

# STORIES OF TOMORROW

## Students Visions on the Future of Space Exploration

*Collaborative Project in European Union's 2020 research and innovation programme*

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### Deliverable 8.6

## Data Management Plan



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## The STORIES Consortium

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2	Otto-von-Guericke University Magdeburg	OVGU	Germany
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11	WRO Hellas	WRO	Greece
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## Executive Summary

This Deliverable includes the Initial Data Management Plans from each Work Package. We thought it is best to present a DMP from each WP because each WP has its own needs with regard to filing, organising and archiving.

This is due to the fact that each WP is looking at a different aspect of the STORIES project, handling different kind of data and managed by different partner organisations.

The partner organisations were instructed on generating a DMP and given a template as an example. Everyone has worked with the DMP online tool DMPonline of the Digital Curation Center, UK (<https://dmponline.dcc.ac.uk/>) which provides a template for HORIZON2020 projects.

The DMPs are in their initial stage and will be updated in due course.

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## 1 DMP Work Package 1 – Pedagogical Framework

**Plan Name** Horizon 2020 DMP - STORIES of Tomorrow - students visions on the future of space exploration (WP1)

**Plan ID** H2020-ICT-2016-1

**Grant number** 731872

**Principal Investigator / Researcher** Angelos Lazoudis

**Plan Data Contact** angelos@ea.gr

**Plan Description** The nature of our research project is Technologies for Learning and Skills. The STORIES project aims to contribute to a dynamic future of children's ebooks evolution by a) developing user-friendly interfaces for young students (10-12 years old) to create their own multi-path stories expressing their imagination and creativity and b) by intergrating the latest AR, VR and 3D printing technologies to visualize their stories in numerous innovative ways. The purpose of Work Package 1(Pedagogical Framework): Develop a pedagogical framework that builds on the essential features of creative STEM learning including exploration, dynamics of discovery, student-led activity, engagement in scientifically oriented questions, priority to evidence in responding to questions, formulations of evidence-based explanations, connection of explanations to scientific knowledge, and communication and justification of explanations. These elements support creativity as a generic element in the processual and communicative aspects of the pedagogy by integrating arts (virtual arts, performing arts, design, music) and proposing innovative teaching strategies that will offer students high participation and enable them to generate highly imaginative possibilities and supports students' deeper learning. Based on project- and inquirybased approaches students will be asked to create their own stories about the future missions to and on Mars. The proposed pedagogical framework will guide the teachers in these interventions, will provide the reference for the development of the assessment approach of the project and will provide the necessary requirements for the enabling technologies the proposed project will develop.

## **1. Data summary**

**Provide a summary of the data addressing the following issues:**

**State the purpose of the data collection/generation**

**Explain the relation to the objectives of the project**

**Specify the types and formats of data generated/collected**

**Specify if existing data is being re-used (if any)**

**Specify the origin of the data**

**State the expected size of the data (if known)**

**Outline the data utility: to whom will it be useful**

The data generated under WP1 serves as evidence for designing the STORIES pedagogical approach. It links inquiry-based learning to creative STEM education and to storytelling. Based on data collected from literature reviews and additional data to be generated by the WP1 pedagogical experts, the STORIES pedagogical framework will provide the reference for the development of the assessment approach of the project (WP6) and will offer the necessary requirements for the development and implementation of enabling technologies within science education.

The expected size of data is not known at this point. As the project evolves we will have an estimate of the data size. This will be reported in the final DMP.

The data might be of use to those interested in better understanding how the arts and sciences can be integrated through digital storytelling in educational settings.

## **2. FAIR data**

### **2.1 Making data findable, including provisions for metadata:**

**Outline the discoverability of data (metadata provision)**

**Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

**Outline naming conventions used**

**Outline the approach towards search keyword**

**Outline the approach for clear versioning**

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

All data will be shared with the consortium in the internal working space with those

partners that need access to them (Fraunhofer - BSCW <http://www.bscw.de/english/>). Folders will be organized in a hierarchical and clear structure. Files will be uniquely identifiable and versioned by using a systematic name convention. Moreover each folder within the BSCW server that stores data will be characterized with keywords so the data can be easily found by using BSCW's search mechanism.

## **2.2 Making data openly accessible:**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

**Specify how the data will be made available**

**Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

**Specify where the data and associated metadata, documentation and code are deposited**

**Specify how access will be provided in case there are any restrictions**

All generated data will be made openly available through the public reports (deliverables).

Data will be provided in tables and spreadsheets as office documents (electronic) and there is no need to use special software in order to access the data.

## **2.3 Making data interoperable:**

**Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

In WP1 we are mainly dealing with data generated by the consortium and/or educational professionals (e.g. teachers). Open access is given to the aforementioned data (e.g. through public reports). No standard vocabulary or methodology is foreseen to be used for WP1 data.

**2.4 Increase data re-use (through clarifying licenses):**

**Specify how the data will be licenced to permit the widest reuse possible**

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**

**Describe data quality assurance processes**

**Specify the length of time for which the data will remain re-usable**

Our generated data within WP1 will be licenced under Creative Commons. Even though we don't expect the data to be re-used in the project. Regarding the quality assurance process for WP1 data: we refer to WP4 and WP6 leaders (that handle the project's most sensitive data) and we are willing to follow their overall approach.

**3. Allocation of resources**

**Explain the allocation of resources, addressing the following issues:**

**Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**

No costs are foreseen for data of WP1.

**Clearly identify responsibilities for data management in your project**

The people responsible for the creation/management of the WP1 Stories data are the authors-contributors of the deliverables. Each team of authors will be lead by the (predefined) task leader who will be responsible for managing the group and the created data.

**Describe costs and potential value of long term preservation**

Not applicable

**4. Data security**

**Address data recovery as well as secure storage and transfer of sensitive data**

Data created within WP1 will be stored to the BSCW workspace server. Access to this data will be given via protected password only to members of the STORIES

consortium.

## **5. Ethical aspects**

**To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former**

Ethical aspects will be addressed as part of the WP9.

