Ref. Ares(2021)7353726 - 29/11/2021

Surrounded by Science

Learning Paths towards Science Proficiency

Research and Innovation Action in the European Union's Horizon 2020 Programme

Grant Agreement no. 101006349

Deliverable 1.1

Quality Management Plan

Editor	Tessa Eysink (UT)
Date	29 November 2021
Dissemination Level	Public
Status	Final

The Surrounded by Science project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement no. 101006349. This publication only reflects the author's view and the European Commission is not responsible for any use that may be made of the information it contains.

© 2021, Surrounded by Science consortium

The Surrounded by Science Consortium

Participant No. *	Participant organization name	Short name	Country
1 (Coordinator)	Universiteit Twente	UT	Netherlands
2	Ellinogermaniki Agogi Scholi Panagea Savva AE	EA	Greece
3	European Physical Society Association	EPS	France
4	Nuclio Nucleo Interactivo de Astronomia Associacao	NUCLIO	Portugal
5	Fondazione IDIS-Citta della Scienza	IDIS	Italy
6	The Lisbon Council for Economic Competitiveness and Social Renewal asbl	LC	Belgium
7	Weizmann Institute of Science	WIS	Israel
8	Norges Teknisk-Naturvitenskapelige Universitet	NTNU	Norway

Contributors

Name	Institution
All partners	All institutions

Legal Notices

The information in this document is subject to change without notice.

The Beneficiaries of the Surrounded by Science consortium make no warranty of any kind with regard to this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The members of the Surrounded by Science consortium shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

The information and views set out in this deliverable are those of the author(s) and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies, nor any person acting on their behalf may be held responsible for the use which may be made of the information contained herein.

Executive Summary

The current deliverable describes the quality management plan for the Surrounded by Science project. The document should be read in relation to the Grant Agreement and the Consortium Agreement.

The goal of the document is to ensure that the project runs well and that all commitments with respect to the EC are met. For this purpose, a management structure has been set up which ensures involvement of all partners in management decision-making, which supplies an efficient decision structure, which ensures that the project delivers quality on time and within the budget, and which provides a mechanism for the prevention of conflicts and resolution of disputes. The management structure includes a Project Coordinator, a General Assembly, a Project Management Committee, a Project Scientific Committee including a Research Manager, Work Package leaders, and an Innovation Manager. All bodies have their specific responsibilities and way of working.

In addition, an internal communication infrastructure has been set up. This infrastructure consists of the Surrounded by Science Teams environment and the Surrounded by Science email lists. The Teams environment is the main platform for document sharing and content-related communication. The email lists are used for notifying (groups of) beneficiaries of activities in the Teams environment (e.g., announcements of new documents available), organisational issues (e.g., announcement of and links to meetings), and administrative topics (e.g., questions regarding financial statements).

Finally, the project has set up quality assurance procedures, which have the aim to ensure that project results, deliverables, and software are consistent and of good quality. In order to monitor the progress of the project in terms of resources and budget, each beneficiary summarizes its activities and resources used and documents them every six months in an activity report and provides financial statements every 18 months. If necessary, corrective actions will be taken in a bottom-up approach. In order to ensure that deliverables are delivered in time and are of good quality, an internal review system has been set up. All deliverables are reviewed by two internal reviewers following a specified timeline. The reviewers check the overall quality and give recommendations for improvements. In order to ensure good quality of all publications of the project, all information and documentation that is made accessible to third parties has to undergo approval for publication. In order to work in a structured and coherent manner, standards are used for document processing and document identification. Also, a template for deliverables is provided. Finally, procedures for software development have been established.

Table of Contents

1 Introduction

In this document, the quality management plan of the Surrounded by Science project is presented. The quality management plan is part of WP1, Management and Coordination, and aims to ensure that the project runs well and that all commitments with respect to the EC are met. It describes the way of working within the project and as such gives directions to all members of the consortium. After this introduction, Chapter 2 describes the management structure of the Surrounded by Science project. The project consists of a Project Coordinator, a General Assembly, a Project Management Committee, a Project Scientific Committee, Work Package leaders, and an Innovation Manager. For each of these bodies, the responsibilities are described, the member(s) of which it consists are described, and the frequency of the meetings are described. In Chapter 3, the internal communication infrastructure is described, for which we use the Surrounded by Science Teams environment and the Surrounded by Science email lists. Finally, in Chapter 4, the quality assurance procedures are described, which have the aim to ensure that project results, deliverables, and software are delivered on time, that they are of good quality, and that they are consistent within the project. These procedures include project monitoring, an internal review system, and standards on the approval of publications, the creation of documents, and procedures for software development.

The document should be read in relation to the Grand Agreement and the Surrounded by Science Consortium Agreement that has been signed by all beneficiaries.

