

User Manual for ManuMaker

Version:

1.0

Intended Readers:

Users of the ManuMaker
application

Development Context:

This application was developed as
part of a bachelor's thesis at the
University of Applied Sciences in
Hamburg (HAW Hamburg)

Author(s):

Daniel Lachmann

Manual Revision:

1.0.0

ManuMaker V1.0



HAW HAMBURG

Publisher:

HAW Hamburg

Berliner Tor 21
20099 Hamburg
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Contact:

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manumaker.dev@gmail.com

Chapter 1:

Introduction

**Intended
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Terminology

- **ManuMaker:** Name of the Application this manual describes. This manual was created for ManuMaker, with ManuMaker. The screen capture and highlighting of image-features was achieved using the very capable tool "Greenshot".
- **Gallery:** The currently opened project in ManuMaker is also occasionally referred to as "The Gallery". This is owed to the fact that the reader navigates from one item to the next in a mostly linear fashion, just like someone would do in e.g. an art gallery. Jumping to the part which interests you the most is also allowed, via use of the slide list / tag search.
- **Gallery Slide:** The items in the Gallery are also referred to as "Slides". This is due to the similarities to slides in a digital presentation program. Every Slide has a Slide Title which is displayed in the title-bar above the image and text editor, as well as in the slide list.
- **Slide List:** The list at the left side of the window. It has two tabs, one which permanently displays all slides in the current Gallery (Labeled "Index") and one which displays all slides matching your search keywords, if there are any.
- **Main Button Bar:** The button bar found at the bottom of the window in all tabs. Depending on the mode, it gives access to different tools to create documentation, and provides the buttons for linear navigation through the Gallery.
- **Annotation Panel:** The section at the right side of the window, which contains the Annotation Text, Tag Utilities and the Audio Player.
- **Image View:** The Element in the center of the window. The current slide's images are displayed here, if the current slide contains an image. In Draft Mode, the ImageView is presented as a grey rectangle even if no picture is present, in the other two modes the Image View's width is shrunk to zero if the current slide contains no image, to make more space for the text.
- **Annotation:** refers to the text of a Gallery Slide which usually contains instructions. There are two different annotations attached to each slide:
Draft - and Final (or Refined) Text. The Refined text is the one visible to the reader of the manual, and can be styled in a WYSIWYG manner in the Refine Tab.
- **Gallery Browser:** The part of the UI which displays a given project. If you've opened this manual within ManuMaker, you're looking at the GalleryBrowser right now.
- **Project:** A manual created or viewed in ManuMaker. Each instance of the software can only load one Project at a time for viewing or editing.
- **Application Settings:** The window where the settings which are constant across all projects are selected. Mainly the Camera-related options at this point.
- **Project Settings:** Every Project has a set of settings attached to it, which are unique to the project (e.g. project name, type of documentation, author's name). All of these can be set at the creation of a new project, but only a few fields are mandatory. All settings for the current project can be changed at any time via the *Settings->Project Settings* menu. The Project is automatically updated with the new information (e.g. information on the title slide)

Intended Use

Use-Cases for ManuMaker V1.0 considered during its design

Manual types:

- Linear instruction manuals for specific tasks, like:
 - mechanical assembly
 - electrical assembly
 - soldering guides
 - maintenance procedure documentation
 - setup / commissioning of hard- and software systems
 -
- Non-linear reference manuals for low- to medium complexity devices*.
 - user manuals
 - troubleshooting guides

*Low-complexity being a scientific electronic calculator, medium being a build-it-yourself 3D-Printer kit, complex being a subject which consists of multiple complex sub-assemblies, such as an automobile.

Documentation Subjects:

- Hardware systems (using the webcam). The size-limit of the subject is mainly set by the documenters workspace configuration and the length of the webcam cable. ManuMaker has been created mainly with devices in mind which can be placed on a desktop or workbench equipped with a PC and e.g. a desk lamp on which the camera can be mounted for steady and precise positioning.
- Software (using a screen capture tool)
- Systems which consist of hardware as well as software, such as a robotic arm and its control-software

Target User Groups:

- **Technical Writers** who are not set up with a content management system by their company and have been using a digital camera and office software for creating manuals.
Note that if the the documentation format does not conform with a company's requirements, ManuMaker can still serve as an organisational tool for drafting the documentation.
In case of hardware-documentation done with a digital camera and an office-grade word processor the following steps are eliminated when using ManuMaker:
 - Operating the camera by hand
 - Organizing the notes for each step
 - Transferring the images from the camera's sd card to the PC
 - Sorting through the images to see which are usable
 - Renaming the images to give a hint for which step of the process they are documenting
 - Organizing the images and text information in the correct order in case of a step-by-step manual
- **Engineers** who need to document their work as well as the tools they create to facilitate their work (especially test stands and prototypes, which may not receive a complicated documentation due to shortage of time).
- **Entrepreneurs** who need to provide documentation for the products they manufacture or import and distribute .
- **Students**, especially in practically-oriented subjects of the S.T.E.A.M.-variety who need to document their contributions to intra- or extra-curricular projects where the basic functions of their work needs to be documented for posterity.
- **Makers**, who are these days developing incredible open-access technology at their desktops at home. Last but not least, ManuMaker is intended to reduce the time needed to create the often crucial and just as often non-existent documentation which makes the inventions accessible to the crowd.

Limitations

Limitations to be aware of:

Technical:

- **A webcam** connected to a computer can only be used by one application at the time. If the webcam selected in ManuMaker's **Application Settings** is already in use elsewhere when an instance of ManuMaker is starting up, it will not be usable in that new instance. The Application will notify you if a webcam is not available. If multiple webcams are connected to the system, go to Application Settings to select an available one, if needed. For just viewing a documentation or for documenting on-screen subjects, a webcam is not required.
- **The elements of a ManuMaker project** are saved in common formats such as .txt, .html and .png for simplicity's sake, and because this makes integration of a documentation project easier in the context of a versioning system like e.g. Subversion. Some drawbacks of this storage format are:
 - Component files can be corrupted accidentally by accessing and modifying them through the file explorer
 - Components can be opened externally and therefore not be writable when ManuMaker is attempting to save the current project. This may result in loss of data.
 - When copying a documentation project (e.g. when restoring a corrupted documentation from backup), great care has to be taken that it is a clean copy.
If a directory "Dir" contains a Project with name "Project A" and another project named "Project A" is copied into the same directory, your OS may ask you to merge the project folders in some way.
That may leave residual data of the initial project in "Dir" in the project structure, and cause ManuMaker to load wrong or incomplete data when loading from the merged folder.
- **Use with constantly updating versioning- or cloud services** can lead to loss of data because the updater may block a file while ManuMaker tries to modify it.
Workaround: Disable automatic updates of the file structure while handling documentation, or use a manual-commit based service.
Known cases where data-loss occurred:
 - Documentation Project saved in Dropbox (only service on hand during testing)
 - This list will be expanded as information is collected
- **The Export to printable HTML funtion:** It works when the conditions are right, although there are no customization options available in the current version of ManuMaker (The default setting is: Portrait orientation, 1 Slide per Page). Please refer to the chapter "*Exporting the Project to HTML Format*" in this manual for some guidelines on how to create a printable ManuMaker project.

Conceptual:

- **Multi-Topic-Manuals:** Due to the shallow structure of the documentation projects created in ManuMaker (Only Project->Chapters->Instructions, no sub-chapters), it is recommended to limit a documentation project to one specific task, e.g. assembly of an apparatus.
If a product needs a manual consisting of several instruction-sets such as assembly, commissioning, troubleshooting, and maintenance, it is recommended to create one ManuMaker-project for each purpose, to avoid making the documentation difficult to navigate through.
- **Complex Troubleshooting:** To troubleshoot a complicated product, the corresponding manual likely requires a lot of cross-references ("If situation A occurs, read on on page X, read page Y for situation B..."). Reasons are:
 - ManuMaker V1.0 does not support embedded links between slides
 - Slide titles may be reformulated ad-hoc during the refinement process, as better formulations come to mind, which requires an impractical amount of management-overhead of references-by-slide-title.
 - The slide- and chapter numbers change across the whole project when a slide is inserted near the beginning of the manual, making manual referencing by chapter- or slide number impractical.
 - A possible workaround would be to use the tag-search feature for cross referencing ("If situation A occurs, type <code A> into the search box and keep reading..."). Then it is just a matter of distributing unique tags to the referenced slides. But since these links need to be managed by the documenter, this workaround is not an ideal solution.
 - For troubleshooting situations, flowcharts can be very helpful. As of ManuMaker V1.0, importing flowcharts in e.g. an XML form is not supported.
While inserting images of flowcharts may work for small charts, the lack of a zoom and scroll functionality in ManuMaker's **Image View** makes viewing large images impractical.

Summary of the available Features

Purpose of the Draft Mode:

Use **Draft Mode** to quickly capture any operational information (visual, text, audio) in a way that causes as little distraction from the task at hand as possible.

ManuMaker takes over most of the information structuring.

In **Draft Mode**, you can:

- Add still images or image series (**Stop Motion Pictures**)
- Capture images using a webcam or inserting them via the clipboard, e.g. using a snipping tool
- Open images in the system's default editor for graphical annotations
- Write down a draft of the instructions without regard for formatting or styling
- Record an audio clip (one can be recorded per slide, default microphone is used) which can be replayed in draft and refine tabs
- Remove the audio or image from from slides
- Delete slides from and add slides to the gallery
- To make the contents searchable, add keywords to the instructional slides. There are three categories of keywords:
 - Relevant to the instructions ("Tags")
 - List of tools used in a slide's context. The tools listed in all slides can be compiled to a list.
 - List of parts used, e.g. the parts added to the assembly in the context of a slide. The parts listed in all slides can be compiled to a list.

Purpose of the Refine Mode:

Use the features of the **Refine Mode** to make the captured information presentable and include additional data.

- Load the text from the Draft Tab into the rich text editor in the Refine Tab
- Listen to the recorded audio draft and transfer the information to the text annotation
- Add warnings and notices in the instruction text
- Add tables in the instruction text as HTML (Alternatively, add tables as images to the image view)
- Add formatting slides: Title- or Chapter Slide
- Adjust the order of slides in the gallery
- Add additional chapters, e.g. "safety" or "troubleshooting"

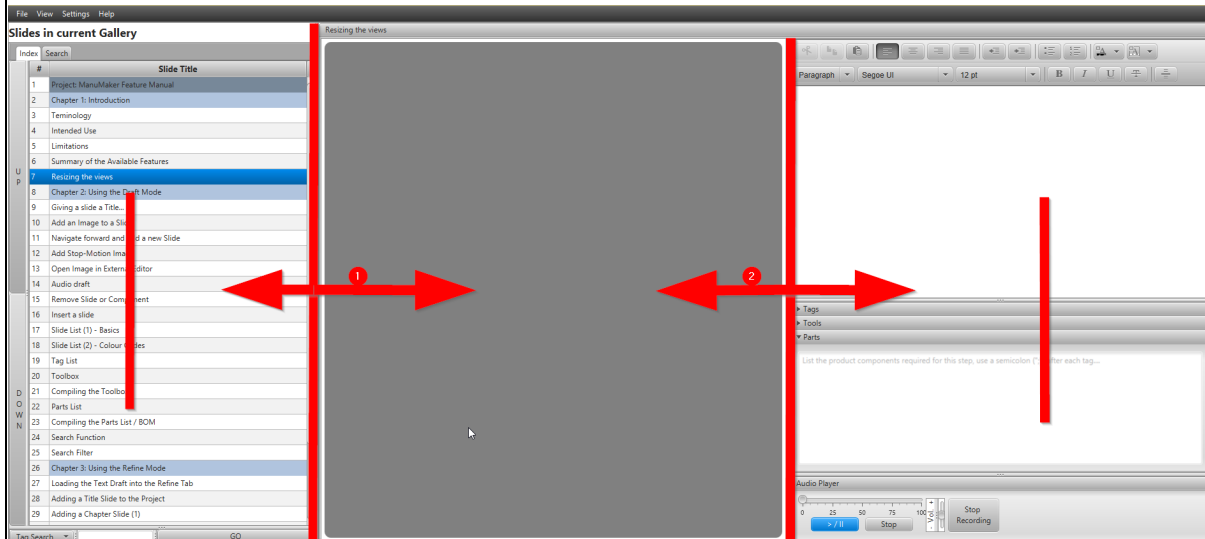
Purpose of the View Mode:

Use the **View Mode** when *using* the documentation. **View Mode** represents the documentation-readers view of the manual, and does not offer any editing functionality.

In **View Mode**, you can:

- Navigate through the Gallery using the arrow buttons
- Read the Annotation Text as seen in the Refine Tab
- See the Tags (non-editable)
- Search slide tags (any combination of the three categories can be searched at one time)

Resizing the views



The Gallery Browser consists of four major sections:

- The Main Button Bar at the bottom of the window, which is not resizable to a significant degree.
- The Slide List on the left side of the window
- The Image View in the center
- The Annotation Panel with text, tags and audio features.

The two vertical separators (marked with long red lines) can both be moved horizontally.

The separator **(1)** between Slide List and Image View can be moved as far as the separator **(2)** between image view and Annotation Panel, and vice versa.

Both **(1)** and **(2)** are limited in how far they can move towards the frame of the window, as both Slide List and Annotation Panel have a minimum width, as denoted by the shorter vertical lines in the picture.