## **6. Other**

**Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)**

Further procedures for data management are not known yet.

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## 2 DMP Work Package 2 – Architecture Specification & Design

**Plan Name** Horizon 2020 DMP - STORIES of Tomorrow - students visions on the future of space exploration (WP2)

**Plan ID** H2020-ICT-2016-1

**Grant number** 731872

**Principal Investigator / Researcher** Constantine Abazis

**Plan Data Contact** abazis.constantine@gmail.com

**Plan Description** The nature of our research project is Technologies for Learning and Skills. The STORIES project aims to contribute to a dynamic future of children ebooks evolution by a) developing user-friendly interfaces for young students (10-12 years old) to create their own multi-path stories expressing their imagination and creativity and b) by integrating the latest AR, VR and 3D printing technologies to visualize their stories in innovative ways. The purpose of Work Package 2 (Architecture Specification & Design) is to define the specifications of the STORIES system architecture, which will be the basis for the technical implementation and service integration incorporating tasks like overall system architecture, functional components specification and design, data components, design and multi-modal user interfaces design. In this capacity, both system data (log records) and student action/teacher assessment data will be created and collected.

**Institution** Other

### 1. Data summary

**Provide a summary of the data addressing the following issues:**

**State the purpose of the data collection/generation**

**Explain the relation to the objectives of the project**

**Specify the types and formats of data generated/collected**

**Specify if existing data is being re-used (if any)**

**Specify the origin of the data**

**State the expected size of the data (if known)**

**Outline the data utility: to whom will it be useful**

Analytics is crucial for the project and a key feature and we intend to provide analytics for all student activities and learning outcomes.

We intend to collect:

**System data (coming from the system software database)**

- unique student ID (this will be the master key in searching the database)
- Students' group ID
- Student data (age, gender)
- Number of students participated
- Number of implementation scenarios created per school
- Number of episodes created by each student group at each school
- How many 3Dobjects, text blocks, images, videos, sounds used per story
- Number of interactions between students
- Number of interactions between students and experts / teachers
- Time spent per episode
- Number of Interactions with conversational agent
- Modifications done and times an episode was re-written.

**Classroom data:** coming from questionnaires for the students which do not pass through the Stories software system.

**Stories assessment data:** Template within the system for evaluation by teacher – teacher will be able to edit scores, marks, comments.

All the above data will be useful to the Project in assessing the effects & prerequisites of deep learning.

## **2. FAIR data**

### **2.1 Making data findable, including provisions for metadata:**

**Outline the discoverability of data (metadata provision)**

**Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

**Outline naming conventions used**

**Outline the approach towards search keyword**

**Outline the approach for clear versioning**

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

No administrative, student or teacher data or data coming from these sources will be retrievable without permission for certain uses. Concerning visual and design assets, in Work Package 2, our database will support submission of 3D, VR, AR and multimedia content and thereby, the description of the necessary meta-models for content submission and events description.

**2.2 Making data openly accessible:**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

**Specify how the data will be made available**

**Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

**Specify where the data and associated metadata, documentation and code are deposited**

**Specify how access will be provided in case there are any restrictions**

Our team will use the Open Science Framework for making data openly accessible. The following deliverables will be accessible from Work Package 2 via the Project's website:

Overall Architecture Specification (1 and 2)

Functional and Data Components Specification & Design

User Interface Design analytic description and mock-ups

Other data sets will be generated through questionnaires and (a) Conversational Agent(s). No existing data is going to be reused. Our team uses Microsoft Office for working documents and saves them as PDF files.

**2.3 Making data interoperable:**

**Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

We will be using standard vocabulary and adhere fully to standards for formats of corresponding software applications.

#### **2.4 Increase data re-use (through clarifying licenses):**

**Specify how the data will be licenced to permit the widest reuse possible**

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**

**Describe data quality assurance processes**

**Specify the length of time for which the data will remain re-usable**

All data produced and/or used in the project are project-specific administrative data, and therefore will not be relevant for third parties. We will not use the data ourselves after the end of the project.

### **3. Allocation of resources**

**Explain the allocation of resources, addressing the following issues:**

**Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**

**Clearly identify responsibilities for data management in your project**

**Describe costs and potential value of long term preservation**

No clear estimation can yet be provided on FAIR costs. Mr Abazis and Mr Paraskakis on Work Package 2 are responsible for data management.

### **4. Data security**

**Address data recovery as well as secure storage and transfer of sensitive data**

Frequent backups and cloud storage architecture, in addition to the ad hoc set up, will ensure the data availability at all times. The data tier of the STORIES of Tomorrow architecture will include an ORM mechanism which along with a DRM (Digital Rights

Management) algorithm and the SSL certificates will add an additional security layer which will protect the data delivery from end to end (Server/Client).

## **5. Ethical aspects**

**To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former**

Ethics and General Data Protection Regulation issues will be covered in subsequent meetings and presentations.

## **6. Other**

**Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)**

Not applicable.

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### 3 DMP Work Package 3 – Technical implementation

**Plan Name** Horizon 2020 DMP - STORIES of Tomorrow - students visions on the future of space exploration (WP3)

**Plan ID** H2020-ICT\_2016-1

**Grant number** 731872

**Principal Investigator / Researcher** Nikolaos Papastamatiou

**Plan Data Contact** papastamatiou.nikos@gmail.com

**Plan Description** The nature of our research project is Technologies for Learning and Skills. The STORIES project aims to contribute to a dynamic future of children ebooks evolution by a) developing user-friendly interfaces for young students (10-12 years old) to create their own multi-path stories expressing their imagination and creativity and b) by integrating the latest AR, VR and 3D printing technologies to visualize their stories in innovative ways. The purpose of Work Package 3 (Technical implementation): Through the STORIES Platform, students in teams create their stories relevant to the travel and life on Mars. They work in a collaborative online platform where they communicate with their teachers, space experts and each other. Data is gathered for evaluation purposes.

