NovaCarts Virtual

Virtual test bench for early HiL tests
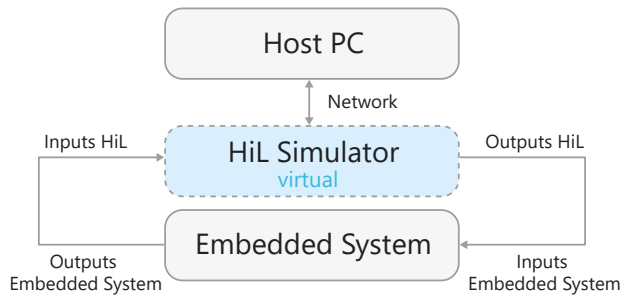
NovaCarts
VIRTUAL

» **Component tests without a real simulation node**
» **Higher test quality through optimized preparation**
» **More efficient use of limited test bench time**

NovaCarts Virtual

The real-time simulation software NovaCarts Virtual provides virtual simulation nodes. This enables cost-effective component tests for electronic control units and embedded systems without the use of real test benches.

This means that NovaCarts Virtual practically replaces a real test bench and serves as an interface for the local operating computer. In this way, test departments can carry out initial tests of the ECU software at a very early stage in the development process or prepare and verify model considerations - without taking up valuable test time on a hardware-in-the-loop (HiL) simulator.
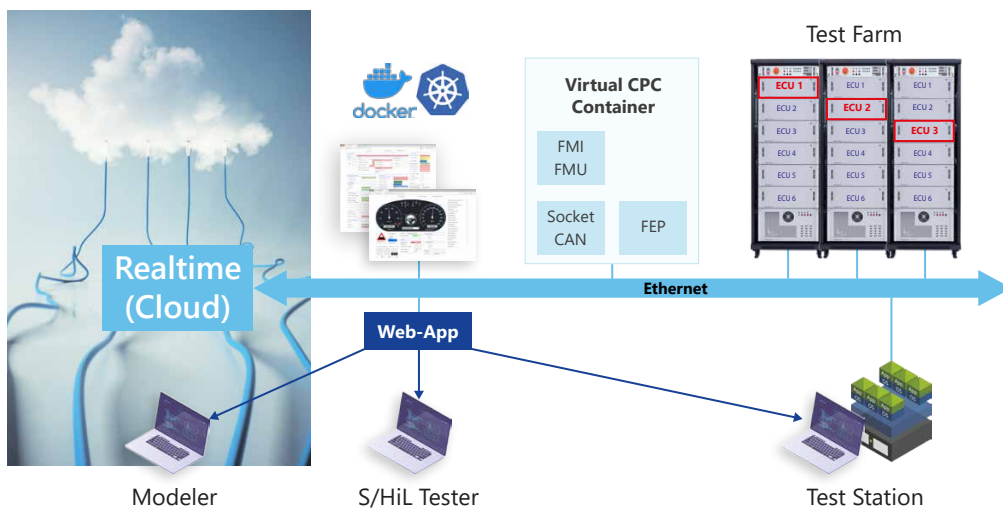

1 HiL principle

In addition, NovaCarts Virtual as a virtual real-time computer can also be used to carry out a lot of preparatory work for the real HiL test. Optimized preparation helps to use the limited resources on the HiL simulators as efficiently as possible.

How it works:

Test engineers, model developers and test station managers can access NovaCarts Virtual via a web app. Users connect to a hardware test bench (test farm) and a virtual simulation node via Ethernet. A web interface is used to graphically visualize the MicroNova test bench.

2 The basic principle of NovaCarts Virtual is a networked real-time cloud.

Licence packages

NovaCarts Virtual is available under three subscription licences, depending on the use case:

NovaCarts Virtual – Docker Base

The NovaCarts Virtual Docker Base Image provides a comprehensive, user-friendly solution for quick and easy deployment of a simulation node. Developed for test bench managers, infrastructure providers and test facilities who want to operate their simulation in containerized environments, this image simplifies the installation and operation of NovaCarts HiL systems.

The basic version provides a virtualized test bench with the following features: 5x CAN channels (incl. CAN gateway), 5x LIN channels and the XiL API. In addition, all maintenance work is included for one year. The Docker image can be deployed directly in the repository.

NovaCarts Virtual – Docker Run

The NovaCarts Virtual Docker Run Image offers an extension for the Docker Base Image. This enables the operation of virtual NovaCarts HiL systems that have 30x CAN channels (incl. CAN gateway), 30x LIN channels, encryption of bus communication, automotive Ethernet and the standardized ASAM XiL API. In addition, all maintenance work is included for one year. The Docker image can also be deployed directly in the repository.

NovaCarts Virtual – Docker Dev

The NovaCarts Virtual Docker Dev Image is suitable for joint development work with the experts from MicroNova. It is based on the Docker Run licence and includes all maintenance work as well as a jointly defined annual development budget. This means that customer requirements can be incorporated directly into MicroNova's software development and clients receive exclusive software images directly in their repository before the official release date.

Category	Article Number	Description	Docker Base	Docker Run	Docker Dev*
NovaCarts Realtime Runtime	NC-24-CMP-NCR-ACO-CAN	Automotive communication CAN/CAN FD	● (5ch)	● (30ch)	● (30ch)
	NC-24-CMP-NCR-ACO-CGW	Automotive communication CAN Gateway	● (5ch)	● (30ch)	● (30ch)
	NC-24-CMP-NCR-ACO-CSK	Automotive communication SOK	●	●	●
	NC-24-CMP-NCR-ACO-J1939	Automotive communication J1939			●
	NC-24-CMP-NCR-ACO-LIN	Automotive communication LIN	● (5ch)	● (30ch)	● (30ch)
	NC-24-CMP-NCR-ACO-ETH	Automotive communication Ethernet			●
	NC-24-CMP-NCR-AUT-NWG	Automation API for Simulation Nodes	●	●	●
	NC-24-CMP-NCR-AUT-XIL-WIN	Automation XiL-API 2.1 for Windows	●	●	●
	NC-24-CMP-NCR-AUT-XIL-LNX	Automation XiL-API 2.1 for Linux			●
NovaCarts ToolChain	NC-24-CMP-NCT-FMU	NovaCarts ToolChain CMP-NCT-FMU			
	NC-24-CMP-NCT-MDF	NovaCarts ToolChain CMP-NCT-MDF			
	NC-24-CMP-NCT-MDT	NovaCarts ToolChain CMP-NCT-MDT			
NovaCarts TestOperation	NC-24-CMP-TOP-HTML	NovaCarts TestOperation CMP-TOP-HTML			
	NC-24-CMP-TOP-MNO	NovaCarts TestOperation CMP-TOP-MNO			
	NC-24-CMP-TOP-SAL	NovaCarts TestOperation CMP-TOP-SAL			
	NC-24-CMP-TOP-SNO	NovaCarts TestOperation CMP-TOP-SNO			

● corresponds to component included (number of channels)

Benefits of NovaCarts Virtual

» **Optimal utilization of HiL test times:** Preparation of HiL tests in the virtual test environment reduces time spent on the real HiL simulator.

» **Versatile use** for the testing of simulation models and ECU software

» **Very early tests**

» **Flexibility:** All models can be exchanged unmodified between HiL computers and virtual environments.

» **Complete set-up:** Operation with the EXAM test automation solution is also possible in the cloud.

» **Cost savings** due to lower hardware requirements