

Milestone Report



Share 3D

ACTIVITY 3

M4 - USER GUIDES FOR DASHBOARD AND STORYTELLING TOOL

Indicated completion date:
28/02/20



CONNECTING EUROPE FACILITY (CEF) – TELECOMMUNICATIONS SECTOR

Grant Agreement INEA/CEF/ICT/A2017/1568597

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Share3D is a project funded by the European Union (Grant Agreement INEA/CEF/ICT/A2017/1568597).



1. INTRODUCTION

The “Sharing new perspectives”, Share3D project is developing tools to enable users to share cultural heritage content that has been uploaded to Sketchfab with Europeana, and to encourage the re-use of 3D and 2D digital content to tell stories and to share these with others.

To accompany these tools, a set of guides were envisaged for end users to inform and encourage their use. The first guide aims to demonstrate the use of the Share3D dashboard to create the metadata needed to share 3D media uploaded on Sketchfab with Europeana. The second guide demonstrates the use of the Share3D story maker to re-use content discovered on Europeana and Sketchfab to create interactive resources for education, tourism, research or simply to share stories about aspects of the cultural heritages. These user guides are complemented by the third guide, which describes the 3D capture and publication workflow, and a set of video training materials.

This report describes how the guides were created and provides an overview of the guides themselves. The guide are publicly available online and can be found at:

<https://share3d.gitbook.io/share-3d-guidelines/>

1.1. Methodology

The guides were produced under activity 3, which is lead for the project by CARARE with Vilnius and Visual Dimension. The activity comprises of four tasks: planning, editorial, peer review and publication.

Planning

Following the project kick-off meeting an editorial board for the Guidelines was established comprising of Kate Fernie (CARARE), Daniel Pletinckx (Visual Dimension), Anthony Corns (Discovery Programme) and Thomas Flynn (Sketchfab).

A set of materials relevant for the guidelines were identified including:

- Support materials available on Sketchfab
- Case studies developed by the 3D ICONS project
- Guidelines on the 3D workflow prepared by the Discovery Programme
- Videos on 3D data capture, processing and publication produced by Visual Dimension
- Reference materials available from CARARE and Europeana

The main guides to be developed were then defined:

2. Use of the Share3D dashboard
3. Use of the Share3D storymaker
4. 3D workflow
5. Use cases

The case studies illustrating the uses of the Share3D tools by the project’s target audiences (education, tourism, research and the creative industries) are being developed under activity 4. The editorial plan is to link these case studies to the guidelines.

Editorial

The use of GitBook¹ to author and publish the guides was recommended by the Athena Research Council. GitBook is an open-source tool used by developers to build documentation and it offers both a flexible tool for authoring and a means of publishing documentation online. Following a review of GitBook's functionality, CARARE registered an account and created a work space for the guidelines.

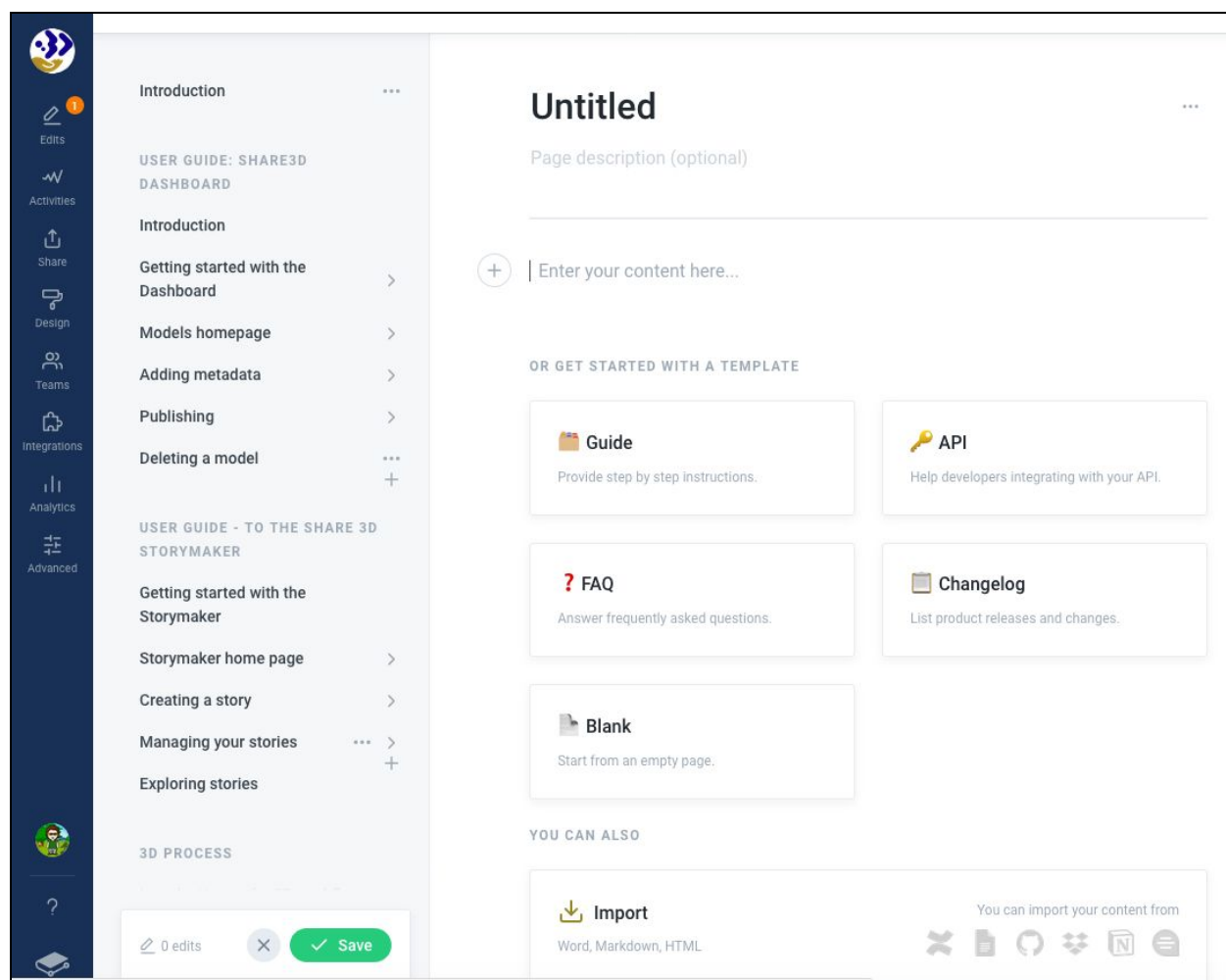


Figure 1: Gitbook authoring tool

The authoring tools within Gitbook include standard word processing features including heading styles, paragraphs, lists and embedded images and other media. Individual pages can be grouped into chapters and nested, this allows readers to navigate within a document either by using the table of contents or moving from page to page.

¹ <https://www.gitbook.com/>

Gitbook enables users to create a private workspace for a team to use while documents are being drafted. Once drafting and editing are completed, private documents can be published and made publically available on the Internet.

CARARE used its Gitbook account to create a workspace to draft and later publish the project guidelines. This space was used initially to create a private draft of the guidelines. The document structure was established, this defined the main sections (or groups) and page templates for authoring the text.

CARARE commenced work drafting the user guides for the Share3D Dashboard and Storymaker in late summer 2019 when the tools had reached their beta stage. Work draft the guides on the 3D process commenced in early summer 2019. Authoring and editing work continued throughout the autumn and winter.

Peer review

Peer review of the guidelines was coordinated by CARARE with input from the members of the project board.

Publication

Once the guides had been through their review and editing, the visibility of the Gitbook document was changed from private to public.

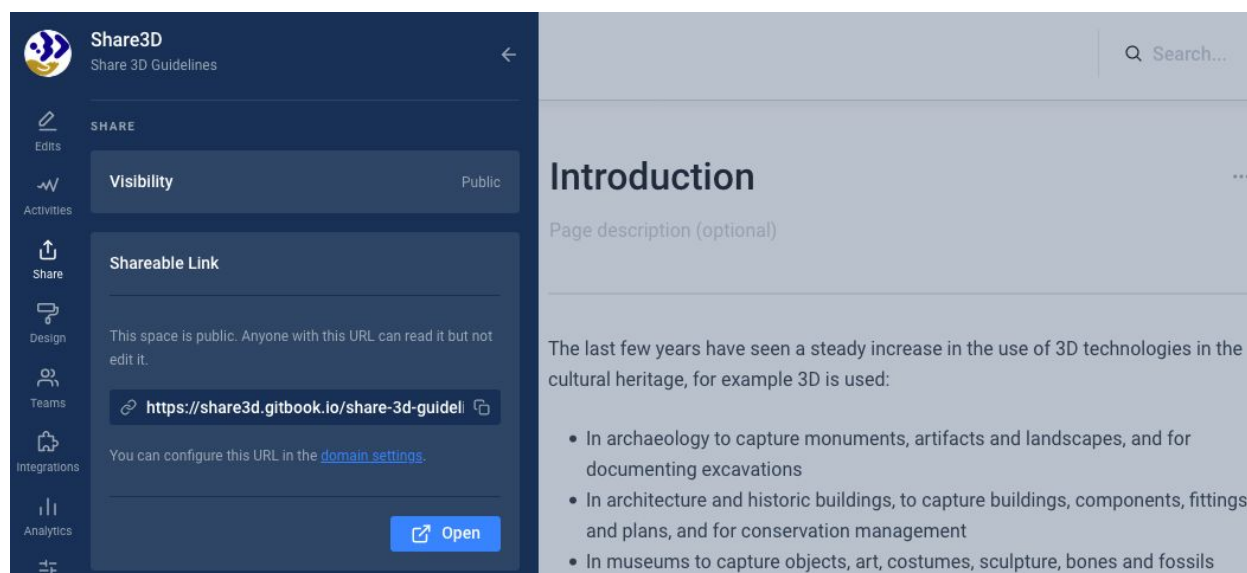


Figure 2: Gitbook visibility settings

Once the visibility of the document was changed to public, a shareable link became available. Links to the guidelines were then established from the [project website](#), the [Share3D dashboard](#) and Share3D story maker to the guides.