Chapter 2:

Settings

**Intended
Readers:**

All users of the ManuMaker application

Author(s):

Daniel Lachmann

Publisher:

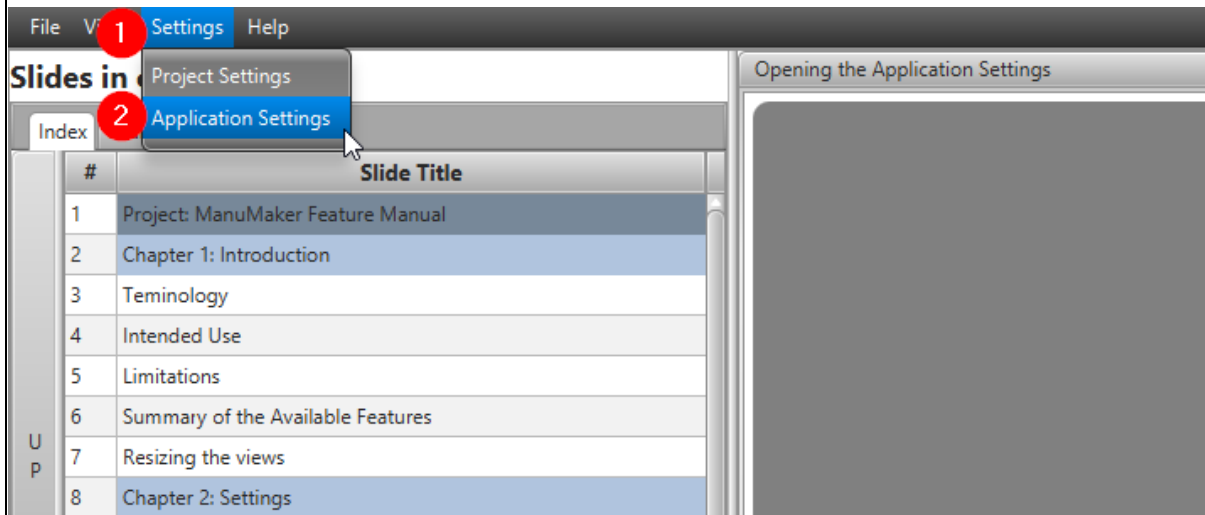
HAW Hamburg

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Contact:

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manumaker.dev@gmail.com

Opening the Application Settings

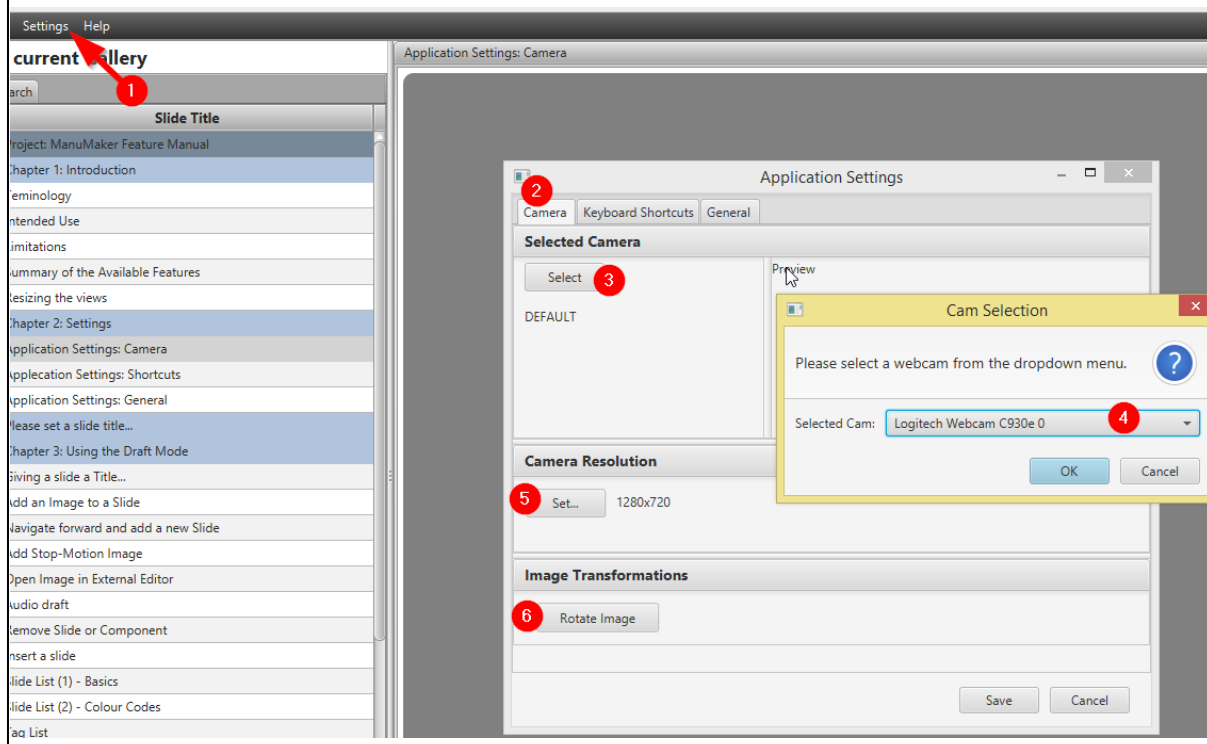


The Application Settings Window:

To open the Application Settings, click on

Settings (1) -> Application Settings (2) in the top menu bar

Application Settings: Camera



The **Camera Tab (2)** of the Application Settings contains:

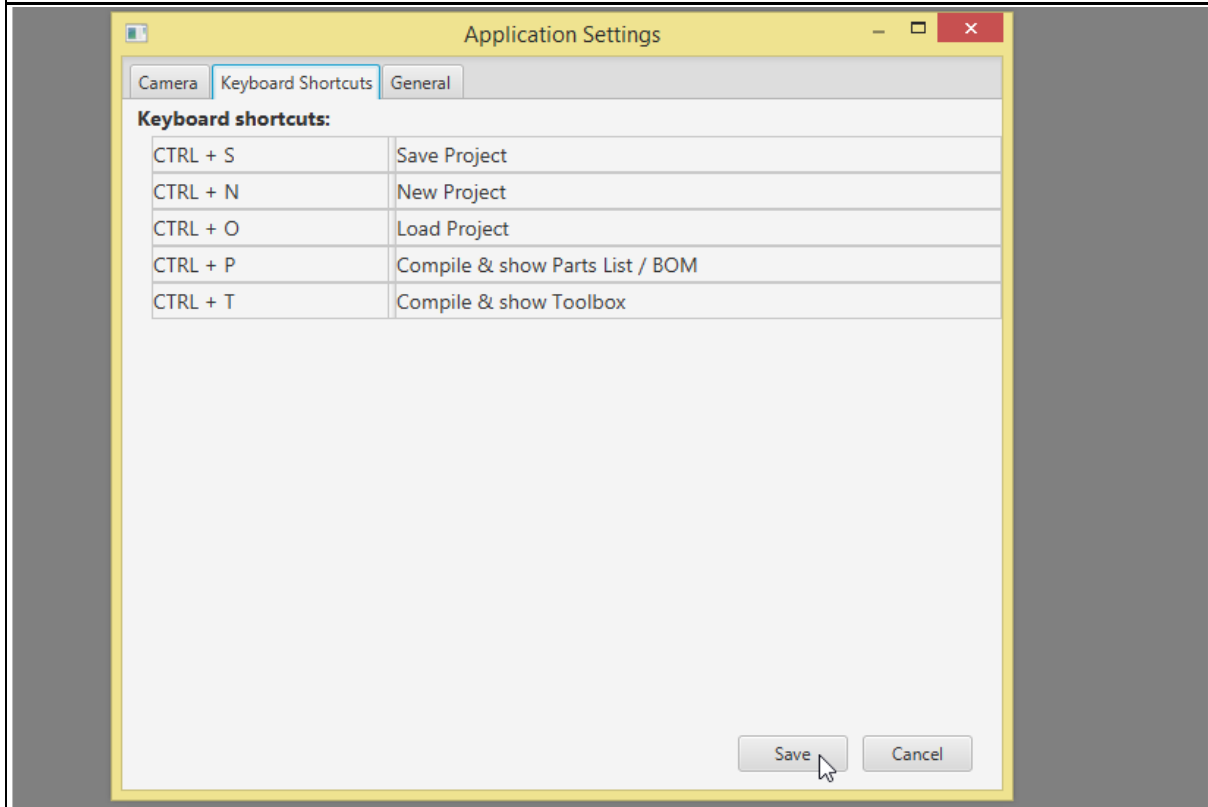
- The **Select (3)** button to set the webcam used for documentation, which opens a dialog with a dropdown list of all available webcams (4). The name of the camera is displayed in the label underneath the button (3).
- A button to set the camera's resolution (5) and a text label which displays the currently selected resolution (here: 1280x720)
- The **Rotate Image (6)** button to rotate the image of the webcam by multiples of 90°, to enable adapting to different camera mounts.



NOTICE

- The resolutions presented in the Camera Resolution settings are not necessarily supported by your webcam. The webcam API used in ManuMaker does not yet support querying the webcam for supported resolutions at HD level.
- This appears to be a safe-failing feature, as all tested cameras defaulted to standard VGA resolution when an unsupported resolution was selected.
- If you select a high resolution and the camera doesn't seem to have adopted it, the likely cause is that the selected resolution is not supported.

Application Settings: Shortcuts



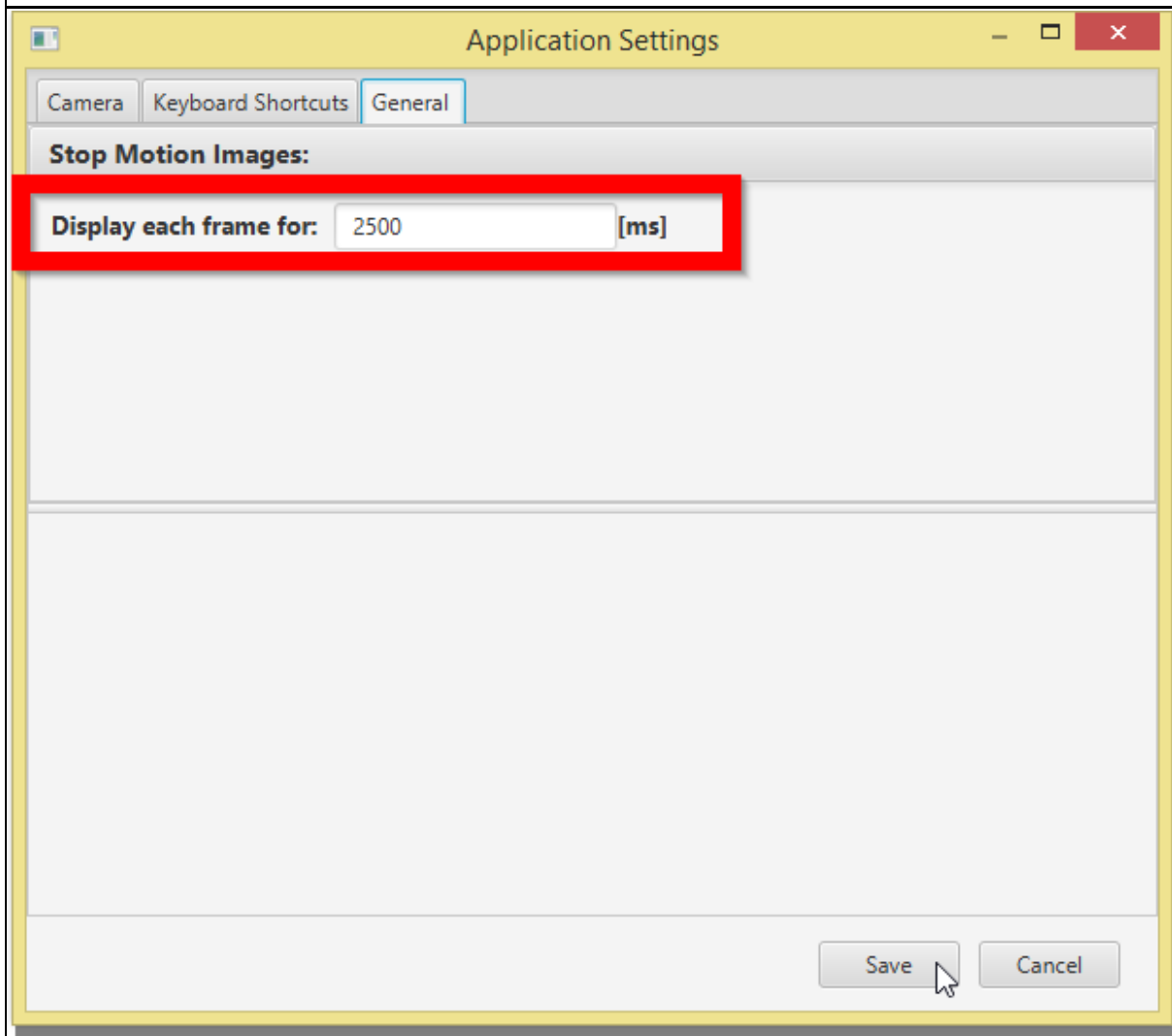
ManuMaker supports keyboard shortcuts for:

- Saving the project
- Creating a new project
- Loading an existing project
- Showing the list of all required parts (BOM)
- Showing a list of all required tools

In Version 1.0, the key-combinations are fixed (see image) and cannot be changed. The most important for most people will likely be the commonly used combination *CTRL + S* to save the project.

Note that saving can take a while for larger documentation projects, and that the GUI is non-responsive while saving takes place.

Application Settings: General



The General Tab:

As of ManuMaker V1.0, the Application Setting's General tab only contains the delay-setting for Stop-Motion Images, which defines the duration every frame in the image series is displayed.

The value can be set between 250ms and 25000ms (0.25s to 25s, respectively).

The given value must be a positive integer.

Project Settings: Mandatory Fields

Project Settings

-Fields printed in bold are required.
-Use HTML formatting tags to define e.g. linebreaks (
) or bold type (...).

Project Title

ManuMaker Feature Manual

Product Name

ManuMaker

▶ Product Version(s) covered by this Manual

Documentation Type

User Manual

▶ Documentation Revision Number

▶ Target Audience

Author

Daniel Lachmann

▶ Company Name

▶ Company Address

Company Logo

D:\AppDocumentation\Resources\Logo.png

Load Delete

ManuMaker V1.0
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▶ Contact Information

▶ Additional information for the title page

Project Path

D:\AppDocumentation\ Select Project Path...

