



Extended Reality (XR) Platform

First tool for scalable mass data provision, processing & publication (AR/VR/MR/3D & more)



ar2go App

XR Platform development and projects.

Ar2go XR is a service for creating, managing, editing and providing content, especially for visual and interactive purposes.

One focus is in AR-applications, for which special functions are offered.

Ar2go XR was developed to accelerate the work process for displaying 3D-content in augmented reality (AR,VR,XR).



ar2go App

ar2go XR Platform.



ar2go XR Platform.

- Easy content delivery and editing
- Import of different media types: 3D-models, images, videos, audio, PDF and so on
- Support of various 3D-formats: FBX, OBJ, STL, 3DXML, CATIA V4, CATIA V5, DXF/DWG, IGES, Inventor, JT, NX, Parasolid, Pro/E, Rhino, Solid Edge, SolidWorks, STEP, STL, VDA-FS
- Import of multiple 3D-files as a single 3D-Asset with zip-files
- Add behaviours in controlling content, interaction and animation
- Optional features like a „build-in newssystem“ (with push-notification)



ar2go App

ar2go XR Platform. CMS.

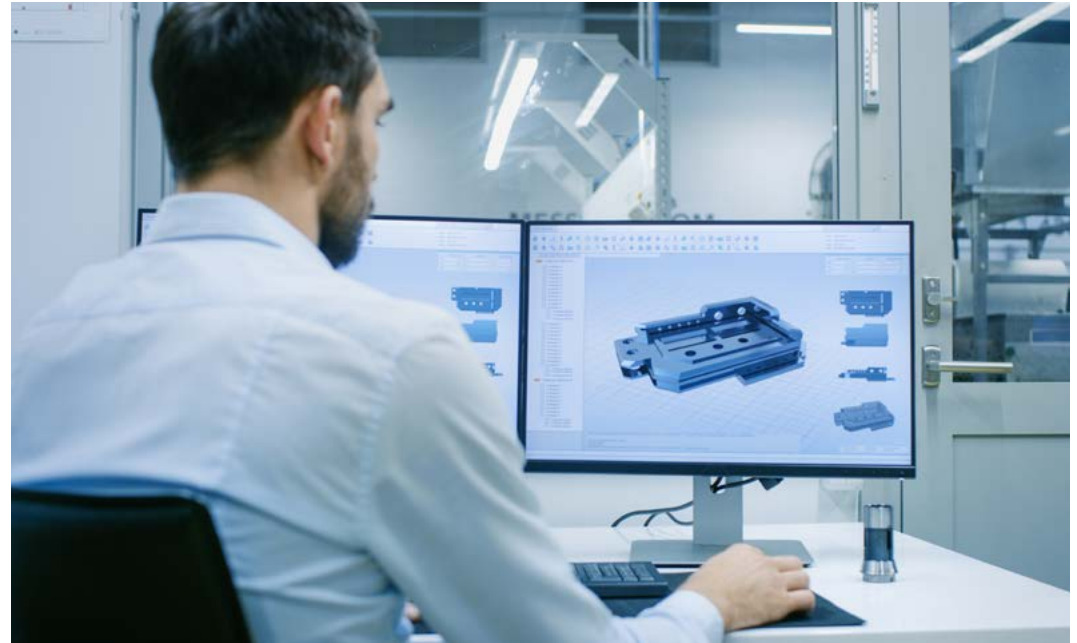
- Easy to use web interface WITHOUT any programming knowledge
- Management of content, assets, marker and geolocations
- Management of the user profile
- Management of project users
- Graphical node-based behaviour editor



ar2go App

ar2go XR Platform. Backend.

- REST-API for the automation of processes and integration into existing systems
- Automated backups



ar2go App

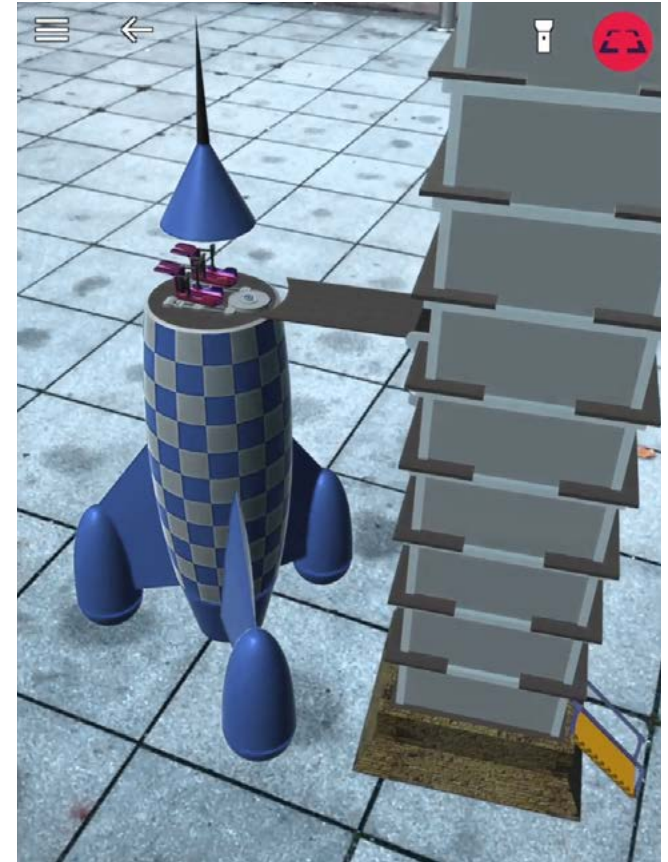
ar2go XR Platform. Customer-App.

- Client-App for android and iOS
- Several options for content selection: direct markings, geolocations, etc.
- Different options for displaying the content:

Marker tracking

Groundplane tracking

ar2go



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ar2go XR Platform. Behaviours.

- Trigger – different triggers to react to

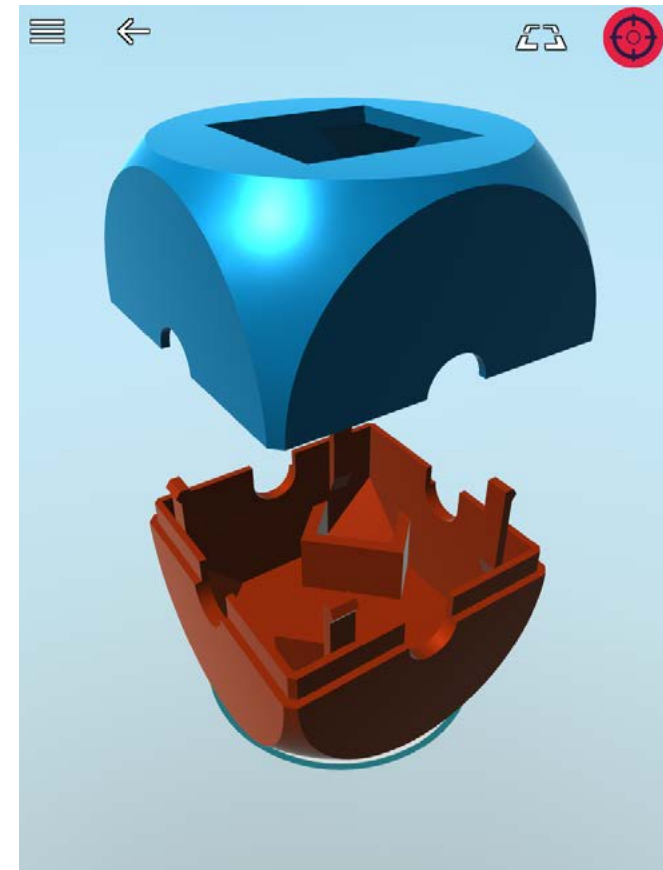


ar2go App

ar2go XR Platform. Actions.

Actions - multiple options available for all types of tasks:

- Transformation
- Materials
- Setters
- Playables
- Conditions/flow
- Dialogues
- Content control

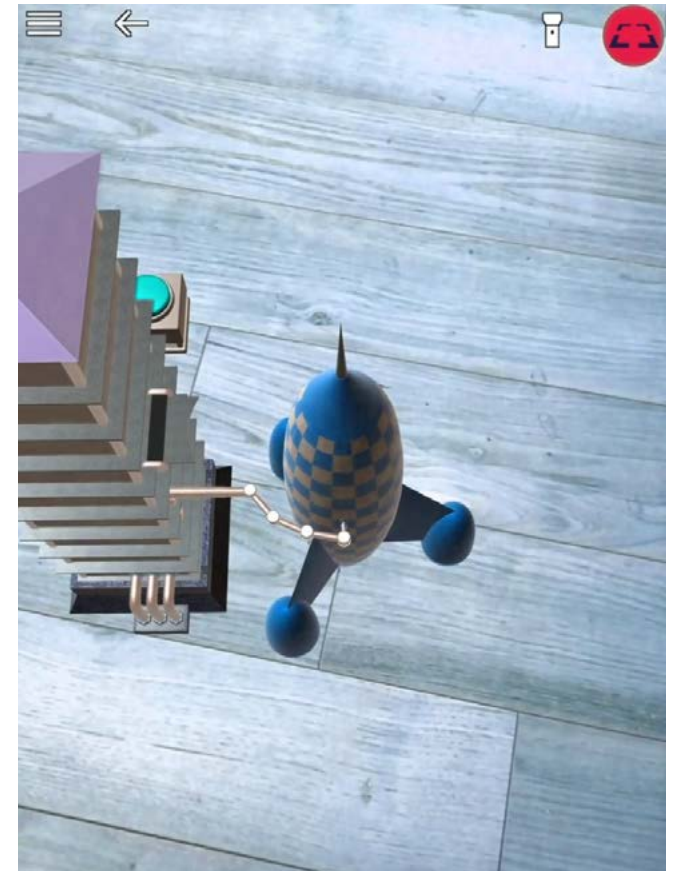


ar2go App

ar2go XR Platform. Functions.

Functions – numerous options for value processing:

- Operations (boolean, mathematics, numbers, lerps)
- Comparison
- Converting



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ar2go XR Platform. Variables.

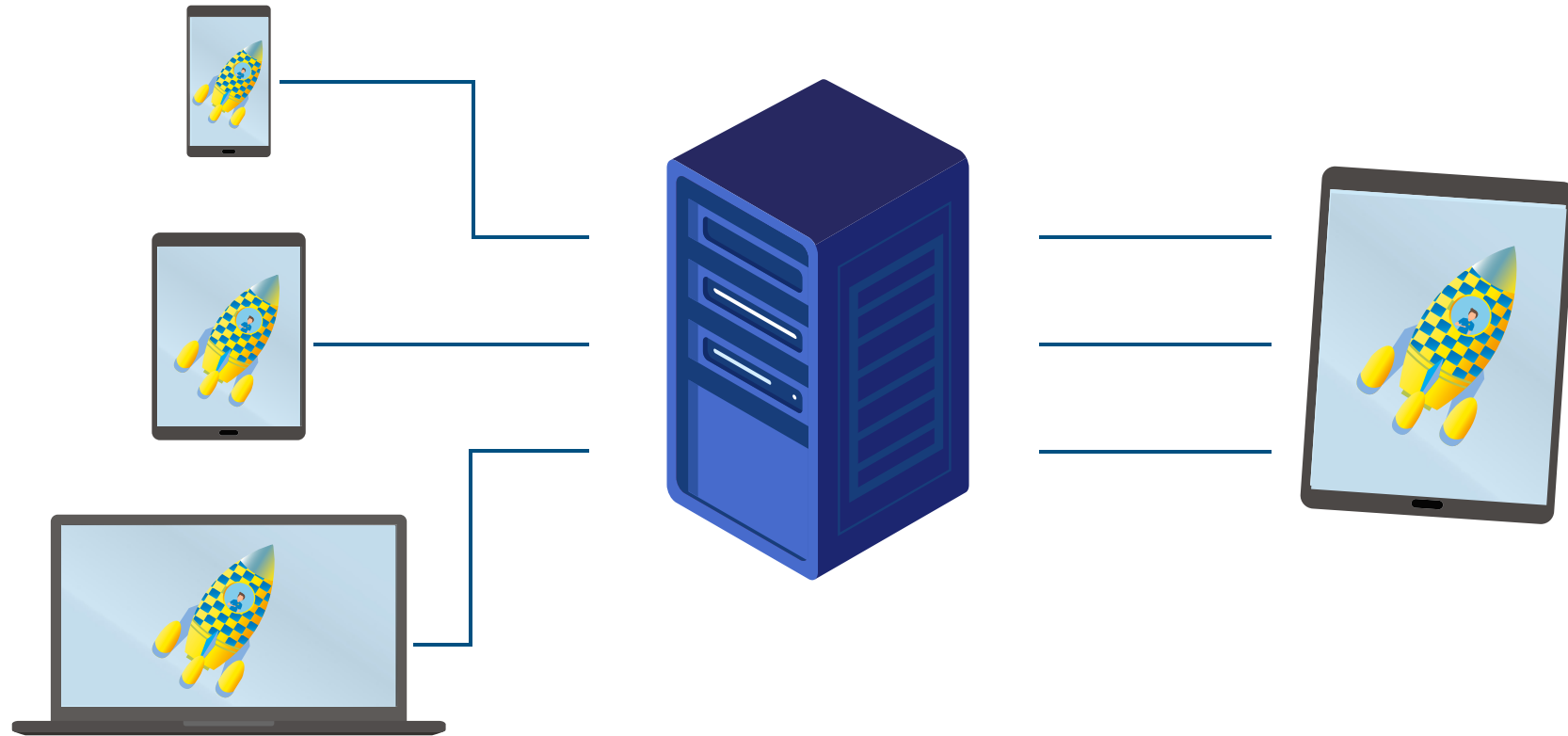
- For all supported types, including lists and global variables



ar2go App

The connection between you and your customer

Cloud service records usage behavior.



