

DELIVERABLE 5.1

Case Study 1 Data and Content Report



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“ParCos – Participatory Communication of Science”

A HORIZON 2020 RESEARCH AND INNOVATION ACTION

Consortium: Lappeenranta-Lahden teknillinen yliopisto (FI, coordinator), Katholieke Universiteit Leuven (BE), Vlaamse Radio- en Televisieomroeporganisatie (BE), and Knowledge West Media Centre LBG (UK).

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Contact (co-ordinator):

Asst. Professor Antti Knutas & Dr. Annika Wolff

LUT University

e-mail: parcos.project@lut.fi

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DESCRIPTION OF THE DELIVERABLE

Overview	Details
Authors	Catho Van Den Bosch, VRT (Belgium) Sandy Claes, LUCA School of Arts (Belgium) Nikki Peeters, VRT (Belgium)
Reviewers	Natasha Tylosky, LUT University (Finland) Lorraine Hudson, KWMC (UK)
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SUMMARY

Deliverable 5.1 – Case Study 1 (VRT) Stage 1 – provides an overview of the outputs of Stage 1 of Case Study 1 in the ParCos project, which is led by VRT in Brussels, Belgium. It is the output of Task 5.1 in Work Package 5 (WP5) – Case Studies and Communications. This report contains an introduction to ParCos, describes the purpose and role of this deliverable, and describes the set-up of the Belgian case studies. This deliverable also includes how the results of these case studies will help develop the different ParCos outputs. An updated version of this deliverable report will be published in August 2022 (month 32 of project) which will expand upon this report and integrate the outputs and learning from Stage 2 of the case study.

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1 INTRODUCTION

Deliverable 5.1. (D5.1) provides an overview of the outputs of Stage 1 of Case Study 1 in the ParCos project, which is led by VRT in Brussels, Belgium. It is the output of Task 5.1 in Work Package 5 (WP5) – Case Studies and Communications. This report contains an introduction to ParCos, describes the purpose and role of this deliverable, describes how the three case studies in ParCos worked together to plan their case studies and then describes the Belgium case study set up, the outputs of stage 1 of the Belgium case study, design insights for ParCos and planned future activities. An updated version of this deliverable report will be published in August 2022 (month 32 of project) which will expand upon this report and integrate the outputs and learning from Stage 2 of the case study.

1.1 THE PARCOS PROJECT

Participatory science and engaging activities are key to ensuring science communication increases public engagement in science. This can be achieved through collaborations between scientists and the non-scientist public. However, concerns about public science literacy are on the rise. The EU-funded PARCOS project will work to create participatory science stories that link to source material that the public can interpret for themselves. The project will explore ways to ensure diversity and inclusion in science participation and communication. It will also discuss the creation of engaging stories for the public that include the public in science activities and the interpretation of the outcomes. By disseminating stories alongside evidence, the audience will be invited to tell their own stories using the ParCos tools.

1.2 PURPOSE AND ROLE OF THIS DELIVERABLE

This deliverable sits within WP5 ‘Case Studies and Communications’ which is being conducted over a 28-month period (June 2020 to October 2022). There are 3 case studies within the ParCos project in three different countries – Belgium, Finland and the UK. The purpose of Task 5.1. within WP5 is to implement and evaluate Case Study 1, which is the Belgium case study, which is reported on in D5.1.

There are 2 stages to the ParCos case studies:

- Stage 1: focuses on the methods of conducting science and collecting data that are relevant to the framing of the case study and to their local context. Each case study will use an appropriate scientific method for collecting data, either predetermined within the case study description or selected by the case study participants in the early stages.
- Stage 2: the case study participants receive training (prepared in WP4) for creating participatory science stories and participate within a participatory design process to create participatory science stories and to integrate methods for communicating these stories to their wider communities and the general public.

Common activities that are being conducted in the context of the three ParCos case studies are:

- a) Identifying and/or collecting data for science stories
- b) Exploring data using ParCos tools
- c) Creating and communicating participatory science stories designed to prompt further engagement by the public

This first version of D5.1 is published in month 16 (April 2021) and focuses on the implementation of Stage 1 of the Belgium case study. An updated version will follow in M32 (August 2022) which integrates Stage 2 of the Belgium case study and the evaluation. The final version of D5.1. will be published on the ParCos Platform and The Bristol Approach website <https://www.bristolapproach.org/bristol-approach/>.

1.3 CASE STUDIES PLANNING

1.3.1 Goal

The goal of ParCos is ‘To improve science communication with the public by creating participatory science stories that link to source evidence that the public can interpret for themselves and then build new science activities on top of this using popular forms of broadcast media and VR/AR technologies. As shown on Figure 1, ParCos is developing participatory design models, methods and tools which are being tested within three case studies in Belgium, Finland and the UK. Each case study has a different focus, in terms of the science topics and the group of participants it is working with, but the learning is then brought together and feeds into the creation of the ParCos models, methods and tools.

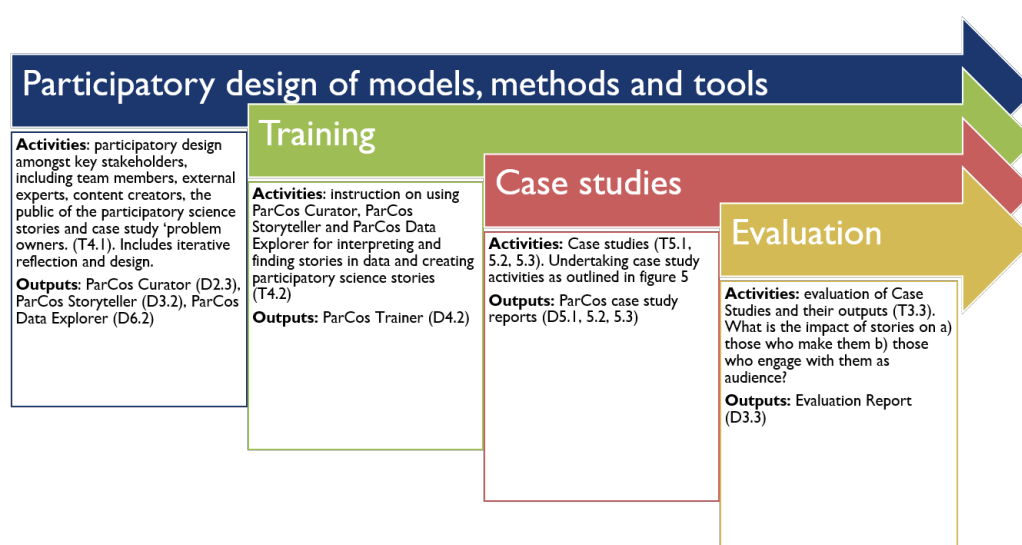


Figure 1: Overview of the ParCos Methodology

Each case study will focus on a different set of stakeholders, who are using data as evidence and who want to tell a story with the data to reach a wider audience. ParCos understands that data is experienced in subjective ways. The case studies will explore participatory approaches to data analysis and the use of arts-based methods to build empathy to data and support discussions about conflicting ideas or interpretations of data.