2 Management structure, procedures, and meetings

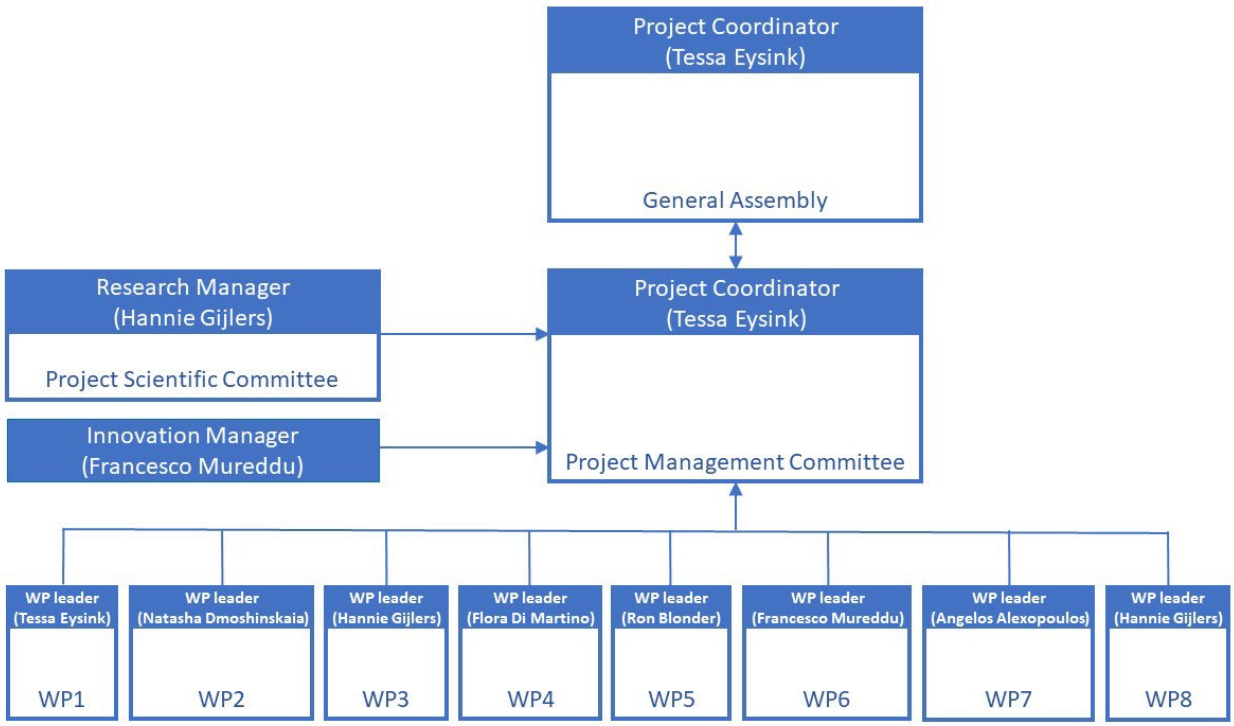
A sound, professional, but also flexible management structure is vital for efficiently managing a Research and Innovation Action. In the Surrounded by Science project, the responsibility for organisational and financial coordination and for scientific leadership is placed into one organization, namely the University of Twente. The aim of the project management is leading Surrounded by Science to organisational, scientific, technical, and financial success.

The purpose of the management structure is:

- to ensure involvement of all partners in management decision-making;
- to supply an efficient decision structure;
- to ensure that the project delivers quality on time and within the budget;
- to provide a mechanism for the prevention of conflict and resolution of disputes.

The management structure is presented in Figure 1. The project consists of a Project Coordinator, a General Assembly, a Project Management Committee, a Project Scientific Committee, a Research Manager, Work Package leaders, and an Innovation Manager, which will be described in the following sections.

Figure 1. *Management structure Surrounded by Science*



2.1 Project Coordinator

The Project Coordinator (PC) is responsible for the overall management, communication, and coordination of the project. The Project Coordinator acts as the intermediary between the partners and the European Commission, monitors compliance by the partners with their obligations, controls the implementation of the whole project, controls the project's resources and budget, handles the financial aspects of the project, controls the schedule of activities and the allocation of staff, ensures the effectiveness of the project's internal communication, applies quality

assurance, deals with risk assessment and mitigation plans, undertakes quality control of contractual deliverables, ensures that all periodic reporting and deliverables will be delivered on time to the Commission and/or project partners, liaises with and reports to the European Commission on all matters concerning the project, and deals with legal, social, ethical and intellectual property rights. The Project Coordinator of Surrounded by Science is Dr. Tessa Eysink from the University of Twente. The financial and administrative responsible person for the project is Renate Masselink-Veldscholten, also from the University of Twente.

2.2 General Assembly

The General Assembly (GA) is the highest decision-making body of the Surrounded by Science project and its main task is the project governance. It has the overall responsibility of all technical, financial, legal, administrative, ethical, dissemination, exploitation, intellectual property, and innovation issues of the project. It will monitor and assess the actual progress of the project and make amendments, where necessary.

The members are the delegated representatives of the consortium beneficiaries. Each contractual beneficiary of Surrounded by Science has one seat on the General Assembly with voting rights. Each representative on the General Assembly is responsible for the internal coordination of Surrounded by Science activities in their institution. The Surrounded by Science representatives are given in Table 1.

