Engee

Integrated engineering platform

for research, simulation, verification and test of technical systems using math and model-based design.

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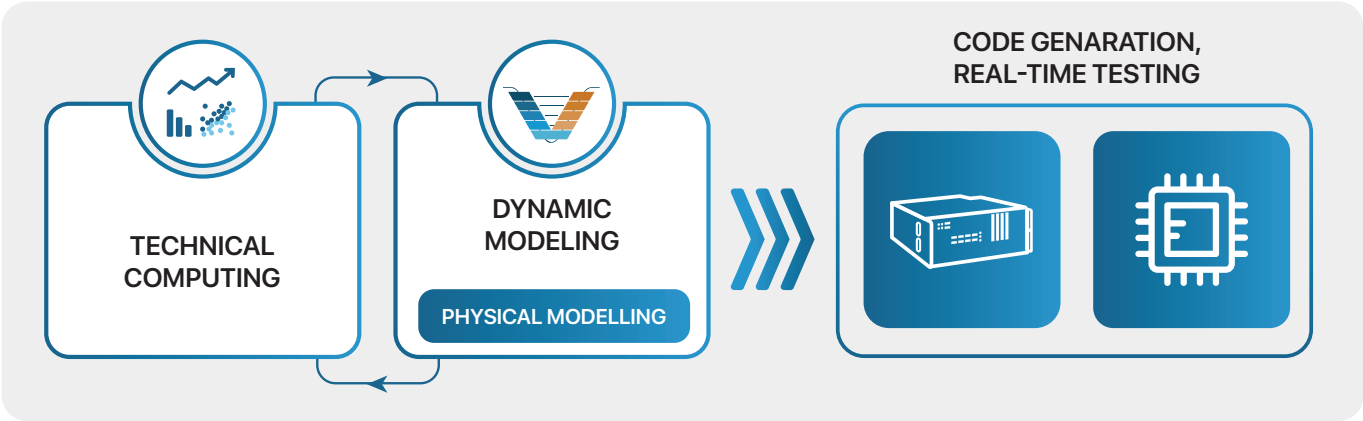
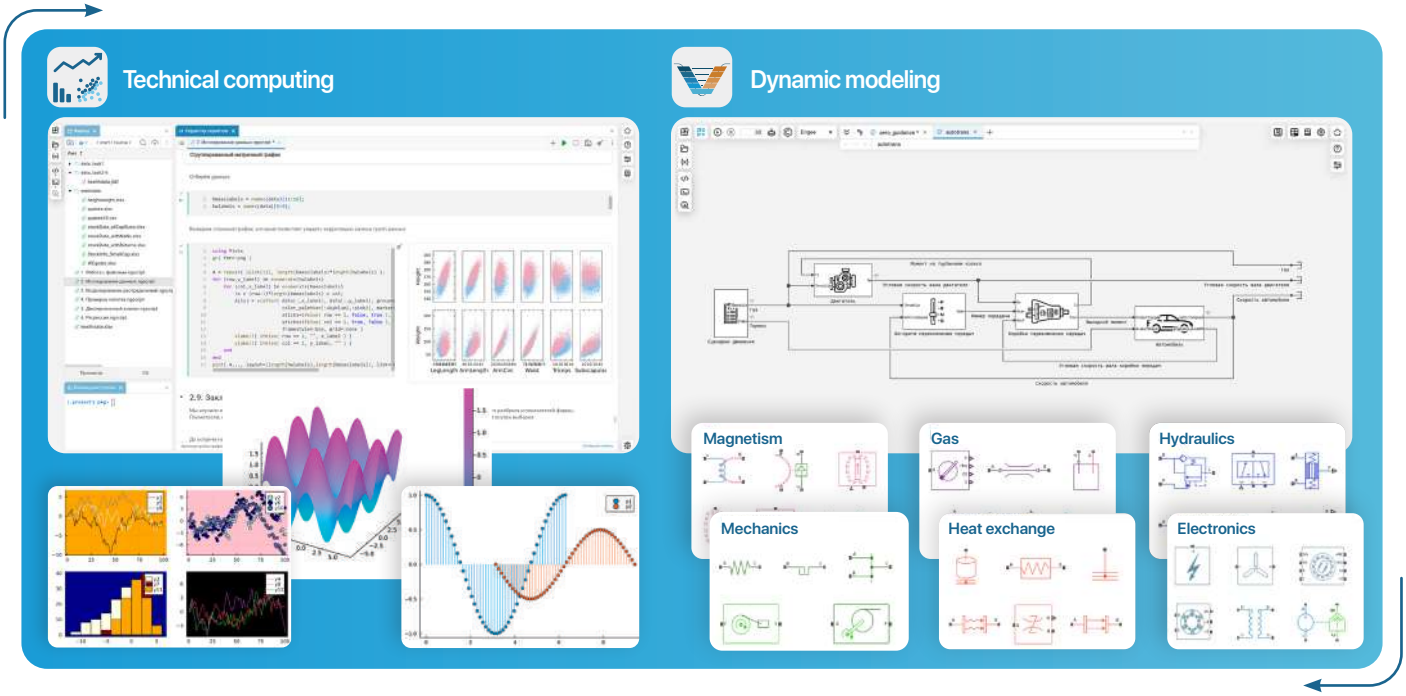


