3DFRAME USER MANUAL: DESKTOP MODE

Release 10.05.2023 – V1

INDEX

1. Introduction

3DFrame is an easy-to-use metaverse created to help companies ideate, plan, and present products when in-person meetings are impossible. With a first-of-its-kind seamless integration with Webex, users can engage meeting participants like never before.

The application supports up to sixteen users simultaneously in real time.

This guide will show how to use the 3DFrame, move within your scene, and manage its elements.

a) Minimum requirements

3DFrame application must be updated to the latest version to be used. Additionally, 3Dframe is compatible with macOS and Windows and only on request for Android.

b) PC supporter:

1. MAC
    1. DESKTOP MODE (Only Desktop, no VR)

Minimum requirements

- OS: MacOS Mojave 10.14
- CPU: Processor Intel Core i7
- RAM: 16 GB
- GPU: AMD Radeon 4 GB

Recommended requirements

- OS: MacOS Ventura 13.2
- CPU: Processor Apple M2 Pro
- RAM: 32 GB
- GPU: Apple M2 Pro

2. WINDOWS

    a) DESKTOP MODE

Desktop minimum requirements

- OS: Windows 7/8/10/11 (64-bit OS required)
- CPU: Intel Core i5-4570 or equivalent
- RAM: 16 GB

- GPU: NVIDIA GTX 1660 or equivalent

Desktop recommended requirements

- OS: Windows 7/8/10/11 (64-bit OS required)
- CPU: Intel Core i5-7600k or equivalent
- RAM: 32 GB
- GPU: NVIDIA RTX 2070 or equivalent

b) VR MODE

Minimum requirements for VR

- OS: Windows 7/8/10/11 (64-bit OS required)
- CPU: Intel Core i5-6900k or equivalent
- RAM: 16 GB
- GPU: NVIDIA RTX 2060 or equivalent

Recommended requirements for VR

- OS: Windows 7/8/10/11 (64-bit OS required)
- CPU: Intel Core i5-9600k or equivalent
- RAM: 32 GB
- GPU: NVIDIA RTX 3060ti or equivalent

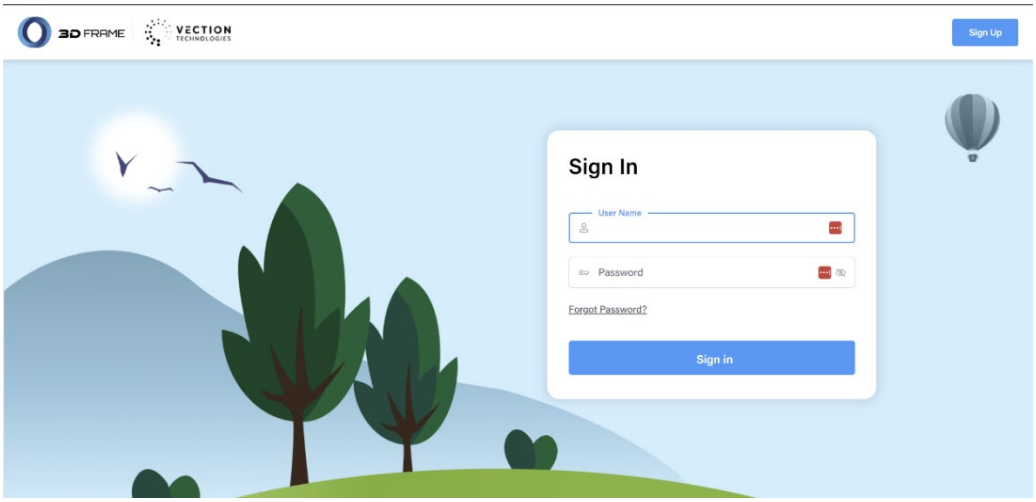
c) Headset supporter

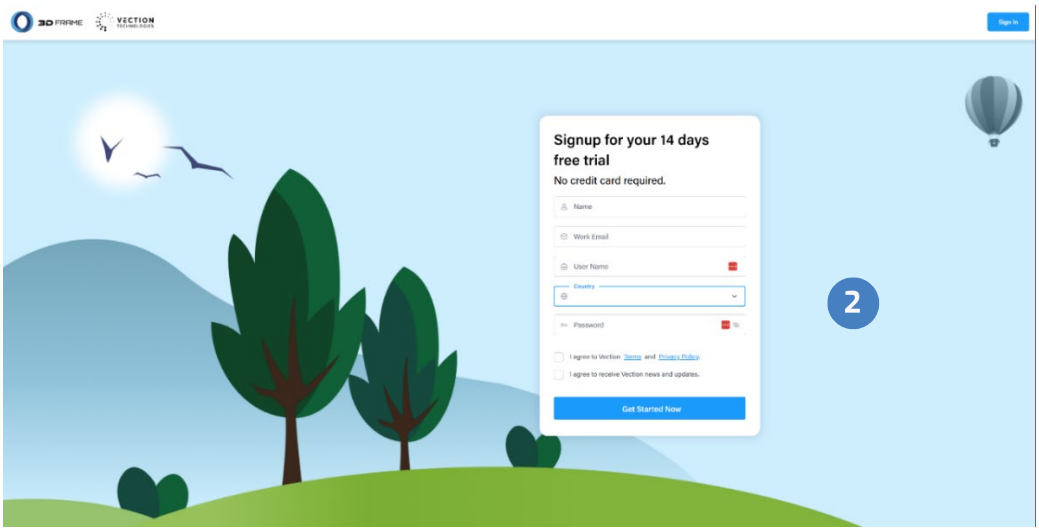
- HTC
- OCULUS (META)
- MIXED REALITY
- PICO: 3 / 4

2. Creating an account

a. Create a 3DFrame Account.

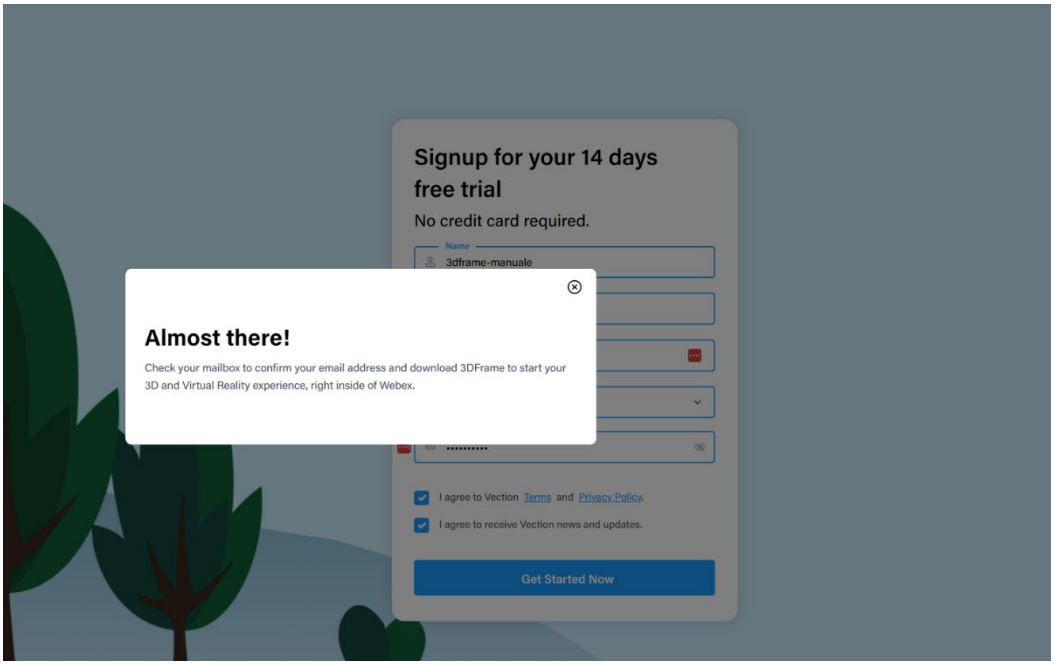
To create a 3DFrame account, you must log on to the site: **https://app.3dframe.vection-technologies.com/signup**, click on the "Sign up" button (1) in the upper right corner, and fill out the (2) with your e-mail and credentials. Therefore, you will need to agree to the terms and conditions to proceed.





b. Confirmation via E-mail

A confirmation request will be sent by e-mail to confirm the account's authenticity.



c. Sign-in with credentials

Click on "Sign-in" to log in with your name and password.

3. Cloud

https://app.3dframe.vection-technologies.com/

Each license is associated with an organization, which can have multiple users connected to it. On the Cloud, all content belonging to the organization can be managed.

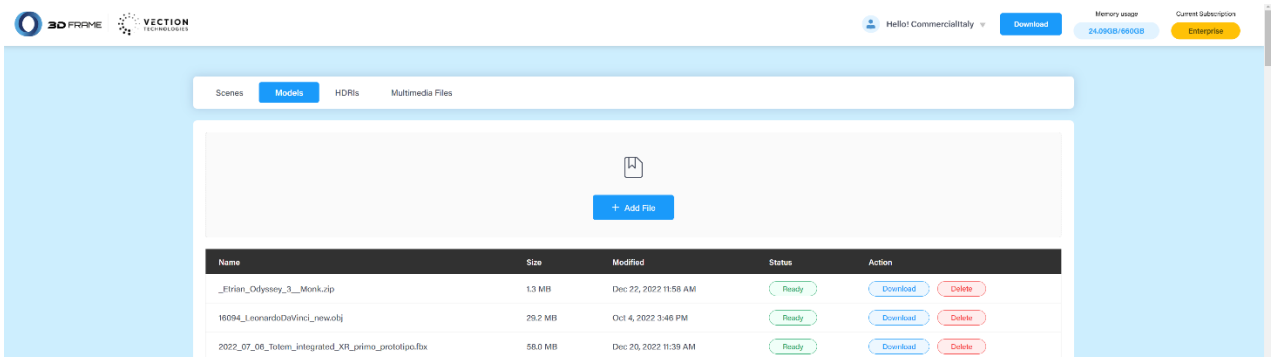
What is the Cloud?

The Cloud contains the assets available to the "client." For example, it includes the material that will be used in each scene created. It also incorporates scenes, models, skyboxes (indicated in the application as HDRI), and multimedia files.

SKYBOX (jpeg): An image representing a background in three-dimensional environments.

The Cloud allows you to:

- Manage scenes: Copy and delete scenes in the account.
- Manage models: Upload or remove models; through the "status" column, you can monitor the progress of uploading a model.
  (Recommended site for downloading 3D Models: https://www.turbosquid.com/it/)
- Manage SKYBOX: Upload skyboxes in a JPEG format.
  (Recommended site for downloading HDRIs: https://polyhaven.com/hdris)
- Manage media files: Upload, download, and remove documents in PNG, JPEG, PDF, WAV, AVI, or MP4 format.
  (Recommended site for downloading media files: https://www.pexels.com/it-it/)

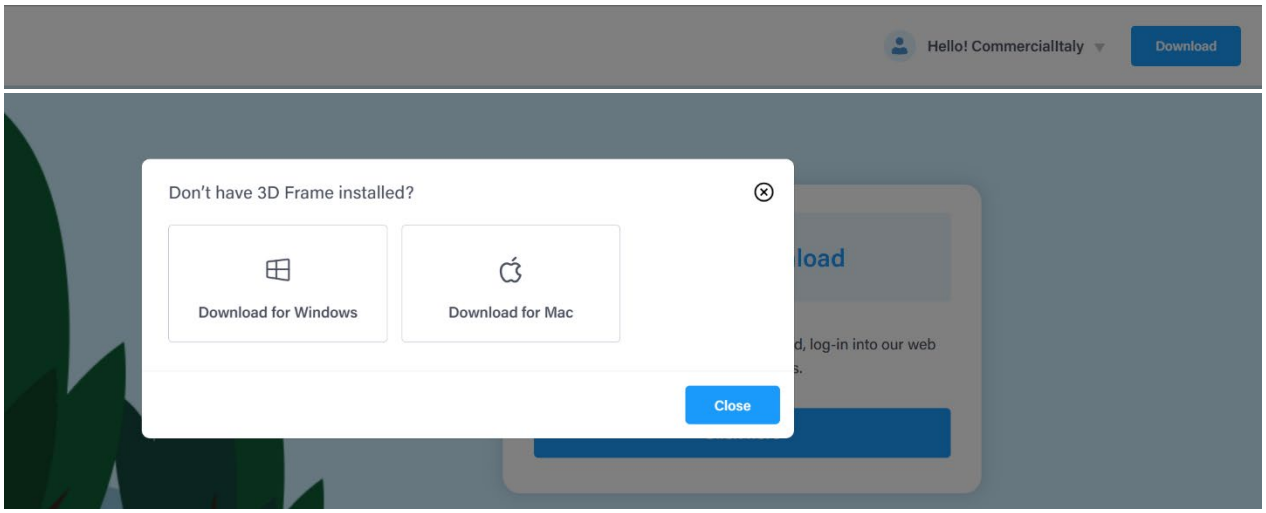


4. APP Installation

You can download the application from the Cloud at:
https://app.3dframe.vection-technologies.com/

You can download the application installer through the "Download" button (1) in the upper right bar. Then, choose the operating system (Windows or MacOS) and follow the wizard.

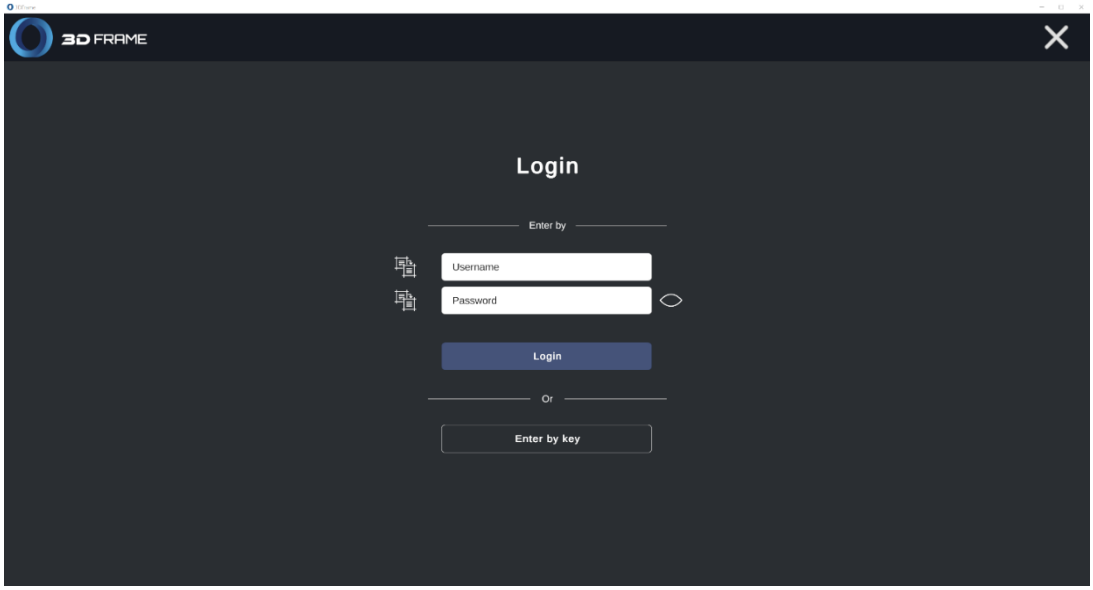
1



5. Starting 3DFrame

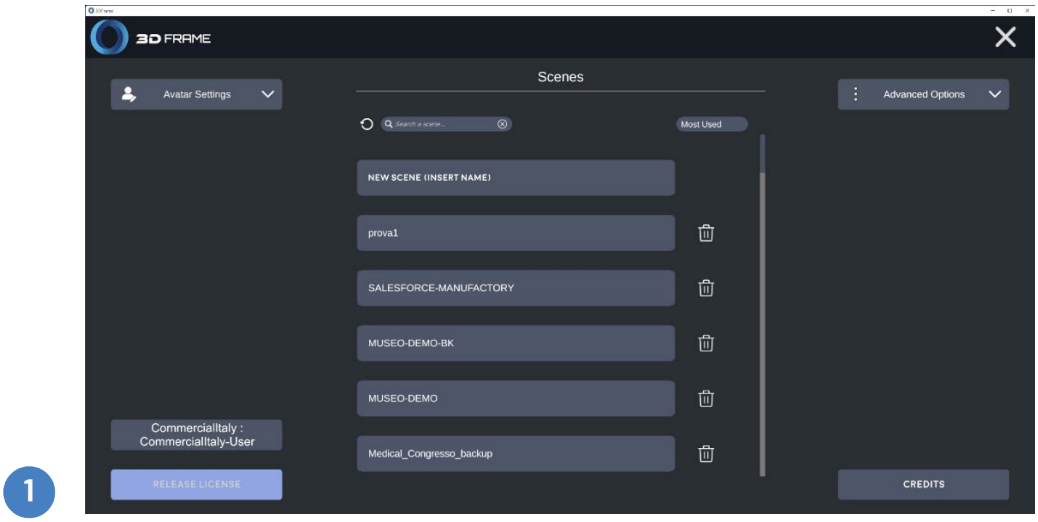
a. Login with credentials

After creating your account and completing the application installation, you can access 3DFrame by logging in. When opening the application, you will be asked to enter the username and password previously created during registration. In addition, your license will be associated with your device. Therefore, you will need to perform a license release to use the license with another device.



b. Licenses release

After logging in, if you wish to log out of your 3DFrame profile, you must press the "RELEASE LICENSE" button (1) and confirm your choice. As a result, you will "release" your license and allow you to use it on another PC or by another user.



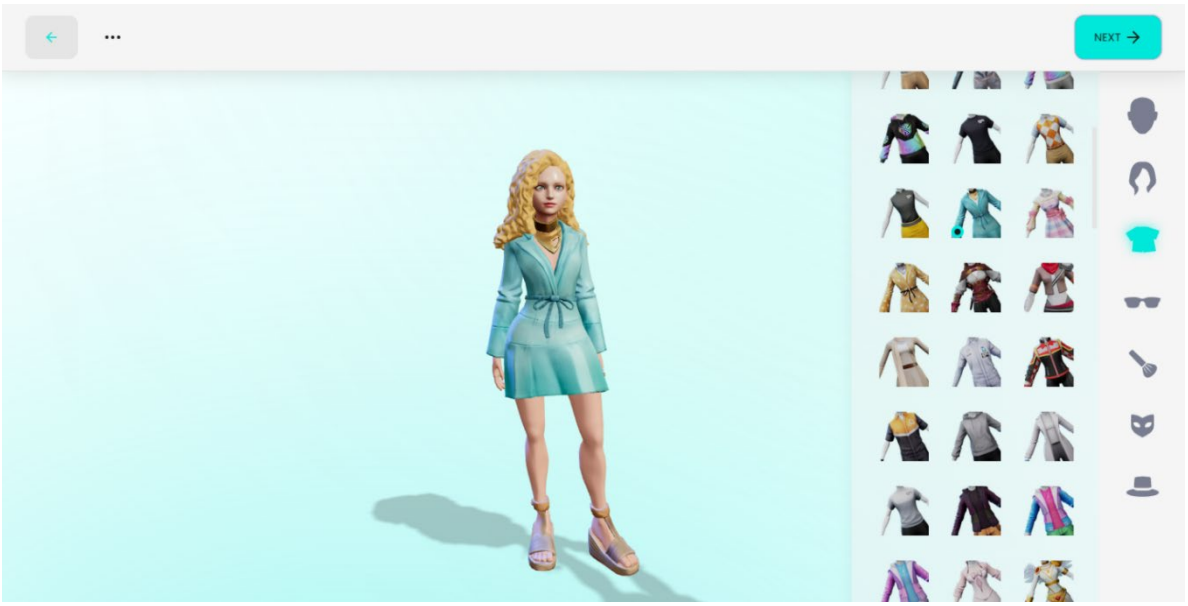
c. Avatar

1. Avatar customization

3DFrame offers three basic options for displaying the avatar: a plastic, wooden, and metal avatar. Alternatively, you can customize an avatar through Ready Player Me, which is integrated into the app. To create your avatar through the app, click the "Avatar Settings" button (1), select the "Customize your avatar" item (2), which will open a Ready Player Me Pop-up, and create your avatar. Then, you can use your avatar in 3DFrame.

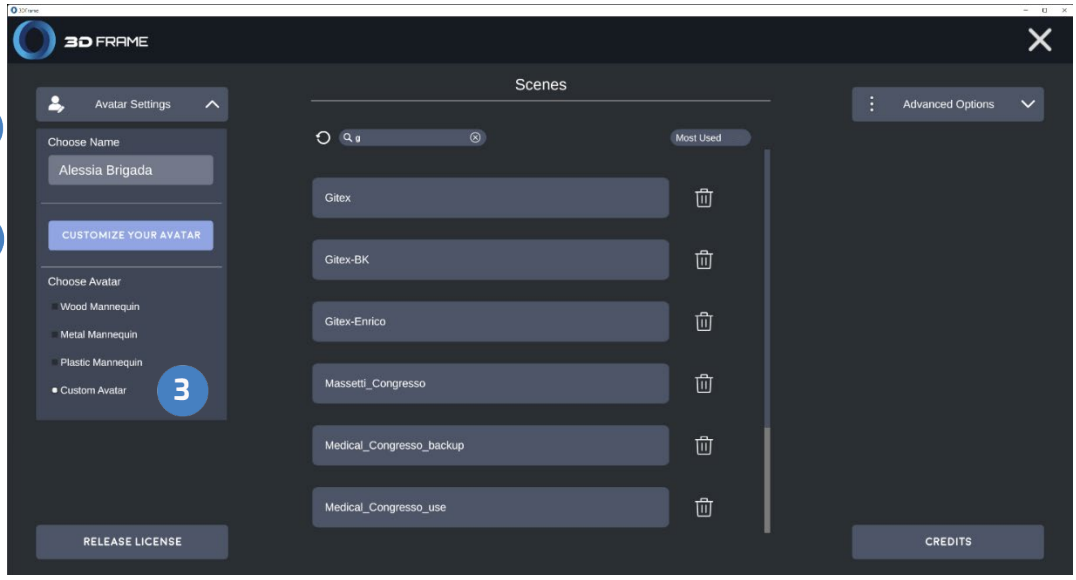
You can also create an avatar directly from Ready Player Me and use a previously created one. https://readyplayer.me/it?slug=avatars

After creating your profile, you can log in to the site and edit the avatar to your liking.



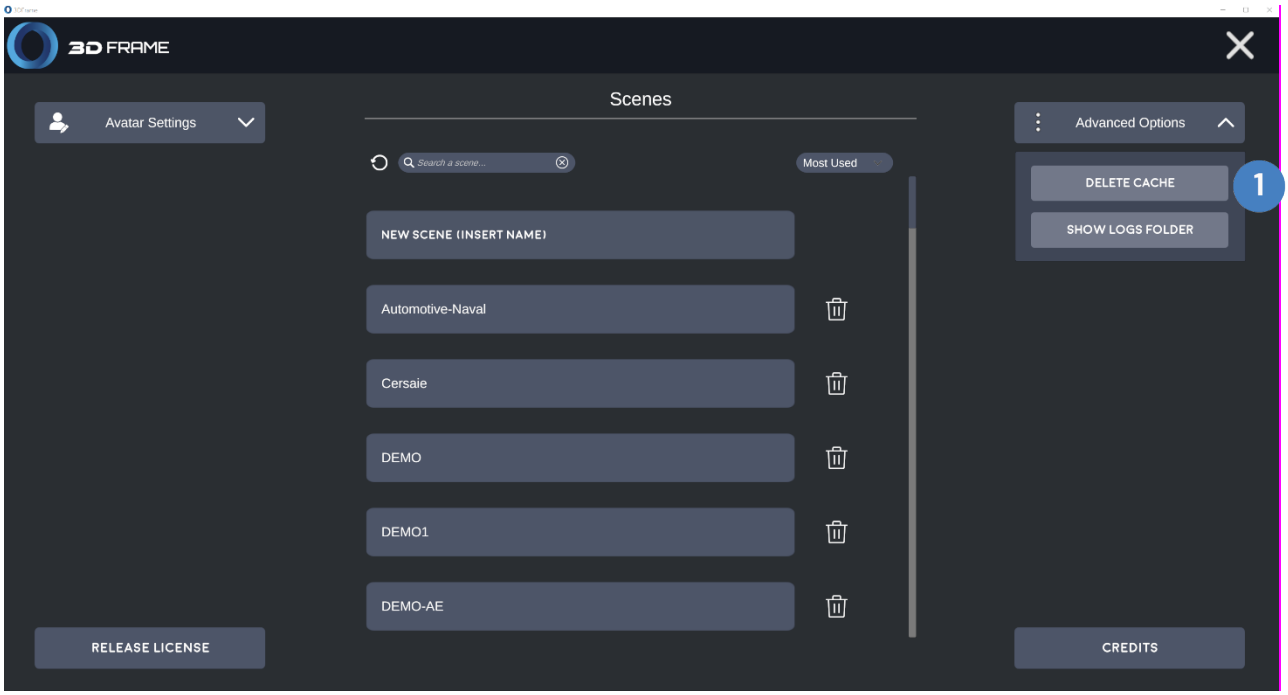
2. Selecting your Avatar

You can select your previously created avatar from the home screen by pressing the "Avatar Settings" button. Then, to display the created avatar in the scene, you only need to select in the avatar setting menu the item " Custom Avatar "(3). You will also need to assign a name to the avatar, which will be visible to other users within 3DFrame. Likewise, you can change the avatar and name anytime, even during a session.



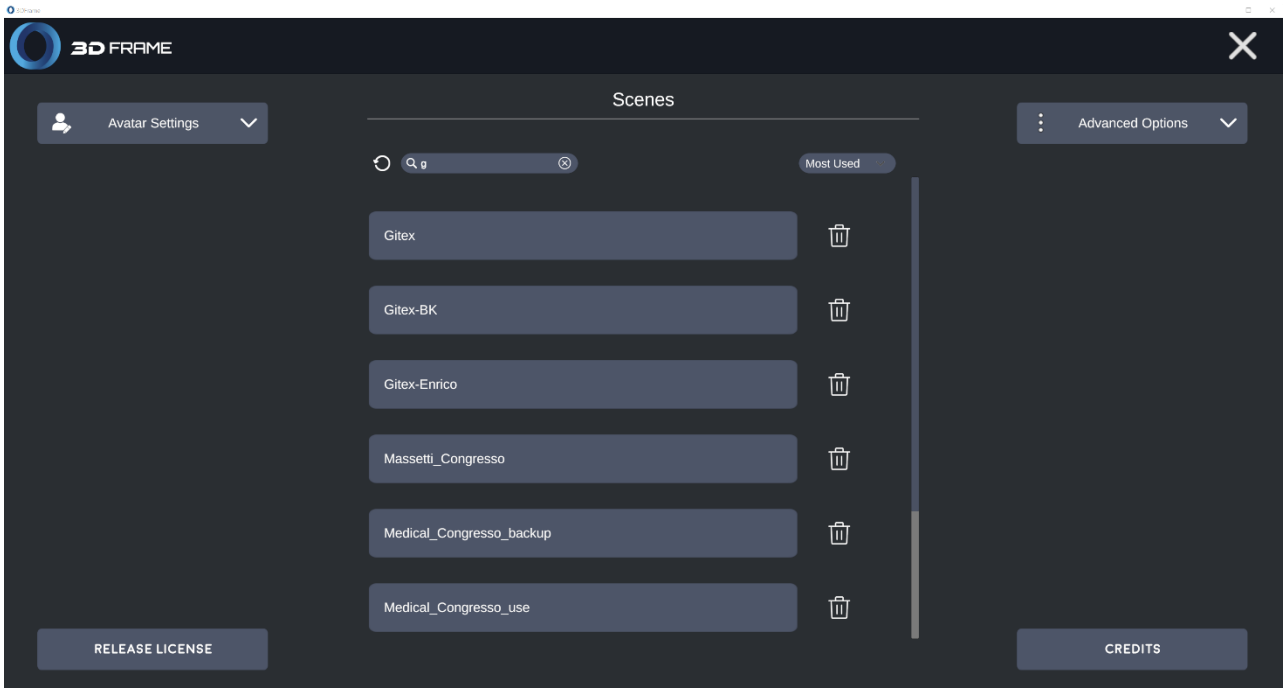
d. Advanced options

By using the "DELETE CACHE" button (1), you can free up space on your computer and delete previously downloaded content. This will not result in the loss of content since if it is present in a scene, and it can be downloaded again by the application automatically.



e. Scene creating, filtering, and searching.

