Sensing, ArtiFicial intelligence, and Edge networking towards Rural Health monitoring (SAFE-RH)

D3.1

Quality Plan

SAFE-RH Project no. 619483-EPP-1-2020-1-UK-EPPKA2-CBHE-JP

Co-funded by the Erasmus+ Programme of the European Union

Contents

Abstract

In order to ensure a smooth implementation, continuous monitoring, and high-quality level of the project results and project outcomes, the Quality Plan's (QP) primary objective is to define the quality control and quality assurance activities that will be carried out over the course of the project. The Quality Plan is a document that details the quality practices and processes that will be adhered to for the life of the project in order to guarantee that the quality standards will be satisfied. Therefore, the use of this document will make it possible for the project partners to work together effectively and deliver the project's results and outcomes.

1. Introduction

The SAFE-RH Evaluation and Quality Assurance Plan, or more specifically the Quality Assurance Plan, is designed to accomplish the following objectives: continuously supporting the improvement of processes and activities by applying a monitoring approach; guaranteeing the correct fulfilment of project tasks and aims; measuring the degree of effectiveness of actions implemented and of results obtained; establishing the procedures to face delays in the development of the outcomes or inappropriate partner performances (thus supporting the management of the project).

UWS, the leader of all efforts including Evaluation and Quality Assurance, is responsible for preparing the present document. However, the project Evaluation and Quality Control would need the participation of the whole Consortium, in addition to external participants in the various project activities and any other pertinent stakeholders.

2. Aims and Objectives of Quality Assurance Plan

The Quality Assurance Work Package 3 (WP3) is responsible for Quality Control, and its objectives are as follows:

- Establish QA procedures for the project as a whole;
- Coordinate the work of an academic staff that will help ensure that the deliverables and outputs of the project meet the requirements of a wider stakeholder group.

The methods for quality assurance (QA) will be devised at the beginning of the project and implemented throughout all of the operations. Up to the point that all of the duties arising from the project have been fully satisfied, it will remain the shared duty of all of the project participants. The primary objectives of the quality assurance procedures are as follows:

- To document and assess the progress of the project;
- To evaluate the contribution of the ongoing results to the project's objectives;
- To discover deviations at an early stage, and feed the information to the PMB, in order to initiate corrective actions (if necessary) as soon as possible in the event that they are required.

3. SAFE-RH Quality Assurance Strategy

Project activities and outcomes progress, control, and evaluation will be carried out on a regular basis with the involvement of all the partners via project meetings, MS team meetings, and internal reports. This will be done in order to ensure that everything runs smoothly. Relevant stakeholders will be actively engaged in the assessment process throughout the life cycle of the project. This will be accomplished via the organisation of targeted meetings, communication through the web, participation in conferences, and the publishing of papers. The Project Management Board will conduct periodic checks and analyses of time and activity gaps, and the Project Management Team will organise periodic MS team meetings (at least one per month) to monitor project activities (and results), advancements, and any potential criticisms that need to be addressed. A more organic management of the project's developments (in terms of time, money, and so on) will be carried out every six months. The periodic meeting of the consortium will also enable for the monitoring and assessment of the project to go smoothly and continuously. Both the assessment framework as well as the quality assurance strategy will be reviewed on a regular basis and changed as required.

The evaluation and quality assurance strategy will place primary emphasis on two different aspects.

On the one hand, it will implement all of the necessary actions to ensure TRACK & CONTROL, with the goal of continuously supporting the process and activities improvement by applying a monitoring approach, guaranteeing the correct fulfilment of project tasks and aims, and establishing procedures to deal with delays in the development of the outcomes or inappropriate partner performance (thus supporting project management).

On the other hand, it aims to accomplish project ASSESSMENT, which aims to ensure the efficacy of project actions in terms of the achievement of project goals by concentrating on project results, outcomes, and impact as well as the implementation of project activities, in addition to the key drivers for the successful completion of the project impact.

An approach to both internal and external evaluation will be incorporated into the project with the intention of ensuring that the following objectives are met: the correct achievement of project indicators; the quality of project activities and events; and the relevance of project outcomes and results. In order to accomplish this goal, a standardised set of questionnaires is being developed, which each member of the Consortium will use while carrying out the activities.