Integrated environment for technical computing and dynamic modeling using block diagrams.

Used for mathematics, machine learning, AI, control design, digital signal processing, physical modeling, embedded systems development.

Detailed documentation and professional support. Ready-made examples and training courses.

Cloud-based client-server architecture allows quick deployment in a critical IT infrastructure, organize a unified data repository and effective project management.

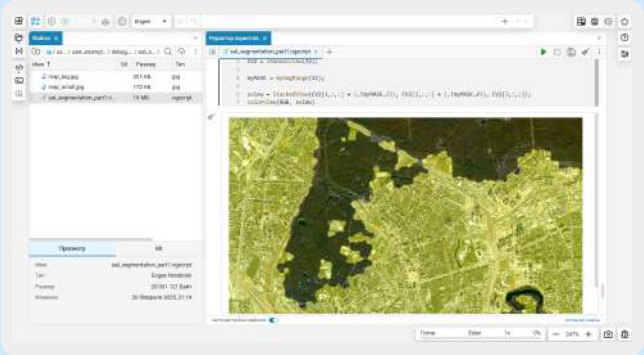


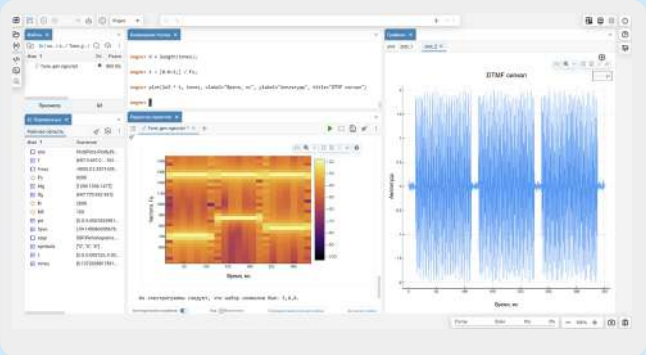
Applications and Industires

- Control systems
- Engineering research and data analisys, AI
- Aerospace
- Automotive and transportation industry
- Defence and UAV
- Energy production
- DSP systems and Radars
- Wireless communications