A brief summary of the three case studies is provided below:

Case Study 1: design explorations based on weather or astronomical data to guide innovative storytelling in broadcasting (Belgium)

Case Study 2: local communities, collecting and using data to address issues of importance to them, and communicating findings in personalised, intelligent and accessible ways including using immersive technologies (UK)

Case Study 3: science in schools, looking at how schoolchildren can use the research data generated by universities and contextualise it to their own context and use through and share with others through documentaries (Finland)

1.3.2 Methods

At the heart of the ParCos project is the development of the participatory design methodology - The Bristol Approach to Citizen Science and the use of arts-based methods. Each of the ParCos case studies is using and testing elements of The Bristol Approach as a methodological framework to guide their citizen science communication activities. There is a particular focus on empowering citizens in communicating the outcome of citizen-led science initiatives, drawing upon the work within WP3 (Finding and telling stories from science data, the ParCos Storyteller), which is using arts-based methods for participatory sense making of science data, and WP6 (ParCos Platform).

1.3.3 Planning

As part of Task 2.1. in WP2 (Supporting community-led science practice), the ParCos project partners received online training on The Bristol Approach on 16th April 2020 as described in the D2.1. report (Hudson et al., 2020). KWMC (who developed the original version of The Bristol Approach) is supporting the three case studies to use the methodology in their own contexts. This has included supporting each case study to identify its project boundaries (i.e. guided by resources, timescales, criteria in bid, challenges such as COVID-19 restrictions) and providing advice to how to engage with potential participants (citizen scientists). Project partners are also working together to agree common terminology and its use within the ParCos project, which was an issue discussed within the consortium monthly meetings where we settled on the idea of creating a glossary of terms. In September and October 2020 KWMC led two Scoping Sessions to support the case study leads in starting to plan their citizen science projects. In November 2020, VRT organized a workshop to share ideas about the immersive technologies that could be used in the different case studies, previously discussed in D4.1.

1.3.4 Case Study Scoping Session 1

KWMC ran an online ParCos Case Study Scoping Session 1, using Microsoft Teams, on the 9th September 2020 (09:30-11:00 UK time) which involved all the project partners. The session covered the following topics:

- a) What are we trying to achieve in our case studies?
- b) Activity: barriers, opportunities & boundaries (JamBoard)
- c) Principles for diversity and inclusion
- d) Belgium, Finland and UK case studies – Activity: Our citizen scientists
- e) Planning our next steps – timeline

1.3.4.1 What are we trying to achieve in our case studies?

In the first part of the session, we explored the different elements of the ParCos project and how they linked to the case studies and would feed into the development of The Bristol Approach. This is illustrated on Figure 2, a diagram used in the session. The pink box shows how the steps of The Bristol Approach align with the timing of the case studies, whilst the blue circles show the key elements of the ParCos case study approach. Concepts mentioned in different work packages are captured in the green circle and the yellow squares are a selection of the key performance indicators. The text on the right-hand side links back to the European Citizen Science Association’s (ECSA) ten principles of citizen science which is discussed in the report - D2.1. The Bristol Approach for Citizen Science (Hudson et al., 2020).

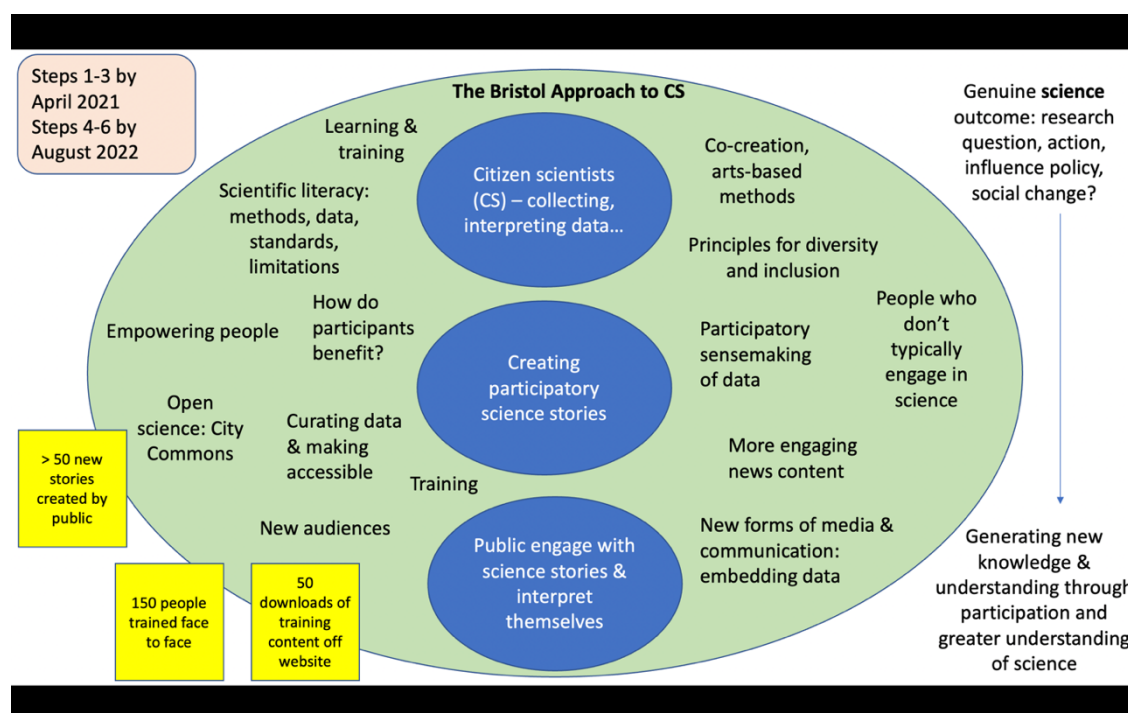


Figure 2: Key elements of the ParCos Case Studies and The Bristol Approach Development.