In the central interface area, a column displays all the scenes created by users belonging to the organization. To create a new scene, type the desired name in the box at the top of the column and press enter. You can use filters and search to find the desired scenes. The filters are alphabetically sorted by most frequently used and recent scenes; by releasing the license, the latter two filters will be reset as well.



6. Roles within the application

a. Editor & Viewer

Editor mode allows the user to customize the scene and access various tools. Users who enter Viewer mode can view content and cannot edit it.

b. Host & Guest

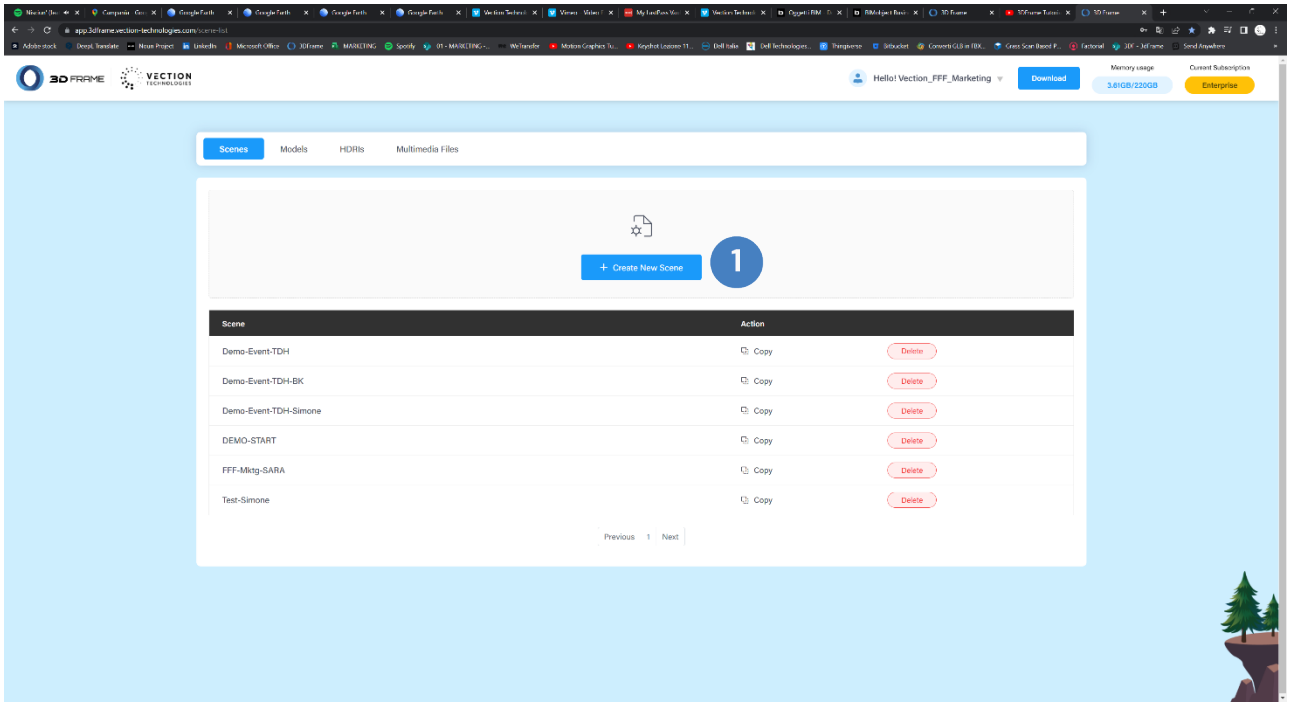
Users within a scene can have the role of HOST or GUEST. The HOST role is assigned to the first user to enter the scene and is the one who has control over the management of other users' roles. For example, the HOST can change other users' roles from Editor to Viewer and vice versa. If the HOST logs out, a GUEST user will be promoted to a new HOST with the same privileges. In addition to managing other users, the HOST will always be the editor and can eject other users from the scene (by right-clicking on a user's name in Toolbar, Teams Group).

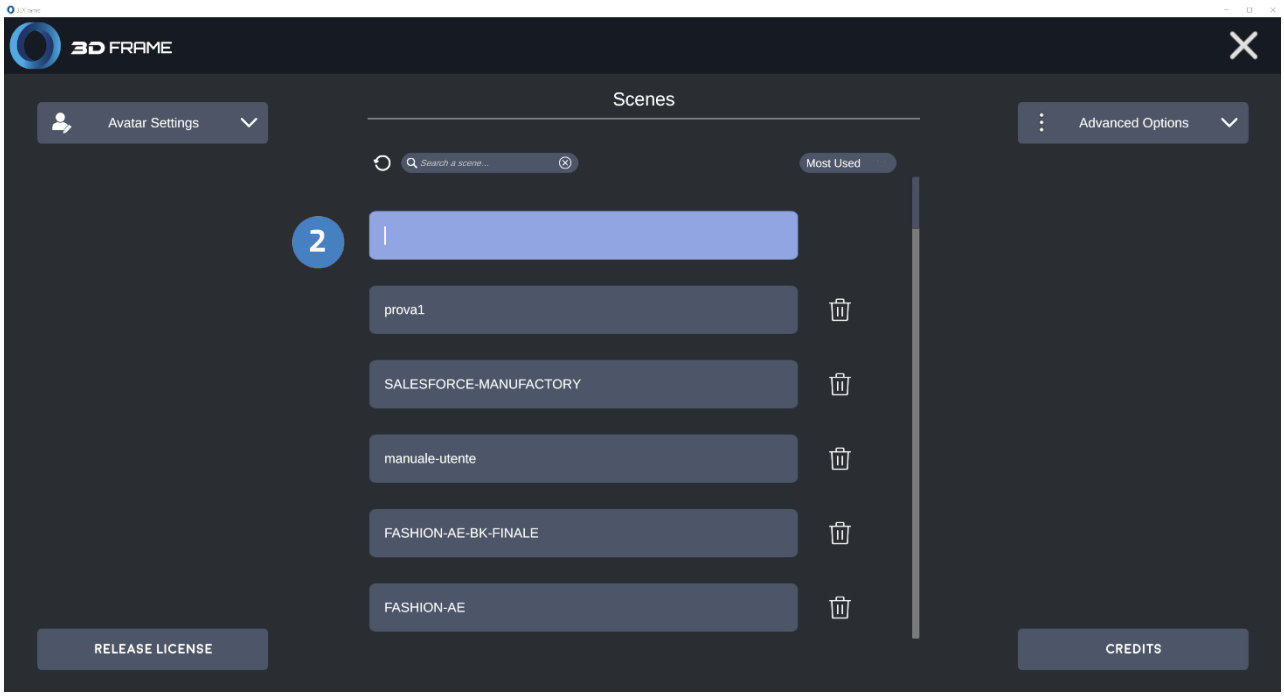
7. Creating a scene

Another way to create a new scene is from the Cloud web page (https://app.3dframe.vection-technologies.com/scene-list) in the scene list section by clicking on the "Create New Scene" button (1).

You can create directly from the application by typing the desired name in the first box (2) at the top of the list and pressing enter.

LINK VIDEO TUTORIAL CREATE NEW SCENE





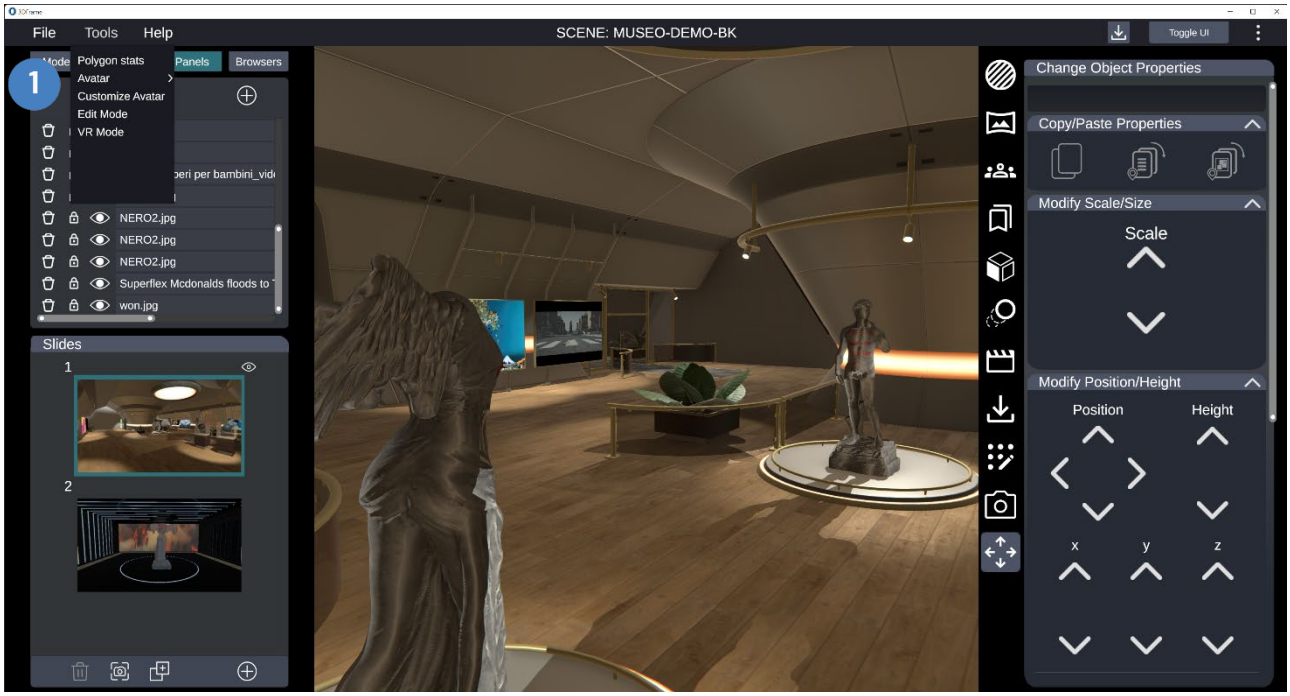
8. Scene Mode

3DFrame allows you to view the scene in three different modes that can be set via the "tools" (1) item in the top bar:

1. Desktop Mode (default)

This mode allows the immersive space to be viewed in 3D without needing a VR visor.

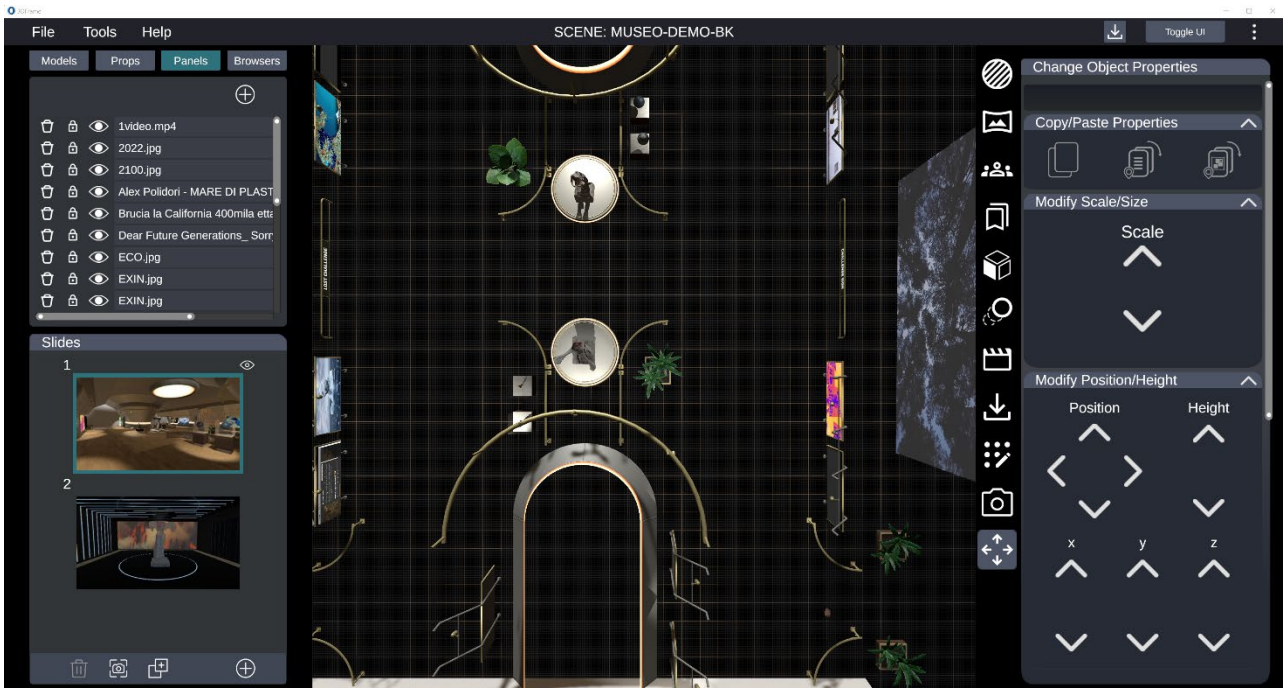
LINK VIDEO TUTORIAL SWITCHING DESKTOP O VR



2. Edit Mode

This mode features a top-down view. Consequently, it is convenient to quickly move and rotate elements of the scene with the mouse, with the help of a grid.

LINK VIDEO TUTORIAL EDIT MODE



3. VR Mode

This mode is used to live the experiences created within 3DFrame in VR using a viewer. Also in this mode are tools for working and collaborating on creating the scene.

9. Commands

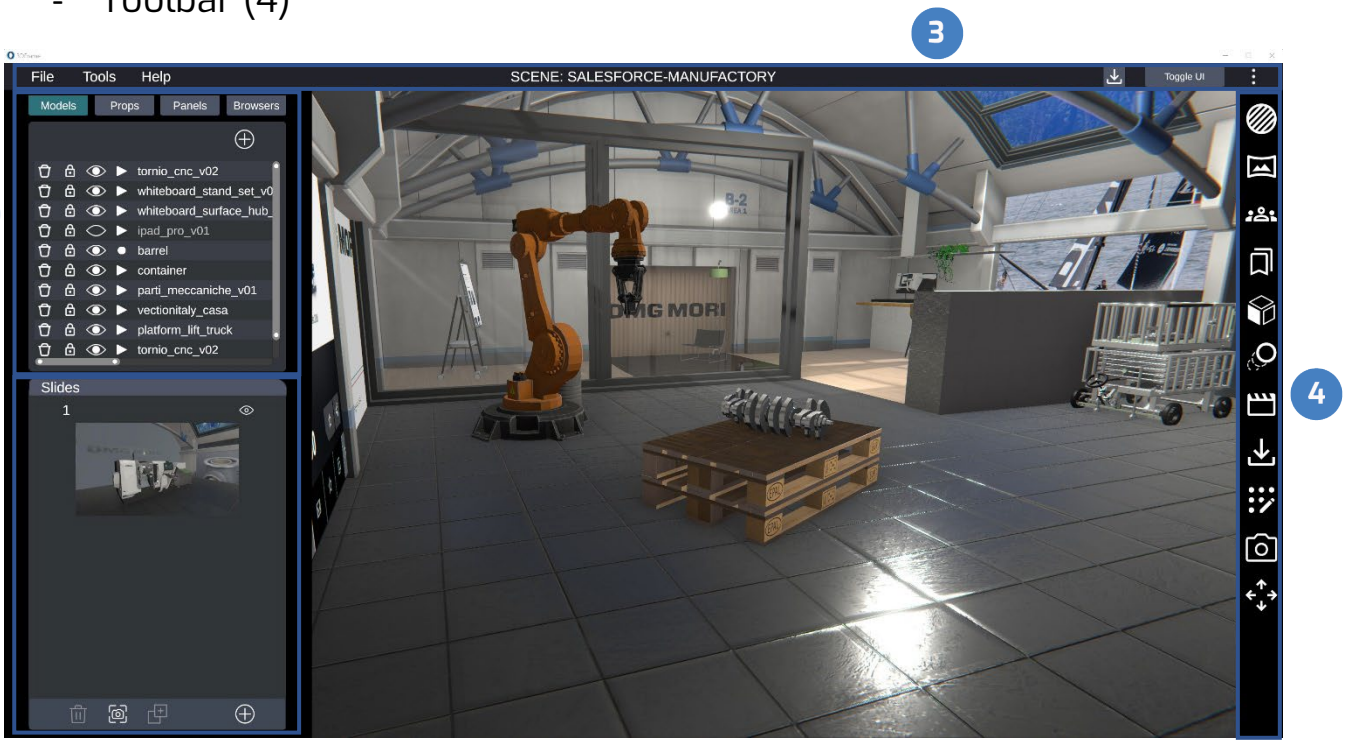
Several commands are available, listed in the application's help, accessible from the "Help" item to move around within one's scene,

Please note you can select the entire model by double-clicking on the part of the model that I want to edit of my choice (for example: assign a material, rotate, scale, etc.).

10. Interface

The interface of 3DFrame can be divided into four usage sections:

- Elements management (1)
- Slides (2)
- Topbar (3)
- Toolbar (4)



a. Elements management

In this section, you can manage staged elements such as:

2. Models
3. Props
4. Panels
5. Browsers

b. Slides

You can create, delete, duplicate slides, and change their thumbnail in this interface section.

c. TopBar

It shows the name of the scene and contains buttons to change general settings, including:

1. File
2. Tools
3. Help
4. Toggle UI
5. Settings

d. ToolBar

In this section, you can find all the tools to create and use your scene.

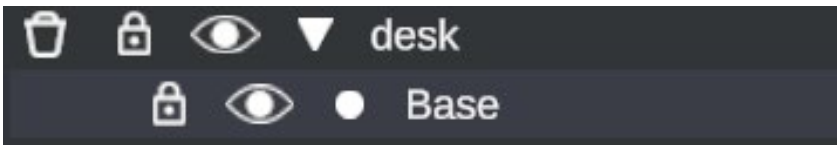
11. Elements Management

In this section, it is possible to manage the following actions:

- The import and visualization of models
- The visualization of props
- The visualization of panels
- The creation and visualization of browsers

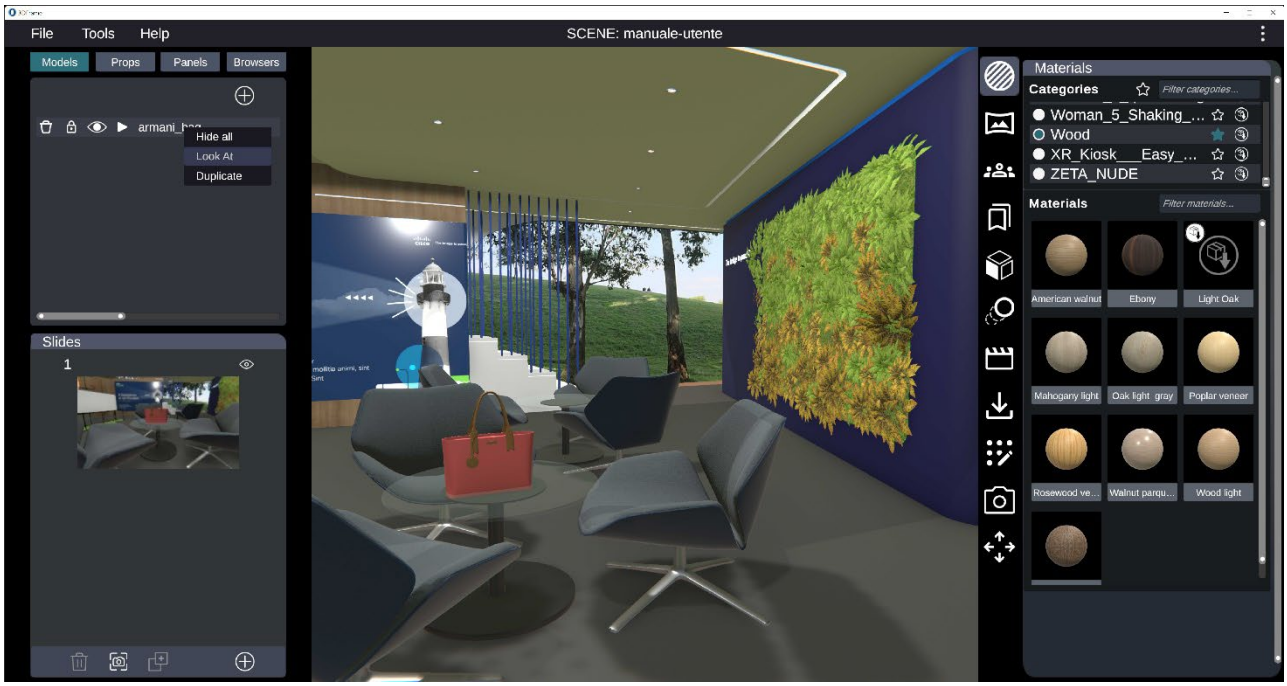
For each element, you have many options:

- Deleting from scene
- Locking the movement of the object in VR for a Viewer user
- Hiding the entire object or a part of it
- Expanding the 3D model into the selectable parts



By right-clicking on an element, you can access other features such as:

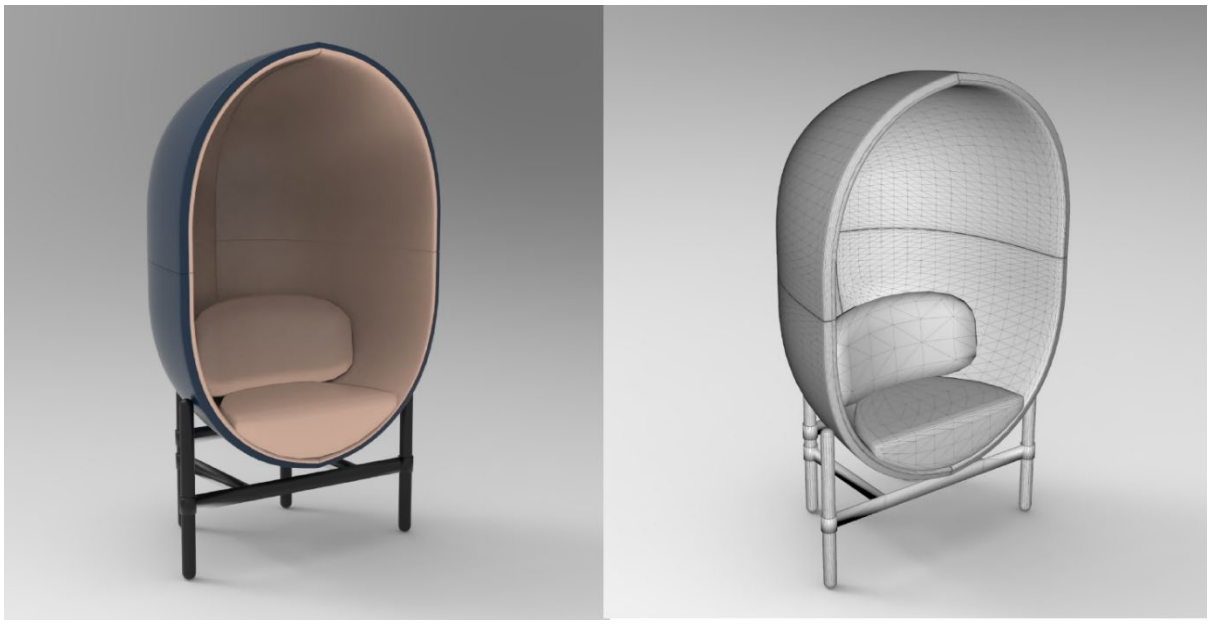
- Hide All, to hide all meshes in a 3D model
- Look At, to turn the view toward the element
- Duplicate, to duplicate the 3D model at the same location



12. Models: 3D model upload modes and file types

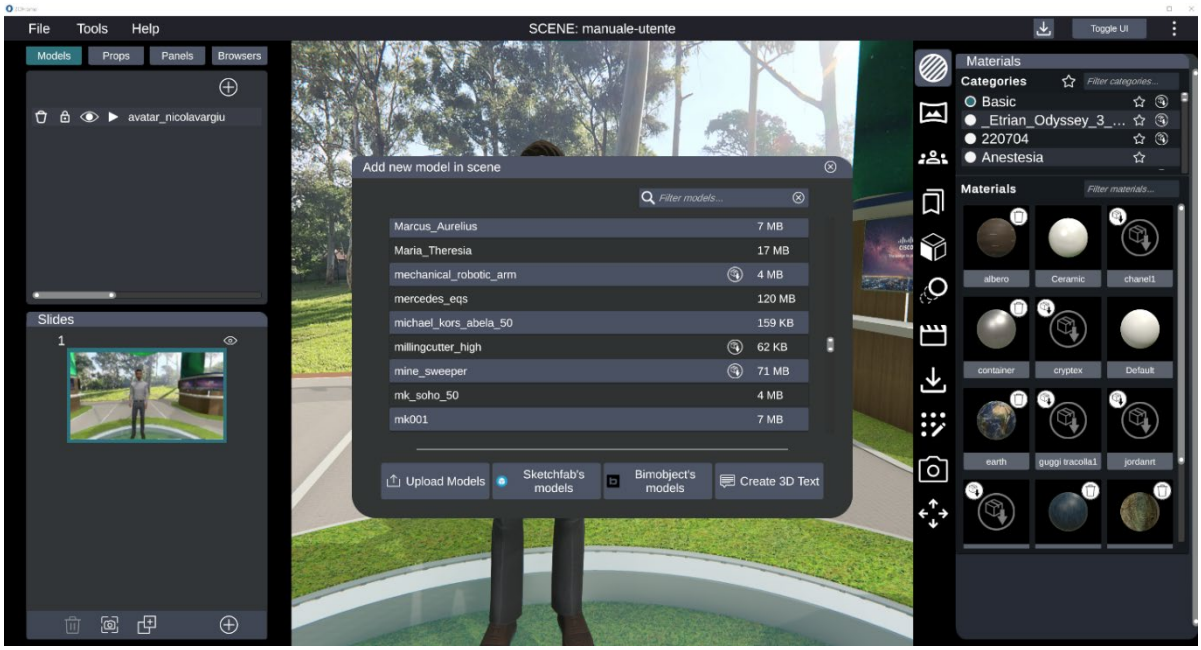
What is a 3D model?

A 3D model is any three-dimensional object (tree, car, house, etc.). The regular basis of a model is a 3D mesh, the structure of which consists of polygons.



Models supported by the application are in .FBX or .OBJ format.

To insert models into the scene, you must first upload them to the Cloud and then insert them through Elements Management. To insert them into the scene, select the Models item (1) and click on the "+" icon (2). A pop-up will open with a list of all available models previously uploaded to the Cloud.