Table 1. *Representatives in the General Assembly*

Participant organization name	**Representative**
Universiteit Twente	Tessa Eysink
Ellinogermaniki Agogi Scholi Panagea Savva AE	Angelos Alexopoulos
European Physical Society Association	David Lee
Nuclio Nucleo Interactivo de Astronomia Associacao	Rosa Doran
Fondazione IDIS-Citta della Scienza	Luigi Amodio
The Lisbon Council for Economic Competitiveness and Social Renewal asbl	Francesco Mureddu
Weizmann Institute of Science	Sherman Rosenfeld
Norges Teknisk-Naturvitenskapelige Universitet	Sofia Papavlasopoulou

If a representative is not able to join the meeting, s/he may appoint a substitute or a proxy to attend and vote at the meeting.

The General Assembly meets twice a year physically during the project meetings. These meetings will be scheduled around the due dates of the milestones (see Table 5) and the majority of the deliverables (see also Section 4.3.3). In addition, they will meet on a regular basis online (+/- every two months). Extraordinary meetings will be organised upon written request of any member. The Project Coordinator is the chairperson of the General Assembly. The operational procedures for the General Assembly, including terms for convening meetings, preparation of the agenda, voting rules and publication of the minutes, are presented in the Consortium Agreement. The agenda is prepared by the Project Coordinator and the minutes, for which a template is given in Appendix I, are stored in the Surrounded by Science Teams environment.

2.3 Project Management Committee

The Project Management Committee (PMC) assists and facilitates the work of the Project Coordinator for executing the decisions of the General Assembly as well as the day-to-day management of the project. In particular, the Project Management Committee is responsible for the coordination between the different work packages. This includes assessment of progress reports, maintenance of work plans, proposals for resource re-allocation (if required), and first level conflict resolution.

The Project Management Committee is led by the Project Coordinator and additionally consists of the Work Package Leaders, the Innovation Manager, the Research Manager and the Project Office.

The Project Management Committee meets during monthly scheduled online meetings. Minutes, for which a template is given in Appendix I, are stored in the Surrounded by Science Teams environment.

2.4 Project Scientific Committee

The Project Scientific Committee (PSC) monitors the quality of research carried out in the project, ensures the dissemination of scientific information, and forms scientific links with other research projects. It assists in the organisation of scientific events and advices the PMC on appropriate scientific standards and good practice in the planned research.

The Project Scientific Committee is chaired by the Research Manager (RM), who will safeguard that all scientific outcomes of the project follow the highest scientific standards. The General Assembly appointed Hannie Gijlers (UT) as the Research Manager. The other representatives in the Project Scientific Committee of the Surrounded by Science project, as appointed by the General Assembly, are Ron Blonder (WIS), Sofoklis Sotiriou (EA), and Michail Giannakos (NTNU).

The Project Scientific Committee meets during monthly scheduled online meetings.

2.5 Work Package leaders

Each Work Package leader (WP leader) is responsible for implementing the work package plan and for the technical and scientific management of the work package (WP) that has been assigned to him/her. The WP leader is proposed by the beneficiary that is responsible for the WP and is appointed by the General Assembly. If a WP leader cannot fulfil the task, the beneficiary responsible for the WP appoints a replacement in consultation with the General Assembly. The WP leaders are responsible for the progress in the WP that is assigned to them. The WP leaders as appointed by the General Assembly are given in Table 2. WP leaders arrange meetings with members involved in the WP as often as necessary.

Table 2. *Overview of WP leaders*

WP	WP name	WP leader	Name
WP1	Management and Coordination	UT	Tessa Eysink
WP2	Research Framework	UT	Natasha Dmoshinskaia
WP3	Digital Toolbox	UT	Hannie Gijlers
WP4	Research Implementation	IDIS	Flora Di Martino
WP5	Impact Assessment	WIS	Ron Blonder
WP6	Accreditation, Lessons Learnt & Exploitation	LC	Francesco Mureddu
WP7	Communication and Dissemination	EA	Angelos Alexopoulos
WP8	Ethics requirements	UT	Hannie Gijlers

2.6 The Innovation Manager

The Innovation Manager (IM) identifies emerging market opportunities, assures that the project's results are exploitable and disseminated effectively, and addresses the issues faced by the relevant markets. The aim of the Innovation Manager is to safeguard that project results are properly assessed for their full exploitation potential. The General Assembly appointed Francesco Mureddu (LC) as the Innovation Manager of the Surrounded by Science project. The IM is in close contact with the PC and WP leaders, in particular with those of WP6 and WP7.

3 Internal communication infrastructure

The Surrounded by Science project provides an internal communication infrastructure which enables: (a) document sharing and content-related communication by means of a Teams environment and (b) communication of notifications between beneficiaries or groups of beneficiaries by means of mailing lists.