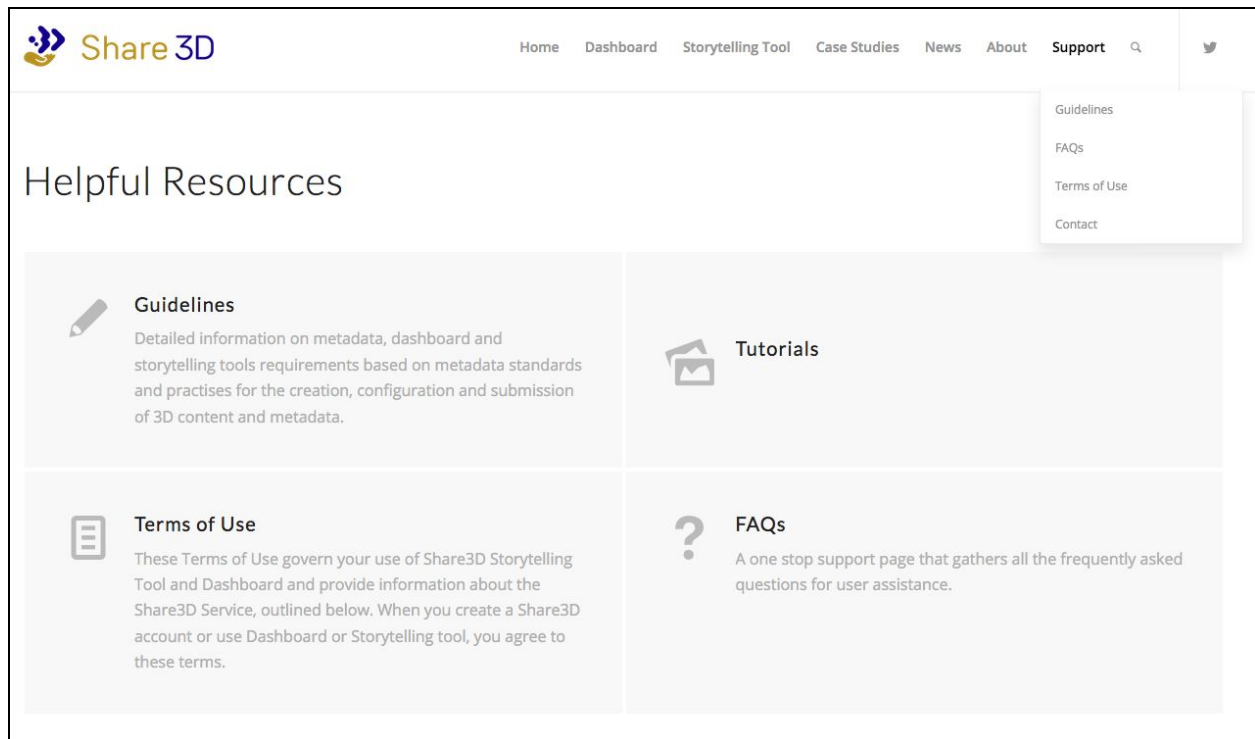


Figure 3: Guidelines on the Share3D support page

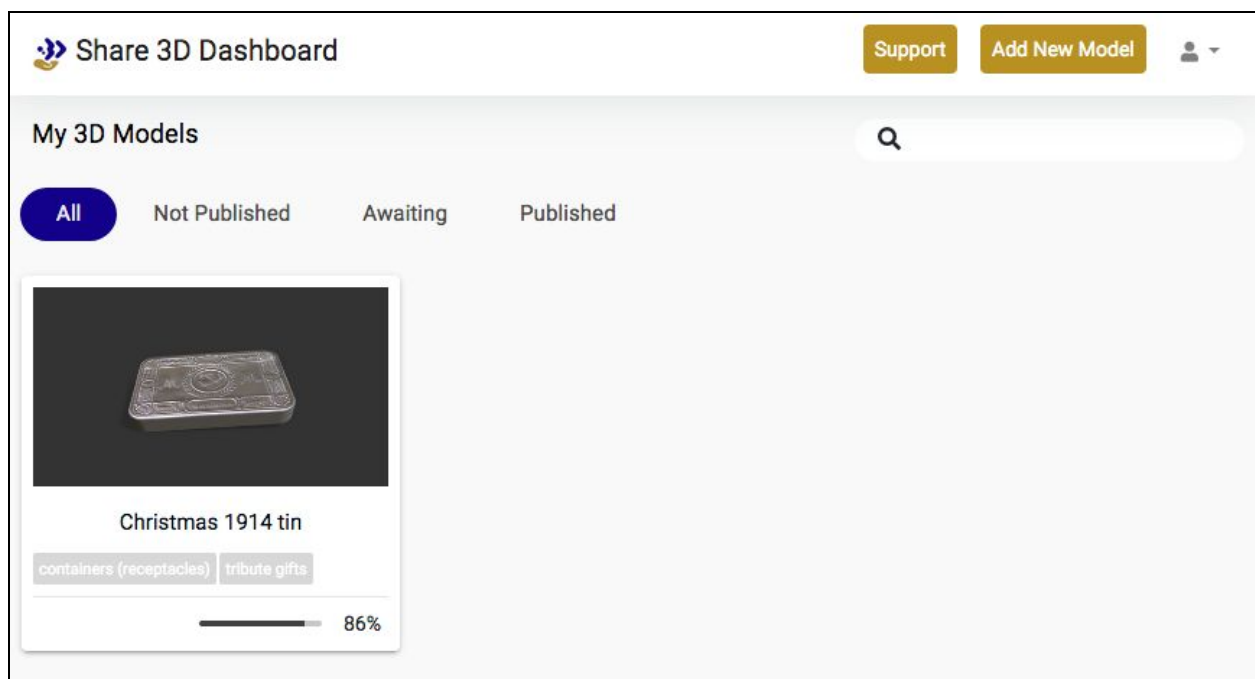


Figure 4: Link to support and the guidelines on the Share3D dashboard

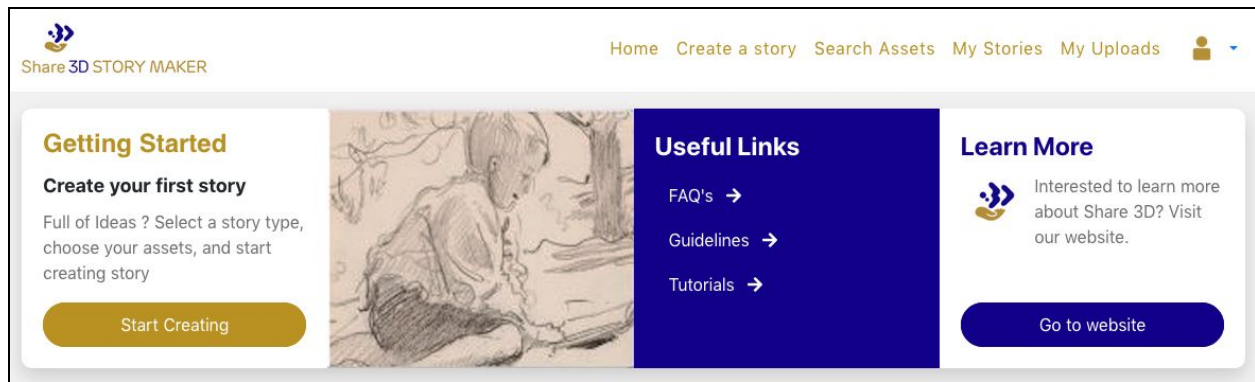


Figure 5: Link to the guidelines on the Share3D storymaker

2. THE GUIDELINES

The guidelines begin with an introduction that provides a brief overview of the use of 3D technologies in cultural heritage, an introduction to the Share3D project and to the document as a whole.

2.1. Share3D Dashboard

Following a brief introduction, the guide to the Share3D dashboard is divided into 4 sections:

- Getting started with the Dashboard
- Models homepage
- Adding metadata
- Publishing
- Deleting a model

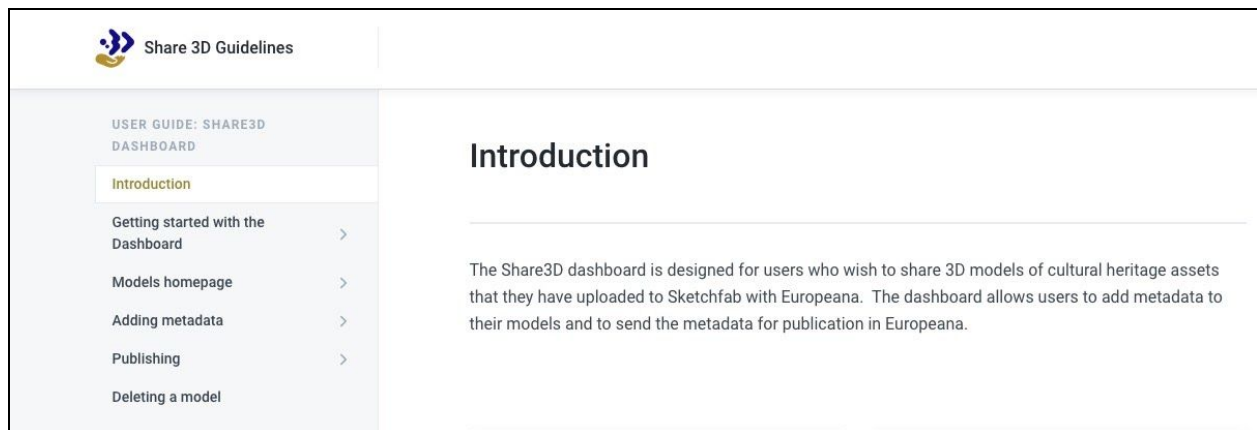
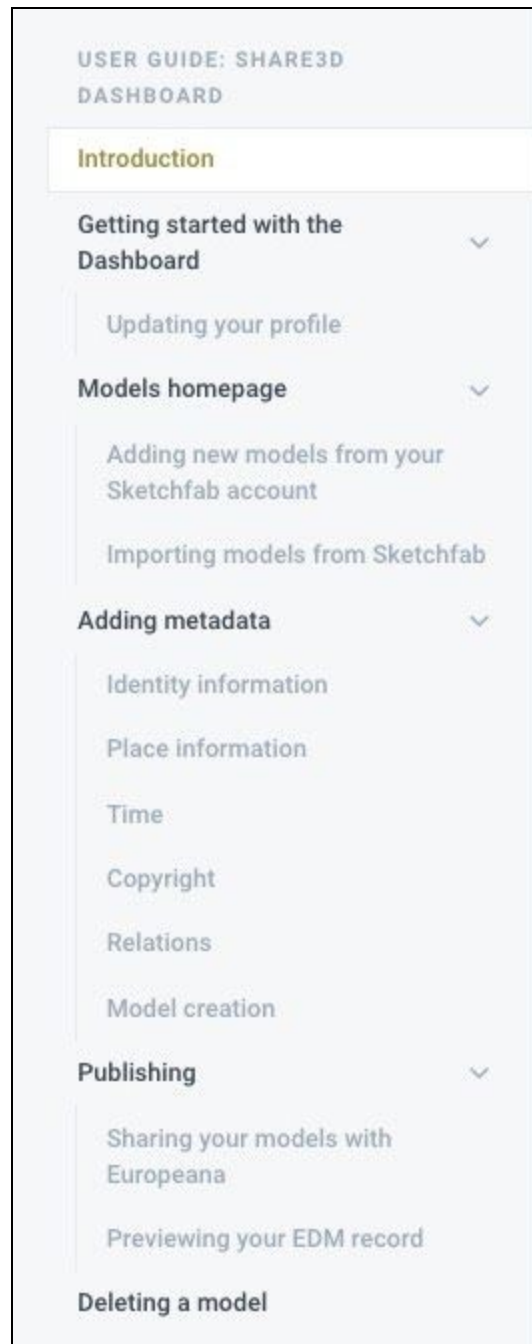


Figure 6: Introduction and the top level menu

Using the document outline on the left-hand side of the screen, users can expand the section headings to see the topics that are covered.



The image shows a document outline for a user guide titled 'USER GUIDE: SHARE3D DASHBOARD'. The outline is structured as follows:

- USER GUIDE: SHARE3D DASHBOARD**
 - Introduction**
 - Getting started with the Dashboard** (with a dropdown arrow)
 - Updating your profile
 - Models homepage** (with a dropdown arrow)
 - Adding new models from your Sketchfab account
 - Importing models from Sketchfab
 - Adding metadata** (with a dropdown arrow)
 - Identity information
 - Place information
 - Time
 - Copyright
 - Relations
 - Model creation
 - Publishing** (with a dropdown arrow)
 - Sharing your models with Europeana
 - Previewing your EDM record
 - Deleting a model**

Figure 7: Document outline for the Dashboard user guide

The guide walks users step-by-step from registering on the Dashboard, linking to their Sketchfab user accounts, creating metadata records to sharing the metadata with Europeana.