1.3.4.2 Barriers, opportunities and boundaries

As ParCos is being undertaken at a time when many of the countries involved are in lockdown due to COVID-19 and where people have been asked to stay at home and not mix with others in person, we recognised that this posed a significant challenge for all the project partners. We therefore captured the barriers different partners envisaged in co-designing and implementing their ParCos case studies by posting them on a Google JamBoard, as shown in Figure 3. We then discussed how to address the barriers, what the opportunities may be and how we should establish boundaries for each of the case studies which we would need to review over time.

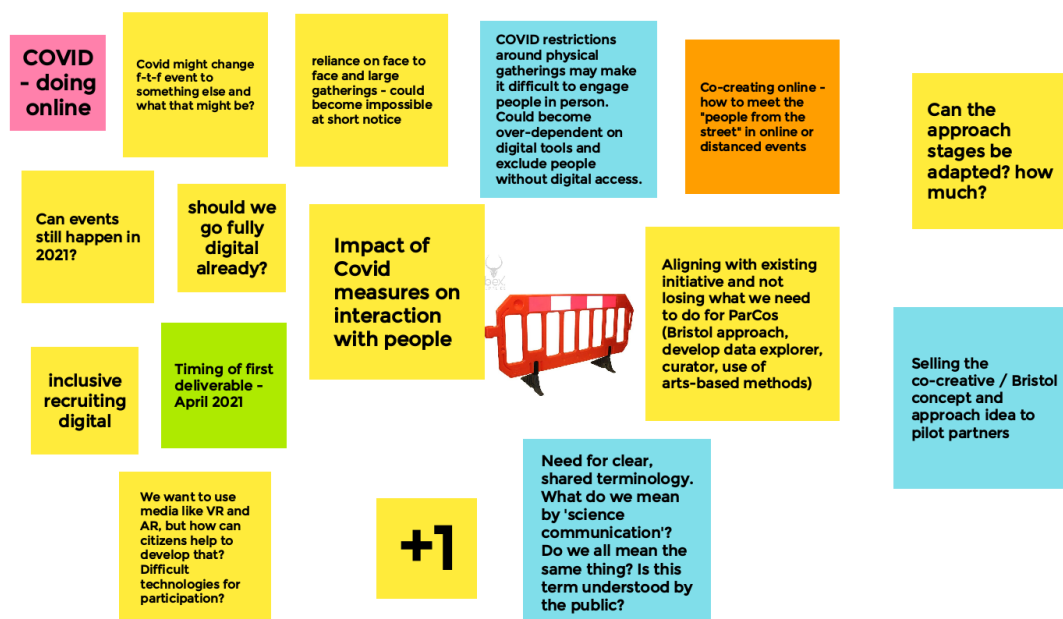


Figure 3: Barriers in implementing the ParCos case studies

Figure 3 shows that there were concerns about whether we should decide at this point to take the activities fully online, as face to face interaction and working with large groups of people in person was unlikely to be feasible due to national restrictions in each pilot country. However, we also discussed concerns about how inclusive using just online interaction would be in terms of who would be likely to attend. We decided to try and use a blended approach i.e. a mix on online and offline activities within the case studies. We recognised that we would need to be flexible with scheduling events, as there were likely to be delays due to COVID-19 and we would need to make changes to plans at short notice. However, as a consortium we agreed we would still work towards completing Stage 1 of the pilots by April 2021 (Deliverables 5.1., 5.2. and 5.3.).

An opportunity of the COVID-19 crisis is that by digitising events, a more diverse audience can be invited. It is for example possible that consortium partners join workshops and lecturers in other countries.

We also discussed the need for shared terminology across the pilot in terms of defining how we understand terms such as science communication, co-design etc and decided to create a glossary of terms. Due to the many restrictions the project partners faced, we decided the case studies should build upon existing activities the project partners were working on with their communities, so they were more likely to happen. But in doing that, we recognised it was important not to lose the ethos of ParCos e.g. it would be important to ensure the activities contributed to methods and development of tools we had committed to create in the ParCos bid, such The Bristol Approach to Citizen Science, ParCos Data Curator, ParCos Data Explorer etc.

1.3.4.3 Principles for Diversity and inclusion

Activities in Task 2.2. (WP 2 – Supporting community-led science practice) of ParCos will lead to the development of a set of principles to support diversity and inclusion in science activities. Therefore, our next activity in the workshop was to discuss how this was relevant to the case studies so that each case study could consider this within their case study design. This involved thinking about what the terms diversity, inclusion and accessibility mean and partners also watched the video <https://www.youtube.com/watch?v=hArUbSpQC1g> ‘Bristol Living Lab – Diversity and Inclusion’ created as part of the dissemination work in ParCos. This video details how KWMC are implementing diversity and inclusion within their wider work and the learning that is feeding into ParCos.

1.3.4.4 Belgium, Finland and UK case studies – Activity: Our citizen scientists

Next, each project partner talked about their ideas and current plans for the ParCos case studies. We also discussed how we would start the engagement and recruitment of participants within each case study, covering the issues shown on Figure 4. The detail of how each case study has progressed with this work can be found in the Case Study Stage 1 Reports (D5.1, D5.2 and D5.3). So for the UK Case Study this is in Section 2 below.

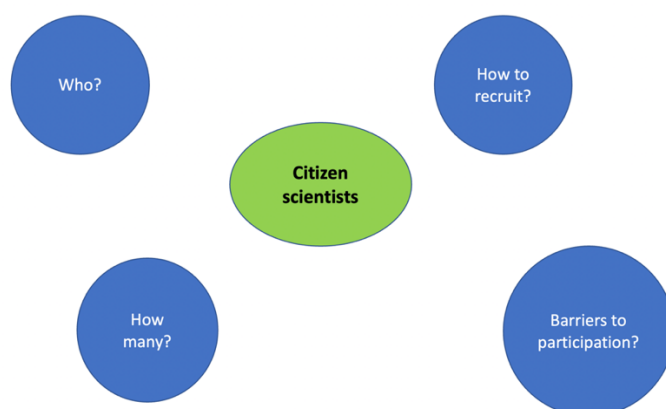


Figure 4: Issues to consider in deciding who would participate in the ParCos case studies

1.3.4.5 *Planning our next steps*

Finally, we agreed on our next steps for developing the case studies and decided to hold a workshop as part of the Consortium meeting in October 2020, and that each case study would bring further details of their plans to this next session.