3.1 Surrounded by Science Teams environment

A Teams environment has been set up for the project. This environment is the main platform for exchanging content-related information and files. In total, 13 channels have been created: one general channel, one for the project meetings, one restricted area for the General Assembly, one for the PMC and PSC, and one for each work package. All channels, except the restricted GA channel, are accessible for all members. Within each channel, folders can be created and members can up- (and down-)load documents. Members can also post messages and/or react on messages creating threads, which are being stored. All documents produced in the project will be shared (and stored) in the Surrounded by Science Teams environment.

3.2 Surrounded by Science mailing lists

Mailing lists will be used for notifying (groups of) beneficiaries of activities in the Teams environment (e.g., announcements of new documents available), organisational issues (e.g., announcement of and links to meetings), and administrative topics (e.g., questions regarding financial statements).

The following Surrounded by Science mailing lists have been created:

- SbS-all@lists.utwente.nl, to reach all project members
- SbS-GA@lists.utwente.nl, to reach the representatives in the General Assembly
- SbS-PMC@lists.utwente.nl, to reach the members of the Project Management Committee
- SbS-PSC@lists.utwente.nl, to reach the members of the Project Scientific Committee
- SbS-WPx@lists.utwente.nl, to reach the project members involved in a specific work package.

All Surrounded by Science mailing lists are archived.

4 Quality assurance procedures

The Surrounded by Science project has set up quality assurance procedures that have the aim to ensure that the project reaches its impact, that all deliverables are delivered on time, are consistent and of good quality, and that the project is realized within the budget.

4.1 KPIs, deliverables, and milestones

The impact of the project is assessed by the fulfilment of the Key Performance Indicators (KPIs). The KPIs are presented in Table 3. The results of the project are described in the project deliverables. These are presented in Table 4. Milestones have been defined as checkpoints to see whether the KPIs have been accomplished and whether the related deliverables have been produced. The milestones are presented in Table 5.

Table 3. *List of Key Performance Indicators*

Description	**Target Value**
Number of Exemplary Activities in Out-of-school Education (to populate the open project's inventory)	60
Number of Exemplary Activities in Out-of-school Education focusing on the involvement of users from rural and remote areas	6
Number of Stakeholders involved in the Scanning the Horizon Exercise	200
Number of Participants in the case studies (Research Sample – with balanced participation of male and female participants – minimum sample size)	10,000 (5,000 citizens and 5,000 students)
Downloads of the Science Chaser app	20,000
Average Use of the Chaser per user (months)	2
Geographical Coverage of the Research	At least in 6 countries (The Netherlands, Greece, Israel, Norway, Italy and Portugal, EPS activities will take place at European level)
Number of Scientific Publications	5 (submitted, the time of the final publication could later from the end of the project)
Number of Dissemination Events	20
Number of views on the project website (taking into account the GDPR restrictions on the use of web analytics)	>500,000

Table 4. *List of deliverables in chronological order*

Delive-rable	Title	Lead beneficiary	Type	Due Date (in months)
D1.1	Quality Management Plan	UT	Report	2
D7.1	Plan for the Communication and Dissemination of Results	EA	Report	3
D2.1	Research Methodology and Plan	UT	Report	4
D1.2	Data management plan	UT	ORDP	6
D3.1	Conceptual Design of the Science Chaser app	UT	Report	6
D7.2	Communication and Dissemination Materials	EA	Report	6
D8.1	H - Requirement No. 1	UT	Ethics	6
D8.2	POPD – Requirement No. 2	UT	Ethics	6
D2.2	Surrounded by Science Key Characteristics and Matrices	UT	Report	12
D2.3	Inventory of Activities	UT	Report	12
D3.3	First release of the infrastructure and the Science Chaser app	UT	Other	12
D4.1	Research Implementation Plan	IDIS	Report	15
D5.1	Impact Assessment Methodology & Instruments	WIS	Report	15
D6.5	1st short policy brief	LC	Report	18
D7.3	Report on Communication and Dissemination Activities	EA	Report	18
D4.2	Initial Implementation Plan	IDIS	Report	24
D5.2	Initial Impact Assessment Report and Selected Best Practices	UT	Report	24
D4.3	Final Implementation Report	IDIS	Report	32
D3.2	Conceptual Design of the Science Booster app	UT	Report	36
D3.4	Final release of the infrastructure and the Science Chaser app	UT	Other	36
D3.5	Final release of the Science Booster app	UT	Other	36
D5.3	Final Impact Assessment Report and Selected Best Practices	UT	Report	36
D6.1	Context Analysis and Considerations for the Accreditation Scheme	LC	Report	36
D6.2	Towards a connected science learning ecosystem	EA	Report	36
D6.3	Exploitation Plan	LC	Report	36
D6.4	Roadmap for Designing Effective out-of-school Science Activities	LC	Report	36
D6.6	2nd short policy brief	LC	Report	36
D7.4	Final report on Communication and Dissemination Activities	EA	Report	36

Table 5. *List of milestones*

Milestone number	Milestone name	Related work package(s)	Due date (in month)	Means of verification
MS1	Kick-off Meeting	WP1, WP2, WP3, WP6, WP7	M1	Planning and Organisation of the work. Internal management structure. Communication Channels. Detailed Planning and Decision-Making Process.
MS2	Inventory of Exemplary Activities and Release of Science Chaser	WP2, WP3	M12	Delivery of the Surrounded by Science Key Characteristics, the Research Matrix and the inventory with 60 exemplary science activities from which the case studies will be selected. The first release of the Science Chaser App.
MS3	Selection of Best Practices	WP3, WP4, WP5	M24	Based on the research and impact assessment work, partners are able to identify best practices in out-of-school science activities and the Surrounded by Science Matrix is expanded and extended.
MS4	Accreditation scheme and Recommendations	WP6	M36	Delivery of the Science Booster Application. Delivery of a roadmap for European policy makers with the proposal for an accreditation scheme. Lessons Learnt and suggestions how the results can also improve and inform formal education will be delivered.

