

Simulated Railroad Framework, <http://simulrr.sourceforge.net>
Synopsis: [000_Synopsis](#)

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The Binary Switch
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1 Synopsis

The "Binary Switch" is a MIDAS Object that is provided together with the SMUOS Framework as one of the so-called "basic MIDAS Objects". No SMUOS extension is needed to support the binary switch.

The "Binary Switch" is implemented within two X3D prototypes, MoosSwitchA and MoosSwitchANs within the files MoosSwitchA.x3d and MoosSwitchANs.x3d, respectively.

2 Purpose of the Binary Switch

The "Binary Switch" MIDAS Object helps to provide interactivity and animation in all situations, where an animated model has got two states ("true" and "false"), where the user can trigger the toggling of the states (typically with a touch sensor) and where the transition from one state to the other takes a parametrizable amount of time.

3 External View

The MIDAS Object "Binary Switch" can be used in

- bound/intrinsic models in static modules
- bound/intrinsic models in dynamic modules
- unbound models (not yet tested)

Following fields are provided at the external interface uiObj:

Standard Fields

Please refer to chapter 5 of the paper [013_ModelsAndObjects](#) for a description of fields that must be supported by any MIDAS Object.

"duration" (SFFloat)

Duration of the transition from state "false" to state "true" or vice versa, in seconds.

"lock" (SFnode)

It is possible to attach a "lock" MIDAS Object here (e.g. MoosLockA). The "lock" can be used to lock/unlock the binary switch. If no lock is attached, then the switch will be unlocked.

"toggle" (SFBool)

send any SFBool value to this field, if you want to toggle the state of the MIDAS Object globally (in all scene instances).

"initialState" (SFBool)

Use this field to initialize the state of the switch.

"actualState" (SFBool)

At the end of each animation cycle, this field will output the actual state.

isActive (SFBool)

This field will be true during an animation and it will change to false at the end of each animation cycle.

softState (SFFloat)

This output field acts as the basis for the animation of the model. <ROUTE> the value of this field to the "set_fraction" field of an interpolator.

State "true" is value "1.0"
State "false" is value "0.0"

4 Internal View

MoosSwitchA uses MibStandard as a base. A network sensor MoosSwitchANs has been implemented to send the "Toggle Request" (SFBool) to the Object Controller (OBCO). The OBCO will toggle the "scheduled state" and distribute it to all scene instances. The instances will start a new animation, dependent on the current "softState" and the "scheduledState" and on "duration". As soon, as the animation has finished, the instances will report a new "actualState" to the user, "softState" is reported continuously.

5 Additional Info

none