**VRdirect** 

# VRdirect

## **VRdirect User Guide**

February 2023 | support@vrdirect.com

## **Chapter overview**

#### **VRdirect**

## A. Preparation

- Concept
- Storyboard
- 360° Production List
- 360° Camera Guide
- Tips for 360° Production

## **B.** Production

- Specifications & Formats
- Alternative Options for 360° Material
- Editing 360° Content
- 2D Media & Assets

## **C.** Virtual Reality Creation

- Overview of the VRdirect Studio
- Creation Area
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    - Upload VR Project
    - Publish VR Project
  - Distribution of the VR Project
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## **Preparation:** Concept Creation

#### Develop a good concept for the VR project!

- What is the VR project about?
  - > What is the presented use case? (Training, onboarding, marketing etc.)
  - What should be achieved with the VR project? (More efficient processes, secure working conditions, ... etc.)
- Determine the content of the VR Project
  - > What type of production is needed? (Professional? DIY?)
  - > Which media types should be used? (Video, images, 3D objects, ...?)
  - > How should the user be guided through the project? (Linear or open guidance?)
  - What design style should it have? (Professional, suitable for children, corporate Cl, ... ?)

#### Definition of target group

- > What is the target group? (Age range, VR-experienced, etc.)
- > Which devices are mainly used for cconsumption? (Web, mobile, VR glass)
- > How large is the audience? (Internal / external use? Marketing campaign?)

#### Selection of distribution channels

- VRdirect App (For mobile devices and VR devices)
- > Web Player (For the web browser on all devices, website integration?)



Figure 1: Example of project structure

#### **Preparation:** Concept Creation

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#### Develop a good concept for the VR project!

- Structure of VR project (see figure 1)
  - > Approximately how many scenes / chapters are needed?
  - > How are these scenes connected to each other?
  - > Is (external) help needed to realize the project?

#### Create a compelling story

- > What story should the VR project tell?
- > How can your ideas be transferred to Virtual Reality?

#### Create a storyboard (see figure 2)

- Which scenes must be included?
- > The further the storyline is defined, the better.
- Develop a detailed timetable for the production (see figure 3)
  - When should production begin?
  - How long should the production take? (Consider pre- and post-production)
  - > Is there enough time for feedback loops?



Figure 2: Example of storyboard



#### Figure 3: Example of timetable

#### **Preparation: 360° Production List**

#### Create a detailed production list for the project!

- Purpose of a production list
  - The production list results from the concept & storyboard planning and helps the coordination of the upcoming 360° production (camera shoot).
  - The parameters must be clarified in advance as detailed as possible - especially if several people are involved in the production.
  - > It is recommended to visit the locations on-site in advance

#### Components

- General information about course of action
- Overview of all scenes
- > Required 360° content in the scene (images or videos)
- Required staff / persons (actors, production team, ...)
- > Required tools and equipment

**Note:** The tips apply to both - a professional production and a "do-it-yourself" production.

For virtual tours it is recommended to mark the stations / camera positions on a floor plan (see Fig. 5).

#### 360° Produktion - Liste

Produktionstage:	15 Februar, 16. Februar 2021		
Drehorte:	Firma Hauptsitz: Firmenstraße 1, 81234 Stadtname		
	Firma Lagerhalle: Beispielstraße 3, 65473 Stadtname		
Personen:	Max Mustermann (+49 XX XXX XX)		
	Erika Mustermann (+49 XXX XXX XX)		
Zeitplan:	Dienstag:	09:00 - 12:00 Bürogebäude 32	
		13:00 – 17:00 Kafeteria	
	Mittwoch:	09:30 – 11:30 Lagerhalle A	
		11:40 - 13:00 Lagerhalle B	

Szenen	360° Material	Notizen & Vorbereitung
Szene 1 – Intro Dienstag, 09:00 – 12:00)	360° Bild vor Bürogebäude 32	Außenansicht aufräumen, Gebiet sperren. Fenster putzen
Scene 1 – Begrüßung Dienstag, 09:00 – 12:00)	360° Video Begrüßung Geschäftsleitung vor Bürogebäude 32	Gleiche Position wie Szene 1, Sprechertext vorbereiten und Darsteller briefen
5		

#### Figure 4: Template of a 360° production list



Figure 5: Position markers in floorplan

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Download

Link

template here:

## **Preparation: 360° Camera Guide**

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#### What to look for in a 360° camera