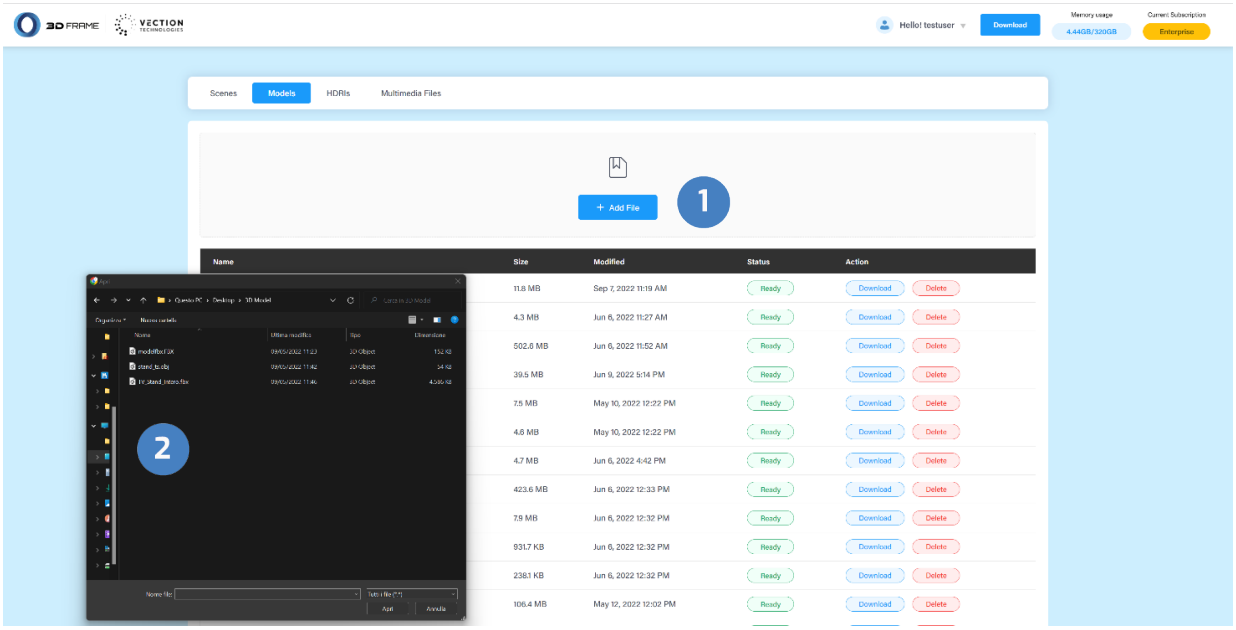


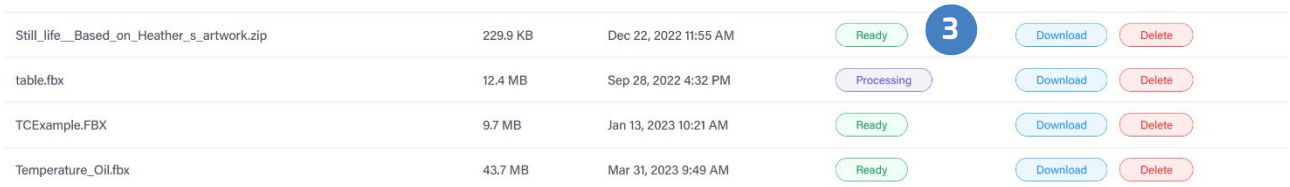
There are many ways to upload models to the Cloud:

a) Uploading models to the Cloud through the web page

To upload models directly to the Cloud, access the "Models" section (or via a link https://app.3dframe.vection-technologies.com/model-manager). This will make the uploaded models available in the list of models within the application. To upload them, click on the "Add file" button (1) and select the file on the local device through the window that will open (2). Through the Web page, you can check the status of the templates. Only if the status is "Ready" (3) will the template be available in the 3DFrame application.

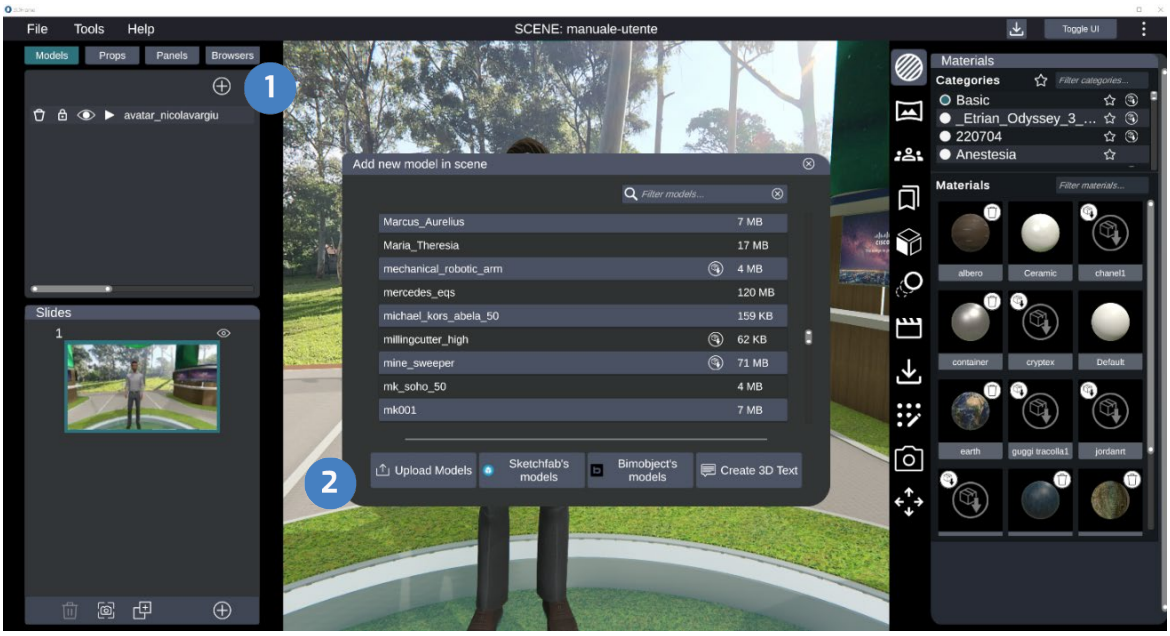
LINK VIDEO TUTORIAL CARICAMENTO MODELLI 3D





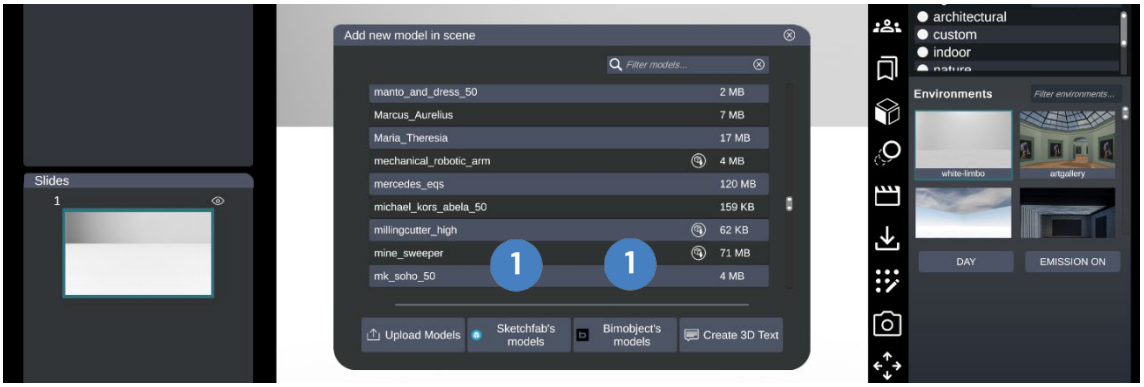
b) Uploading models to the Cloud through the app

You can recreate the process of uploading models to the Cloud within the application. First, click on the "+" icon (1) in the Models window. Then, another window will open. By clicking on the "Upload Models" button (2), it will show the Web page to allow you to upload models as in point a).



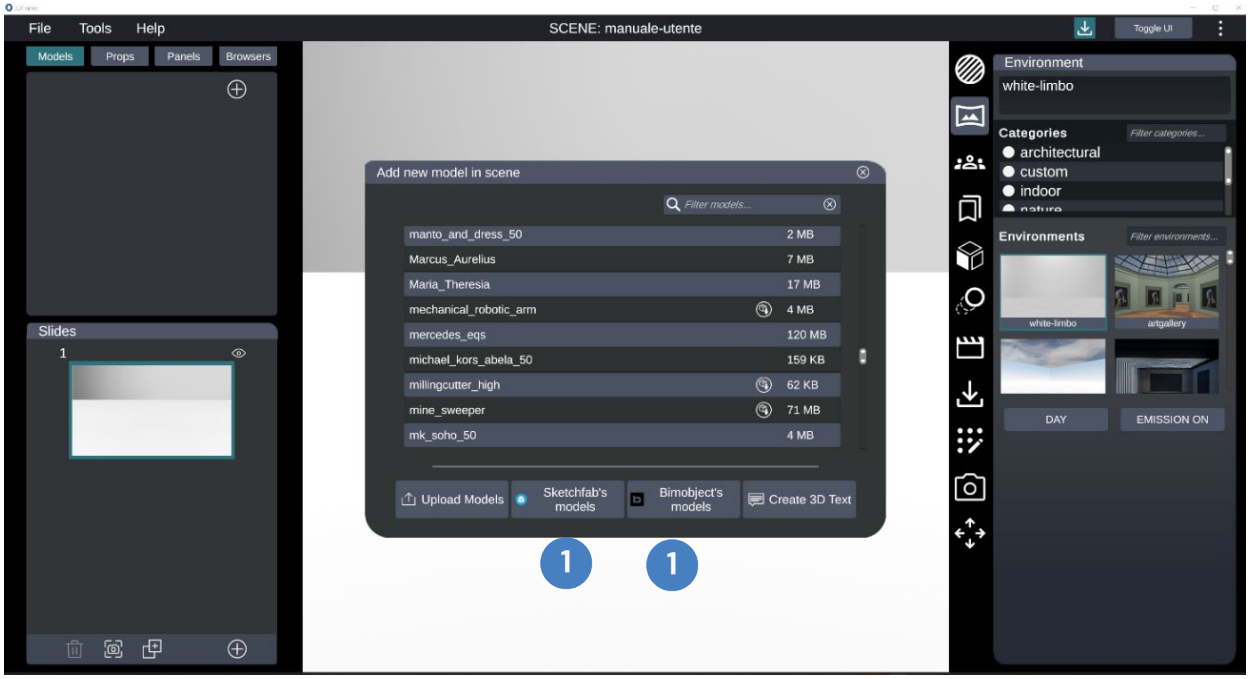
c) Loading models from external libraries

In addition to standard model loading, the application provides two different built-in libraries: Sketchfab and BimObject, which can be accessed with the relevant buttons (1). For both libraries, it is necessary to have a profile.



Sketchfab Library

Entering 3D models through the Sketchfab library is very easy and intuitive. You only need to access the library with your account (2) and search for the desired model through the filters (3). Once you have found the model you want to insert in the scene, you will select it, and by clicking on the "Download model" button (4), the model will upload directly both to the Cloud and to the scene (5).



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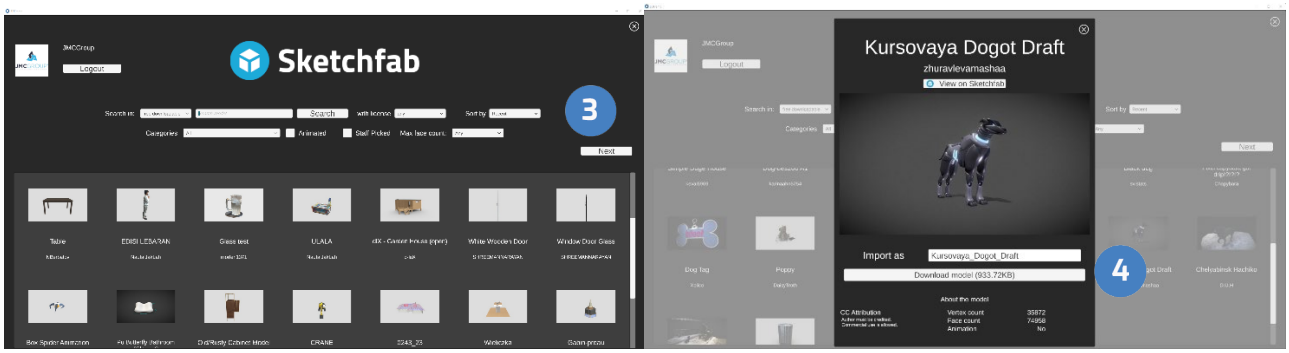
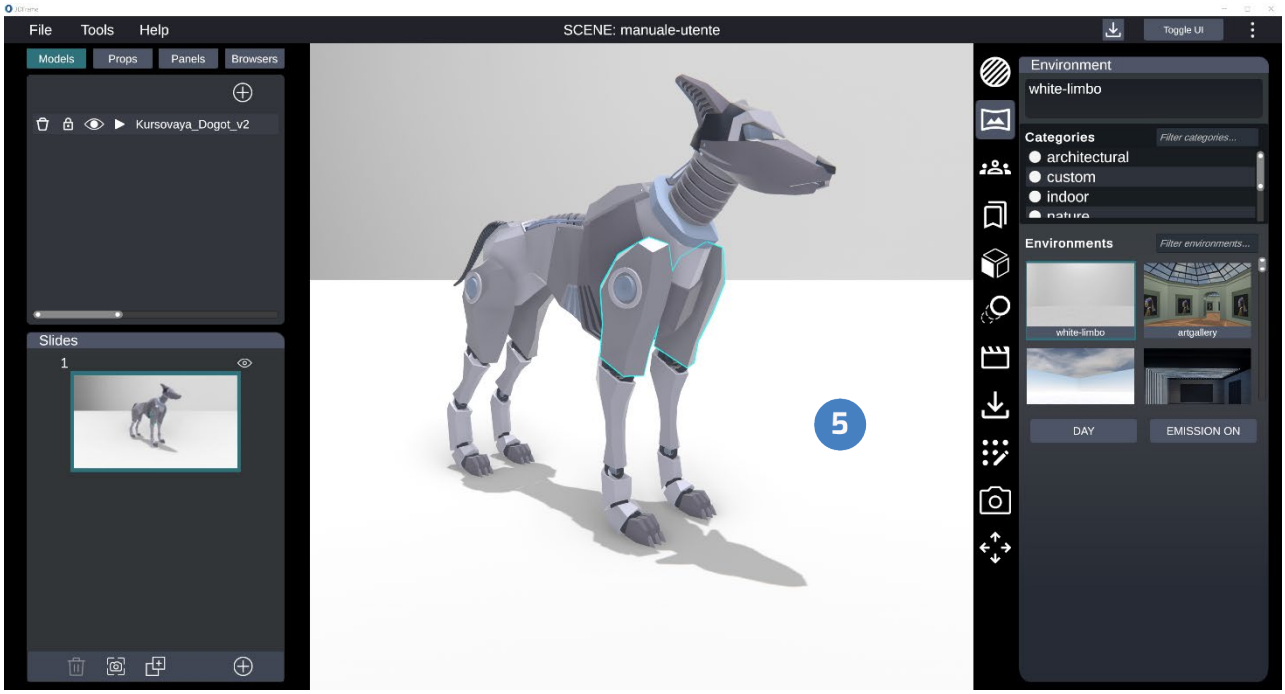
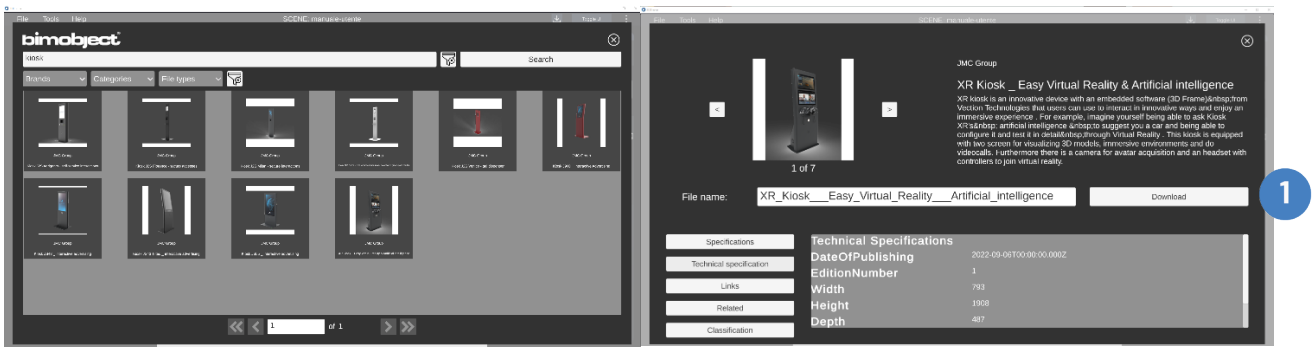
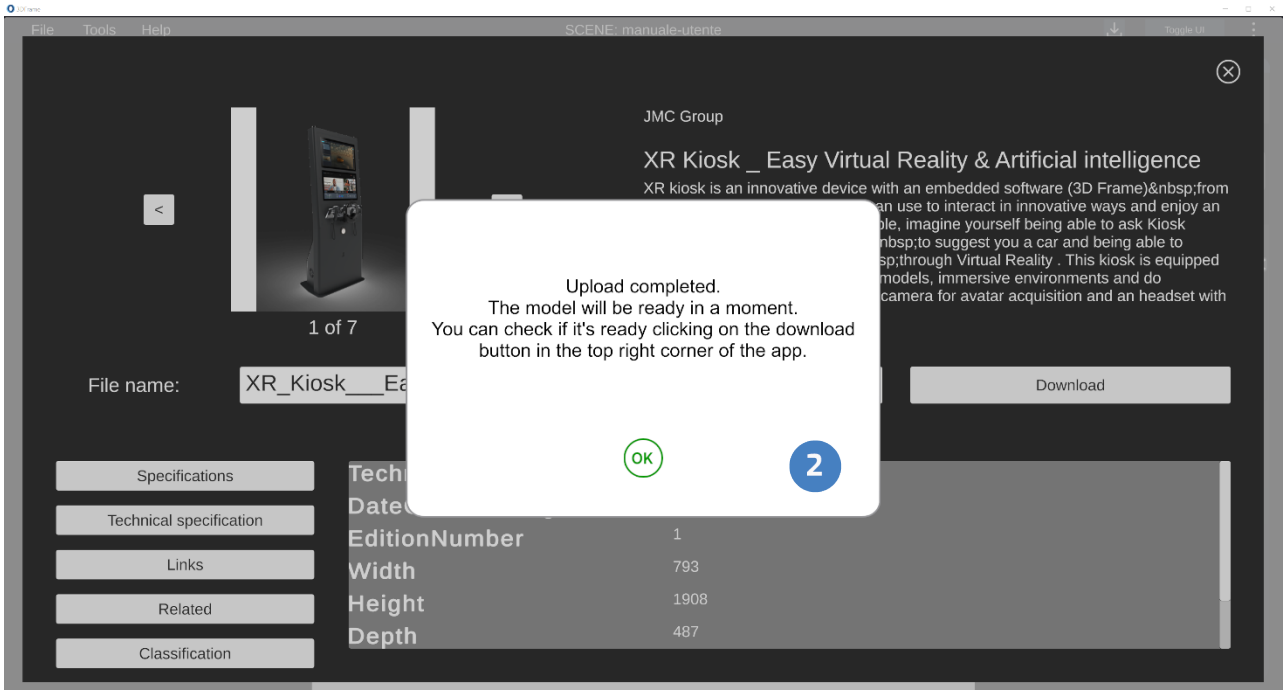




Bimobject Library

Inputting 3D models through the Bimobject library also works efficiently. You only need to access the library with your account and search for the desired model through the filters. Once you find the model you want to import within the scene, click the "Download" button (1) to import the model to the Cloud. A pop-up (2) will alert you that you can proceed to download more models or return to your scene. Returning to the 3DFrame scene, you can see when the model is usable within the application through the download icon (3) in the Topbar. When the model is available on the Cloud, next to the model's name will no longer be "Processing" but "Add to scene" (4). By clicking on the latter, the 3D model will be inserted within your scene (5).

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JMC Group
XR Kiosk _ Easy Virtual Reality & Artificial intelligence
XR kiosk is an innovative device with an embedded software (3D Frame) from
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camera for avatar acquisition and an headset with
1 of 7
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The model will be ready in a moment.
You can check if it's ready clicking on the download button in the top right corner of the app.
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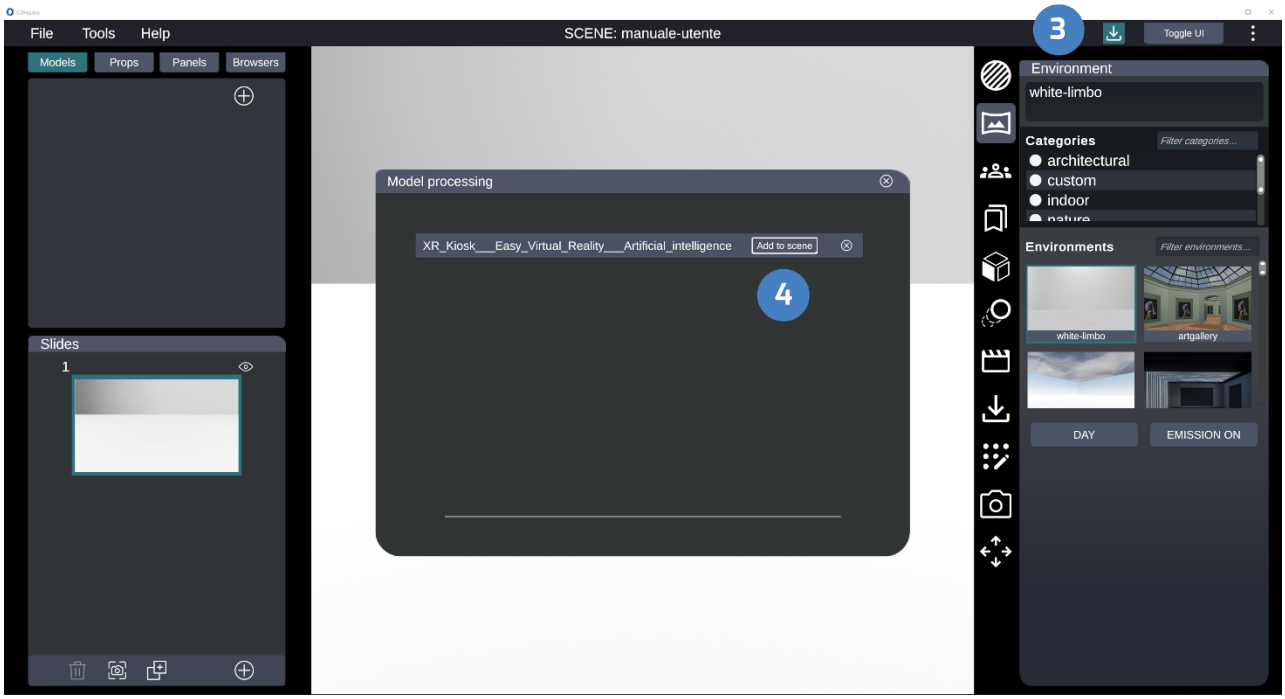
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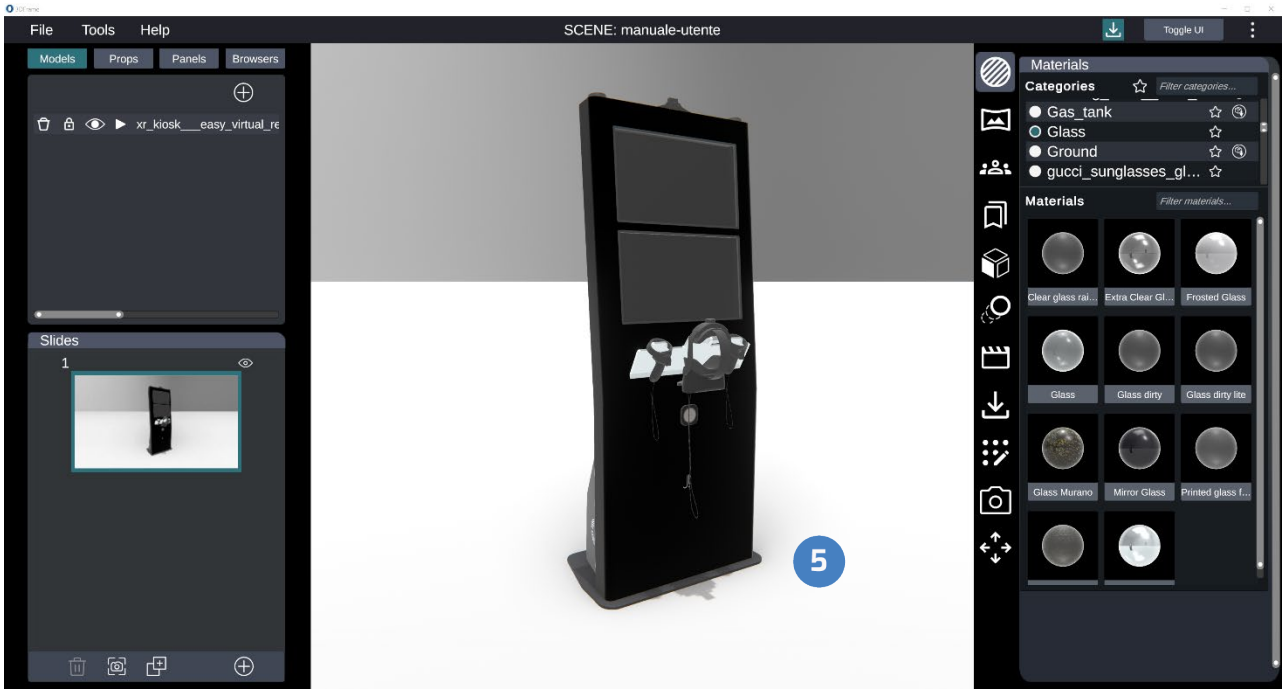
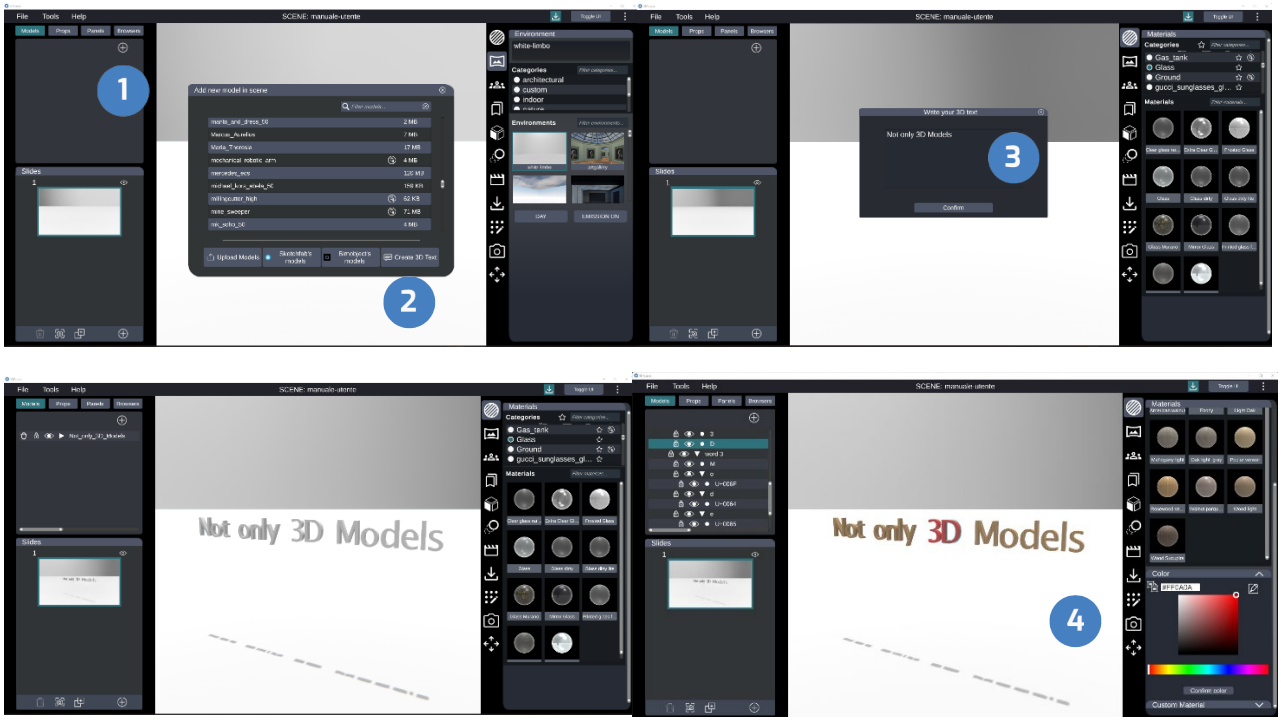


1. 3D text creation

In addition to 3D models, you can insert text within a scene. It will become a 3D object you can configure and animate like a 3D model. To create it, you will need to click on the "+" button (1) found in the Elements manager under the "Models" heading. Then, by opening the pop-up that presents the list of models on the Cloud, you only need to click the "Create 3D Text" button (2). At this point, a second pop-up will open, allowing you to write the desired text within it (3). By clicking "Confirm," you can also create the 3D text. Once created, you can configure it with materials and colors and change its position, scale, and rotation (4).