#### 1. Data summary

**Provide a summary of the data addressing the following issues:**

**State the purpose of the data collection/generation**

**Explain the relation to the objectives of the project**

**Specify the types and formats of data generated/collected**

**Specify if existing data is being re-used (if any)**

**Specify the origin of the data**

**State the expected size of the data (if known)**

**Outline the data utility: to whom will it be useful**

Data collected in the platform includes:

Basic students' information (name, surname, email, class and school)

Projects created by teachers (title, mission, students involved (team members))

Stories created by students (title, assets uploaded, assets used).

Interactions between students, their teachers and space experts.

Interactions with the conversational agent.

These data are necessary on the one hand to pilot the platform in schools and on the other hand to evaluate the students and understand if deeper learning was achieved.

These data will be kept in SQL databases. Anonymous data(everything apart from students names and emails) will be exported in several formats (csv, xml, json, etc).

The data will be generated through the pilots that will take place.

The size of the assets(images, video, sound files) that will be used are estimated to be about 20MB per project. The assets will be given under a creative commons licence, and will not be available for commercial use.

No previous data will be used.

These data can be useful to all those researching collaborative problem solving, STEM in Education, deeper learning, learning by doing, etc.

## **2. FAIR data**

### **2.1 Making data findable, including provisions for metadata:**

**Outline the discoverability of data (metadata provision)**

**Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

**Outline naming conventions used**

**Outline the approach towards search keyword**

**Outline the approach for clear versioning**

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

There are no metadata for the data created by the platform tools.

### **2.2 Making data openly accessible:**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

**Specify how the data will be made available**

**Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is**

**it possible to include the relevant software (e.g. in open source code)?**

**Specify where the data and associated metadata, documentation and code are deposited**

**Specify how access will be provided in case there are any restrictions**

Names and email accounts of students will be kept under confidentiality.

Other data will be freely available, from the project's platform for download.

Images and videos created by students will be available under a creative commons licence.

### **2.3 Making data interoperable:**

**Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

N/A

### **2.4 Increase data re-use (through clarifying licenses):**

**Specify how the data will be licenced to permit the widest reuse possible**

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**

**Describe data quality assurance processes**

**Specify the length of time for which the data will remain re-usable**

These data can be useful to all those researching collaborative problem solving, STEM in Education, deeper learning, learning by doing, etc.

## **3. Allocation of resources**

**Explain the allocation of resources, addressing the following issues:**

**Estimate the costs for making your data FAIR. Describe how you intend to**

**cover these costs****Clearly identify responsibilities for data management in your project****Describe costs and potential value of long term preservation**

Cloud server rental is necessary for long term preservation. Would be relevant to the assets uploaded.

**4. Data security****Address data recovery as well as secure storage and transfer of sensitive data**

The STORIES project will collect and process the personal data in accordance with applicable laws, i.e. the relevant international and European conventions, relevant EU and national legislations in addition to their national implementations in relevant EU Member States. In STORIES any personal data that have been anonymised, are no longer considered as personal data and can be used without further restrictions. In this respect, **Data Anonymization** is defined as the process of sanitising a data set from any personally identifiable information. The resulting data set cannot be used to identify any real persons.

Daily backups are envisaged. All project data will be stored in cloud servers.

**5. Ethical aspects****To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former**

So far no ethical issues are an issue within the project. As we have said all data will be anonymized.

**6. Other****Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)**

Not applicable.

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## 4 DMP Work Package 4 – Service Integration

**Plan Name** Horizon 2020 DMP - STORIES of Tomorrow - students visions on the future of space exploration (WP4)

**Plan ID** H2020-ICT-2016-1

**Grant number** 731872

**Principal Investigator / Researcher** Miltiadis Anastasiadis

**Plan Data Contact** manastasiadis@motivian.com

**Plan Description** The nature of our research project is Technologies for Learning and Skills. The STORIES project aims to contribute to a dynamic future of children's ebooks evolution by a) developing user-friendly interfaces for young students (10-12 years old) to create their own multi-path stories expressing their imagination and creativity and b) by intergrating the latest AR, VR and 3D printing technologies to visualize their stories in numerous innovative ways. The purpose of Work Package 4 (Service Integration):

- Integrate all STORIES components into a functional environment providing all required services.
- Integrate the supporting networking infrastructures with STORIES functional components.

**Institution** Other

### 1. Data summary

**Provide a summary of the data addressing the following issues:**

**State the purpose of the data collection/generation**

**Explain the relation to the objectives of the project**

**Specify the types and formats of data generated/collected**

**Specify if existing data is being re-used (if any)**

**Specify the origin of the data**

**State the expected size of the data (if known)**

**Outline the data utility: to whom will it be useful**

**State the purpose of the data collection/generation**

The purpose of WP4 is:

- Integrate all STORIES components into a functional environment providing all required services.
- Integrate the supporting networking infrastructures with STORIES functional components.

During the service integration process, the whole system will be integrated and will work as a single entity. Within this process the system will collect data coming from the system itself (login data, student data, time consumed, classroom data, etc), data coming from the evaluation questionnaires that will be online, evaluation data that is offline and data generated as a result of the data analytics engine. All data will be generated while the system is running and will be stored in a database, either on premise (school environment) or on the cloud.

One critical issue is terminology. Defining terms is very important for such a complex project and essential when bringing together different worlds like pedagogy and school environments, information and communication technologies and assessment and evaluation teams from universities. Some key wordings to be used throughout the project are:

**Story:** we have one story and this is the trip to Mars and colonizing it.

**Implementation scenarios:** This term refers to how each team of students perceives implementing the story. There can be unlimited implementation scenarios. Each team of students will draft and implement its own scenario that will be agreed with their teacher.

**Episodes:** Each implementation scenario will comprise of episodes that each group of children will define and agree with their teacher. All possible different episodes per implementation scenario must be connected logically and sequentially.

The whole process will comprise of several iterations. Children groups will come back many times redefining and re-writing episodes – and in turn the implementation scenario, until it is approved by their teacher.