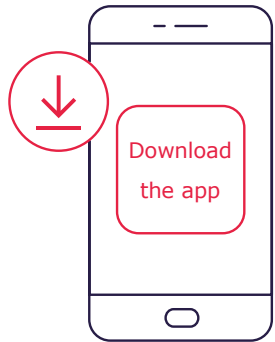
ar2go makes your content available
in the cloud

Mobile device with AR-App



ar2go App

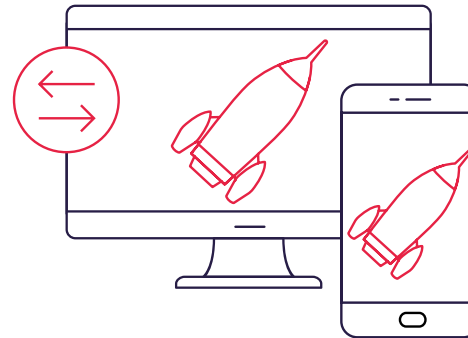
Create your 3D/AR/VR application in 4 steps



1. Download the app

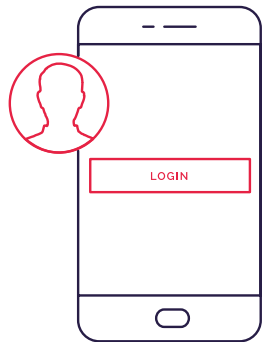
Please download the app on your mobile device.

Test the possibilities of the app and explore the demo content.



3. Upload own content

You can log in into your project by our content management system (the PION ONE Editor) and start creating your own content.

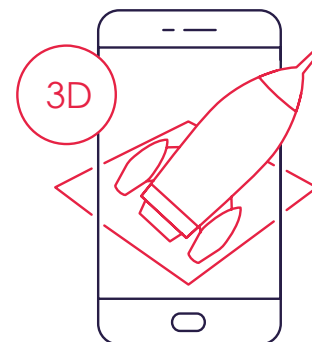


2. Register for your own project

Tap on the register button, which will redirect you to the registration.

As a registered user you can upload your own content and you can change the demo content.

All data you provide will be used exclusively for the purpose of using your own project.



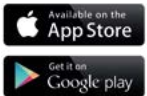
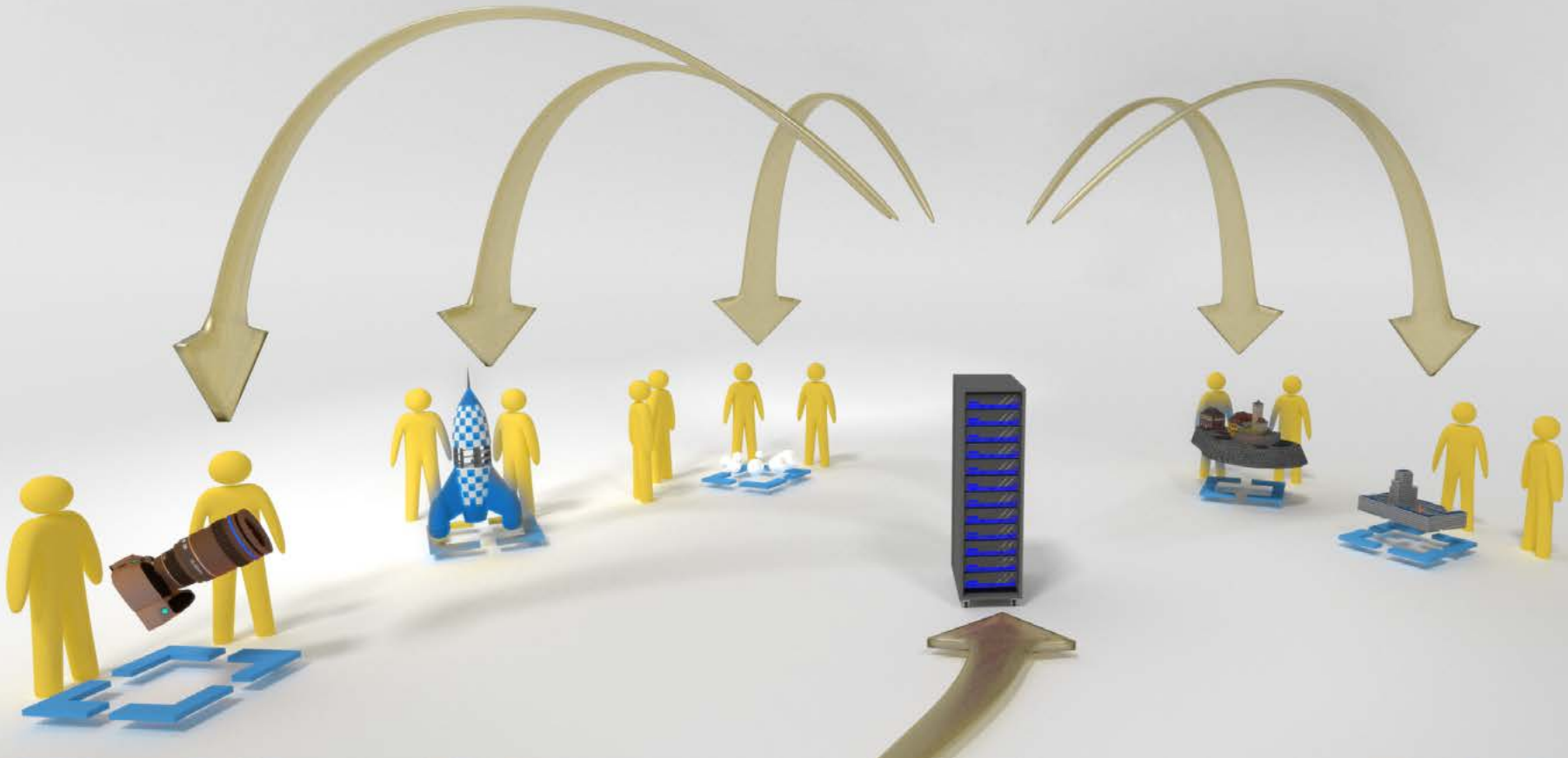
4. Bring your content to life

For extensive experiments with the multiple possibilities of the behaviour-system, follow the tutorials and learn from the existing examples.

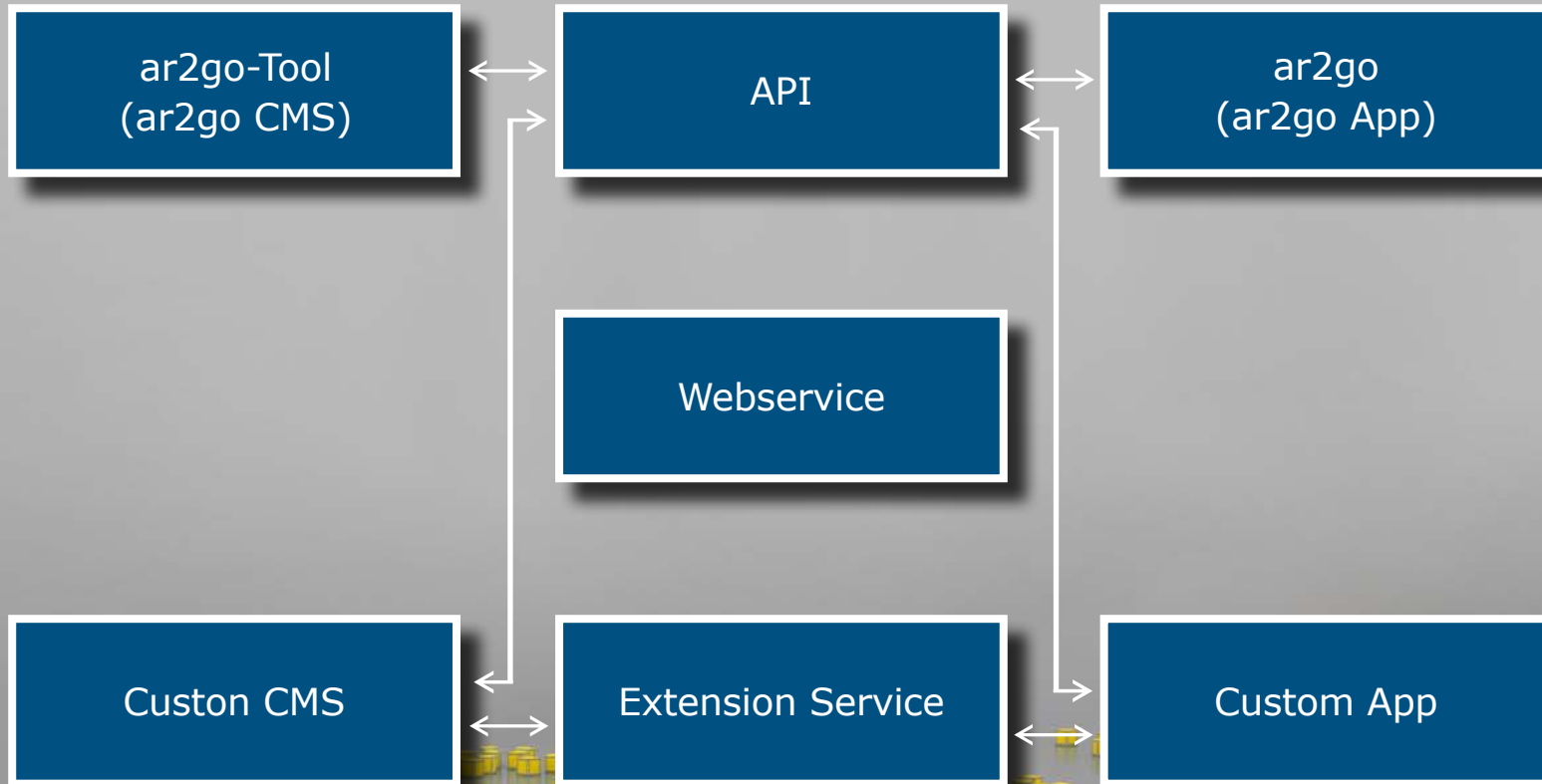


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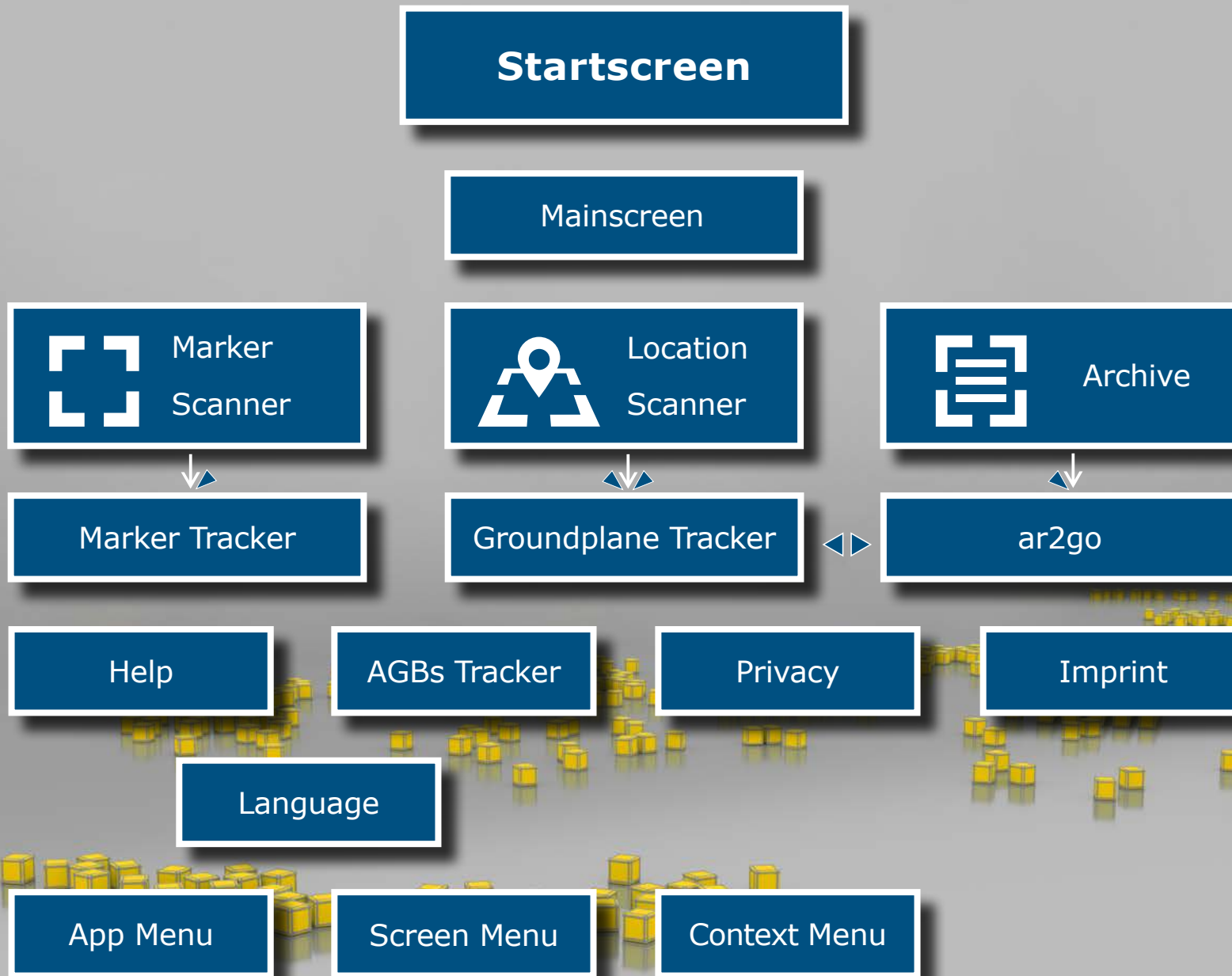
ar2go EXTENDED REALITY (XR) PLATFORM