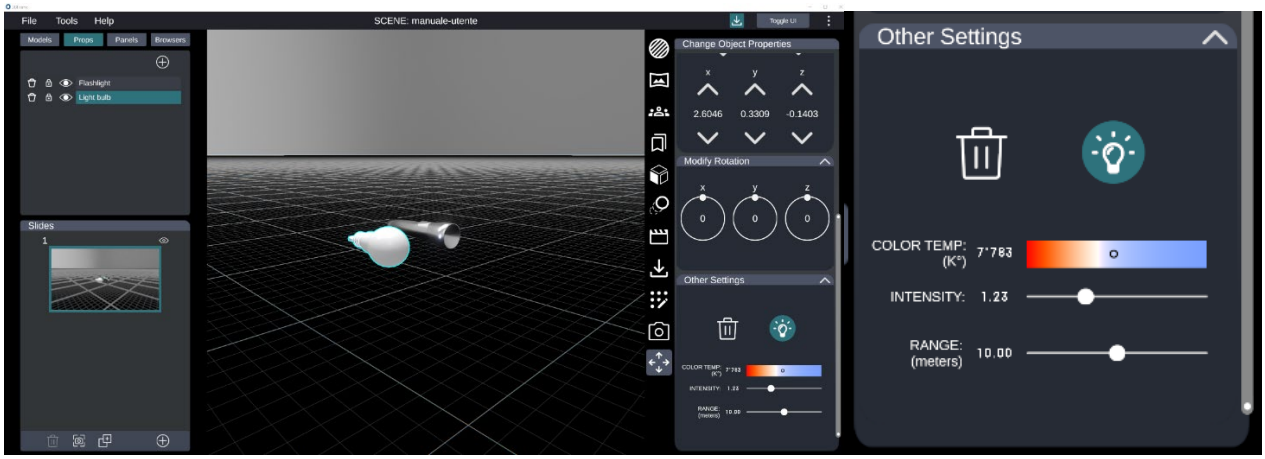


13. Props

In this section you can view the props, i.e. tools pre-loaded within the application and available to enrich the scene. These are:

- prop lights (flashlights and bulb lights)
- walls (a parallelepiped that can be used as a wall, column, or floor)
- Animation space

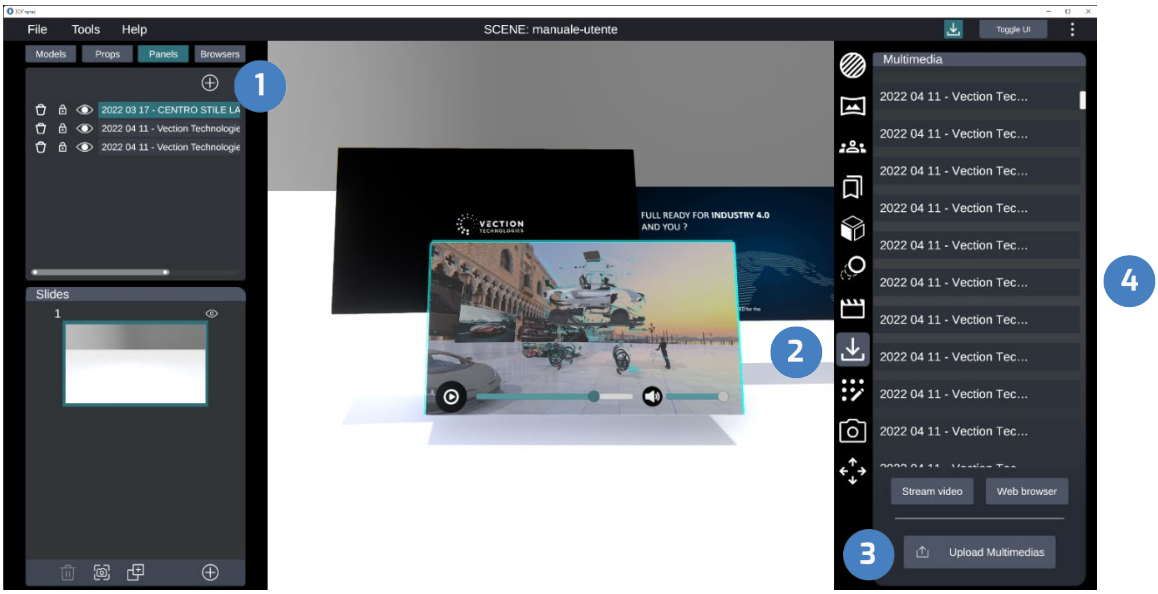
Clicking on the "+" icon in the Elements manager will open the props section of the toolbar. To insert a new one, click on the desired one.



14. Panels

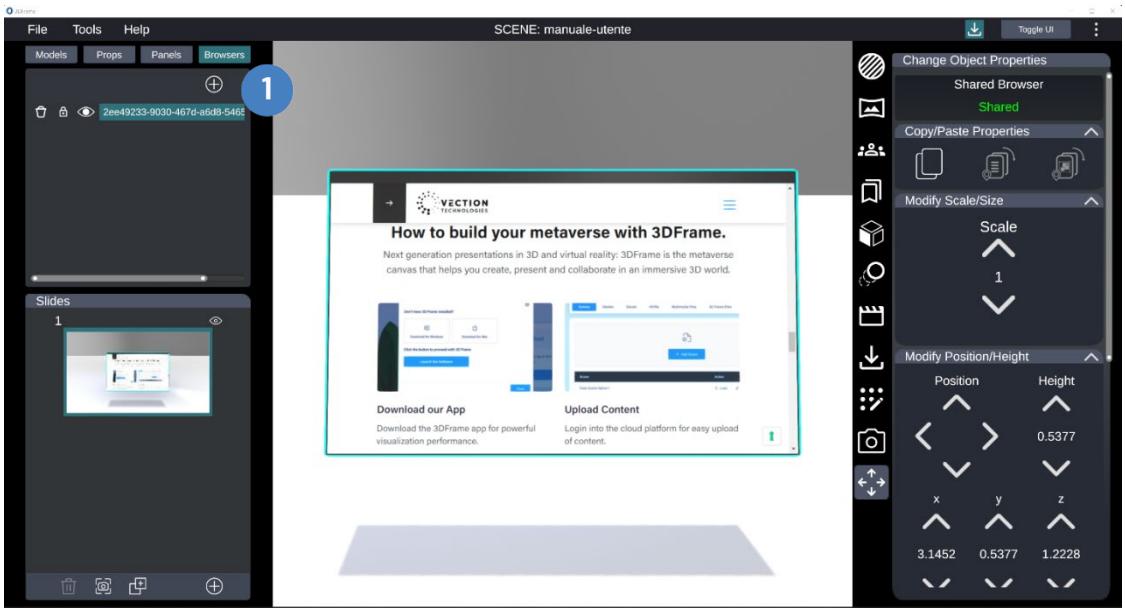
In this section, you can control all the panels in the scene.

Clicking on the "+" icon (1) in the Elements manager will open the multimedia list section (2) of the toolbar, where you can import multimedia files through the "Upload Models" item (3) or choose them from the Cloud (4).



15. Browser

This section allows you to view all the browser pages in the scene. You can also create a new browser page by clicking on the "+" icon (1) and searching for the page to be displayed.



16. Slides: Creation and difference between scene and slide

a. What is a scene?

The scene is a shared, customizable immersive space containing settings, slides, models, and participants. A name also identifies it.

b. What is a slide?

The slide configures settings and models. You can have multiple of them with different forms of storytelling. All participants in the scene will be on the same slide. Changing it will move all users to the new slide.

c. How to create a slide?

In this interface section, you can create slides within the scene. An empty slide will be created by clicking the "+" icon (1) on the right.

Other functions are present, including:

- An eye icon (2) next to a thumbnail shows the scene you are working in.
- Select a slide by clicking on a thumbnail once. It will display an outline indicating the selected slide.
- Change slides by double-clicking on a slide thumbnail and waiting for it to load.
- Delete the selected slide by clicking the trash can icon (3). However, you cannot delete the slide you are on.
- Refresh the thumbnail of the current slide with the current view (UI excluded) by clicking on the second icon.
- Duplicate a slide by clicking on the third icon (5). The duplication is helpful for a backup but to configure the slide differently (environment, the position of templates).

17. TopBar

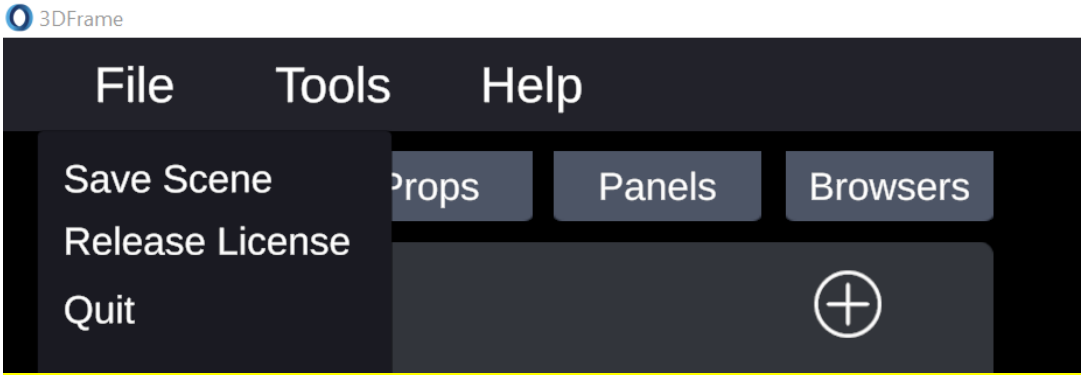
It shows the scene's name and contains buttons to change general settings.

a. File

It contains:

- SAVE SCENE: It saves the entire scene, then all the slides
- RELEASE LICENSE: It releases the license for use on other PCs

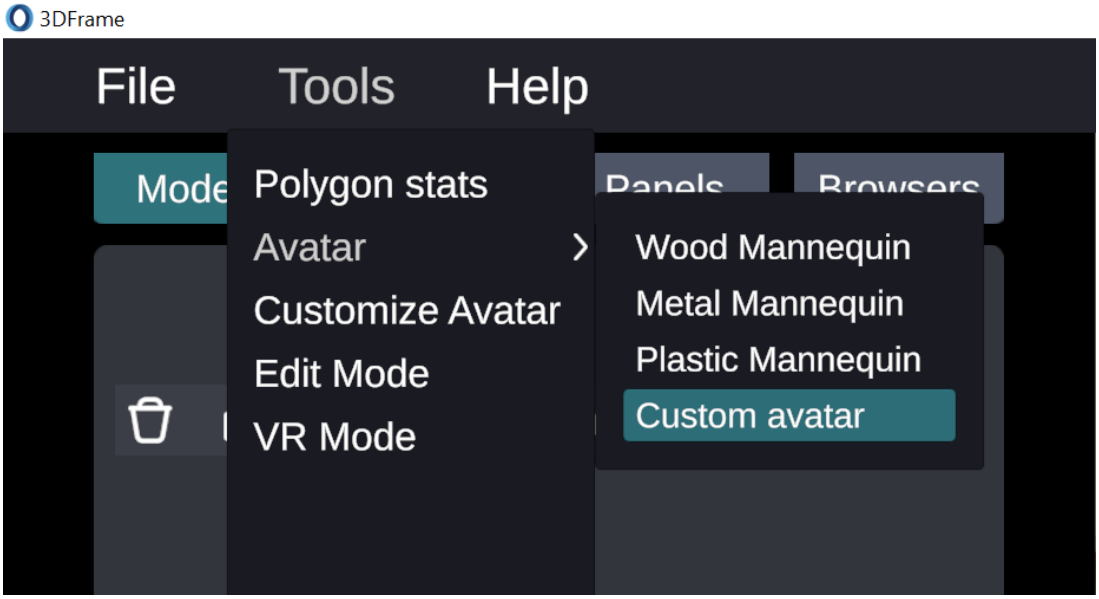
- QUIT: It allows you to exit the application. Then, you will be asked whether to save the scene or cancel the exit (nothing will be saved, and you will remain in the scene)



b. Tools

It contains:

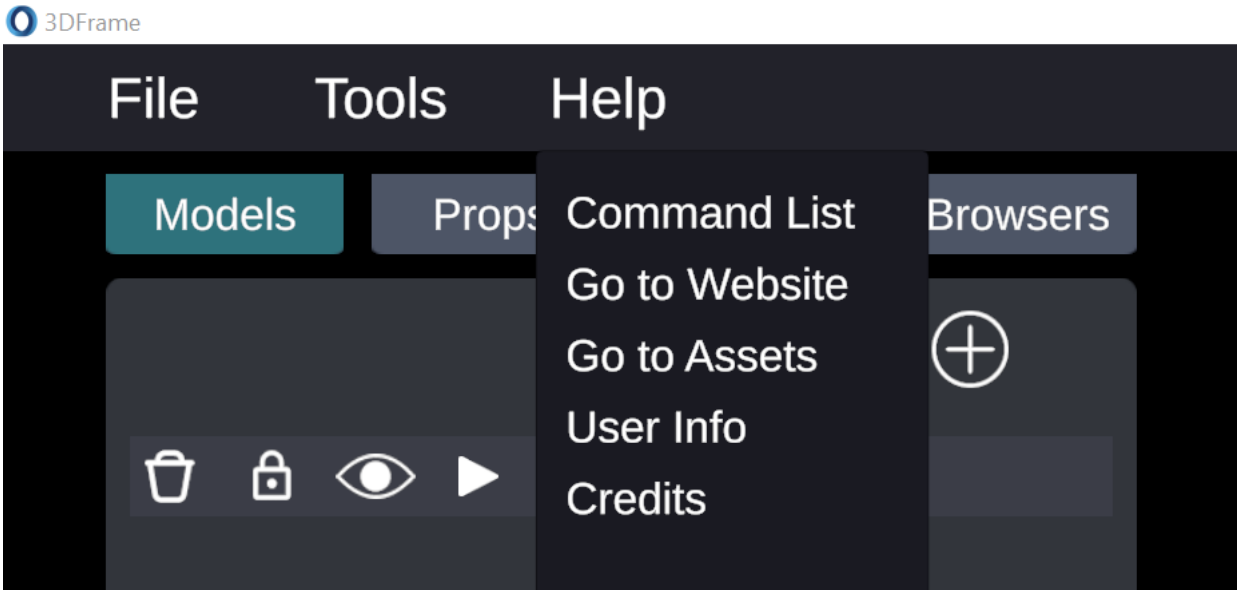
- POLYGON STATS: They show the weight and number of polygons/vertices of models in the scene. This function is beneficial for figuring out which model might slow down the scene to eliminate or hide it (hidden models do not slow down the execution).
- AVATAR: choosing the avatar before entering the scene is possible. Three default avatars (metal, wood, plastic) and a custom one is available.
- CUSTOMIZE AVATAR: 3DFrame, having integrated Ready Player Me (https://readyplayer.me/it), gives the possibility to use the avatar created on the platform. (Back to section)
- EDIT MODE/ SCENE MODE: to switch from edit mode to desktop (default), and vice versa
- VR MODE/DESKTOP MODE: to switch between desktop and VR views. If an error connects with the viewer, a pop-up will show how to reconnect.



c. Help

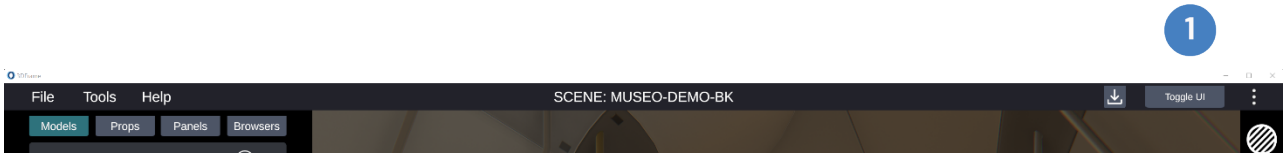
It contains:

- COMMAND LIST: A list of commands helpful in moving around within the application.
- GO TO WEBSITE: This is a direct link to the Cloud from where to upload content and manage the 3DFrame account (https://app.3dframe.vection-technologies.com/signin).
- GO TO ASSETS: if clicked, it opens the window where the application locally saves the files used in the account. CAUTION: Changing this folder while using the app may cause problems.
- USER INFO: a pop-up that gives 3DFrame user and license information, such as expiration, user, and name.
- CREDITS: pop-up giving information about the version of the app.



d. Toggle UI

This button hides the UI and allows you to switch to Presentation mode. You can invoke this function using the F1 button.



e. Settings

Editable parameters of the application:

- Quality: It changes the rendering quality of the application.
- Touchscreen: It enables or disables movement via the touch screen, disabling keyboard movement. The left joystick controls forward/backward, left/right movements, and the right joystick up/down. You can also enable a background to visualize the controls better.

- Models: You can decide where models will be imported into the scene, whether in front of my avatar (default) or the scene's center.
- VR: Also known as "Smooth camera," it allows for a smoother display of the headset stream to the same user's PC monitor. It also reduces PC performance (it can be functional if you want to show your view during a VR session). Additionally, you can enable rotation of the avatar 180° by tilting the controller joystick backward.
- Animations: You can set how often animations will record movements. At the value "0" animations will be smoother but will reduce PC performance during creation (does not affect playback)
- Connection: It defines the maximum time before ejecting a user trying to enter the scene, active only for Webex host

18. ToolBar

1. Materials

You can customize 3D models by assigning them materials and colors in the library or creating your own.

2. Environments

You can contextualize scenes and 3D models in different environments available in the library. You can also request the inclusion of custom environments.

3. Teams Group

In this section, you can view all participants within the scene and create calls and video calls. Additionally, the host user of the space can assign the editor/viewer role to other users. Finally, you can edit your display name by clicking and writing it down.

4. Bookmarks

You can create a guided path within the slide by saving locations of interest.

5. Explode models.

Performs an exploded view of the selected model only if the model makes it possible.

6. Animation

You can animate assets in the scene through an animation system. Your animations will appear in this section and can be started, stopped, edited, and looped.

7. Media Player

It collects the multimedia in the slide.

8. Multimedia list

It provides a list of loadable multimedia in the scene.

9. Props List

It shows the available props and a button to display them on the slide.

10. Cameras

With this feature, you can create a view other than a subjective one and share it with other participants.

11. Object Properties

This section collects all information about a 3D model, including position, rotation, and scale. In addition, each different type of element will have additional properties.

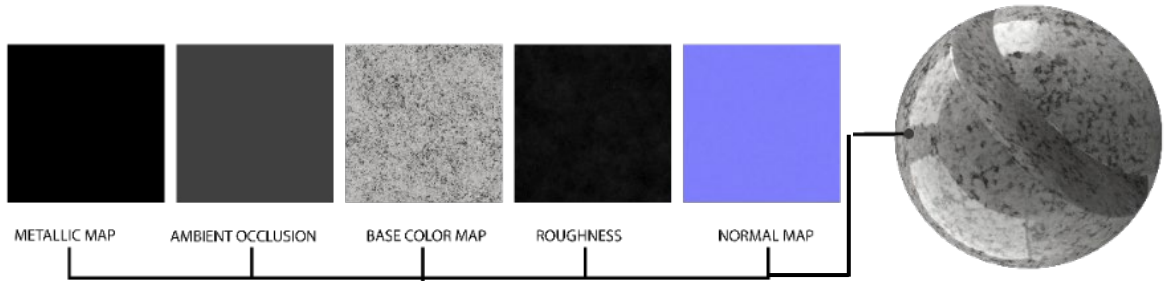
19. Materials

3D models can be customized with different materials.

LINK VIDEO TUTORIAL TO CUSTOMIZE YOUR 3D MODEL

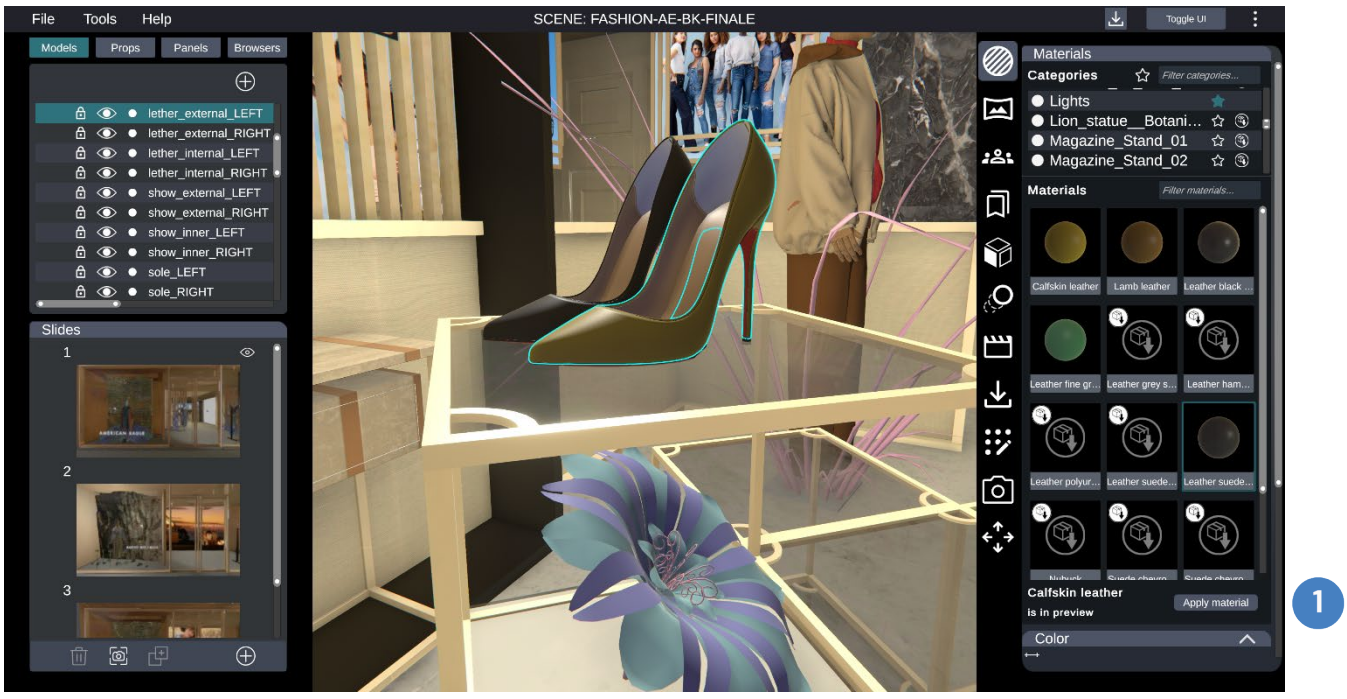
What are materials?

A 3D material is a set of properties that characterize the visual perception of a virtual object. For example, it can define the appearance of a surface, such as color, texture, transparency, reflectivity, brightness, and many other attributes that affect the visual appearance of the 3D object. Using materials, it is possible to create 3D objects with very realistic aspects, such as the surface of a metal, plastic, or fabric object. A 3D material comprises multiple textures named: metallic, Ambient occlusion, map, base color, roughness/smoothness, and normal map. The combination of them creates the 3D material.



a. Assign a material.

3DFrame has a library of materials available for download, divided into categories. To assign a material to a 3D object, select the part of the object you want to customize and double-click on the material to set to it or click the "Apply material" button (1).



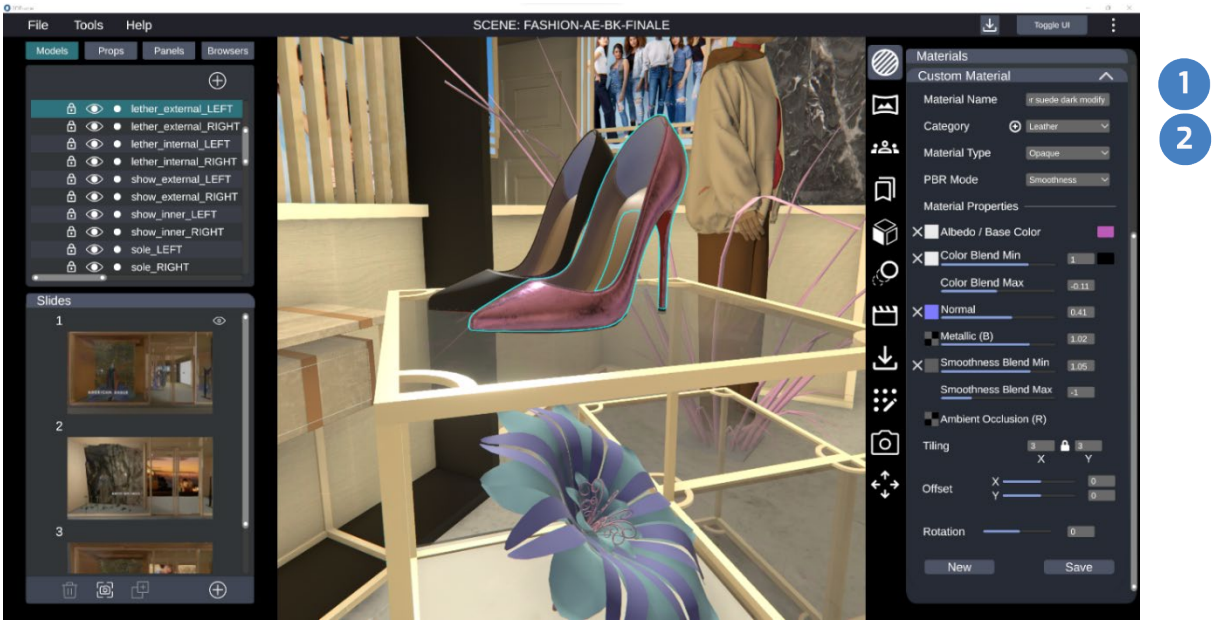
To download and use the material, click on the icon on the left (1) or the Download All icon to the right of the category (2).

b. Change the color of a 3D model.

Once you have chosen the desired material and selected the mesh of interest, you can choose its color using the "Color" section (1) by entering a HEX code (2) or by using the tool below. You can also discover and retrieve material and color (3) or use the color bar that appears in section (4).

c. Modify a material.

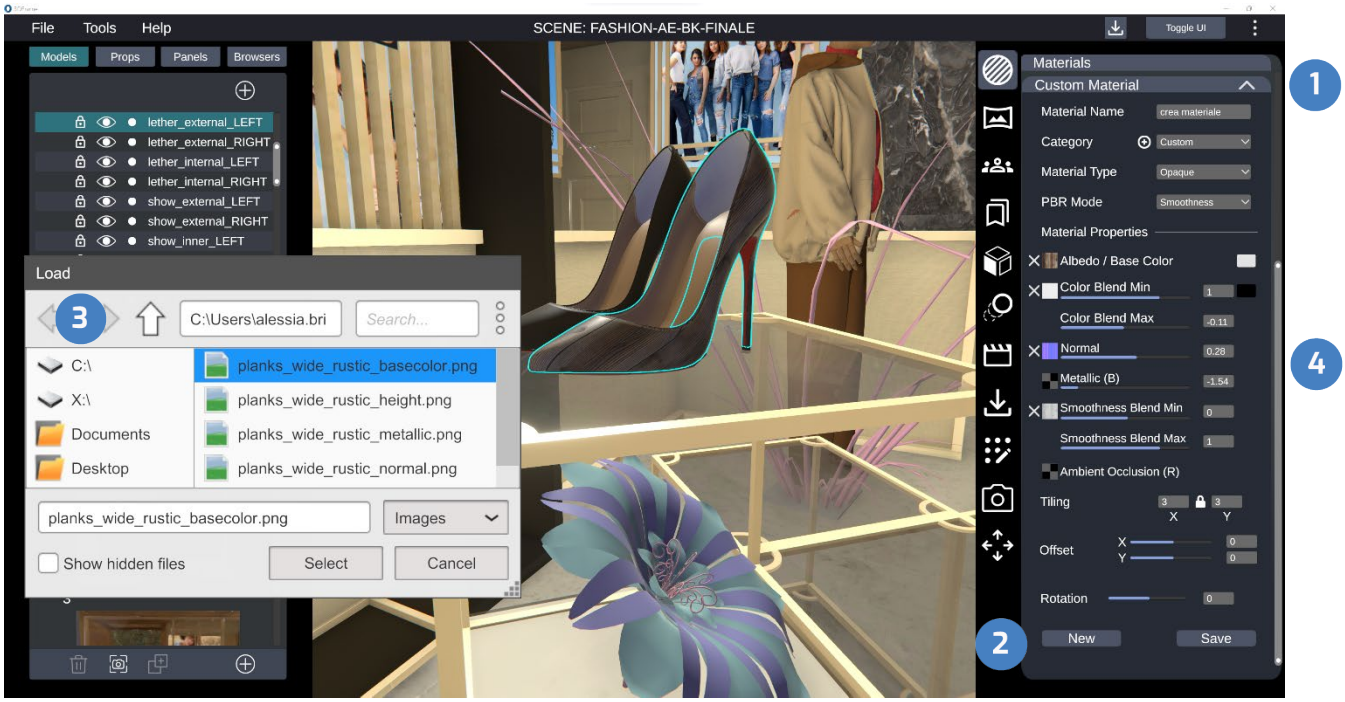
You can modify a material by going to set its properties. Several settings allow you to change various parameters. To save the edited material, you need to change its name (1) and assign it a category to display it within that category (2).



d. Create a material.