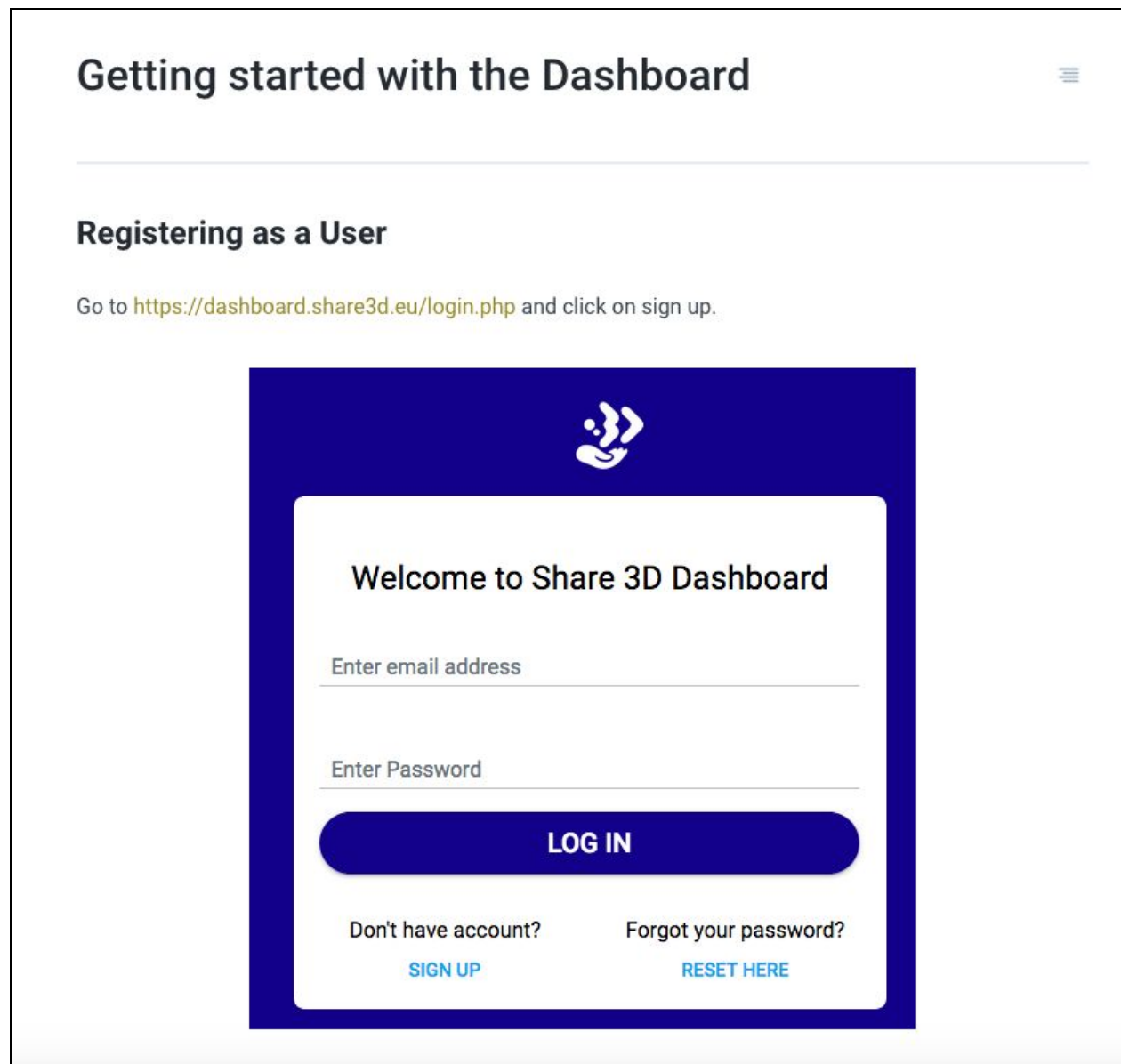


Figure 8: Getting started

The “Getting started” section describes how users of the Dashboard can create a profile, which includes information that is used in the metadata later provided to Europeana including the language of the metadata records, and the name of the organisation which is providing the content.

The section on the “Models homepage” describes how users can link their Dashboard and Sketchfab accounts, and how to choose models in their Sketchfab accounts to add to their Dashboard. Sketchfab’s API is used to copy metadata, links and preview images across to the Dashboard.

The next section of the guide describes how to use the Dashboard to edit and enrich the metadata copied across from Sketchfab. The Share3D metadata editor covers:

- Identity (ID, title, description and subject terms)
- Place (place name, latitude and longitude of the object),
- Time (temporal and period coverage of the object),
- Copyright (copyright and an access licence for the 3D model),
- relations (links to related resources, bibliographic and other references)
- model creation information (creation date, description and processes used)

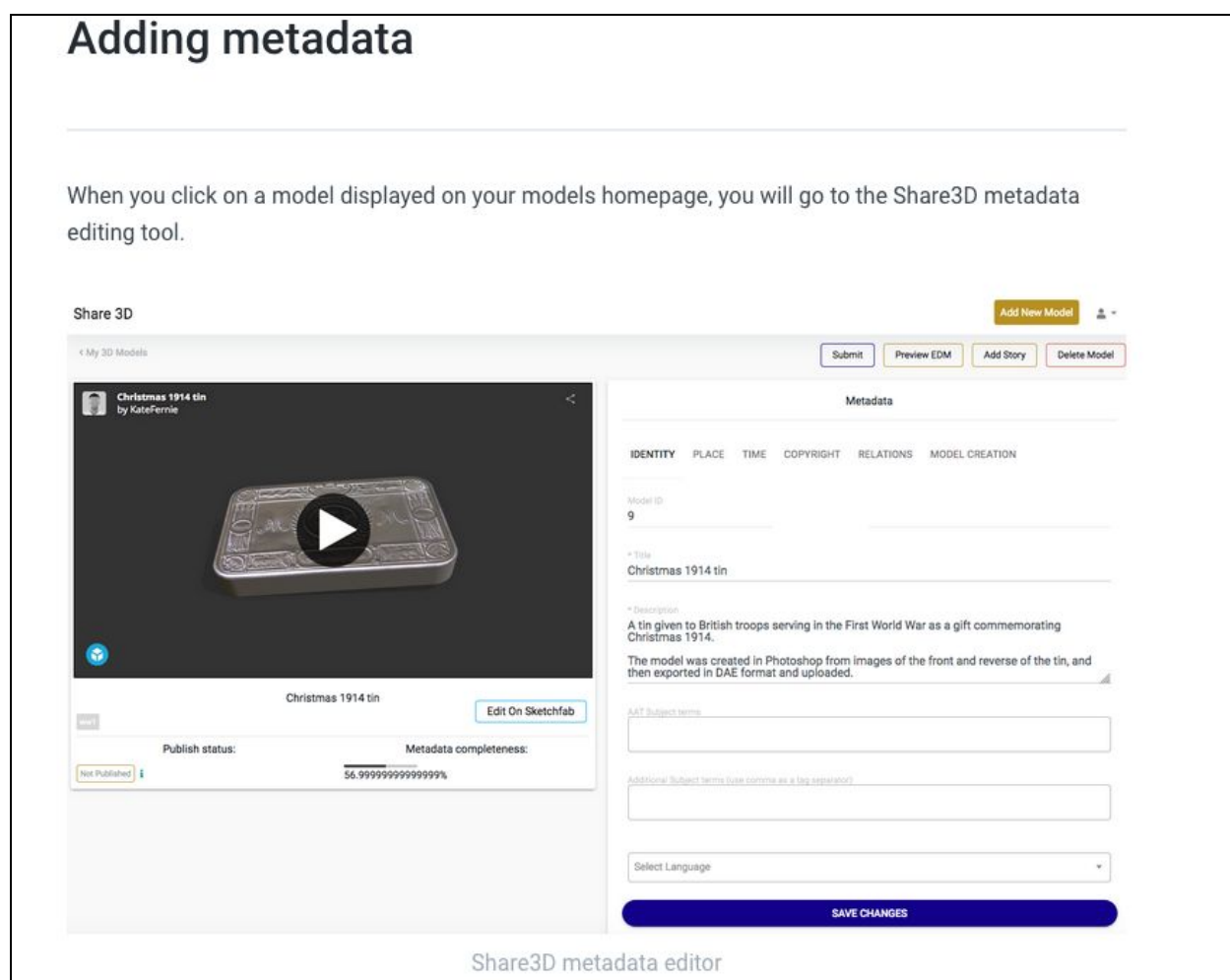


Figure 9: Share3D metadata editor

The “Publishing” section of the guide covers the process of submitting the metadata record for publication. Users of the dashboard can “preview” the metadata that will be submitted to Europeana in EDM format and, once satisfied, “submit” it for publication. This section includes information about Europeana and the Europeana Data Exchange Agreement, and the terms that Dashboard users need to agree to before their records are sent to Europeana.

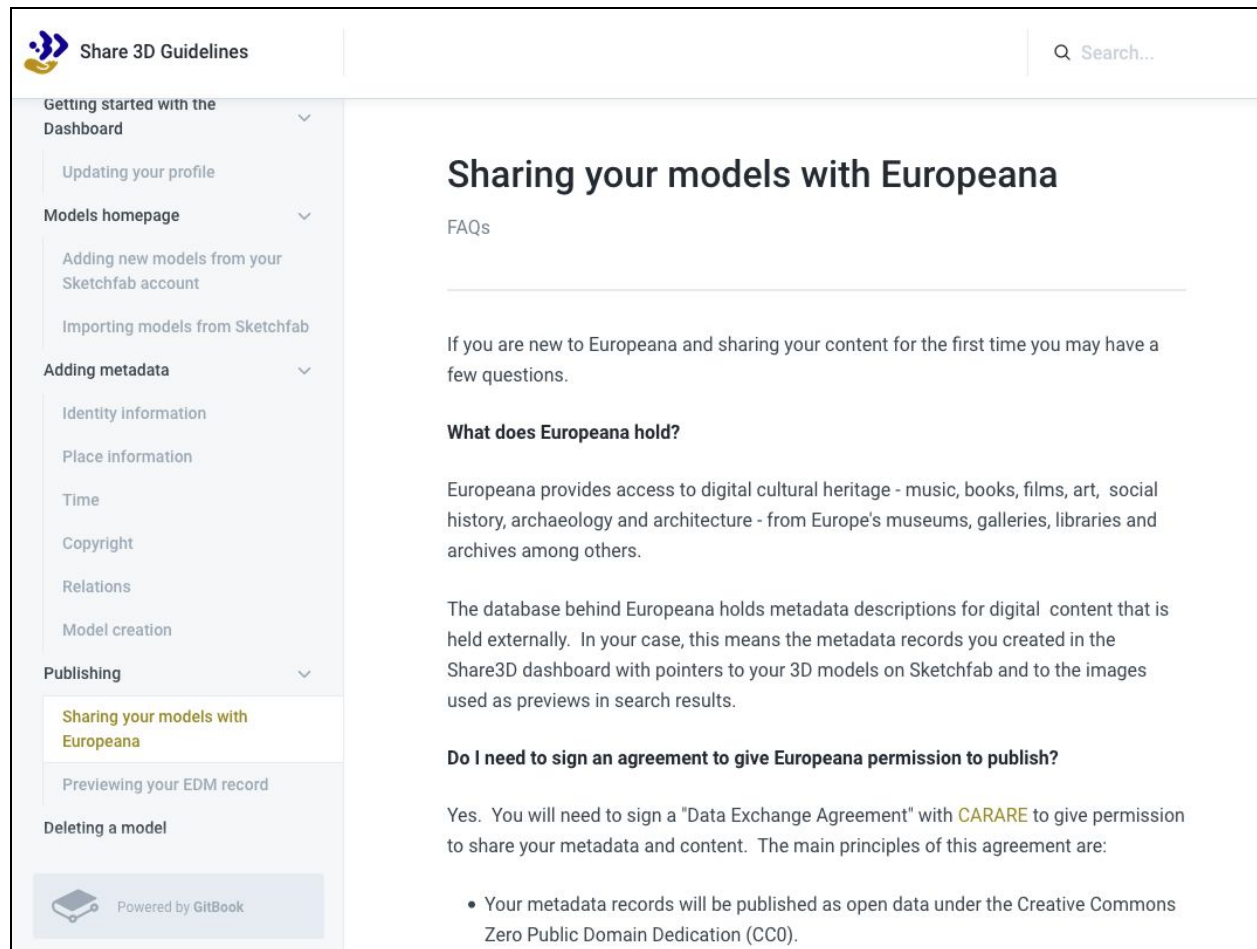


Figure 10: Sharing models with Europeana

The final section of the guide covers the process of “deleting” or withdrawing a model from the Dashboard. This option allows users to delete model information from the Share3D dashboard in the event that there is a change in circumstances, for example if a model is withdrawn from Sketchfab for any reason.

