research

development

production

TestMaster®

test administration

test sequenzer

facility control

data management

s·e·a Science & Engineering Applications Datentechnik GmbH

NATIONAL INSTRUMENTS Alliance Member

TestMaster®

The Integration Framework for Flexible Test & Control

Progressive industrial test environments have to be efficient and reliable. More and more they become important tools for engineers and scientists. *TestMaster* covers these requirements.

TestMaster is a reliable tool for test and production environments for the industry. Additionally it is a flexible tool for engineers, scientists and integrators. The modular design of TestMaster results in a high degree of flexibility. Because of its modular concept, the TestMaster framework can easily be customized to the specific needs of individual projects. It allows to add or modify software functionality within an installed system without affecting already validated functions and test processes.

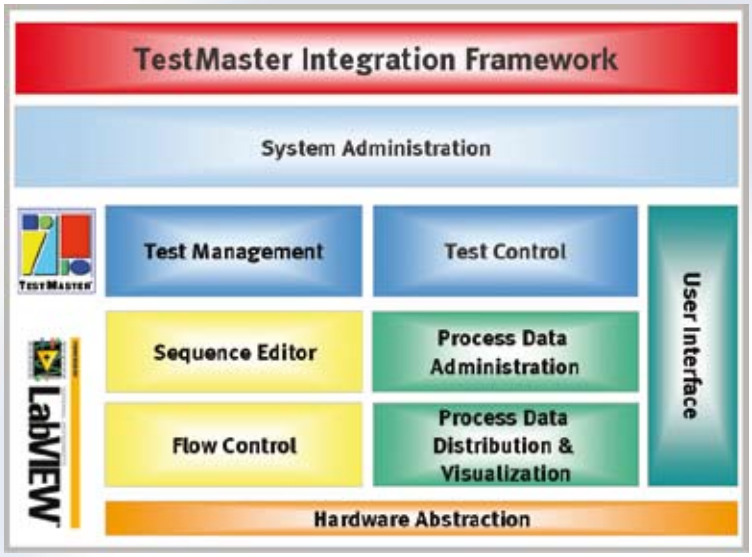
modular

TestMaster consists of five basic elements, which can be combined for several requirements:

- test administration and control,
- hardware abstraction,
- sequenzer,
- process data distribution and visualization,
- administration of data processing.

These elements are designed with defined programming interfaces (API) and can be combined with small efford to customer modules.

Additionally the interfaces to the graphical programming language LabVIEW™ from National Instruments and other languages allow the user to extend the system.



Structure of TestMaster toolkit

future-proof

TestMaster is a platform independent and scalable future-proof concept. The TestMaster modules are based on LabVIEW. The open and strict modular architecture guarantees portability of the applications to future hard- und software platforms and therefore saves your investment.

Common standards such as TCP/IP-protocol for communication or SQL and XML for the management of definition and test data are the basics of the *TestMaster* data interfaces. They allow integration in existing software environments.

Today *TestMaster* is already available for Windows, Linux, and Sun and can also be operated in heterogeneous environments. *TestMaster* applications on realtime operating systems are possible as well.

flexible

TestMaster is a flexible tool for a variety of industrial applications and focused on practical aspects of automation and testing processes. The innovative modular concept of the *TestMaster* software provides a high degree of flexibility to the end user. All operator panels and commands are easily user configurable.

The major concept of hardware abstraction enables the software for almost any kind of application but still ensures a consistent presentation to the user. It reduces significantly the effort for adaption of the application to changed requirements. It also strongly limits the operational risk, e. g. when hardware needs to be added to the application.

industrial proven

TestMaster has been proven in many industrial production and automation as well as research and development projects. Application areas are e.g. test stands, process supervision, production control for:

- automotive
- communication
- aerospace and space buisiness
- audio- and video measurement technology
- chemistry

TestMaster has been choosen as platform for different OEM software products in industrial production.