Each partner organisation will be accountable for the following tasks: distributing questionnaires, ensuring that they are collected during local events and project activities in accordance with the templates that have been provided, and sending UWS the answers that have been obtained so that they can be further analysed and valorized. A report will be written after each activity, event, or meeting that is being evaluated, with the exception of a report for the midterm assessment and a report for the final evaluation. Whenever feasible, online surveys and questionnaires will be preferred.

The translation of questionnaires and surveys is completely open to partners, on the condition that they adhere to the formats that are offered. In this scenario, they are obligated to make sure that a bilingual version of the document is supplied if needed, and they are required to submit the responses in English so that the analysis may go more smoothly.

On the other hand, UWS will continually check the compliance of project indicators, such as the deadlines and the projected number of participants, in accordance with the indicators that are supplied in the project proposal.

4. SAFE-RH Quality Control (QC)

The Quality Assurance Strategy that is going to be established for the purpose of putting the SAFE-RH project into action will include quality control as one of its components. The processes and procedures that make up the Quality Assurance Strategy will be required to provide evidence that they comply with the broad principles underlying standards, laws, and certifications. Compliance with the general quality assurance subjects becomes a key concern for the project's management in addition to being nearly a mandatory process for participants who have not yet been certified in the project.

The **Plan-Do-Check-Action (PDCA)** model serves as the foundation for the strategy that is used for quality control and risk analysis inside the SAFE-RH project. With the help of this model, a continuous feedback loop is being developed in order to investigate, quantify, and locate the causes of fluctuations, as well as to implement remedial measures.

A. “PLAN” phase of PDCA

During the "Plan" phase of PDCA for quality control, the following are included:

- Performing literature review;
- Define requirement analysis;
- Defining the WP and the (development) activities;
- Defining the ideal or desired results;
- Data collecting to assess the problem in terms of its deviation from an ideal state;
- Determining the target group clustering;
- Design of curriculum outline.

B. “DO” phase of PDCA

The "Do" phase of the PDCA process involves putting into action the chosen strategy to either bring the deviation under control or resolve the problem. In order to determine whether the chosen solution is successful or not, the implementation of it will first take place on a limited scale.

C. “CHECK” phase of PDCA

The PDCA step known as "Check" has come to be associated with quality control inspection. The quality of the results will be evaluated by first establishing certain criteria, and then evaluating the specifications by contrasting them with those standards.

This is the most important step with respect to Quality Assurance that will encompass the processes that ensure all of the necessary actions will be carried out by the partners. These procedures will focus on a number of important elements, including the following:

- Document control: management of printed and electronically stored documents (for example, codes for the documents, ways of storing the documents);
- Reporting: harmonisation with the reporting procedures of the project, gathering information from all the partners for reporting (both technical and financial);
- Deliverables: instructions on the format and the method of creating the deliverables, acceptance of deliverables via meetings in which the relevant partners will assess them after undergoing a peer review process;
- Risk management (for the phases of the project);
- Organisation of all meetings;
- Control of the timetable (identification of time and the specific actions to be taken before the deadlines);
- Communication and exchange of information between the partners;
- Management of the interrelationships between the phases of the project and the partners;
- Description of responsibilities of all the partners according to their level of involvement in the project.

D. "ACT" phase of PDCA

The "Act" phase of PDCA refers to the act of standardising the successful solution and adopting the same for wholesale process improvement. It also refers to involving other stakeholders in the changed process, creating safeguards to check relapse into the previous stage, exploring opportunities for further improvements, and involving other stakeholders in the changed process.

The Quality Control Committee (QCM) will be responsible for ensuring that all of the Quality Assurance System's actions are carried out from all of the partners, and this obligation will fall within their purview.

A quality control committee is developed at the beginning of the project to ensure the quality of the deliverables, outputs and results of the project. A member from each institute is included in this committee whose lists is given in Table 1.

Table 1. Quality Control Committee for SAFE-RH Project

Partner No	Institute	PCT Member	Contact
1	The University of the West of Scotland	Naeem Ramzan	Naeem.ramzan@uws.ac.uk
2	University of Lorraine	Yves Berviller	yves.berviller@univ-lorraine.fr
3	Capital University of Science & Technology	Nadeem Anjum	nadeem.anjum@cust.edu.pk
4	COMSATS University Islamabad Wah Campus	Ehsan Ullah Munir	ehsanmunnir@gmail.com
5	The Islamia University of Bahawalpur	Dost Muhammad Khan	khan.dostkhan@iub.edu.pk

4.1. QC of deliverables

The following four components will be included in each deliverable:

- The front page, which contains all of the administrative information;
- An executive summary or explanation of the findings;
- A complete description of the results obtained;
- A bibliography and a list of references (optional).