The **Project Settings Window** appears whenever a new Project is started, or after clicking *Settings->Project Settings* in the top menu bar.

There are two types of text-input found within the Project Settings window:

1. Text Fields: Single line text input, does not support linebreak by pressing ENTER
2. Text Areas: Multi line text input, make newline with ENTER

All text put in this window can be appended by html codestyling (old-fashioned but effective) to get e.g. bold-printed words or linebreaks inserted to the plain-text inputs. See **(1)**

Mandatory Fields in the Project Settings:

- **Project Title (2):** The title will only be visible in the Slide List as the title of the Title Slide.
- **Product Name (3):** The product being documented.
- **Documentation Type (4):** E.g. Assembly Manual, User Guide, Maintenance Manual
- **Author (5):** The name of the author.
- **Project Path (6):** Note that the path selected in the chooser dialog will be appended by a directory named "<project title>\".

Project Settings: Optional Fields

The screenshot shows the 'Project Settings' dialog box with the following fields and callouts:

- 1**: Product Version(s) covered by this Manual (Text field: 1.0)
- 2**: Documentation Revision Number (Text field: 1.0.0)
- 3**: Target Audience (Text field: Users of the ManuMaker application)
- 4**: Company Name (Text field: HAW Hamburg)
- 5**: Company Address (Text field: Berliner Tor 21
20099 Hamburg
Germany)
- 6**: Load button (Next to the Company Logo field)
- 7**: Delete button (Next to the Company Logo field)
- 8**: Preview of the currently selected logo (ManuMaker V1.0 HAW HAMBURG)
- 9**: Contact Information (Text field: Email: manumaker.dev@gmail.com)
- 10**: Additional information for the title page (Text field: Label for the additional information... Please fill in the additional information to display on the Title page of the documentation....)

Optional fields in the Project Settings:

1. Product version or versions which are covered by the manual
2. The revision number of the documentation (The format can be chosen freely)
3. Definition of whom this manual was written for (E.g. maintenance technicians, engineers, end-users)
4. Name of the company which builds the product and publishes the manual
5. Address of the publishing company
6. A button for selecting a logo (Any image file in jpg, bmp, png or gif format, display size is constrained by width-parameter.
7. A button to delete the image.
8. A preview of the currently selected logo. Note that when a new logo is selected to replace an existing one, the gallery needs to be saved, closed and reloaded for the change to effect on the Title Slide.
9. Contact information to be printed on the Title Slide of the documentation
10. A heading and a content-field for displaying additional information on the project's Title Slide.

Chapter 3:

Using the Draft Mode

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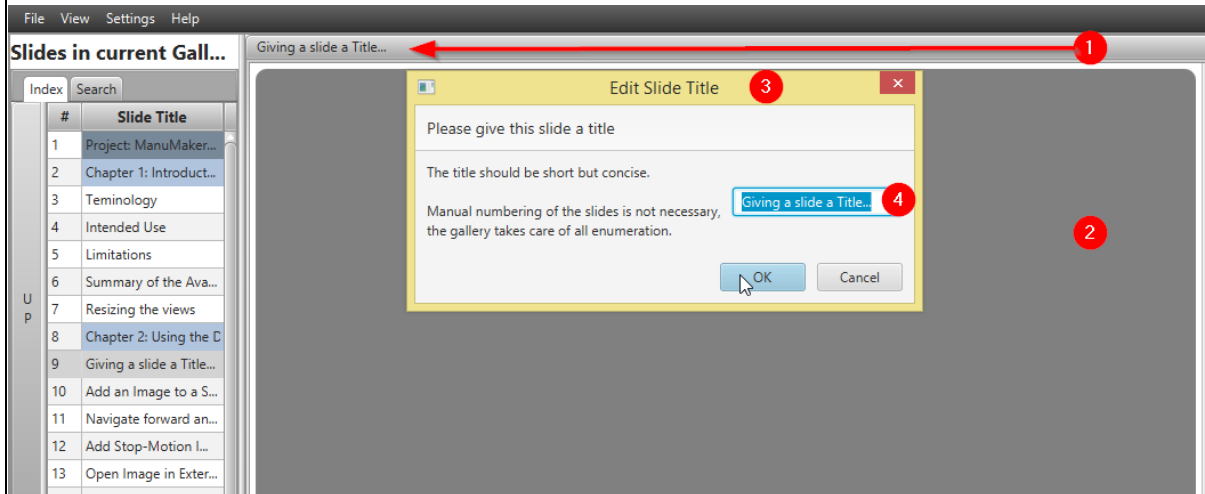
HAW Hamburg

Berliner Tor 21
20099 Hamburg
Germany

Contact:

Email:
manumaker.dev@gmail.com

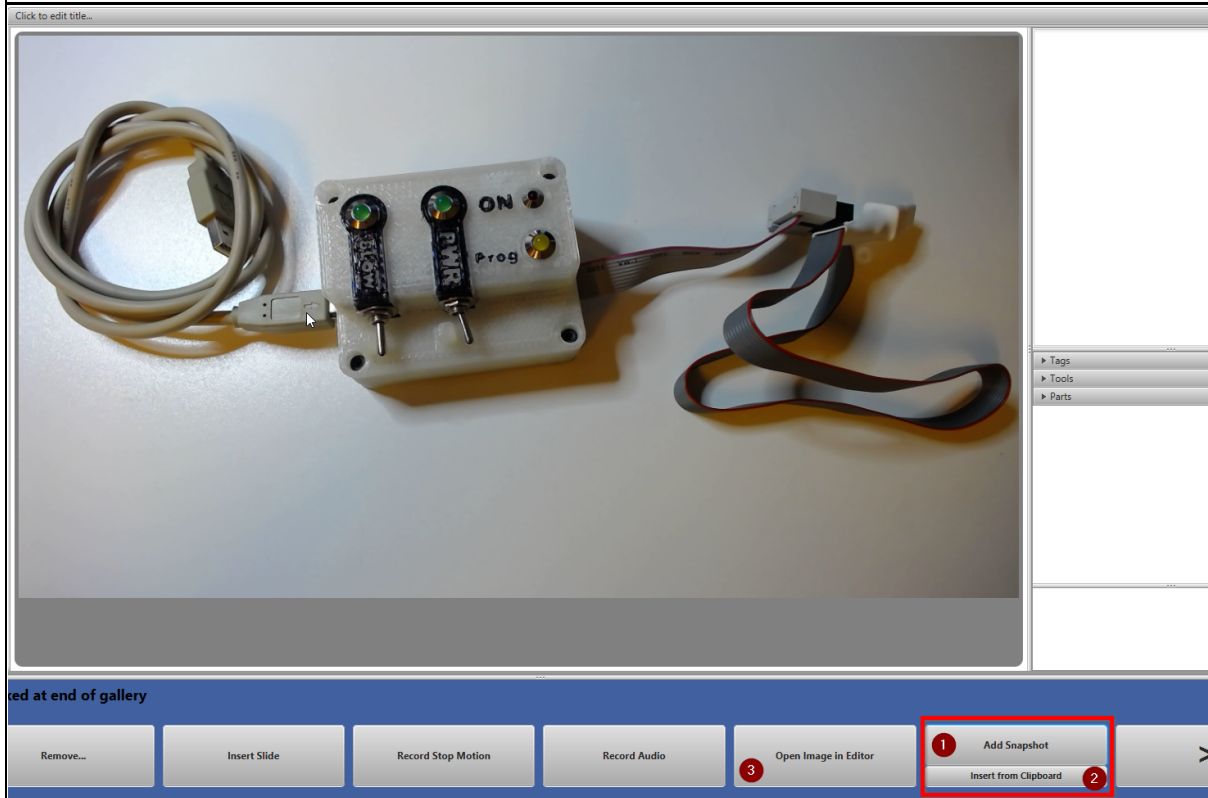
Setting the Slide Title



To add or modify a Slide's Title:

1. Click on the **Title Bar** above (1), or on the **Image View** (2)
2. The **Edit Slide Title** dialog (3) opens
3. Type a short, concise title for this step into the **Text Field** (4)
4. confirm with **OK**.

Adding an Image to a Slide



There are two ways to add an image to the current slide:

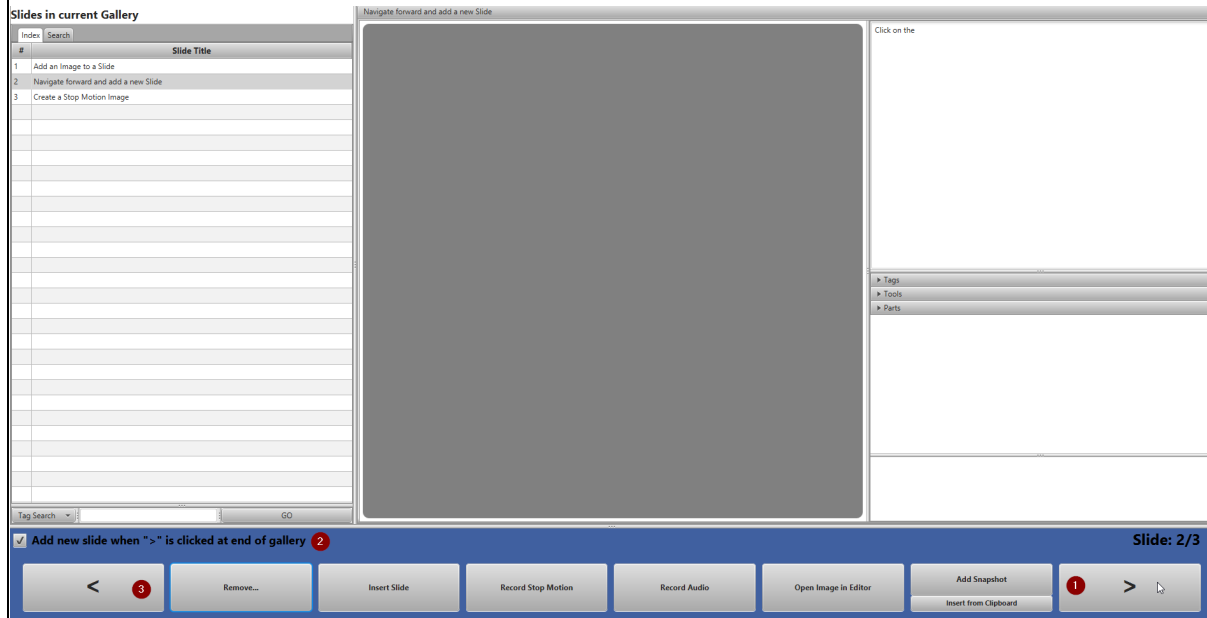
For Hardware documentation

- click **Add Snapshot (1)**, to start the camera stream.
- You can now position the subject and your camera until you are satisfied with how it looks.
- Clicking the **Snapshot (1)** again will capture the last picture from the camera and stop the camera stream.

For documenting things presented on a computer screen

- Copy the screen-portion to the clipboard (using a snipping tool is recommended)
- Insert it using the **Insert from Clipboard** button (2).

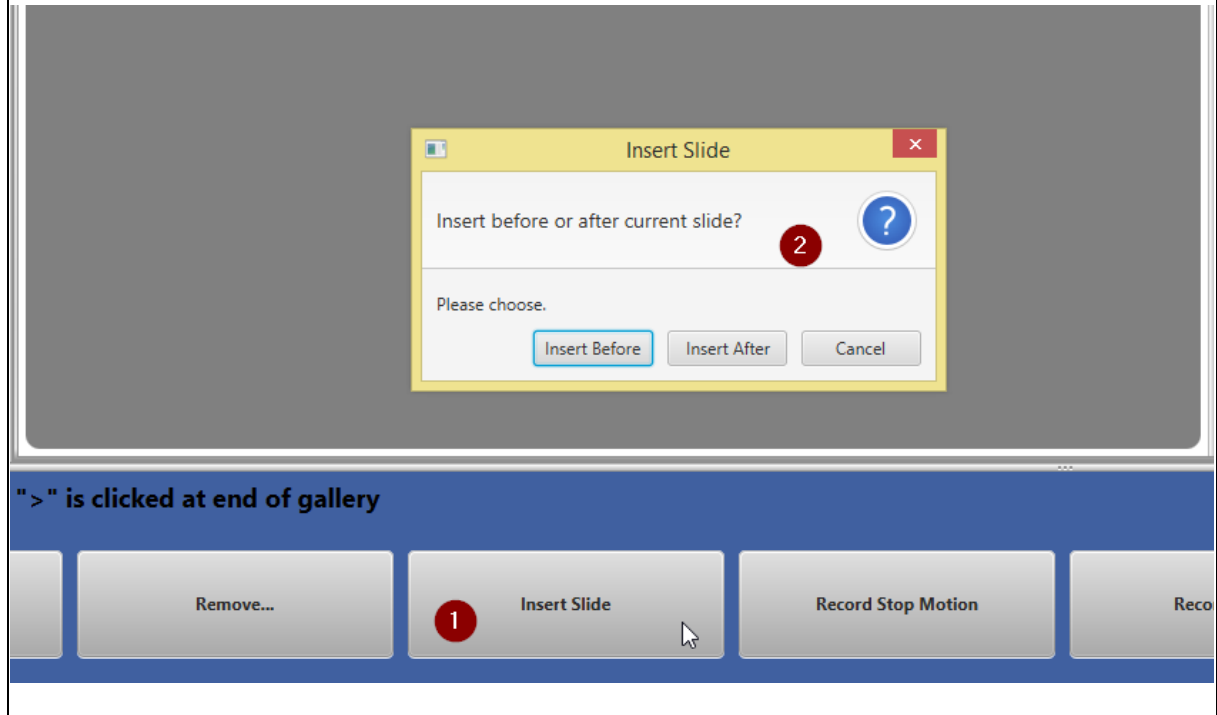
Navigating forward



Navigation basics:

- Click on the forward button **(1)** to navigate to the next slide.
- If the checkbox **(2)** is checked, clicking forward at the last slide in the series will add a new blank slide to the end off the Gallery.
- When the box **(2)** is unchecked, the navigation buttons do not modify the Gallery.
- The back button **(3)** navigates to the slide before the current one.