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### **Explain the relation to the objectives of the project**

The objective of the project is to enhance deeper learning in STEM, through the creation of a story telling platform. The data that will be collected and analyzed will enable researchers in universities and school teachers to understand student skills, and how these skills are enhanced by using the stories telling platform.

**Specify the types and formats of data generated/collected**

The data to be collected will be formatted data with predefined structures and of alphanumeric type. The system will collect and store data of numeric and character type structure. Furthermore the system will collect and store processed data resulting from the data analytics engine that will be also in the form of reports. These data will be kept in SQL databases. Anonymous data(everything apart students names and emails) will be exported in several format (csv, xml, json, etc).

**Specify if existing data is being re-used (if any)**

NO

**Specify the origin of the data**

Story telling platform generated data, evaluation questionnaires data.

**State the expected size of the data (if known)**

The size of the assets (images, video, sound files) that will be used are estimated for about 20MB per implementation scenario. The assets will be given under a Creative Commons Licence, and will not be available for commercial use.yet.

**Outline the data utility: to whom will it be useful**

Teachers and pedagogical researchers. More specifically These data can be useful to all those researching collaborative problem solving, STEM in Education, deeper learning, learning by doing, etc.

**2. FAIR data****2.1 Making data findable, including provisions for metadata:****Outline the discoverability of data (metadata provision)****Outline the identifiability of data and refer to standard identification**

**mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

**Outline naming conventions used**

**Outline the approach towards search keyword**

**Outline the approach for clear versioning**

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

**Outline the discoverability of data (metadata provision)**

The system is not using metadata structures.

**Outline the identifiability of data and refer to standard identification**

**mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

Yes. For example for the 3D objects we have unique identifiers. The 3D objects that will be built in the course of the project will be stored on a common repository space and will be accessible by the wider pedagogical community.

**Outline naming conventions used**

There are many naming conventions which are listed in the respective deliverable of functional and data components specification and design.

**Outline the approach towards search keyword**

Searching will take place with character strings, words.

**Outline the approach for clear versioning**

The system is currently being built up and the technical team is following a process that is used in all project implementations about versioning, keeping old versions and updating from one version to another.

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

No metadata will be in use.

**2.2 Making data openly accessible:**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

**Specify how the data will be made available**

**Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

**Specify where the data and associated metadata, documentation and code are deposited**

**Specify how access will be provided in case there are any restrictions**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

The data to be made available constitutes mainly of the analytics reports of the evaluation for improving STEM and student skills. As a consortium we have agreed that the data to be collected and shared Anonymously comprises of the following categories:

**System data (coming from the system software database)**

unique student ID (this will be the master key in searching the database)

Students' group ID

Student data (age, gender)

Number of students participated

Number of implementation scenarios created per school

Number of episodes created by each student group at each school

How many 3Dobjects, text blocks, images, videos, sounds used per story

Number of interactions between students

Number of interactions between students and experts / teachers

Time spent per episode

Number of Interactions with conversational agent

Modifications done and times an episode was re-written.

**Classroom data:** coming from questionnaires for the students which are not though embedded in the Stories software system.

**Stories assessment data:** Template within the system for evaluation by teacher

– teacher will be able to edit scores, marks, comments.

### **Specify how the data will be made available**

Names and email accounts of students will be kept under confidentiality. Other data will be freely available, from the project's platform for download. Images and videos created by students will be available under a creative commons licence.

### **Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

The outcome of the analytics reports will be stored on a common database. We can provide freely these evaluation reports or we can give access to the wider pedagogical community through the stories of tomorrow web site where we can have these evaluation reports.

### **Specify where the data and associated metadata, documentation and code are deposited**

N/A

### **Specify how access will be provided in case there are any restrictions**

N/A

## **2.3 Making data interoperable:**

**Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

Interoperability will take place especially when using 3D objects from third sources. But currently the project is in its first phase and building up. Service integration is not yet taking place and the technical team is still working on it. We will be sharing 3D objects the consortium is building and we will be reading 3D objects if necessary from

external sources.

#### **2.4 Increase data re-use (through clarifying licenses):**

**Specify how the data will be licenced to permit the widest reuse possible**

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**

**Describe data quality assurance processes**

**Specify the length of time for which the data will remain re-usable**

The same applies as for open data access. These data – presented above - can be useful to all those researching collaborative problem solving, STEM in Education, deeper learning, learning by doing, etc..

### **3. Allocation of resources**

**Explain the allocation of resources, addressing the following issues:**

**Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**

**Clearly identify responsibilities for data management in your project**

**Describe costs and potential value of long term preservation**

Cloud server rental is necessary for long term preservation. Would be relevant to the assets uploaded. We plan to explore costs with cloud operators having as our first priority security mechanisms in place for data storage and data transmission. Towards that we are also in discussions with big cloud operators like IBM, Oracle, Microsoft and we will decide in due course as project implementation and pilots are evolving.

### **4. Data security**

**Address data recovery as well as secure storage and transfer of sensitive data**

Currently all data is test data and is stored on the servers of the technical partners. After the project is in piloting phase and we will have real data, the data will be stored on secure servers of a company that is certified with ISO 9001 and ISO 27001. This company will be either Motivian or any other large cloud operator like IBM, Oracle or

Microsoft. STORIES project will collect and process the personal data in accordance with applicable laws, and i.e. the relevant international and European conventions, relevant EU and national legislations in addition to their national implementations in relevant EU Member States. In STORIES any personal data that have been previously anonymised, are no longer considered as personal data and can be used without further restrictions. In this respect, Data Anonymization is defined as the process of sanitising a data set from any personally identifiable information. The resulting data set is not possible to be used to identify any real persons. Daily backups are envisaged. All project data will be stored in cloud servers.

## **5. Ethical aspects**

**To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former**

So far no ethical issues. As we have said all data will be anonymized.

