

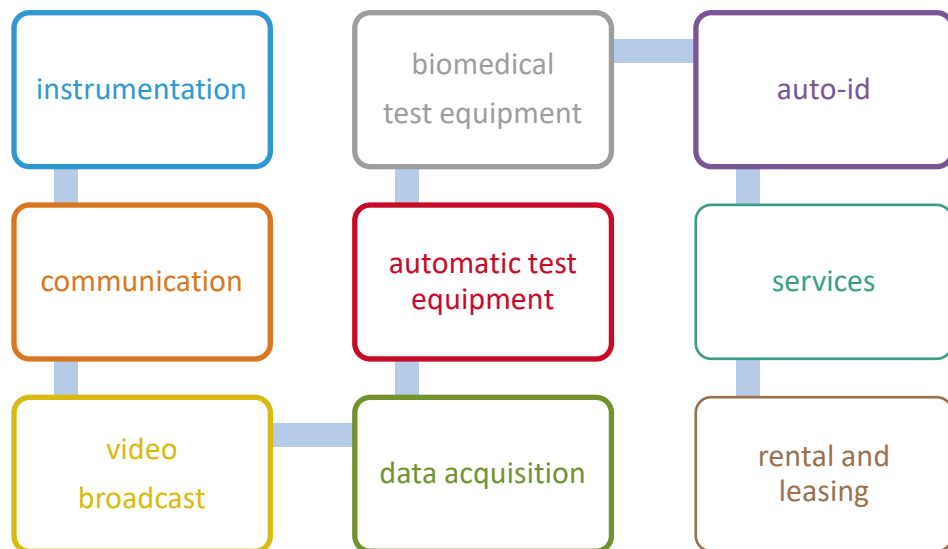
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Since the day we were founded in 1938 CN Rood has been on the cutting edge of technology. Enabling us to help you solve the challenges you encounter using the latest technological developments and insights.



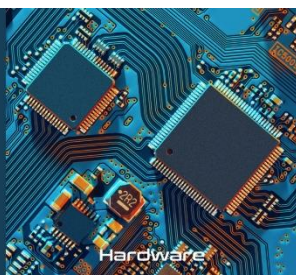
C.N.Rood Group

**The largest independent Test & Measurement supplier in the Nordics, Baltics and Benelux*



Our almost 50 employees cover: Iceland, Norway, Sweden, Finland, Denmark, Estonia, Latvia, Lithuania, The Netherlands, Belgium and Luxembourg. The product portfolio may vary by region, please contact our offices for detailed information.

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Update 03-05-
2022v1
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**Het ontwerpen van
innovatieve elektronica**

Woensdag 20 maart 2024
1931 Congressentrum 's-Hertogenbosch



Framework for testing and data management



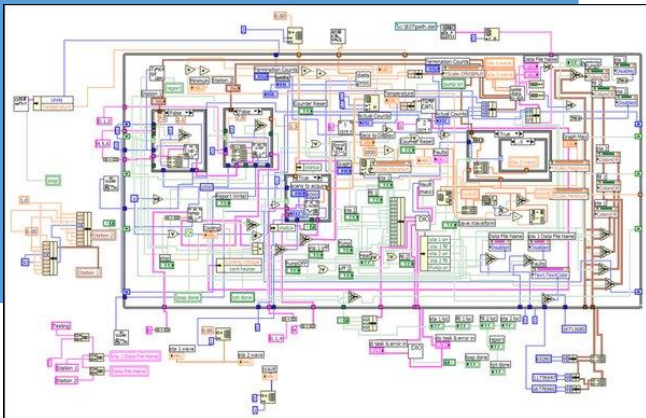
William Baars
NI Teamleader
CNRood



Common test systems in the industry

How does test system look like?

- New software for each test system
- Hardware reusage are low
- Yield rates
- Approach to test
- Low documentation
- No version control
- No calibration procedures



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Woensdag 20 maart 2024
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Framework for test systems

Why?

- Higher quality of products
- Detect defects and issues early
- Lower cost of test
- Track and analyze production & test systems

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Framework for test systems

What is it

Framework

- Sequencing
- Execution
- Reports
- Database connectivity
- User Interface
- HAL/Drivers
- Adapters/Plugins
- Instrument park
- Fixture connectivity
- Protection & Safety
- Mechanical parts

Specific Rig

- Unique additions
 - Measurements
- Test steps
- Exceptions to sequence and execution
- Test fixture
- Addition to standard instruments
- Unique product connectivity

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Not using
framework
for test

Software Red Flags

- No code sharing
- Source code control
- The go to person
- Lack of documentation
- Test data stored for later usage
- No analyzing or trending
- Different Languages



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Not using
framework
for test

Hardware Red Flags



- Different HW between test systems
- No reuse of HW between test systems
- Calibration procedures none existing
- Lack of documentation
- Products not designed for test

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Framework for test systems

How

- How many different products are produced?
- How many times can a product be tested?
- How many common tests/measurements?
- How can test results be analyzed?
- How can test system be distributed?
- How can development become test driven?
- How to we program/flash devices?

To list a few...

Framework

- Sequencing
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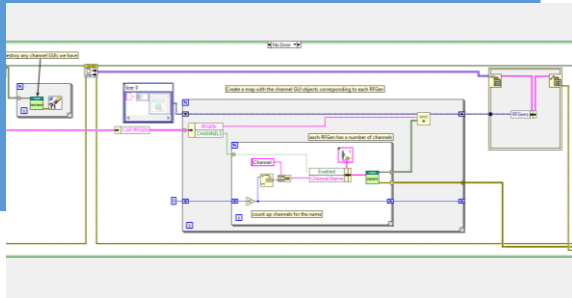
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Framework for test systems

How SW

- How flexible must the framework be?
- How many different types of measurements?
- How many types of tests?
- How should deployment work?

To list a few...



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Framework for test systems

How HW

- How dynamic must the framework be?
- How many types of fixtures are needed?
- How many types of connections?
- How many products needs to be tested in parallel?
- How can equipment be reused?

And more...



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Framework for test system

Ready-made or build your own?



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Framework for test system



First test system based on
framework

Bonus AI and Testing if time allows

<https://www.youtube.com/watch?v=Bk-dmXE5xk>

From 51:00

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Framework for test systems

Thank you for listening!

- Visits us, booth 8

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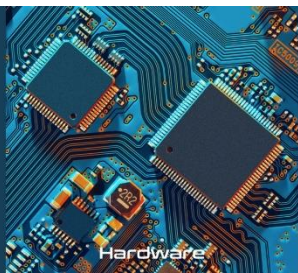
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Hardware



Software



Test & Measurement



Engineering



Research & Development

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