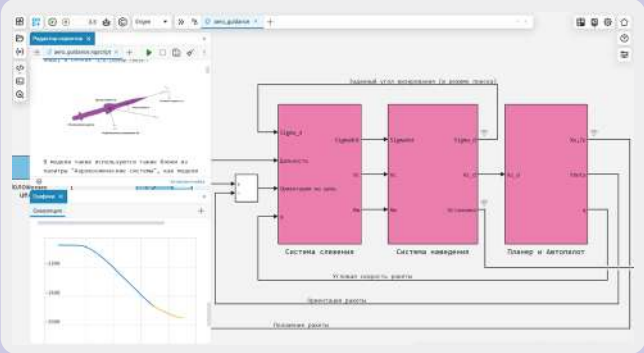
Modern and user-friendly UI

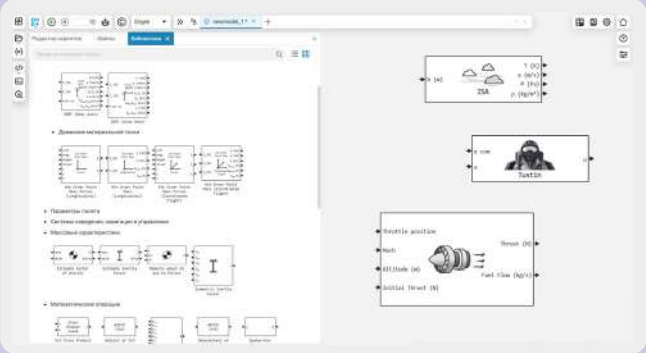
Interactive computing and development environment