1.3.5 Case Study Scoping Session 2

The 2nd case study scoping session took place online via Microsoft Teams on the 13th October 2020 (13:00-15:00 UK time) and was attended by all ParCos partner organisations. The session covered the following topics:

- a) Case Studies - Aims, objectives, outputs, outcomes, data collection
- b) Individual Case Study presentations
- c) Co-creating with Communities using The Bristol Approach and aligning case study activities
- d) Co-creating online + offline: sharing best practice
- e) Aligning case study activities with ParCos deliverables

It was an opportunity for each organisation leading a case study to share how the plans for their case studies were developing and how they linked back to the ParCos project aims, objectives, outcomes, tools, deliverables etc. We also agreed to complete the Miro board summarising the plans for our case studies, which is illustrated in Figure 5. We also shared learning between partners identifying opportunities to collaborate over the next few months as well as to discuss how we could address the ongoing challenges individual ParCos partners faced in project delivery due to the COVID-19 restrictions. We shared our experiences of delivering blended activities using a mix of online and offline activities. Zoe Banks Gross from KWMC shared her experiences of co-creating with communities in another EU Horizon 2020 project REPLICATE¹ and we discussed how the learning from that could feed into how we work with communities in ParCos.

¹ <https://replicate-project.eu>

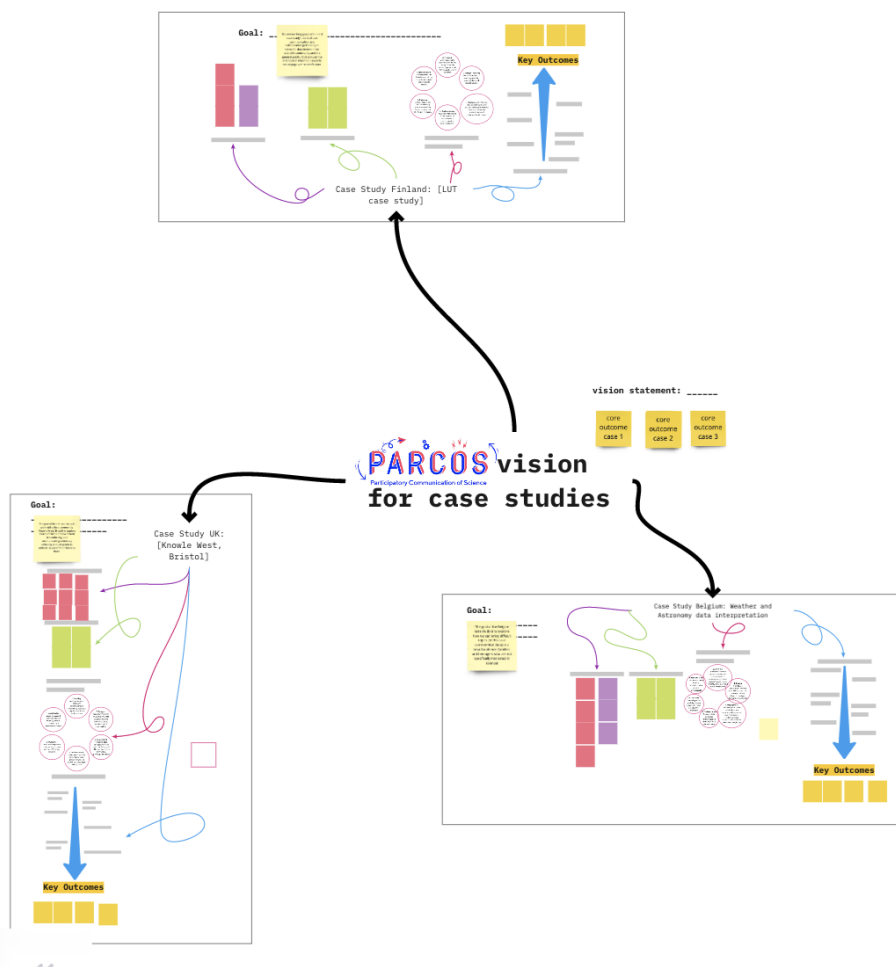


Figure 5: ParCos Vision for Case Studies on Miro Board²

1.3.6 Case Studies Stage 1 Sharing Session

Between November 2020 and April 2021, each of the case studies have secured their relevant ethical approvals and focussed on implementing Stage 1. The first version of D5.1, D5.2 and D5.3. presents the information of on the activities undertaken to date. In May 2021 KWMC is organising a Stage 1 sharing session to bring the case study leads together to reflect on the activities and their future plans, to share learning and experiences, and to use this as an opportunity to feed this into the methods and tools development in ParCos.

2 CASE STUDY SETUP - VRT

2.1 GOAL OF THE CASE STUDY

As a public broadcaster, VRT has the mission to inform, inspire and connect all Flemish citizens. Therefore, the VRT case study aims to identify ways to present data via media in an engaging way and encourage audiences to interpret that data.

² https://miro.com/app/board/o9J_klznvDI=/

As participatory approach, we worked together with students from LUCA School of Arts to explore innovative approaches for data and science storytelling in broadcasting. Here, we used weather and astronomical data for a series of design explorations that guided the development of the case studies.

The choice for the subject of weather and astronomical data is twofold. On the one hand, weather data is already actively present in people’s daily lives, i.e., in the form of weather forecasts. However, few people are triggered to explore the data behind those forecasts. We believe that when we integrate ways for audiences to explore data via this recognisable medium, they would be driven to make sense of weather data, and enabled to draw their own conclusions, for example on climate change.

On the other side, we decided to work with astronomical data. Although space as a theme appeals to a wide audience, specific astronomical data would only appeal to a limited group of people who have an interest and deeper understanding of science, and more specifically of space. We chose this subject because of the challenge to deliver abstract data and subjects to a broad audience.

Moreover, if we can tell these (science) stories in an accessible and interactive way, we can support and even empower audiences to not only make sense of data, but also to engage with it. If we can motivate the larger audience to delve into this difficult matter, it can help them overcome the overwhelming feeling of trying to understand data and charts. In addition, it may even encourage them to become more critical of news articles that contain scientific claims and numbers.

