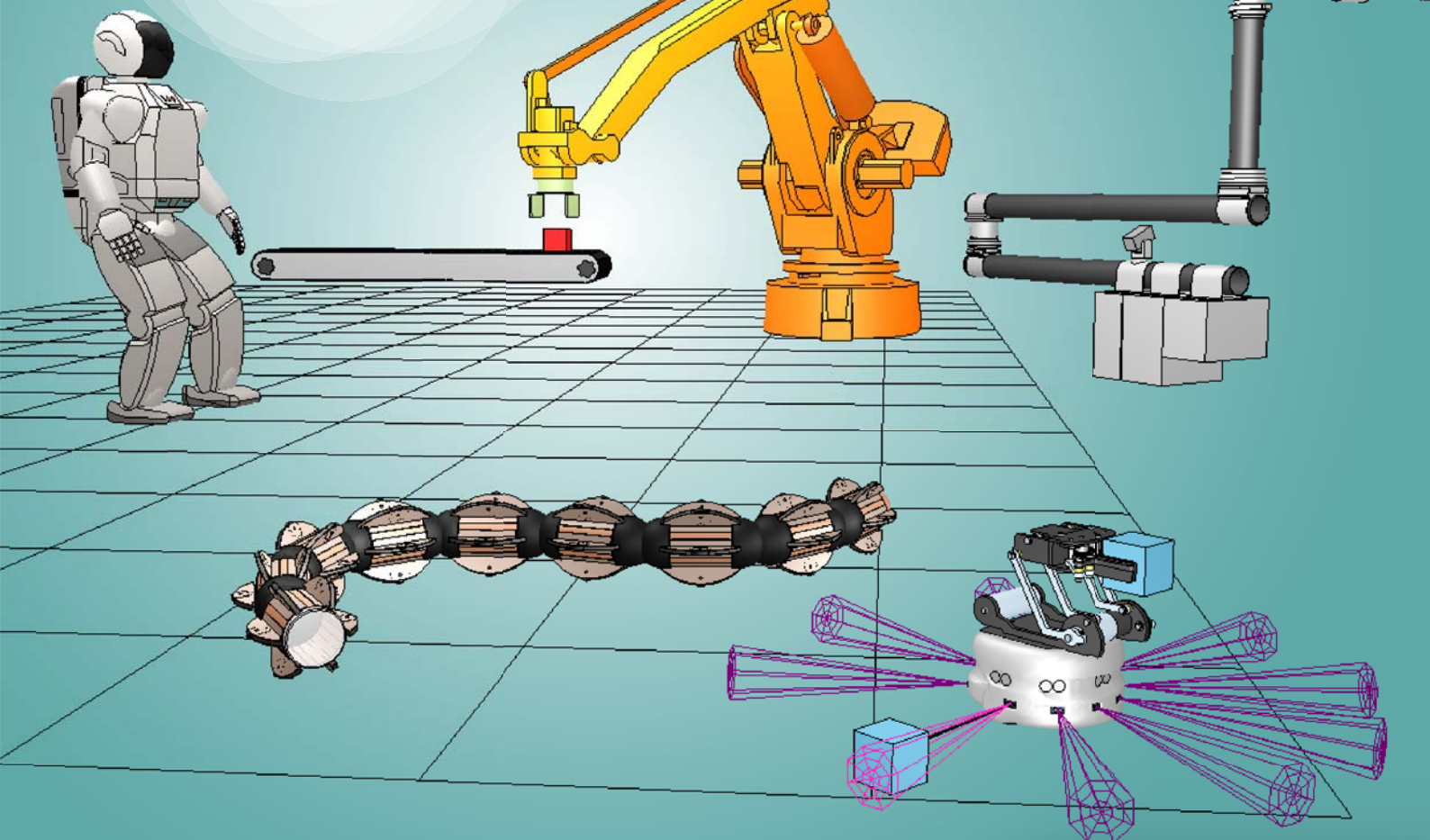


Create.
Compose.
Simulate.



**V-REP.**

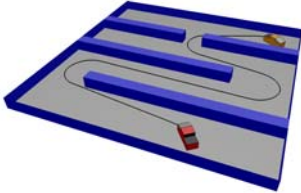
Virtual Robot Experimentation Platform

- _ ロボット機構全体または一部のみの動作検証
- _ 工場自動化システム用シミュレーション
- _ 遠隔モニタリング
- _ ハードウェア制御
- _ 試作と実証の迅速化
- _ 安全性モニタリング
- _ アルゴリズム開発の迅速化
- _ ロボット教育の支援ツール
- _ 製品PR用ツール

Features:



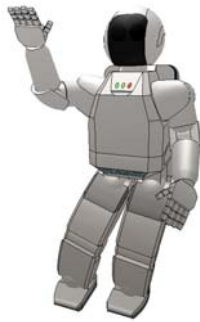
Collision detection and distance calculation: ジオメトリの最短距離計算による修正で衝突や干渉の迅速なチェックが可能



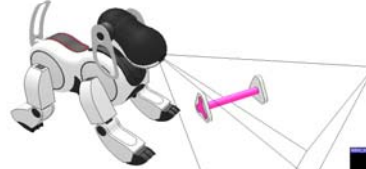
Path planning: ホロノミック移動ロボットの、2~6次元パスプランニング。車輛等非ホロノミック移動のパスプランニング



Interaction during simulation: シミュレーション中のモデルに対し、連動するスクリプト、オブジェクト移動、回転、コピー貼り付け等のインタラクションが可能。インターフェース(キーボード含)もちろんカスタマイズ可能



Dynamics/Physics: 迅速かつカスタマイズ可能なダイナミクス計算により、リアルな3D環境とオブジェクトインタラクションのシミュレーションが可能



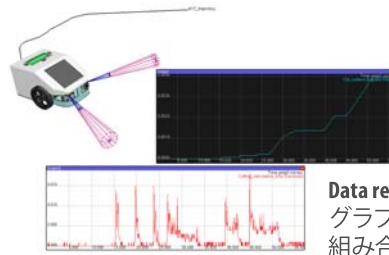
Camera-like sensor simulation: 組み型イメージプロセッシング機能(カメラタイプセンサ等)のカスタマイズ可能なシミュレーション



Proximity sensor simulation: リアルで精密な、カスタマイズ可能な近接センサシミュレーション



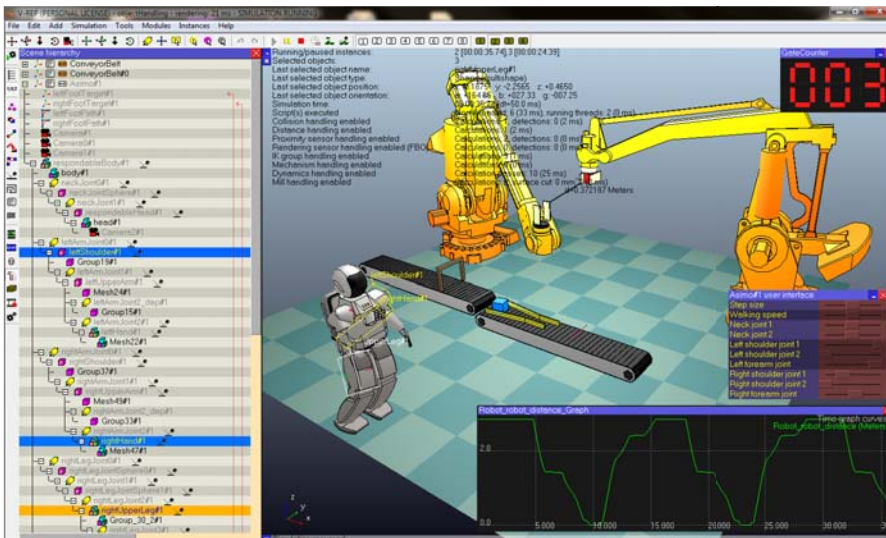
Forward/inverse kinematics: どのようなタイプのメカニズムにも使えるForward/inverse力学計算



Data recording and visualization: 3Dカーブ、XYグラフを組み合わせたリ、タイムグラフを組み合わせたリなど種類豊富な保存データの作成が可能

Other features include:

- Script driven simulations: Unlimited number of threaded or non-threaded Lua scripts
- 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
- Geometric constraint solver module, allowing to intuitively solve, actuate and interact with mechanisms
- 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-, path/trajectory-, and custom user interface edit modes
- Minimal or no programming required for simple simulations
- Model self-duplication or self-destruction capability
- Simulation speed control
- Powerful API with more than 250 clean and fine-grained functions, available from the C/C++ and Lua side (other languages capable of API calls are also usable)
- Easy CAD data import/export: DXF, 3DS, OBJ and STL (ASCII & binary) are supported
- Fully customizable simulator, at various levels, by writing a customized client application, or by writing extension modules (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. Views can be camera-views, graph-views, or camera-like sensor 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, exhaustive documentation, static and dynamic textures



Demonstration videos:

www.hibot.co.jp

Distribution:

株式会社ハイボット
〒153-0064
東京都目黒区下目黒2-18-3
第一花谷ビル 801

www.hibot.co.jp
Tel : +81 (3) 6420 0445
Fax : +81 (3) 6420 0446
E-mail: info@hibot.co.jp



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