Inserting a Slide

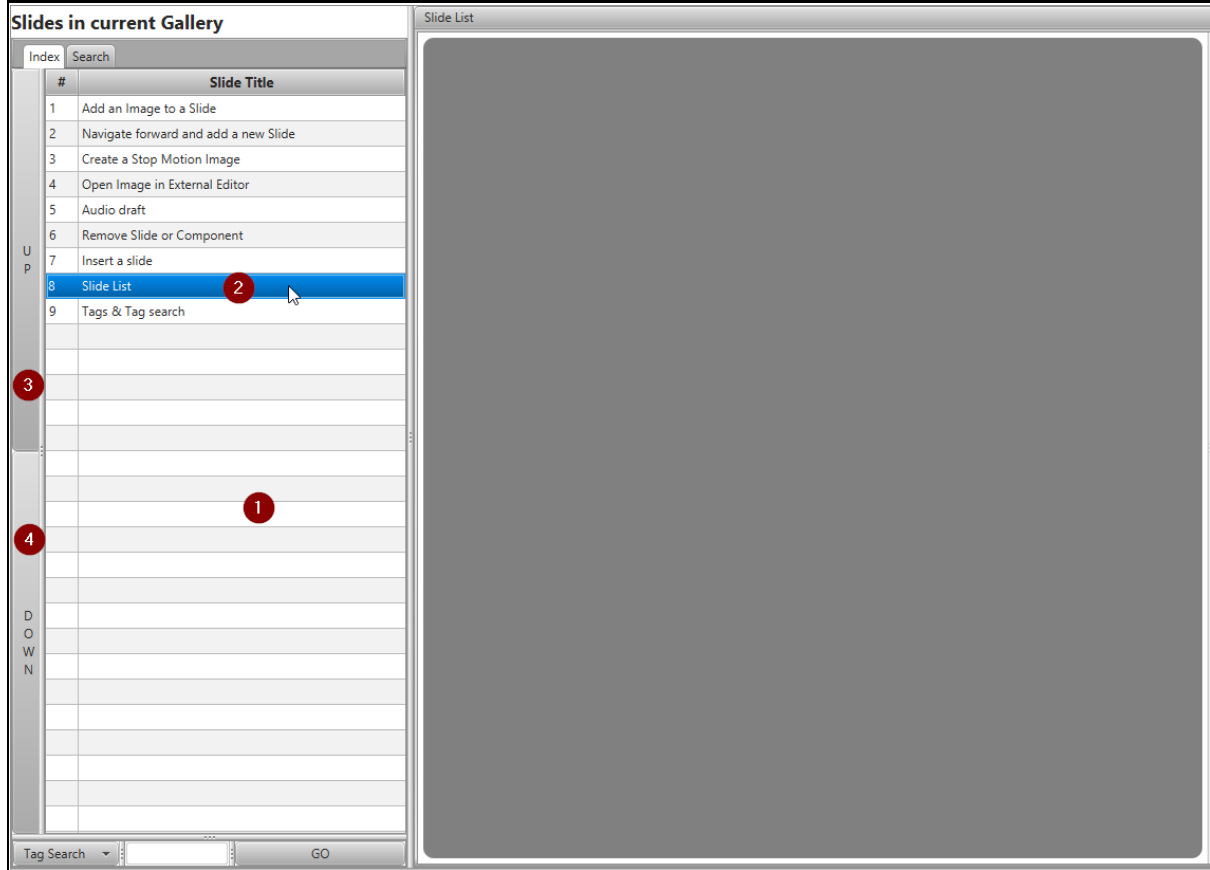


To insert a Slide:

If information needs to be added between two slides, navigate to one of the adjacent ones and click the button **Insert Slide (1)**.

A dialog **(2)** gives you the choice to insert the new blank slide before or after the current one.

Slide List (1) - Basics



Using the Slide List:

The **Slide List** (1) presents a complete overview of all slides in the Gallery. The currently selected slide is highlighted (2) and can be moved up (3) or down (4) in the list by clicking on the respective buttons.

By clicking on an item in the list, the **Gallery Browser** jumps to the selected position in the Gallery.

The **Slide List** also displays the title of each slide, so choosing well-formulated titles makes the navigation easier.

Slide List (2) - Colour Codes

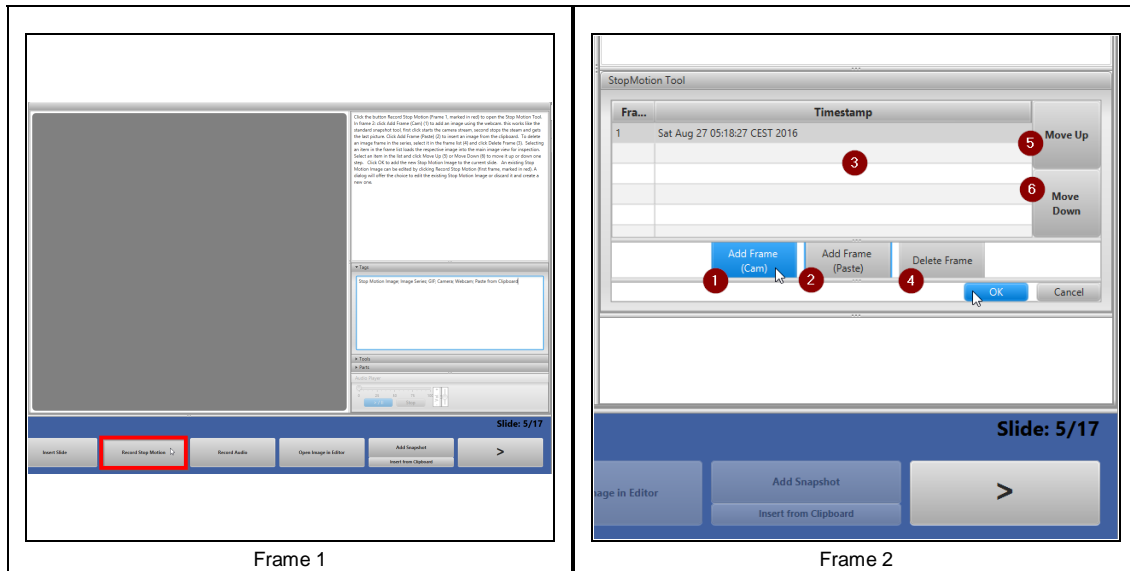
Slides in current Gallery

Index Search			
#	Slide Title		
1	Project: ManuMaker Feature Manual	1	
2	Chapter 1: Introduction	2	
3	Capabilities	3	
4	Intended Use		
5	Chapter 2: Using the Draft Mode		
6	Giving a slide a Title...		
7	Add an Image to a Slide		4
8	Navigate forward and add a new Slide		
9	Add Stop-Motion Image		
10	Open Image in External Editor		

The slides in the list can be distinguished by colour:

- **(1)** (blue grey) is the Title slide of the Project.
 - It must always be the first slide in the Gallery.
 - The title presented in the list is prefixed with "Project: ".
- **(2)** (light blue) denotes a Chapter Slide.
The title presented in the list is prefixed with "Chapter : "
- **(3)** denotes a standard slide in the gallery, which is not currently displayed.
- **(4)** denotes the slide currently displayed in the **Gallery Browser**.
Note: The selected slide is the only one whose colouring extends to the slide's ordinal number.

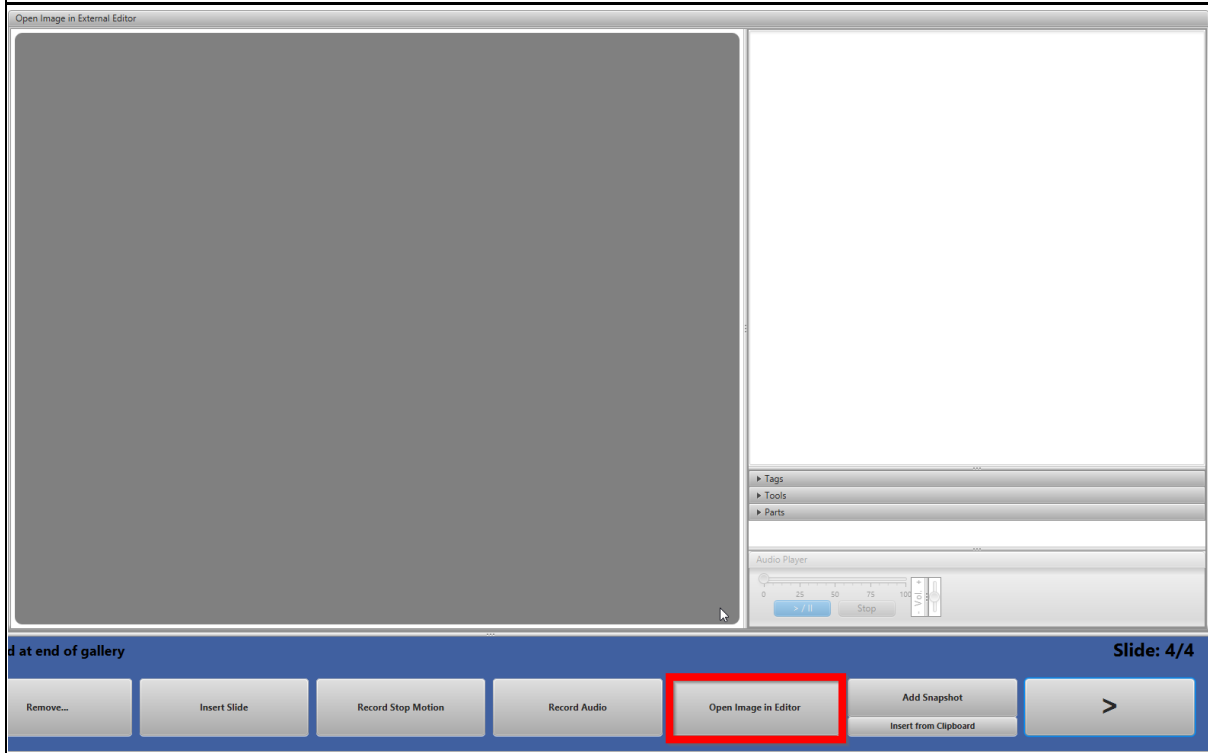
Adding a Stop Motion Image



To add a Stop Motion Image Series:

- Click the button **Record Stop Motion** (Frame 1, marked in red) to open the **StopMotion Tool**.
- In Frame 2: click **Add Frame (Cam)** (1) to add an image using the webcam. This works like the standard snapshot tool, first click starts the camera stream, second stops the stream and gets the last picture.
- Click **Add Frame (Paste)** (2) to insert an image from the clipboard.
- To delete an image frame in the series, select it in the frame list (3) and click **Delete Frame** (4).
- Selecting an item in the frame list loads the respective image into the **Image View** for inspection.
- Select an item in the list and click **Move Up** (5) or **Move Down** (6) to move it up or down one step.
- Click **OK** to add the new Stop Motion Image to the current slide. An existing Stop Motion Image can be edited by clicking **Record Stop Motion** (first frame, marked in red). A dialog will offer the choice to edit the existing Stop Motion Image or discard it and create a new one.

Opening Images in an External Editor



Editing a Captured Image:



NOTICE

- The image is loaded from the filesystem.
- Make sure the project is saved before using this function, otherwise an outdated image may be loaded.

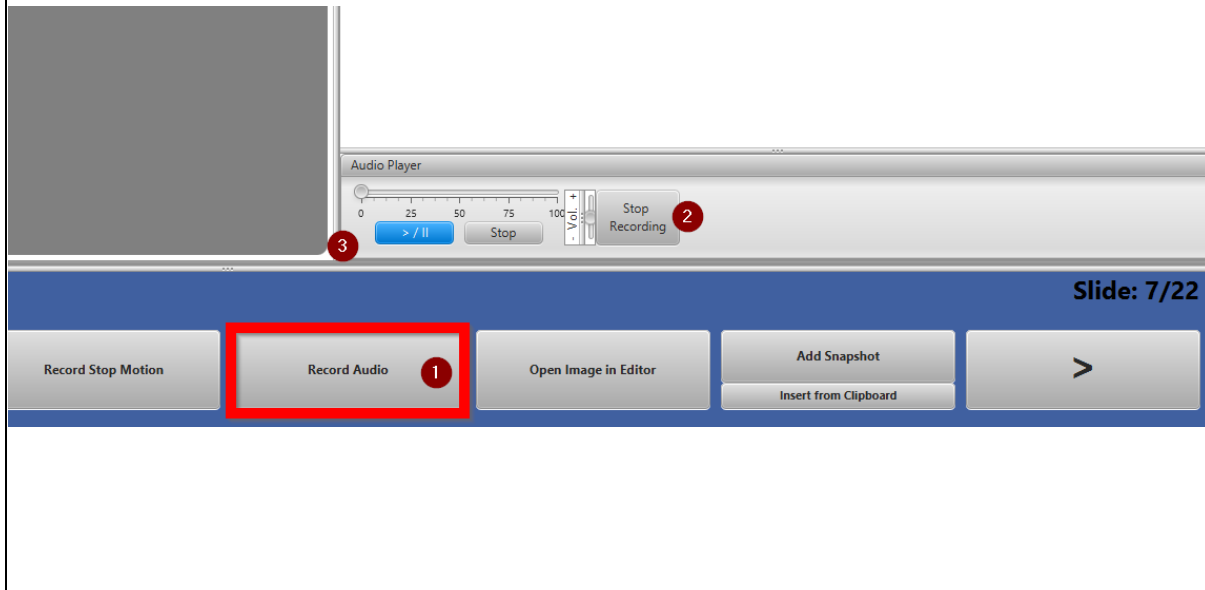
To edit a captured image (be it from Webcam or from the Clipboard), click **Open Image in Editor** (See red frame).

