Critical manufacturing
an ASM PT company

Augmented Reality

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Augmented Reality

Estimated time to read: 5 minutes

Augmented Reality enables any task relevant information available inside MES to be viewed over a live camera shot of the real product, process, line or facility area. This means you have faster and simpler shop floor visibility and monitoring, and an improved operational efficiency.

Info

Augmented Reality is a separately licensed module.

This tutorial will guide you through the setup and usage of the Augmented Reality functionality.

Note

When in Augmented Reality, you cannot open wizards, and if you open a link, you will exit the Augmented Reality mode.

Overview

Augmented Reality is a mechanism to superimpose information on top of an object, as viewed through a device camera, for the purposes of visualization or interaction.

The Augmented Reality feature works by identifying QR codes in the image being captured by the camera of the mobile devices, and looking up the respective configuration in the system about the object associated with that QR code. The registration of QR codes and objects is done via **Tags**.

Setting Up Augmented Reality

To be able to use the Augmented Reality feature it is necessary to follow the steps described in the table below:

Step	Title	Description

Step	Title	Description
1	**Create the Necessary UI Pages**	If the intention is to display a UI page when a certain QR code is read, the UI page must be created in advance.
2	**Create the Augmented Reality Tags**	Create as many Steps as required to be used by the different Flows.
3	**Create the Necessary Flows**	Create the necessary Tags in the system.

Table: Augmented Reality Setup steps

The individual steps are explained in more detail in the sub-sections that follow.

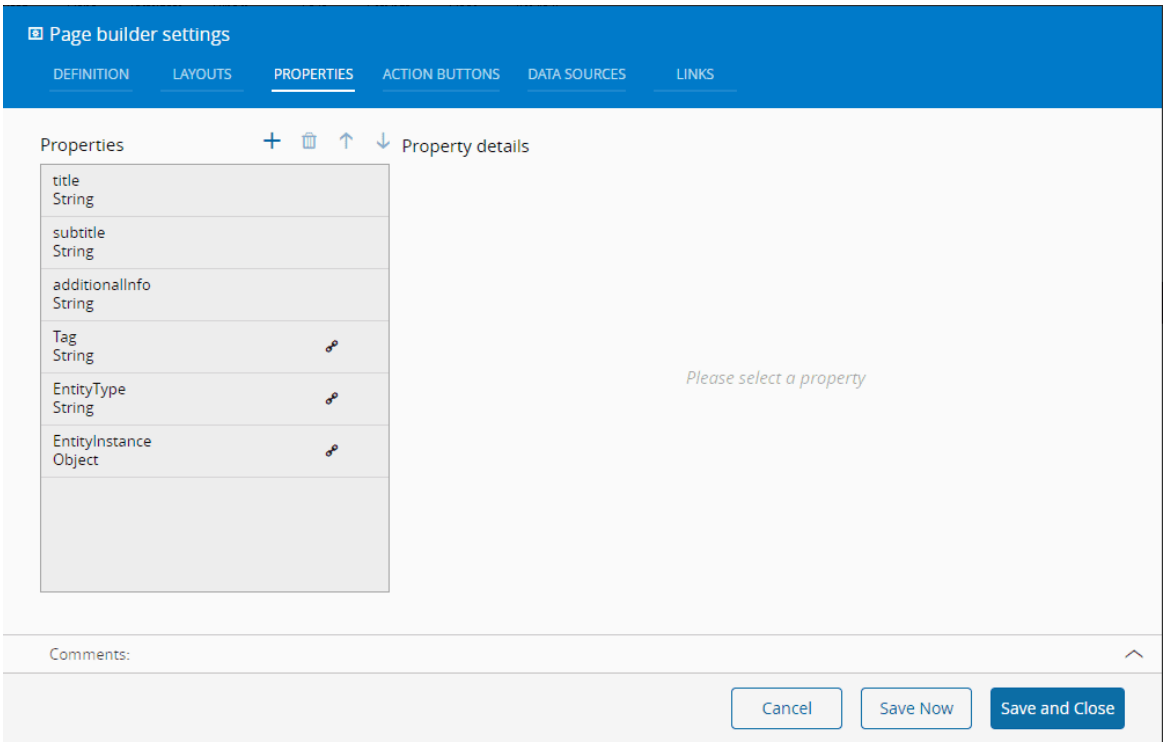
Create the Necessary UI Pages

UI Pages used in Augmented Reality are normal UI Pages, but the Augmented Reality module automatically supplies some parameters to the UI Page when an object is recognized. These parameters are listed in Table 2 below:

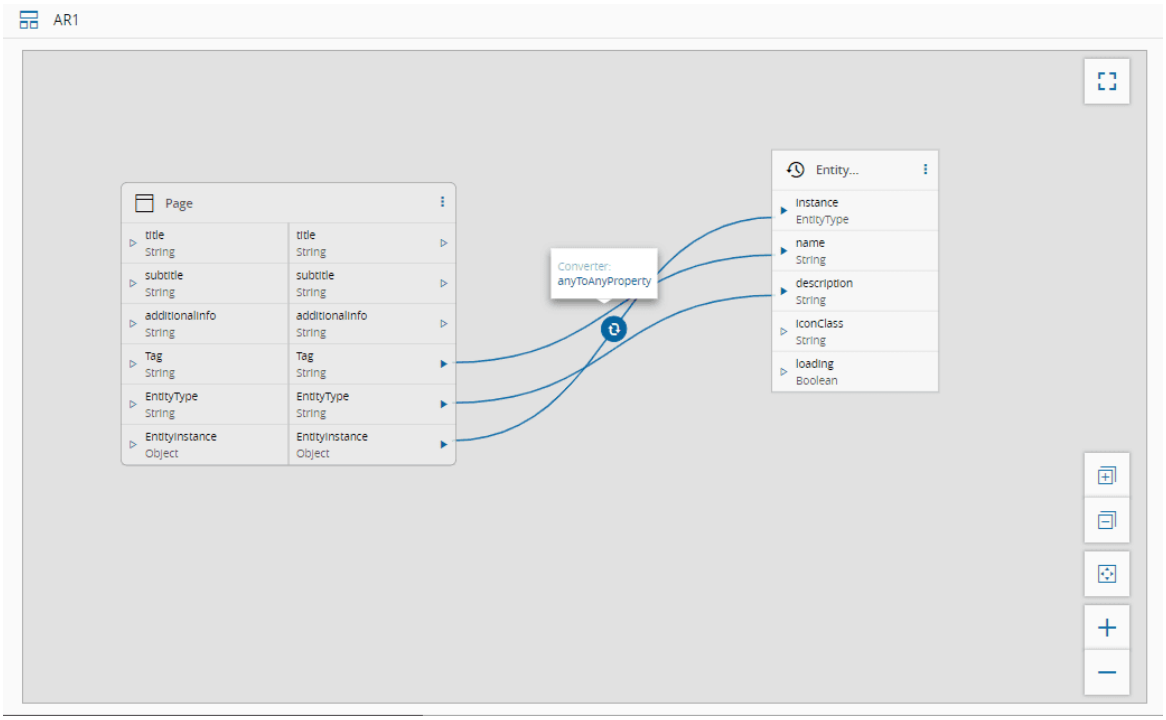
Parameter	Data Type	Description
Tag	**String**	The id of the Tag that was recognized.
EntityType	**String**	The name of the entity type associated with the id of the recognized Tag.
EntityInstance	**Object**	The object associated with the Tag that was recognized.