2.2. Share3D Storymaker

The guide to the Share3D Storymaker is divided into 5 sections:

- Getting started
- Storymaker homepage
- Creating a story
- Managing your stories
- Exploring stories

USER GUIDE - TO THE SHARE 3D STORYMAKER	
Getting started with the Storymaker	
Storymaker home page	▼
Your profile, password and logout	
Creating a story	▼
Creating a slideshow	▼
Choosing your first asset	
Writing your story	
Adding slides	
Editing your story	
Creating a timeline	▼
Beginning your timeline	
Adding slides	
Editing and previewing your timeline	
Managing your stories	▼
Previewing a story	
Publishing a story	
Exploring stories	

Figure 11: Document outline for the Storymaker guide

The “Getting started” section covers the process of registering as a user, which is a necessary step for those who wish to create stories using the tool.

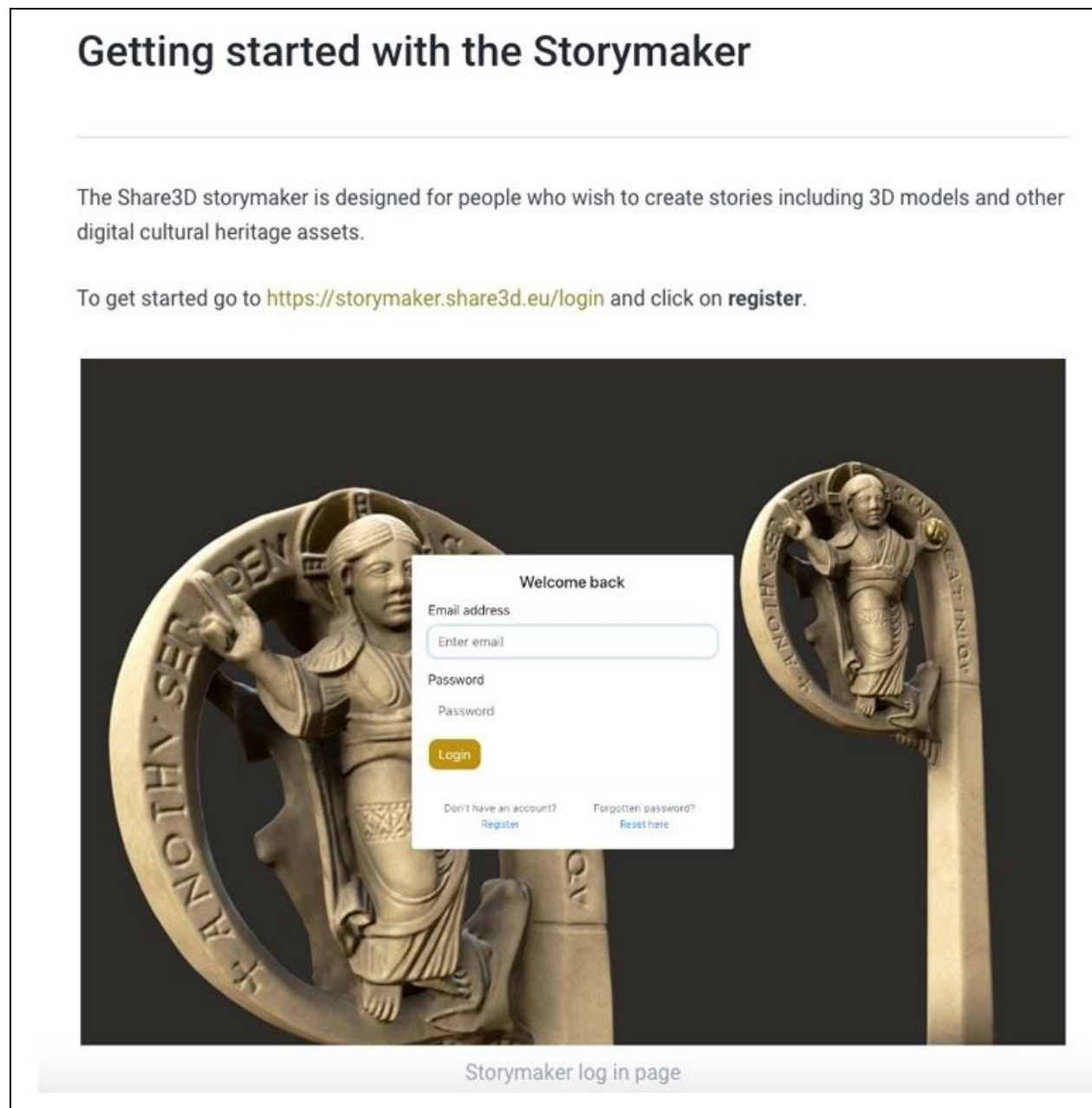


Figure 12: Getting started with the Storymaker

The next section of the guide describes the “Storymaker home page”, which includes useful links to Frequently Asked Questions and to these guidelines, and also to the user’s profile page. The user’s profile includes details of their name and organisation, which are used by the tool in the metadata record for each story the user creates.

The “Creating a story” section of the guide introduces the three templates provided for stories:

- Object with hotspots,
- Slideshow, and
- Timeline

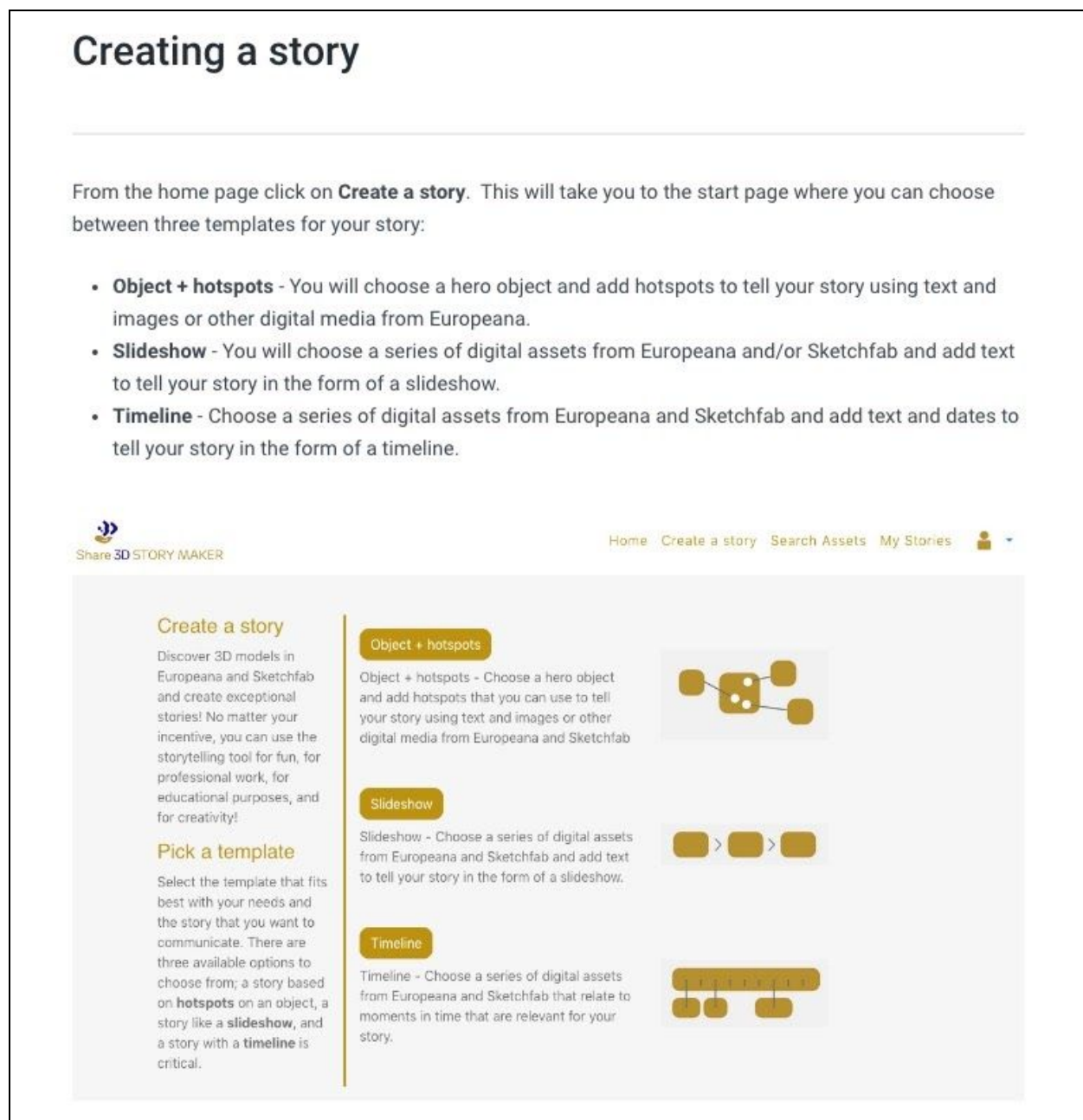


Figure 13: Selecting a template to create a story

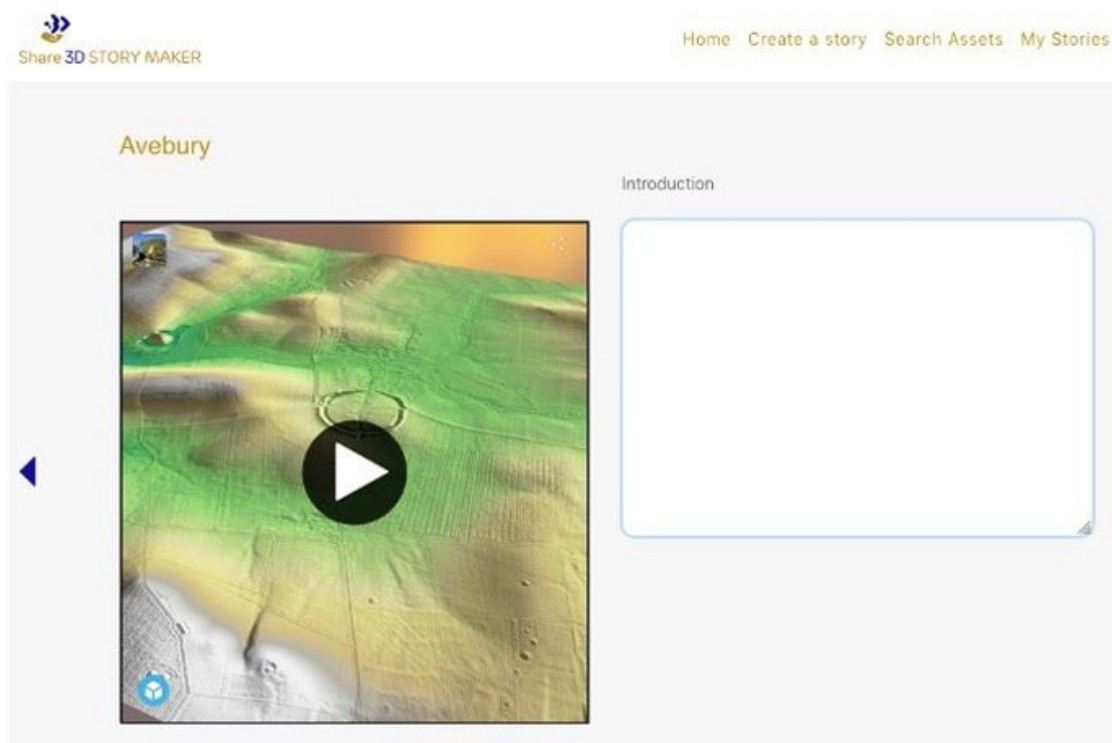
The guide then goes on to describe the process of creating a story using each of these three templates.