Next to exploring formats to deliver these stories, we also considered new touchpoints to reach and connect with audiences as a public broadcaster. This way, we aim to keep the story accessible and focus on a user-centric approach. In the development of the design explorations, we focused on reaching different audiences. We therefore selected three different contexts for our case studies, which will be discussed in the next parts of the deliverable:

- a) More Weather Expo
- b) Knal Festival
- c) EDUbox

ParCos Objective	Belgium Case Study Aim	Belgium Case Study Objective
O2: To improve interaction between different science stakeholders through participatory approaches to science communication.	1) To help different audiences to interact with science through participation in science communication with other stakeholders	a. To run participatory science communication activities with 18 students Data and Information Design in the ParCos Case Study for the development of interactive installations

		<p>for the More Weather Expo and the Knal Festival.</p> <p>b. To recruit > 15 Participants (secondary school students) to participate in the development in the EDUbox</p>
<p>O1: To increase trust in science outputs through making underlying evidence and its interpretation more transparent</p>	<p>2) To increase the confidence of the different audiences in science communication through the creation of participatory science stories</p>	<p>a. To reach > 1000 children who visit the More Weather Expo with the interactive installation</p> <p>b. To reach 10 percent of the visitors at the Knal Festival (depends on the restrictions that apply on that moment for physical events)</p>
<p>O3: To develop pedagogical approaches and to deliver teaching of new practices for communicating science to both professional and non-professional users.</p>	<p>3) Disseminating learnings about ParCos to science communicators (teachers, scientists, and creatives)</p>	<p>a. To disseminate together with 3 partner organisations to reach 100 teachers (professional users)</p> <p>b. To support the students Media and information Design to create at least 17 science stories</p>

Table 1: Belgium Case Study aims and objectives and alignment to wider ParCos objectives

2.2 PARCOS TOOLS

ParCos is creating new science communication tools that can be used in the creation of participatory science stories through the activities below:

- curating data sets (ParCos Data Curator in WP2 – led by LUT)
- finding stories in data (ParCos Data Explorer WP6 – led by LUT)
- turning data stories into narrative visualisations (ParCos Storyteller WP3 – led by VRT)

In Stage 1 of the VRT case study, we start feeding our learnings into the development of these tools. More specifically, we have searched for different narrative visualisations that help

inform the ParCos Storyteller. We also plan to share learnings from each of the case studies and explore how this informs the science communication tools at a Stage 1 Case Study Sharing Session in May 2021.

3 MORE WEATHER EXPO

3.1 WHO IS INVOLVED?

More Weather (Oostende (BE), summer 2021) is an exhibition for children and families to learn more about the weather in a fun and interactive way. The event is organised by VRT. As part of ParCos' objectives, we aim to present large data sets about weather in a very understandable way.

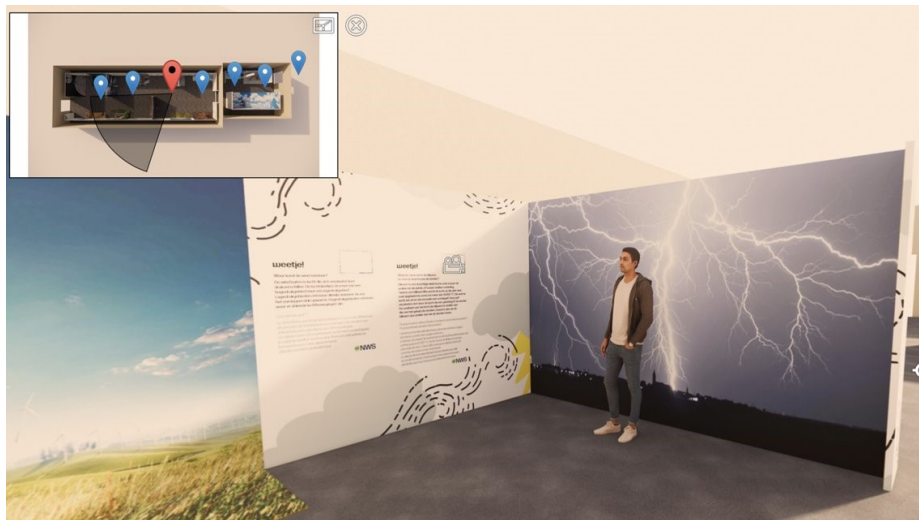


Figure 6: Mock-up More Weather Expo

Audience

The target audience of the expo are young children (6 to 12 years) and their families. Here, we aim to research how we can help them make sense of large amounts of (abstract) data.

Communicators

Bachelor Students Data and Information Design (LUCA School of Arts)

We worked together with 18 bachelor students Media and Information Design at the LUCA School of Arts. During a course given by dr. Sandy Claes they explored different artistic ways to present datasets in an innovative and interactive way.

Kyo Schelfhout, one of the students that participated in this course, even decided to optimize his concept as part of his bachelor's thesis and therefore build on the ParCos methodology.

Producers More Weather (VRT)

During the design process of the installations for the More Weather Expo, we regularly organized feedback sessions with the producers of the event. Here, it was important to take into account practical limitations as well, such as the technical optimization of the installation.

3.2 METHODS AND ACTIVITIES UNDERTAKEN

Quick Designs and Design Iterations

The first step in the design process was to identify a story and then frame it. The students started working with datasets related to weather. One of the datasets included the weather data in Belgium of the past 100 years, provided by the Royal Meteorological Institute of Belgium. As a next step, the students started to design the stories, similar as described for the arts-based methods.

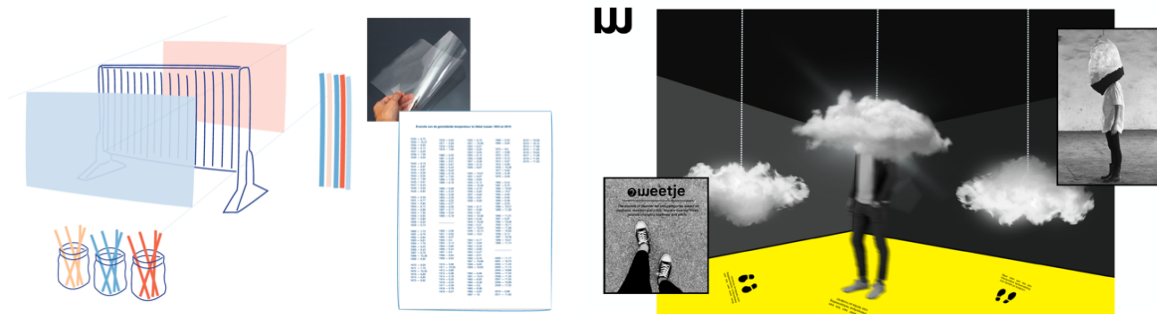


Figure 7: Examples of the first design iteration

During the course the students made several quick designs (figure 7) and did small scale-user tests with the target audience. A feedback session was organised, to align expectations.