The first two components of each deliverable are, in general, intended for wider dissemination in order to satisfy the demand of the CBHE community, as well as the requirement of an even more widespread audience, to have knowledge about the outcomes that were accomplished in the project. On the other hand, it is possible that the third section contains information that is (commercially) sensitive and has to be secured.

Following is a description of the many sorts of deliverables, as well as the structure of deliverables, the standard format for the front page, and the numbering system that was chosen.

In addition, the template of Quality review form is also prepared so that each deliverable will be go through regressive check. The Template of Quality review form is given in Annex 1.

The following are the two primary categories of project documents:

- DOCUMENTS FOR INTERNAL USE: these documents are only available to project members and are intended for internal use.
- EXTERNAL DOCUMENTS, on the other hand, are classified into two classes:
    - those addressed to the European Commission (EACEA), and
    - those directed to external contacts.

They will be kept in a private archive that can be accessed via the OneDrive.

The PMB reviews and gives its approval to every external document before it is made public. They may be accessed in the same way by navigating to the private section of the project website. Depending on the degree to which they have been disseminated, some external materials may also be available to the general public.

4.2. QC of project meetings

Requests for meetings will result in the members of the team being contacted individually so that they may be planned and scheduled. Dates for meetings need to be decided upon and communicated at least two weeks in advance, if at all possible. The relevant team leader is the one who is responsible for kicking off the organising of the meeting. Collocation of meetings shall be used wherever it is practical to do so in order to reduce the amount of time and money spent on travel by partners.

Those who take part in meetings: In accordance with the requirements outlined in the project proposal and the project plan, each of the partnering organisations is obliged to send a certain number of individuals from their team to the meetings. All meeting attendees are obliged to engage in cooperative way. In the event that a participant cannot make it to a meeting for which they were scheduled, they are obligated to notify the organiser in advance and either supply a replacement participant or member to take their place.

Agenda for the Meeting: The agendas for the meetings are created by the organisers of the meetings. Everyone who is going to be attending the meeting has to get the agenda at least fourteen days in advance. Participants in the meeting may make suggestions for new things that should be included to the Meeting Agenda, but they must do so at least five days before the meeting is scheduled to begin. After reaching a resolution by unanimous consent, the consortium may add additional topics to the agenda at any point during the meeting.

4.3. QC of SAFE-RH training/events

During the course of the project, all of the trainings/events that are being put on by the partners should be planned in a professional manner. Participants should be given, in a timely manner, a complete information package from the organisers, which should include the draught agenda, a study tour guide, or a comment on the logistics of the event (informing about travel arrangements, venue, suggested hotels, etc.). The amount of time needed for preparatory activities is directly proportional to the nature of the event; for example, several months may be necessary for research tours or conferences, but several weeks may be sufficient for trainings. This responsibility is categorised as a stand-alone assignment for the host institution or partner.

The organisers of the meeting are responsible for ensuring that the registration procedures go well, that the meetings are carried out with the right amount of time allotted for event sessions and breaks, and that all of the required materials are available (e.g. meetings, training and promotional material). The organisers will also make sure that minutes of the meetings are recorded in a clear and simple manner, along with a list of items that need to be done. Also, feedback forms will be handed out to participants whenever it is deemed necessary (for example, during trainings), and the relevant partner will compile event reports based on the information provided in the feedback forms. It is recommended that the Power Point presentation be built with the use of a suitable template developed by UWS. Every document that the partners in the project create will use the document template that was built specifically for the project.

On the basis of the obligations of the beneficiaries, which are related to the information requirements, the partners are required to inform the public, the press, and the media (including the internet) of the event, which must visibly indicate "Co-funded by the Erasmus+ Programme of the European Union" as well as the graphic logos of both the project and the Erasmus+ Programme. During the event, advertising items such as posters, roll-ups, and other materials are to be shown.

4.4. QC of SAFE-RH electronic media including website

The project builds up the public portion of the SAFE-RH website (https://safe-rh.eu/). The SAFE-RH platform allows all project partners to have access to it, and its primary function is to centralise all of the project's documentation and deliverables in a single location. It will serve as the central hub for all communication and paperwork pertaining to the project that involves several parties. COMSATS is in charge of establishing and maintaining the SAFE-RH website with all of the information and materials that have been received from the other project partners.