You can create new material using the application. To do this, you have to click on the "Custom Material" button (1), then on "New" (2). After this, a window allows you to enter the various Jpeg/png files to create the material (3). Then, if you want to change the textures of the material, you have to enter the PNG or JPEG files in the appropriate sections. Afterward, you can change the parameters via the proper slicer or by directly entering the numerical value (4).

As for Normal Map, using the "OpenGL" format is recommended.

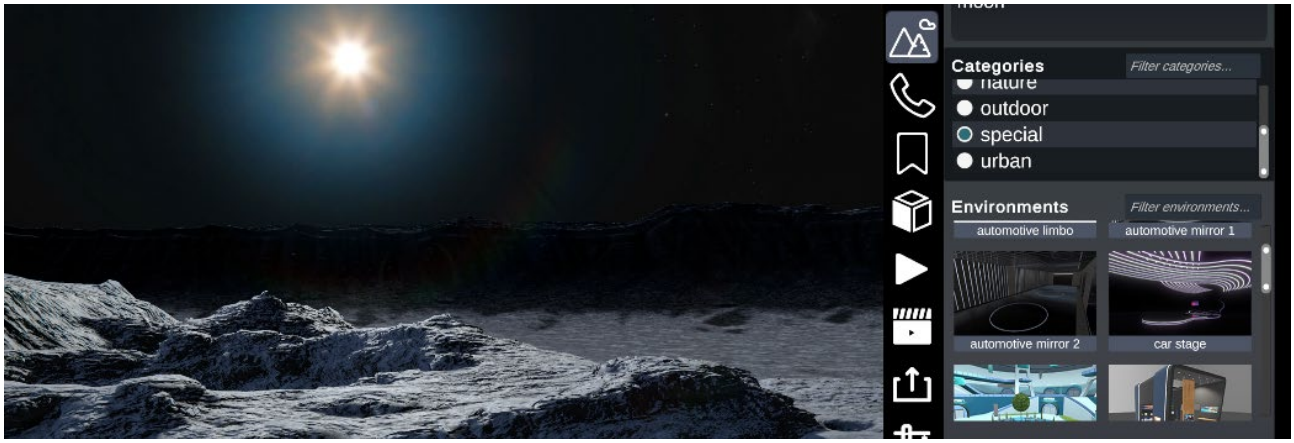


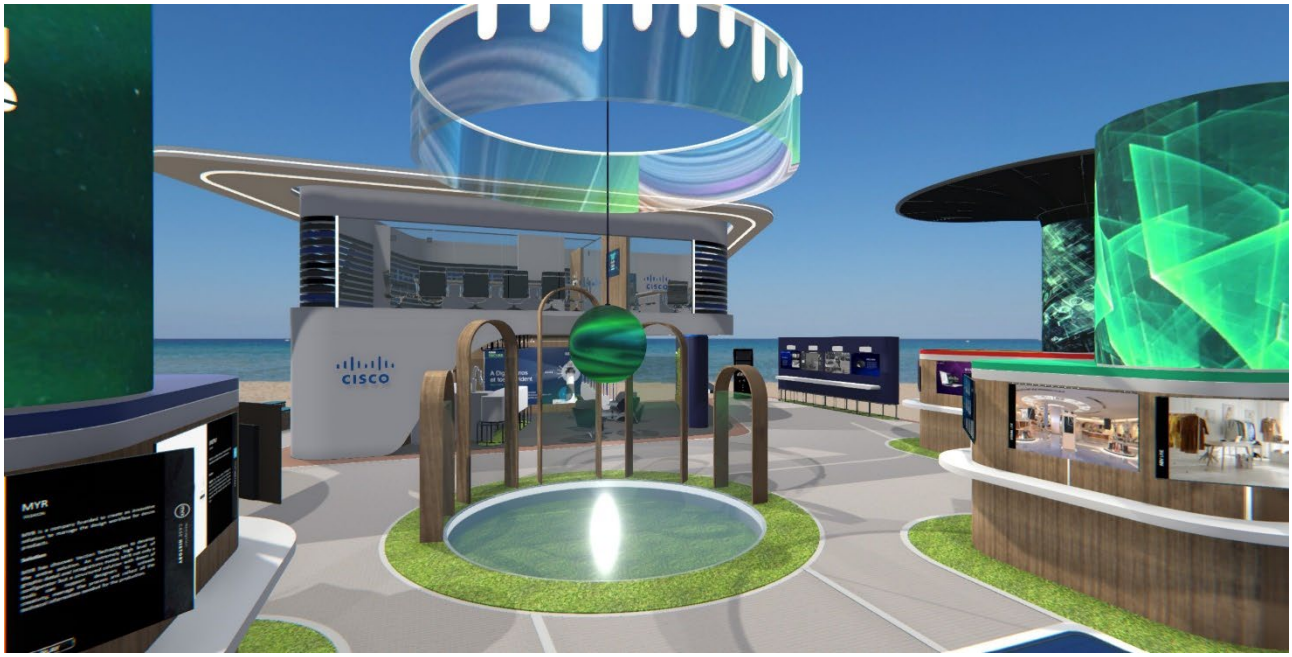
20. Environments

What is an environment?

An environment is nothing more than the setting of the project. Therefore, it is the set of 3D models that form an environment.

In other words, the environment is not a model you can customize but a predefined setting.





What is an HDRI?

An HDRI in 3DFrame means a skybox, a 24-bit spherical image (in jpeg format) that retains the panoramic background and lighting information. It is used in the 3D world as a background for the setting. For example, you can use it like a sky, for illuminating the environment with sunlight, generating reflections on metal surfaces.

a. Changing the environment

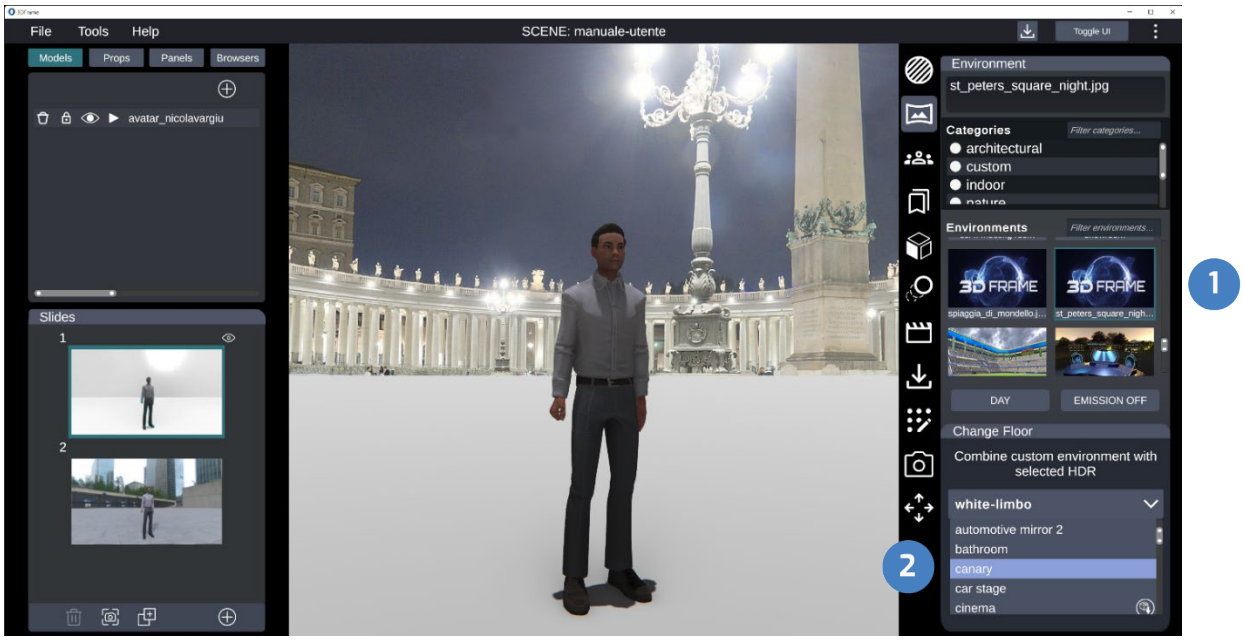
For each immersive experience, it is possible to choose the environment. LINK VIDEO TUTORIAL CHOOSE YOUR ENVIRONMENTS. 3DFrame provides a package of 3D environments (1) some directly accessible, others downloadable via the download icon on the right. As far as ambient light is concerned, a daytime and a nighttime scenario are available (2). It is also possible to activate or deactivate the emissive properties of materials to generate lighting effects on the environment (3).

If you want to create one or more customised settings, you can make a request to your sales representative or via https://vection-technologies.com/contact-us/

b. Mixing Environment and HDRI (skybox)

You can combine 3D environments with HDRIs, which can be uploaded to the Cloud in the "HDRI Manager" section (https://app.3dframe.vection-technologies.com/hdri-manager). To find the

perfect combination, select the uploaded HDRI, which will appear in the settings section (1), and choose a 3D setting from the "Change Floor" section (2).

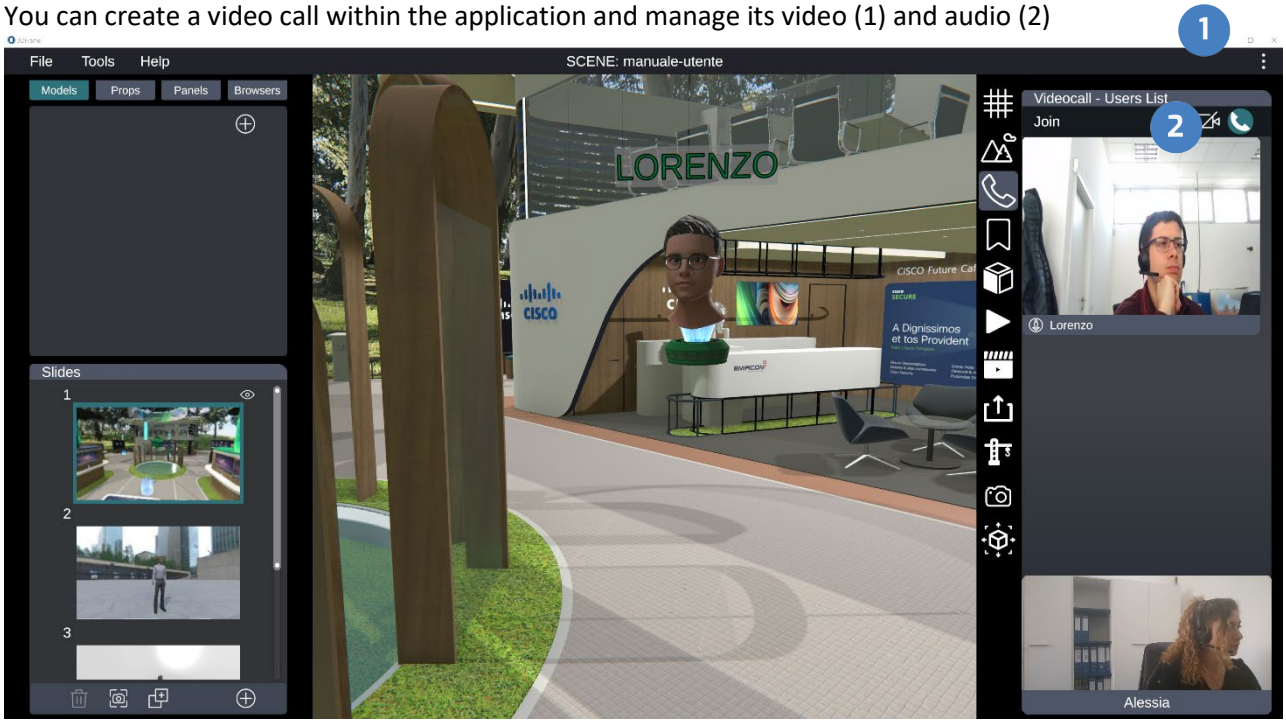


21. Teams Group

This section will display all users within the scene.

a. Create a video call.

You can create a video call within the application and manage its video (1) and audio (2)

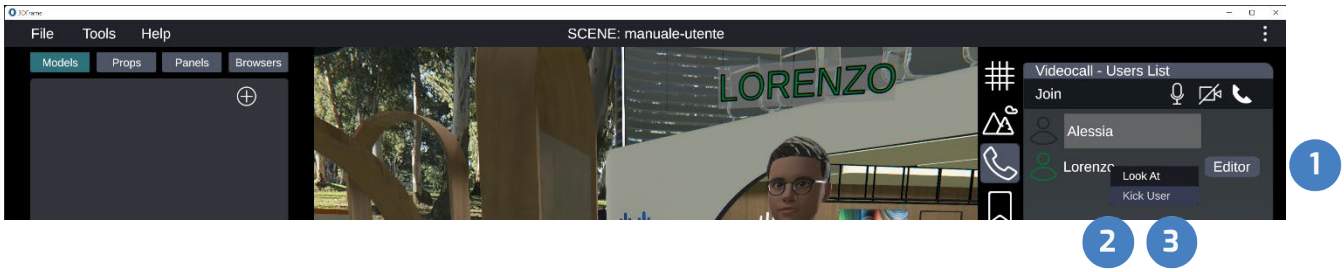


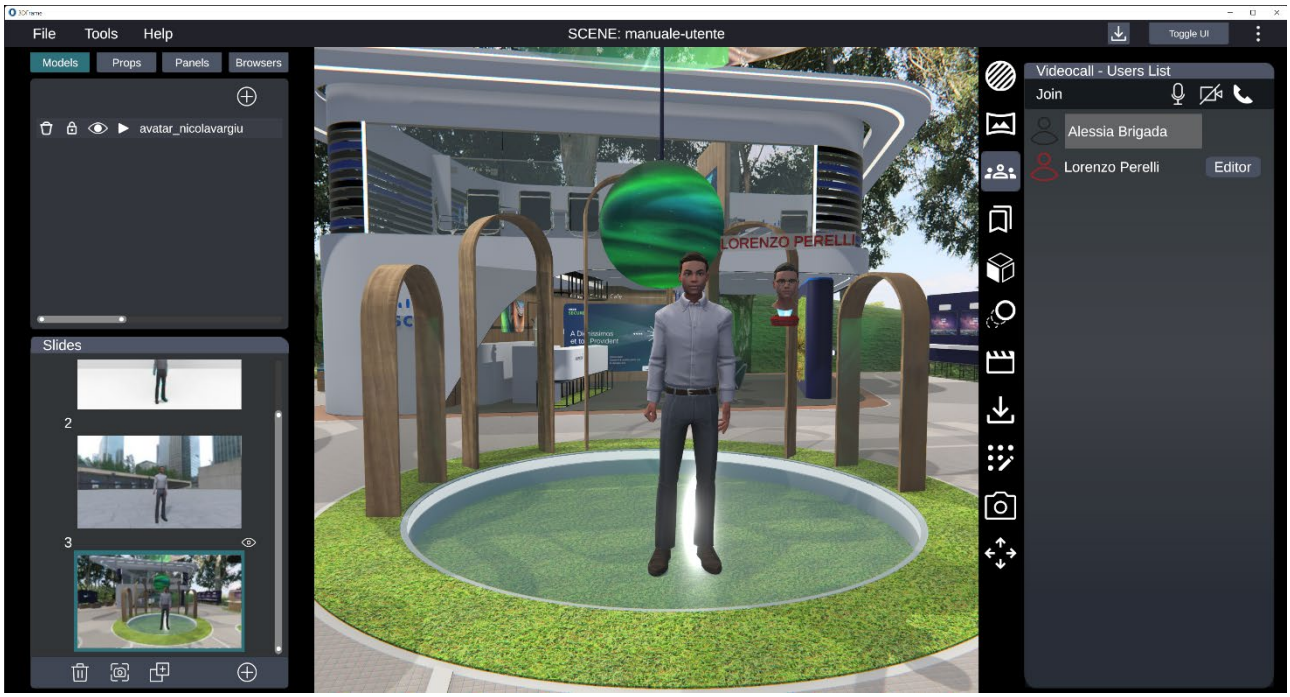
b. Setting up an editor or viewer for a participant

The scene host can decide the role of other participants (1). If "Editors" can change the scene, "Viewers" can only view the contents and move around the scene.

Any user can look toward another by right clicking the desired user's name and selecting "Look At" (2).

The host also has the option of removing a participant from the scene, again by right-clicking over the name and selecting Kick User (3).



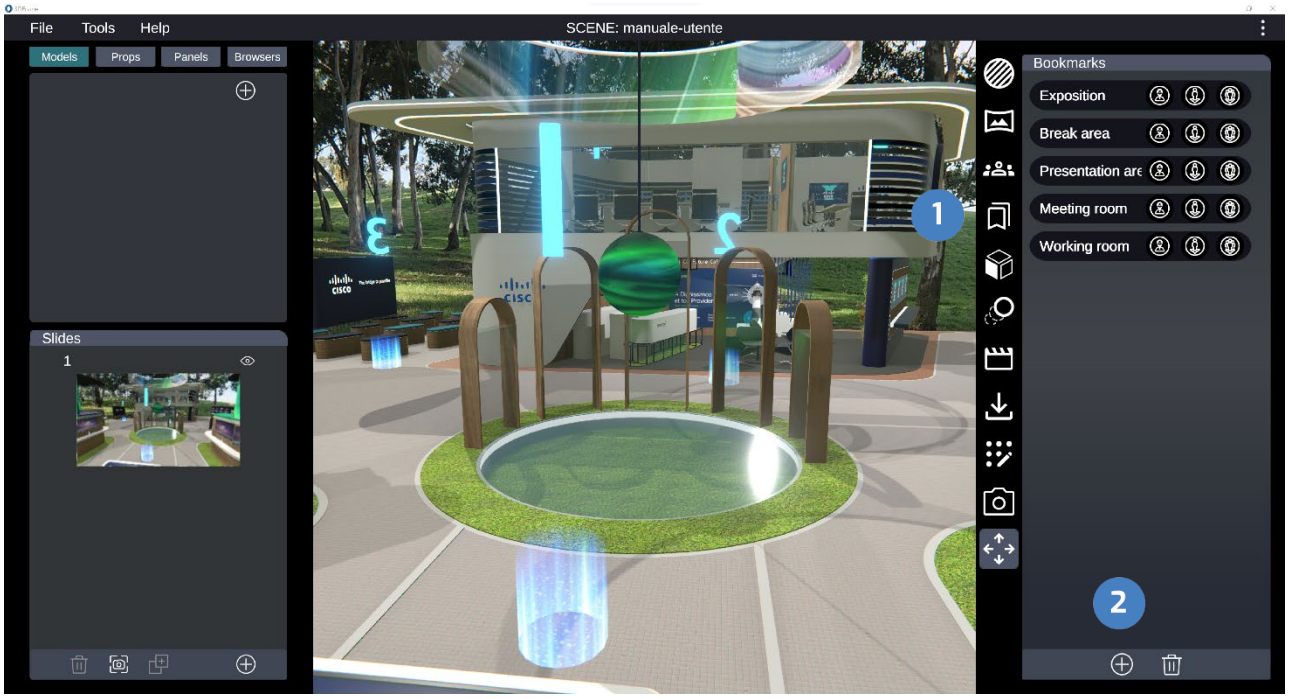


22. Bookmarks

A bookmark saves a precise location within the scene that allows the teleportation of an avatar or all participants with one click.

a. Create a bookmark.

To create a bookmark, you have to place your avatar in the desired location and orient it in the direction you want to set the viewpoint for users. At this point, click on the icon (1) representing this function and click on the "+" at the bottom (2). The bookmark is created in its desired location while also preserving the rotation of the avatar's face.



b. Bookmarks settings

Each bookmark has three accessory features:

- Set As default (1): Every time you enter the slide, every avatar will materialize. At this point, you can only enable one per slide.
- Go to bookmark (2): You are moved to the selected point.
- All go to bookmark (3): All avatars in the scene will move to the selected point.

c. Rename and delete all bookmarks.

Once selected, bookmarks can be deleted (1) and renamed (2). Specifically, to rename a bookmark, click on the name and type in the box.

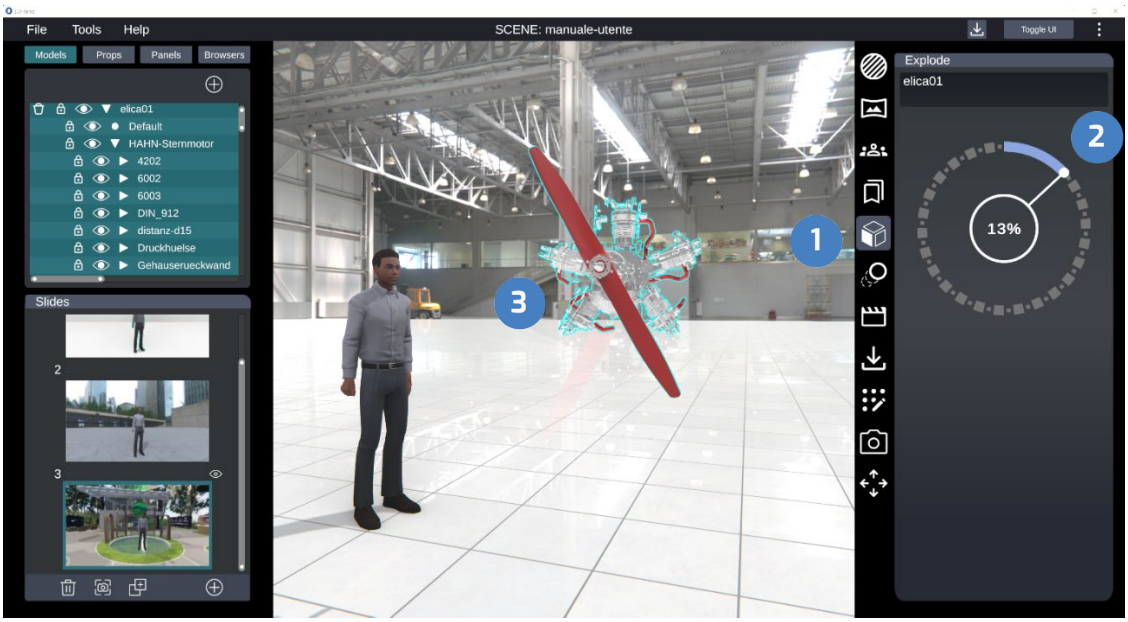
23. Explode model.

If a 3D model consists of several separate meshes, it is possible to explode it and display its parts. Thus, single mesh models and "rigged" models (e.g., animate dummies) are excluded.

A rigged model is a 3D model where you can control animations on joints and moving parts (skeleton). Therefore, it is not possible to create an articulated animation if my model consists of a single piece, it does not have a skeleton.

a. How to explode a 3D model

To explode a pattern, click on the dedicated icon (1). A section containing a percentage indicator (2) will open and select a model (3) will show the explosion level, which can be modified with the slider or by entering a specific value.



24. Animation

Thanks to the animation system within the application, it is possible to animate the assets in the scene and make them impactful.

Within 3DFrame, it is possible to create animations but also to view others created with third-party programs.

a. 3D models with animations in the source file

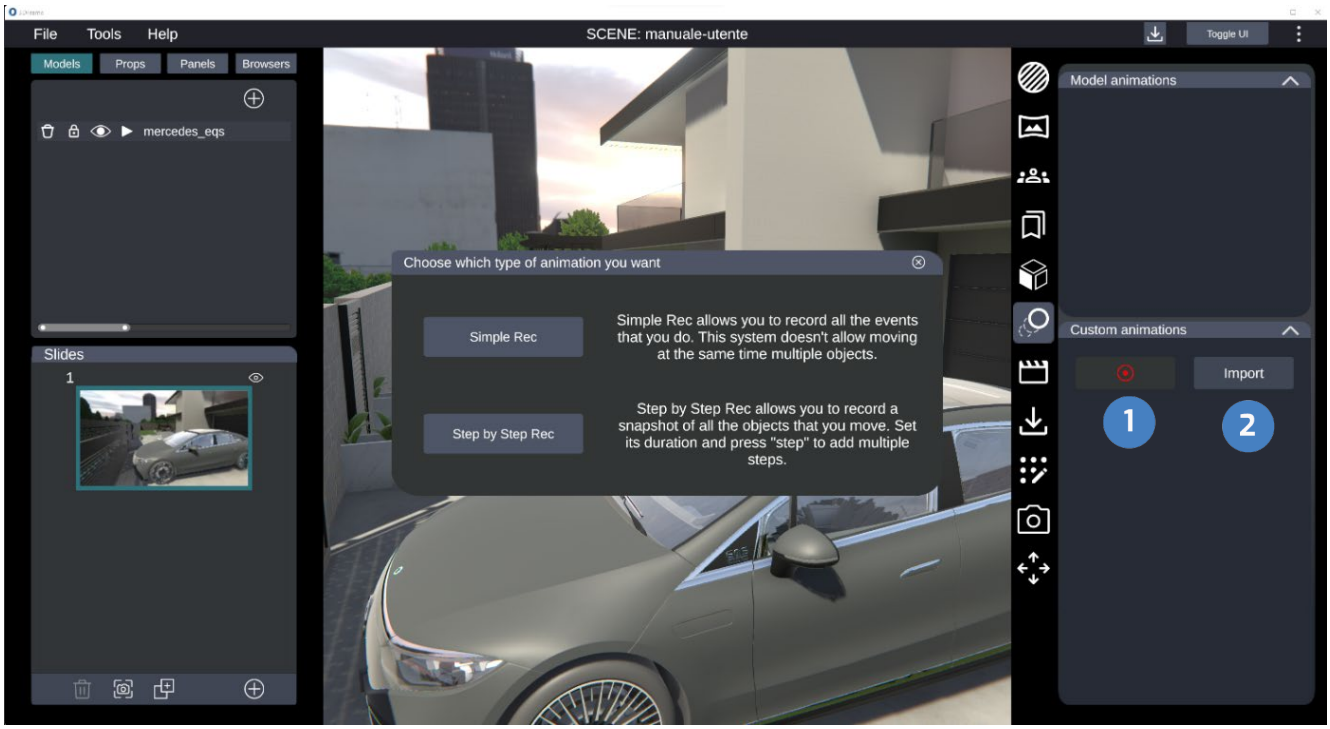
If the 3D object placed within the immersive experience has one or more predefined animations, they can be reproduced in 3DFrame through the "Model Animations" section (1). If the model has multiple animations, the application can only reproduce one at a time. Just select the 3D object with the animation and manage it through the section.

In the animations section, you can:

- Start the animation by entering slide (2)
- Put the animation in play or pause (3)
- Put the animation in a loop (4)
- Stop the animation and return to its initial state (5).

b. Custom animations

In addition to the animations already present in the model, there are two other types of custom animations. These animations can act on multiple models and meshes at the same time, and they are also customizable. Click on the Rec button (1) to open the menu or import to import from other scenes (2).