This will open the image in your system's default editor.

To re-insert an image back into the gallery:

- Copy the image to clipboard in the editor
- Insert it into the current Gallery by clicking **Insert From Clipboard**.

Audio draft



Adding an Audio Draft:

To log critical information during a process that requires use of your hands, you can record an audio draft of a steps documentation.

To start recording, click the button **Record Audio Draft (1)** and speak into your default microphone.

When you're done, click the **Stop Recording** button (2), and the Audio clip will be attached to the current slide.

To replay the audio draft, you can use the **Audio Player (3)** available in the **Draft** and **Refine** tabs. The **Audio Draft** is a tool exclusively intended for the documenter, and is hence not available in the **View** tab.

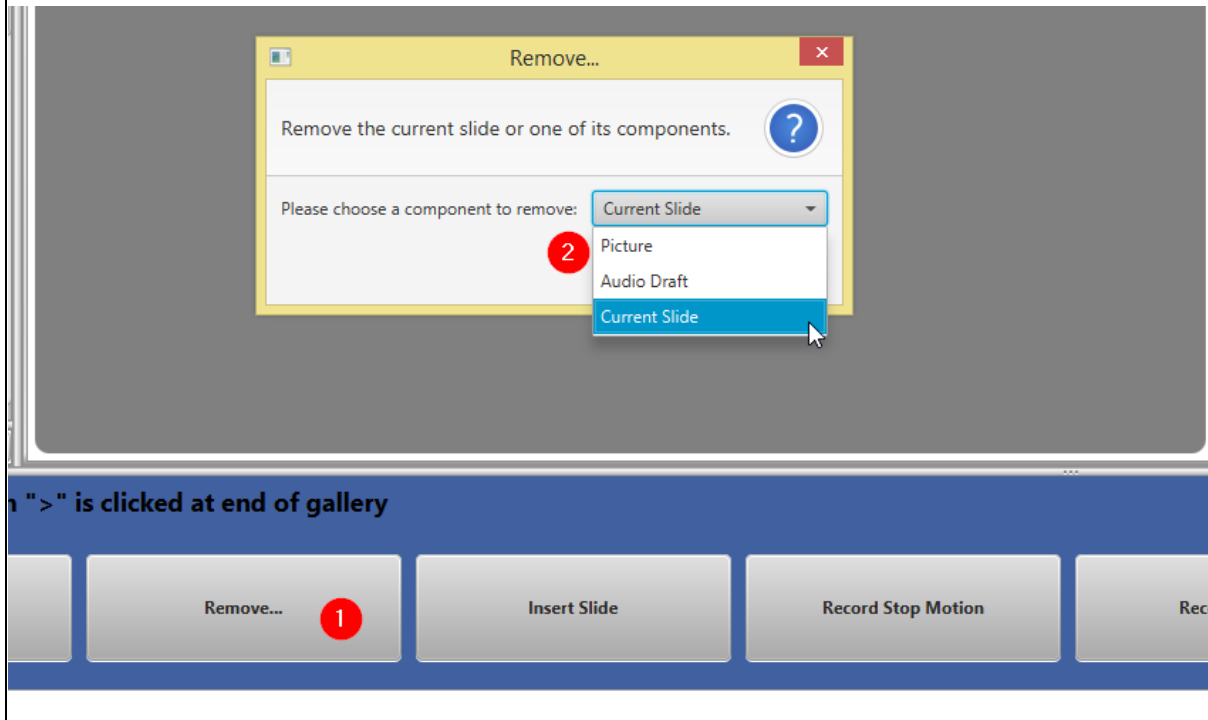
All relevant information from the **Audio Draft** should be transcribed to text during the refinement-phase of the documentation (as of **ManuMaker Version 1.0**, this has to be done manually).



NOTICE

You can store ONE audio clip per slide.
If you wish to overwrite the existing one, just click on (1) again and confirm that you wish to discard the existing audio clip

Removing Slides or Components



To remove the current slide or any of its external components such as the **Picture** or the **Audio Draft**, click on the button **Remove...** (1).

A dialog (2) will show where you can choose which component to delete:

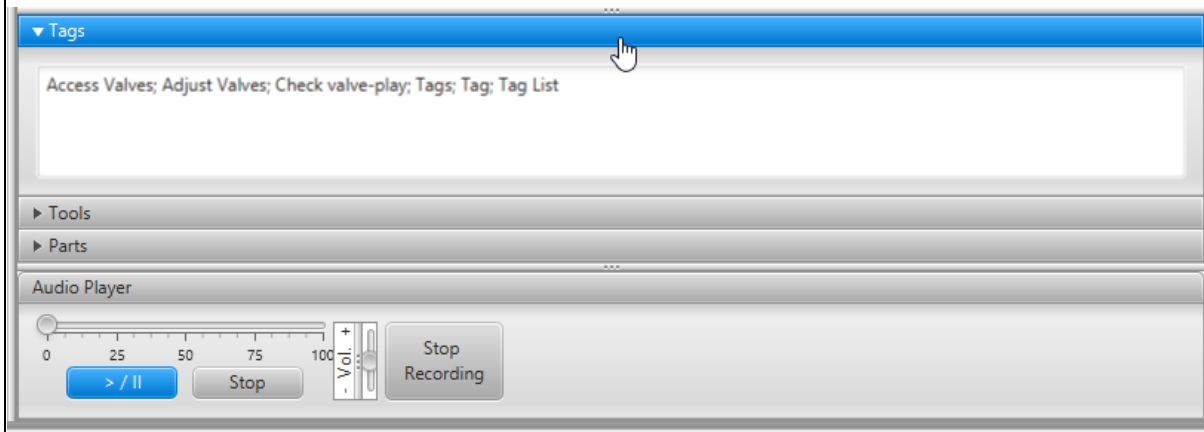
- The complete current slide with all its text, images, audio...
- The current image, in case the slide shall be text-only
- The audio draft



NOTICE

Components and slides are permanently removed. There is no mechanism to get them back, once deleted.

Tag List



Adding Tags to Slides:

All slides have a Tag field. The documenter provides tags for each slide, separated by a semicolon (;).

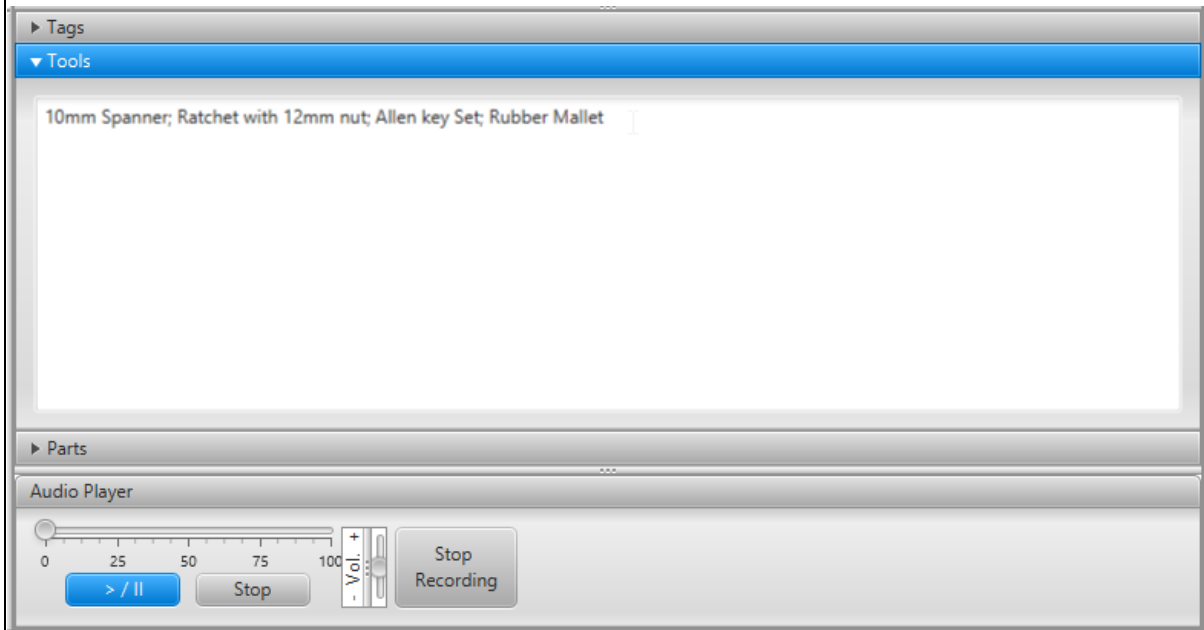
The tags can consist of single or multiple words, and should contain the keywords related to the current slides instructions. E.g. *Gearbox Maintenance; Replace Shaft Seals;*



NOTICE

Include synonyms of the keywords used in the instruction text.
This raises the chance of success for keyword search.

Toolbox



Using the Toolbox:

All Instructional Slides have a Toolbox field.

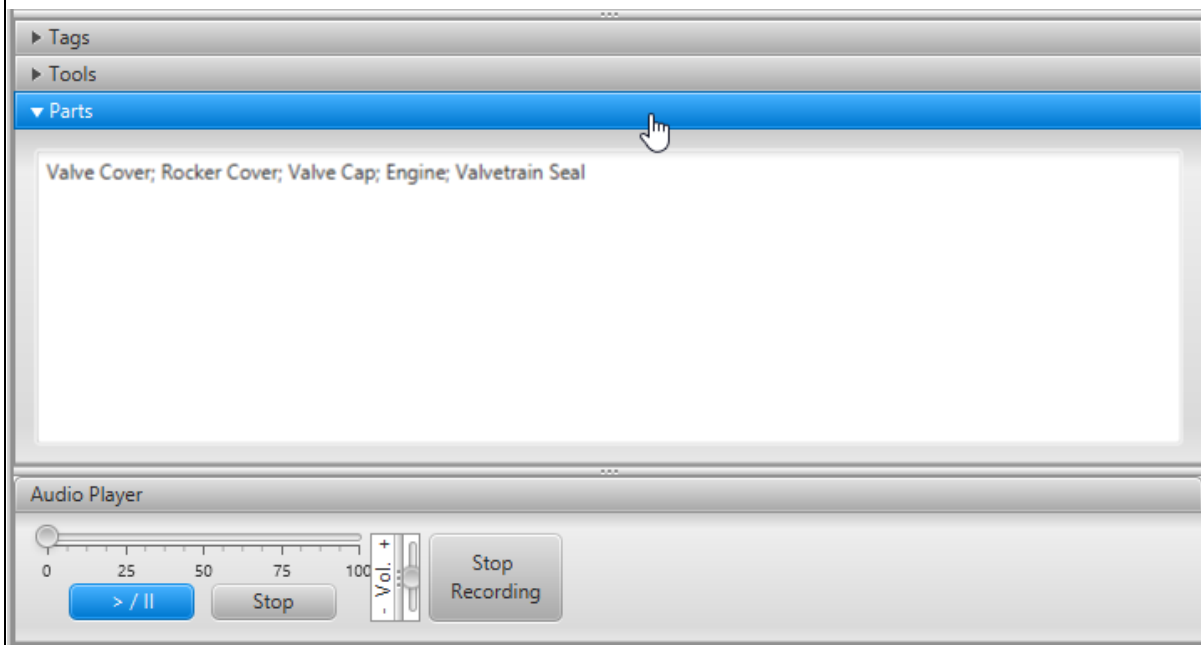
Here, the documenter specifies the tools needed for this specific step.



NOTICE

- Do not add synonyms for tools.
- The tools are compiled into a tool list, different words for the same tool make it less readable.
- Use the most common term for any given tool, and be consistent.

Parts List



Using the Parts list:

All instructional slides have a **Parts List**.

In an assembly manual, the documenter specifies the parts which are added to the assembly in the current step.

In a repair or maintenance manual, the parts being maintained as well as the parts being handled in the process are mentioned.

If the parts have identification numbers, add the numbers to the **Parts List** to enable search by part-No.