The KPIs, deliverables, and milestones are used to monitor the progress of the project. The procedures for monitoring are described in the following sections. The procedures include project monitoring, an internal review system, and standards on the approval of publications, the creation of documents, and procedures for software development.

4.2 Project monitoring

The University of Twente is responsible for monitoring the progress of the overall project in terms of resources and budget. This monitoring is mainly based on the six-monthly activity reports in which each beneficiary summarizes the work done and the resources used, as well as on the financial statements each beneficiary provides. If necessary, corrective actions will be taken.

4.2.1 Six-monthly project reports

Every six months, each WP leader summarizes the activities and resources used for the corresponding WP and documents them in an activity report. More specifically, the WP leaders report on the activities done in the context of the WP, whether the progress of the deliverables is according to plan, whether hours spent by all members involved in the WP is according to plan, whether there are any problems and deviations from the plan, whether corrective actions are necessary, how this would change plans for the future, and whether and how this influences other WPs. The University of Twente developed a format for this, which can be found in Appendix II. The sixth-monthly activity reports are due on or before the 10th of the month following after the relevant reporting period.

The project management summarizes the activity reports of all WP leaders in a six-monthly project report, which will subsequently be checked and amended, if necessary, by the WP leaders. The six-monthly project report contains sections for project progress and deviations of the project plan. The main goal of the six-monthly project reports is to:

- monitor progress of the project,
- discover deviations from the Grant Agreement as soon as possible, and
- start corrective actions if necessary.

At the start of the project, each beneficiary lists the persons from that beneficiary involved in the project together with an indication of their time expenditure and allocated tasks. Any intermediate changes in personnel will be reported to the Project Coordinator.

4.2.2 Financial statements

After 18 and 36 project months, the administrative coordinator of the project collects the financial statements from all beneficiaries and sends them to the Commission (together with the respective Project Management Report).

4.2.3 Corrective actions

Each WP leader is responsible for monitoring the progress in the work package assigned. The project management is responsible to monitor the overall progress of the project mainly based on the information which is collected by the WP leaders. Table 6 gives an overview of risks that can impact the successful implementation of the project and the proposed mitigation measures.

Table 6. *Critical risks for implementation and their proposed mitigation measures.*

Description of risk (indicate level of likelihood: Low/Medium/High)	**Work package(s) involved**	**Proposed risk-mitigation measures**
A partner leaves the project (low)	WP1, WP2, WP3, WP4, WP5, WP6, WP7	All partners are highly committed, and the majority has a long track record of cooperating with each other. In the very unlikely case, a partner leaves the project, measures will be taken to ensure the expertise is either covered by a new partner or by the remaining partners stepping in.
Partners do not agree on specific issues (low)	WP1, WP2, WP3, WP4, WP5, WP6, WP7	Management procedures for decision-making and conflict resolution will be applied. However, the target is to achieve consensus among consortium members for all open issues.
A key staff member leaves or is temporarily not available (low)	WP1, WP2, WP3, WP4, WP5, WP6, WP7	All consortium partners have a critical mass of experts enabling substitution if necessary. All can also easily hire new people to get additional competencies if required during the project.
The inventory of science activities does not yield enough high-quality example activities in each country (low)	WP2, WP4, WP5	The consortium partners that offer science activities to the public have a large network that they can use to identify high quality example activities. In addition, national coordinators will be appointed to ensure short