## **6. Other**

**Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)**

Motivian is governed with ISO9001 and ISO 27001 covering in full data management and security and its technical team has an extensive experience in managing large data sets, confidentially and with advanced security mechanisms. Experience has been built up through very large projects in both the public and private sector.

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## 5 DMP Work Package 5 – Piloting

**Project Name** STORIES of Tomorrow - students visions on the future of space exploration (WP5)

**Project Identifier** H2020-ICT-2016-1

**Grant Title** 731872

**Principal Investigator / Researcher** Jens Koslowsky

**Project Data Contact** koslowsky@ea.gr

**Description** The nature of our research project is Technologies for Learning and Skills. The STORIES project aims to contribute to a dynamic future of children's ebooks evolution by a) developing user-friendly interfaces for young students (10-12 years old) to create their own multi-path stories expressing their imagination and creativity and b) by intergrating the latest AR, VR and 3D printing technologies to visualize their stories in numerous innovative ways. The purpose of Work Package 5:

The main objectives of this work package are

- To test extensively the proposed STORIES intervention in at least 15 pilot schools in Greece, Finland, Germany, France and Portugal and collect data to provide evidences for students deeper learning in STEM.
- To organize a series of national workshops and international training events for teachers and educators where the proposals pedagogical approach and leading edge learning technologies will be applied in order to support the design, creation and use of digital content for personalized learning and teaching, and facilitate innovation in education. Starting from a core of 15 pre-selected schools around Europe, to increasingly build the community of stakeholders (teachers, students, science educators, researchers, business actors and policy makers) who will accompany the development of the project from the early phases till the full deployment of the project results into long term sustainability planning.
- To create a series of guidelines and support materials, namely the STORIES tool-kit, for teachers and students in order to effectively implement the STORIES approach in their classroom.

**Funder** European Commission (Horizon 2020)

**Institution** Other

## **1. Data summary**

**Provide a summary of the data addressing the following issues:**

**State the purpose of the data collection/generation**

**Explain the relation to the objectives of the project**

**Specify the types and formats of data generated/collected**

**Specify if existing data is being re-used (if any)**

**Specify the origin of the data**

**State the expected size of the data (if known)**

**Outline the data utility: to whom will it be useful**

The implementation and pilot-testing of the STORIES platform and pedagogical approach is the main aim of the work in WP5. While the work of WP5 enables the data collection during the pilot, that data will be collected mostly as part of WP6 (evaluation).

The pilot students in the pilot schools will log in with a unique identifier to the platform.

The Stories created will be uploaded during the implementation to the platform.

The usage data of students using the system will be collected during the work of WP5.

The same applies during the STORIES Challenges. WRO Hellas will collect the information of all entries and participants of the challenges.

Other data (names of teachers participating in summer schools and visionary workshops) are being collected in excel or pdf forms to prove attendance.

## **2. FAIR data**

### **2.1 Making data findable, including provisions for metadata:**

**Outline the discoverability of data (metadata provision)**

**Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

**Outline naming conventions used**

**Outline the approach towards search keyword**

**Outline the approach for clear versioning**

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

All data will be shared with the consortium in the internal working space with those

partners that need access to them (Fraunhofer - BSCW).

Folders will be organized in a hierarchical and clear structure. Files will be uniquely identifiable and versioned by using a systematic name convention (to be clarified).

## **2.2 Making data openly accessible:**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

**Specify how the data will be made available**

**Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

**Specify where the data and associated metadata, documentation and code are deposited**

**Specify how access will be provided in case there are any restrictions**

As we are dealing with sensitive data of primary students, the data will be handled very restrictively. Further details are to be decided by the Ethics committee established as part of WP9.

## **2.3 Making data interoperable:**

**Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

As we are dealing with sensitive data of primary students, the data will be handled very restrictively. Further details are to be decided by the Ethics committee established as part of WP9.

## **2.4 Increase data re-use (through clarifying licenses):**

**Specify how the data will be licenced to permit the widest reuse possible**

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**

**Describe data quality assurance processes**

**Specify the length of time for which the data will remain re-usable**

As we are dealing with sensitive data of primary students, the data will be handled very restrictively. Further details are to be decided by the Ethics committee established as part of WP9.

### **3. Allocation of resources**

**Explain the allocation of resources, addressing the following issues:**

**Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**

**Clearly identify responsibilities for data management in your project**

**Describe costs and potential value of long term preservation**

It is not clear how extensive the data collection will be. Therefore, for WP5 it is not possible to give an estimation.

The national coordinators of the piloting are responsible for the teacher data collection on national level.

The student data will be collected as part of WP6 and the technical WPs.

The data of the STORIES challenges will be collected and managed by task leader WRO Hellas.

### **4. Data security**

**Address data recovery as well as secure storage and transfer of sensitive data**

All data is saved on the BSCW and access is password protected.

### **5. Ethical aspects**

**To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former**

Ethical aspects will be address as part of the WP9.

**6. Other**

**Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)**

Further procedures for data management are not known yet.

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## 6 DMP Work Package 6 – Assessment and Validation

**Project Name** STORIES of Tomorrow - students visions on the future of space exploration (WP6)

**Project Identifier** H2020-ICT-2016-1

**Grant Title** 731872

**Principal Investigator / Researcher** Prof. Dr. Florian Kaiser

**Project Data Contact** siegmar.otto@ovgu.de; franziska.koerner@ovgu.de

**Description** The nature of our research project is Technologies for Learning and skills. The STORIES project aims to contribute to a dynamic future of children´s - ebooks evolution by a) developing user-friendly interfaces for young students (10-12 years old) to create their own multi-path stories expressing their imagination and creativity and b) by integrating the latest AR, VR and 3D printing technologies to visualize their stories in numerous innovative ways. The purpose of Work Package 6 (Assessment and Evaluation): The objective of the evaluation work is to ensure a continued learning

process based on the deeper learning paradigm that addresses not just intellectual abilities but also motivational abilities such as collaborative problem solving at the center of the project. Our deeper learning paradigm incorporates the idea that a range of abilities and their orchestrated skillful application leads to STEM mastery.