- Special features in 360° cameras
  - > High 360° image and video resolution
  - Stabilization for moving images
  - > Support for dark and night shots
  - Stitching options (automatic stitching or manual stitching?)
  - More lenses = higher quality of the image but also more complicated handling

#### Cameras for beginners

- Insta360 ONE R (ca. 400 EUR)
- Insta360 ONE X2 (ca. 470 EUR)
- GoPro Max (ca. 500 EUR)
- Advanced / professional cameras
  - Ricoh Theta X (ca. 1.000 EUR)
  - Kandao QooCam 8K Enterprise (ca. 2.000 EUR)
  - Insta 360 Pro 2 (ca. 5.000 EUR)



## **Preparation:** Tips for taking 360° images and videos

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#### General tips

- Use as much lighting as possible.
- > Use a stable tripod to ensure the camera is centred and steady
- > Set the camera at a person's average eye level (approx. 1,60 meters)
- > Do not position the camera too far or too close to the subject / object of attention
- Clear the space around the camera and make sure that people in the background are not visible in the scene (or staged on purpose)

#### 360° Images

- Ensure that you also take "neutral" 360° photos (e.g. for a menu or intro scene)
- > Rather take too many photos than too few

#### 360° Videos

- When taking a 360° video it is recommended to also take a 360° image in the same camera position (in case the video appears laggy or has poor quality)
- > Please consider that most 360° cameras take better quality images than videos
- Only record video sequences that are worth showing, as some viewers may lose interest over time
- > Make sure the 360° video is sharp, to the point and rather short
- > Rather record too many videos than too few



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## **Production:** Specifications and Formats

#### Use these specifications and formats when importing content into the VRdirect Studio!



#### 360° images

- > Projection type: Equirectangular monoscopic, side-by-side, top-bottom
- quality: min. recommended 4096 x 2048px, as JPG or PNG



#### 360° videos

- > Projection type: Equirectangular monoscopic, side-by-side, top-bottom
- Quality: 4K (recommended) = 4096 x 2048px, as MP4 .h264 encoded
- > 30 fps, 12 mbps bitrate

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#### 2D images

- Format: JPG or PNG (with transparency)
- Stereoscopic, side-by-side, top-bottom, JPG or PNG
- > Quality: min. recommended 1920 x 1080px



#### 2D videos



- Format: MP4 (no transparency)
- Audio format: MP3 stereo mix
- Quality: min. recommended 1920 x 1080px

#### Audio



- > Format: MP3 stereo mix recommended: 128 Kbps
- 1,2,6 and 8 audio channels for AAC codec are supported

#### 3D models



- Format: .glb or .fbx, including textures
- > Animations of the model baked into the file are supported





#### Download specification sheet:



#### **Production:** Alternative Options for 360° Material

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**Existing 360° content from Stockfootage libraries** 

- 360° images and 360° videos
  - Bigstock (Link)
  - Adobe Stock (Link)
  - > Shutterstock (Link)
  - Pond5 (<u>Link</u>) royalty-free, also offers music



#### 3D Modelle

- > Turbosquid (<u>Link</u>)
- Sketchfab (<u>Link</u>)
- cgtrader (<u>Link</u>)



## **Production:** Editing 360° Content

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#### Edit 360° content for a professional touch!

Optional

#### Stitching within the 360° camera

- The so-called "stitching" combines the individual shots from the camera lenses to create a 360° image or video
- Most 360° cameras perform stitching automatically after an image or video has been captured
- Look for this feature when choosing a 360° camera
- Manual stitching can get very time-consuming and therefore only recommended for professionals

#### Tools for professional editing

- Use of professional design software for adjustments to brightness, contrast, color correction, video cutting ... etc.
- Adobe Photoshop (<u>Link</u>)
- Adobe Premiere (Link)
- GIMP (Link)



GIMP

## **Production: 2D Media & Assets Assets**

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Enriching the VR project with media and graphics

- Creation of graphics, buttons, icons, text boxes ...
  - The creation of such 2D assets can be done via common software (e.g. PowerPoint) or other graphical design programs
  - > In PowerPoint, you can export the 2D assets as a PNG image and then add them to the VR project



#### • Other possibilities

- > Find buttons, images, icons and more on the internet (Flaticon, Pixabay, ...)
- Use the VRdirect icon library (see next slide)

#### **Production: 2D Media & Assets**

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#### The VRdirect Icon Set is already pre-installed in the VRdirect Studio



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#### **Overview of the VRdirect Studio: "Create" section**



#### **Overview of the VRdirect Studio: "Share" section**





## **Overview of the VRdirect Studio:** Editing a project



#### **Create Section:** Adding a Scene

- If you open the VRdirect Studio for the first time, you will see this view.
- You start the project by adding 360° content either by drag & drop or by clicking in the large field.
- Multiple 360° images are also supported at once to create projects even faster.
- A 360° scene is automatically created from the 360° content.
- Alternatively, you can click the plus button "Create first scene" to create an empty project.