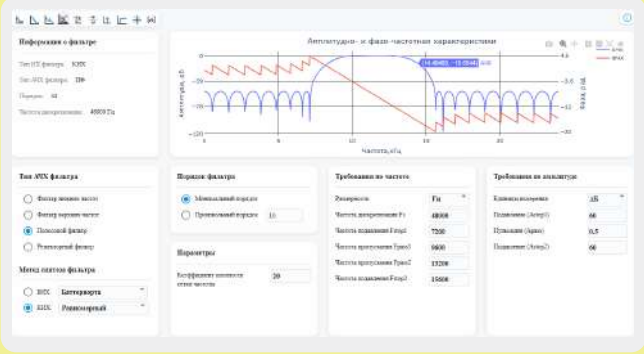


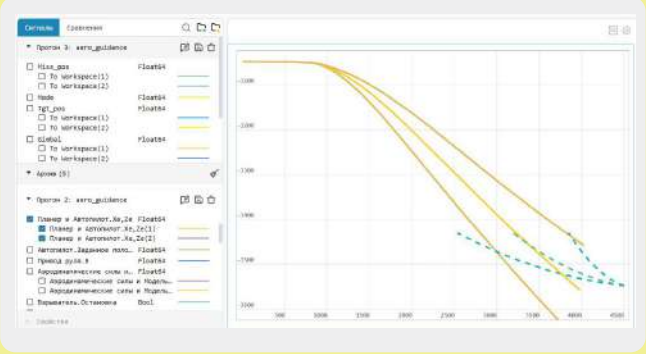
Dynamic modeling



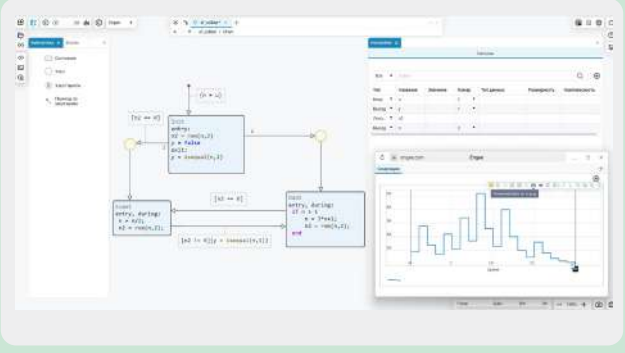


Technical Apps

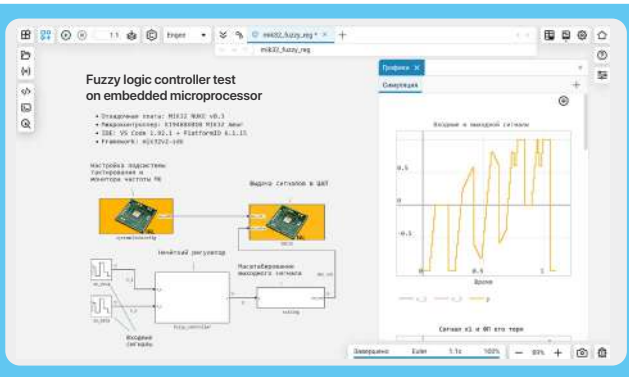




State machines



Embedded code generator



Technical computing with Engee

Multi-language IDE for development of engineering scripts, codes, programs and applications. Designed to be convenient for solving various technical tasks.

Engee is an out-of-the-box environment in your browser that requires no installation or setup.

DATA ANALYSIS
Explore, model and analyze data

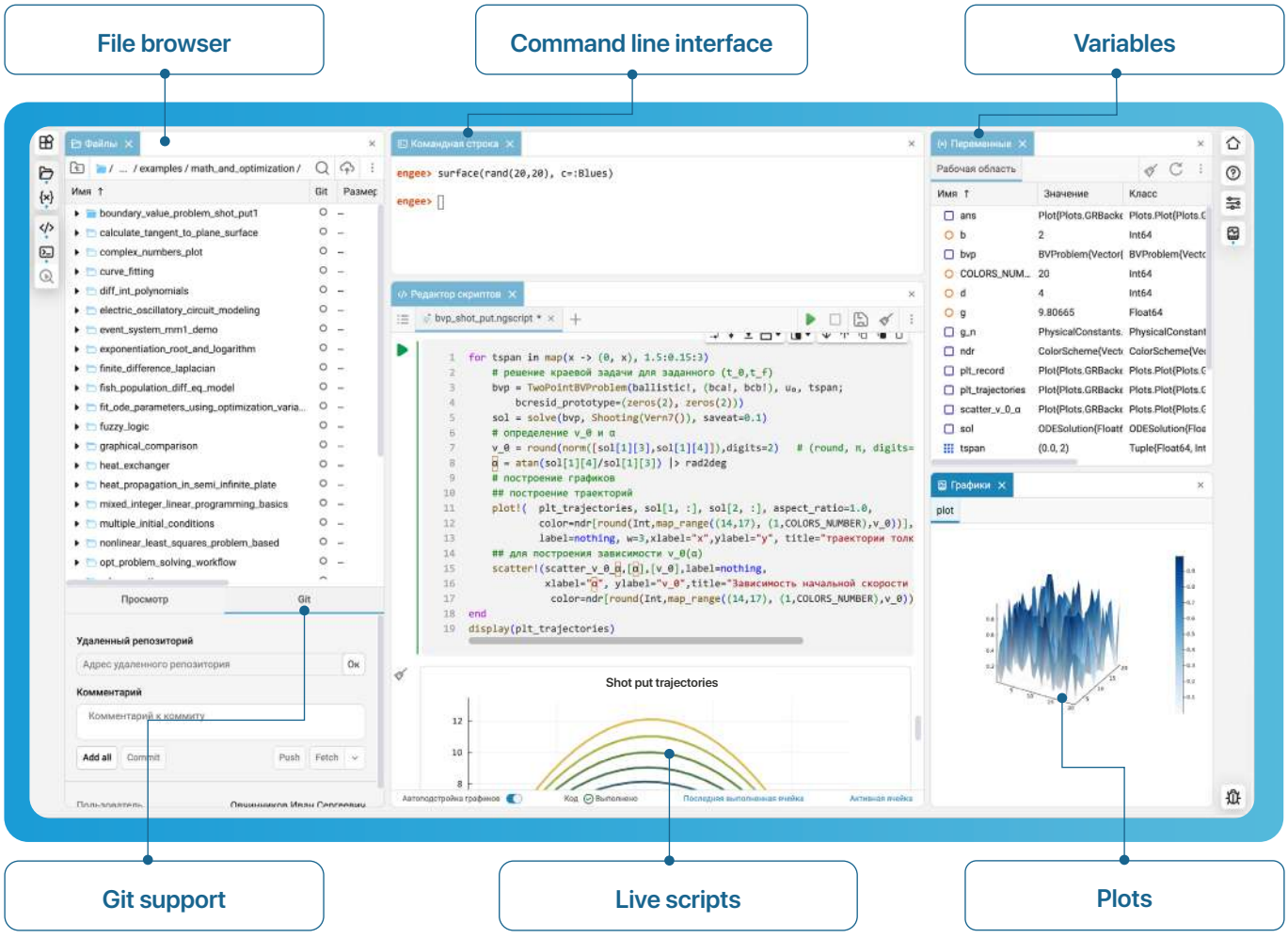
VISUALIZATION
Visualize and explore results