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Content Entries

Asset Packs

Behaviour variables



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Project

User

Bureaucracy

Data



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Data

News

Indicators

Content



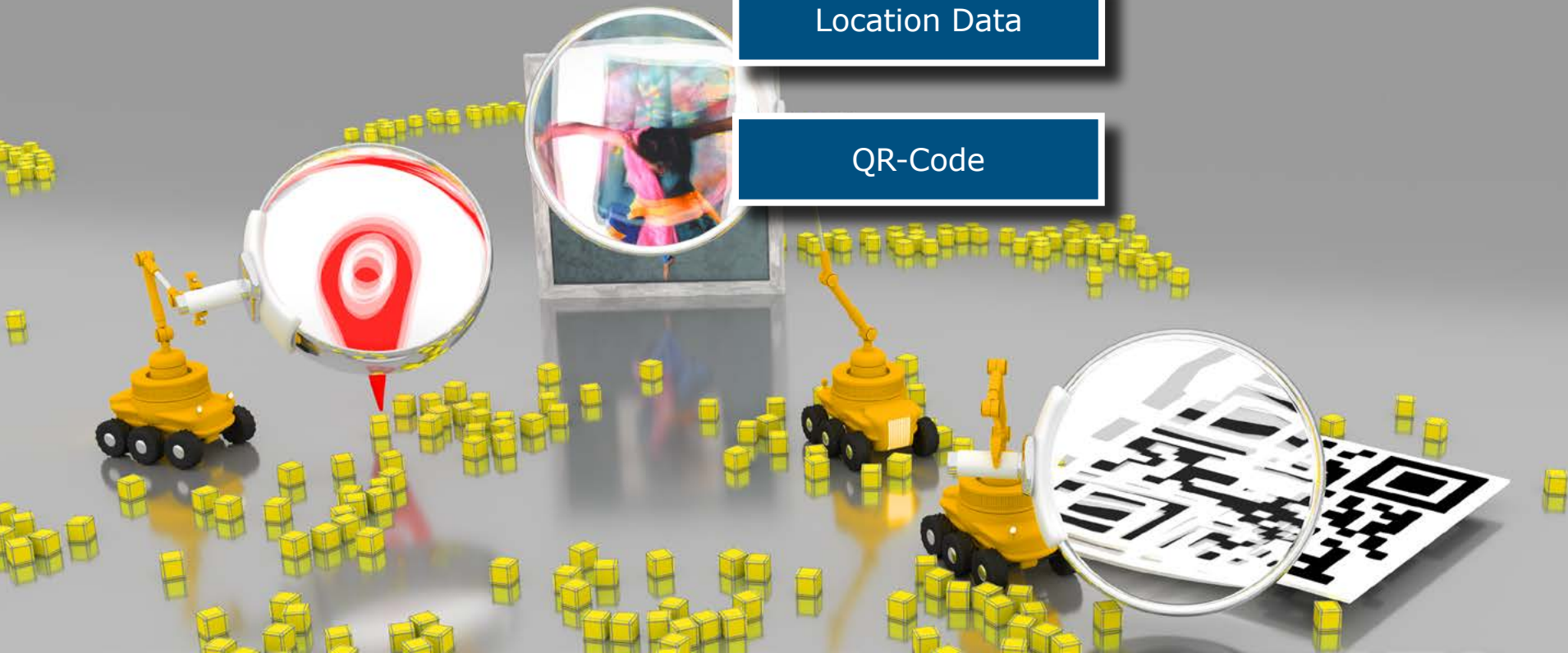
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Indicators

Pictures

Location Data

QR-Code



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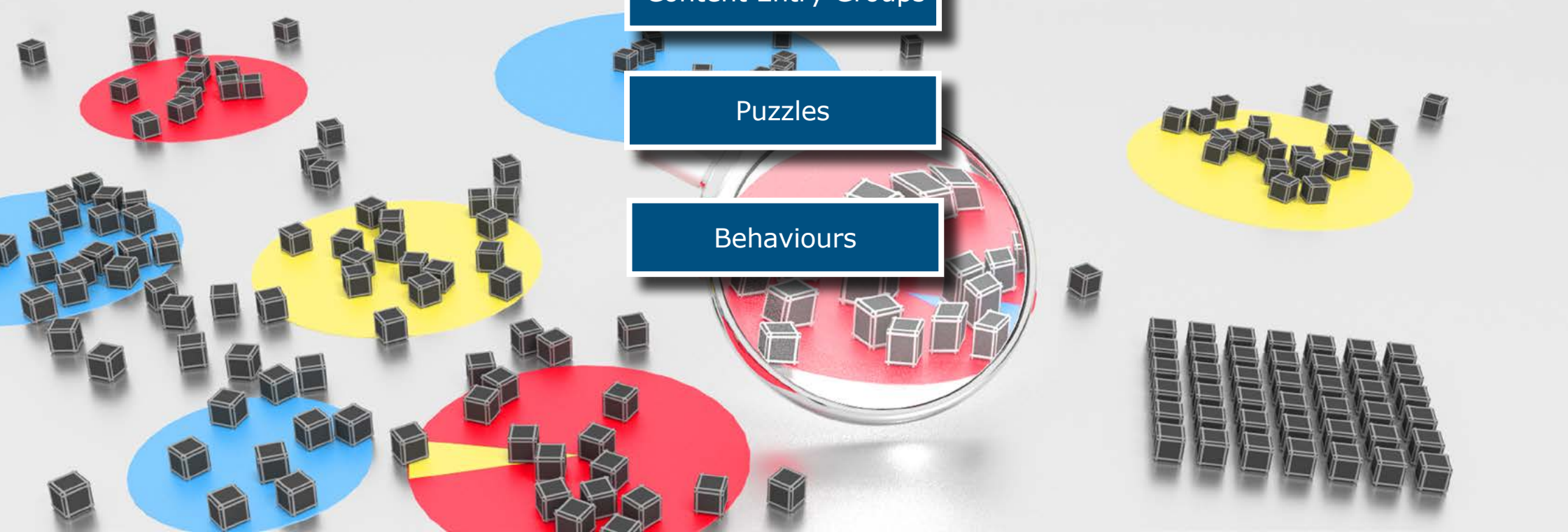
Content

Content Entries

Content Entry Groups

Puzzles

Behaviours



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Content Entries

Asset Packs

Behaviour variables



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Asset Packs

Assets

Behaviours

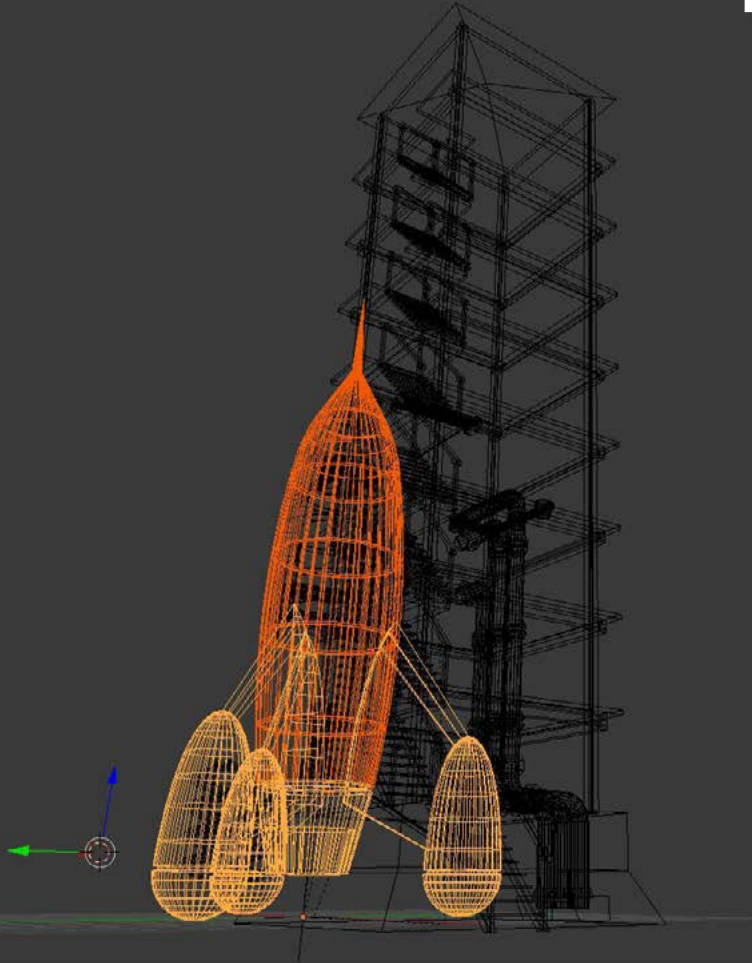


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Assets

Platform

Validity



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ar2go XR Platform. Functions.

	Free Trial	Full Version
CMS	X	X
Examples	X	X
Content	3	Infinite
ar2go	X	X
Vuforia powered Image Marker		X
Groundplane Tracking	X	X
VR		X
News system		X
Behaviour Editor	X	X
API		X
Own App		X
JPEG, PNG, MP3,MP4, PDF	X	X
FBX, OBJ, STL, 3DXML, CATIA V4, CATIA V5, DXF/DWG, IGES, Inventor, JT, NX, Parasolid, Pro/E, Rhino, Solid Edge, SolidWorks, STEP, STL, VDA-FS	X	X
Help	Forum, Email	Forum, Email, Phone,
Optional features	Puzzle	News, Puzzle, Social Media, Buttos, legal notice (*), CAD Import (**), ... (***)
Duration Price	1 month. Free	Euros/ month/content/download
	contact us!	

(*) Legal notices are a feature that facilitates the processing of legal notices in the app, so imprint, usage instructions and the data protection declaration can be created and changed in the CMS and adapted to the languages accordingly.

(**) The CAD import can import the following formats: 3DXML, stp, igs, CATProduct, CATPart (for more formats, contact us).

(***) Contact us for more features.



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Practical example 1: Creating content

The content here can be images, videos, audios, PDF documents, user interfaces and above all, 3D models.

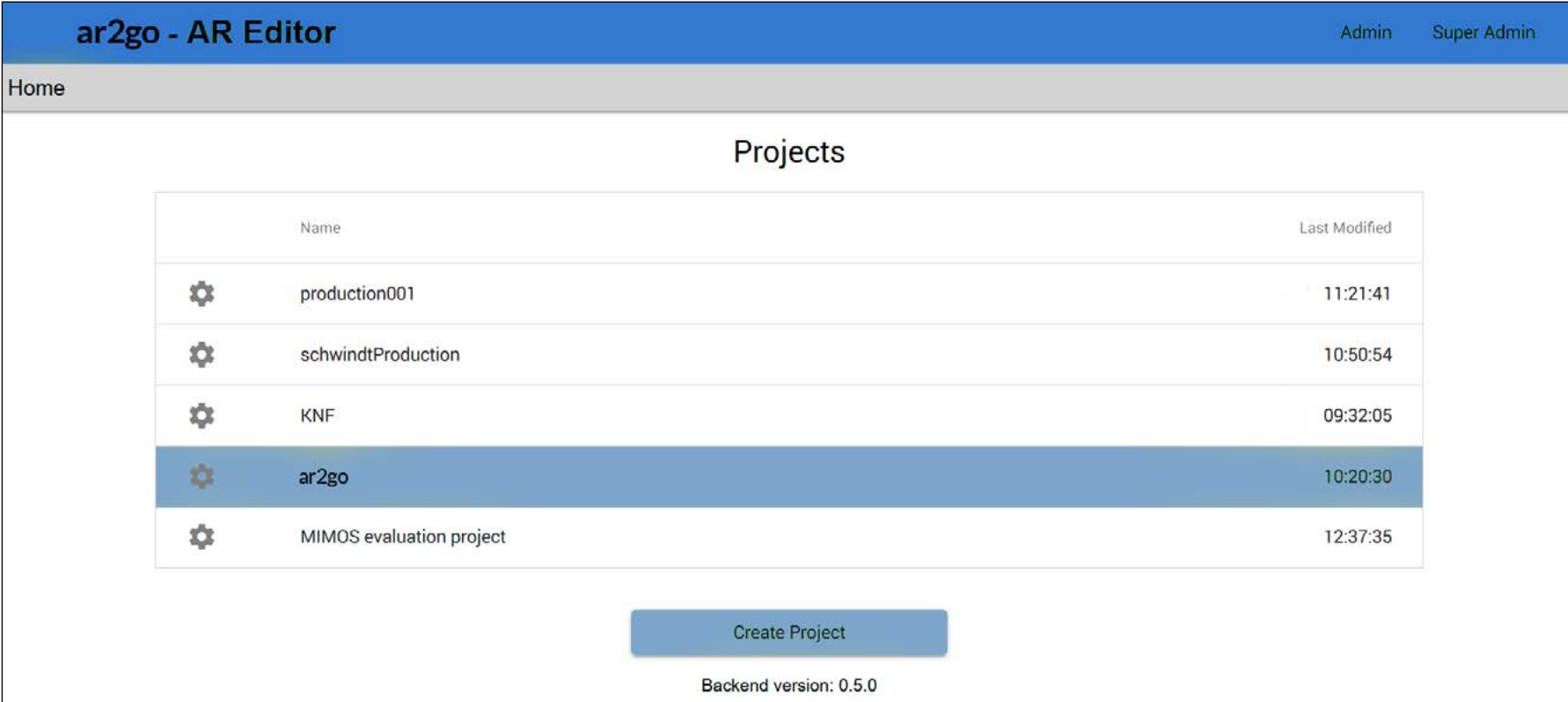
We will start with an image file.