		lines to science organisations not in the consortium.
Providers of selected case studies are not willing to participate in the assessments (low)	WP2, WP4, WP5	The number of example activities is much higher than the number of the to be selected case studies, so we expect enough alternatives. In addition, the different perspectives in assessment make it also possible for providers to choose for a less intrusive assessment increasing the willingness to participate.
Learners are not interested in downloading or using the Science Chaser app, and thus are not providing enough data (medium)	WP3, WP4, WP5	The partners will design an app with gamification features that will make it attractive to use. Partners have broad access to the target groups and a unique capacity to involve users, involving both formal education networks (e.g., open school network of EA), as well as informal networks (NUCLIO, EPS).
Development of the data collection component of the Science Chaser app is delayed (low)	WP3, WP4, WP5	The technical developers of the project have a good record to deliver on time.
Technical development of the Digital Toolbox is delayed (low)	WP3	The technical developers of the project use agile software development. They develop the digital toolbox in small steps adding new features set by step. In this way, after a first prototype, there is always a working version of the toolbox. Delay in this situation means that specific features have not (or not fully) been implemented yet.
Science organisations are not ready to improve their science activities (medium)	WP7	The mission of science organisations is to increase people's science proficiency by offering high-quality science activities, which will guarantee a minimum level of readiness to improvements. In addition, Surrounded by Science offers them the Digital Toolbox which makes it easier for them to improve.
Science organisations do not offer their regular science activities anymore due to COVID-19 or other reasons (low)	WP4	As a response to difficulties in offering their regular science activities due to COVID-19, many science organisations decided to also offer alternative (online) science activities, which can also be used in our inventory.
Consortium member cannot travel anymore due to COVID-19 or other reasons (low)	WP1	If necessary, project meetings can be done hybrid or fully online.
Problems arise with data leakage or privacy in the Science Chaser app (low)	WP3	The technical partners will follow the strict rules of the UT concerning data storage and privacy.

Corrective actions will be taken in a bottom-up approach and will primarily be adopted within the respective work package itself. Only problems which affect the interdependence of other work packages or which could affect the overall success of the project will be dealt with on a project management basis or within the Project Management Committee.

The main concern of corrective actions on a project management basis is the quality and timeliness of the project deliverables (see Table 4) and the milestones (see Table 5). The project management will document deviations from the plan of formal project output. Based on each monitoring report, the project management will decide whether an issue can be settled within a work package or whether interdependencies with other work packages are concerned.

If only one work package is concerned, the work package leader will supply an updated work plan for the work package that will substitute the original plan. If the work of other work packages or the success of the whole project is likely to be affected by delays or poor performance of a work package, the project management will inform the Project Management Committee immediately. Together with the affected beneficiaries, the Project Management Committee will develop an updated project plan.

The Project Coordinator is responsible for reporting critical problems, which could affect the entire project, to the EC Project Officer.

4.3 Internal review of deliverables

In the Surrounded by Science Grant Agreement, each deliverable has been assigned to one leading responsible beneficiary (see Table 4). This beneficiary has the responsibility that the deliverable is delivered in time and is of good quality. The beneficiary responsible for the deliverable ensures that the content is coherent with the general objectives within the task and that the overall goals of the project are met. If there are any issues that endanger the success of the work package and/or the success of the project, this should be reported immediately to the Project Coordinator and discussed within the Project Management Committee.

For each deliverable, the Project Coordinator assigns two internal reviewers, who check the overall quality of the respective deliverable and, if appropriate, give recommendations on improvements (see Table 7 for the list of possible internal reviewers). There are two types of deliverables: (a) reports (indicated in Table 4 as Report, ORDP, or Ethics) and (b) software (indicated in Table 4 as Other), which are discussed next.

Table 7. *List of internal reviewers*

Reviewer	**Organization**
Tessa Eysink	UT
Hannie Gijlers	UT
Natasha Dmoshinskaia	UT
Sofoklis Sotoriou	EA
Angelos Alexopoulos	EA
Sofia Papavlasopoulou	NTNU
Michail Giannakos	NTNU
Patrick Jost	NTNU
Shermen Rosenfeld	WIS
Ron Blonder	WIS
David Lee	EPS
Enrique Sanchez	EPS

David Sands	EPS
Rosa Doran	NUCLIO
Carlos Antunes Santos	NUCLIO
Sara Anjos	NUCLIO
Flora Di Martino	IDIS
Rossella Parente	IDIS
Luigi Cerri	IDIS
Luigi Amodio	IDIS
Francesco Mureddu	LC
Alice Iordache	LC
Chrysoula Mitta	LC

4.3.1 Internal review of reports

The reports will be submitted in standard form and layout. A template has been developed (see Appendix III) and is available in the Surrounded by Science Teams environment, which is used for internal communication and document sharing. Together with the beneficiaries that contribute to the deliverable as indicated in the Grant Agreement, the responsible beneficiary will work on the deliverable and the following timeline will be adhered:

1. A table of contents or an outline of the main topics of the deliverable will be distributed to two appointed internal reviewers and the PC two months before the deadline.
2. A full draft will be sent to the internal reviewers one month before the deadline.
3. The internal reviewers check the overall quality of the respective deliverable and review the content against the Grant Agreement and the criteria set out in Section 4.3.4. They give recommendations on improvements to the authors two weeks before the deadline. For reports, this will be done in the document itself (by ‘track changes’ and inserting comments); for software, an internal review report will be written. If necessary, a feedback cycle between authors and reviewers is established.
4. The final version of the deliverable will be sent to the PC one week before the deadline, who performs a final check and submits the deliverable to the commission.

4.3.2 Internal review of software

Together with the beneficiaries that contribute to the software as indicated in the Grant Agreement, the responsible beneficiary will work on the software and the following timeline will be adhered:

1. The URLs where the software can be accessed will be distributed to two appointed internal reviewers and the PC one month before the deadline.
2. The internal reviewers check the overall quality of the software and review the content and features against the Grant Agreement and the criteria set out in Section 4.3.4. They give recommendations on improvements to the responsible beneficiary two weeks before the deadline and write an internal review report. If necessary, a feedback cycle is established.
3. The version to be submitted to the EU will be provided to the PC two days before the deadline. The PC submits the deliverable to the commission.