Final presentation and stakeholder feedback

Figure 8: Final presentation of the prototypes (1,2,3,4)

After the course of one semester, the students presented their results. These were shared with different stakeholders that were involved in the event and in ParCos.

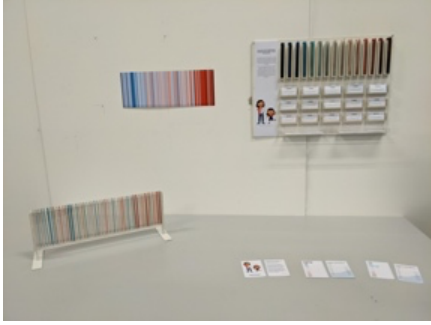



	<p>A participatory installation in which the average temperature of different years is presented in color. Each visitor can co-create the installation by placing colored panels that represent a year in a set-up and helping illustrate the notion of global warming.</p>
	<p>An umbrella on which visitors can place stickers with the current type of weather. This way, data can be linked to emotions.</p>
	<p>An installation of thunderclouds in which visitors can use an app to control the storm in the cloud. In the next step, they can put their heads in the clouds and learn more about the data.</p>
	<p>A personalised weather forecast for visitor's birthdays, which is linked to a larger story about seasons and the position of the earth in relation to the sun.</p>

Table 2: A selection of the different design explorations:

3.3 CONTENT PRODUCED

After the design course, the student who created design exploration 4 continued working on his prototype as part of his bachelor's thesis. Together with the news department, we further developed this into a digital installation for the More Weather expo.

The final output that will be developed is an application where children can search the weather on their date of birth and see how the average temperature and rainfall has evolved over the years. This will be linked to a larger trend, global warming. For this, we work together with Karrewiet, VRT's youth news programme.



Figure 8: Storyboard Personal Weather Forecast

3.4 PARCOS TOOLS

The ParCos Storyteller

The design process and the different storytelling techniques that have been used will be analysed and in a next stage of the project those insights will be used to develop guidelines for science communicators to approach data in a participatory way. The intent is that this will help the science communicators to reach a larger audience.

The ParCos Data Explorer

The ParCos Data Explorer will help non-experts to explore curated data sets and to build their own participatory science stories using the process of data storytelling. The insights of the design process with the students can help to define what the needs of the non-experts are.

3.5 REPORT ON EVENTS

Timing

Table 3 gives an overview of the timing of this part of the case study.

Timing	Actions
March 2020 – September 2020	Preliminary research - Spotting opportunities for the case studies, networking and defining the research question.
October 2020 (13/10/2020)	Introduction of the scope of the project to the students Media and Information Design
November 2020 (13/11/2020)	Presentation of the first design explorations
December 2020 (18/12/2020)	Presentation of the final concept
January 2021	Pitching concepts to the producers of the More Weather Expo
February 2021 - June 2021	Kyo Schelfhout works on a digital platform to present at the More Weather Expo as bachelor's thesis under the guidance of VRT
July 2021 – August 2021	More Weather Expo
August 2021	Processing the results of the installation at the More Weather Expo

Table 3: Timing More Weather Expo

Impact Covid-19 crisis

All courses and meetings took place online. Until now, the Covid-19 crisis has had no influence on the plans for the organisation of the More Weather Expo because it takes place in the summer of 2021. Until further notice, exhibitions can take place in Belgium.

4 KNAL! FESTIVAL

Knal! festival (festival in Leuven (BE), autumn 2021)¹, a city-wide festival that combines art and science in various events with the big bang as the main theme. The festival is organised by Kunst Leuven. The goal of the VRT case study at Knal! is to present astrophysical research about the sound of stars. More specifically, you are able to identify different stages of the life of stars by converting their light waves into sound waves.²

4.1 WHO IS INVOLVED?

Audience

We aim to develop an installation in which a difficult scientific subject is presented in an understandable way for all interested passers-by and visitors of the event. At this festival, we want to encourage citizens to actively participate in this and invite them to identify stars themselves, thus becoming citizen scientists themselves.

Communicators

Professional scientist

For the Knal! Festival, we are supported by dr. Katrien Kolenberg, astrophysicist and STEM-coordinator associated at the Catholic University of Leuven.

Bachelor Students Data and Information Design (LUCA School of Arts)

For this part of the case study, we are collaborating in the same way with the students Media and Information Design at het LUCA School of Arts as in the More Weather case study. During a course given by dr. Sandy Claes, they explored different artistic ways to present the dataset in an innovative and interactive way.

Gijs Ipers, one of the students that participated in this course, decided to optimize his concept as part of his bachelor's thesis.

Producers Knal Festival

During the design process of the installations for the Knal! Festival, we regularly organised feedback sessions with the producers of this event. It is important for them that the installation fits within the narrative of the event and that it is technically optimized.

4.2 METHODS AND ACTIVITIES UNDERTAKEN

Quick Designs and Design Iterations

In the same way as with the More Weather Expo, the design process was organised in different phases following the Bristol Approach. After starting their design explorations in September, they had the opportunity to pitch their first ideas in November.

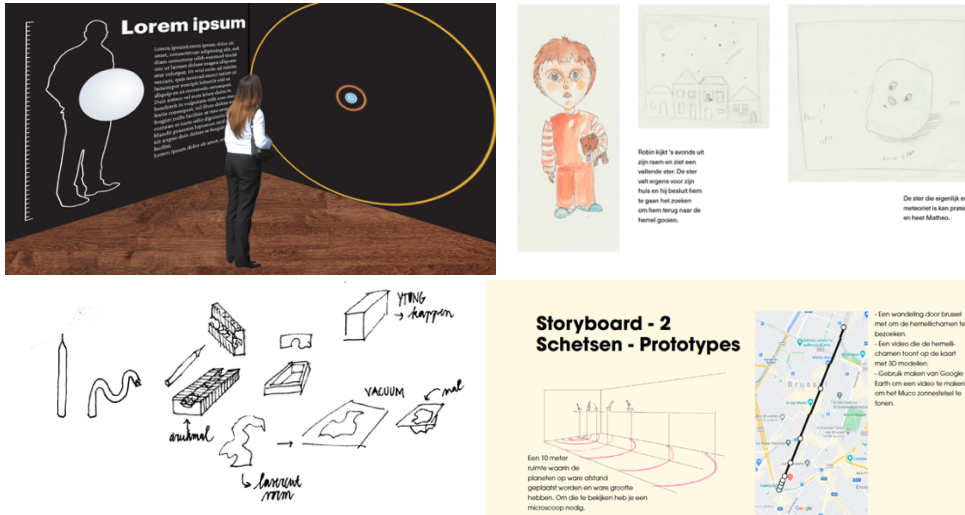
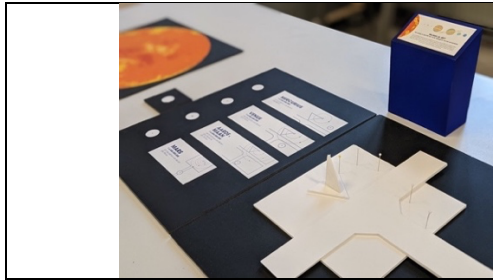