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Practical example 1: Creating content

After the login you can choose your project in the CMS of the platform



The screenshot displays the 'ar2go - AR Editor' CMS interface. The top navigation bar is blue with the title 'ar2go - AR Editor' on the left and 'Admin' and 'Super Admin' on the right. Below the navigation bar is a grey 'Home' breadcrumb. The main content area is titled 'Projects' and contains a table with the following data:

	Name	Last Modified
⚙️	production001	11:21:41
⚙️	schwindtProduction	10:50:54
⚙️	KNF	09:32:05
⚙️	ar2go	10:20:30
⚙️	MIMOS evaluation project	12:37:35

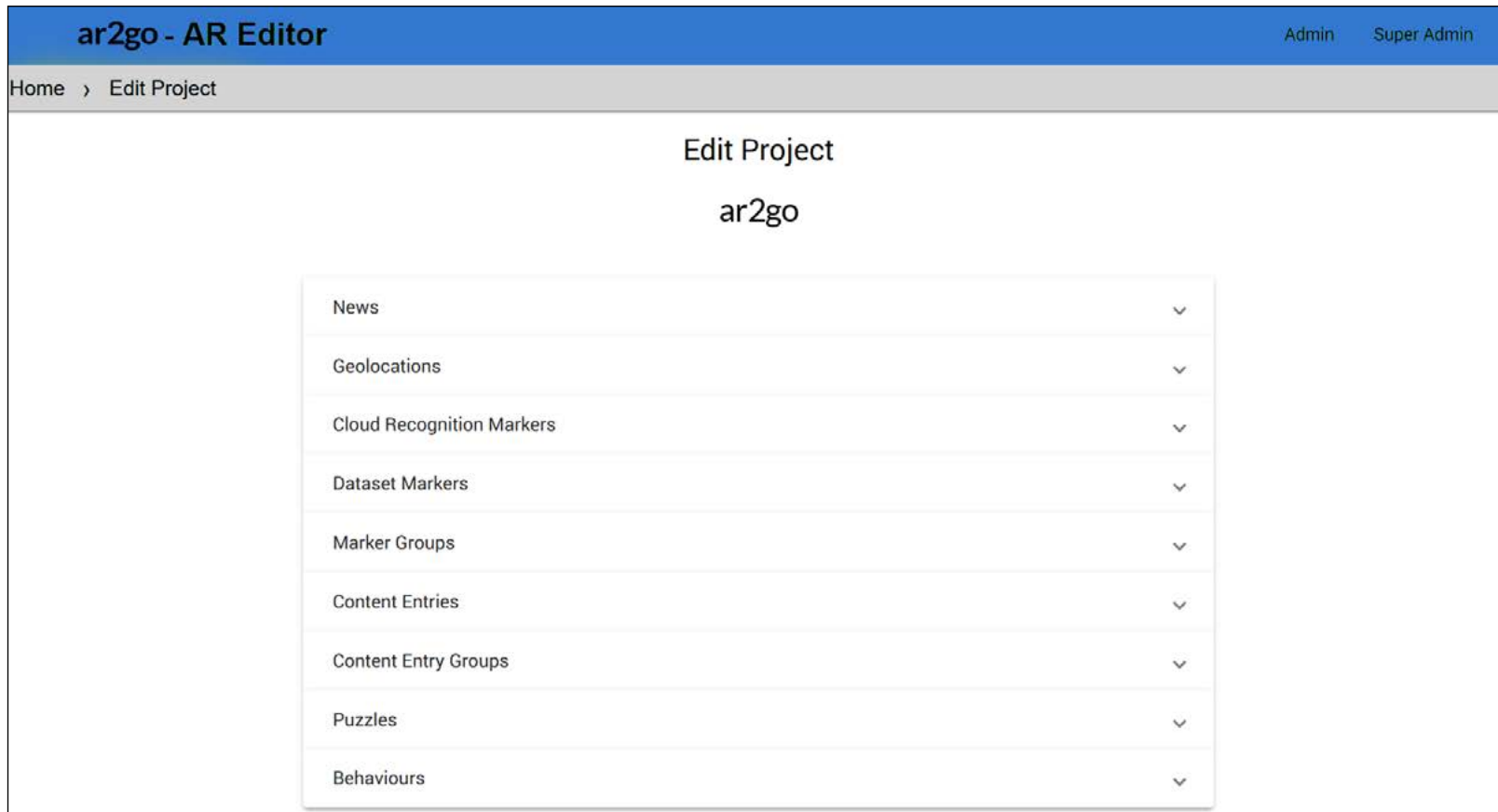
Below the table is a blue 'Create Project' button and the text 'Backend version: 0.5.0'.



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Practical example 1: Creating content

... and an overview is displayed.



The screenshot displays the 'ar2go - AR Editor' interface. At the top, there is a blue header with the text 'ar2go - AR Editor' on the left and 'Admin Super Admin' on the right. Below the header is a breadcrumb trail: 'Home > Edit Project'. The main content area is titled 'Edit Project' and 'ar2go'. A list of content categories is shown, each with a dropdown arrow on the right:

- News
- Geolocations
- Cloud Recognition Markers
- Dataset Markers
- Marker Groups
- Content Entries
- Content Entry Groups
- Puzzles
- Behaviours




















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Practical example 1: Creating content

Content Entries

[Create Content Entry](#) [Create Upload Link](#)

	Name	Content Entry Group	Description	Actions
	ar2go	Samples	First steps.	  
	Rocket	Rocket		  
	video	Samples		  
	Rocket_Kopie	Rocket		  

To create new content (ContentEntry), select the button „Create Content Entry“ under the item „Content Entries“.



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Practical example 1: Creating content

In the following dialogue you can choose a name for the new content (ContentEntry).

For our example we choose that this content should always be visible (Archive Visibility: Always). Our content does not have to be „discovered“ first. He is immediately visible in the archive of the client app.

Create Content Entry

Name *
Mein Bild Inhalt


Description
Das ist mein erster Inhalt

Content Entry Group

Archive Visibility
Always

SCALING *
1

Thumbnail(optional):



Cancel Create








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Practical example 1: Creating content

Now we can easily open the new created ContentEntry with a click on it in the entry list....

Content Entries

[Create Content Entry](#) [Create Upload Link](#)

	Name	Content Entry Group	Description	Actions
	Mein Bild Inhalt			  

Practical example 1: Creating content

...whereupon, among other things, an AssetPack list is displayed.

Here we create such an AssetPack by clicking on „Create Asset Pack“.



An AssetPack is basically a container for the actual data/files of the content (such as images, videos, audios, PDF documents, user interfaces and, above all, 3D models).

In practice, this enables flexible handling of the data belonging to a content. The actual data, i.e. the uploaded files, are themselves called assets. Hence the name AssetPack for the container in which these are stored.



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Practical example 1: Creating content

In the following dialog you can choose a name for the new AssetPack.

A AssetPack could always include data/files of one certain type (images, videos, audios,...).

So we also have to choose the type we want. In this example we choose the image.

Create Asset Pack

Name *

Mein Image AssetPack

Description

Das ist mein Image AssetPack

Type *

Image

Asset Match Error Message

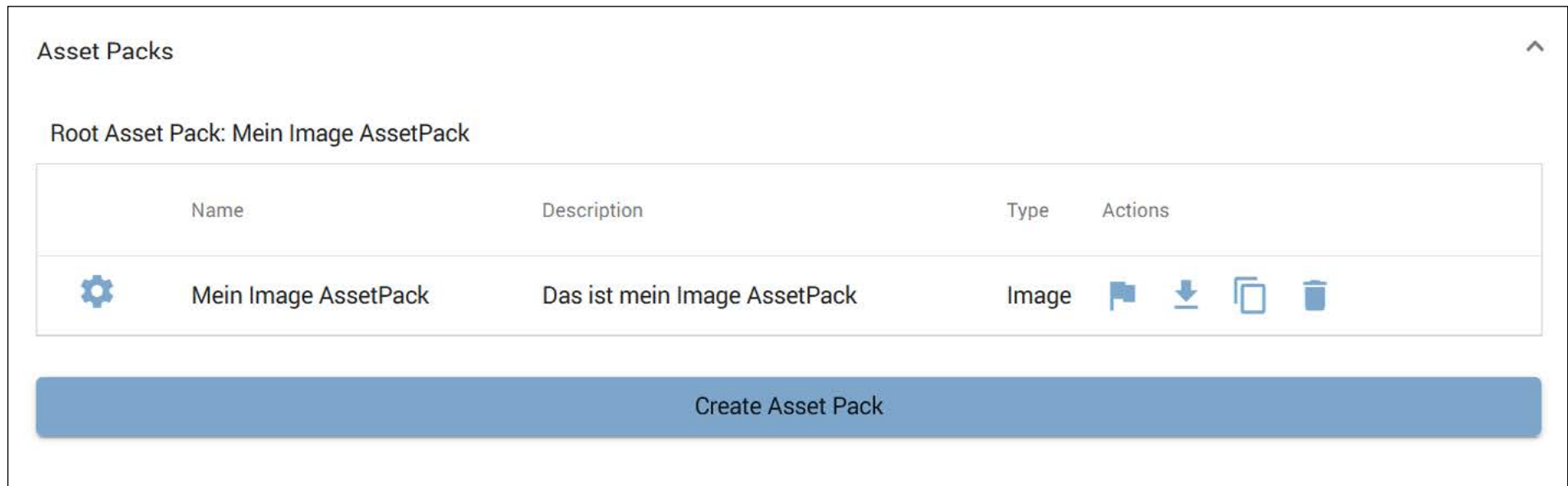
Language	Message
<input type="button" value="Add"/>	



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Practical example 1: Creating content

The new AssetPack is displayed in the AssetPack list, where you can open it with a click on it.



Practical example 1: Creating content

After that we can see a list with assets. So this is the list with the actual data/files for our ContentEntry (content), however, only those that belong to this AssetPack.



In this case we can upload our image as an Asset by clicking on „Create Asset“.



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Practical example 1: Creating content

In the subsequent dialogue, we choose a name for the new Asset, select the desired file and the platform. The platform is the platform of our client (Android, iOS,...) for which this asset was created.

Some data/file-types must be in a form that is supported by the respective client platform.

So far this only effects 3D-models. For our example (an image) we can simply select „Universal“, which ensures that this asset is valid for all platforms.

Create Asset

Name *
Mein Bild

File *
 12_dezember.jpg

Platform *
Universal

Language

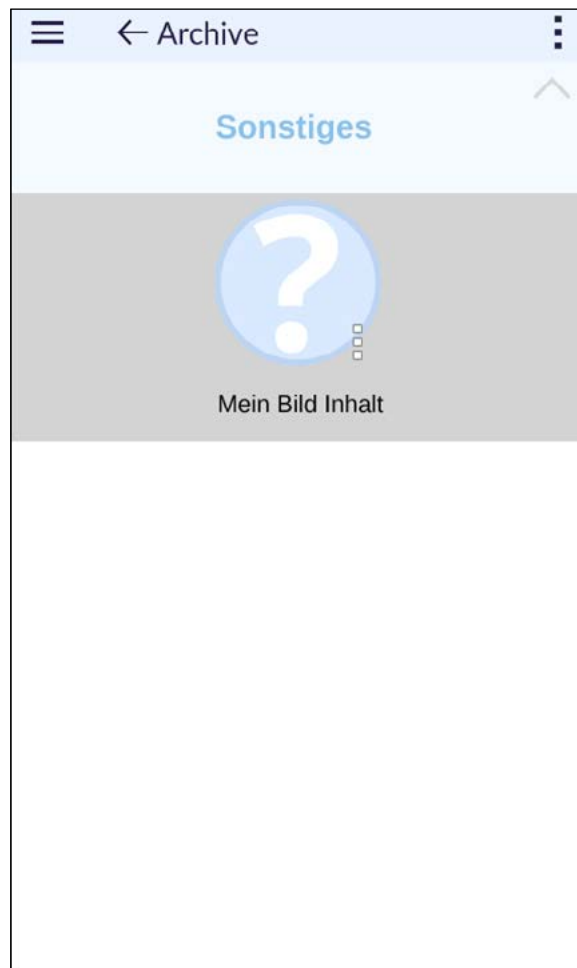
Start Validity

End Validity

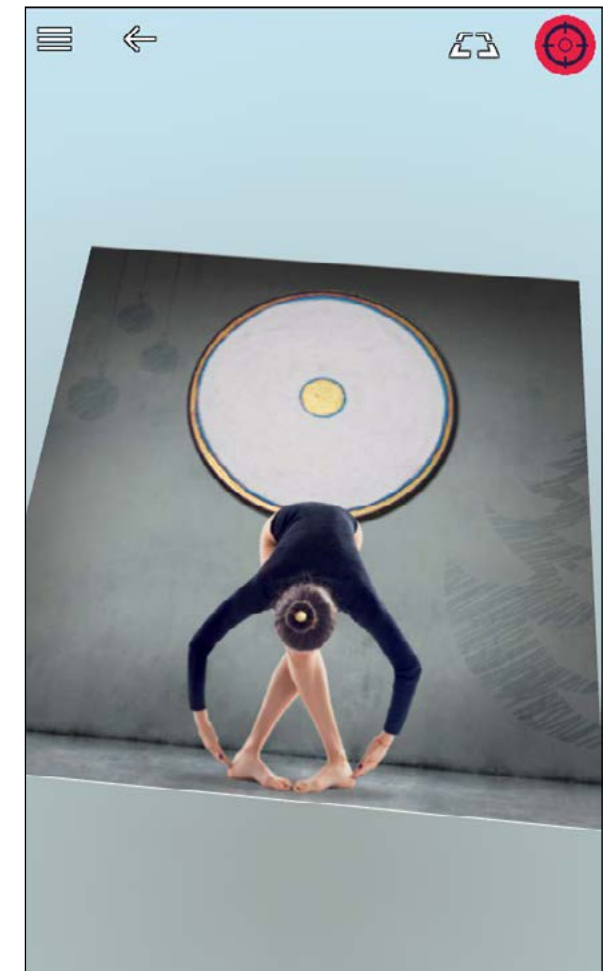


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Practical example 1: Creating content