What is a scene?

A scene represents a 360° environment in which the user is standing. Scenes are filled with 360° images or videos.

#### **Create Section:** Automated project creation

- If several images are added at once, this dialog for preparing the project will open in the next step.
- Standard icons for the scenes can be activated or deactivated here. This option automatically links all scenes together and adds a previous/next scene and home button to each scene. This allows tours to be created in a matter of seconds.



- In addition, the order of the scenes can be set by rearranging them.
- To save the order and default icons you should select the button at the bottom of the page.



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#### **Create Section:** Selecting the 360° content for the scene

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 Once a scene has been created (here in the example: via + button in the Storyboard view) it can be edited in the scene properties of the right sidebar.



- To keep the project structured, it is recommended to name the scenes in the "Name" field.
- 360° content (images or videos) can be dragged and dropped into the highlighted area in the sidebar or selected by clicking on it.



#### **Create Section:** Add more scenes

- To expand the VR project, you can add more scenes.
- This can be done repeatedly by clicking on the plus button.
- Scenes can also be duplicated intuitively to create projects even faster.



#### **Create Section:** Scene connection

- To move from room to room, as in the example, insert a connection between the scenes.
- Two scenes are connected to each other by selecting the "Destination scene" in the sidebar under "Scene connection".
- A connection between two scenes is created as soon as it is visible in the storyboard view by arrows.
   The connection starts automatically after the seconds specified at "Seconds to connection".
- Connections can also be actively triggered by interactions to move the user from room to room. This interaction must first be created as an object in the respective scene.



#### **Create Section:** Adding an object

- To trigger the interaction of a scene change (i.e. jump from scene to scene), you need an object that the user can click on - i.e. a trigger for the interaction. However, objects can also be placed without interaction, e.g. simply to be visible.
- Back in the first scene, a click on the plus button adds a new object to the scene. This object can be placed and scaled freely in space via drag and drop/mouse interaction.
- In the object properties (sidebar on the right) you can set and adjust various parameters of the object.





#### What are objects?

Objects are elements within a 360° scene that can trigger an interaction (e.g. linking to another scene, fading in a text/image, playing music/video, etc.) or simply be visible.

#### **Create Section:** Selecting content for objects

- An initially empty (image) object can be filled with content in several ways, which can be seen in the overview on the right.
- On the one hand, local files can be added via drag and drop or by clicking on the highlighted area.
- In addition, images and videos from the Internet can be included by inserting a publicly accessible URL.
- With the asset library, you also have direct access to numerous graphics that you can freely use in any of your projects. A click on the desired graphic places it in the object.



## **Create Section:** Note on objects

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#### **Options for creating graphics (for objects)**

- > The creation of graphics for objects is done by 2D assets (icons, buttons, graphics, etc.).
- > The creation of such 2D assets is done using common software (e.g. PowerPoint) or other graphics programs.
- > In PowerPoint you can export the 2D assets as PNG and then add them to the VR project.



#### **Other options:**

- Use existing 2D content
- Find buttons, images, icons and more on the web
- Use the asset library from VRdirect

#### **Create Section:** Add an interaction

- To insert an interaction, the object is selected, and the interaction is defined in the right sidebar (under "Interactive events").
- For an interaction 3 parameters have to be set:
- 1 The trigger (the way the interaction is triggered by the user on the object).
- 2 The action (the type of interaction e.g. activate object).
- (3) The target object (what does the interaction refer to)
- Optionally an animation effect

#### What are the types of triggers?

- Click = user clicks on the object
- Hover Over = user hovers over the object with mouse / controller / gaze
- Hover Out = user moves away from the object with mouse / controller / gaze



#### **Create Section:** Trigger scene connection with object

- In order to trigger a scene connection with an object, e.g. by clicking on a button, this must be created in the object properties.
- To do this, click on "Scene connection" in the object properties and select the desired target scene.
- In addition, the type of interaction can be specified. "Click" is selected as the default.
- In addition, the direction in which the user looks in the following scene can be defined ("Destination View").