As the software will be under continuous development, we will ‘tag’ each software deliverable on the GitHub repository. This ‘tagging’ mechanism allows retrieving the source code of each deliverable at any point in time.

4.3.3 Internal review during project meetings

The majority of the deliverables has its due date coincide with one of the project meetings, which are planned to take place every 6 months. The project will plan the project meetings in such a way that the internal reviews of those deliverables can be discussed during these project meetings.

4.3.4 Tasks of internal reviewers

The internal reviewers are responsible for:

- Checking the deliverable (report or software) against the objectives defined in the Grant Agreement;
- Checking completeness and whether the deliverable (report or software) can be understood by persons not directly involved in the project;
- Checking references, if any, in reports;
- Recommending improvements in the text (reports or software), if applicable;
- Recommending solutions for problems/discrepancies, if necessary, and;
- Documenting the review result of reports in the report itself and documenting the review result of software in an internal review report.

4.4 Approval of publications

Each beneficiary has the right to publish or allow the publishing of data which constitutes his or her work in the project. All information and documentation that is made accessible to third parties (organisations and persons not part of the Surrounded by Science consortium) has to undergo approval for publication. Thirty calendar days before the intended publication, the beneficiary announces the following data to the Project Coordinator:

- Nature of the publication (conference, location, date, deadlines, etc.)
- Abstract and authors of the publication
- Target audience of the publication

The final publication will be uploaded in the Surrounded by Science Teams environment and all contributing beneficiaries will be mentioned in the paper (as co-authors or under acknowledgements).

Any other publication or communication is required to have obtained the consent of the beneficiaries concerned. If none of the beneficiaries objects to the publication within 30 calendar days from the date of referral, consent is given. Any objection must include a request for modifications, specifically if information contained in the proposed publication or communication is likely to impair the industrial and commercial use of knowledge, or a request for cancellation if intellectual property-protection is being sought for the information contained in the proposed publication.

If a dispute regarding a publication cannot be settled amicably within 2 calendar months, the General Assembly decides on the issue.

Every publication will contain the following acknowledgement and disclaimer of European Community support:

> The Surrounded by Science project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement no. 101006349. This publication only reflects the author's view and the European Commission is not responsible for any use that may be made of the information it contains.

4.5 Standards in creating documents

In order to work in a structured and coherent manner, standards are used for document processing and document identification.

4.5.1 Document processing tools

For the preparation of all documents relevant for the Surrounded by Science project, the standard Microsoft Office Suite (Word, Excel, PowerPoint) is used. Final versions of deliverables and public documents will be made available to the European Commission and the reviewers in PDF format. Graphics can be provided in any standard image format such as TIFF, GIF or JPEG. Templates for documents, presentations, financial statements etc. are provided in the Surrounded by Science Teams environment.

4.5.2 Document identification

All project documents are given a unique identifier. Draft versions will be given the following identifier: SbS followed by the deliverable number followed by an underscore and the version, where the version numbering starts at v1 (which can only be incremented by the author), and is given an additional number and initials of the reviewer after revision. The final deliverable will be given the following identifier: SbS followed by the deliverable number. For example:

- At the start: SbS D1.1_v1
- After revision: SbS D1.1_v1.1 HG
- When final: SbS D1.1

In addition to the identification, a history of changes will be given in draft versions of the deliverables. This history of changes will be removed in the final version.

4.6 Procedures for software development

A minimum set of guidelines are in place and are followed. These guidelines never overrule software development guidelines, which are already in place at the beneficiary's organisation, nor overrules the Consortium Agreement.

4.6.1 Source control

All source code and documentation will be stored in a Git system on GitHub (https://github.com/) or equivalent, accessible to all authorized participants, i.e., participants requiring such an access for the completion of their task. The description of the APIs required to access online services will also be made available in a similar way.

4.6.2 Backups

The backup of source code is achieved using the distributed version control system built into Git, where each developer has a copy of the source code on his local machine. This enables a redundant backup system. The running software and the user-generated content will be backed up on a daily basis (every night) using the standard policy in place by the University of Twente.

5 Conclusions

In this deliverable, a description has been given of the quality management plan of the Surrounded by Science project. It is an important document, as it provides guidelines for all consortium members with the ultimate aim to ensure a successful project which delivers high quality results on time. By setting up a management structure, it becomes clear how the different bodies are related to each other and what is expected from each of them in terms of responsibilities and meetings. The internal communication infrastructure facilitates the communication between consortium members and gives directions on how to communicate. By setting up quality assurance procedures, all beneficiaries are obligated to monitor their own activities in the project and report on these. In addition, the internal review system gives guidelines to Work Package leaders and internal reviewers for what is expected from them at which moment in time.