user friendly

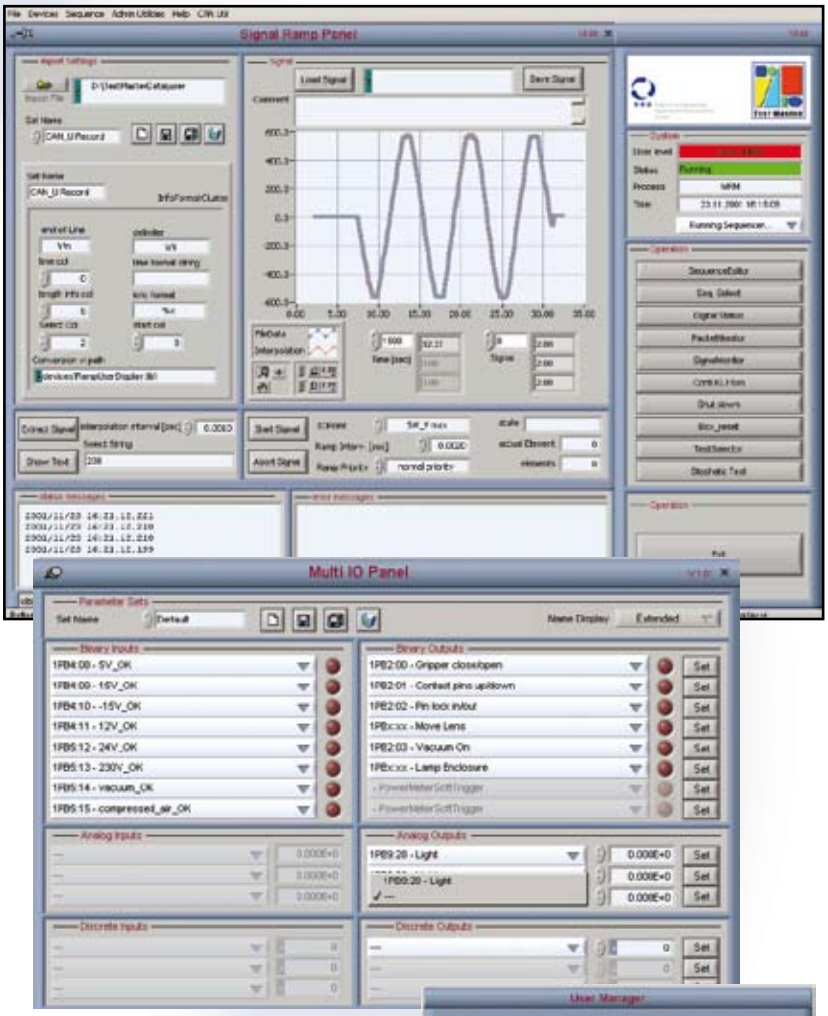
All specific needs of the application can easily be customized and changed by the end user, strongly increasing flexibility of the system. This includes the hardware configuration, user interface presentation, access rights, and more.

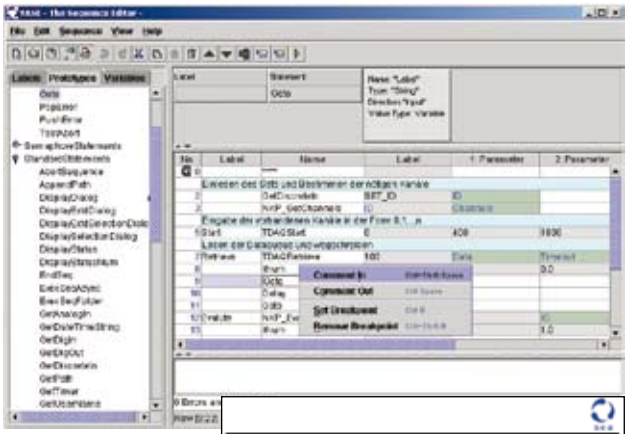
Test definition and sequences as well as hardware and data administration can be managed by graphical displays. Central handling of definitions enables their universal availability.

The control and test activities are defined in clear graphical interfaces and provide user-friendly access to the powerful features of *TestMaster*. Different user levels allow access control to defined test procedures and functionalities.

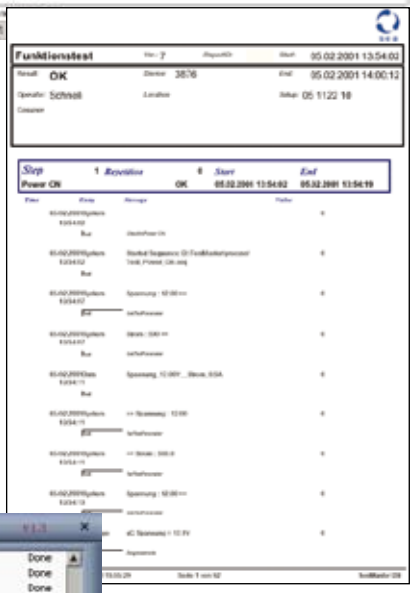
efficient & extendable

- editor/sequenzer for automatic test /process control (parallel sequencing) API's for customizable commands, device drivers, and hardware access
- centralized error handling
- version control for test definition, requirement and test management as imbus TestBench, CTE, and TestStand™ (National Instruments)
- integration of RealTime and embedded systems (FPGA) e. g. for HIL simulation
- hardware control by abstraction model (device driver concept) e.g. for:
  - industrial communication (e.g. CANBus, ProfiBus, INTERBUS)
  - PC/PXI based data acquisition
  - VISA/GPIB based instruments
  - image processing
  - motion control