Chapter 4:

Using the Refine Mode

**Intended
Readers:**

All users of the ManuMaker application

Author(s):

Daniel Lachmann

Publisher:

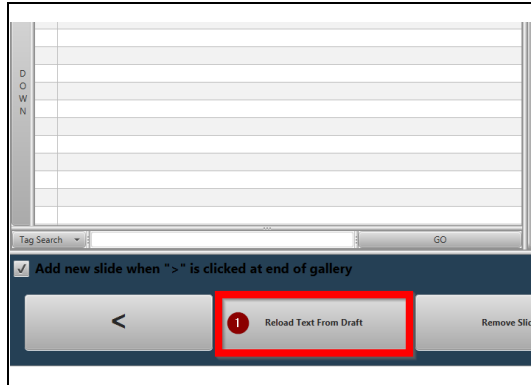
HAW Hamburg

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20099 Hamburg
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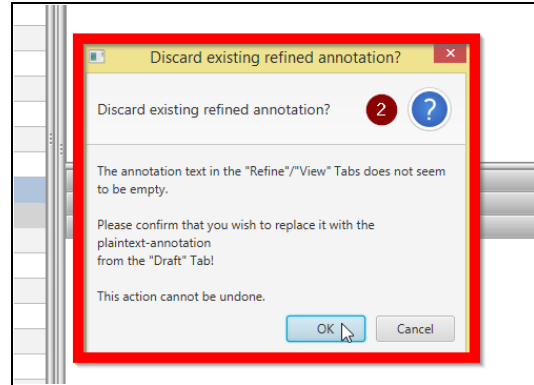
Contact:

Email:
manumaker.dev@gmail.com

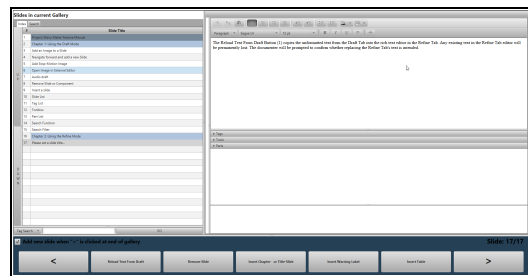
Loading the Draft Text into the Refine Tab



Frame 1



Frame 2



Frame 3

To load the draft text into the rich-text editor in the Refine Tab:

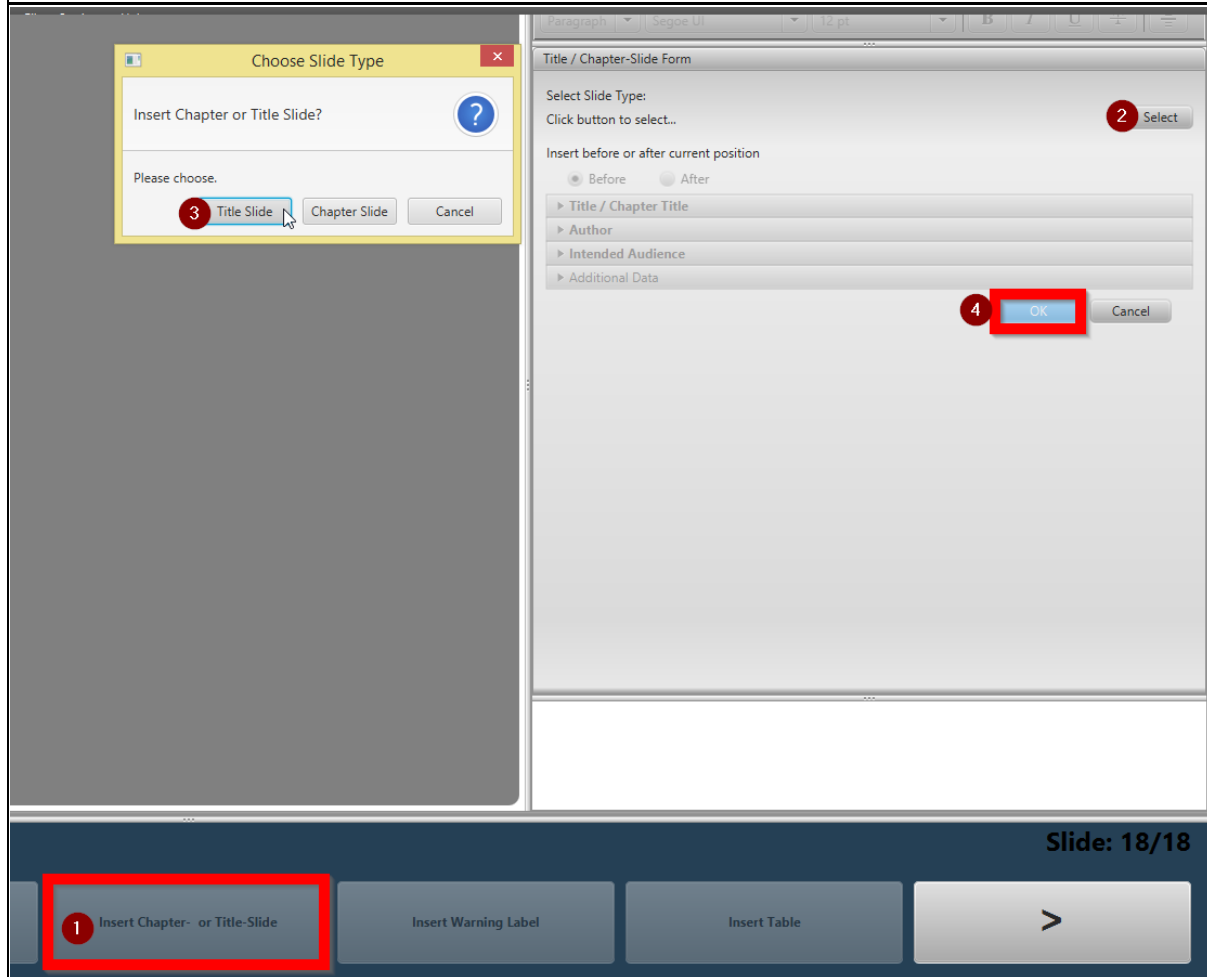
- [Frame 1] Click on the **Reload Text From Draft** button (1)
- [Frame 2] You will be prompted by a dialog (2) to confirm whether replacing the Refine Tab's text is intended.
- [Frame 3] The unformatted text from the Draft Tab is copied into the rich text editor in the Refine Tab.



NOTICE

Any existing text in the Refine Tab editor will be permanently lost.

Adding a Title Slide



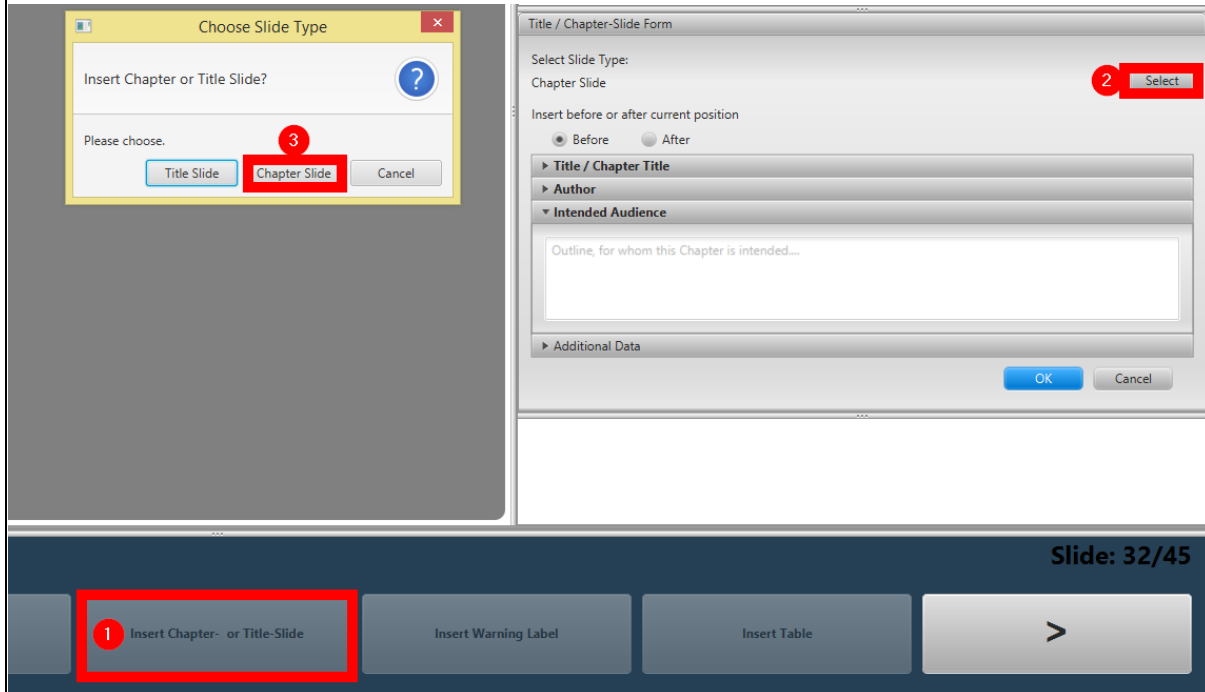
To add a Title Slide to the documentation:

1. Click on **Insert Chapter- or Title Slide** (1).
2. Click **Select...** (2)
3. Click **Title Slide** (3)
4. Confirm with **OK**(4).

The title slide information (e.g. type of documentation, company logo to be displayed) can be set via **Settings->Project Settings** in the top **Menu Bar**.

After modifying the **Project Settings**, the **Title Slide** is automatically updated.

Adding a Chapter Slide (1)



To add a Chapter Slide:

1. Click **Insert Chapter- or Title Slide (1)** in the **Refine Tab**.
2. Click on **Select(2)** in the **Title / Chapter Slide Form**
3. Choose **Chapter Slide(3)** in the popup dialog.

See Next Slide on how to proceed.

Adding a Chapter Slide (2)

The screenshot shows the 'Title / Chapter-Slide Form' dialog box. Red arrows with numbers 1 through 6 point to specific elements:

- 1**: Points to the 'Before' radio button under 'Insert before or after current position'.
- 2**: Points to the 'Title / Chapter Title' text field.
- 3**: Points to the 'Author' text field.
- 4**: Points to the 'Intended Audience' text field.
- 5**: Points to the 'Additional Data' section, specifically the 'Text...' field.
- 6**: Points to the 'OK' button.

Fill out the form:

1. Select whether the chapter should start before or after the current slide **(1)**
2. Type a title in the respective **Text Field(2)**.



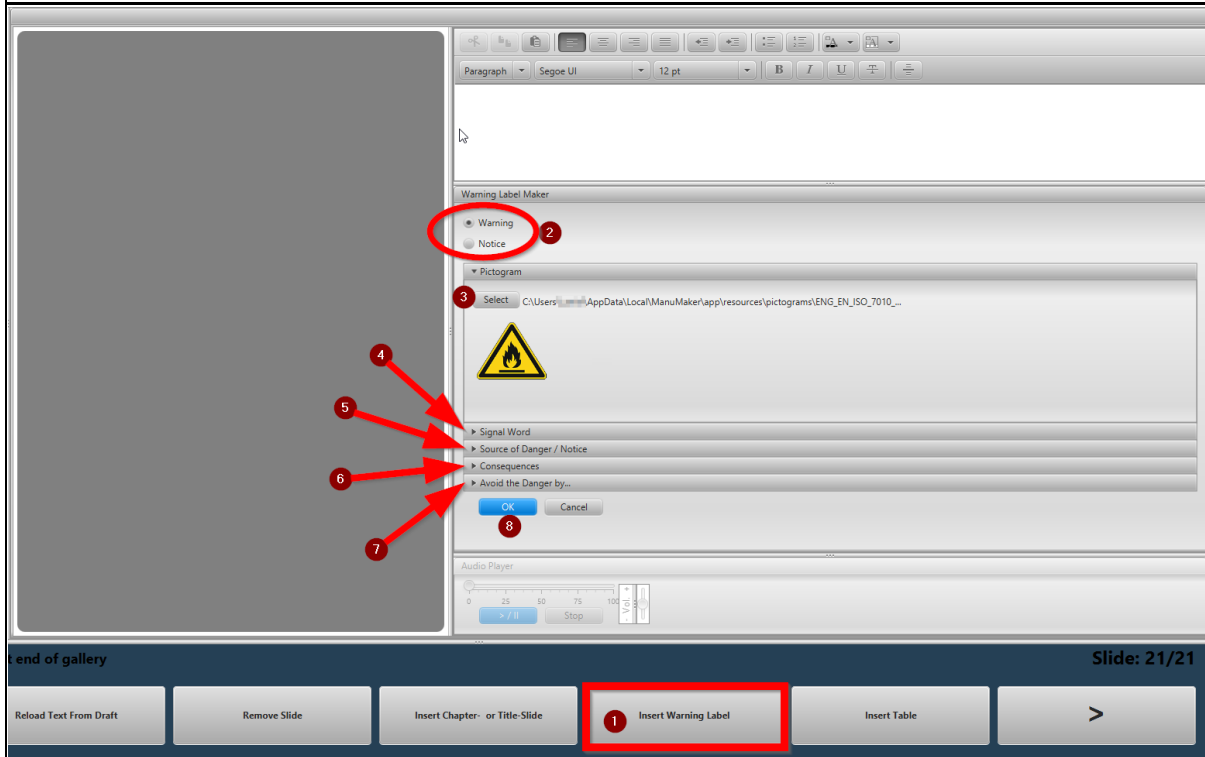
NOTICE

DO NOT add a "Chapter:" or "Chap."-prefix to the Title Field.
All chapter slides are automatically titled with a "Chapter :
"-prefix, where applicable.

DO NOT manually number the Chapters (e.g. in the title field). The chapter number is automatically assigned and updated whenever a new chapter is added to the gallery.

3. Fill out the mandatory fields: **Title (2), Author (3), Intended Audience (4)**
4. There is an extra Text Field **(5)** which can be used for presenting additional information on the chapter slide.
This extra information can be headed by a custom title which will be printed in bold.
5. Confirm your input by clicking **OK** and the new Slide will be added to the Gallery at the specified location.

Inserting a Notice or Warning



To insert a Warning Label or a Notice:

- Click the **Insert Warning Label** button (1)
- Select the desired label type (2).
- Load a warning pictogram from the filesystem (3).
A selection of *EN ISO 7010* pictograms are packaged with the ManuMaker Application.
You can find them in the installation directory of the Application at `..\ManuMaker\app\resources\pictograms\..`
- Fill out all the the accessible text fields in the form. **Notices** only require a **Signal Word** (4) and a **Notice Text** (5), **Warnings** require all fields (4) to (7) to be filled out.
- To insert the label into the text, *right-click* in the desired location in the **Rich Text Editor** on the **Refine Tab**, and select the *Paste* option in the **context-menu**.
- The label is then inserted at the specified position in the text. The pictogram may only be visible after reloading the slide.

Inserting a Table into the Annotation Text

The screenshot shows a 'Table Import Form' dialog box with the following fields and buttons:

- Table Caption** (2): A text field containing 'Comparing different APIs (anonymized) regarding their compatibility with ManuMaker's proposed features'.
- Table Identifier** (3): A text field containing '1'.
- File Import**: A section with the text 'Please select file path...' and a **Choose File...** button (4).
- Buttons**: **OK** (5) and **Cancel** buttons at the bottom right.