Table: Augmented Reality UI Page parameters

An example of this type of UI page is shown below:

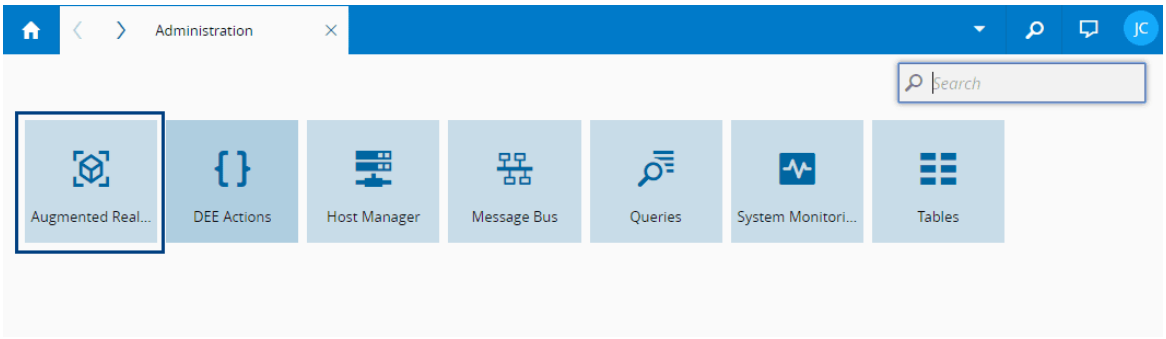


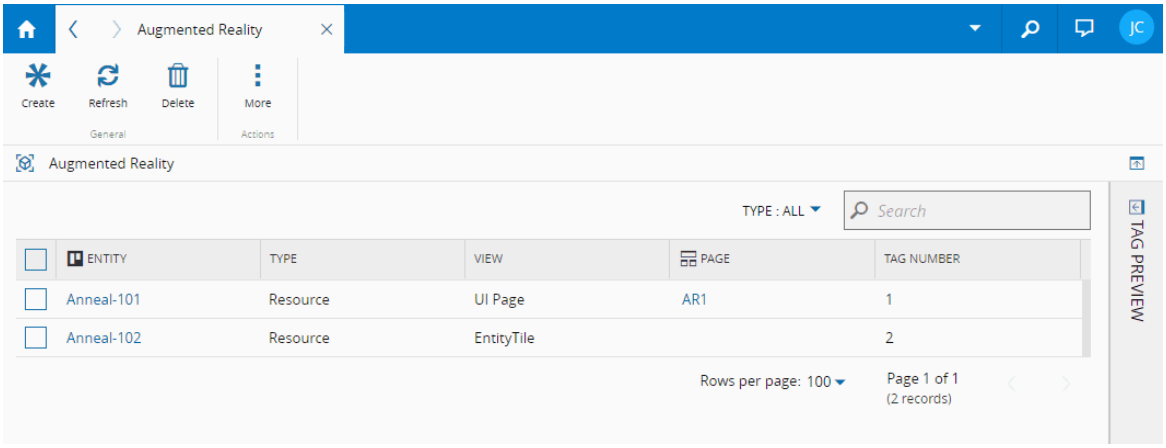
The parameters can then be supplied to any UI Page widget. In the image below, the three parameters are passed to an Entity History widget. In the case of the **EntityInstance**, the converter that is used is the **anyToAnyProperty** without any Converter Parameter.



Create the Augmented Reality Tags

Augmented Reality Tags are created in the Administration menu, Augmented Reality entity. For more information, see the Augmented Reality (Administration) and Augmented Reality (System Widgets/) sections of the User Guide.





Info

Currently, it is only possible to generate tags that range between 0 and 511.

Info

An Augmented Reality tag can display a particular UI Page or a standard UI Page.

Info

Augmented Reality tags are stored in the Generic Table **EntityTag**.

Using Augmented Reality

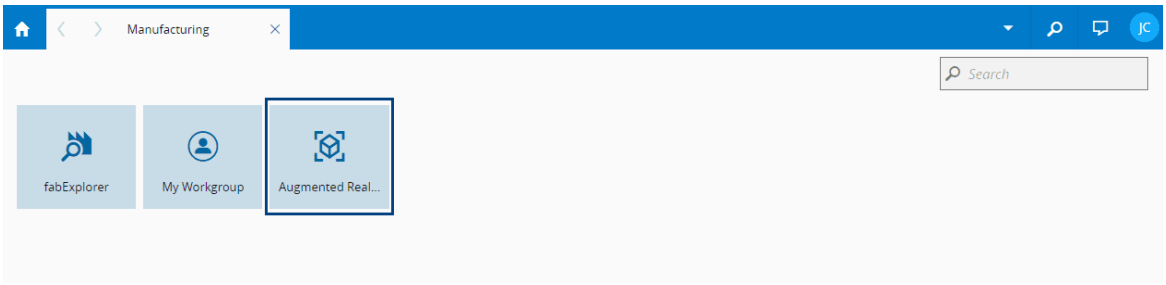
Augmented Reality can also be accessed from the **Manufacturing** menu, **Augmented Reality** entity.