PROGRAMMING
Create scripts, functions and classes

MODEL INTEGRATION
Seamless workflow for automation and tests

Engee tecnnical computing features

- Live interactive scripts
- Visualization and scientific graphics
- Multi language support: Julia, Python, MATLAB, Fortran, C/C++
- Dozens of preinstalled libraries
- High operating speed
- Low-code apps for engineers
- Unique system objects and proprietary function libraries for specialized tasks



Dynamic modeling environment

Engee is a foundation for model-based design of complex technical systems. It enables engineers to use familiar graphical block diagrams to simulate before hardware implementation, and to deploy algorithms without hand coding.

The environment provides a functional and modern model editor, efficient debugging tools, and rich library of enginners-useful blocks for wide range of tecnical applications.

Engee provides efficient tools for multi-level modeling of systems with complex architecture, automatic generation of production-ready code, continuous testing and verification of embedded systems.

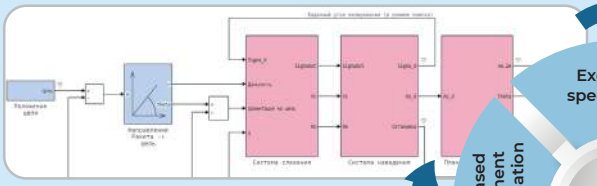
MULTIDOMAIN SYSTEMS

Mathematical core of our own design allows combining hybrid system models (discrete and continuous), multirate systems (subsystems with different sampling times), causal (algorithms and environment), physical models, user blocks and libraries

CONTINUOUS MODELS

Creation and debugging of control systems of any complexity in continuous time using system models:

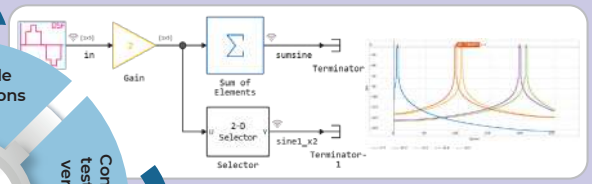
- Block Libraries for Aerospace systems and automatic control system
- System dynamics
- Environment models
- Simulink models conversion

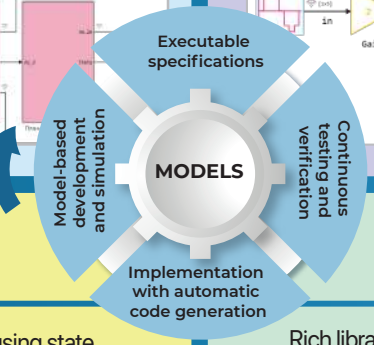


DISCRETE MODELS

Fundamental capabilities for development of digital systems: vectorization, creation of mixed-signal models, models with different sampling rates:

- Digital control
- Libraries for DSP, Communications, Radar
- RF components
- LTE, 5G