Below the dialog box, the 'Refine Tab' interface is shown with a dark blue background. It contains four buttons: 'Insert Chapter- or Title-Slide', 'Insert Warning Label', **Insert Table** (1, highlighted with a red box), and a right arrow button.

To insert a Table:

- Click on the **Insert Table** button (1) in the **Refine Tab**.
- A form opens where you need to specify a **caption** (2) and an **identifier** (3) (e.g. 1.1). The identifier will be automatically be completed with a prefix "Tab. " when the table is generated.
- Next, select a table file to import by clicking **Choose File...**(4).
- The table must be in the .html format, which can be exported from e.g. LibreOffice by clicking File->SaveAs and selecting .html as filetype.
- Click **OK** (5) to confirm your selection.
- The table is now available in the system's clipboard and can be added to the **Refine Text** by right-clicking in the appropriate location and selecting *Paste*.

Example Table

An imported Table:

Tab. 1

API Name	Webcam Selection	Webcam Listing	Capture of Still Images	Allows setting Resolution	License
Webcam Capture API A	Yes	No	Yes	Yes	Apache License 2.0 Or GNU-GPL Version 2
Webcam Capture API B	Yes	No	Yes	Yes	3-clause BSD License
Webcam Capture API C	Yes	Yes	Yes	Yes	The MIT License

Comparing different APIs (anonymized) regarding their compatibility with ManuMaker's proposed features



NOTICE

Do not import very large tables (especially regarding their height), if the manual is intended to be printable.
For tall tables in printing-oriented projects, consider adding the table to a slide without a picture.
The **Export Tool** will then load a template without an image for that slide, so there is more space, and the table is less likely to "leak" onto the next page.

Chapter 5:

Using the View Mode

**Intended
Readers:**

All users of the ManuMaker application

Author(s):

Daniel Lachmann

Publisher:

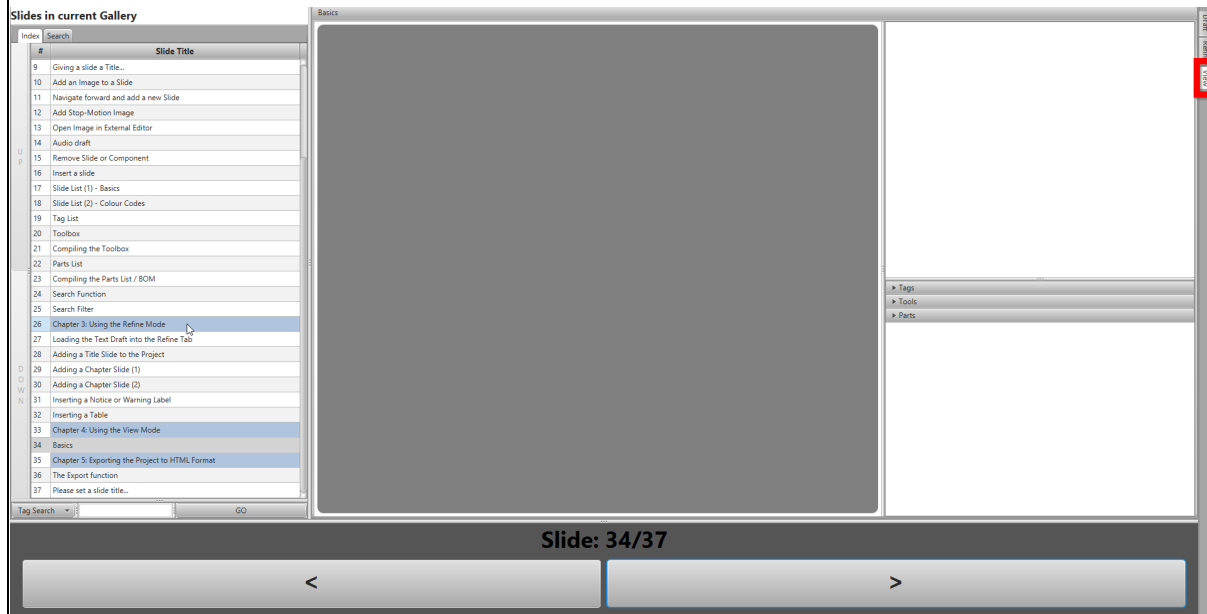
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Contact:

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Summary



Features of the View Mode:

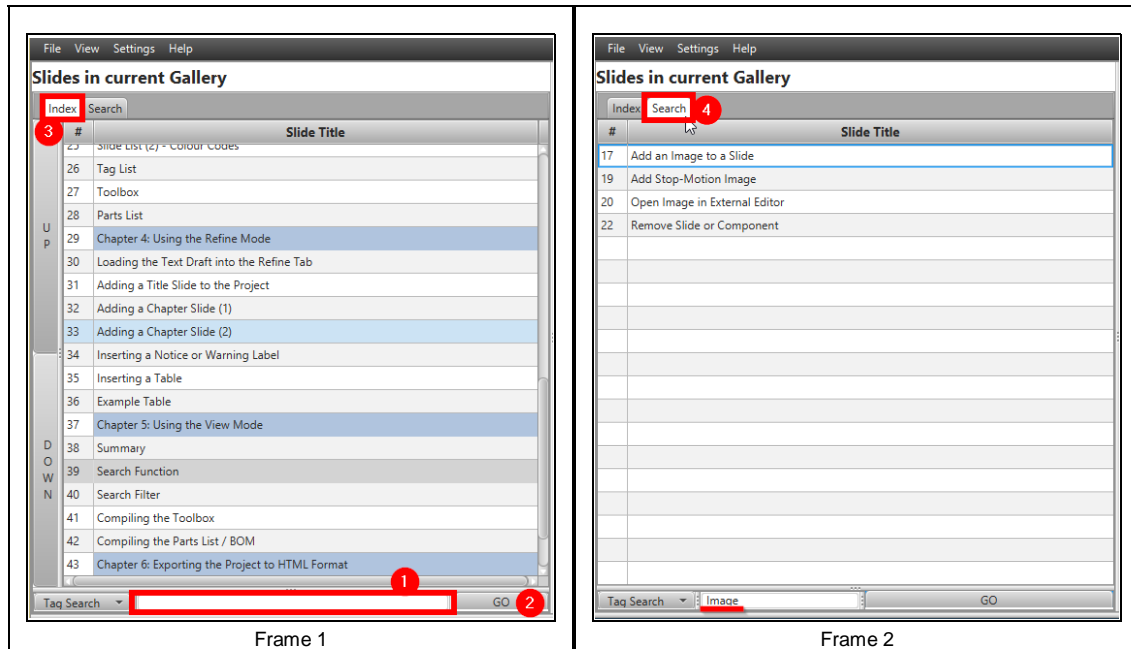
The View mode is intended for the readers of the documentation. It does not offer the user any editing features.

The functions which are available in View Mode are all related to information retrieval, such as:

- Linear navigation through the documentation via the **Forward-/Back-Button** in the **Main Button Bar**
- Direct navigation to a specific slide via a click on the respective item in the **Slide List**
- Search funktion to find only slides which deal with a specific subject

If Stop-Motion pictures are cycling through too fast, go to *Settings->Application Settings* and then open the *General-Tab*. Here you can adjust the duration for which each frame is displayed in Milliseconds (Accepted range is 250ms - 25000ms). Click on *Save* to apply the new settings and close the Application Settings dialog.

Search Function



Searching Tags, Tools and Parts:

The Tags exist to make the documentation searchable by keywords.

To search for all slides related to a keyword:

- [Frame 1] Type the keyword into the **Search Field (1)** below the slide list
- [Frame 1] Click on **GO (2)**.
- Note that the search is case-insensitive.

If initially the **Index Tab (3)** [Frame 1] of the slide list is selected, the **Search Tab (4)** [Frame 2] is automatically opened and all slides matching the keyword or keywords are displayed.

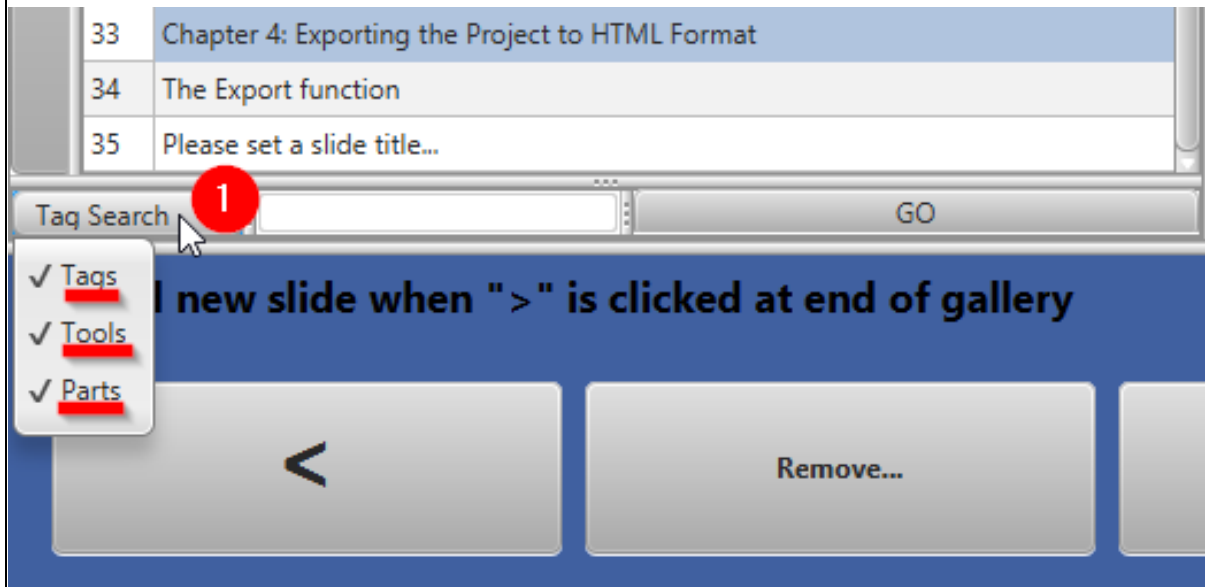
To search for multiple keywords, separate them with a semicolon, to navigate to a particular slide, left-click on it in the list of the **Search Tab**.



HINT

- For a broad search, use short keywords, as the search returns words which **match** or **contain** the searchword.
- Searching for "valve; rocker;" finds all instances of " [...]valve[...]" and all instances of "[...]rocker[...]", while the search word "valve rocker assembly;" only finds exactly that term or terms which contain it.

Search Filters

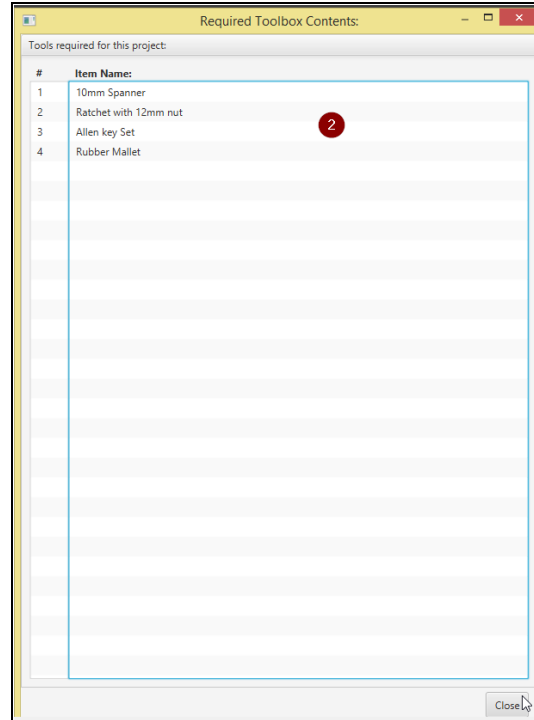
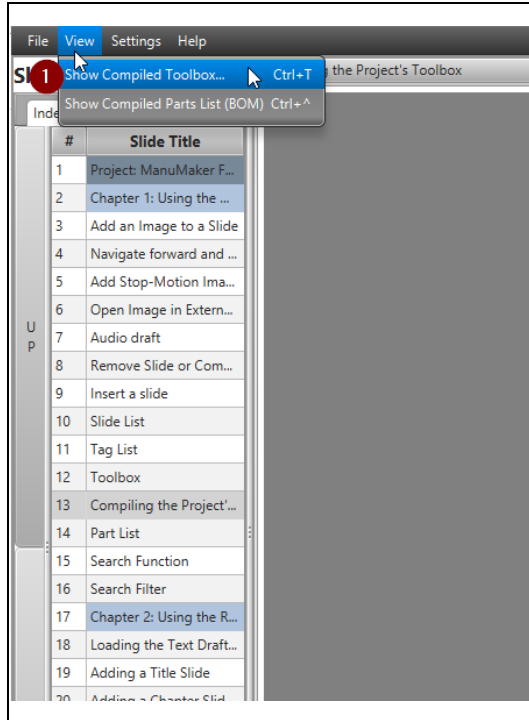


Search by category:

To search only for a specific type of keywords, e.g. parts or tools, click on the **Tag Search** dropdown menu (1) at the bottom left of the slide list, and select the keyword-categories you wish to search for.

By default, all categories are enabled.