The 'slideshow' template is designed for people who want to create a linear story around a series of digital assets from Europeana and Sketchfab. The steps involve

- Entering a title and short description for the story
- Searching Europeana and Sketchfab
- Creating each slide by selecting an asset and writing the text
- Saving and publishing the story to share it online

Writing your story

Once you have selected the first asset you will be taken back to the storymaker template. You will see the asset is displayed on the left-hand side of the screen. On the right hand side you will see there is a text box in which you can write the introduction to your story.



Once you have entered your introductory text the **Save** button will appear.

Save your story. The next step is to add more slides.

Figure 14: Using a template to write a story

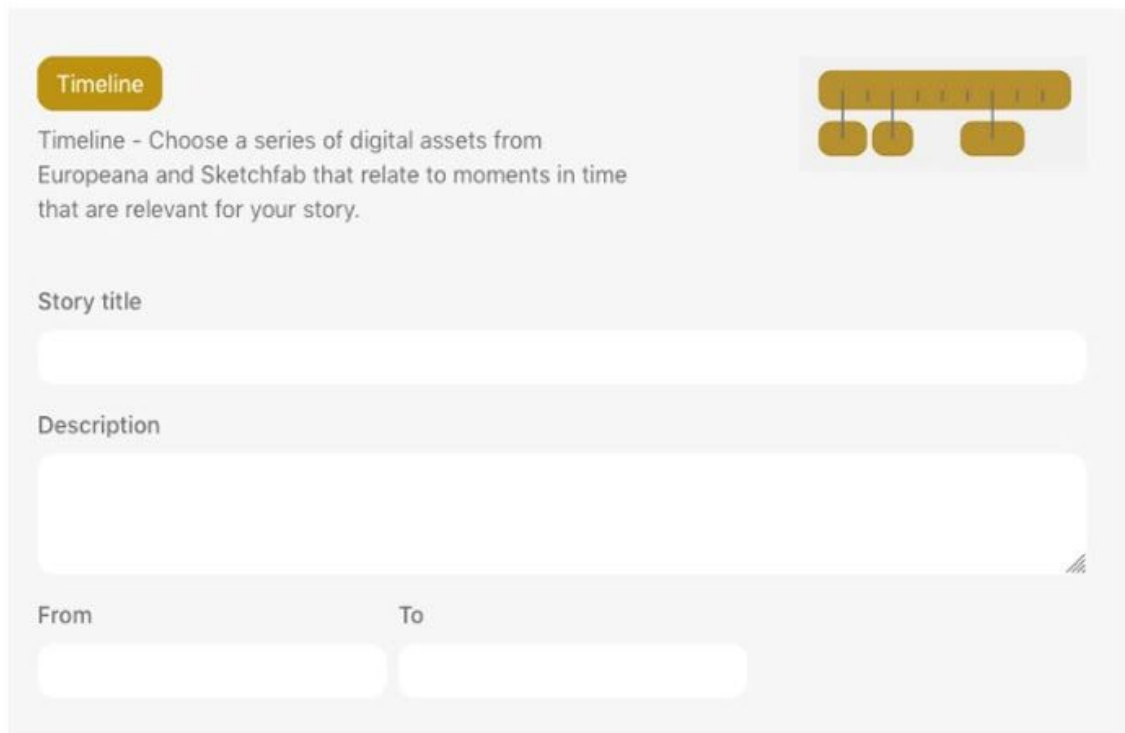
The 'timeline' template is designed for people who want to create a linear story about moments in time. The steps involve:

- Entering a title and short description for the story
- Defining the beginning and end of your timeline,
- Adding slides at specified dates on the timeline,
- Writing and editing the text
- Previewing and then publishing the timeline

Creating a timeline

This template is designed for people who want to create incorporating a series of digital assets from Europeana or Sketchfab to describe points in time.

From the "[Create a story](#)" page click on Timeline. Your next step is to give your story a title, enter a short description (of the story) and to give the start and end date for the timeline.



The screenshot shows a web form titled "Creating a timeline". At the top left, there is a yellow button labeled "Timeline". To its right is a small graphic of a timeline with several points. Below the button, the text reads: "Timeline - Choose a series of digital assets from Europeana and Sketchfab that relate to moments in time that are relevant for your story." The form contains the following fields: "Story title" with a text input box; "Description" with a larger text area; "From" and "To" date pickers. At the bottom right of the form area, there is a small icon of a document with a pencil.

Once you have entered these details click on the "**Next**" button. Clicking on this will take you to the "[Search Assets page](#)". Enter a keyword into the search box and click on return.


Your search will return results from both Sketchfab and Europeana. Click on the asset that you'd like to make the starting point of your timeline.

Figure 15: Timeline template

Each user has a personal homepage to manage their stories. This page lists all the stories that a user is working on including private stories (drafts) and public stories.

Managing your stories

At the top right hand side of your screen you will see a link to **"My Stories"**. This is your personal home page and lists all of the stories that you have created.



Next to the preview image for each story you will see:

- The story title
- Your description of the story, its content and duration
- The status of your story - private or published
- Buttons to view, edit, delete, publish/unshare your story.

While you are working on a story its status is **"Private"**. You can preview the story by clicking on the **"View"** button, and edit it by clicking on **"Edit"**.

When you have finished writing your story and are ready to share it, click on the **"Publish"** button. You will see that the status label changes from Private to Published, and the Publish button changes to Unshare.

You can **"Unshare"** a published story at any time if you want to edit the contents.

Finally, you can also **"Delete"** a story from the "My Stories" page. For example, you may wish to create draft stories (perhaps to test the different templates) that you later need to delete.

Figure 16: Guidelines for managing stories

The Storymaker tool allows users to preview their stories as they are working. This function allows users to see the story displayed as it would be once published. They can then return to edit mode and make any desired changes or additions before publishing.

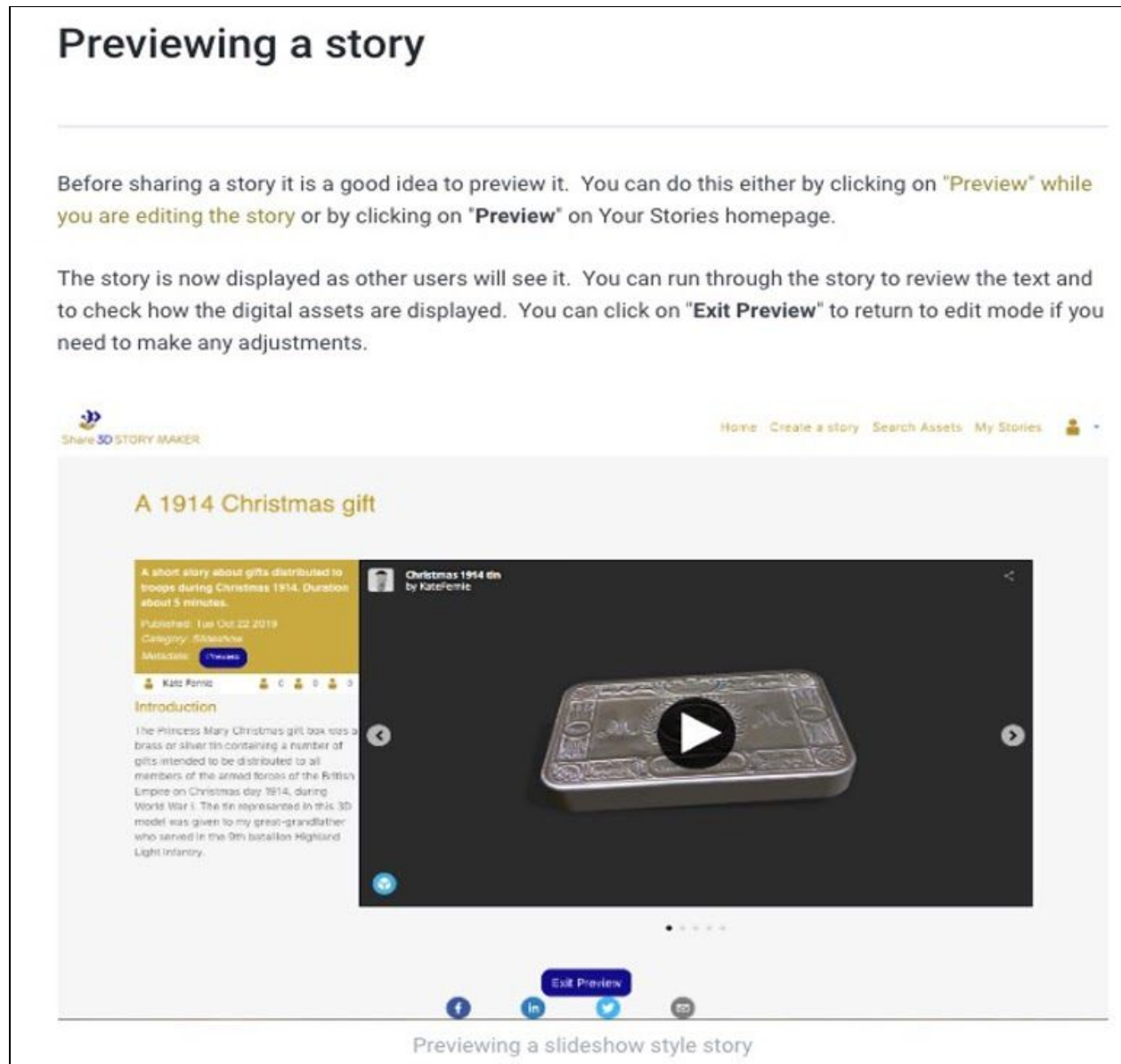



Figure 17: Previewing a story




Once a user has completed writing their story, they can share it on the Internet by publishing it. Once a story has been published it is visible to all visitors to the Storymaker website (both registered users and visitors) and can be shared with friends via social media channels.

Users of the service can 'unpublish' a story at any time. For example if a user decides to create a new version unpublishing the story allows them to return to edit mode and add or change their materials.

Publishing a story

You can publish a story by clicking on the "Publish" button on your "My Stories" homepage. A window will pop-up asking you to confirm that you want to publish.

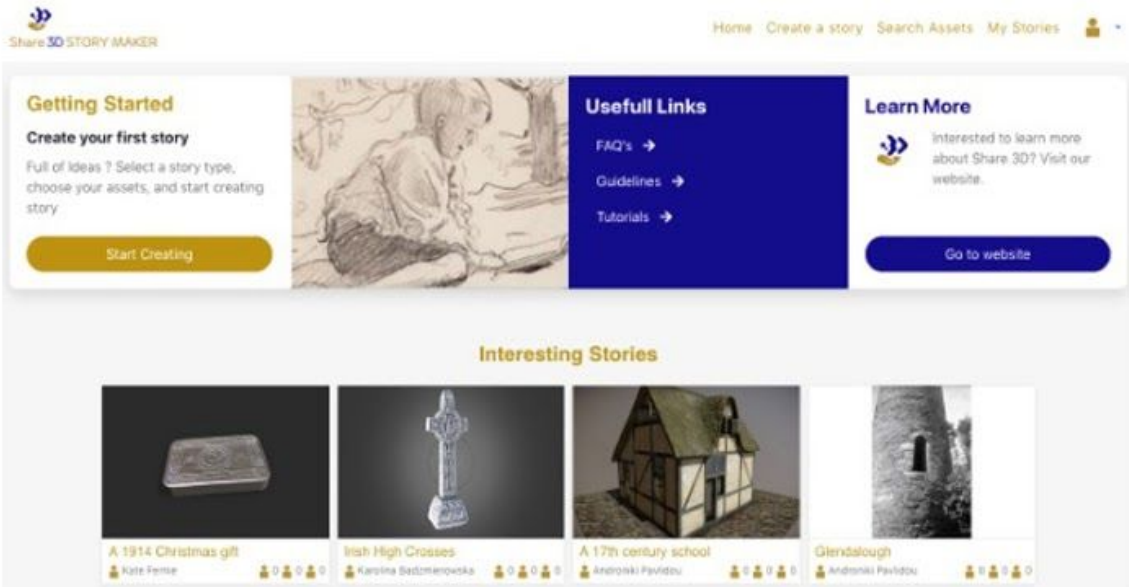


A 1914 Christmas gift 1   


A short story about gifts distributed to troops during Christmas 1914. Duration about 5 minutes.