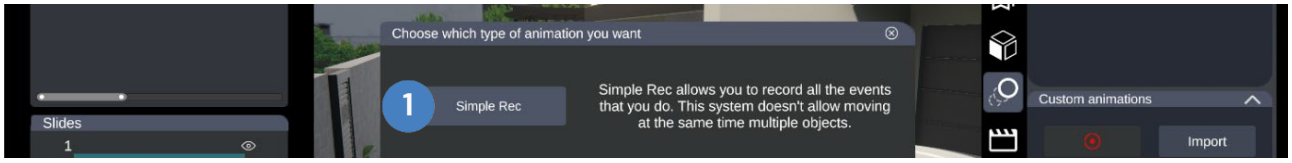
1. Simple Rec

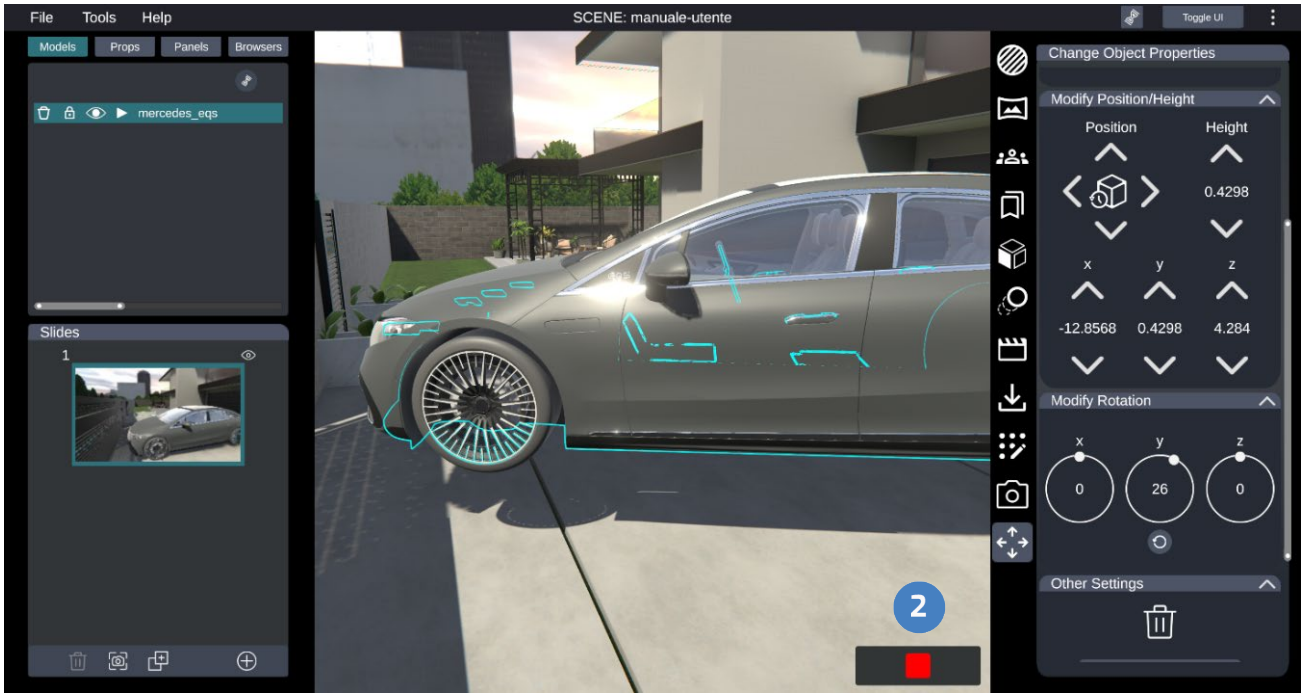
To create an animation using this method, simply click the "Simple rec" button (1) and from this moment on, every movement made on every asset in the scene will be recorded and played back later exactly as it was created, including the times used to create the evolutions. For example, use the "Object Properties" or "Explode" tools.

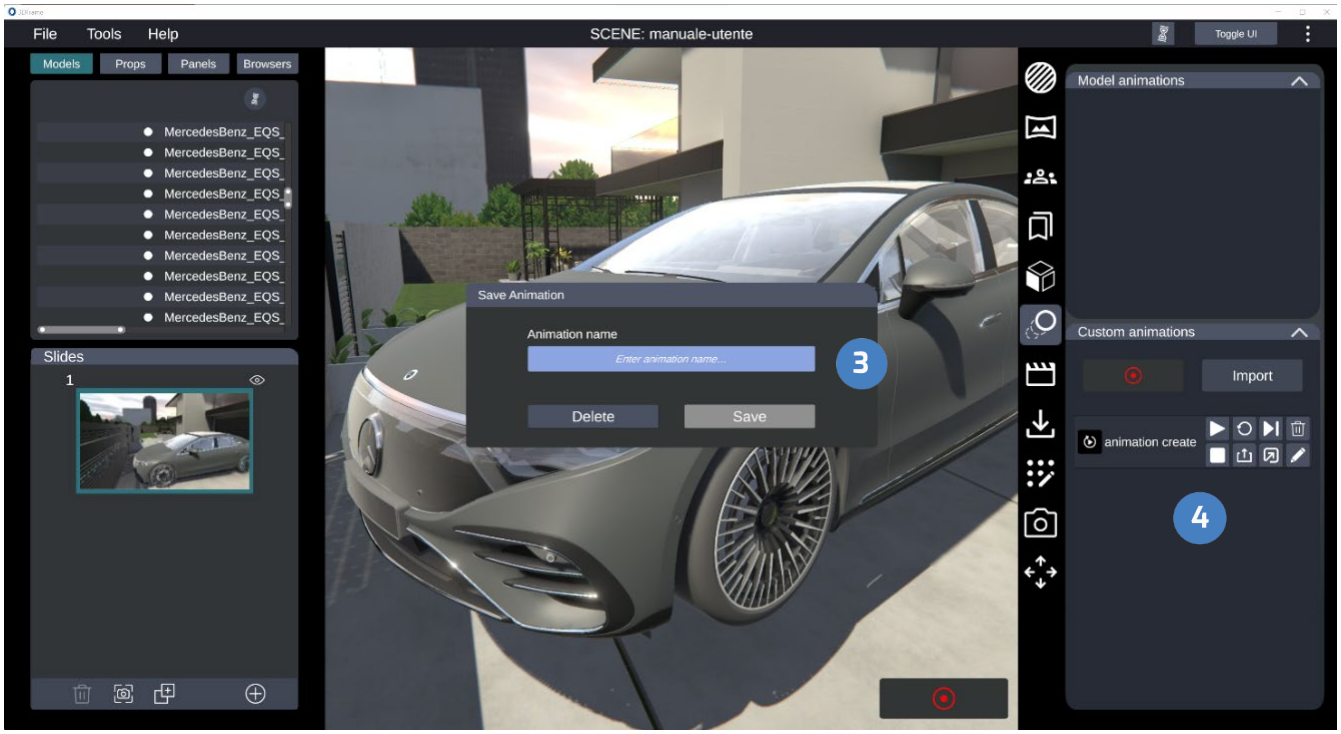
When the animation is finished, click on the red stop icon (2) at the bottom. At this point, choose a name (3) to save the animation and find it in the animation list in the dedicated section (4).

The recording of animations also depends on a parameter placed in the menu in TopBar, under Settings and Animation. This parameter indicates how often the editor records the positions of the various assets, making the animations smoother but reducing performance. Should the recorded animations be too choppy, consider reducing this parameter; conversely, if you have too much trouble recording, increase the value due to PC performance.

It is recommended to prefer Step-by-Step for simple animations. As a result, your experience will generally be smoother. Additionally, Simple rec is more beneficial for animations executed "the same way they were created." For example, it can be helpful when animating an object in VR and performing a natural 3D motion, but difficult to replicate with the menu.







2. Step by step

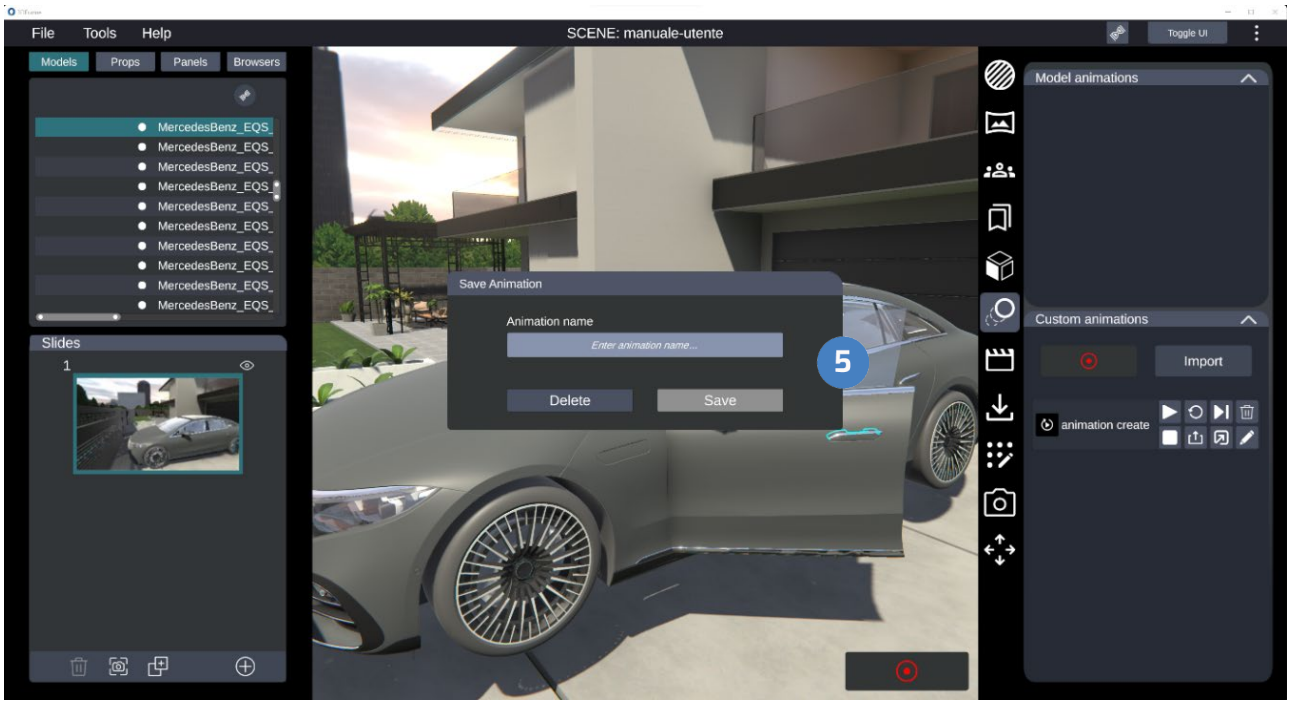
Select the "Step by step rec" option to create an animation with this method. From this point, start animating any assets in the scene to make the first step. When finished, click on "Add step" (1). In this way, all movements implemented on the assets will be recorded starting from the initial position to the final position, ignoring intermediate positions. The recording will show the resulting movement by combining the various movements; if you want to play back an animation exactly as recorded, you will need to use the "Simple Rec" method,

Once you click "Add step," a pop-up will be shown where you will be prompted for the Delay time (2) concerning the previous step (i.e., how long after the animation starts or between steps you are saving should start).

The other required parameter is Animation time (3), which is how long the animation should run.

When all steps are completed, and all parameters have been set, save the animation by clicking on the red stop icon (4) and giving it a name (5).

The animation will be shown in the animation section in order of creation.



25. Animation management

All animations created are manageable through functions such as:

- Operate or pause (1)

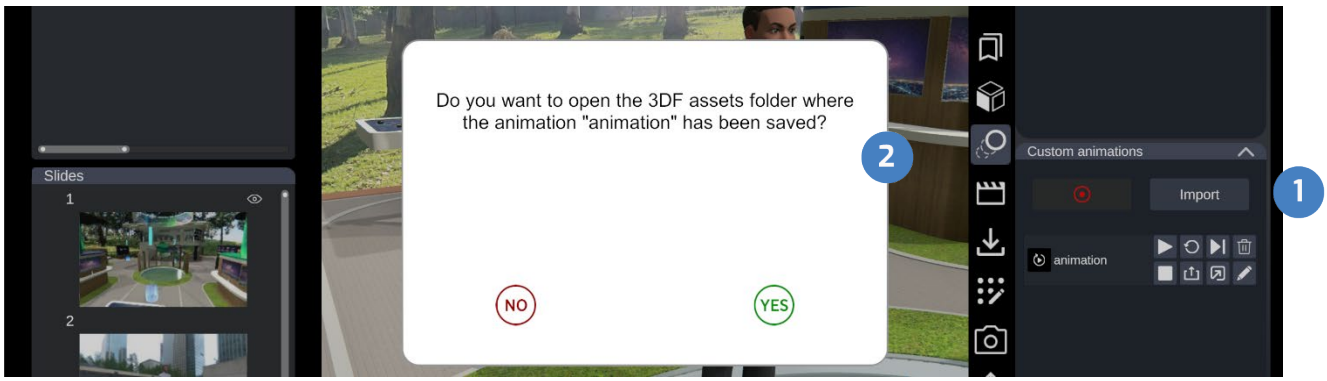
- Put in a loop (2)
- Send to the end of execution (last step) (3)
- Delete (4)
- Put in stop and return to the beginning (5)
- Export the animation (6)
- Add steps to the end (7)
- Edit parameters (8)
- Set default per slide (it can be more per scene)

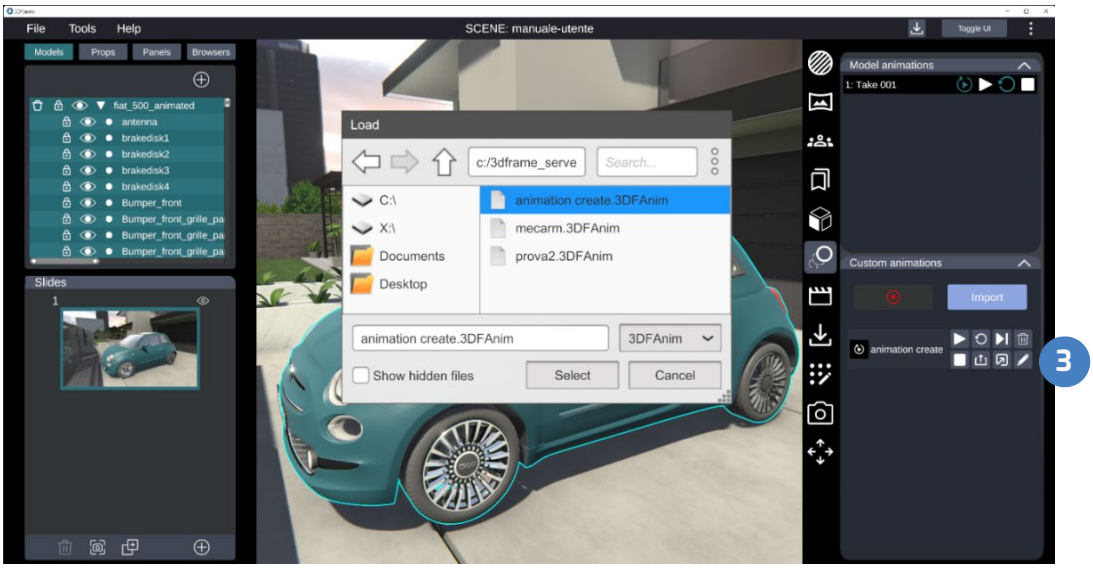
Some of these options will not be available during a multiplayer session, so consider preparing animations in a single player. With multiple users in the scene, creating new animations will still be possible, but it will not be possible to edit or delete them.

c. Import and export an animation.

To import an animation created with the 3DFrame application, you can export it from the scene where it exists and import it to a new scene, assigning it to the relevant model. To do this, click on the "Import" button (1) and select the folder where you saved the animation from the pop-up that will open (2), choosing the right file with a ".3DFAnim" extension.

Select the export button present among those proposed (3) to export an animation. A pop-up will open asking for the location to save it locally. The file will be saved with the extension .3DFAnim.

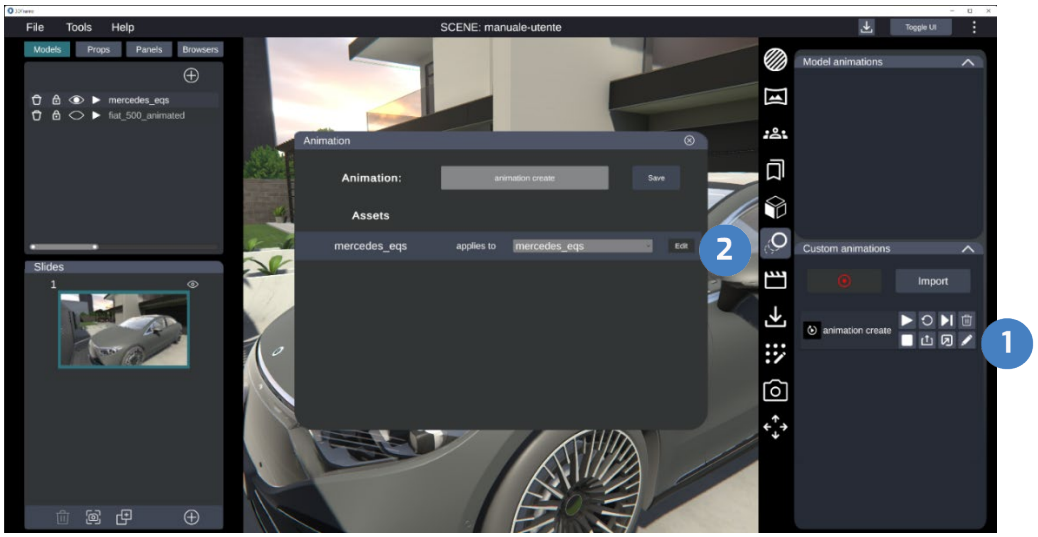


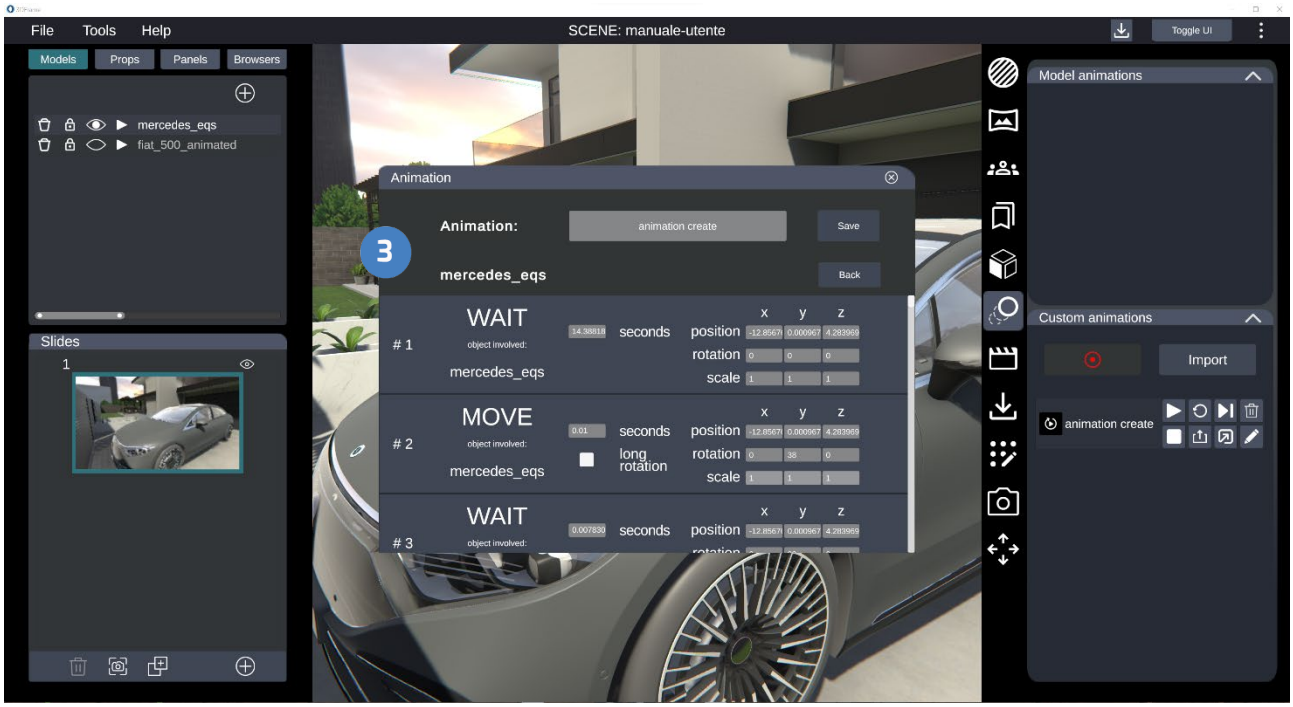


d. Editing an animation

To edit a previously created and saved animation, click on the "Edit" icon (1), opening a pop-up containing all the assets involved in the animation. At this point, you must click on the "Edit" button (2) next to the asset you wish to edit. This will then open a new screen that presents all the set actions (3) (i.e., all the steps the application has saved to create the animation of the relevant model). The application allows you to edit:

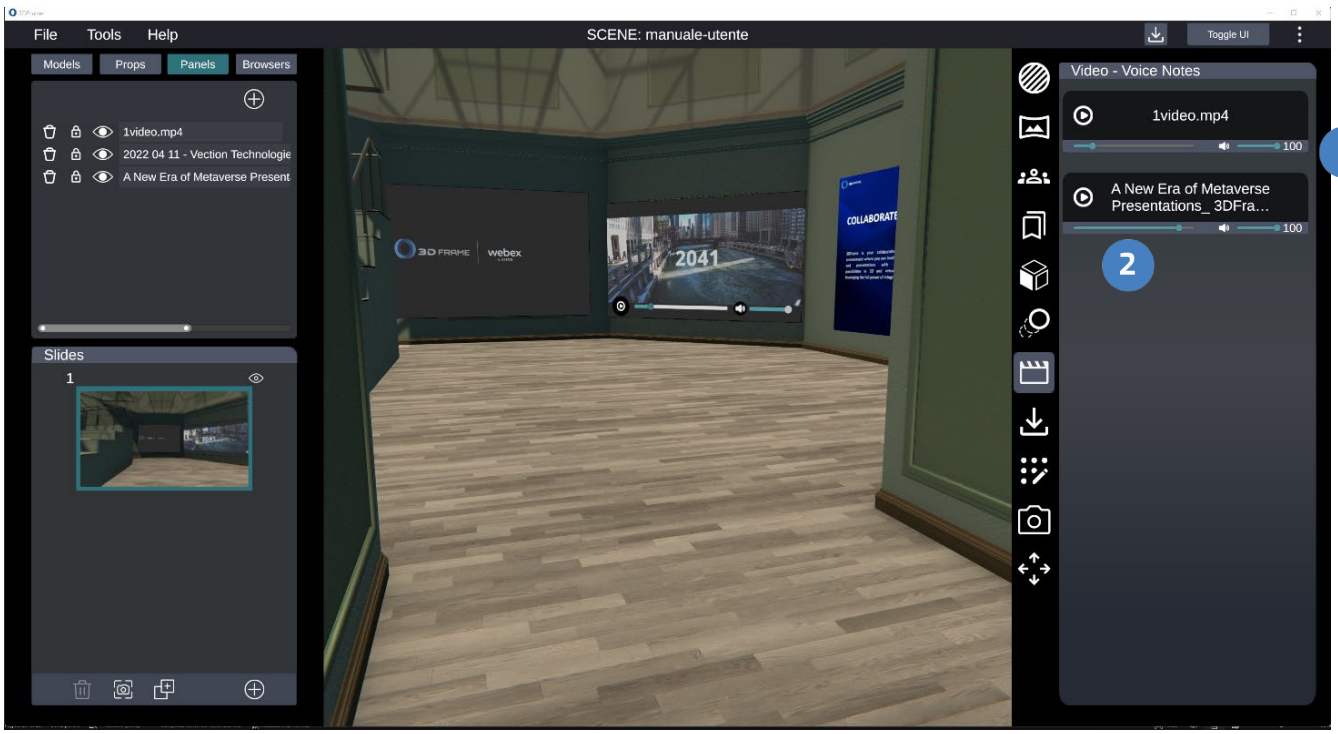
- Position
- Rotation
- Scale
- Execution time
- Whether to use the long rotation arc or not, in the case of rotations greater than 180° (default: smaller angle)
- Visibility
- Play/stop a video.





26. Media player

This section allows you to manage all staged multimedia, adjust its volume (1) and monitor the progress bar in the case of video or audio (2).

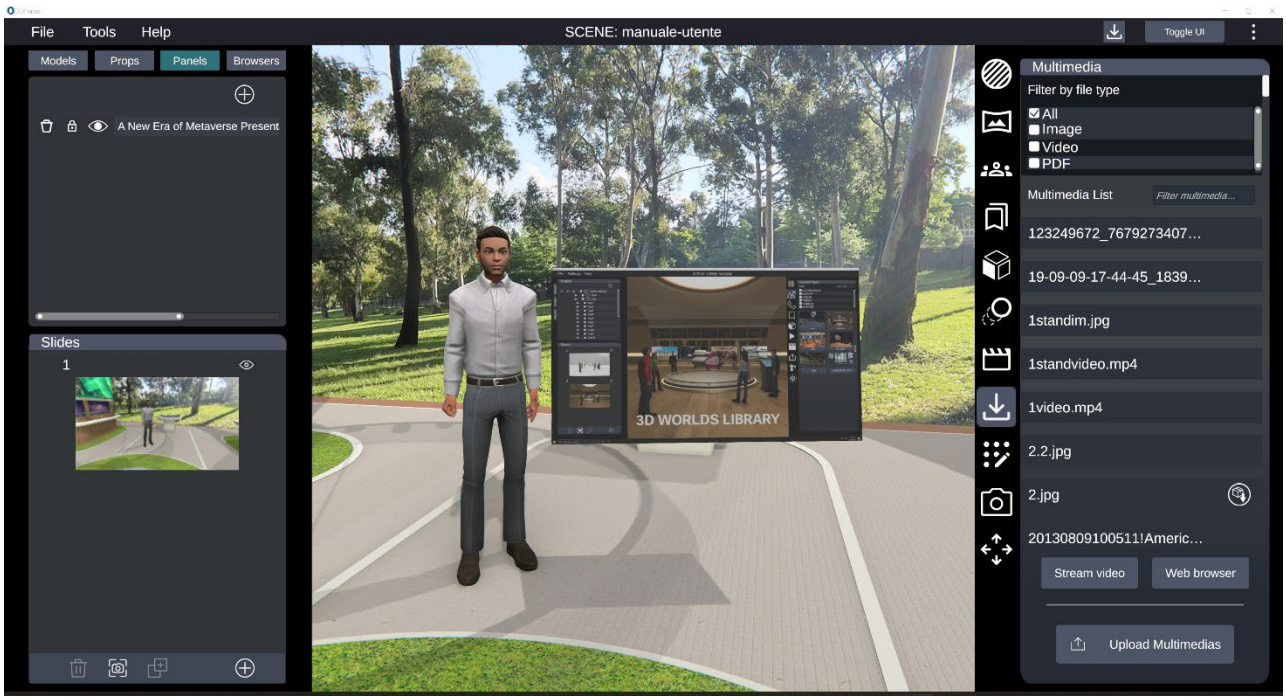


27. Multimedia list

Shared panels, images, videos, and web browsers will appear on stage as private panels, visible only to the user who created them.

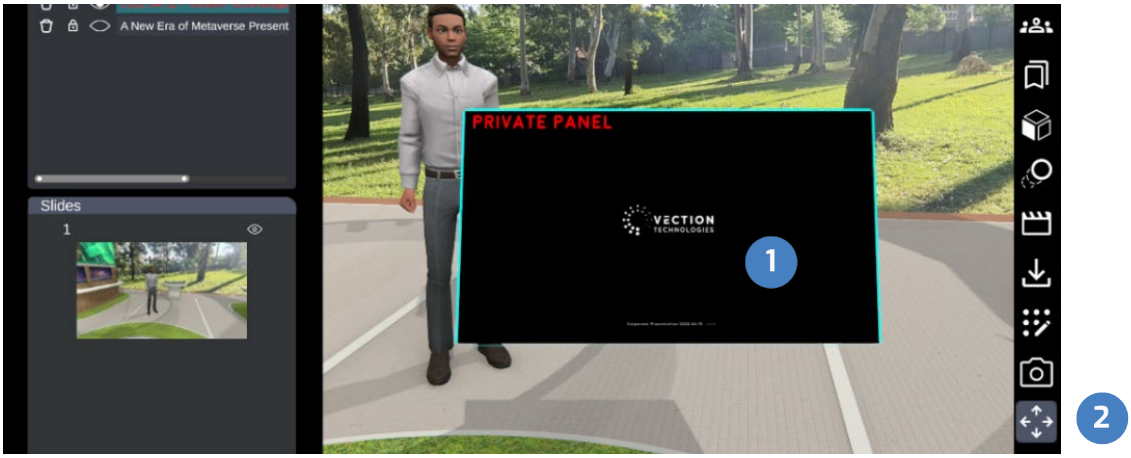
LINK VIDEO TUTORIAL UPLOAD YOUR MULTIMEDIA

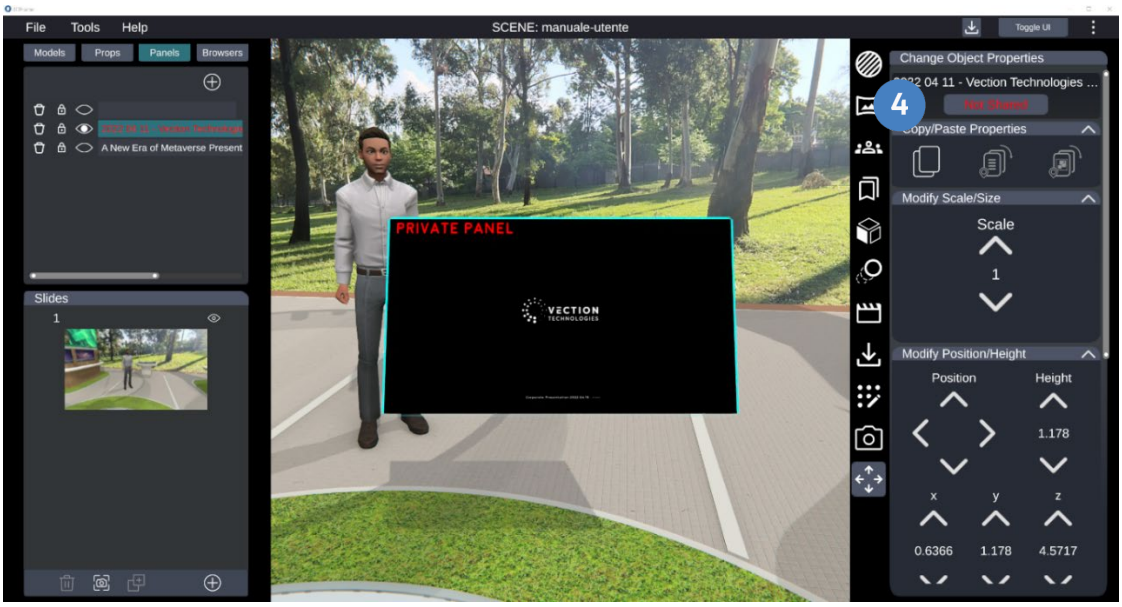
With this tool, you can insert various elements into the scene and decide whether to make them usable.



a. How to make a panel visible to everyone

When you place media within the scene, the panel is private; therefore, it is viewable only by the person who created it. To make it visible to all other users, select panel (1) and change the setting from "not shared" to "shared" through the "change object properties" section (3) found in the object properties (2). To change the setting, click on the "not shared" item (4).

