

SITE CONFIGURATOR

Service for embedding and managing 3D-models on a website

User guide

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Preparation of a 3D-model

In what format to work

Our service supports loading models in a variety of formats (glb, gltf, usdz, fbx, stl, obj, 3ds, 3dm, 3mf, dxf, iges, igs, step, stp, brep, ifc, dae, kmz), but for maximum realism, we recommend working with the GLB format (an optimized version of the GLTF format). This format is specially designed for realistic demonstration of models in the Web space.

The most suitable program for working with this format is Blender. This is a modern, actively developing and free 3D-graphics editor. Only it allows you to properly prepare a model with textures.

In the future, we will mainly focus on this format of 3D-modeling.

Exporting a model to GLB from other formats

In the Blender editor, you can open many file formats and correctly export them to GLB via the *File* => *Import* menu. The most popular of them are: OBJ, STL, FBX.



Basic model settings

For the convenience of using the model in our service, we recommend performing the following simple actions:

- Remove all kinds of nodes, leaving only meshes
- Set the geometries of all meshes in their geometric centers (in Blender, select Set Origin => Origin to Geometry => Bound Center, in 3D max this is done using Pivot Point, and for automatic correction there is a setting inside the editing of the project inside the service (Scene parameters => Start view => Fix the centers of the model parts), which may not work correctly for complex structured models)
- Bring the model to real dimensions in meters and reset all meshes to rotations and scale (in Blender, select meshes, Ctrl-A and select Rotation and Scale).
- Place the model in the <u>center of all three coordinates</u>



Centering the model

- If the model is in the form of a single mesh, then it is enough to set zero coordinates for it.
- Otherwise, you can select all the meshes, clone them, then combine them into one mesh, then set it at the center of the coordinates, after which, combine all the meshes with this mesh through binding to the vertices, and delete it.
- If there is no animation in the model, the service tries to center the model automatically through the setting *Scene Parameters Start view* => *Place the model in the center*.

Working with dimensions and details

For correct display in augmented reality, the model must have real dimensions in meters.

To smooth the model in Blender, select the Subdivision Surface modifier and increase the Levels Viewport to the appropriate level.



Checking and correcting normals

When working with the model, check the state of the normals:

- Select the model and go to Overlays
- Select the Face Orientation checkmark

If the model is red, normals are turned out. To fix this, go into edit mode, select all or part of the model, press ALT + N and select Flip.

To prevent this problem from interfering with your work:

- Go to the Material Properties tab on the right
- Go to Settings and uncheck Backface Culling



Features of working with materials

The GLB format is demanding of materials, so special preparation is needed for it. It is important to familiarize yourself with the <u>acceptable</u> properties of the material for the GLB format.

The parts of the model (hereinafter meshes) that users can repaint (change color, texture) should have only one material.

We recommend working with materials in Blender, but keep in mind that only Image Texture, Normal Map and other maps can be used in Shader Editor.

If you work in 3D max and use V-RAY or CORONA materials, then to export to GLB format, you must first export the model to FBX, and then import it into Blender and export to GLB.

If you use CORONA or several V-RAY materials, you will additionally need to reconnect textures in Blender according to their names.

For more information about exporting from 3D max to GLB, see here.



How to apply texture

To apply texture to a model in Blender:

- We select the model
- At the bottom, select the Shader Editor and transfer the desired texture there
- We connect the texture with our model via Color to Base Color
- If the texture does not lie flat, then go to the UV Editing panel. Two windows appear, in the right window we switch to Edit Mode and select the model. The expanded model appears in the left window. Align the texture.



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- If the Mapping block is used to scale the texture and we want the user to be able to replace this texture with another one, then we need to delete this block and use only the method described above.





Making the material transparent

- We select the necessary material.
- Go to the Material Properties => Settings on the right, select Alpha Blend in the Blend Mode section, and Alpha Hashed in the Shadow Mode section.
- We head to the Shader Editor and set the corresponding value in Alpha (the lower the value, the more transparent the object will be).



Creating a glass material

- We select the mesh. Go to the Shader Editor. Creating a new material using the New button.
- We set Transmission to 1.0, and Roughness to 0.0.
- Go to the *Material Properties* => *Settings* on the right and select Alpha Clip in the Blend Mode section.
- We return to the Shader Editor and set the corresponding value in Alpha (the lower, the more transparent the object will be).



