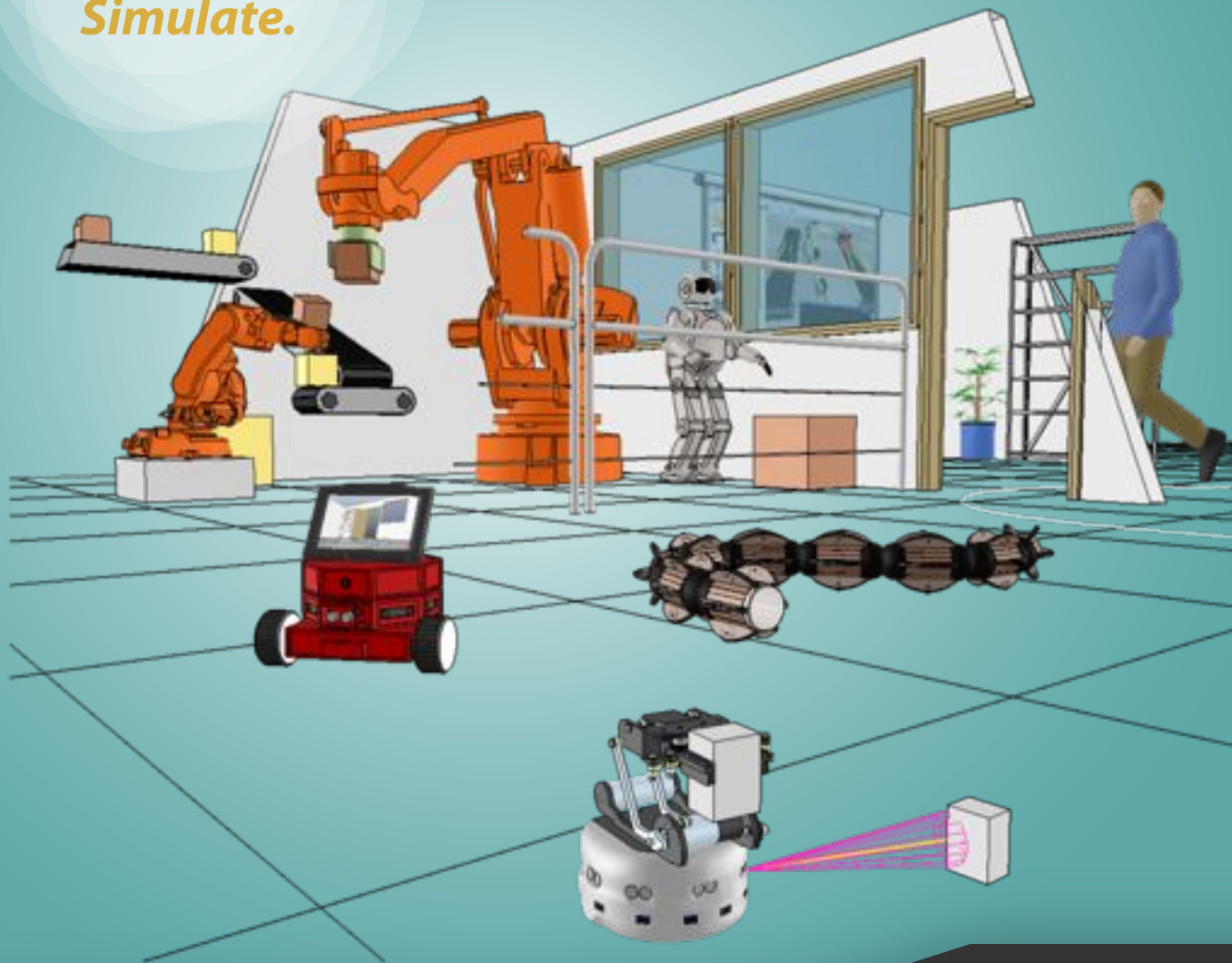


*Create.
Compose.
Simulate.*



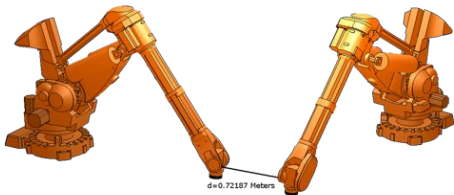
V-REP.

Virtual Robot Experimentation Platform

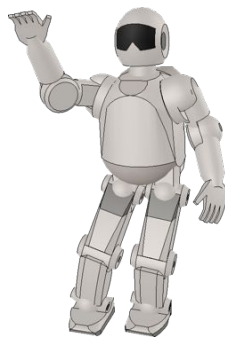
for

- _ fast prototyping and verification
- _ simulation of factory automation systems
- _ fast algorithm development
- _ robotics related education
- _ remote monitoring
- _ hardware control
- _ safety monitoring
- _ product presentation

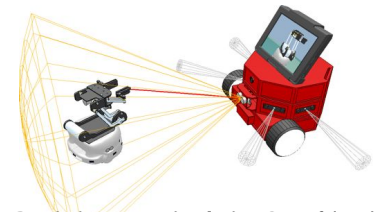
Features:



Collision detection and distance calculation: Fast interference checking and minimum distance calculation between any geometries or collection of geometries

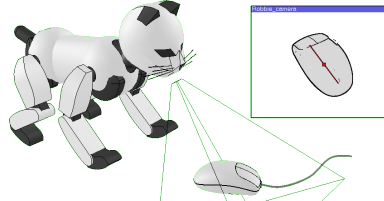
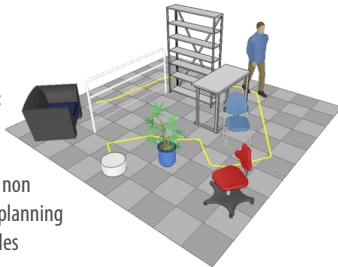


Dynamics/Physics: Fast and customizable dynamics calculations to simulate real-world physics and object interactions (collision response, grasping, etc.).