Necessarily, our approach to develop STEM mastery includes a multitude of educational measures (especially a wide variety of technology based instruments) to broadly foster deeper learning. The complexity that comes with multiple measures also leads to a challenging evaluation procedure. Corresponding to the learning modules, we will develop matching technology-based assessment instruments that allow assessing all six abilities that are central to deeper learning. These abilities can be divided into intellectual abilities and motivational abilities. To accomplish a comprehensive assessment of STEM mastery within the deeper learning paradigm in science education, we will develop standardized assessment instruments that cover intellectual and motivational abilities alike. Abilities such as collaborative problem solving, essential within the deeper learning paradigm, inevitably also depend on communicational and social skills.

**Funder** European Commission (Horizon 2020)

## **1. Data summary**

**Provide a summary of the data addressing the following issues:**

**State the purpose of the data collection/generation**

**Explain the relation to the objectives of the project**

**Specify the types and formats of data generated/collected**

**Specify if existing data is being re-used (if any)**

**Specify the origin of the data**

**State the expected size of the data (if known)**

**Outline the data utility: to whom will it be useful**

The evaluation of the STORIES project is the purpose of the data collection in WP6.

The objective of the evaluation work is to ensure a continued learning process based on the Deeper Learning paradigm. Therefore, we will assess possible consequences of the six deeper learning competencies (a) science understanding and knowing, b) scientific reasoning, c) reflecting on science, d) collaborative problem solving, e) interest and excitement, and f) identification with scientific enterprise) which integrates our knowledge of different subjects necessary to address the science challenges and fascination in science challenges (e.g., “The journey to Mars”).

The data set will be generated through questionnaires and (a) Conversational Agent(s). No existing data is going to be reused. Our team uses Microsoft Office for working documents and saves them as PDF files.

Since the Conversational Agent(s) is/are not finished yet, it is not possible to assess the data volume. Also, we do not have a technical solution for the data storage at the current state of the planning process.

The data expands the largely under explored field of Deeper Learning. Consequently, the data might be useful for researchers with interest in Deeper Learning.

## **2. FAIR data**

### **2.1 Making data findable, including provisions for metadata:**

**Outline the discoverability of data (metadata provision)**

**Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

**Outline naming conventions used**

**Outline the approach towards search keyword**

**Outline the approach for clear versioning**

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

At the current state of the project we cannot give any explanations about where and how data and metadata will be accessible and if we want to use Digital Object Identifiers. The data will be shared with the consortium in the internal working space (BSCW).

Folders will be organized in a hierarchical and clear structure. Files will be uniquely identifiable and versioned by using a systematic name convention, but what that convention will include is not known so far.

Also, we cannot name the thesaurus yet, which we are going to use for the keywords.

**2.2 Making data openly accessible:**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

**Specify how the data will be made available**

**Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

**Specify where the data and associated metadata, documentation and code are deposited**

**Specify how access will be provided in case there are any restrictions**

Our team will use the Open Science Framework for making data openly accessible. Further explanations will follow.

We cannot say yet, which data will be accessible at what stage. However, there will be different access levels. Sensitive data will not be publicly available, according to data protection law.

Perhaps the following software is needed to access the data: word/spreadsheet processing program (e.g. Microsoft Office), Adobe PDF Reader, and XML viewer.

Where and how the data, metadata, and documentation will be deposited is not known at the current phase of the planning process.

### **2.3 Making data interoperable:**

**Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

Explanations about how we will make the data, metadata, and documentation interoperable and whether we are going to use standard vocabulary for all data types, will follow at later states of the project.

### **2.4 Increase data re-use (through clarifying licenses):**

**Specify how the data will be licenced to permit the widest reuse possible**

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**

**Describe data quality assurance processes**

**Specify the length of time for which the data will remain re-usable**

At this early phase, our team did not make decisions about how the data will be licensed and when the data will be available.

The data can be reused by other scientists in the field of Deeper Learning and educational research. Neighbouring disciplines and interdisciplinary research groups might also be interested.

Since we have not finally decided on the measurement methods yet, we cannot describe the data quality assurance processes.

The length of time for which the data will remain reusable is not known at this state of the planning process.

## **3. Allocation of resources**

**Explain the allocation of resources, addressing the following issues:**

**Estimate the costs for making your data FAIR. Describe how you intend to**

**cover these costs****Clearly identify responsibilities for data management in your project****Describe costs and potential value of long term preservation**

Owing to the missing estimation of the data amount at this stage of the project, we cannot say how costly FAIR data and long-term preservation will be.

The work package leaders, Prof. Dr. Florian Kaiser and Dr. Siegmund Otto are responsible for the data management.

**4. Data security****Address data recovery as well as secure storage and transfer of sensitive data**

At this early stage of the project, our team has not made decisions about data recovery, secure storage and transfer of sensitive data.

But the WP6 team is doing regular backups of the files.

**5. Ethical aspects****To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former**

References for ethical aspects will follow in further steps of the project.

**6. Other****Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)**

Further procedures for data management are not known yet.

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## 7 DMP Work Package 7 – Dissemination and Exploitation

**Plan Name** Horizon 2020 DMP - STORIES of Tomorrow - students visions on the future of space exploration (WP7)

**Plan ID** H2020-ICT-2016-1

**Grant number** 731872

**Principal Investigator / Researcher** Ines Prieto

**Plan Data Contact** i.prieto@cite-espace.com, c.chaffardon@cite-espace.com

**Plan Description** The nature of our research project is Technologies for Learning and Skills. The STORIES project aims to contribute to a dynamic future of children's ebooks evolution by a) developing user-friendly interfaces for young students (10-12 years old) to create their own multi-path stories expressing their imagination and creativity and b) by intergrating the latest AR, VR and 3D printing technologies to visualize their stories in numerous innovative ways. The purpose of Work Package 7 (Dissemination and Exploitation): The tasks in this work package aim to define specific measures that will support the dissemination and exploitation of project results and contribute to their sustainability through effective networking and communication. For this purpose, the following objectives have been identified:

- Organisation of a series of dissemination activities that will allow for the consortium to develop links and opportunities for collaboration with similar activities in Europe but also globally in order to succeed its ambitious objective, namely to use project based learning with a story-telling platform to achieve deeper learning in science in schools across Europe.
- Exploitation of the services of the project. The business case of the final service will be studied, an initial market validation will take place and a detailed business plan will be delivered.