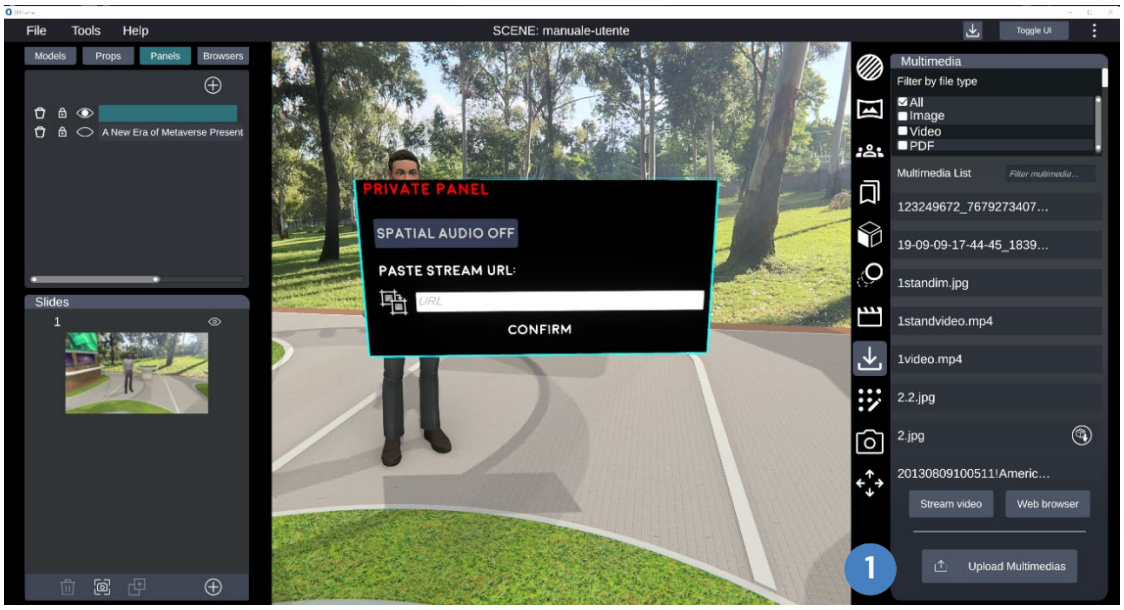




b. Upload multimedia from the Cloud

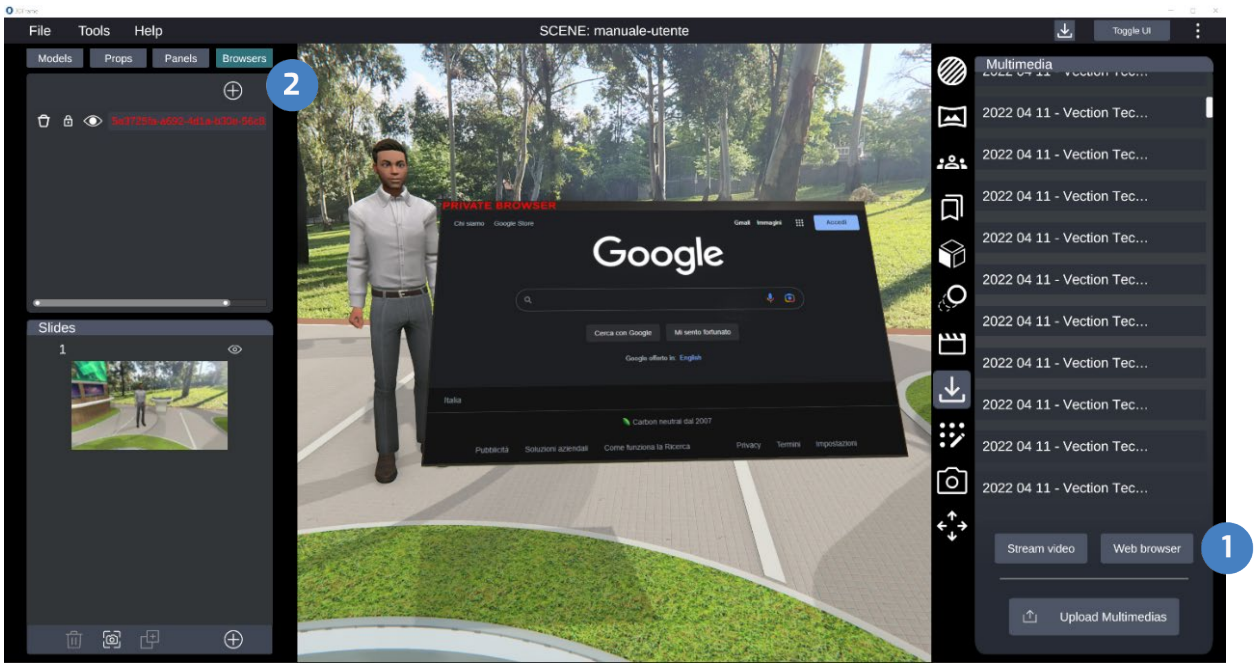
You can upload media directly from the application by clicking on the "Upload multimedia" button (1) or via the Cloud. All available resources will be listed in the list (2), which can be filtered by type (Video, Images, or PDF).

In the case of video panels, it is possible to set the spatial audio with the relative distance (Web Browser and video streams excluded).



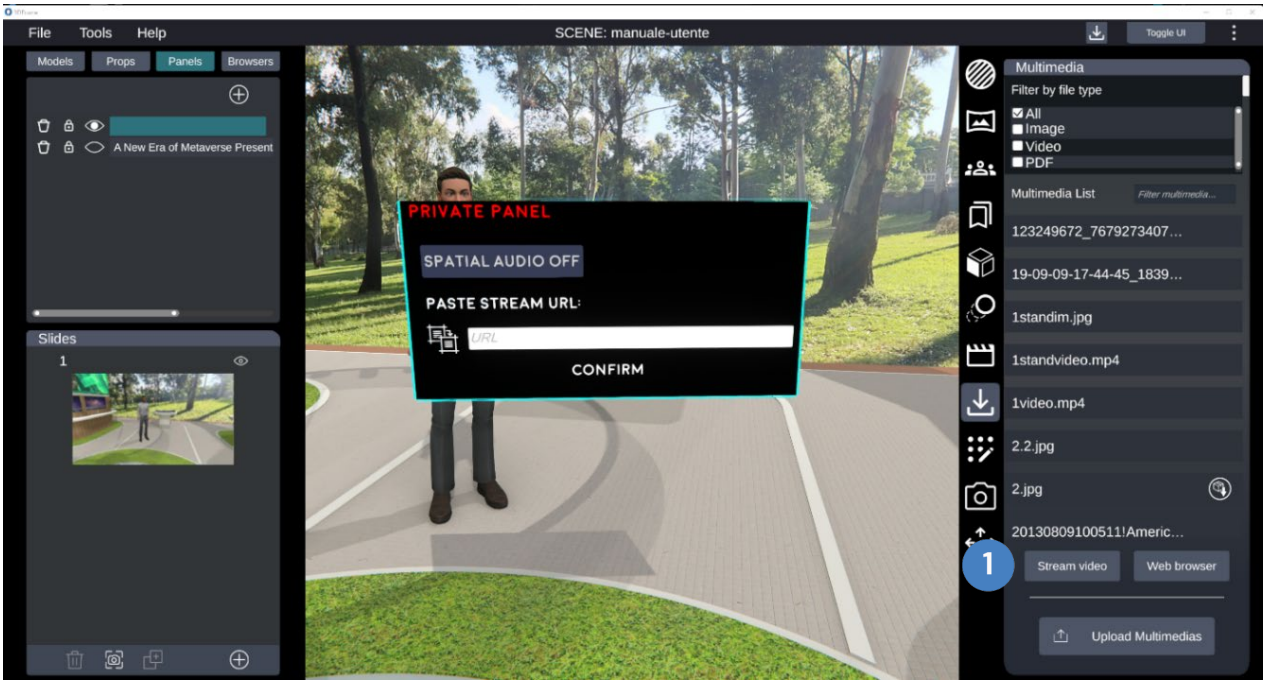
c. Web browser

To insert a web page, click on the "Web browser" button (1) or on the "+" in the Browser tab in Element Management. Then, select the created panel and click on the "Object Properties" tool. Here, you can enter an address in the search bar and use the basic functions of a browser. To make the panel visible to everyone, set "Shared" the object through "Object properties" at the top.



d. Streaming video (YouTube, Twitch)

YouTube or Twitch videos can be inserted. Just click the "Stream video" button (1) and enter the address of the video you want to view to insert it into the scene (spatial audio will not be available).



28. Props list

This section allows the user to customize the scene by inserting lights, walls, and "animation space." Lights allow localized or radial lighting, while walls allow the user to separate areas of the environment to create rooms, floors, ceilings, and more. "Animation spaces" allow the user

to create a 3D space that, when traversed by an avatar (with head or hands), will trigger a chosen animation (e.g., create buttons or animations dependent on the position of an avatar).

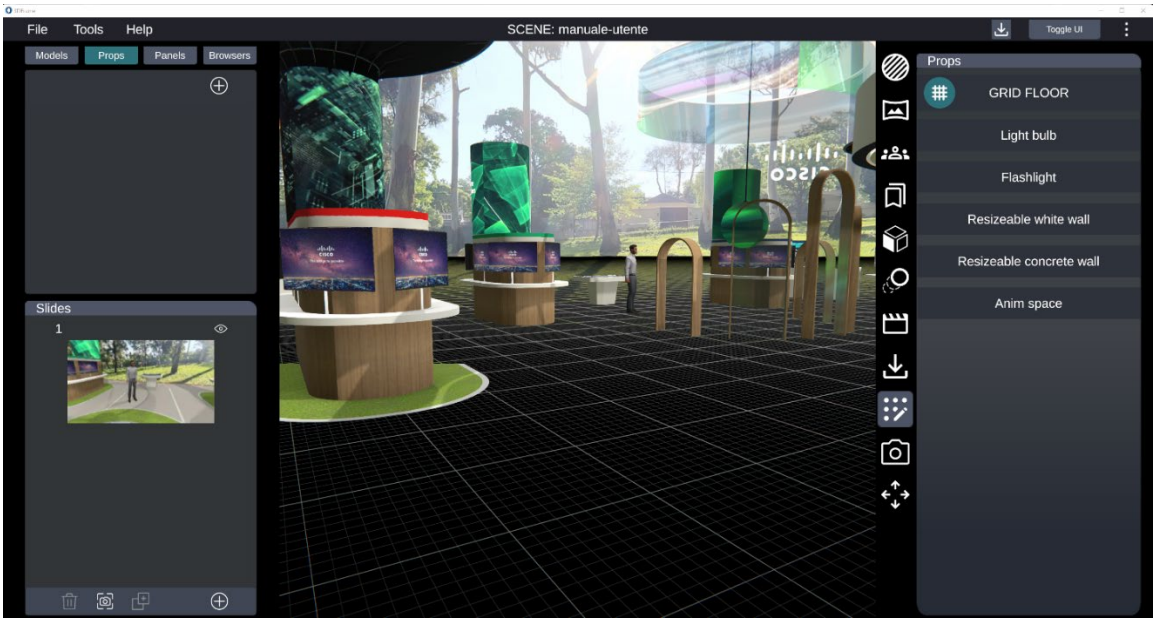
They can be animated like a regular 3D model.

LINK VIDEO TUTORIAL PROPS E WALLET

Through this section you can:

a. Grid floor

Allows you to view the scene with a grid that makes it easier to adjust and place elements. If activated, lights and "Animation spaces" will become visible from your viewpoint and will not change for other users.



a. Lights

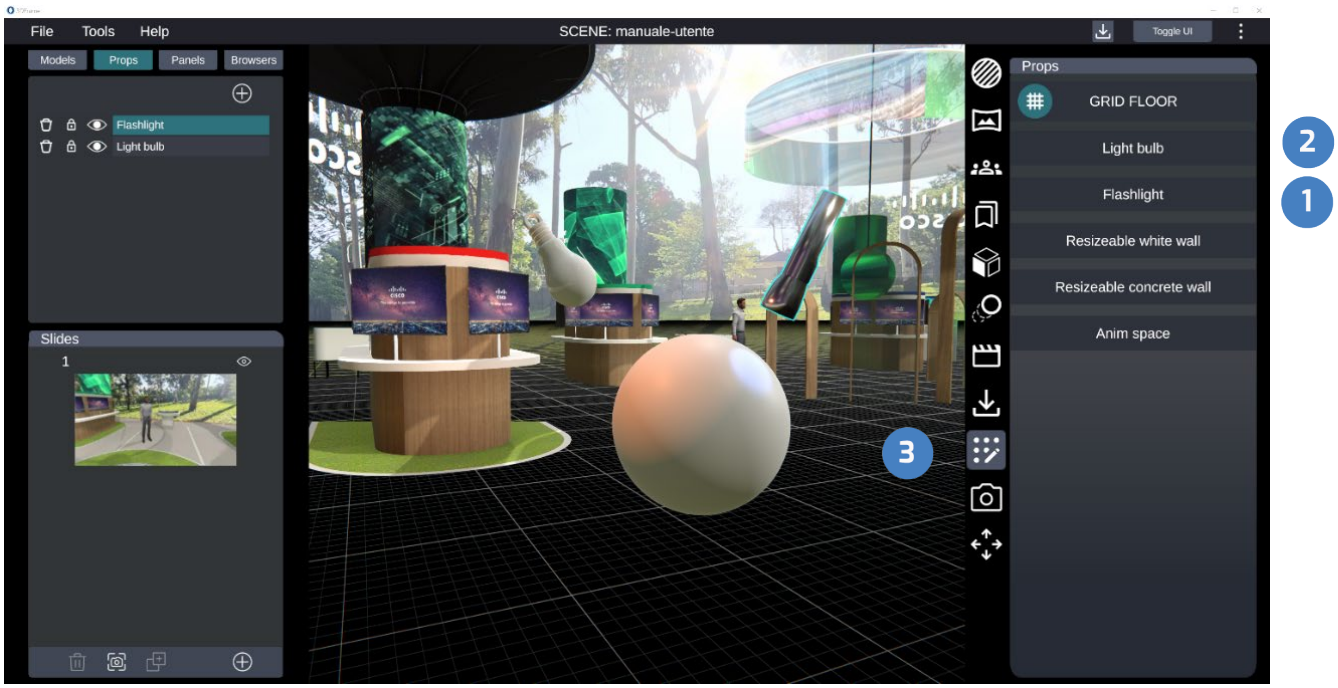
Within 3DFrame, it is possible to insert two types of "real-time" lights, the effect of which occurs in real time:

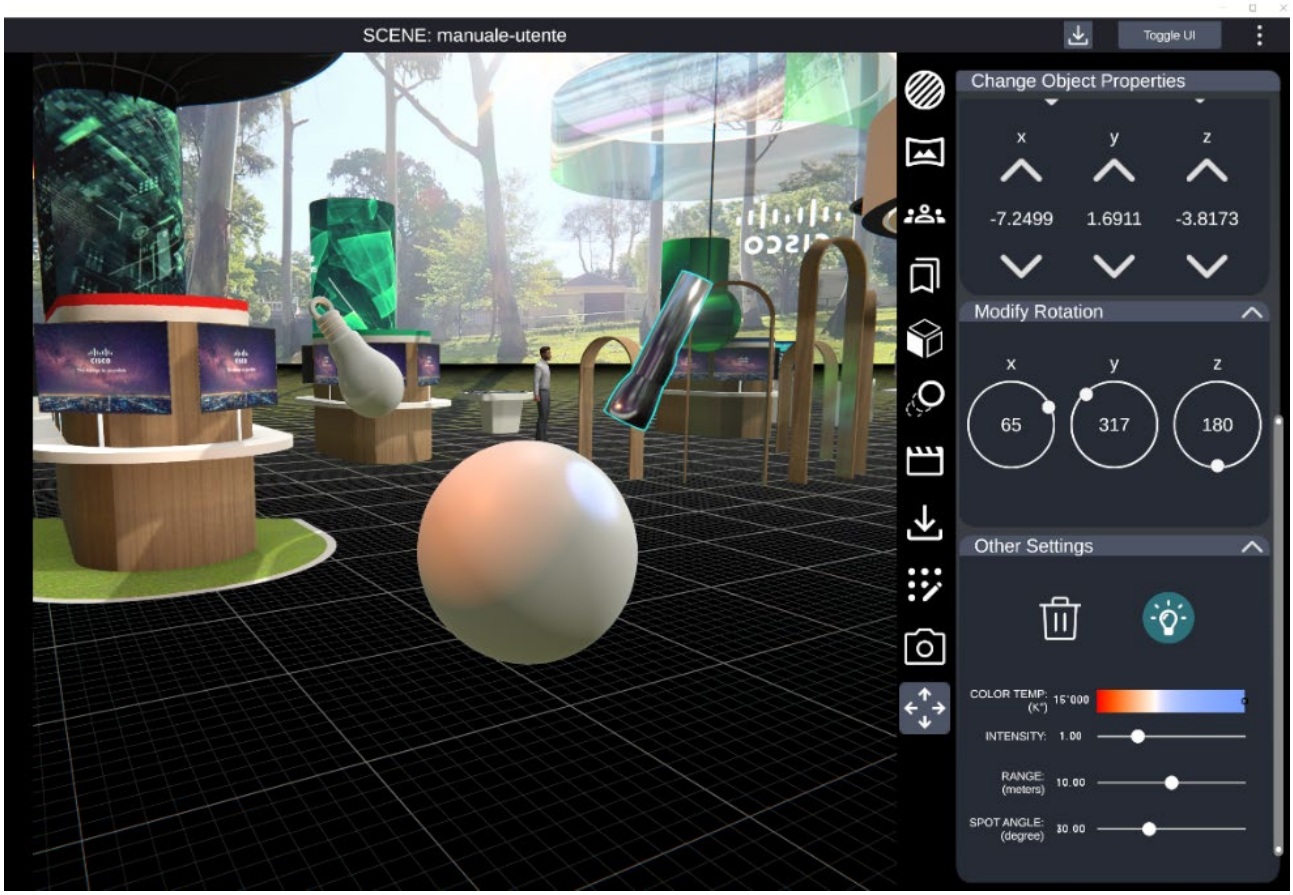
- Flashlight (1), direct light.
- Bulb light (2), radial and diffuse light.

For both, you can adjust various parameters, including:

- Temperature, which changes color.
- The position and rotation.
- The range, which is how far it reaches.
- The intensity, which is the power of the light.
- The spot angle is the angle at which the cone of the light (Flashlight) opens.

To insert a light, select one of two options (Bulb or Flashlight) from the "Prop list" menu (3). Then, change the parameters through the "Object properties" section (4), which will open automatically when you select light in the scene. Next, to change the position and rotation of light, select it and change its values through the " Modify Rotation " section (5). Finally, to modify intensity and color, you can change its parameters in the " Other Setting " section (6).



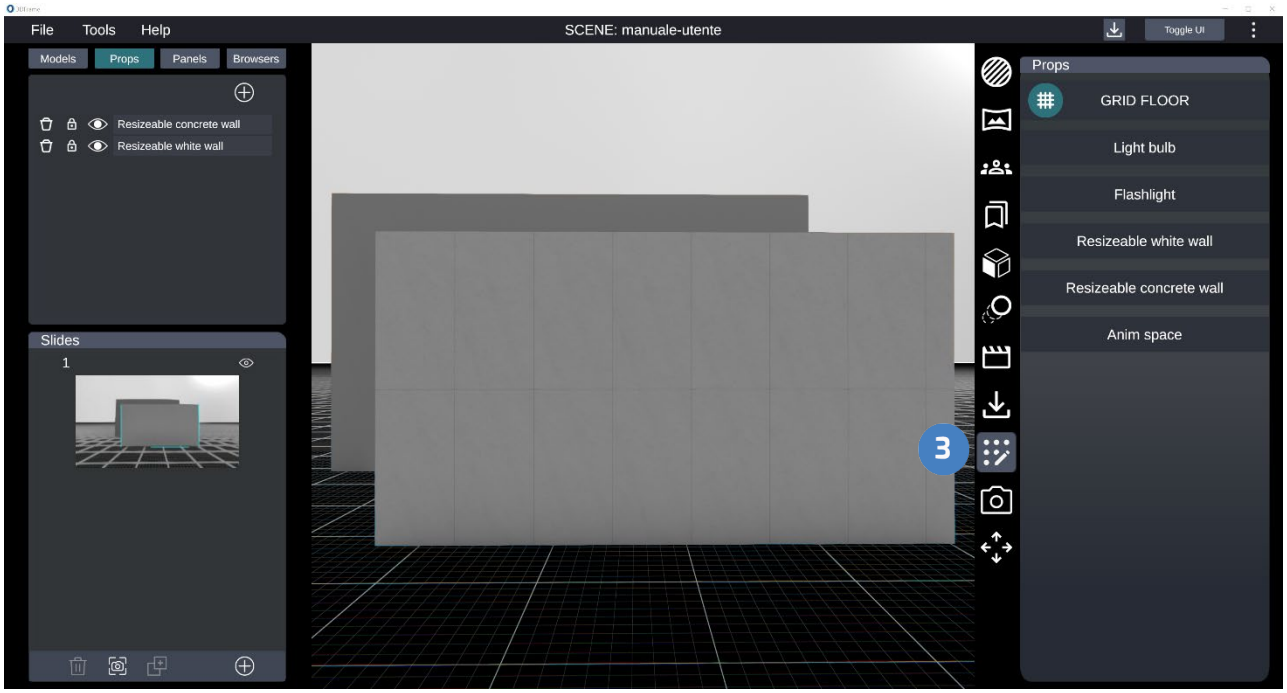


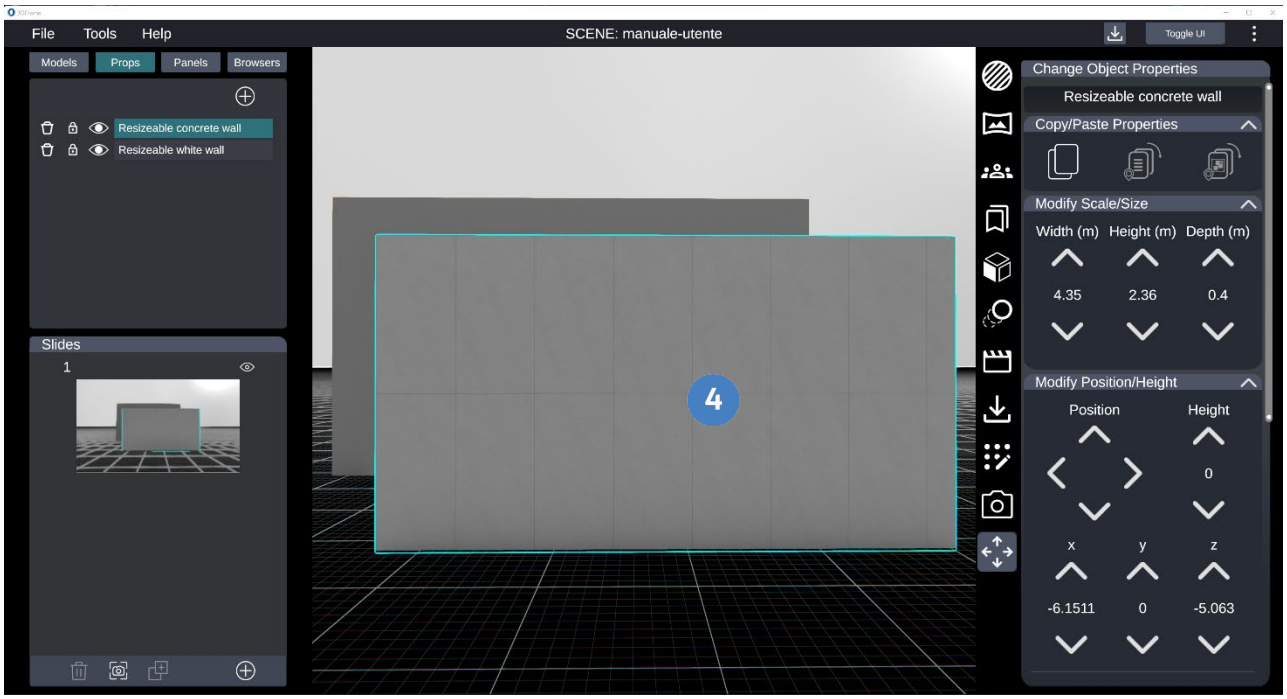
a. Walls or floors

Within the application, plans can be created and modified. They are called:

- Resizable White wall (1).
- Resizable Concrete wall (2).

To insert them into the scene, select one of the two items from the list of "Props"(3). Once inserted, the plans can be changed by selecting them (4) and changing the scale, position, and height through the "Change Object properties" section (5). This feature can help create partitions in rooms or floors and ceilings (to make them walkable in VR, they need the "Walkable" option, which can be set from the Object Properties, Other Settings).