[Private](#) [View](#) [Edit](#) [Delete](#) [Publish](#)

When the story has been published its status will change from Private to Published, and it will be visible on the Storymaker home page.



Share 3D STORY MAKER

Home Create a story Search Assets My Stories 

Getting Started

Create your first story

Full of ideas? Select a story type, choose your assets, and start creating story

[Start Creating](#)

Useful Links

- [FAQ's](#)
- [Guidelines](#)
- [Tutorials](#)

Learn More

Interested to learn more about Share 3D? Visit our website

[Go to website](#)

Interesting Stories

Story Title	Author	Views
A 1914 Christmas gift	Kate Ferrie	0 0 0 0
Irish High Crosses	Karolina Badzimenowska	0 0 0 0
A 17th century school	Androniki Pavlidou	0 0 0 0
Glendalough	Androniki Pavlidou	0 0 0 0

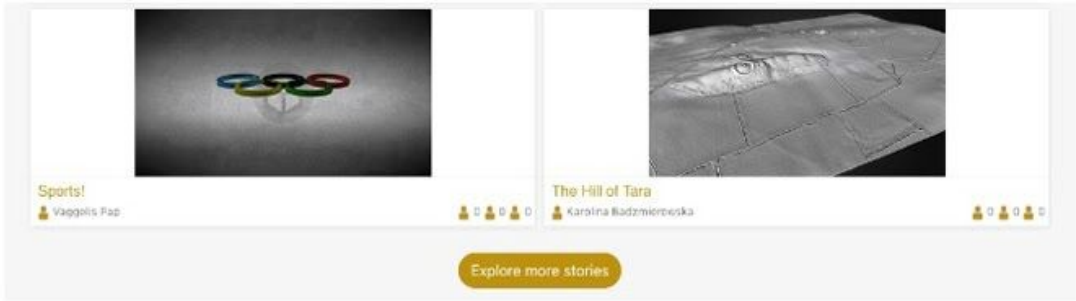
When you **View** the story, you will see that you now have the option to share your story on Facebook, LinkedIn, Twitter and by email.

Figure 18: Publishing a story

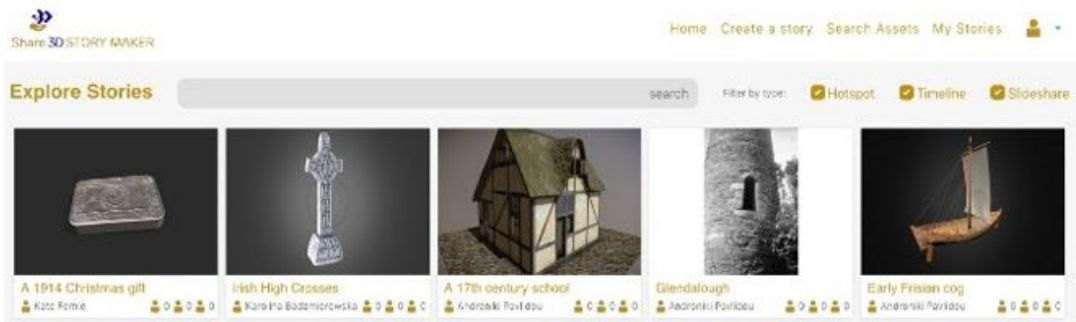
All visitors to the Storymaker website (<https://storymaker.share3d.eu/home>) can browse through the published stories.

Exploring stories

When you go to the **Storymaker home page** you will see some of the latest stories. Scroll down to the bottom of the page and you will see there is the option to **"Explore more stories"**.



Clicking on Explore more stories takes you to the **"Explore Stories"** search page. You can search for stories by entering keywords, or by type (hotspot, timeline, slideshow).



Explore Stories search Filter by type: ☒ Hotspot ☒ Timeline ☒ Slideshow

A 1914 Christmas gift **Irish High Crosses** **A 17th century school** **Glendalough** **Early Frisian cog**

Kate Feme Karolina Badziewicz Andrzej Pawlowski Andrzej Pawlowski Andrzej Pawlowski

i If you hover over a the preview image for a story you will see the short description about the story.

Figure 19: Exploring stories

2.3. Guide to the 3D Workflow

This guide provides an introduction to the 3D workflow from data capture and processing to publishing 3D models online.

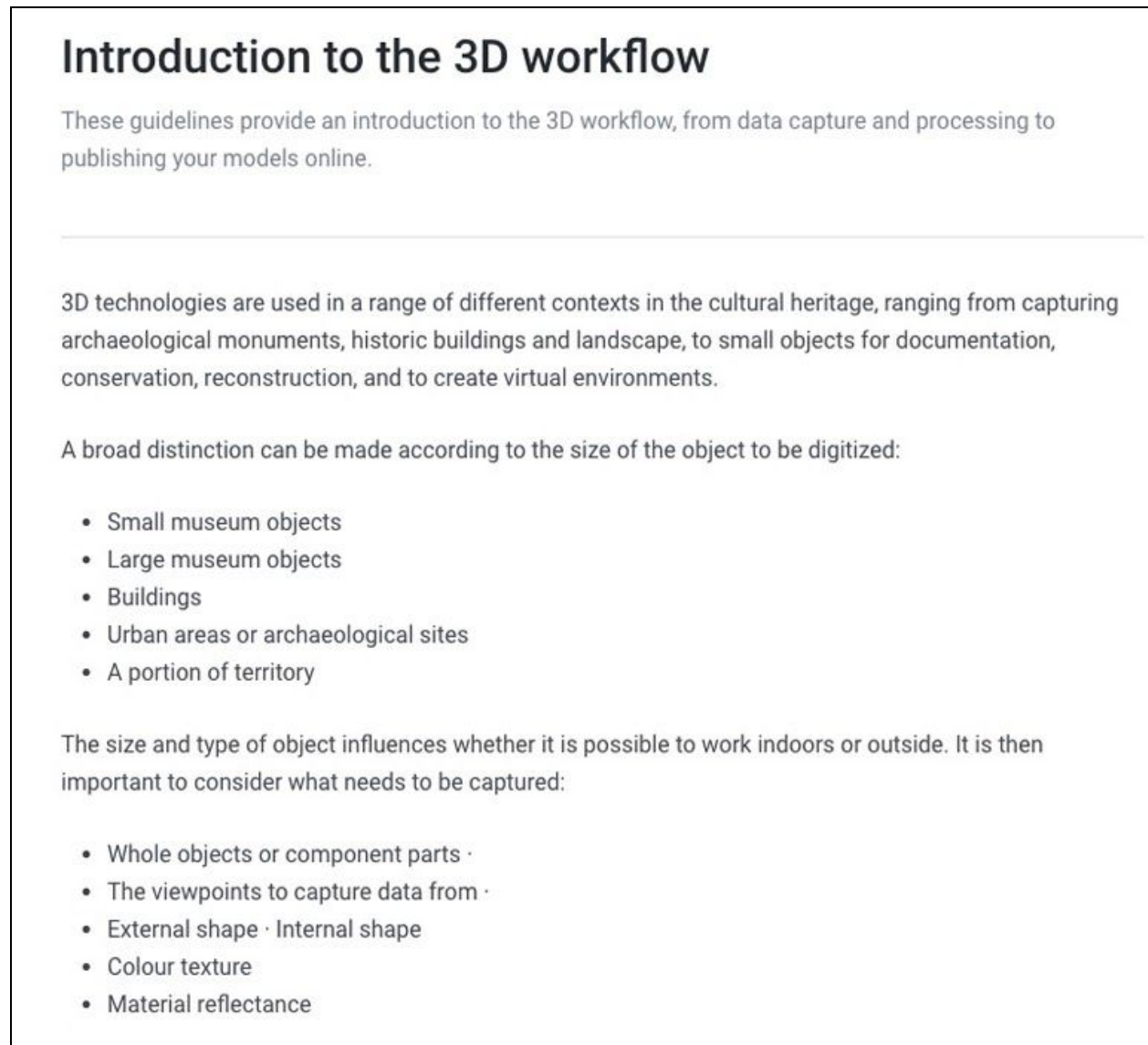


Figure 20: Introduction to the 3D workflow

The guide covers the following topics:

- Data capture
- Post processing
- Visual enhancement
- Publishing 3D models online
- Complementary media
- Metadata

- Licencing

3D PROCESS	
Introduction to the 3D workflow	
Data capture	▼
Active systems: short range	
Active systems: long to mid range	
Passive systems: photogrammetry and other image based methods	
Post-processing	▼
Geometric Reconstruction	
Visual Enhancement	▼
Modelling and augmenting	
Publishing 3D models online	▼
Getting started in Sketchfab	
Next steps in Sketchfab	
Complementary Media	
Metadata	▼
Capturing metadata	
Licencing	

Figure 21: Document outline for the guide to the 3D workflow

The section of the guide on data capture covers:

- Short range active systems (lasers, structured light),
- Long to mid range active systems (time-of-flight, LIDAR), and

- Passive systems (photogrammetry and other image based methods)