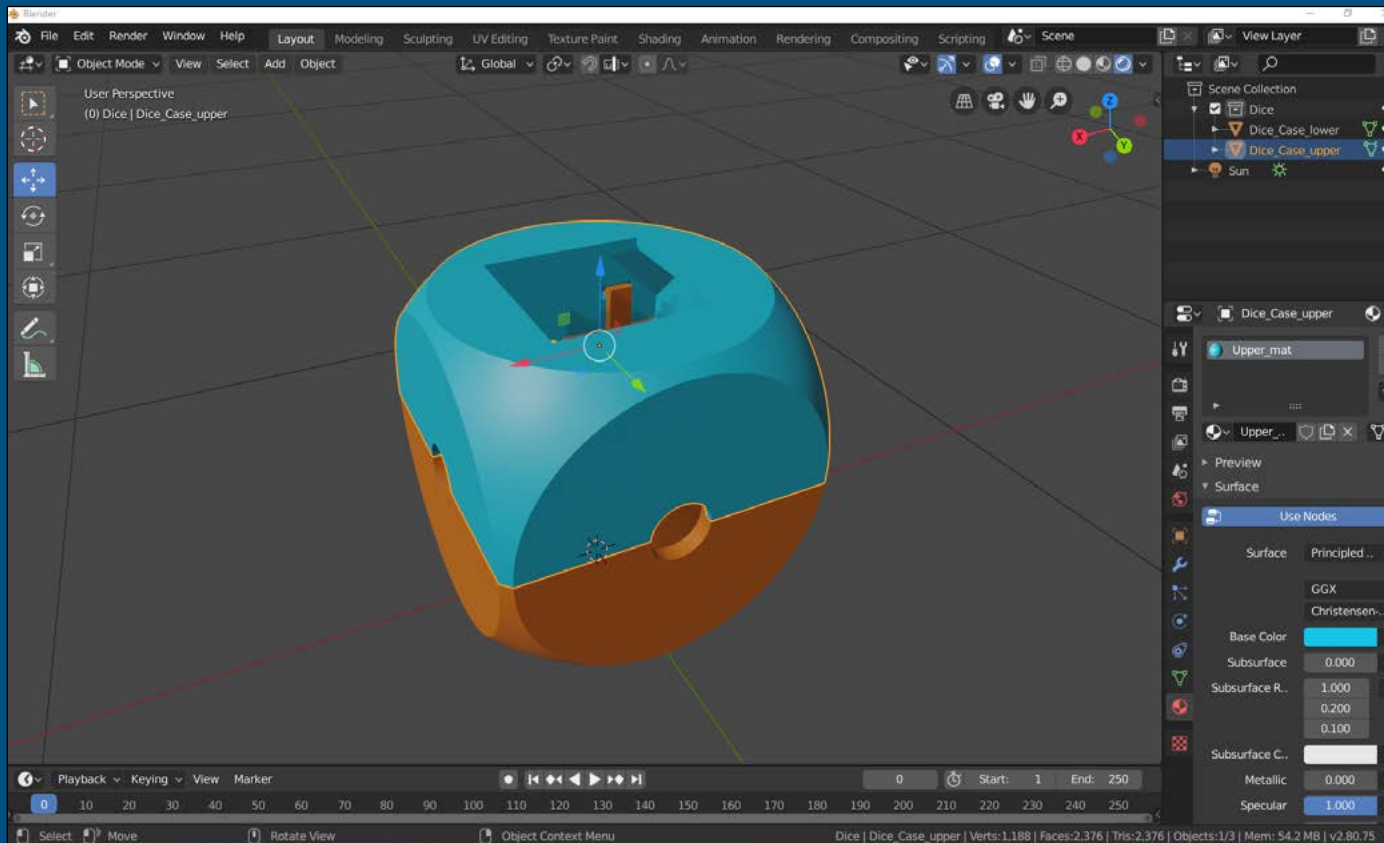
Now, our content is available on the client app. If you start the client app, go to archive. The new content is listed under „Miscellaneous“. With a click it is loaded and displayed.



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Practical example 2: Creating a 3D-model

For the new content, we create another Asset in the same ContentEntry as our image. This time a 3D-model.



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Practical example 2: Creating a 3D-model

Therefore we have to create a new AssetPack (because an AssetPack could include only one type of assets). So we choose „3D-model“ as type this time.

Create Asset Pack

Name *

3D-Modell AssetPack

Description

Dies ist mein AssetPack für ein 3D-Modell

Type *

3D Model

Asset Match Error Message

Language	Message
Add	

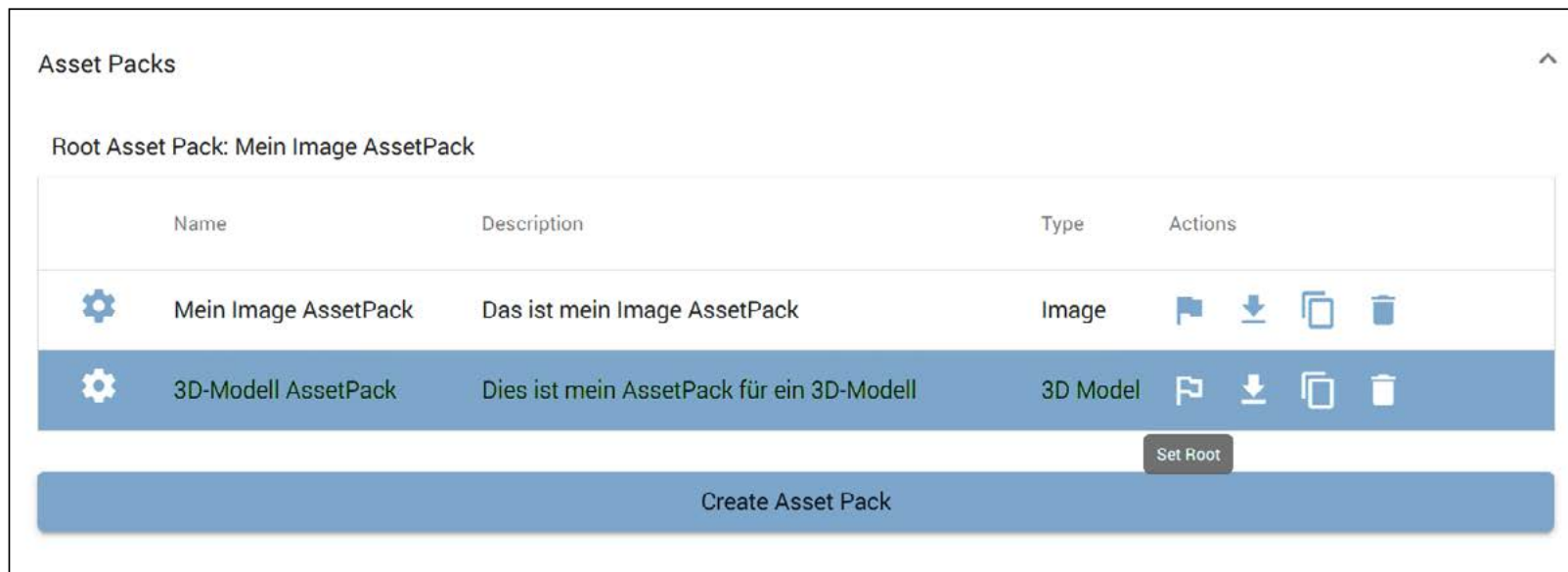
Cancel Create



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40. Practical example 2: Creating a 3D-model

In the AssetPack list we can now see an Image AssetPack and our new 3D model AssetPack. However, the client app will only automatically load one AssetPack at a time. (If you want to load several of them, this can be done easily with the behaviours. But more on that later.) In order to determine which AssetPack is to be loaded at the start, simply set it as „Root“. To do this, click on the flag under „Actions“.



Practical example 2: Creating a 3D-model

Now we create a new asset in our new AssetPack.

Again we choose a name, select our 3D-model (this one is in the .fbx-Format) and select the platform.

In this example we choose Android and iOS, so our content is available on both platforms.

Create Asset

Name *
Mein 3D-Modell

File * ?
 Presi_Dice.fbx

Platform *
Android, iOS

Language

Start Validity

End Validity





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Practical example 2: Creating a 3D-model

3D-models are converted by the platform into a format that can be read by the client app. For 3D-models, there is also a distinction between platforms. Therefore, the 3D-model, as we defined it before, is converted separately für both platforms.

Because the conversion takes a little time depending on the scope of the 3D-model, another list is now visible below the asset list, in which the conversion status is displayed.

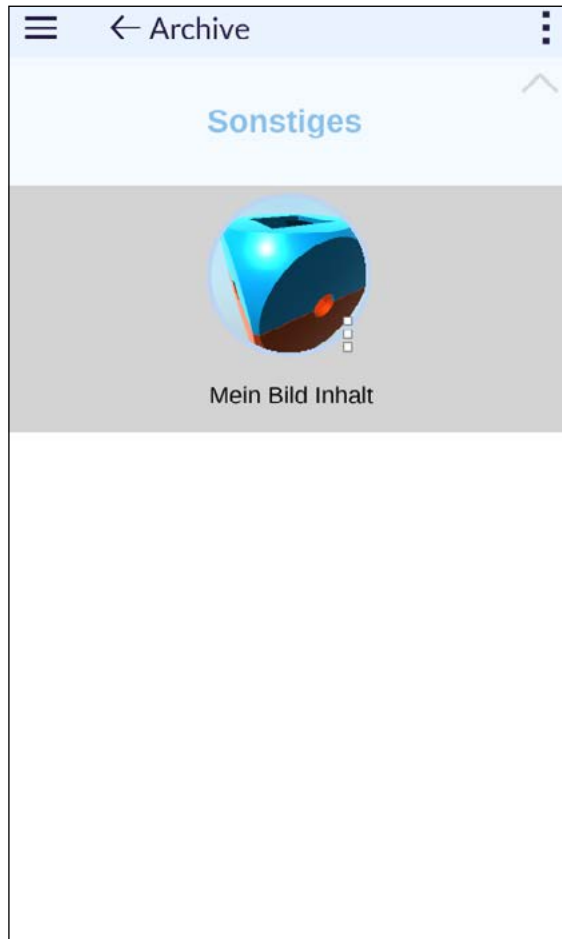
Pending Assets				
Name	Created	Last Modified	State	
Mein 3D-Modell	9:09:24 AM	9:09:24 AM	Running	
Mein 3D-Modell	9:09:24 AM	9:09:24 AM	Pending	

Pending Assets				
Name	Created	Last Modified	State	
Mein 3D-Modell	9:09:24 AM	9:09:40 AM	Completed	
Mein 3D-Modell	9:09:24 AM	9:09:56 AM	Completed	



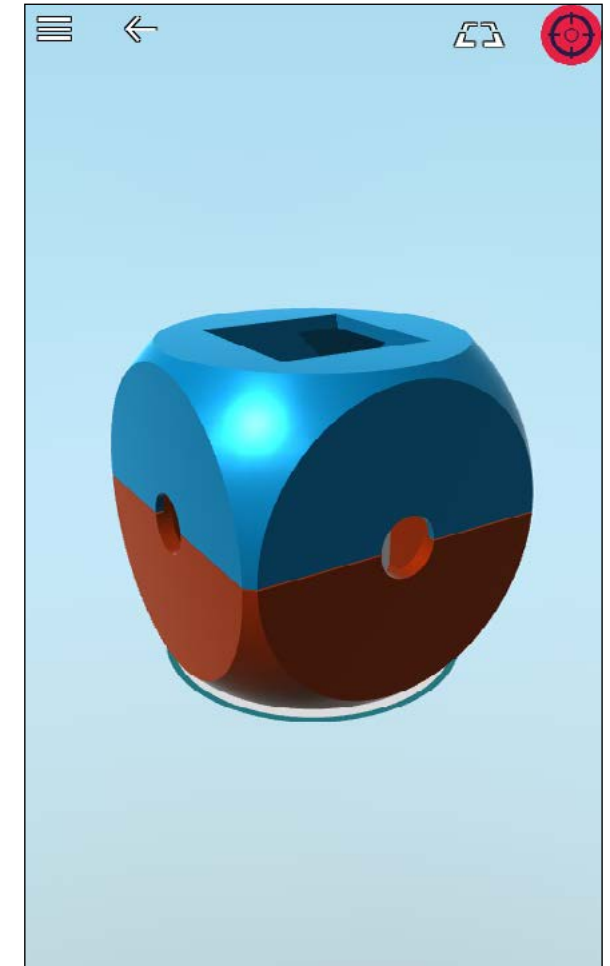
ar2go App

Practical example 2: Creating a 3D-model



As soon as the converting is finished, we can load the 3D-model with the client app.

Because we named our ContentEntry „Mein Bild Inhalt“ and we created our 3D-Model in the same ContentEntry, the name is shown.

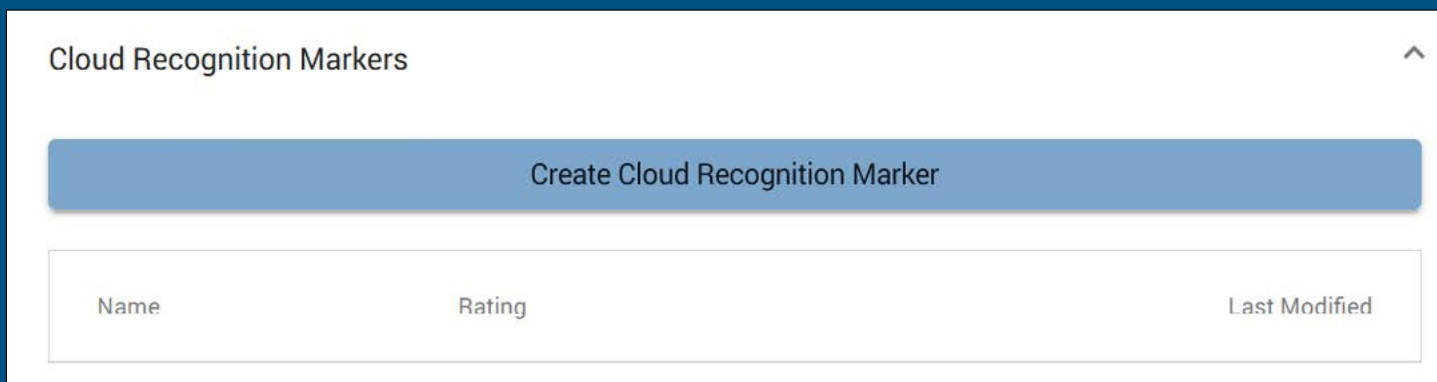


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Practical example 3: Creating a marker

Content cannot only be accessed from the archive. The device`s camera can be used to scan markers, which are linked to certain content. Markers are basically completely normal images that are recognized by the client app and trigger the loading and display of content.

Markers can also be used to „discover“ content. Contents can only appear when they have been „discovered“. In this case, when a marker has been scanned for the first time.



We select the „Create Cloud Recognition Marker“ button.



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Practical example 3: Creating a marker

In the following dialog, we select a name for the new marker and choose an image which should be our marker. In our example we use a screenshot of the PION ONE website. We also select a ContentEntry that we want to link to this marker. In this case, we select our already created ContentEntry „Mein Bild Inhalt“.

Create Cloud Recognition Marker

Marker name *
Mein Marker

Browse... piononeWebsiteMarker.png



Width
10

Content Entry
Mein Bild Inhalt

Comment

Cancel Create Marker



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Practical example 3: Creating a marker

On the one hand, markers must be unambiguous and on the other hand, they have to have a certain amount of detail for marker recognition.

In order to be able to judge how well an image is suitable as a marker, it will be analyzed...