Packing textures

In order for the textures of your model to be displayed in the service, it is necessary that you attach them to your model file. Depending on the program you are working in, this can be done in different ways:

- In Blender, select File => External Data => Automatically Pack Resources from the menu
- In order to properly export materials from 3D max, it is important that they are all in the same folder (<u>how to do this</u>).



Creating an animation

- We select the mesh. Go to the Timeline bottom menu. Turning on the animation.
- On the right, go to Object Properties. We include coordinates and degrees. So we set the origin.
- Move the blue cursor to the required time interval. At the same time, we move the mesh to the required place.
- Repeat these actions until the end of the animation. After the end, turn off the animation and click on start to view what happened.



Model optimization

To display a 3D-model in a browser, especially on most mobile devices, requires good optimization:

- Apply all modifiers
- Remove unnecessary vertices and polygons that do not make a significant contribution to the visual component
- Reduce the size of textures (for most cases, 1024 by 1024 jpeg images are sufficient, which can be compressed, for example, in Photoshop with an optimization value of 60%)
- If there are meshes with the same geometry, then apply linked duplication (Alt-D)

The recommended final size of the uncompressed model is up to 3 MB.

Preparation of additional models

To show different variants of parts of the model (for example, the shape of the roof at the house), it is necessary to prepare separate model files.

If you want to replace only geometry, then you need to take into account (in this case, you need to specify the *Use only geometry* switch inside the service in the model change settings):

- Only the first mesh in the scene is taken as a replacement geometry
- To reduce the weight of the model, it is better to exclude materials, because only geometry is replaced

Preparing to change textures

For those parts of the model where textures are supposed to be changed, apply low-quality textures inside the model so that it is visually possible to form a uv scan, and the weight of the model does not increase significantly, because when loading the model in the service, these textures will be replaced with options uploaded in the personal account in good resolution (this applies to both conventional textures, and elevation maps).

Preparation for changing parts of the model

If you need to show different versions of parts of the model, then you can place meshes of different variants in one place of the model.

In the model, they may intersect each other, but in our service you can add a visibility switch for each option, indicate its initial state and the same group number so that your options switch automatically, showing the desired option and hiding the rest.

To apply the switch to several bags at the same time, it is convenient to include the same parts of the names in the names of such meshes. This common part can be specified in the properties of the switch.



Uploading a 3D-model to the service and configuring the view



Uploading a 3D-model to the service

You can upload either a single file or a zip-archive if the model has separate texture files or other data. There should be no directories in the archive (only files).



You can also use the catalog of ready-made models, and if you do not find the right option, then we can add it for free upon request to support.





Errors in loading the 3D-model

If you expected a different result after loading your own 3D-model (for example, textures shifted or parts of the model disappeared), try disabling all items from the model loading settings (located above the model loading window) and re-loading your 3D model.



Uploading versions of the 3D-model for AR

At the first step of the project creation wizard, it is possible to download a separate model file in USDZ format to demonstrate augmented reality mode for iOS.

Step 1

This function will be useful if the automatic generation of this file does not occur properly.

If you have an implementation of augmented reality through other services or a mobile application, then in the second step there is an Augmented Reality tab where you can insert the URL of a third-party implementation of ARmode.



Start view

To start working with a 3D-model, we recommend setting up the basic parameters of the initial display:

• Position in 3D-space

Step 2

- Centering the model
- Automatic loading of the model or by click

If required, you can also configure:

- Correction of the centers of the model parts
- Correction by location, size and rotation
- Single rotation of the model around its axis
- Animated icons at startup





Scaling and rotation

It is often necessary to adjust the zoom and rotation settings.



Animation

Animation tracks only work in GDB format and must be embedded in the model itself.

The following features are available:

Step 2

- Adding labels text explanations that appear during animation playback
- Adding a list of animation options
- Manual control by scrolling with the mouse wheel or gesture on the touch screen

Multiple selection of tracks for playback for the model as a whole and for variants is supported.





Dimensions and floor

You can enable the display of the overall dimensions of the model, as well as the display of the floor of the desired shape, size, shape and color.





Panorama and lighting

The model often looks more impressive together with a panorama that fits the meaning. There may be several of them, then the user will be able to choose the appropriate one when viewing from the list.

Lighting is also of great importance for the visual display of the model. You can adjust the color and power of the general lighting, as well as the color, power and direction for the directional light coming from above and below.