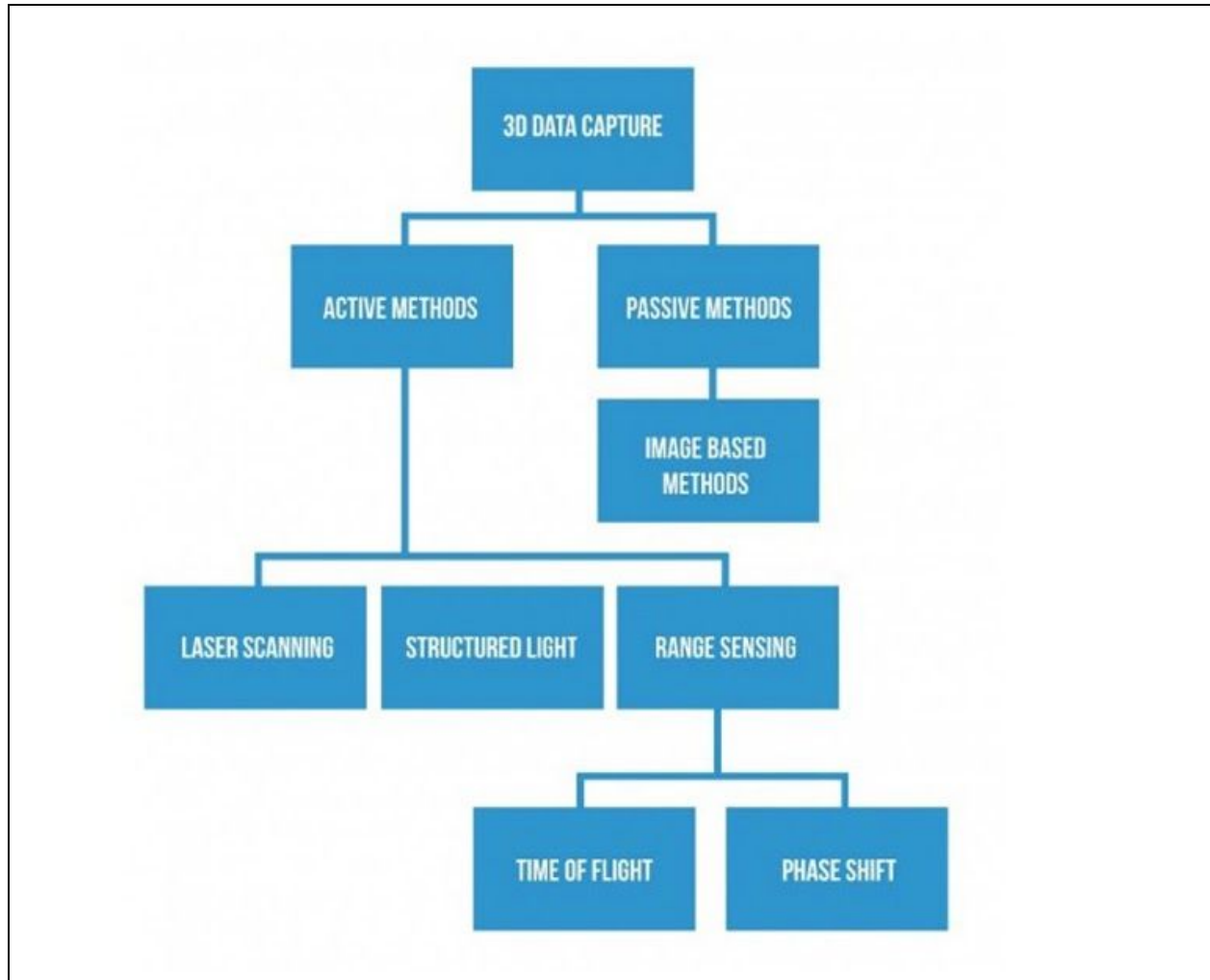


Figure 22: Overview of data capture techniques

Each page provides a description of the methods illustrated with diagrams and, where appropriate, links to the video training materials.

 Module 1.3 of the video training course illustrates a range of active and passive 3D digitisation techniques, the equipment, camera setups and the results.

Training module 1.2 documentation of heritage with imaging

Figure 23: References to the video training course materials

The section of the guide on post-processing provides an introduction to the steps taken to process the raw, captured data and transform it into 3D models. The processing stage includes geometric reconstruction, which may include work on point cloud data, processing of mesh data, cleaning and/or simplifying the data and creation of texture maps to improve the efficiency with which models are rendered online.

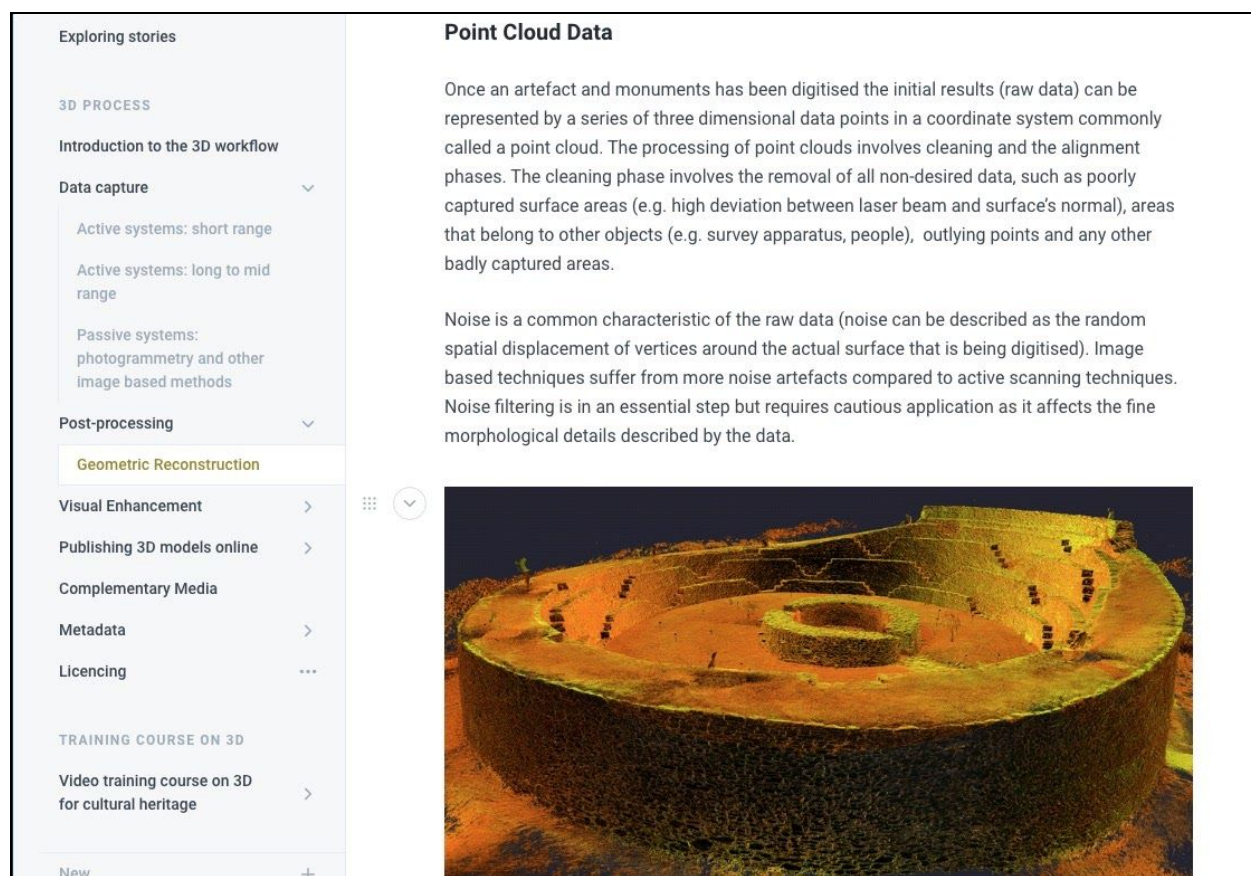


Figure 24: Processing Point Cloud Data

The next section of the guideline covers visual enhancement of the processed data. These covers a wide range of processes including texturing, reconstructing elements and modelling techniques.

Visual Enhancement

Several computer graphics techniques can be used to visual enhance of the 3D models produced from geometric reconstruction processes. For the cultural heritage techniques that produce 3D simulations that are consistent the visual characteristics of real artefacts and monuments (reality capture) are mainly used. The techniques described below are listed in order beginning with those that ensure a strong geometric consistency:

- Texture extraction and projection starting from photographs finely oriented on the 3D model (e.g. image-based modelling and photogrammetry)
- Texturing using photographic samples of the real materials of the artefact (e.g. wall materials, etc)
- Texturing using generic shaders
- Interactive or semi-automatic reconstruction based on relevant profiles
- Interactive or semi-automatic reconstruction based on primitives adjustment
- Reconstruction based on technical iconography (plans, cross-sections and elevations)
- Reconstruction based on artistic iconography (sketches, paintings, etc)

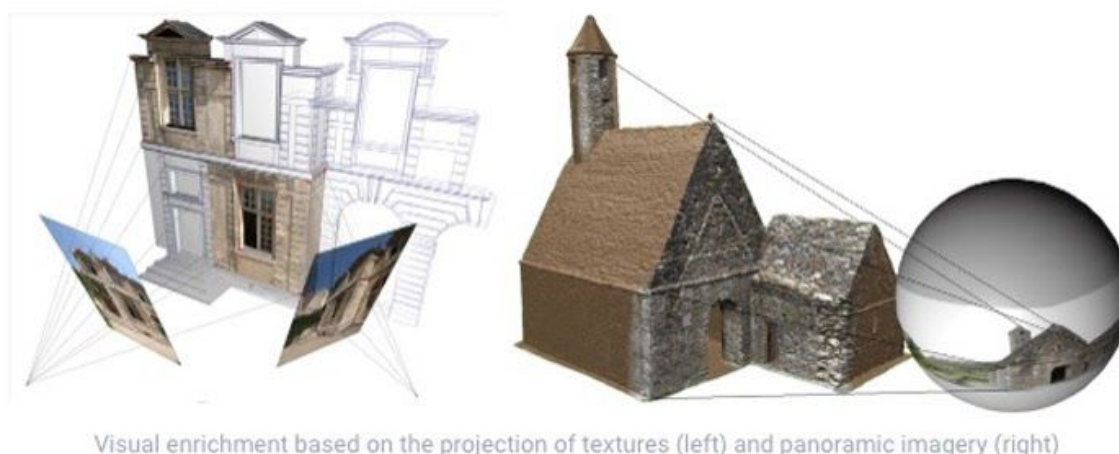


Figure 25: Techniques to visually enhance 3D models

The section on publishing 3D models online discusses the importance of taking into account audience needs, accessibility, support and sustainability. A number of HTML5 and WebGL solutions for publishing 3D models online are introduced including Sketchfab.

The document then continues to provide a guide to “Getting started in Sketchfab”. This provides an introduction for cultural heritage users to the process of preparing 3D models for upload to Sketchfab.

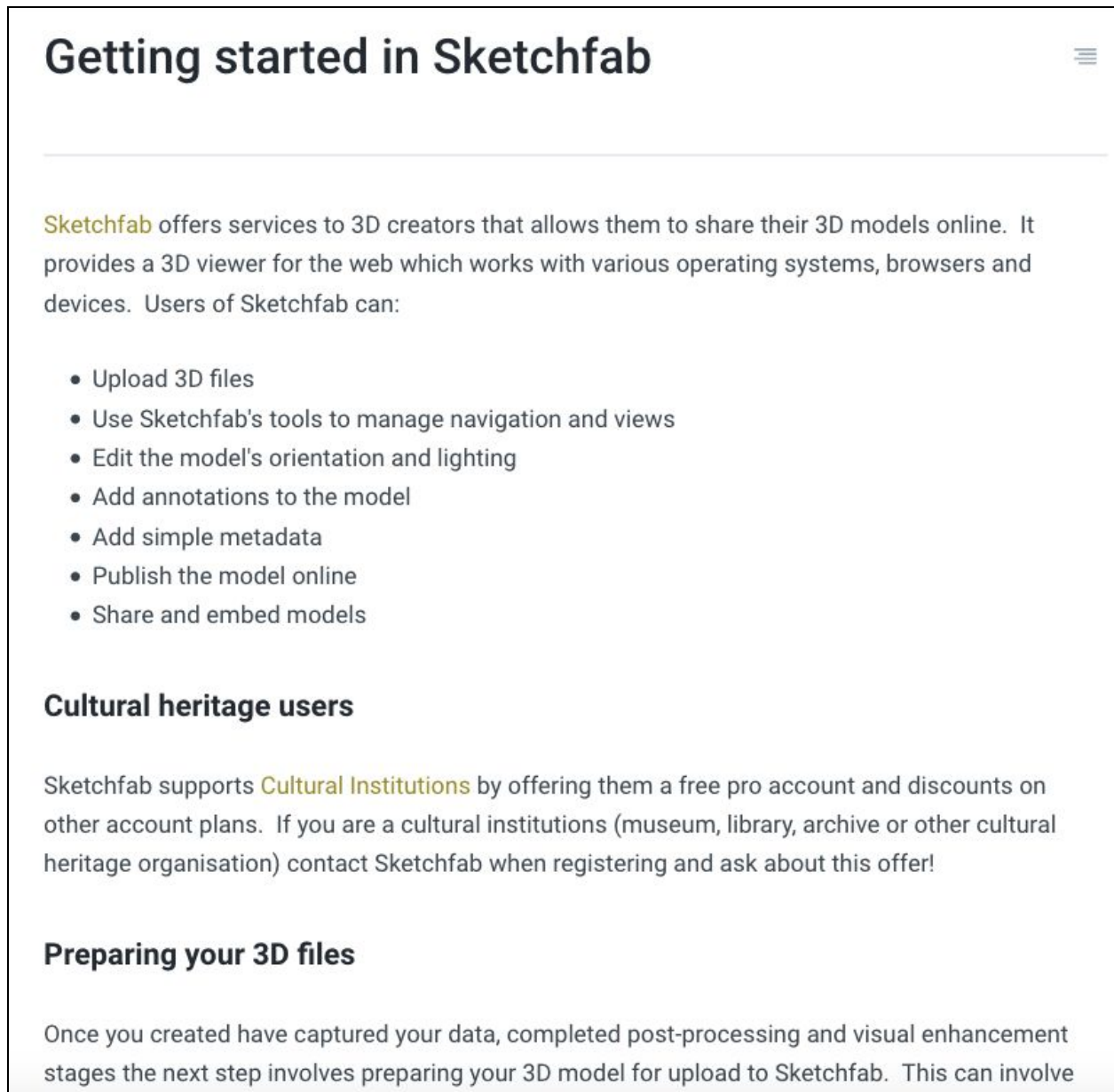


Figure 26: Getting started in Sketchfab

The guide continues to describe the “next steps in Sketchfab” once a 3D model has been uploaded. These include checking the model’s appearance, editing the navigation and lighting of the model and adding annotations.