#### **Create-Section:** Add a time event

- So-called "Time Events" can also be set in each scene to trigger an interaction.
- To do this, simply select the respective scene and expand "Time Event" in the scene properties (in the sidebar at the very bottom) and add an event.
- In a Time Event, the timer can be set to start the interaction (i.e. the seconds until the event). Example: 3 seconds after the user has entered the scene, ... should happen.
- Then, as with interactions, an action must be selected and a target object to which the action refers.



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**For which interactions are time events suitable?** Time events are particularly suitable for guiding the user through a VR project in a time-based manner or for gradually fading in text elements in the scene.

#### **Create Section:** Make an invisible object appear

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- For example, to make an object appear.
  First add a new object to the scene
- Then click the checkbox at the bottom with "Invisible at start" in the object properties. This makes the object hidden (not visible) when you enter the scene.
- To show the object again, a corresponding interaction is necessary - either via a second object or via a time event. The action "Show object" is necessary for this.



What are invisible objects suitable for? An invisible object can be, for example, a video that is only displayed and played once the user clicks on a "Play" button. In that case, the video object must be invisible first.

#### **Create Section:** The background scene

- The background scene is a scene that is not visible on the storyboard. It runs in the background of the project but is editable like a normal scene.
- It is located behind the second icon in the sidebar.
- All objects, interactions and time events in the background scene are visible and available throughout the project. (e.g. a music object that is in the background scene runs throughout the project and does not reload in each scene).





#### **Create Section:** The Object List

• The object list is located behind the third icon in the sidebar.

VRdirect)

Save Project

Create

project.vrprj >

Share

- All objects that are placed in the current scene appear as a list item in the object list.
- This helps when having very extensive scenes. Clicking on the object in the list displays it directly in the editing area.
- In addition, objects can be deleted, duplicated, locked (to protect against accidental editing) and temporarily hidden here.



**VRdirect** 

Preview

Share

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#### **Create Section: Comments**

- The comment function is located behind the fourth icon in the sidebar. It is possible to leave comments for a scene. For example, as a note to yourself or as feedback when working on a project with colleagues.
- Comments are always added to the currently selected scene.
- The icon in the upper right corner can be used to delete multiple comments at the same time.



#### **Create Section: Add external links**

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- The interaction "Open URL" allows to open an external link in a new browser window.
- Such external links can trigger for example the display of websites, chat windows or PDF downloads.

Notice!

For the "Open URL" feature - the end user must have a stable internet connection when viewing the VR project.



#### **Create Section:** Preview of the VR project

- A preview of the built VR project is possible at any time in order to test/check the project and all interactions locally.
- To do this, click on the "Preview" button in the toolbar.
- This opens a new window in which the VR project is displayed from the perspective of a user (Web Player view).



## **Create Section:** Upload VR project from create section

- Please first save the VR project in the creation area (via the toolbar).
  → will be saved as a .vrprj file.
- Then click on the "Share" button in the toolbar. Now the project will be uploaded.
- Once this is complete, a message "Project uploaded" will appear with the "View Details" button, which must be clicked to provide details about the project in the next step.



#### Hint!

In the "Share" area, projects that have already been uploaded from the cloud can be edited or updated from anywhere, regardless of location. They appear in a list after they have been uploaded.

## Share Section: Upload an already existing VRdirect project

- An already existing .vrprj project file can be uploaded manually via the Share page.
- Select the project (.vrprj file) via the "Upload" button (top right).
- All media files and assets will be prepared for publishing in this step. After uploading, the data will be processed and made available for all devices.
- It is necessary to continue with the next steps.



VRdirect) STUDIO Create project.vrprj X Share Untitled X	⊑ Upload ≗
General Information	₽
Untitled Author	Drag and drop project preview image or click to select a file

## **Share Section:** VR project details

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- The uploaded project appears as a new tab with the new project.
- Here you can edit parameters and additional information for the project (meta data). For example, a project author and description, as well as adding a thumbnail image for the project.
- All meta data in the upper area must be actively saved using the "Publish unsaved changes" button, which appears in a yellow box on the right.





What does the yellow box on the right side mean?

The boxes on the right are so-called "status information" and indicate whether a project is being processed, is ready for sharing, has already been published or whether changes need to be saved.

## **Share section:** Publish VR project

- In the next step, the VR project can be published via the button in the yellow box "Publish changes".
- After a successful publication, the status of the project is changed, and you have the possibility to "take back" the project at any time by unpublishing it.
- The published project can be updated at any time using the "Edit" (opens edit mode) and "Upload" (for uploading a .vrprj file) buttons. In this case, the upload and processing will start again.
- The published project is now ready to be shared via the distribution links.