Augmented Reality

Here you can:

- Change the title of the AR launch button before loading the widget (the button appears if automatic widget loading is disabled and models for AR are loaded)
- Specify a link to an external augmented reality launch service
- Load markers to launch AR when pointing the smartphone camera at a similar product image





Graphics and optimization settings

You can configure:

- Graphics quality
- Volume, reflection, and glow enhancement effects
- Color balance
- Brightness and Contrast settings
- Presence of shadows
- General material
- Facets
- Performance optimization
- Hiding small details
- Auto correction mode





Navigation and help window

Next, we configure the navigation buttons and, if necessary, the content and the moment when the help window appears.

The navigation buttons are divided into the main ones that appear in the main menu, and additional ones. The second group of buttons is always visible until the main menu is open.





Design

Here you can customize the appearance of the widget interface to match the style of your brand. There is a reason for this:

- Design themes
- Additional styling of interface colors and shapes
- Fonts
- The design of the screensaver
- Watermark Overlay
- And much more





Creating a 3D-configurator



Selecting a part of the model and quickly applying images

At the third step of creating a project, you can click on the desired part of the model and select the desired setting.

To quickly overlay your image on the desired part of the model, just select the image on your device in the dialog box that appears.

Any setting has a field for the name of a part of the model, where you can specify only part of the name so that the setting applies to several elements of the model that have this part of the name.



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Color settings

You can adjust the color change for any part of the model. You can specify a list of your own colors, a palette for choosing any color, or both at the same time.





Customizing your materials

You can set up simultaneous texture and color changes for any part of the model. To do this, select the material setting. If you want to use additional texture maps for a more realistic view of the model, you can load them both for all options at once or load them separately for each user's choice.





General catalog of materials

For each material setting, it is possible to add both your own materials and select the appropriate material from the general catalog, which is edited on the main page of your personal account. You can also select material from the library of the service.





Setting up models

You can set up a change of components for the product. To do this, you can specify a list of models for any of its parts that will replace this part of the product.

You can also place models from the list on the surface of a certain part of the main 3D model (see the <u>example</u>).





Setting up visibility switches

You can hide and show parts of the model as separate switches, or by combining them into groups. In the second case, switching the visibility of one part of the model will affect the visibility of others.





Size adjustment

Individual parts of the model can be resized along three coordinate axes with the following features:

- Size control only on the right axes
- Setting the initial, minimum and maximum values, as well as the change step
- Maintaining proportions
- Repetition of the texture pattern depending on the size of the part of the model
- Specifying the unit of measurement





Tags and links

A block of labels is used for visual text hints of individual parts of the model. They can be styled to suit your preferences.

When you click on the label, a convenient selection of colors and textures is displayed (if there are appropriate settings for the same part of the model as the label).

Each element of the model can serve as a link to internal sections of the site or external resources.





Cost and order form

The cost of the finished product, which can be displayed in the widget, may depend on the choice of materials and other settings.

You can also enable the ability to apply directly from the widget.



Embedding the 3D-model on the site



Embedding a 3D-model into any website

There are several ways to embed a project on a website:

- Inserting the 3D-widget code (you need to specify the site domain in the list of domains, as well as the product code in the first step, if you want to use the container type for the widget "With the product code")
- Adding a link to view in a separate browser tab
- Export as a 2D-image
- Creating a video review

The widget can work on any website creation engines, including inside website builders.



There are two bright buttons for quickly inserting one project onto the site: one copies the code, and the other forms a file with more detailed instructions for implementing your model.



Embedding a 3D-model to Tilda

To insert a 3D widget into the Tilde website builder:

- Copy the code in the "Code for any site" section on the 4th step
- Add a Zero-block to the Tilde and paste the copied code there





Embedding a 3D-model to Wordpress

To easily add your project to a website created on the Wordpress platform, you need to:

- Install our plugin
- Copy the shortcode at step 4 of the project creation wizard and paste it into the right place on your site





Embedding a 3D-model to the Creatium

To export a project to Creatium website builder, you need to:

- Download the plugin number <u>on the page</u>
- Import the plugin by number into an empty block of your site on Creatium
- Copy the project ID at step 4 of editing the 3D widget in our service and paste it into the corresponding field of the component in Creatium

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Creating instructions for implementing 3D-models for your employees and dealers

On the main page of your personal account:

- The button for generating a letter to the dealer in order to tell about the possibility of using 3D models of the manufacturer.
- The button for generating instructions for implementing the created projects into your Internet resources.



Additional tools

Smart AR

On the main page of your personal account or on the fourth step of any of the projects, you can get a code to insert a smart AR mode button on the website.



Statistics

For analytics, at the fourth step, the number of rotations of the 3D-model is available in the block of additional tools, so that you can assess the level of involvement of the site visitor in your product.



