3D Path Generator

General information

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Version: 1.0.0.0	
Short description This example demonstrates the use of the visualization element '`Path3D`'. `Path3D` is designed to be used in combination with CODESYS SoftMotion (see the CNC 3D Editor example). However, this example shows the application of it independently from CODESYS SoftMotion.	

Requirements and restrictions

Programming system	CODESYS Development System Version 3.5.1.3 or higher
Target system	CODESYS Control Version 3.5.1.3
Supported Platforms/ Devices	All
Additional requirements	-
Restrictions	-

Price

This example is for free.

Product description

A path with 2200 points in the shape of a gate is created in this example. The generated path is visualized in yellow. Parts of the path are highlighted in red, by setting the member variable `udiSourceElementID` of `VisuStruct3DPathPoint` and the visualization property `Highlighting` variable.

The track is calculated from the points of the path.

The data structure '`VisuStruct3DTrack`' of `System_VisuElem3DPath.library` is used for hosting the points of the path and the track.

Technical description

`PLC_PRG:`

The main program of this example instantiates an element of `VisuStruct3DControl` for navigating in the 3D model. It also creates an instance of `PathGenerator` (`FB`) that generates the path and calculates the track. Both structure instances are linked with the appropriate visualization element.

`PathGenerator (FB):`

This function block first creates a path of 2200 points. Afterwards, the track, which moves along the path, is calculated with the help of a ring buffer. That means, when the buffer is full, the next point will be saved at the beginning and the starting point will be incremented by one and so on.

`Visualization`:

The visualization object `Path3D` uses the information of the `VisuStruct3DTrack` elements 'Path' and 'Track' and the instance of `VisuStruct3DControl` for the 3D model. In the `Path3D Properties` the color of the path and the track can be changed. Also the color for highlighting specially elements of the path can be chosen.

Screenshots