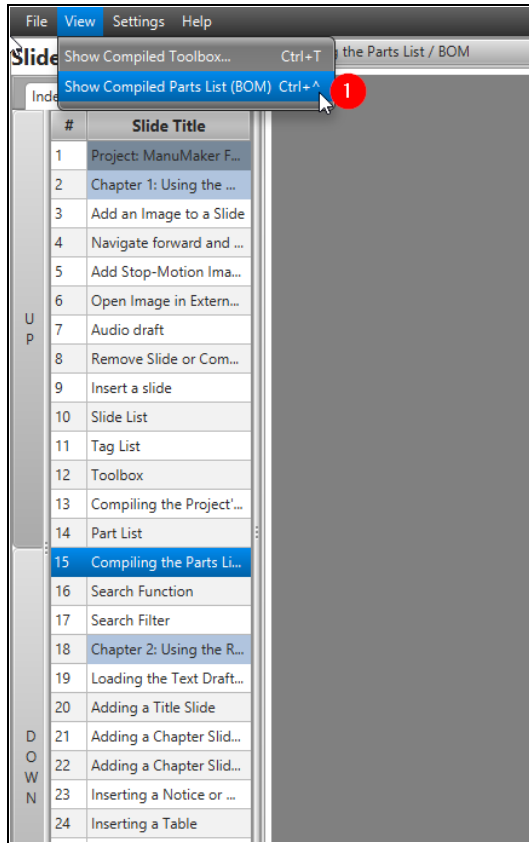
Compiling the Toolbox



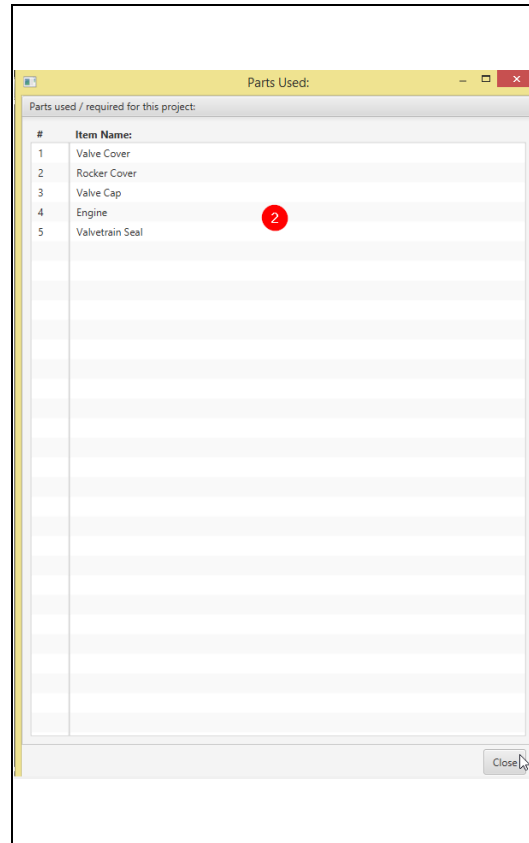
List of all tools used in the Project:

- To show the complete list of tools needed for the work described in this manual, click on **View** in the top menu-bar and select **Show Compiled Toolbox... (1)**.
- The shortcut **CTRL + T** can also be used.
- The **Toolbox Window (2)** will open and the list of tools collected from all slides in the gallery will be displayed.

Compiling the Parts List / BOM



Frame 1



Frame 2

List of all parts used in the project:

1. [Frame 1] click on **View** in the Menu Bar and select Show **Compiled Parts List (BOM)** (1) The shortcut **CTRL + P** can also be used
2. [Frame 2] The **BOM Window** (2) will open and display all the required parts from all slides.

Chapter 6:

Exporting the Project to Printable HTML Format

Intended Readers:

All users of the ManuMaker application

Please Note:

ManuMaker has been made with the intention to create a documentation format which takes advantage the digital medium.

Yet, for the moment, the need to print documentation on paper is still there, so adding an export feature to make the manuals printable was mandatory, from the perspective of usability.

However, not all documentation created with ManuMaker is automatically printable.

This chapter will provide some guidelines on how to create printable documentation in ManuMaker.

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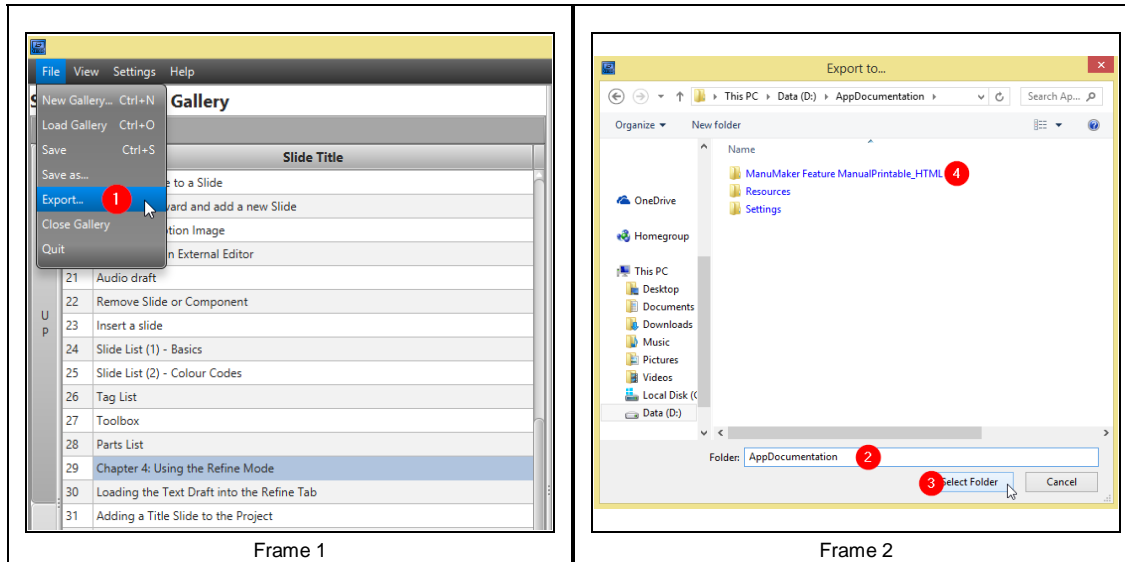
Email:
manumaker.dev@gmail.com

Fundamentals of the Export Function

Some Information on ManuMaker's Export to printable HTML - Function:

- Exporting the native ManuMaker gallery format to a printable form is recognized as a required bridge to the past. Printing is still a requirement in many cases, and it will still be for a while.
- One idea behind this project was to reduce paper waste. Therefore, if you have the opportunity to access a documentation on a portable device (e.g. Tablet PC), please consider that option. ManuMaker's development will go on, and there will be an effort to make the user-interface layout switchable between touchscreen and mouse-mode.
- The most commonly recognized format for portable documents is undoubtedly PDF. The export function does not use it for the following reasons:
 - The rich text editor in JavaFX (as found in ManuMaker's Refine Tab) is HTML based and using existing APIs I would have needed two conversion steps to extract plain text from it.
 - The result would then have been fed into e.g. the ApacheProject's PDFBox.
 - Since the HTML in ManuMaker's editor is more than likely not very clean (start / end tags may be missing or misplaced through editing in the Refine Tabs WYSIWYG Editor and also through import of Title Slides, Chapter Slides, Tables and Warning Labels), it was foreseeable that these conversion API's would not easily be convinced to produce usable results.
- The chosen solution: Export to HTML. This was considered a good idea, because:
 - HTML is a very easy to use format, since it is completely open and the files can be opened and edited in plaintext-editors.
 - As mentioned previously, ManuMaker's rich-text capabilities are HTML based (due to the JavaFX framework used)
 - Everybody with a computer has access to a webbrowser, and an internet connection is not required to view the HTML Documentation on the filesystem.
 - Browsers offer a "print page" function, which charmingly chops the displayed web-page into segments that fit on A4 pages with no regard for aesthetics or continuity..
 - A solution for the chopping: Page breaks are available in HTML
 - The problem with with that solution: Page breaks do not limit the size of a page's content vertically, they only keep the *following* information off the current page.
 - This works fine, if a page's content is *shorter* than the A4 Page. Otherwise it will still leak across pages, pushing the page-break tag to the next, partially filled page.
 - This way the next slide will still start on it's own page - so at least the error does not propagate.
- Despite the noted Difficulties: Page numbering is inserted into the page-template by the **Export Tool**. If Slide 9 spans 1.5 pages, Slide 10 will still be labeled with the correct ordinal (10), despite technically being the eleventh sheet of paper in the manual. There will just be an un-numbered "rougue" page in-between the numbered ones.
- With some discipline in the documentation process, pages can be kept short enough not to leak out of the A4-bounds. To check if a project is printable without page-leaks
 - Export the project to HTML
 - Open the exported HTML documentation in a web-browser of your choice
 - Preview the page-boundaries by using the print-preview function
 - If a page is too long, consider splitting it's information across two slides, or shorten it by reformatting the text
 - Re-export and verify again

Exporting a Documentation Project



To export a Project:

- [Frame 2] Click on *File*->*Export* (1) [Frame 1]
- [Frame 2] Select the Parent Directory (2) [Frame 2]
In this example, the directory of the ManuMaker Project is chosen
- [Frame 2] Click Select Folder (3) to export the project.
- The Exported documentation will be saved in a folder in the selected parent directory.
- [Frame 2] The folder name consists of the Project Title as set in the Project settings, appended by "Printable_HTML" (4) .
- This folder is portable, since it contains all information needed for the HTML-based manual (Images, Logo, etc. are copied into the Printable_HTML folder)

Guidelines for printable Documentation (1): Export Templates

Transferring the Gallery's information to HTML:

To understand the reasons behind the following instructions, the underlying structure of the exported slides in HTML form must be understood.

- During the export process, all the data of a slide is transferred into a HTML template.
- Every slide type (Title, Chapter, Instructional with picture(s), Text only) has its own template file, which is located in the installation directory under *app/resources/printable_html/...*
- The templates (all HTML templates ManuMaker uses for display, print and warnings) are **intended** to be replaced, if a different design is needed to e.g. conform to a company's style guide.
To replace them, please refer to the source code of the respective base files in the directory named above and make sure any replacements contain the same root elements
- Templates can easily be created by using table calculation software for defining the colour, position and size of background and text, use the export / save function which generates the most plain html
- Before you alter any of the html template files, make sure you create a backup first.
- Each template defines the visual appearance:
 - Minimum width of the page (defined by giving the template a white-coloured frame which the viewer doesn't see. otherwise the empty spaces would be shrunk together as HTML does not preserve whitespaces and conventional newlines)
 - fontsize and location of different text elements:
 - This is achieved through the use of placeholder words
 - When the export-version of a slide is generated, the html template is loaded (as a String, using UTF-8 encoding) and all the placeholders are replaced by the relevant slide data via String.replace operations.
 - If a placeholder would be to appear twice, both instances would be replaced with the same data
 - If a placeholder could not be found, no exception will be thrown and the corresponding data will simply not appear in the exported manual
 - Frames around elements and colour-scheme for the page
- The instructional page-templates all consist of the following elements:
 - Header, which contains the slide number (All slides including chapter and title slide are counted, counting starts at **1**)
 - Title of the slide printed in large, bold letters
 - Information data (Image, Text, or both), which usually makes up the largest portion of the slide
 - the placeholder for the information data is followed by a pagebreak (Not part of the slide-specific template, every slide is loaded into the page-template *TMP_Page.html*)
- There are two key aspects to be considered when making a slide printable:
 - Keep contents to a minimum width (which is not a concern unless the template-files are modified)
 - Keep the amount of information small enough to fit on its page, without pushing the page-break over the edge to the next page.

Guidelines for printable Documentation (2): Page Size

The length of a page's content is determined by up to three attributes:

- Height of the image (on slides which contain an image)
- Number of images, for slides which contain **Stop Motion Pictures**, as all of the frames are printed on the respective page.
- Length of the Refined Text.

For regular **Still Images**:

- The images are fit to the width of the template's frame, retaining a few cm of whitespace to either side to facilitate binding and printing
- Aspect ratio will be retained
- Avoid tall, narrow pictures (screen-captures) in projects intended for printing, since they will be stretched to about 15cm width and a corresponding height.
- Solutions for cases where a tall, narrow image format cannot be avoided and there is no space for the text:
 - Name two slides with the same title, and give them index numbers
 - Insert *only* the picture in the first slide, and check that it doesn't leak across pages in print mode
 - if it still leaks: add whitespace on both sides of the image, to make its aspect ratio more manageable
 - See the pages about the Project settings in the chapter *Settings* for reference, where this trick has been applied.
 - Insert *only* the text into the second slide.
- Above solution can also be applied for Stop-Motion Images with many frames, which may fill a whole page by themselves.

For **Stop Motion Images**, the same basic rules apply. The differences:

- Each image is printed in its own frame, with a subtitle denoting the index of every image
- The images are fit to the width of their respective sub-frames (ca. 6cm wide)
- Starting at the first frames, two frames are loaded in a dual template which presents them side-by-side
- If the number of frames is uneven, the last frame will be presented in a single frame centered below the others (same size as individual dual frames)
- Again: tall, narrow images take up a lot of vertical space, but are okay to use if sufficient space is available (See Slide about the *Search Functions* in chapter *Using the View Mode*)
- Images with an aspect ratio around 1:1 are a good way to get as many slides on a page while preserving readability.
 - Please note that capturing an entire screen, annotating it with arrows and then shrinking it to 6cm width is likely to lose its informational value.
 - It is therefore recommended, to only use small sections of the screen or very close-up images with the camera for printable documentation.
- short, wide images are also discouraged for Stop-Motion.

Rule of thumb: The answer to the question "If this screen-capture / camera picture is reduced to 6cm width, can the reader still discern its use and read e.g. position numbers and arrows?" should be "Yes."

For the **Annotation Text**, the number of lines is the deciding factor.

- Manual newlines will be preserved, and need to be used to create whitespace between enumerations and sentences
- Text is wrapped automatically when a line is longer than the page-width, so the number of lines visible in ManuMaker's annotation text box may not be as many as in the exported documentation
- It is recommended to separate an overly long annotation-text into two or more subtopics of equal or similar hierarchical level, and distribute those across the same number of slides.
- Inserting some whitespace is more helpful to the reader than keeping the pagecount low.
- **NOTE:** If page leaks occur for no visible reason (If the print-version contains blank pages):
 - check the preceding slide for rogue newlines after the last paragraph / warning label
 - Delete all blanks up to the last letter / boundary of the last warning label