With this quality management plan, we believe that we have a good start to make the Surrounded by Science project a successful project.

6 List of appendices

Appendix I Template for the minutes of the GA and PMC meetings

Appendix II Template for the six-monthly activity reports

Appendix III Template for deliverables

Appendix I

Template for the minutes of the GA and PMC meetings

Surrounded by Science

<Name of Committee> Minutes

<Month dd, yyyy>

Present: <Name1>, <Name2>, …., <Namex> (minutes)
Absent: <Name1>, <Name2>, ….

1. Announcements
   - Announcement 1.
   - Announcement 2.

2. Topic 1
   <Text about this topic.>

3. Topic 2
   <Text about this topic.>

4. Aob

Appendix II

Template for the six-monthly activity reports

Surrounded by Science

Activity Report WP<X>

WP title: <Title>
WP leader: <Name (Affiliation)>
Date: <dd mm yyyy>
Reporting period: <mm yyyy – mm yyyy>

1. Highlights
   <Give the highlights of the activities in the work package performed during the reporting period>

2. Overview of hours spent per person

Person	**Affiliation**	**Hours spent**

3. Overview of budgeted and spent hours per partner

Partner	**Budgeted in months**	**Budgeted in hours**	**Spent in hours**
Total			

<Explain differences in budgeted and spent hours>

4. WP progress in reporting period

<Give a detailed description of the activities done in the context of the work package and the progress of the work package in the reporting period. Also indicate whether the progress of the deliverables is according to plan.>

5. Problems and deviations from the plan

<Describe, if any, problems that arose and deviations of the activities that were planned in the work package according to the project proposal. Also describe whether and which corrective actions have been taken during the reporting period or which are necessary to be taken.>

6. Impact of deviations on future and on other work packages

<If there are deviations from the plan, describe how this will change plans for the future, and whether and how this influences other work packages.>

Appendix III

Template for deliverables

Surrounded by Science

Learning Paths towards Science Proficiency[1]

Research and Innovation Action in the European Union's Horizon 2020 Programme

Grant Agreement no. 101006349

Deliverable X.Y

<Title of Deliverable>

Editor	<Name> <(Affiliation)>
Date	<Day Month Year>
Dissemination Level	<Public or Confidential>
Status	<Draft or Final>

The Surrounded by Science project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement no. 101006349. This publication only reflects the author's view and the European Commission is not responsible for any use that may be made of the information it contains.

© 2021, Surrounded by Science consortium

[1] As soon as the Surrounded by Science logo is available, replace the Surrounded by Science title by the logo and delete this footnote.

History of Changes[2]

Version (Date)	**Modifications**	**Modified by**
SbS DX.Y_vx (dd-mm-yyyy)	- p. x: <text> - p. x: <text>	<Author>

[2] Remove this table before submission to the EU

The Surrounded by Science Consortium

Participant No. *	Participant organization name	Short name	Country
1 (Coordinator)	Universiteit Twente	UT	Netherlands
2	Ellinogermaniki Agogi Scholi Panagea Savva AE	EA	Greece
3	European Physical Society Association	EPS	France
4	Nuclio Nucleo Interactivo de Astronomia Associacao	NUCLIO	Portugal
5	Fondazione IDIS-Citta della Scienza	IDIS	Italy
6	The Lisbon Council for Economic Competitiveness and Social Renewal asbl	LC	Belgium
7	Weizmann Institute of Science	WIS	Israel
8	Norges Teknisk-Naturvitenskapelige Universitet	NTNU	Norway

Contributors

Name	Institution
All partners	All institutions

Legal Notices

The information in this document is subject to change without notice.

The Beneficiaries of the Surrounded by Science consortium make no warranty of any kind with regard to this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The members of the Surrounded by Science consortium shall not be held liable for errors contained herein or direct, indirect, special, incidental or consequential damages in connection with the furnishing, performance, or use of this material.

The information and views set out in this deliverable are those of the author(s) and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies, nor any person acting on their behalf may be held responsible for the use which may be made of the information contained herein.

Executive Summary

<Give a summary of the document. Describe the goal of the document and the content of each chapter.>

Table of Contents

1 Introduction

<Give a short introduction to the document. Position the document in the WP and describe its contribution to the upcoming work. Also add the structure of the deliverable.>

1.1 Heading 2 item

<Text>

1.1.1 Heading 3 item

<Text>

<Whenever a figure or table is used, it should always be referenced in the text as Figure X or Table X.>

Figure X. <*Title of figure x*>

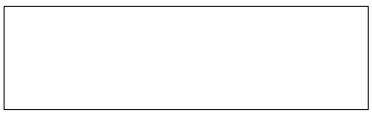


Table X. <*Title of table x*>

<Headings in bold>	
<Text>	

2 Conclusions

<Describe conclusions>

3 References

<If references are used, insert this chapter. If no references are used, leave this chapter out.>

4 List of appendices

Appendix I Title of the appendix

Appendix II Title of the appendix

Appendix I

<Title of the appendix>

<For each appendix use a cover sheet. Provide the appendix itself on the next page(s)>