6. Animation Space

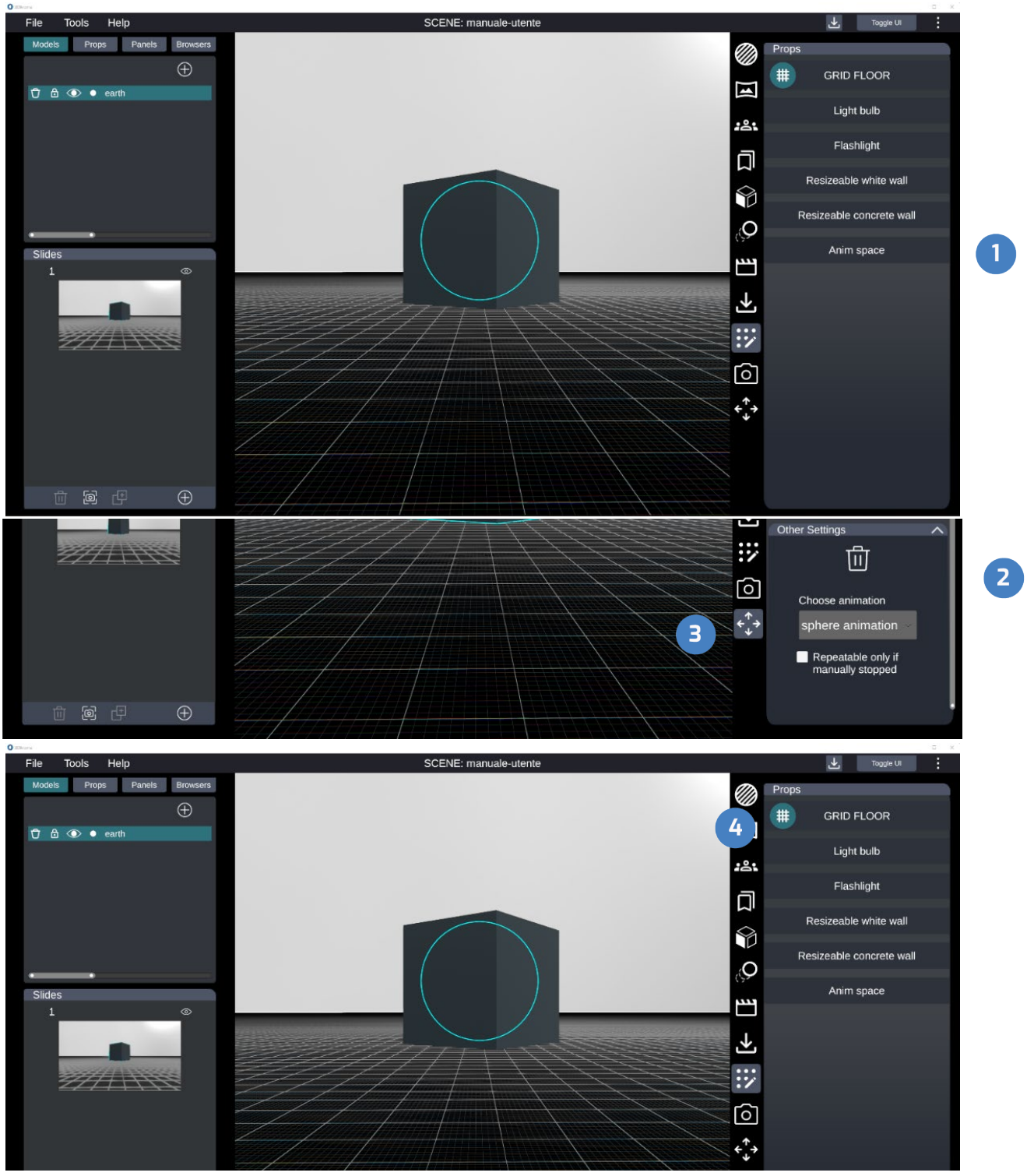
What is an animation space?

An animation space is an invisible, bounded zone linked to a given animation. In addition, the animation attached to it starts automatically whenever a user comes across this zone.

To create an animation space, select the "Anim space" item (1) from the "Props" menu. A cube representing the interaction area will then appear. Therefore, you can bind this area to a previously created animation via the function in "Other Settings" (2) found in the object properties section (3).

You can change the size and position of the area thanks to modifications (position, scale, rotation), also present in object proprieties.

To make the space animation cube visible, activating the grid floor display will be enough by clicking on the icon (4) in the props list section.



29. Cameras

Cameras are a tool to show, to all desktop users, specific viewpoints in the scene. There is one viewpoint for each user in the scene; more can also be added. These cameras can be fixed or mobile if tied to animations.

A user in VR will be able to use the same features, but it will not be possible to set a viewpoint for him (he will always see his own).

With this feature, you will have the ability to emulate a real video direction.

The functions present are:

a. Preview camera

Clicking on a user or room name will open a panel with a preview showing that viewpoint. The panel can be moved and closed with the button in the upper right corner. In the case of a room not linked to a user, it is also possible to change its name by clicking above the list on the right and typing in the desired one.

b. Set Camera

Set your view with that of the selected camera. In this case, you cannot move until the camera is disabled. VR users are excluded.

c. Set Camera for all.

Set the view of all users in the scene by synchronizing it with that of the selected camera. In this case, you cannot move until the camera is disabled. VR users are excluded.

d. Delete Camera

Delete the affected camera. You can delete only cameras not related to users.

e. Show Cameras

Activates or deactivates the visibility of cameras from your viewpoint. Cameras will remain functional even if they are not visible.

f. Add Camera

Adds a new room in front of the avatar.

g. Disable Camera

Disables the camera set on one's view, making it possible for the avatar to move.

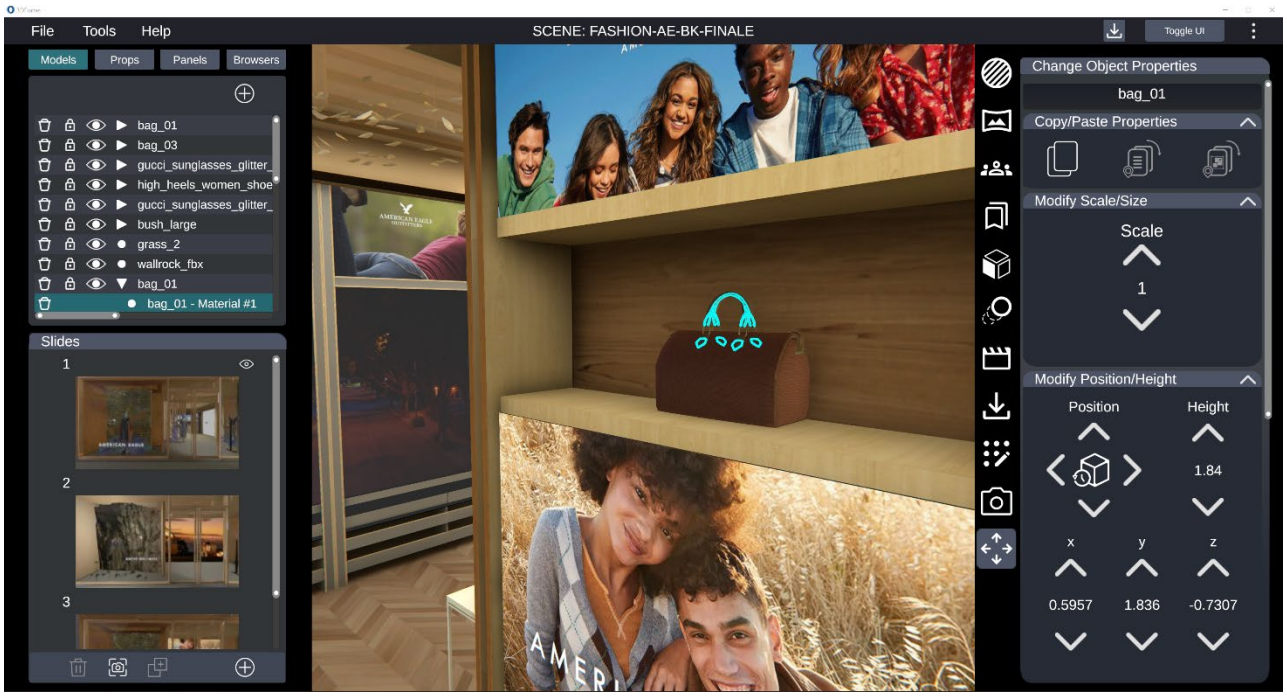
h. Disable Camera for all.

Disables the camera set to view for all, making it possible for avatars to move around.

30. Object properties

This section contains all the properties of the objects in the scene. Here you can change the position, rotation, and scale of models, accessories, panels, and browsers.

LINK VIDEO TUTORIAL MOVE SCALA ROTATE

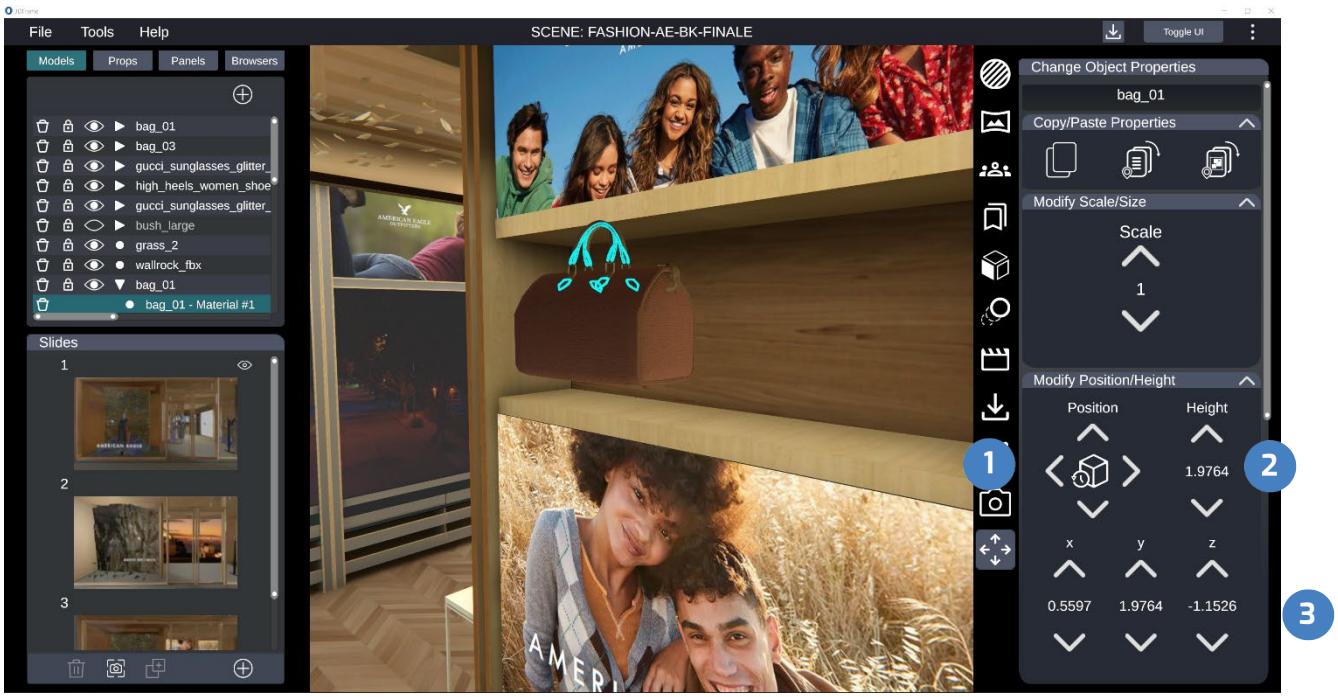


a. Modify position/height.

After selecting an object, you can change its position in the horizontal plane using the "Position" buttons (1). The object moves relative to its point of view using the directions indicated by the arrows.

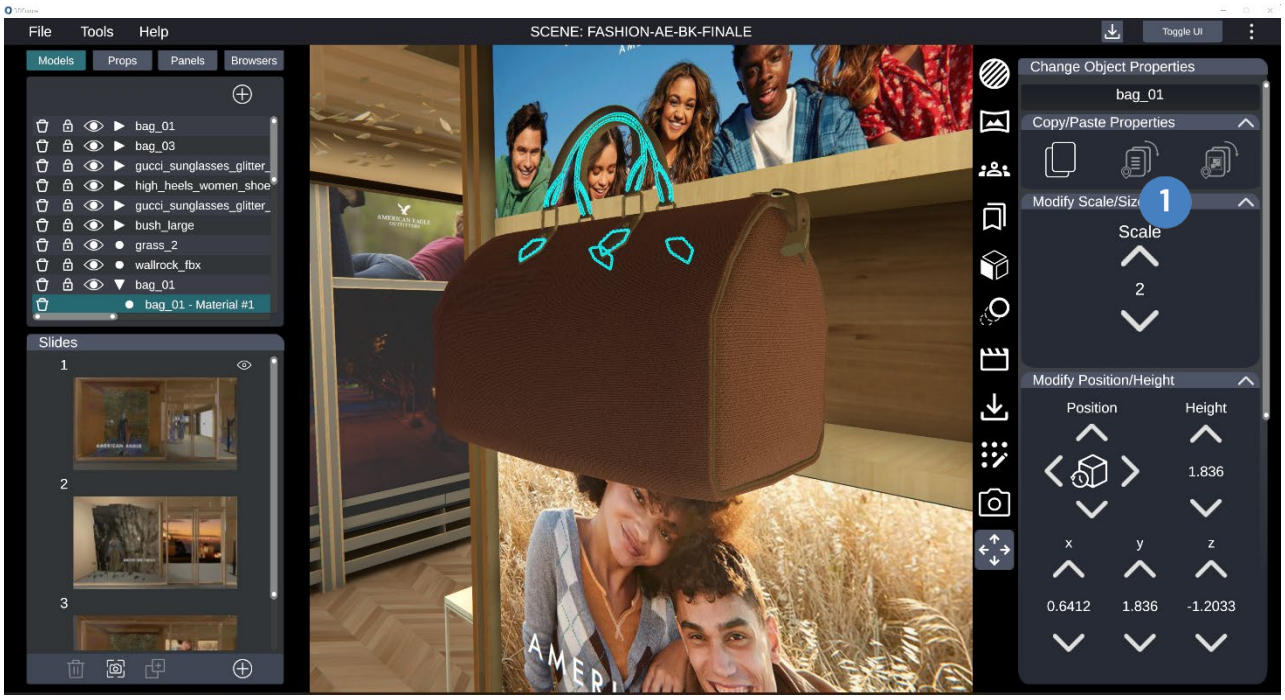
Using the two "Height" arrows (2), on the other hand, you can increase or decrease the distance of the object from the ground.

On the other hand, if you want to change the position of the object concerning the 3D axes of the environment, you can directly change the individual coordinates using the buttons below "x," "y," and "z." (3)



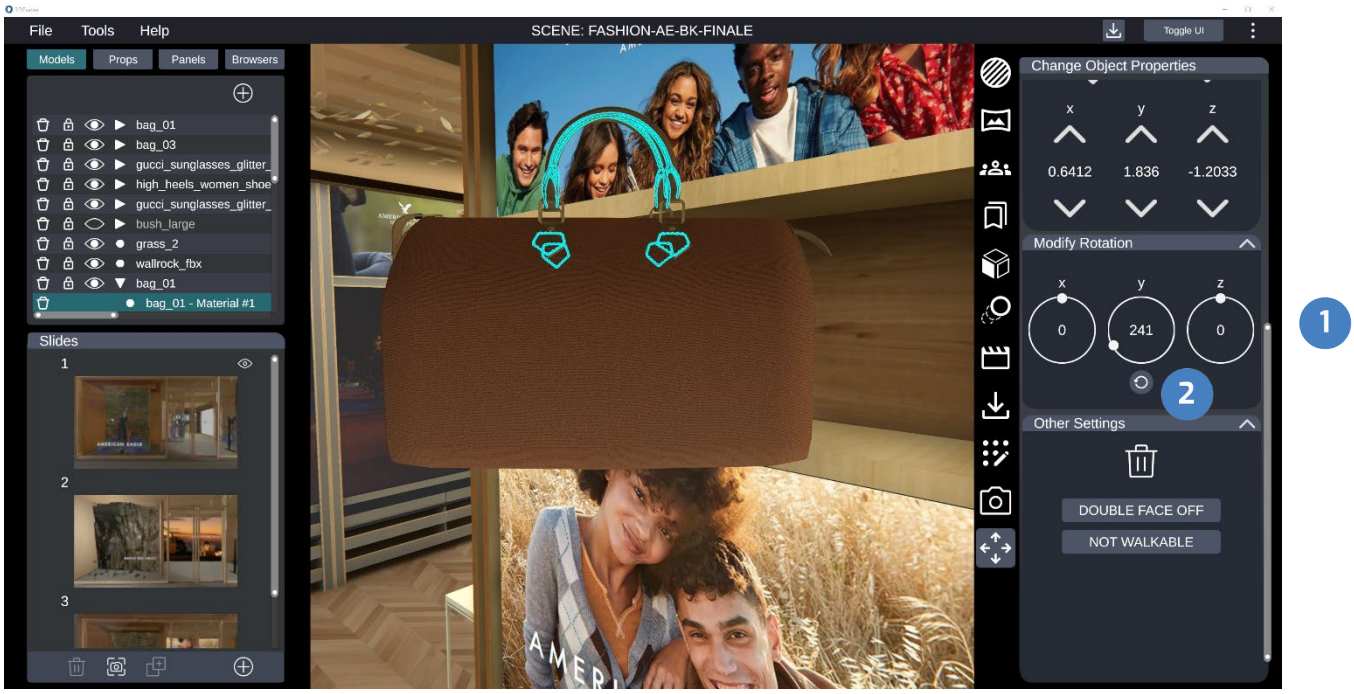
b. Scale

Thanks to the 'Scale' buttons, it is possible to change the scale of the object. (1)
The scaling function takes into account the original size of the 3D model imported into the scene.



c. Rotation

Similarly, to changing the position using Cartesian axes, you can change the rotation of the selected object by indicating how much it should rotate around the x, y, and z axes. (1) It is also possible to rotate an entire 3D model around its y-axis by clicking on the "Autorotation" button (2).

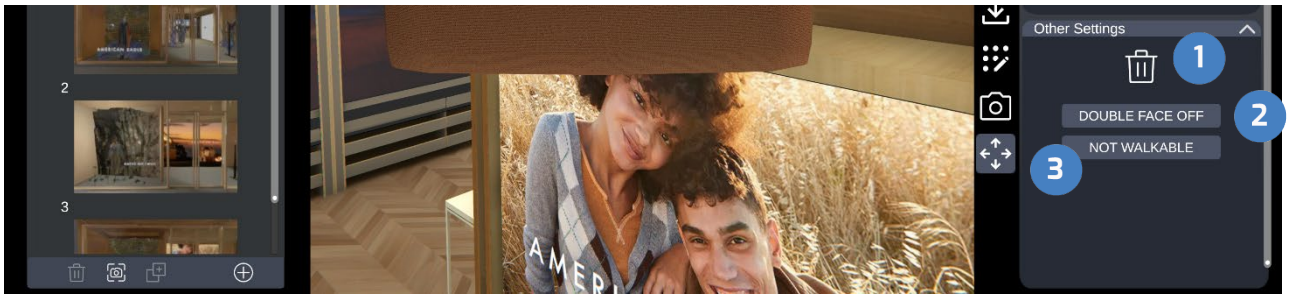


d. Other Settings

Various features can be found in this section depending on the element selected.

Selecting a 3D model:

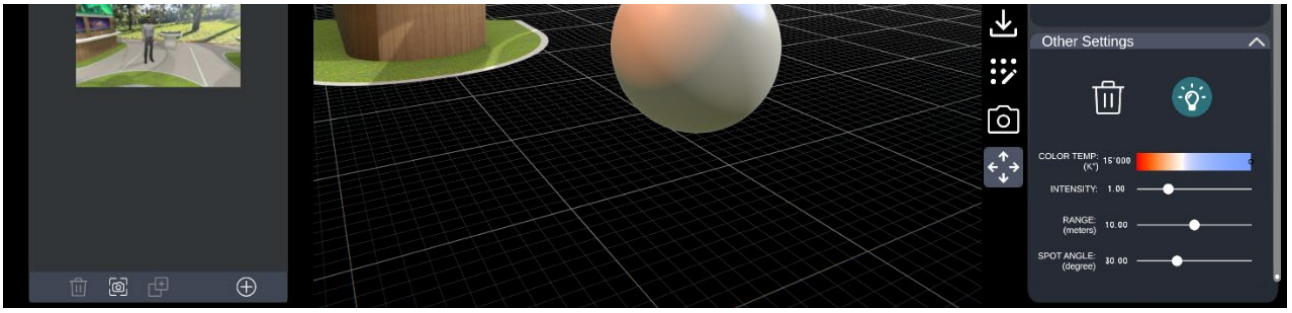
- "Delete 3DModel": You can delete the selected object from the scene by pressing the appropriate button. (1)
- "Double face-off/on": Some 3D models may be displayed with some meshes (faces) visible only from one side (inverted normals). This option duplicates the selected mesh to make it visible from both sides. However, increasing the weight of the model (reducing performance). (2)
- "Walkable," when enabled, allows an avatar in VR to walk over a mesh as if it were a regular floor. It will then be possible to use it as a teleportation point (see VR commands). (3)



By selecting a light, you can see:

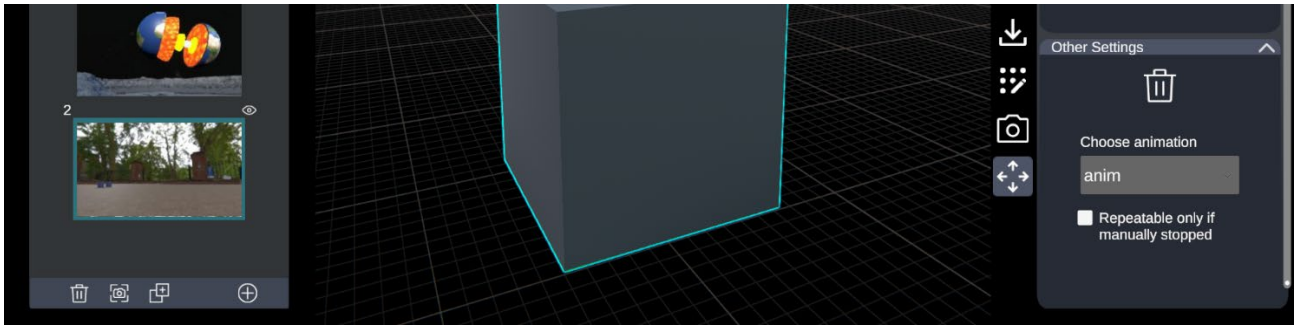
- Delete: If clicked, it will delete the selected light.
- Light on/off: Depending on how the setting is set, the light will be on or off.
- Color temp: You can decide whether the light will be cooler or warmer through a color bar ranging from red to blue.

- Intensity: You can adjust the intensity of the light.
- Range: You can decide the space in which the light beam acts and change the illumination width.
- Spot Angle: using the 'Flashlight' light source, this function allows the opening angle of the light cone to be adjusted.



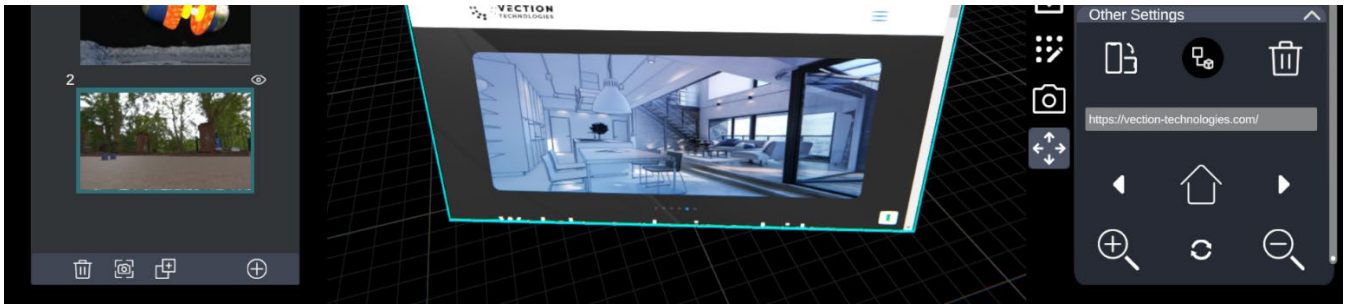
By selecting an animation space:

- Delete: You can delete the animation area
- Choose animation: You can decide which animation to bind that area to by selecting its name in the menu. Then, the chosen animation will be triggered whenever someone enters that area.
- Repeatable only if manually stopped: If active, the affected animation will restart by traversing the space only if the animation panel first stops it. (Useful for starting certain animations automatically only once, to restart it click stop, then re-enter the space)



By selecting a web browser, you will see these options:

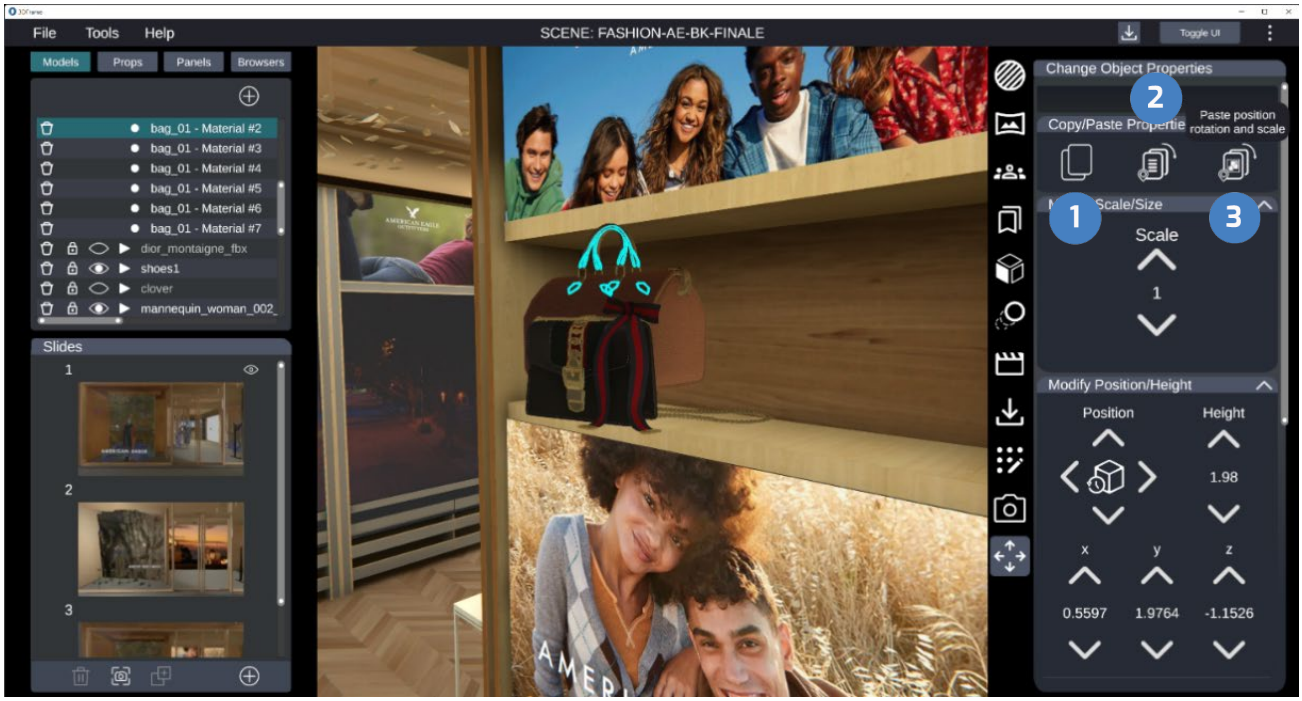
- Switch aspect ratio: You can change the panel's appearance from horizontal to vertical.
- Link to model: You can link the web panel to specific 3D models. When you interact with the 3D model, the web panel will also undergo the same interactions.
- Delete: You can delete the selected panel from the scene by pressing the appropriate button.
- Link: You can re-enter the panels link directly from this space.
- Home: If clicked, it returns to the home of the search page.
- Zoom in: Enlarges the elements within the panel.
- Zoom out: Decreases the elements within the panel.
- Refresh: It cancels the search and sets up a panel.



e. Copy/paste properties (3D Models & Panels)

- "Copy": allows you to copy the properties of a selected object, such as position, rotation, and scale. (1)
- "Paste Position and Rotation": allows you to paste the position and rotation previously saved with the "Copy" button. (2)
- "Paste Position Rotation and Scale": allows you to paste the position, rotation, and scale previously saved with the "Copy" key (3)

You can use the same procedure for multimedia and panels in general.

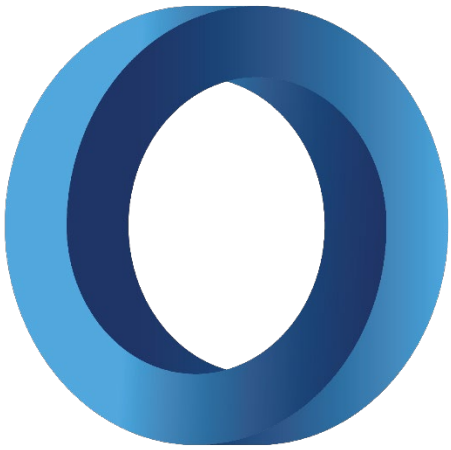


31. Tips for creating your scene

(Scene created with the 3DFrame application)

STEPS:

- Create an avatar consistent with the scene.
- Create the scene and assign it a name.
- Upload the necessary materials to the Cloud.
- Choose the appropriate environment.
- Insert the 3D models.
- Position them in space using the object properties section.
- Configure them using the materials section.
- Create animations using the "animation" section and create appropriate space animation to make them more dynamic.
- Create multiple slides with different configurations and create eye-catching and identifying save screens for them.
- Insert multimedia to support the immersive experience.
- Create a guided tour using bookmarks.
- Create a backup scene (from the Cloud, duplicate the scene with another name. This is useful if you want to have many users try the experience and accidentally save an unwanted state).
- Live your immersive experience with whomever you want.



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