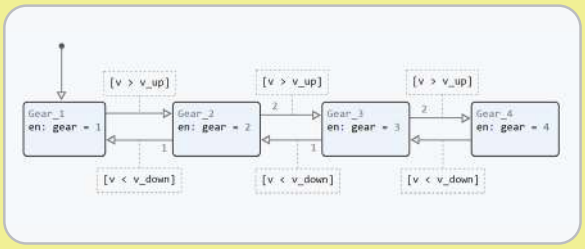




STATE MACHINES

The best tool for visual control logic design using state diagrams. Graphical representation of system states and describing the logic of transitions between them:

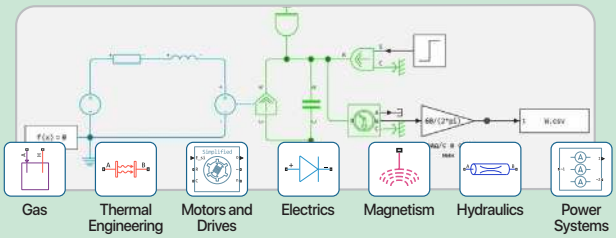
- Control logic
- Failure handling
- System modes



PHYSICAL MODELS

Rich libraries of acausal physics models for various areas of engineering:

- Electronics and Energy
- Mechanics
- Hydraulics
- Electrical Machines
- Import of FMI components
- Custom user physical blocks

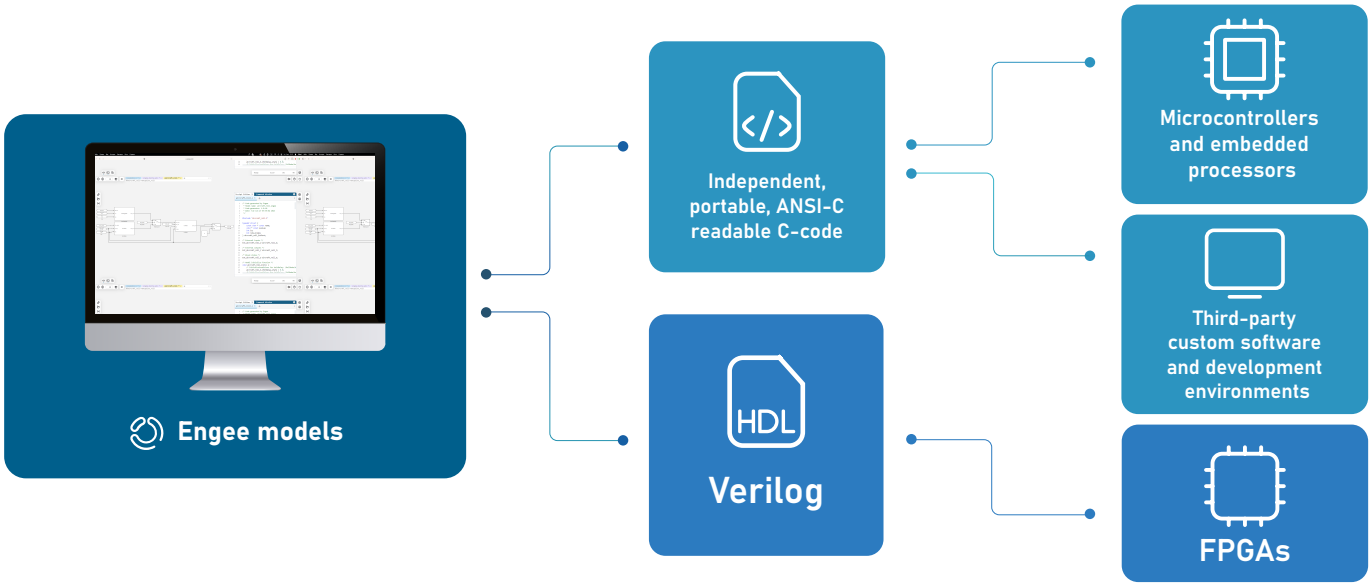


Embedded code generation

The Engee code generator creates fast, compact, human-readable, portable, independent from Engee, traceable to model C-code suitable for industrial use:

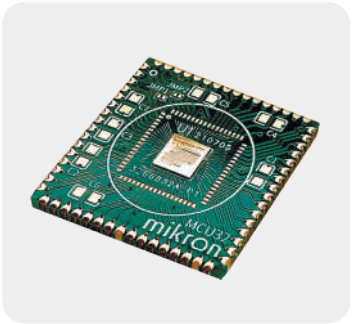
Apply the generated code in an external IDE to create an executable object file for embedded floating-point or fixed-point processors.