In addition, a Facebook page will be created, either in the form of a fan page, in order to guarantee the project's presence in the social media space. All of the representation tools will be kept up to date by the partners of the project, and their primary purpose is to effectively convey both the project's ongoing operations and its completed outcomes.

It is requested of all partners that they promote the SAFE-RH project on the websites of their respective universities as well as other social media channels (for example, Facebook, and Twitter, etc.) by providing a brief description of the project, the project logo, project events, and a link to the SAFE-RH website. It is planned that all of the tools will be implemented with a high level of performance, as well as with excellent functionality and stability, with an emphasis on achieving the greatest possible reach and level of awareness among the target audience.

4.5. QC of SAFE-RH promotional material

The SAFE-RH project's communication and dissemination efforts will conform to the project's Dissemination and Sustainability Plan in order to ensure the plan's success. The project's graphic identity as well as the visual identity of the Erasmus+ Program shall be reflected in all promotional materials.

UL is in charge of the creation as well as the dissemination of all promotional material. Before the final edition is printed, published, and distributed, the draught will first be circulated around to all of the partners for comments and recommendations. The materials will be distributed by all partners in the project at events that are pertinent to reach the target group that the initiative is aiming for.

4.6. QC of SAFE-RH project management

During the meeting that was held to kick off the project, the management structure for the project was formed in order to assure efficiency, decisiveness, adaptability, and quality of work. During the Kick-off meeting, the Project Management Board (PMB) was also formed. This is a board where representatives from all of the project partners sit, along with their deputies.

As is customary, the PMB will conduct an analysis of the activities and make a decision about any required precautionary steps including the reorganisation of tasks and resources, all the while maintaining a sharp concentration on the effect of the project. The management of the project will be open and adaptable, but at the same time it will be disciplined enough to guarantee that the project activities will be carried out in order to accomplish the goals that have been set. UWS is accountable for the administrative tasks associated with the project as well as the compilation of internal reports.

Each partner is equally and independently accountable for the actions that have been allocated, as well as the usage of money and the reporting of those activities. The duty for the local administration falls on the personnel who can be contacted.

5. Internal and External Evaluation of SAFE-RH

5.1. Internal evaluation

Internal evaluation refers to the measures and actions that are proposed by members of the Consortium and will include the following:

- The collection of feedback from Consortium members
- The collection of feedback on project implementation and management in the context of the relationship between Consortium members (mid-term and final evaluation).

Participation in polls and surveys constitutes feedback. Following the conclusion of each project meeting, partners will be given the opportunity to participate in an online survey on their level of satisfaction, the progress made toward achieving the project's goals, and other related topics. After obtaining all of the responses, QM will compile a report that details the most important findings.

In addition to the assessment of the meetings, an annual evaluation is going to be carried out. In this regard, QM will develop a mid-term and a final assessment report based on input obtained from Consortium members.

5.2. External evaluation

In addition to the evaluation strategy that was described earlier, which was an internal evaluation strategy, SAFE-RH will also include an external evaluation strategy. This will be done in order to ensure that the project's results and outcomes are relevant and adequate for stakeholders and institutions that are not direct beneficiaries of SAFE-RH.

In point of fact, the activities of the project suggest that feedback from relevant stakeholders will be essential to properly guide project actions and to (informally) validate SAFE-RH outcomes. This is especially important when taking into consideration the primary goal of the project, which is to contribute to providing an answer to the mismatch between the needs in terms of competences required by smart rural health.

The measures and actions proposed by Consortium members are referred to as the external evaluation, and it will include the following: the collection of feedback from participants in the various project activities (technical implementation); the collection of feedback from attendees to the project's training sessions.

The issues will be addressed by the use of external quality assurance, monitoring, and assessment.

