needs.

Response 3

- More training
- More courses related to the industry
- More practical courses

Response 4

- Courses related to the industry
- Qualified team
- The cost
- Have more training

Response 5

- Cost
- Having practical components
- Qualified and experienced team

Response 6

- Courses related to the industry
- Having online courses
- Provide more training
- Having practical materials

Response 7

- Cost
- Should have more training
- Qualified teachers
- Courses related to the industry
- Having qualified teaching assistants

Response 8

- Courses related to the industry
- Cost
- Having qualified teaching assistants

Response 9

- Cost
- Courses related to the industry

Response 10

- Cost
- Have practice in companies
- Having projects

Response 11

- Having good related applications

Response 12

- No, of hours not to increase than 20
- To have continuous interaction between the researcher and the advisor
- Focus on human-machine interaction courses

Response 13

- Having more projects and courses related to the industry
- Having several projects

Q2. What is your main motivation behind pursuing a master degree program? Please chose the most important factor to you.

a. Career motivation (5/13)
b. b. Research and development (3/13)
c. To pursue PhD afterward(1/13)
d. Gain more experience and build up knowledge(4/13)

Q3. Will you prefer to conduct projects or the MS Thesis in collaboration with the industry?

a. Very desirable(5/13)
b. Desirable(6/13)
c. Not necessary (1/13)

Q4. Did you hear before about "Cyber Physical Systems" or any other similar programs?

a. Yes   (5/13)   b. No (7/13)

Q5. If you were enrolled in this program, then will you have plans to start a company (startup) after finishing it?

a. Yes (10/13)   b. No (3/13)

Q6. Put your evaluation (from 1 to 5) for the below courses that will be offered in the Cyber Physical Systems program, where mark 5 indicates that this course is very important, while grade of 1 means it is least important.

Note: In the interview, you can ask about the course description and content o give you a better understanding about the courses.

➢ Common Core Courses

No.	Courses	Importance evaluation score (from 1 to 5) (avg score for 13 participants)
1	Internet Of Things	4
2	Machine learning	4.6
3	Human Computer Interaction	3.2
4	Security & Privacy In Cps	3.5
5	Data Analytics For Engineers	3.4
6	Embedded Systems	3.2

➢ Elective courses

No.	Courses	Importance evaluation score (from 1 to 5) (avg score for 13 participants)	No.	Courses	Importance evaluation score (from 1 to 5) (avg score for 13 participants)
1	Advanced Computational Modelling and Analysis	2.6	14	Introduction To Robotics	3.2
2	Basics Of SCADA Systems	2.5	15	Knowledge Management	2.6
3	Cloud Computing and Semantic Web	3.38	16	Microcontrollers	3.4
4	Control Theory	3	17	Microelectronics	3
5	Data Analytics For Engineers	4	18	Mobile Computing	3.2
6	Digital Systems Architecture	2.5	19	Nano Systems: Devices And Design	4.1
7	Estimation Theory	2	20	Optimization For Cps	3.9

8	Heterogeneous Multicore Architectures	2.6	21	Reliability And Risk Analysis	3.3
9	Image Processing	3.5	22	Risk Management	2.9
10	Image Processing And Computer Vision	3.4	23	Sensors, Actuators And Sensor Networks	4.1
11	Smart Grids	4.1	24	Transportation System Design	3.5
12	Smart Health Technology	4.6	25	Ubiquitous Computing	2.9
13	Systems Theory	2.5	26	Virtual Reality /Augmented Reality	3.5