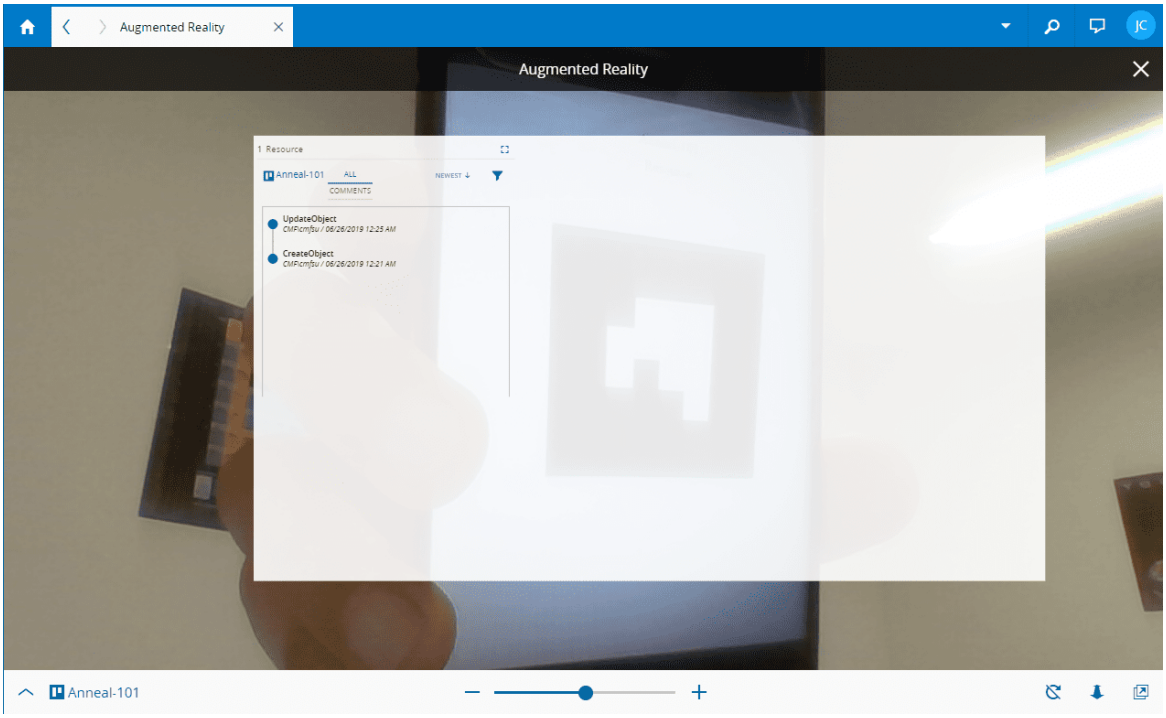
Note

The device that is running the GUI must have a camera and the camera is allowed to be used by the GUI.

To use the Augmented Reality point the camera at the pre-defined QR codes. The system will automatically display either the standard tile or the pre-defined UI Page when the object is recognized.