Working with a large number of 3D-models

Massive loading of models

To download multiple models at the same time (create a large number of projects), there is a button "Edit projects" on the main page of your personal account.

Before that, you need to create a zip archive with the models (they can be nested in folders). In this case, the names of the model files will be used as the title and product code.

This code can be used for more convenient integration into the site, when instead of the project ID, you can use a combination of the user ID and the product code (for more information, see <u>the export section</u>).

If the product code matches, the previously created project will be updated.



Applying scene parameters to other projects

In the second step of creating a 3D-widget, there is a button so that you can apply the scene parameters to other projects.

You can select the project categories to which you want to apply the scene parameters of the current project, as well as which parameters will be applied.



Examples of using the service

3D-configurator with a change of the main model

- In the first step, you load a primitive geometry model (for example, a cube) with the same dimensions as the real product
- Click on the model, select "Add models" and upload the necessary model files in GLB format in the list of options.
- If desired, you can add other settings, such as changing the material. In this case, models of different product variants must have model elements with the same name (or with a common part of the name). All these common parts will have different materials.



Configuring modular products (preparation of the 3D-model)

Consider a 3D configurator for a modular sofa.

First, we will prepare a 3D model in Blender. To do this, we will create a replaceable module that we will turn into the necessary options.

Next, we will add the necessary combinations of modules. At the same time, it is advantageous to clone identical elements using the link (Alt + D) for faster loading.

We place all combinations in the center of the coordinates and name their component elements with a common part. In our example, these are "var_1", "var_2" and "var_3".

We assign our own material to the upholstery and pillows. We assign the part of the name "pillow" to the pillows.

Exporting the finished model to GLB.



Configuring modular products

(creating a project in the service)

We are creating a new project in our service. Uploading the prepared 3D-model.

In the "Settings" block, on step 3, click on the plus icon and select "Add models". In the name of the part of the model, select "base". Next, we create a list of module options and enter "var_1", "var_2" and "var_3" as the name of the model part.

We add a change of materials for upholstery and pillows.

Adding a visibility switch for the pillows. In the "Related settings" block, specify the pillow material setting. When hiding the pillows, this setting will not be active.

The modular sofa configurator is ready. In step 4, you can get the code to insert it on the site.



Constructor with user textures (preparation of the 3D-model)

Let's consider a 3D configurator of a fire extinguisher with a custom image (print) applied to it.

First, we will prepare a 3D model in Blender. To do this, we will create a separate transparent surface "image", which will repeat the contours of the main part of the fire extinguisher, where the user's image will be placed.

Next, we apply the initial image and adjust the UV scan accordingly so that the texture lies flat on our surface.

Exporting the finished model to GLB.



Constructor with user textures

(creating a project in the service)

We are creating a new project in our service. Uploading the prepared 3D model.

We add the material with the "Load your texture" mode enabled at the part of the model where the custom image should appear. In our case, this is the "image" surface.

Adding an empty version of the material. We can also add other prepared versions of the images on the fire extinguisher.

We can also add a color setting for the same part of the model, since the user can upload images on a transparent background.



3D-configurator with nested categories

For each category and subcategory (model settings), which should only show the next choice to the user, rather than replacing one part of the model with another, load a primitive geometry model (for example, a cube), preferably with the same dimensions as the largest version of the product.

Next, assign the options for these settings in the "Related settings" block the settings that should be activated when the user selects these options.

Write to <u>our support</u> team and we will send you an example of this project so that you can follow the analogy to create your own 3D configurator.



Configurator with moving models

- Upload your 3D-model of the floor of a room or the ground of a street space or choose the appropriate option from our catalog (we recommend models with an area of 1 sq. m). For example, by the "Landscape" tag.
- Add, if necessary, settings for sizing and changing materials for the uploaded model.
- You add settings for model variants that can be placed on the surface of the loaded floor or ground model, with the movement mode enabled.



Creating mockups

- Upload your 3D-model or one from our catalog (we recommend models with the "Mockups" tag)
- Upload materials (our models have already prepared places to insert your design)
- Export the mockup in a convenient form for you



3D-tour based on 3D-models

With the help of our service, you can create 3D-tours of any space. To do this, you need to download a model of this territory and place labels between which you can move.

The labels should be linked to individual parts of our model, and also have the movement mode enabled, where you can customize the overview, opening a window with a description and other useful functions.



Embed 3D-models on the website and boost sales

More on the website <u>configurator.site3d.site</u>











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