Proximity sensor simulation: Powerful, realistic and exact proximity sensor simulation, fully customizable. Performs an exact minimum distance calculation within a given detection volume.

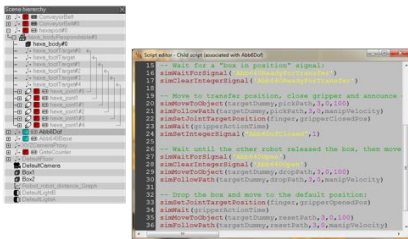
Path planning: Holonomic path planning in 2-6 dimensions, and non holonomic path planning for car-like vehicles



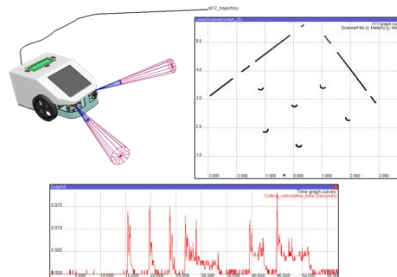
Camera-like sensor simulation: Simulation of camera-like sensors with built-in image processing capabilities, fully customizable



Forward/inverse kinematics: Forward/inverse kinematics calculations for any type of mechanism (branched, closed, redundant, containing nested loops, etc.)



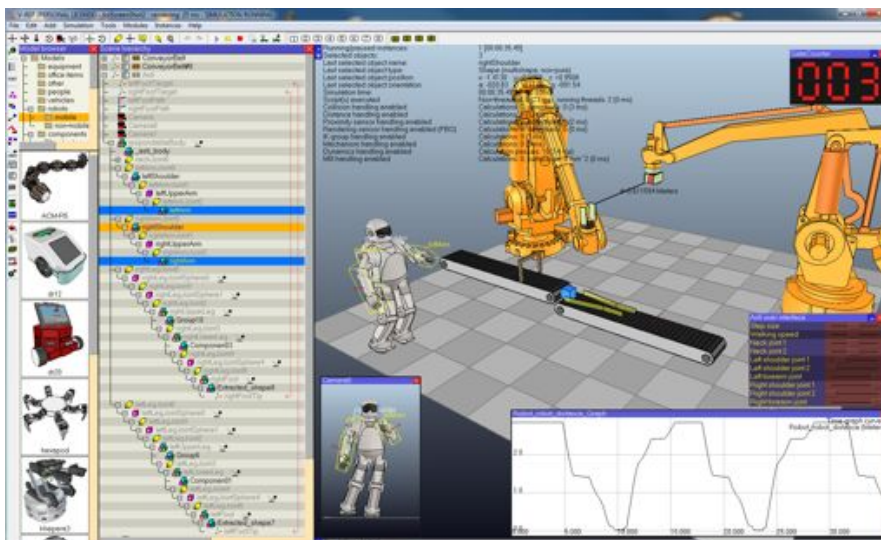
Distributed control: simulations are script driven with an unlimited number of simultaneously operating threaded or non-threaded Lua scripts



Data recording and visualization: A large variety of recordable data streams can be used to display time-graphs, or can be combined with each other to form x/y-graphs, or 3D curves

Other features include:

- Interaction during simulation: interaction with a running simulation is possible at any time: models, together with their associated behavior (i.e. scripts) can be shifted, rotated, copy/pasted, erased, scaled, etc. without having to adjust any code
- Unlimited number of fully customizable user interface elements with integrated edit mode
- Simulation of surface cutting using various customizable cutting tool shapes.
- Simulation of force/torque sensors, capable of recording applied forces or torques, and conditionally breaking apart
- Various types of joints: revolute joints, prismatic joints, screws, and spherical joints
- Path or trajectory functionality for elaborate kinematic movements
- Next to regular scene edition/composition, various integrated edit modes are available: triangle-, vertex-, edge-, path/trajectory-, and custom user interface edit modes
- Minimal or no programming required for simple simulations
- Model self-duplication or self-destruction capability
- Model browser with drag-and-drop functionality
- Powerful API with more than 280 clean and fine-grained functions, available from the C/C++ and Lua side (other languages capable of API calls are also usable)
- Supported CAD data formats: DXF, 3DS, OBJ and STL
- Fully customizable simulator, at various levels, by writing a customized client application, or by writing plugins
- Compact and lightweight application and files: V-REP fits into 5MB, no dependency installations are required. Simulation scenes and models are saved as a single compressed file, loading operations are very fast
- Full-featured scene hierarchy view, indicating object names, types, associated control scripts, loop closures, selection and visibility states, warnings, etc.
- Fully customizable view configurations, with 8 easily toggleable pages, where each can be customized with an unlimited number of views
- Free V-REP player version, allowing running and interacting with previously created scenes or models
- Four in-parallel running simulator instances, sharing a same copy buffer
- Simulation and visualization of wireless communications, with free definable emission range, direction and shape
- Possibility to lock scenes from further edition/modification, script content viewing or resource export
- Many more features: e.g. multilevel undo/redo, AVI recorder, simulation of paint or welding seams, static and dynamic textures, exhaustive documentation



Demonstration videos & evaluation version download:

www.v-rep.eu

Distribution:

K-Team Corporation
Y-Parc - Rue Galilée 9
1400 Yverdon-les-Bains
Switzerland



www.k-team.com
Tel : +41 (24) 423 89 50
Fax : +41 (24) 423 89 60
E-mail: info@k-team.com