**Funder** European Commission (Horizon 2020)

### 1. Data summary

**Provide a summary of the data addressing the following issues:**

In Work Package 7, there is no generation of data as such, since this Work Package is dedicated to the communication and exploitation of the results of the project and

contribution to the project sustainability.

Still, since WP7 ensures the project awareness is as broad as possible, it will communicate the results of the project.

Scientific results will be communicated in the form of Scientific Publications since papers will be submitted to scientific journals and magazines focusing on digital story telling for formal and informal science education. An Internal Conference will present the outcomes of the project, and an international Call for Papers for a Special Issue or Edited Volume of "Digital Story Telling in formal and informal education" will be published.

The Digital Stories produced by students in participating schools will be published in a specific digital library, with a dedicated web space allowing the public to assess, read and watch the outcomes of the project.

#### **Specify the types and formats of data generated/collected**

The data that will be collected will be used to the effective assesment of the dissemination activities by the different membres of the Consortium. It will be collected using the Microsoft Pack Office 2010 (Word, Excel, and Power Point).

#### **Specify if existing data is being re-used (if any)**

Re-using exisiting data is not planned

#### **Specify the origin of the data**

The data that will be disseminated will be provided by the Consortium Members to the WP7, in order to ensure correct communication of the outcomes of the project.

CONFIDENTIAL DOCUMENTS (only for members of the Consortium including the Commission Services)

D7.1 Dissemination Plan: contains regularly updated information provided by Consortium members about their dissemination activities, as well as updated list of potential targets for dissemination.

D7.5 Exploitation Strategy and Business Plan: contains list of target groups and potential users of the story-telling platform, provided by the task leader.

#### PUBLIC DOCUMENTS

D7.2 Project web site : only general information about the project, and updated news.

D7.3 Dissemination material : no specific data

D7.4 Publications : Scientific papers and presentations of the outcomes of the project using data generated through evaluation of the project (WP6),

D7.7 Digital Library : repository of the Students Pilots Activities (e-books about their stories of Mars), collected by each Consortium member involved in piloting activities, and respecting national regulations.

D7.9 Final conference proceedings

#### **State the expected size of the data (if known)**

Not known yet.

#### **Outline the data utility: to whom will it be useful**

The information communicated will be used for dissemination purposes.

General information about the project will be useful for the students involved, their families and schools. Published scientific results will be useful for the formal and informal educational community and education policy makers. Digital Library will be useful for the general public.

## **2. FAIR data**

### **2.1 Making data findable, including provisions for metadata:**

#### **Outline the discoverability of data (metadata provision)**

Not applicable

#### **Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

Not applicable

**Outline naming conventions used**

Not applicable

**Outline the approach towards search keyword**

Not applicable

**Outline the approach for clear versioning**

Not applicable

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how**

Not applicable

**2.2 Making data openly accessible:**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

**Specify how the data will be made available**

**Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

**Specify where the data and associated metadata, documentation and code are deposited**

**Specify how access will be provided in case there are any restrictions**

**Specify which data will be made openly available? If some data is kept closed provide rationale for doing so**

The Data that will be used for assessing the correct dissemination of the project is only for internal use, and is the Exploitation Strategy and Business Plan.

The deliverables:

D7.1: Dissemination Plan

D7.5 Exploitation Strategy and Business Plan

are confidential, only for members of the Consortium including the Commission Services.

The following deliverables will be made public:

D7.2: Project web site

D7.3: Dissemination material

D7.4: Publications

D7.7: Digital Library

D7.9: Final conferences proceedings

### **Specify how the data will be made available**

All relevant information and deliverables will be uploaded to the internal working space BSCW to which all Consortium members have access. The Deliverables are uploaded to the Participant's portal from the European Commission. The European Commission will upload the public Deliverables to CORDIS.

The publications (D7.4) will be available according to the policies of the journals or conferences they will be published in.

The Project web site (D7.2) and Digital library (D7.7) will be available on line.

### **Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

All Deliverables are uploaded in PDF format.

The Project web site (D7.2) and Digital library (D7.7) will be available on line.

### **Specify where the data and associated metadata, documentation and code are deposited**

The data and associated documentation collected by, or provided to WP leader in D7.1 will be stored in its internal server (2 copies) with disk back-up every night, and copy on LTO every night. No external access is given to the data.

### **Specify how access will be provided in case there are any restrictions**

Consortium members will access to confidential data (D7.1 and D7.5) through the project internal working space, upon invitation.

## **2.3 Making data interoperable:**

### **Assess the interoperability of your data. Specify what data and metadata**

**vocabularies, standards or methodologies you will follow to facilitate interoperability.**

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

**Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability.**

Not applicable, since the data that we are dealing with in the WP7 is not research data as such.

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

Not applicable, since the data that we are dealing with in the WP7 is not research data as such.

#### **2.4 Increase data re-use (through clarifying licenses):**

**Specify how the data will be licenced to permit the widest reuse possible**

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why**

**Describe data quality assurance processes**

**Specify the length of time for which the data will remain re-usable**

**Specify how the data will be licenced to permit the widest reuse possible**

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed**

Licensing is not relevant here.

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some**

**data is restricted, explain why**

The Consortium hasn't taken decision on this point, especially in the case of the Digital Library, which involves making public productions of materials by students, and therefore must comply with the Image and Data right of the EU, as well as of every country.

**Describe data quality assurance processes**

Not known yet.

**Specify the length of time for which the data will remain re-usable**

Not known yet if reusable data.