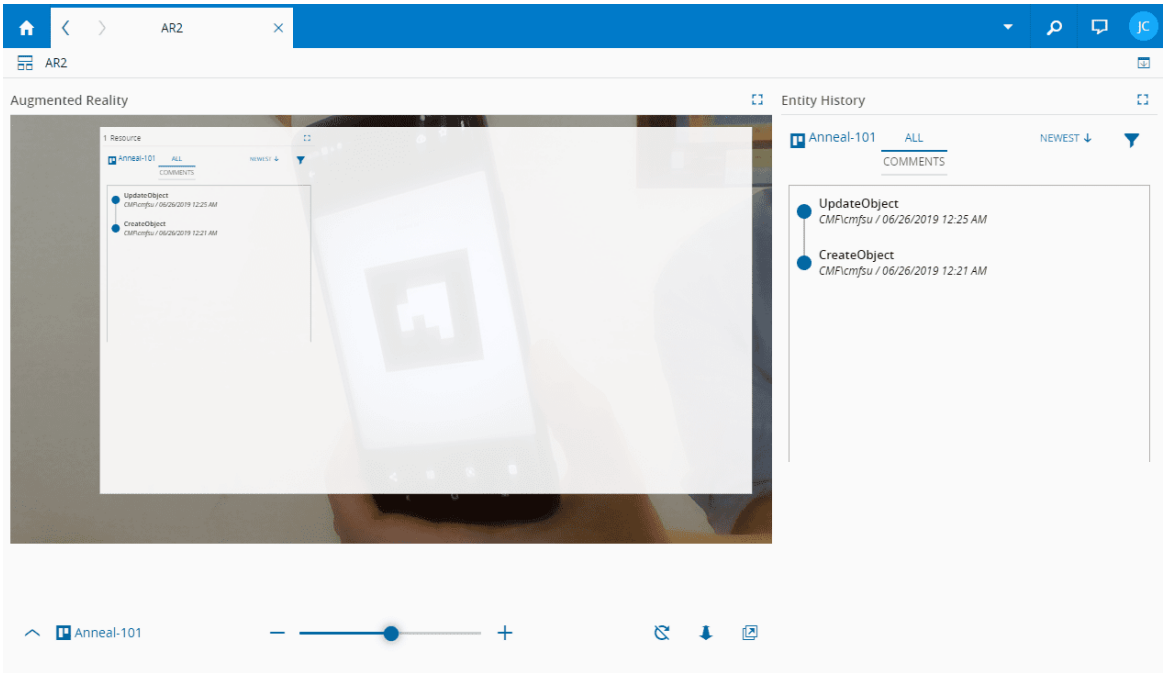
The following images show the example defined above to display the history of an object.