Integrate generated code with manually written code (existing or processor-specific) for user applications or other engineering software.



Microprocessors support:

- ARM
- Texas Instruments
- Baikal
- Elbrus
- Elvis
- Mikron
- Milandr
- FPGA



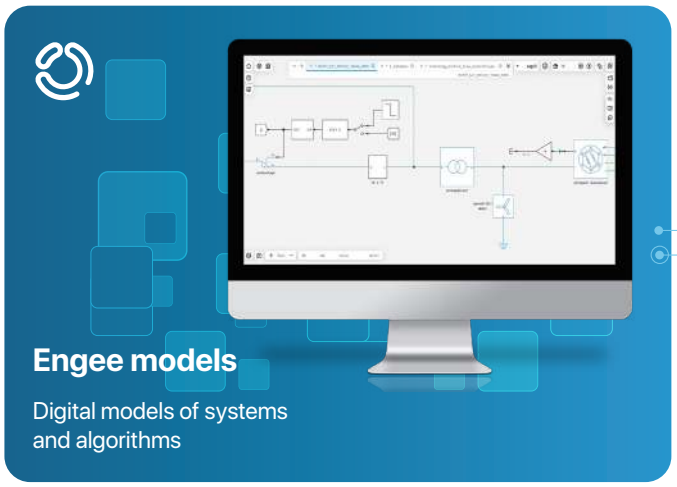
Development boards support:

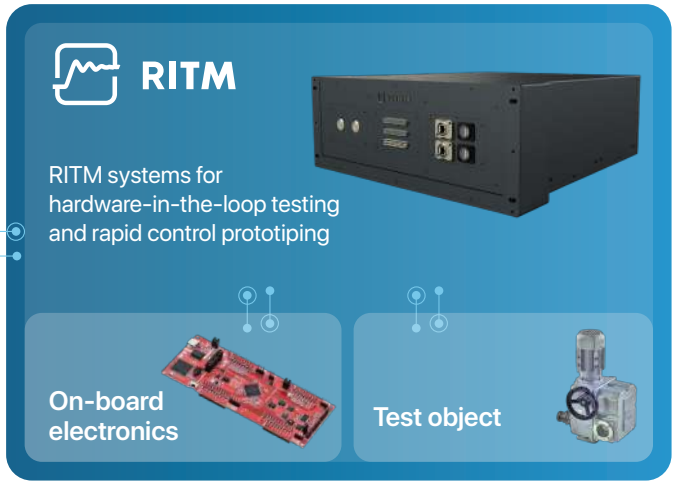
- Arduino
- Raspberry Pi
- STM32
- MIK32
- Custom

Real-time simulation and testing

Seamless integration with RITM real-time targer computers allows to create, control, and instrument real-time applications from Engee models and run them on RITM.

RITM systems support connection of external devices via various digital and analog interfaces, multi-channel data capture and are ideal for rapidly prototyping control designs and thoroughly testing embedded controllers with digital twins.





Engee third-party devices and software support

COM

- MCUs and development boards Arduino, STM, Milandr, MIK32
- Programmable logic controllers (PLCs)
- Data acquisition boards
- GPS modules
- Media devices

CAN

- Engine control units (ECUs)
- Electronic systems of vehicles
- Medical devices
- Robotics systems

UDP

- Visualization tools: Unigine or Unreal Engine
- Computer Vision Cameras

VISA

- Signal generators
- Oscilloscopes
- Spectroanalyzers and vector network analyzers (VNA)
- Data acquisition and switching systems

Engee

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