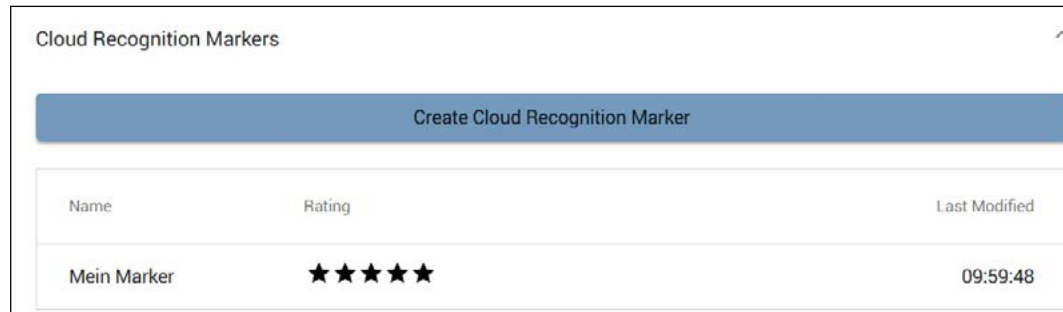


Cloud Recognition Markers

Create Cloud Recognition Marker

Name	Rating	Last Modified
Mein Marker	● ● ●	09:59:48

... and a rating will be created.



Cloud Recognition Markers

Create Cloud Recognition Marker

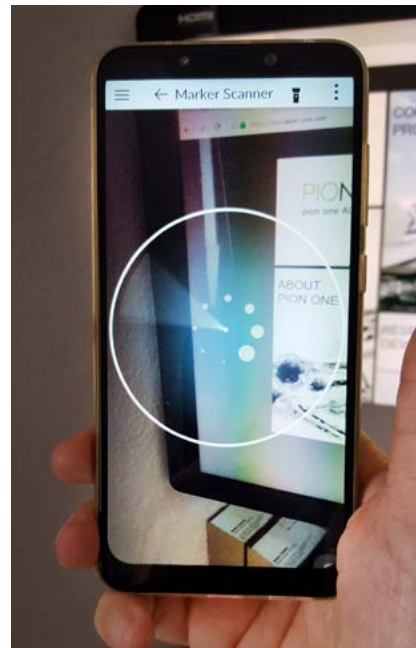
Name	Rating	Last Modified
Mein Marker	★ ★ ★ ★ ★	09:59:48



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Practical example 3: Creating a marker

Now, our marker can be scanned with the client app on a mobile device. To do this, tap the „marker scanner“ button on the main screen of the app and hold the device`s camera over the marker (here, the PION ONE website). The app now tries to evaluate the current camera image and it detects a marker that was created in the platforms CMS, the content will open (here, in marker tracker mode).



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Practical example 4: Location scanning

In addition to the markers, the current position of the device (and the location of the user) can also be used to make content visible.

Content is assigned to specific geographic coordinates.

This means that content can also be „discovered“ when you are in a certain place.

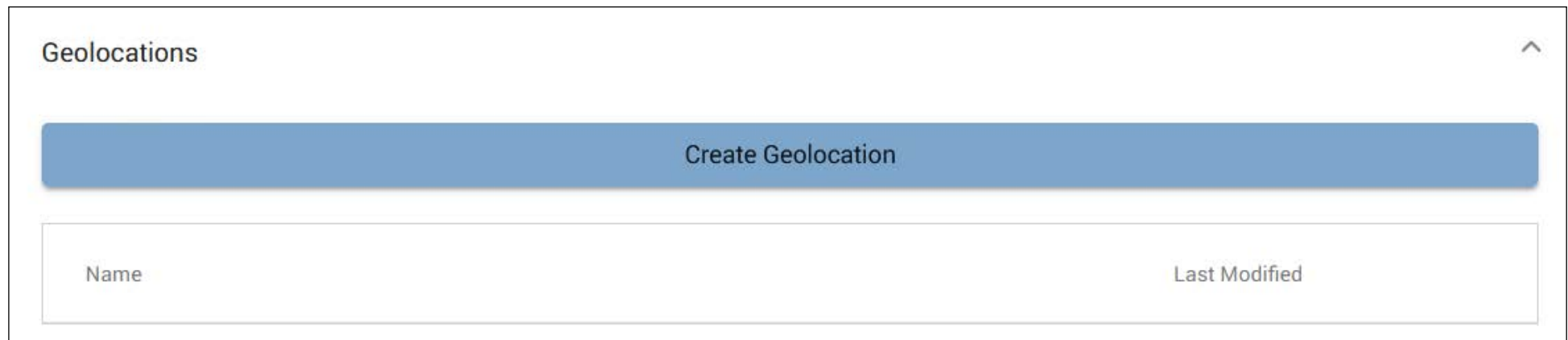


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Practical example 4: Location scanning

To create a geolocation, we select the button „Geolocations“ in the CMS of the platform. Now we can see a list with all geolocations, which are created for our project. In this case, the list is empty.



We select the button „Create Geolocation“.



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Practical example 4: Location scanning

In the following dialog we select a name for our geolocation and the location (in longitude and latitude) on an interactive map with a radius where we can „discover“ our content.

Besides, we choose a ContentEntry, we want to link to our geolocation. In this case, we choose the created ContentEntry „Mein Bild Inhalt“.

Create Geolocation


Name *
Meine Geolocation

Description

Longitude *
10.8916292807961

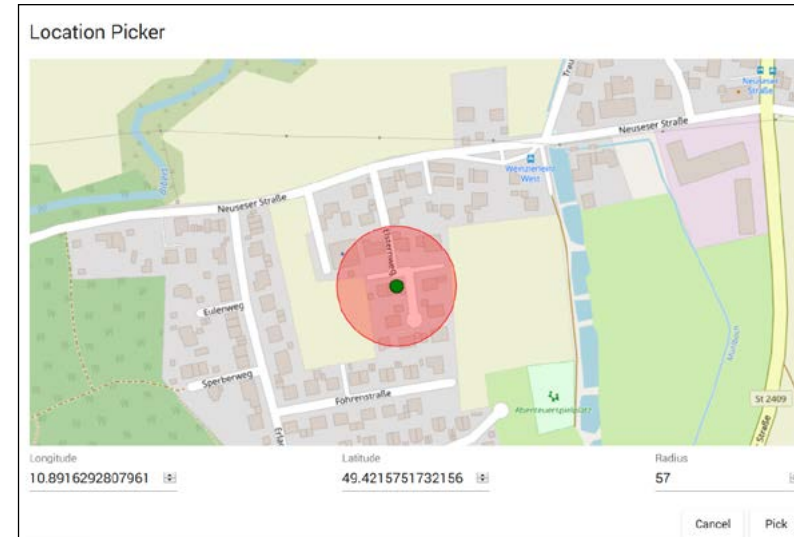
Latitude *
49.4215751732156

Radius
57



Content Entry
Mein Bild Inhalt

Cancel Create

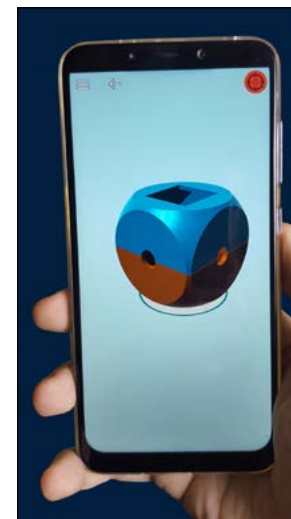
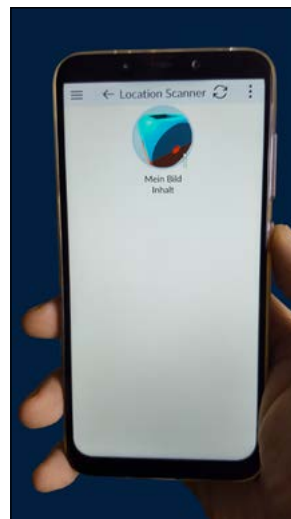


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Practical example 4: Location scanning

Now, the linked content can be accessed with the client app on a mobile device at the location determined by our geolocation.

To do this, tap the „Location Scanner“ button on the main screen of the app to switch to the location scanner. The content which is linked to a geolocation in the CMS platform for the current location of the device is now listed on our screen. By tapping on one of these contents, it will be loaded and displayed.



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Practical example 5: Behaviours

Behaviours are basically descriptions of behaviour patterns. They can be used to teach the content automatic processes and interactivity.

This means that a program can be defined with which the content can be controlled in detail.

Behaviours open up very far-reaching possibilities, such as:

Specifying event triggers that trigger actions, actions can be chained, both parallel and sequential, specifying colors, materials, position, rotation, size, animations, dialogs, videos, loading of other assets, mathematical functions, variables, reading out device data, operations such as comparisons, conditions, lists, to give just a little foretaste.



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Practical example 5: Behaviours

In the CMS of the platform, in an AssetPack, under its asset list, we can also find a list with the behaviours that have been defined for this AssetPack. (In our example this list is still empty).

To create a behaviour, we select the „Create Behaviour“ button.



This leads us into the behaviour editor. At the top right we assign a name again and then we can start to click our behaviour together. Behaviours are node-based, so working here is very user-friendly.



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Practical example 5: Behaviours

Here we specify that at the start, the upper part of our 3D-model is shifted slightly upwards.

The screenshot displays the 'Behaviour Instance Editor' interface. The main workspace shows a sequence of actions: an 'OnStart' trigger (red box) connected to a 'Translate' action (purple box). The 'Translate' action is configured with the following settings:

- Space: Local
- 3D-Object: Dice_Case_upper
- X: 0
- Y: 2
- Z: 0

The right-hand panel shows a list of categories for actions, with 'Actions - Transformation' expanded to show a list of actions including LookAt, Rotate, Scale, SetPosition, SetRotation, SetScale, and Translate. The 'Translate' action is highlighted in the list.

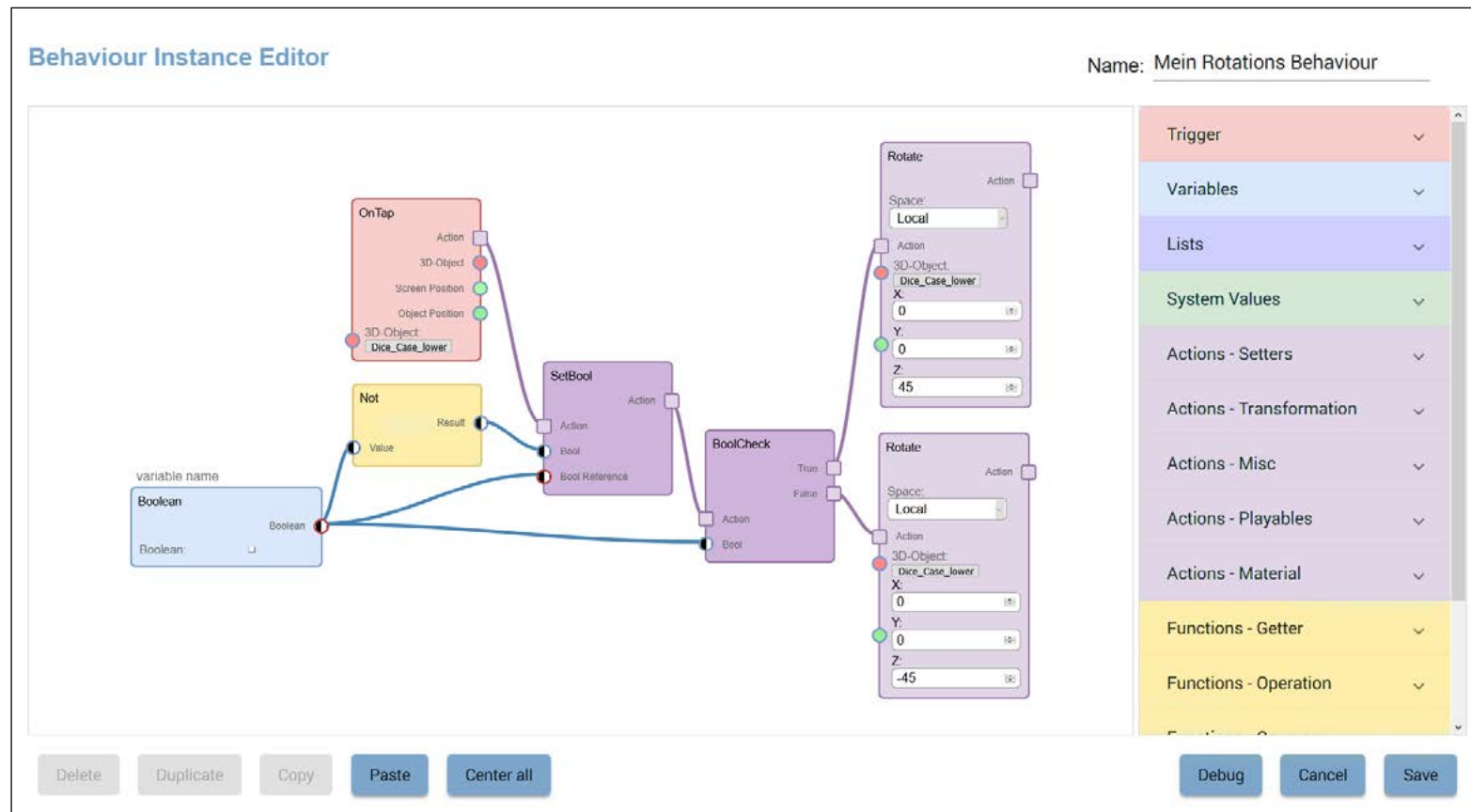
At the bottom of the editor, there are buttons for 'Delete', 'Duplicate', 'Copy', 'Paste', 'Center all', 'Debug', 'Cancel', and 'Create'.



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Practical example 5: Behaviours

We create another behaviour to demonstrate interactivity.







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Practical example 5: Behaviours

This behaviour ensures that when you tap the lower part of our 3D-model, it rotates 45° towards and back. New or freshly edited behaviours are automatically set to „Work in Progress“.

This means that they are not loaded by the client app. So in order to complete the process, we still have to bring our behaviours to „Ready“ status.