## **Share section:** Share VR project

- The distribution links make it possible to share the published project with a target group.
- 1 The project code can be entered into the VRdirect app\*. It takes the user directly to the VR project, which can then be downloaded and viewed. In the app, one can also view the content offline at any time.
- 2 The URL (Web Player Link) can simply be opened in a web browser and leads the user directly to the VR project. An Internet connection is important here.





\* The **VRdirect app** can be downloaded from the <u>App Store</u> or the <u>Google Play</u> Store, as well as the Quest, Pico and HTC Vive Store.

#### Share Section: Integrate VR project into website

- The VR project can be integrated into any website, just like a YouTube video, by embedding the project via the "Embed Code".
- To do this, click on the "Embed Code" icon below the Web Player link. This will open a new window with the embed code generator.
- It lets generate the so-called HTML snippet (iframe), which must be inserted into the source code (HTML) of the desired website.
- Here you can adjust additional parameters, such as the size of the window or the full-screen mode.





#### Share Section: Invite selected users to the VR project

- To make the VR project accessible only to selected people, the so-called "Collaborate with others" feature can be used.
- To do this, click on the "Invite User" button.
- A new window will open where you can enter the email address of the user you want to invite.
- Here you can choose between the roles "can view" (the project will then appear for this person to view in VRdirect Studio) or "can edit", for co-editing rights (except uploading the project).

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In order to use the "Collaborate with others" feature, it is necessary that the invited user also has a VRdirect account, as the shared project will appear in the VRdirect Studio. An invitation email will be sent automatically.



## **Distribution of the VR project:** Three options





The published VR project can be viewed by the end user via several options

## **Distribution of the VR project: Web Player**

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Start the VR project via the Play button (in the middle)



Pause the VR project at any time (bottom center)



Activate the full screen mode in the lower right corner to see the VR project in full screen mode



Temporarily disable or re-enable audio for the entire project.



- Navigation within the VR project:
  - In the 360° environment, you can look around to the left and right by dragging with the mouse (Mouse Drag).
  - In the 360° environment you can zoom in or out with the mouse.
- The small white arrow (at the bottom) can be used to display the control elements (pause, full screen, VR, ...).

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Switch to virtual reality mode **on the smartphone** by clicking on the VR icon at the bottom left (e.g. for Google cardboard)





Hint!

The Web Player also works on the smartphone, the tablet or in the VR goggles, i.e. everywhere where a web browser can be opened.

## **Distribution of the VR project: App**

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The app is available in the Apple and Android Store and can be downloaded for free for iOS and Android devices.



Once the project is found, confirm the addition again via "Add VR Project".





The project will then appear in the app and can be downloaded via the download button.



Click on "Add project" (plus button). Then enter the VR project code or scan the QR code.



Once the VR project has been downloaded, it can be viewed. It is recommended to turn the smartphone into landscape mode for this.



## **Distribution of the VR project: App**

After the project opens, you can look around in all directions by navigating left and right in the 360° scene with your finger.



You can select an object using the crosshairs in the center. It acts as a "mouse cursor" and selects an object after the pink circle passes through.





The "Back Button" (arrow) in the upper left corner of the screen leads back to the app menu with the VR projects.



Clicking on the lower arrow, more controls appear.



The Cardboard mode is activated via the "VR







A click on the "Swipe" icon activates the "Gyroscope Mode". There you can look around in the 360° environment to the left and right by moving the phone.

## **Distribution of the VR project: App**

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#### Notes on the app menu



In the upper right corner there is an edit button that allows you to delete added projects



 Behind the information icon in the upper left corner you will find legal information and the imprint.



- After that select the corresponding project for deletion by clicking it in the list
- Then click the "Delete" button and confirm the deletion



 The menu can be extended at any time by adding new VR projects

## **Distribution of the VR project: VR Headset**

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- Download the VRdirect app via iOS or Android and then turn on the VR mode (Cardboard Mode)  $\rightarrow$  VR button at the bottom left of the app
- Access via the respective browser
- After entering the Web Player link, the project can be viewed via the VR headset in the Web Player



VR App for all popular headsets



- Download the latest VRdirect app via the respective store.
- Available for Meta, Pico, HTC, ...
- Recommended due to optimal performance

Current headsets support the use of controllers in the VR project. In addition, depths can be perceived with a professional headset and, for example, 3D models can be explored from all sides.

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# Next steps?

Benefit from the advantages of Virtual Reality and contact us!

contact@vrdirect.com >>>