Figure 9: Examples of the first design iteration

A wide variety of ideas were presented and different formats were researched. These include a walk in the city, a picture book, candles, and various formats that can help create an interactive installation.

Final presentation and stakeholder feedback

	<p>AstroSounds, a platform that teaches how to listen and identify different types of stars. In a next phase this would become a citizen science platform.</p>
	<p>The candles are an artistic interpretation to illustrate the different live stages of a star. The intention is to place this on a table as a conversation starter.</p>



Hike of 1 kilometer in the city centre of Leuven. This hike serves as a quest that illustrates the scale of the universe. In this case the student chose to work with a different data set.

Table 4: Final presentation of the prototypes (1,2, 3)

After the course of one semester, the students presented their results. These were shared with the different stakeholders, professional scientists, the producers of the Knal! Festival and ParCos partners.

4.3 CONTENT PRODUCED

Platform

After the design course, the student who created design exploration 1 continued working on his prototype as part of his bachelor's thesis. During his thesis, he will focus on the further development of the platform, which could become one of ParCos's outputs for educators.

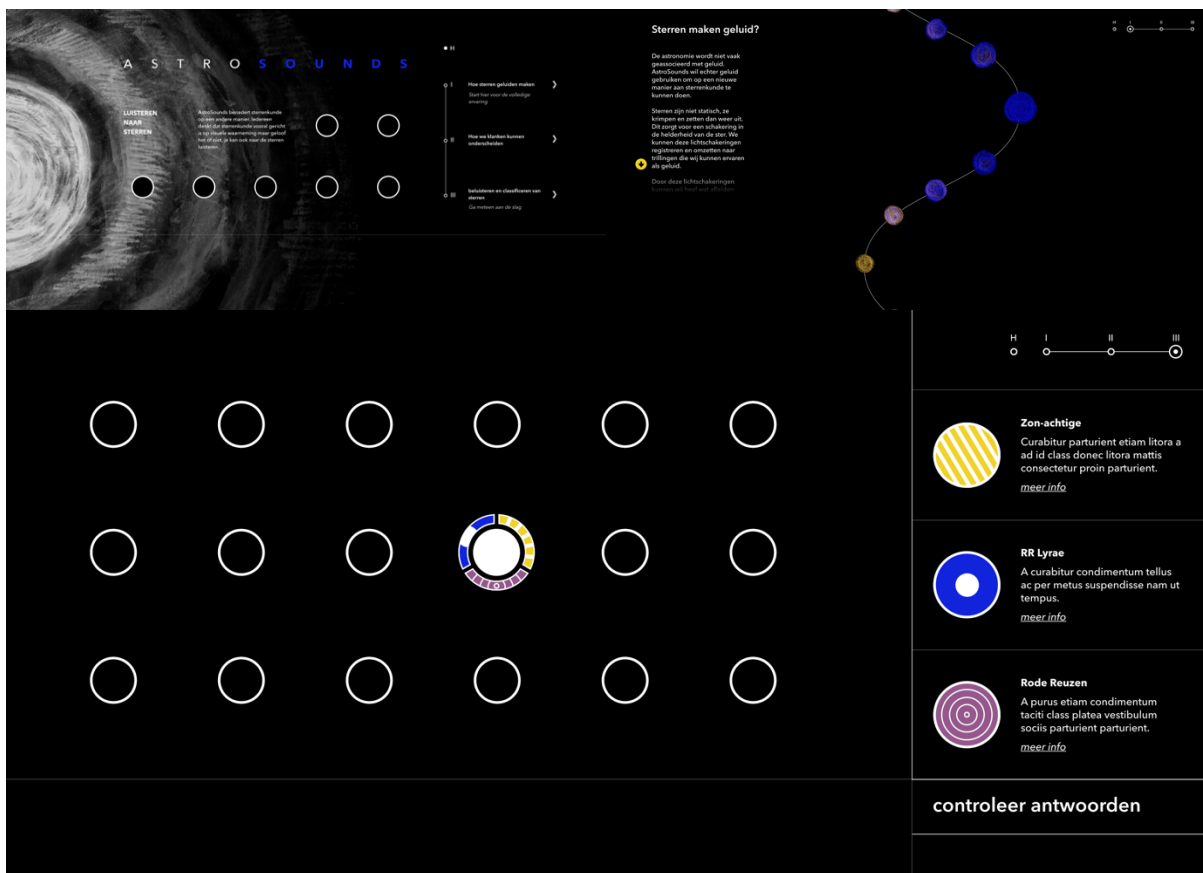


Figure 10: Scenario AstroSounds Platform

The platform starts with an introduction in which the sonication of the stars is explained. This is followed by a series of examples to illustrate the set-up. In a later phase, citizens are able to discover new stars themselves and do part of the research.

Installation

At the Knal! Festival, the AstroSounds platform will be presented. One of the challenges there is to guide the visitors from a physical festival to an online platform. This is part of our research as a public broadcaster to explore new ways in reaching audiences and connect with them by following their journeys.

Therefore, we organised a workshop with several experts in media innovation to brainstorm about different ways to conceptualise this. The results of this workshop will help us create an installation that will bring different types of audiences in contact with the (science) data. Even more, we aim to reach an audience that varies from passers-by to science enthusiasts.