Behaviours		
Name	Publishing Status	Actions
Mein Rotations Behaviour	Ready	 
Mein Init-Behaviour	WIP	 

[Create Behaviour](#)

Set Publishing Status

Set a publishing status for the Behaviour "Mein Rotations Behaviour"

Broken: There is something not working as intended. Check and fix this behaviour.

WIP: This behaviour is currently work in progress.

Ready: This behaviour is ready and will be released with the contentEntry.

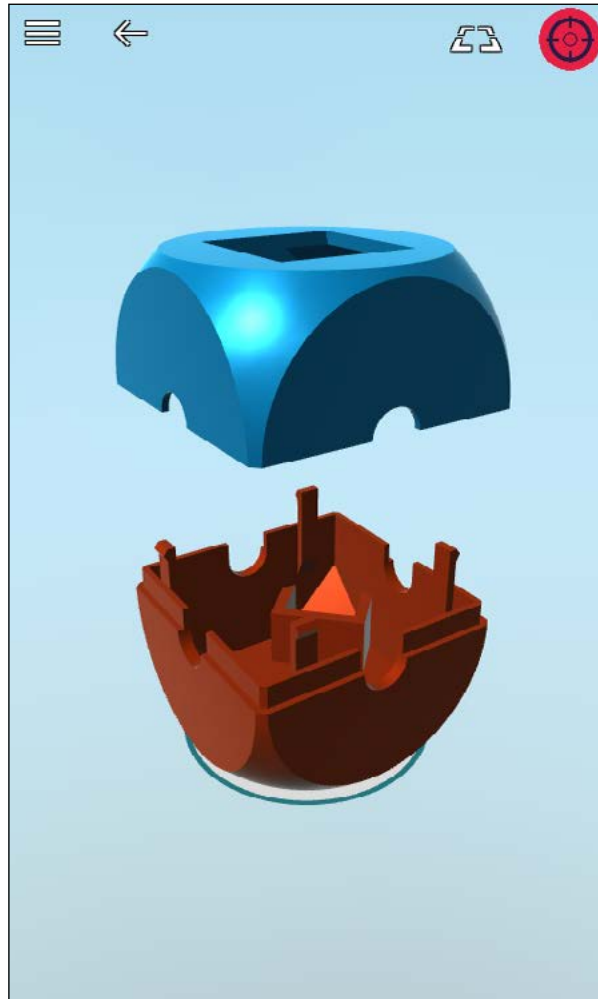


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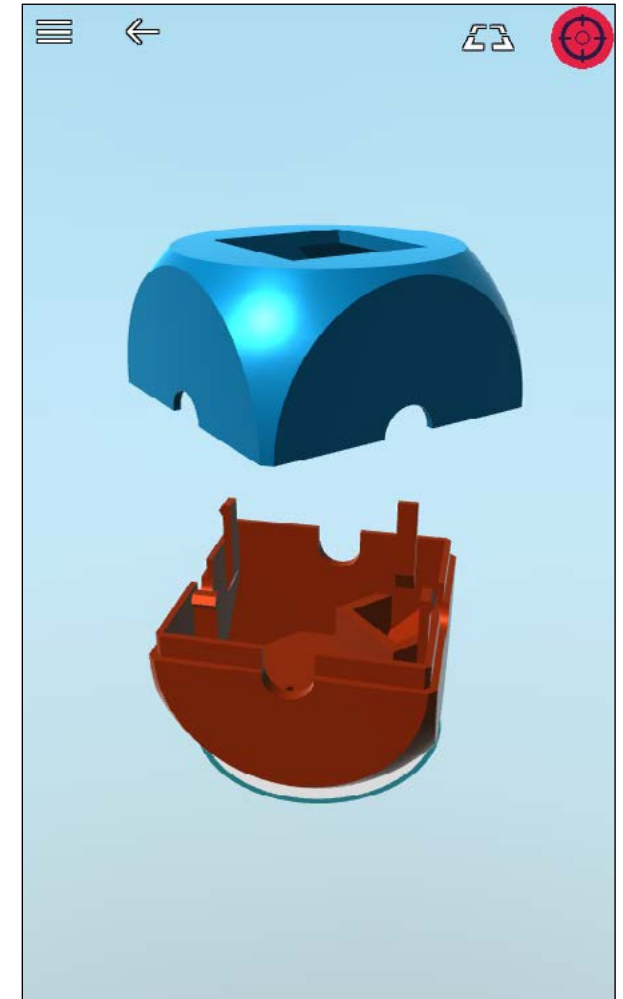
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Practical example 5: Behaviours



Now we can see in the client app that the upper part of our 3D-model has been moved up, as we have defined it in our „Init Behaviour“.

By tapping the lower part of our 3D-model, it will rotate 45° towards and back.



This was a simple introduction, which illustrates some of the basic functions and possibilities of the ar2go AR platform.

Of course, not all functions and options can be shown in this presentation.

In addition, new functions will be added as the platform continues to develop.



ar2go App



The connection between you and your customer

Cloud service records usage behavior



xr2go makes your extended content available in the cloud

Mobile device with the AR-App

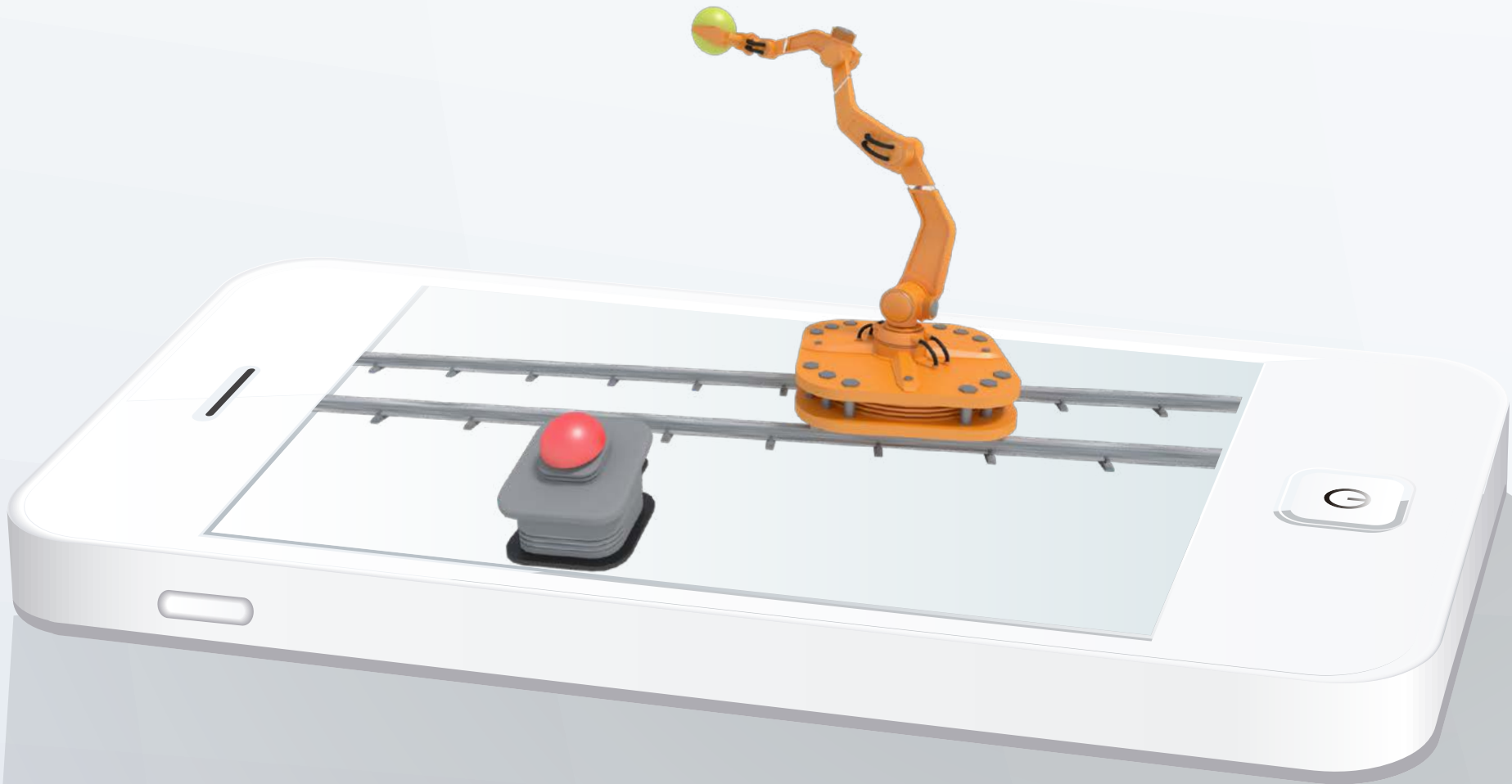


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Schwindt Durchblick APP

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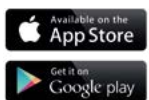


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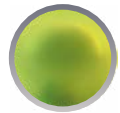
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Actions with buttons



Touch Buttons

The following actions can be carried out by tapping a virtual button:



Scaling



Rotation



Movement



Animation



Information



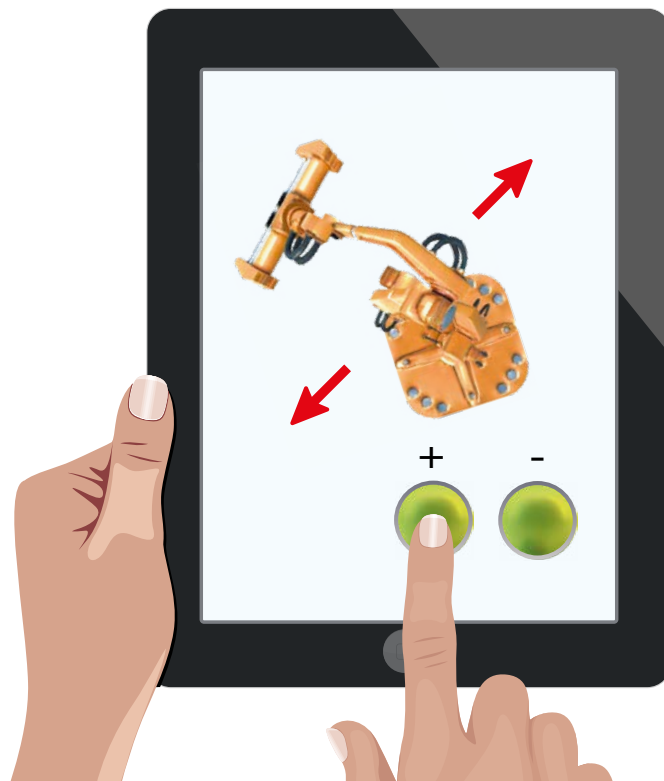
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Actions with buttons

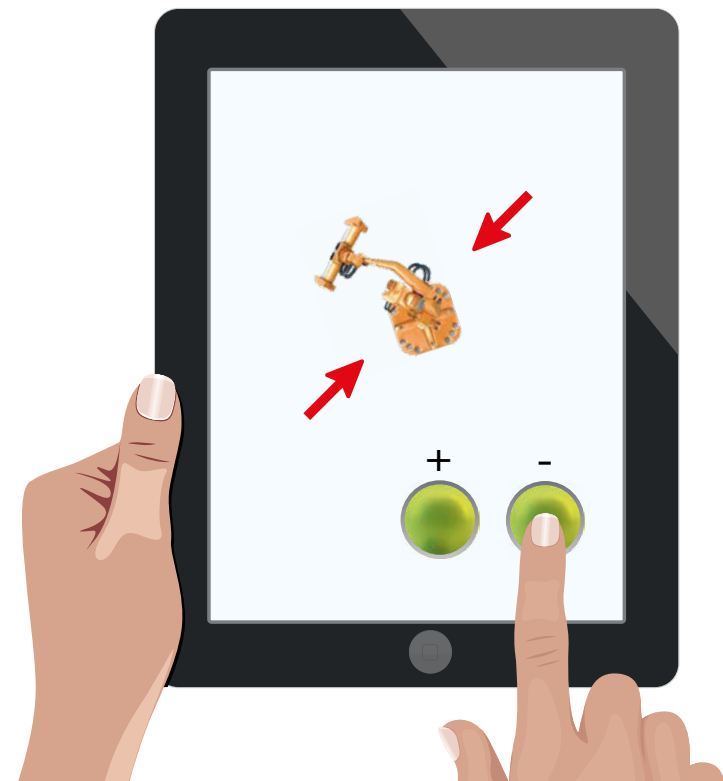


Scaling

Enlarge object



Shrink object



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Actions with buttons



Rotation

You can rotate the object by pressing the button.



ar2go App

Actions with buttons



Movement

You can move the object in every direction while pressing the button.



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Actions with buttons



Animation

You can start an animation of the object by pressing the button.