**3. Allocation of resources**

**Explain the allocation of resources, addressing the following issues:**

**Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**

**Clearly identify responsibilities for data management in your project**

**Describe costs and potential value of long term preservation**

**Estimate the costs for making your data FAIR. Describe how you intend to cover these costs**

Not applicable

**Clearly identify responsibilities for data management in your project**

Each task leader is responsible for his/her data management.

**Describe costs and potential value of long term preservation**

Long term preservation needs to be discussed with Consortium, but it is an important point when ensuring the long term sustainability of the project.

**4. Data security**

**Address data recovery as well as secure storage and transfer of sensitive data**

The consortium has not yet discussed this point.

**5. Ethical aspects**

**To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former**

Answers will follow.

**6. Other**

**Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)**

Further procedures for data management are not known yet.

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## 8 DMP Work Package 8 – Project Management

**Project Name** STORIES of Tomorrow - students visions on the future of space exploration (WP8)

**Project Identifier** H2020-ICT-2016-1

**Grant Title** 731872

**Principal Investigator / Researcher** Julia Huebner

**Project Data Contact** stories@uni-bayreuth.de

**Description** The nature of our research project is Technologies for Learning and Skills. The STORIES project aims to contribute to a dynamic future of children's ebooks evolution by a) developing user-friendly interfaces for young students (10-12 years old) to create their own multi-path stories expressing their imagination and creativity and b) by intergrating the latest AR, VR and 3D printing technologies to visualize their stories in numerous innovative ways. The purpose of Work Package 8 (Project Management): This work package is responsible for the co-ordination of the project in both administrative and technical terms aiming towards achieving effective operation of the project as well as timely delivery of quality results. The main objective is therefore the effective management of the project. An effective project management system requires effective decision-making, operational internal communication, development of solid work breakdown structures, schedules, costs and resource plans, effective administrative and technical control of the project, quality assurance and risk management. The tasks of this work package will ensure that all pre-described objectives of the consortium are achieved in a timely manner and that all the outputs are of the expected quality. Furthermore, the internal processes of the consortium will be systematically assessed and evaluated. The data generated in WP 8 is exclusively operative data, as used in any research project administration. It is not 'research data' as such.

**Funder** European Commission (Horizon 2020)

### 1. Data summary

**Provide a summary of the data addressing the following issues:**

**State the purpose of the data collection / generation:**

Effective administration and operational internal communication

**Explain the relation to the objectives of the project:**

All data collection/generation in WP8 are relevant for a good project management and a good fundament for all partners for working together.

**Specify the types and formats of data generated/collected:**

At the University of Bayreuth we are working with Mikrosoft Office 2010. Documents are produced in Word, Exel, Power Point and saved as PDF files.

**Specify if existing data is being re-used (if any):**

The internal contact list would be updated if necessary.

**Specify the origin of the data:**

All project managment tools are created if necessary or they are preset by the European Commission.

**State the expected size of the data (if known):**

Not yet known

**Outline the data utility: to whom will it be useful:**

Only for internal use

**2. FAIR data****2.1 Making data findable, including provisions for metadata:****Outline the discoverability of data (metadata provision):**

Not applicable

**Outline the identifiability of data and refer to standard identification mechanism.****Do you make use of persistent and unique identifiers such as Digital Object Identifiers?**

Not applicable

**Outline naming conventions used:**

Project Name, WP, Version, Date

**Outline the approach towards search keyword:**

Not applicable

**Outline the approach for clear versioning:**

Not applicable

**Specify standards for metadata creation (if any). If there are no standards in your discipline describe what metadata will be created and how:**

Not applicable

**2.2 Making data openly accessible:****Specify which data will be made openly available? If some data is kept closed provide rationale for doing so:**

The project management data which will be created in WP8 are only for internal use.

The Deliverables:

D8.1 "Project Management Guidelines"

D8.2 "Quality and Risk Management Plans and Final reports"

D8.3 "Quality and Risk Management Plans and Final reports"

D8.4 "Quality and Risk Management Plans and Final reports"

D8.5 "Web-based Management Platform"

are confidential, only for members of the consortium (including the Commission Services).

The Deliverable D8.6 "Data Management Plan" will be Public (Open Research Data Pilot)

**Specify how the data will be made available:**

All project relevant information and Deliverables will be / are uploaded to the internal working space BSCW (<https://fit-bscw.fit.fraunhofer.de/>) to which all Consortium members have access. Furthermore the Deliverables are uploaded to the participant's portal from the European Commission (<https://ec.europa.eu/>). The European

Commission will upload the public Deliverable to CORDIS.

**Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)?**

All Deliverables are uploaded in PDF format.

**Specify where the data and associated metadata, documentation and code are deposited:**

They will be stored on an external hard disk, and this storage will be updated every month.

**Specify how access will be provided in case there are any restrictions:**

The Consortium Members gets an invitation for the internal working space, and the European Commission gave access to the participant's portal.

**2.3 Making data interoperable:**

**Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability:**

Not applicable

**Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?**

Not applicable

**2.4 Increase data re-use (through clarifying licenses):**

**Specify how the data will be licenced to permit the widest reuse possible:**

Not applicable

**Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed:**

Not applicable

**Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why:**

All data produced and/or used in the project are project-specific administrative data, and therefore will not be relevant for third parties. We will not use the data ourselves after the end of the project.

**Describe data quality assurance processes:**

The data are/will be stored on an external hard disk, and this storage will be updated every month.

**Specify the length of time for which the data will remain re-usable:**

Not applicable

### **3. Allocation of resources**

**Estimate the costs for making your data FAIR. Describe how you intend to cover these costs:**

Not applicable

**Clearly identify responsibilities for data management in your project:**

Each Work Package Leader is responsible for his/her data management.

**Describe costs and potential value of long term preservation:**

Not applicable

### **4. Data security**

**Address data recovery as well as secure storage and transfer of sensitive data:**

Not applicable

**5. Ethical aspects**

**To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former**

Answer will follow

**6. Other**

**Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any):**

Not applicable

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