top right:
sequenz editor Yase
for process definition

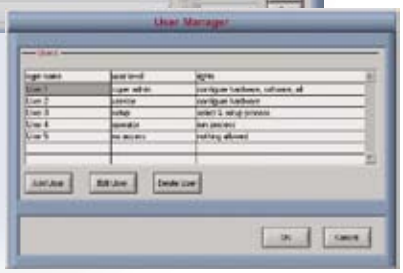


right:
Test report

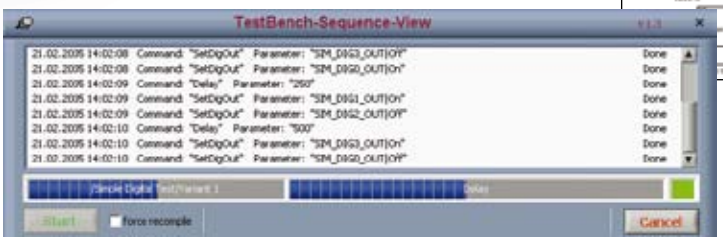
bottom:
execution of TestBench sequences

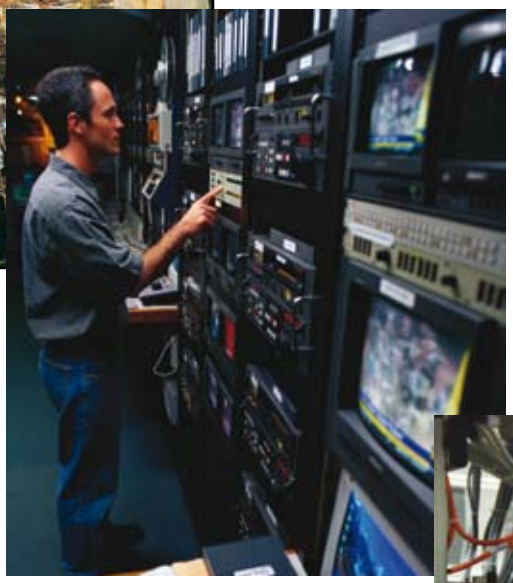
top:
TestMaster software with signal simulation panel, configurable buttons, menues and status display.

Multi IO panel



right:
TestMaster user administration





top to bottom:

process control of laser welding procedure with *WeldWatcher*

measurement technology for studio equipment with *MeasureMaster*

quality control in auromotive procuction with ACTP

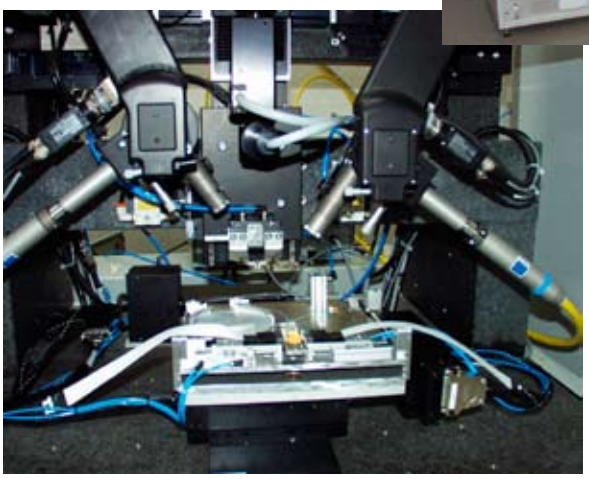
VersaWeld-facility for alignement, welding and qualification of fiberoptic components wirh *TestMaster*

Services

Our service for *TestMaster* includes:

- consultancy and concept development,
- software development,
- service and maintenance,
- customization,
- training.

S.E.A. provides several *TestMaster*® based products as TestMaster for fiber optic applications, MeasureMaster for audio and video applications, WeldWatcher for laser welding process control, and the Automotive and Aerospace Component Test Platform ACTP.



Performance

- modular
- future-proof
- flexible
- user friendly
- efficient and extendable
- open platform

- real time
- image processing
- motion control
- industrial field bus interfaces (CAN-Bus, ProfiBus, INTERBUS, FieldPoint)
- GPIB
- data management

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