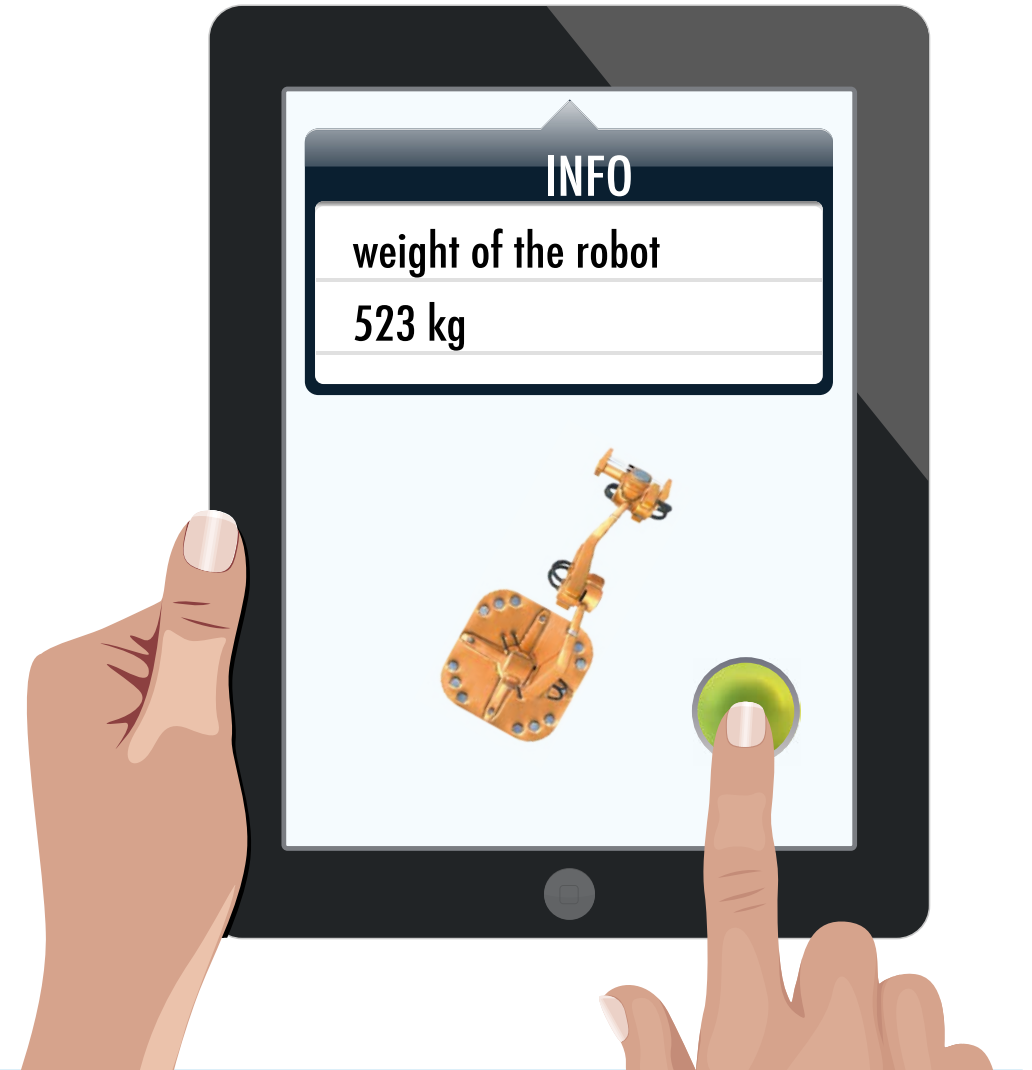
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Actions with buttons



Information

By pressing the info button, the user receives informations about the object.



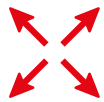
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Actions with buttons



Triggering the 3D-object

It can also be scaled, rotated or moved by directly touching the object.



Scaling



Rotation



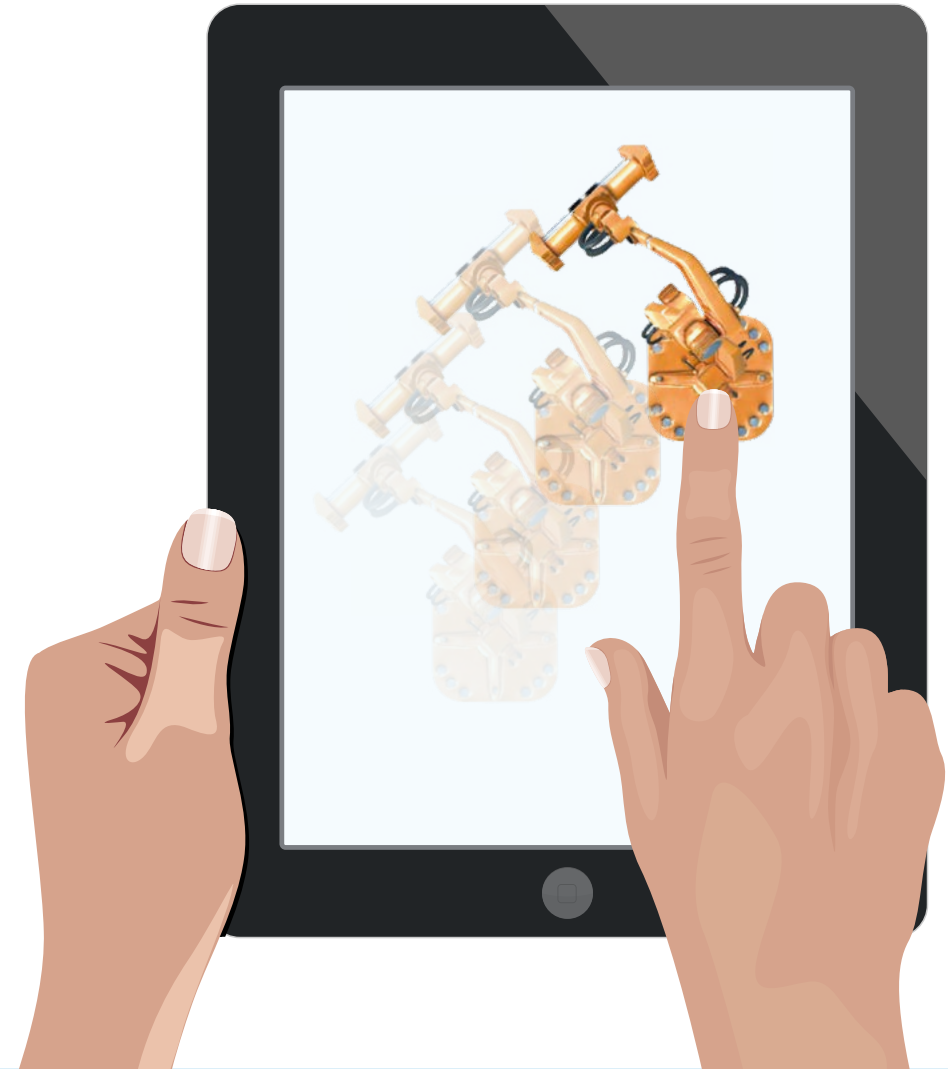
Movement



Animation



Information



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Extension of content in existing apps

Time 1



Time 2



Time 3



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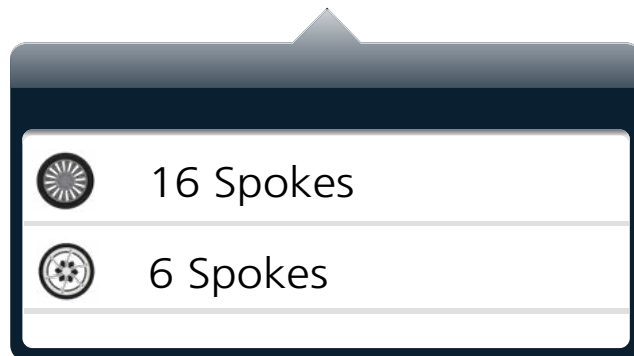
Provision of AR content for live presentations



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Configuration of 3D-objects

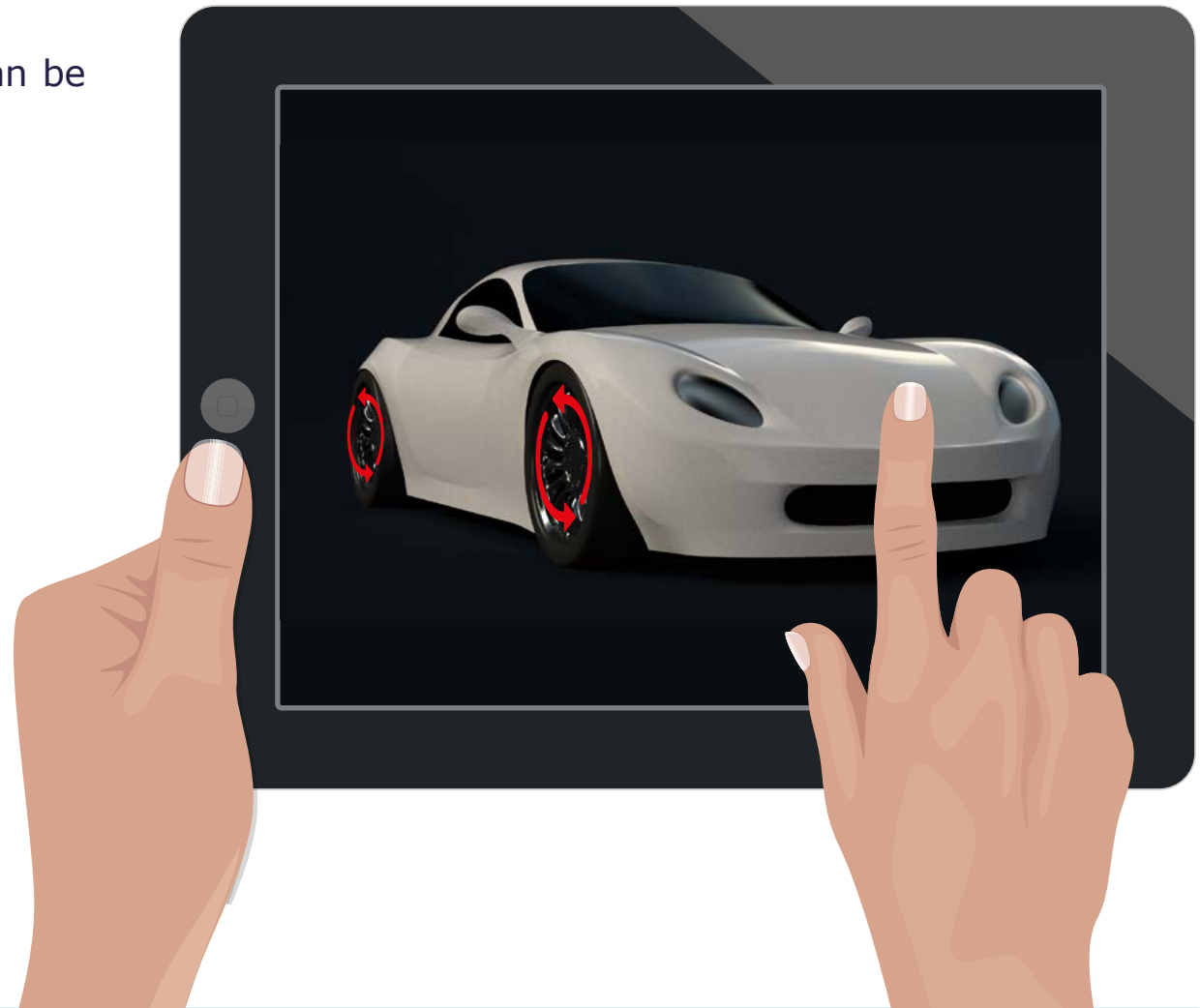
The user can change parts of the 3D-object by himself in the configurator, so he can create individual looks.



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Actions on sub-objects

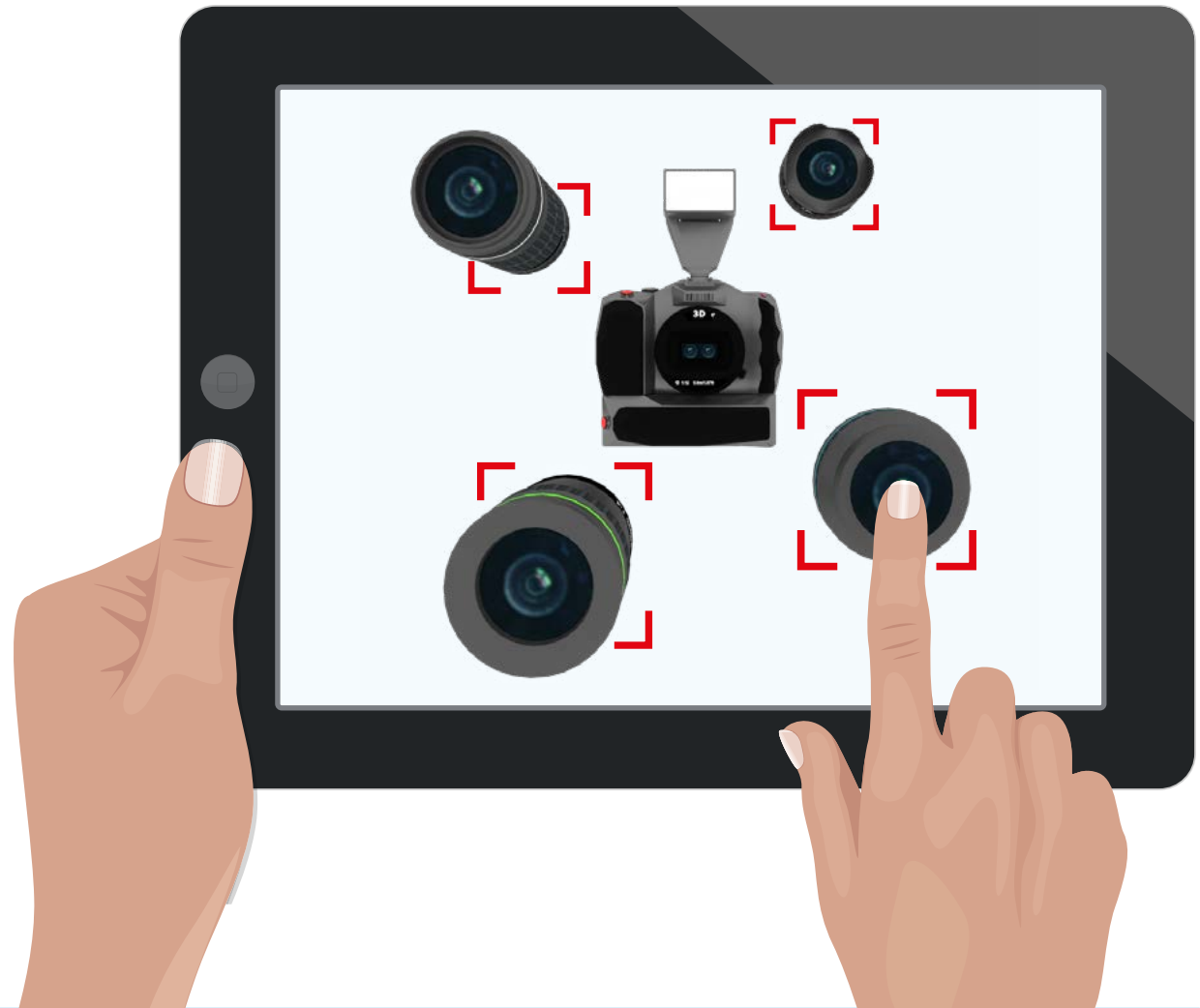
Actions (such as the rotating tires) can be called up on partial objects by pressing the 3D-object.



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Configuration of 3D-objects

3D-objects can be configured for different components by pressing.



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