



# Digital twin of Cartesian Pick&Place XYZ

*Developed in the VIRTUAL UNIVERSE Pro environment*

## Description

The digital twin of the XYZ Cartesian Pick&Place system is developed in the VIRTUAL UNIVERSE Pro environment

### Solution highlights :

- ✓ 3D models can be created or modified from the software's library or imported from the main CAD programs: Solidworks, Inventor, Catia and also the main 3D file formats: 3DXML, 3DS, OBJ, etc...
- ✓ Real-time model simulation
- ✓ Control identical to real system using simulated console in TIA portal (a real console can also be used)
- ✓ PLC program execution identical to real system thanks to the use of a real PLC
- ✓ Program modification carried out as on the real machine using SIEMENS TIA portal PLC programming software.
- ✓ Connection to the V126 PLC (in addition to the machine PLC) to operate the Digital Twin.
- ✓ Possibility of creating faults on any sensor or actuator
- ✓ Use on PC or virtual reality headset
- ✓ The simulation is completely open and can be modified (e.g. sensor position, adding an actuator or sensor)
- ✓ Create your own simulations
- ✓ Interactive simulations, with the user able to grasp and move 3D world objects

### The main uses of a digital twin are :

- ✓ Training production operators
- ✓ Pre-study / design of automated systems
- ✓ Machine programming before or during production
- ✓ Remote program editing and modification mechanical (without access to the actual machine)
- ✓ Program and mechanical modifications followed by functional testing of the modification while avoiding system degradation due to errors
- ✓ Program and mechanical modifications while limiting production downtime



## References:

**VI20 :** Virtual UniversePro: System simulation in a 3D environment - 1 license (For use with VI06/VI07 virtual reality headsets or conventional PCs)

**VI22 :** Virtual UniversePro: System simulation in a 3D environment - Establishment license (for use with VI06/VI0 virtual reality headset or conventional PC)

**VI26 :** Programmable 3D digital twin Cartesian Robot XYZ on Virtual Universe Pro, with Siemens S7-1200 PLC package and I/O board (VUPro license to be purchased separately)