- Relevance to the objectives, in comparison to the original proposal, occurred any change that may have affected the project's relevance and added value for the partner countries involved; how the consortium dealt with internal and/or external constraints (such as legislative changes, labour market needs, lack of motivation/commitment of partners, lack of availability of staff, cultural differences, visa issues, exchange rate fluctuations, etc.); to what extent the project met the objectives; and
- The applicability, added value, and impact for the partner countries involved in the activities that have been implemented so far; any obstacles or difficulties that have been encountered and the steps that have been taken to address them.
- The quality of the project's implementation in terms of the activities that have been implemented and the degree to which these activities are in line with (or diverge from) the work programme, timetable, and partners' share of responsibilities that were presented in the application.
- Visibility (project website), the maintenance and updating plan that is currently in place, as well as the actions that have been implemented for ensuring its visibility to all interested stakeholders; support material produced by the project for the purposes of visibility and promotion; respecting the visibility, exploitation, and publicity obligations described in the grant agreement.
- Equipment acquisition, including specification, tendering, assessment of tenders, delivery, installation, and utilisation purpose in accordance with various goal groups.

6. SAFE-RH Risk Management Plan

A regular risk assessment will be carried out as part of the internal quality management, and it will be reviewed during the regular PMB meetings (Risk brainstorming), which will lead to corrective actions and possibly adaptations of the Work Plan based on a sound process. This will be done as a part of the internal quality management.

The project management and risk plan strategy addresses issues that could potentially endanger the achievement of the overall goal of the project and its objectives, taking into consideration potential financial risks (overspending and underspending), timing risks (postponing of activities / deliverables), performance risks (project management), and sustainability risks for the project's results. The primary goals will be to offer a reliable evaluation, to foresee obstacles in a methodical manner, and to limit the possibly negative effect that the situation may have overall.

As soon as a project partner is made aware of a new risk, that partner is obligated to immediately inform the Project Coordinator (UWS) and the Project Management Board (PMB) of the risk, at which point the partner should also suggest possible interventions and solutions. The identification and assessment of new risks is a shared responsibility among all project partners. In particular, partners may consider remedial steps (decreasing the severity and effect) and preventative activities (avoiding that the risk happens), while also describing the resources that would be required.

The PMB may respond in a variety of ways, from merely accepting the situation in the event that the risks are negligible to enforcing a mitigation plan that includes alternatives, workarounds, and the proposed corrective actions that will make the risk consequences acceptable for the consortium.

In addition, the project officer, will take part in the risk management process. During the course of their monitoring visits, they will determine whether or not there is a possibility that the project will fail to meet its key indicators and whether or not there is a possibility that the project partners will not be able to spend all of the money in accordance with the planned budget for the project.

It is of the highest significance that each individual project partner allots sufficient resources to the project in accordance with best practises. An underspending during the project implementation (also causing a shift in the headings' ratio), which means that the project timetable is followed with reference to technical deliverables, but the relevant expenditures are not timely invoiced or validated; etc. There are a number of potential risks associated with this situation, including: the delay of the project implementation as defined in the project work plan; the rushed implementation of the work plan with low quality; an underspending during the project implementation (also causing a shift in the project).

Each of the project's partners is responsible for ensuring that they provide the necessary resources to the endeavour, including both financial and human resources.

ANNEX 1: SAFE-RH Review Form Template

Sensing, ArtiFicial intelligence, and Edge networking towards Rural Health monitoring (SAFE-RH)

REVIEW FORM

Deliverable Number

Document Title

SAFE-RH Project no. 619483-EPP-1-2020-1-UK-EPPKA2-CBHE-JP

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SAFE-RH DOCUMENT QUALITY CHECK & REVIEW REPORT 1

Title of document:
Deliverable Author(s):
Reviewer(s) - Institution:
Date of review:

Comments

1) Correspondence to task and project objectives
Have the objectives as presented in the Grant Agreement been addressed in an adequate manner?

Reviewer's comments:

Author's response:

2) Quality of results
Are the results substantial and of high value?

Reviewer's comments:

Author's response:

3) Transferability to other project activities
Can the information contained in the deliverable be easily used in subsequent or parallel project activities? Are the results adequately explained?

Reviewer's comments:

Author's response:

4) Readability, clarity and succinctness
Does the deliverable include all the necessary elements, is it readable, in comprehensive language, short and clear, etc.? What about the methodology followed?

Check spelling, literature list, referencing of tables and figures in the text. Check if figures and tables are readable and relevant for understanding the text.

Reviewer's comments:

Author's response:

Further comment(s)
A list of concrete suggestions for updating the deliverable which are not covered above.

Reviewer's comments:

Author's response:

Final Ranking of the Deliverable
Following this review the Reviewer must conclude whether the deliverable is accepted or not. Put an "X" next to the final rating of the Deliverable:

- Fully accepted
- Accepted with comments
- Accepted with reservation
- Rejected unless modified as suggested