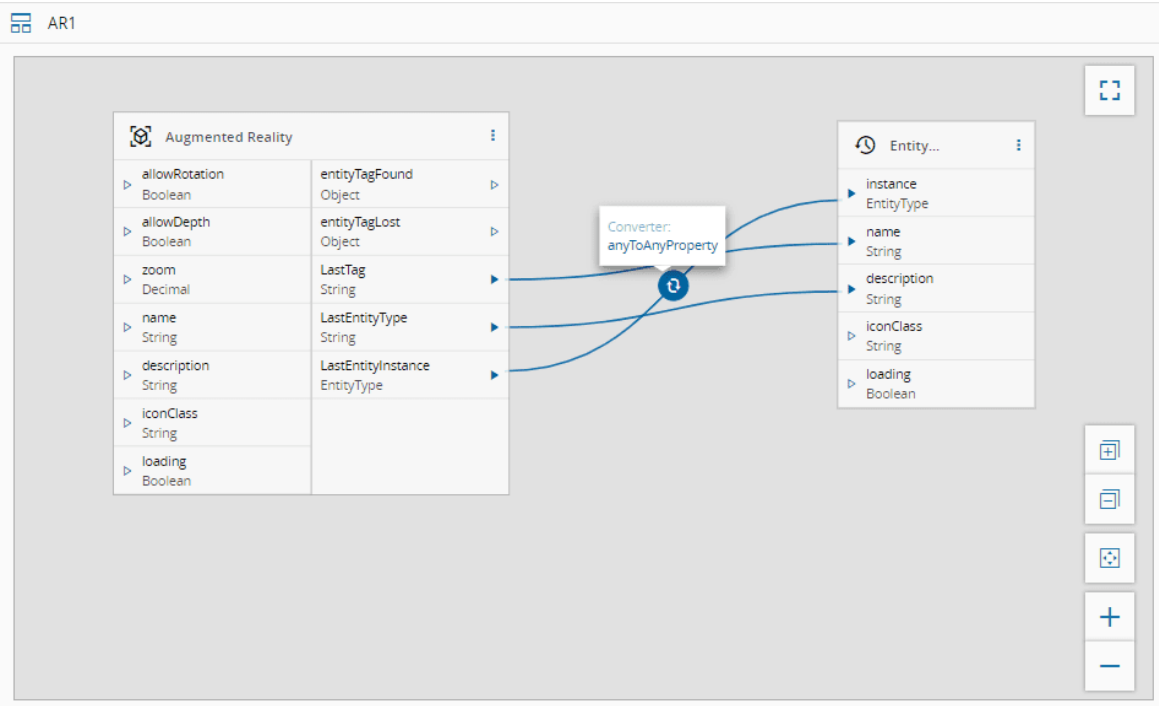


Using Augmented Reality as a Widget

Augmented Reality can also be used as a Widget. In this case it leverages the same Augmented Reality Configuration. The example below uses an Augmented Reality Widget to feed an Entity History Widget.



In this example, the Widget is linked with the properties **LastTag**, **LastEntityType**, and **LastEntityInstance** as seen in the image below:



The Augmented Reality Widget provides five parameters as described in the next table:

Property	Data Type	Description
entityTagFound	Object	Provides access to the most recent detected tag that can be accessed with the properties as described in the above **Augmented Reality UI Page parameters** table.

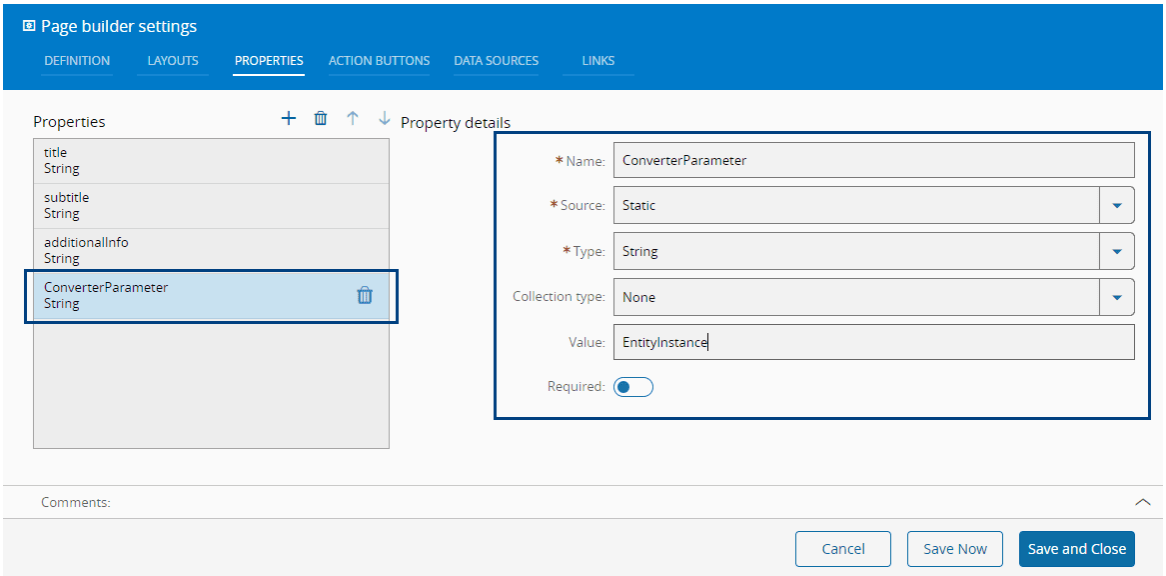
Property	Data Type	Description
entityTagLost	Object	Provides access to the most recent tag that was lost (that is removed from detection), which can be accessed with the properties as described in the above **Augmented Reality UI Page parameters** table.
LastTag	String	The id of the last tag that was detected.
LastEntityType	String	The name of the entity type associated with the id of the last detected tag.
LastEntityInstance	Object	The object associated with the last tag that was detected.