A range of other media may be produced as a result of 3D projects, the guide highlights these may include static images, elevations and plans, videos (of the model), animations, panoramas and virtual reality models.

The guide continues by discussing metadata for 3D models and the key information that should be recorded. The guide makes recommendations on the importance of capturing metadata as projects progress through their data capture, post processing, visual enhancement and publishing stages. As projects may produce several datasets (including complementary media and reports) it is important to capture metadata for the whole collection, and the individual objects. The need for metadata to support the discovery of 3D objects by users of services such as Europeana is highlighted. This section cross references the use of the Share3D dashboard for metadata capture and to send data to Europeana.

Sharing your data

To make the most of the metadata that you create, it should support discovery of your 3D objects by portals (such as Europeana) that can promote it to a broad range of users. Two key issues face 3D content creators:

1. Differences in the metadata specified for different services (e.g. between Sketchfab and Europeana)
2. The need to find an efficient way of storing metadata describing the digital provenance with the 3D model itself.

i The Share3D **dashboard** is designed to allow users to add metadata to 3D models that they have uploaded to their Sketchfab accounts, adding details needed to share their models with Europeana's users. The metadata captured using the dashboard is sent to Europeana.

Figure 27: Metadata and the Share3D dashboard

The final topic in this guide concerns licensing of 3D content. This section discussed the layered rights that may exist in 3D projects (with different rights sometimes being attached to original objects, captured and processed datasets). The section concludes with a discussion of the value of using Creative Commons licenses to give users a clear indication of how they can use the 3D content.

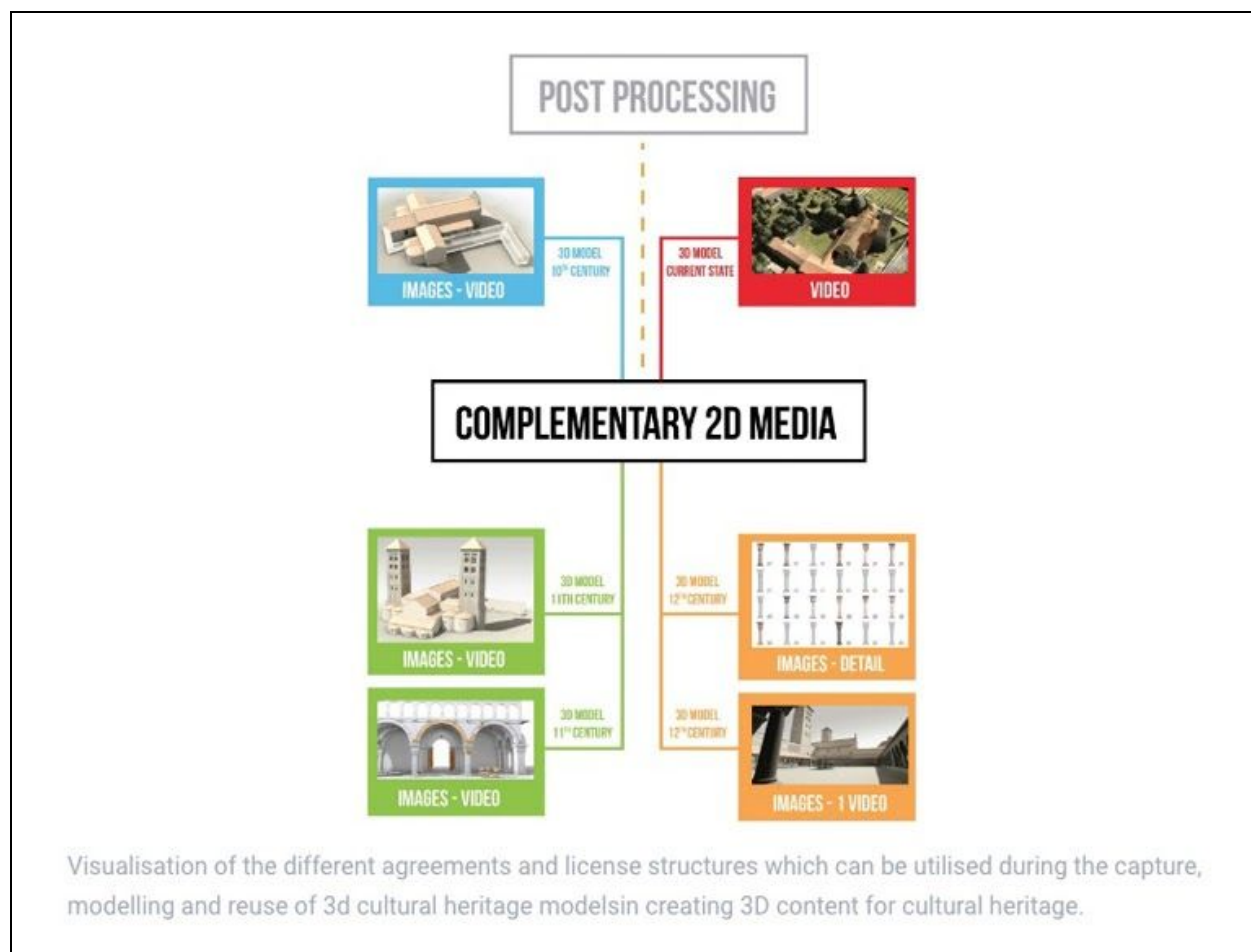


Figure 28: Licencing of 3D and complementary media

2.4. Training course for 3D cultural heritage

The guidelines include links to a video training course that were produced by Visual Dimension. The videos include:

- Introduction
- Documentation of heritage with imaging
- 3D digitisation of heritage assets
- Creation of 3D assets
 - Triangular chair example
 - Tobacco package example
 - Bed example
 - Pasglas example
 - Octagonal pasglas example
- Online visualisation of 3D assets - from Unity to Sketchfab

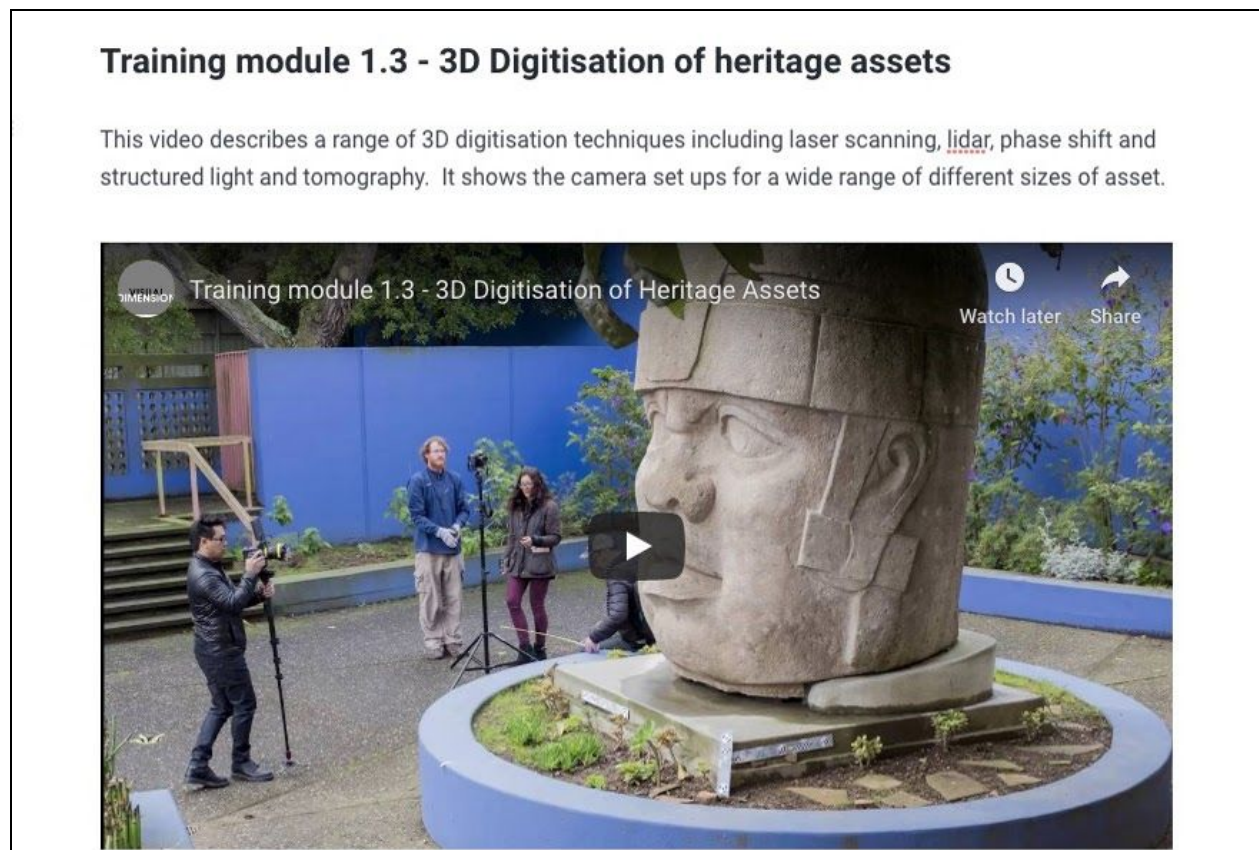


Figure 29: 3D Digitisation of heritage assets

Training module 2.2.a - Online visualisation of 3D assets - from Unity to Sketchfab

This video shows how to select a scene that has been rendered in Unity 3D and prepare it for upload to Sketchfab, and goes on to show how to edit the model in Sketchfab and how to add annotations.



Figure 30: Video training: from Unity to Sketchfab

3. SUMMARY

The “Sharing new perspectives”, Share3D project has developed a set of guides to support users of the Share3D dashboard and the Share3D story maker. The guides provide a user-friendly guided walk through of these tools to encourage their use and re-use of content in Europeana and Sketchfab for education, tourism, research and the creative industries. The user guides are complemented by a guide to 3D data capture, processing and the publication of 3D content online, and a set of video training materials.

The guide are publicly available online and can be found at:

<https://share3d.gitbook.io/share-3d-guidelines/>

REFERENCES

Share3D project website: <https://share3d.eu/>

Share3D dashboard: <https://dashboard.share3d.eu/login.php>

Share3D storymaker: <https://storymaker.share3d.eu/home>

Europeana: <https://www.europeana.eu/portal/en/about.html>

Sketchfab for cultural heritage: <https://sketchfab.com/museums>