

Smorynes

Small Laboratory Machines

is a programming and simulation framework for the implementation of digital twins of positioning devices that are used in laboratory instruments.

These machines require the control of several linear and rotary axes. Smorynes supports linear XYZ axes and rotary marked PTRs.

The framework is designed to create a digital twin of the planned machine, which will allow you to prototype the entire trajectory of the device interactively from the 3D scene before the physical implementation. In the next stages, it will be used to program and set the functions of the already implemented machine.

A formal description of the trajectory is stored in a file and allows simulate the function of the device in the scene.

The formal description can be compiled into proprietary / C, C # / code of the specific vendor's hardware, if the control system API is available.

Nodes of trajectory

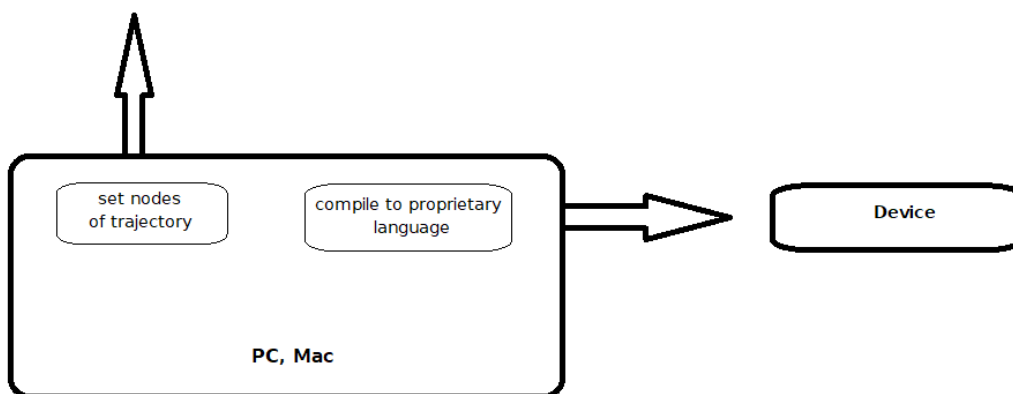
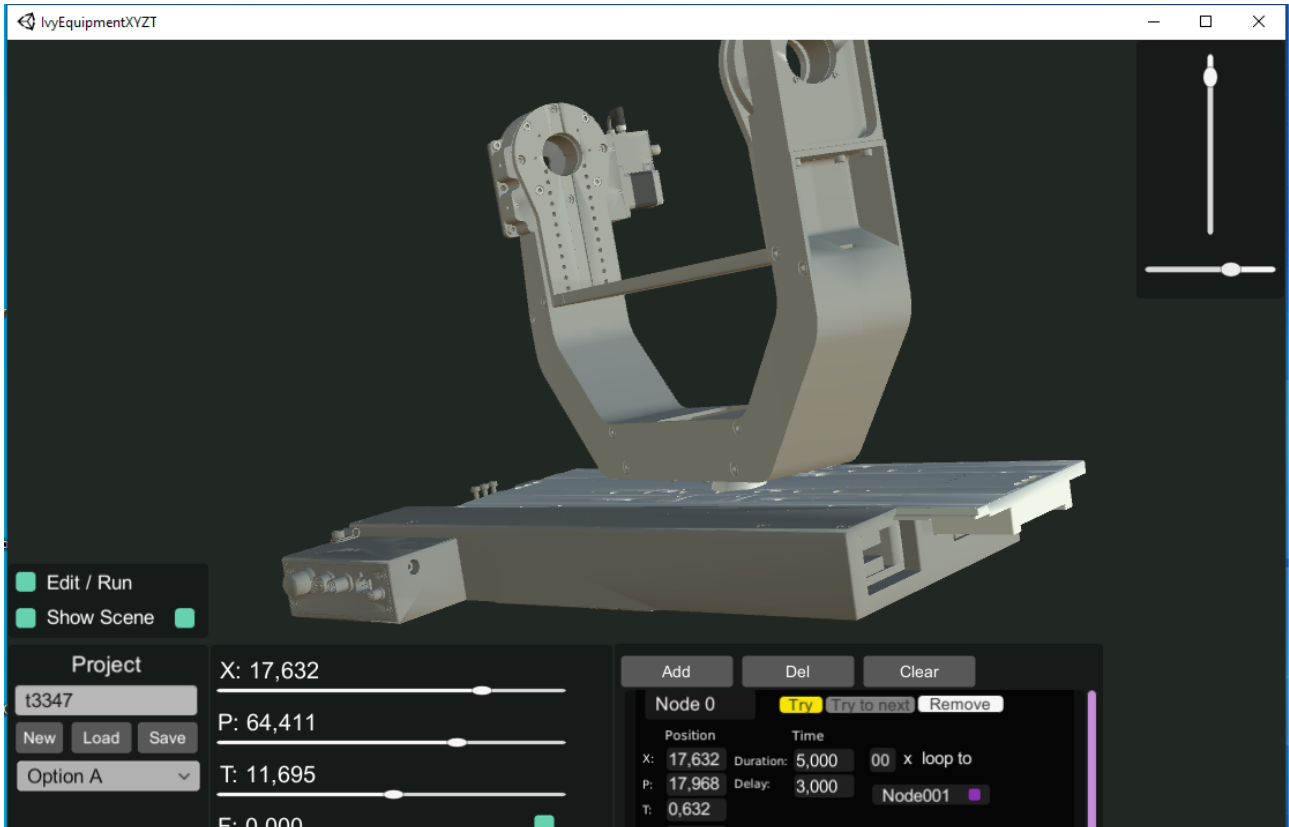
Trajectory points / nodes / contain several types of parameters:

- position on the XYZ and PTR axes, according to the mounting
- parameters of generating output digital signals
- input signal scanning parameters
- bridge for calling functions of external .dlls and interpreters

In the interface, which is integrated directly into the scene, only those parameters, that can be assumed to cover the most common required functions are available.

Smorynes? How can be used in practice?

The use is evident from the example of a linear axis with a gimbal, ie with control of the X and PT axes.



Programming online ?

Online programming is assumed.

Connect you to <http://xyzt.crazyplay.eu/Smorynes/> Opens the menu scene.

From the list select the device whose path you want to program. After setting the points and simulating them, don't forget to save the file to your local computer. Use the Save button.

Use the Export button to save the data file on the local computer. The data is stored in the form of source code. You can choose C # or other format. Output formats are constantly expanding

Do you offer similar machines and want to extend them with 3D benefits ?

If you are interested in cloning the Smorynes 3D interface for your machines, we will implement it in the following steps:

- send us your machine model in some usual CAD format , describe the operation of the machine and specify the individual extensions required
- we will modify your model so that it can be rendered in the 3D system we use
- we integrate the necessary extensions after mutual consultations with your company
- we install the beta version on the server so that it is possible to start testing

- after the testing is finished and product is accepted by you, licensed source codes and documentation will be provided