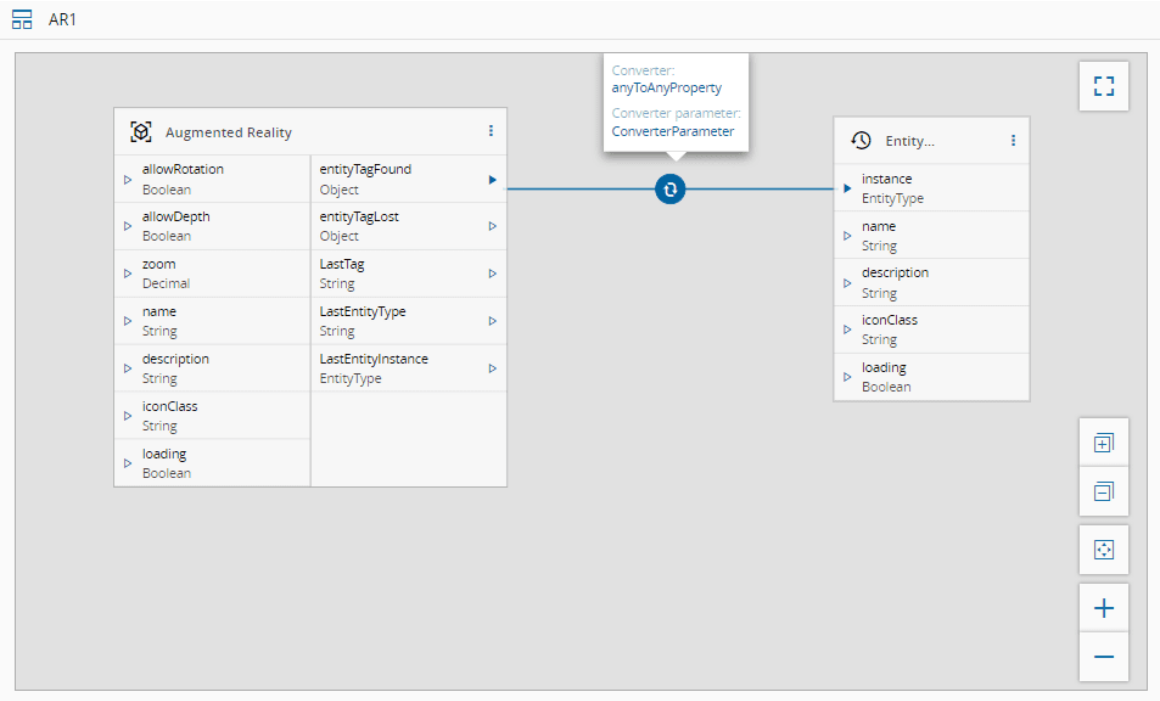
Table: Augmented Reality widget output properties

The objects **entityTagLost** and **entityTagFound** contain the list of properties shown in the **Augmented Reality UI Page parameters** table. These properties can be accessed by using the **anyToAnyProperty** converter and supplying as the **ConverterParameter** the name of the property. Typically, the **ConverterParameters** would be a static property like the UI Page. This process is described in the image below:

Property	Data Type	Description
Tag	Access to the tag (id) name	Access to the tag (id) name
EntityType	Access to the entity type name	Access to the entity type name
EntityInstance	Access to the entity instance	Access to the entity instance

Table: **entityTagFound** or **entityTagLost** object properties




AR1
Converter:
anyToAnyProperty
Converter parameter:
ConverterParameter
Augmented Reality
allowRotation
Boolean
allowDepth
Boolean
zoom
Decimal
name
String
description
String
iconClass
String
loading
Boolean
entityTagFound
Object
entityTagLost
Object
LastTag
String
LastEntityType
String
LastEntityInstance
EntityType
Entity...
instance
EntityType
name
String
description
String
iconClass
String
loading
Boolean

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