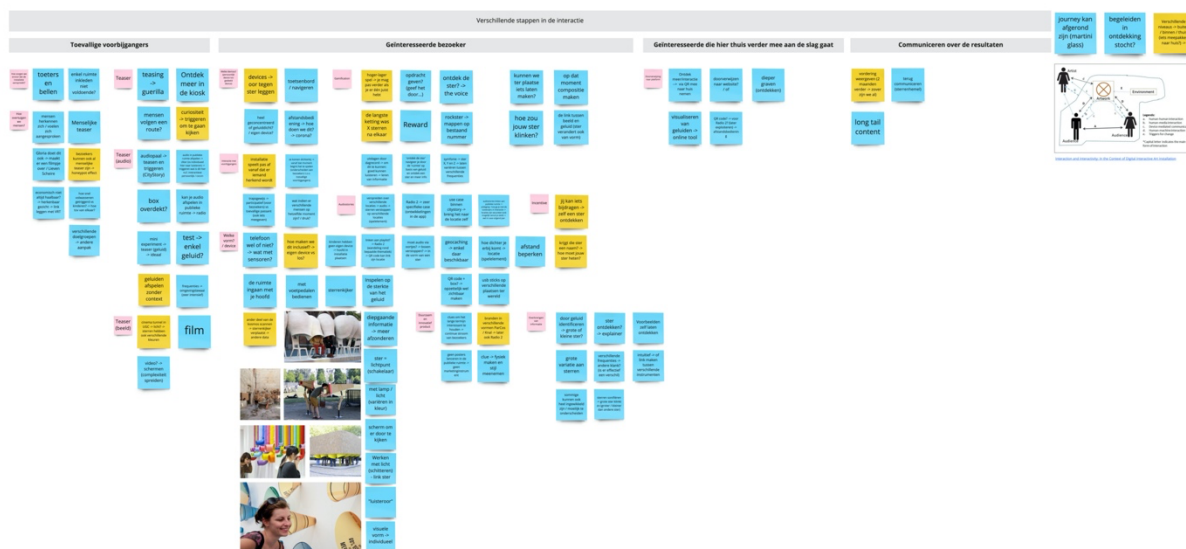


Figure 11: Ideation workshop for prototype development (installation)

In the next phase, we will focus on the concept development of the installation. We aim to research how we can make it possible for the audience to interact with the data in different ways.

4.4 PARCOS TOOLS

The ParCos Storyteller

The design process and the different storytelling techniques that have been used will be analysed for the ParCos Storyteller. In a next stage of the project, those insights will be used to develop guidelines for science communicators to approach data in a participatory way. The intent is that this will help the science communicators in reaching a larger audience.

The ParCos Data Explorer

The ParCos Data Explorer will help non-experts explore curated data sets and build their own participatory science stories using the process of data storytelling. The insights of the design process with the students can help define what the needs of the non-experts are, in this case the bachelor students Data and Information Design.

Principles for Inclusion

At the Knal! Festival VRT aims to reach the widest audience possible. For this purpose, it is important that the material being developed according to the principles of inclusion.

4.5 REPORT ON EVENTS

Table 5 gives an overview of the timing of this part of the case study.

Timing

Timing	Actions
March 2020 – September 2020	Preliminary research - Spotting opportunities for the case studies, networking and defining the research question.
October 2020 (13/10/2020)	Introduction of the scope of the project to the students Media and Information Design
November 2020 (13/11/2020)	Presentation of the first design explorations
December 2020 (18/12/2020)	Presentation of the final concept
January 2021	Pitching concepts to the producers of the Knal! Festival
February 2021 - June 2021	Gijs Ipers works on a digital platform to present at the Knal! Festival as bachelor's thesis under the guidance of dr. Katrien Kolenberg
March 2021 (22/03/2021)	Workshop VRT – Brainstorm concept development
April 2021 – Augustus 2021	Concept development
October 2021 – January 2022	Knal! Festival
December 2022	Processing the results of the installation at the Knal! Festival

Table 5: Timing Knal! Festival

Impact Covid-19 crisis

The lessons with students Media and Information Design and workshops all took place online. Until now the Covid-19 crisis has no influence on the plans for the organization of the event because it takes place in the autumn of 2021. Exhibitions are still allowed in Belgium to take place.

5 EDUBOX

The EDUbox is an educational tool from VRT NWS, VRT's news department, that introduces young people to different societal themes and that is developed in cooperation with expert

partners. So far, VRT NWS has created EDUbox Data, Artificial Intelligence, Democracy, Financial Education, Mobility, and by far the most successful one on Fake News.

Next to all the content VRT NWS makes on radio, TV, online and for social media, VRT NWS informs and inspires young people with EDUbox to stimulate them to dive deep into a subject. It is like a very engaging interactive documentary that uses tactile, applications, video, theory, practice, discussion and more. In short: it is a deep learning construct. These tools can be used by secondary school teachers to teach about specific societal topics. As part of ParCos, we are exploring the possibility to create an EDUbox that focuses on the interpretation and communication of (astronomical) data through the lens of space.

¹ <https://www.visitleuven.be/knal>



Figure 12: Example of an EDUBox

5.1 WHO IS INVOLVED?

Audience

The goal of EDUbox is to make students in secondary school more familiar with specific societal topics. In this case, we aim to teach them in a participatory way to engage with abstract data, such as data related to exoplanets, make sense of it and become part of the story, by linking the data to their own world. example, EDUbox could help them explore and present the data about the live stages of stars in an understandable way.

Communicators

Secondary School Teachers

For the EDUbox it is important that we work together with secondary school teachers because they will have an important role in sharing the knowledge with their students. By involving them in the process we can better respond to their needs.

5.2 METHODS AND ACTIVITIES UNDERTAKEN

Design research

Within VRT we research different possibilities to present (science) data to students. During our research we focussed on best practices and what their added value could be for a public broadcaster.

5.3 PARCOS TOOLS

Bristol approach

For the development of the EDUbox we work according to the principles of the Bristol Approach. We want to involve the target audience, in this case the children from an early stage to give them the tools to help develop a new teaching package that corresponding to their needs and ideas.

Principles for diversity and inclusion

5.4 REPORT ON EVENTS

Table 6 gives an overview of the timing of this part of the case study. This planning is subjective to the team of VRT NWS and further development of the case study.

Timing

Timing	Actions
February 2021– April 2021	Preparations: contacting the persons involved (intern and extern), introductory meetings
Autumn - Winter 2021	Development of the EDUbox
Winter 2020	Distribution of the EDUBOX

Table 6 – Timing EDUBox

6 RESOURCES

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