

PHILIPS

sense and simplicity

Agile & Scrum

...applied in a complex Medical environment

Bits&Chips

Agenda

- Intro
- Building interventional tools
- Our transition from Waterfall to Agile
- Legislation
- Agile values implemented
- Building medical software iteratively



Duration: 45 minutes



Ron Eringa

Job info:

- SW Team leader @ Philips Healthcare
- Department: Application Solutions
- Current project: EP navigator
- Certified Scrum Master
- Coaching Agile & Scrum

Personal:

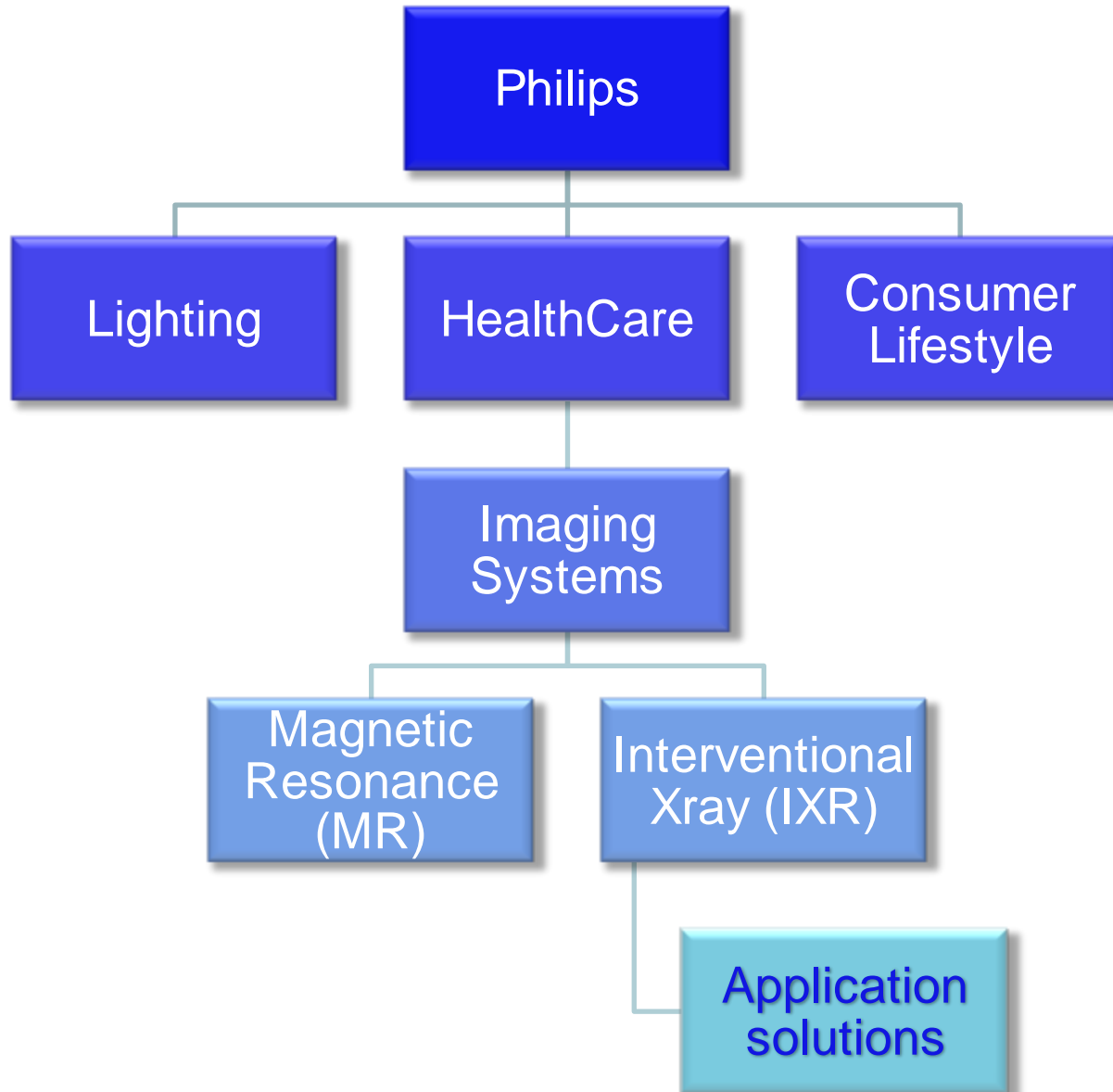
- Married
- Father of 2 girls

Hobbies:

Running, Skiing, Photography

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Fast changing landscape



Interventional tools

The screenshot displays the Philips interventional software interface. At the top, there are tabs for 'Patients' and 'View'. The main window is titled 'Live View' and shows a 3D anatomical model of a heart with catheters. The model is color-coded: the heart is blue, the catheters are green, and the surrounding structures are red. The 'Live View' window displays the following text: 'CAUD 4°' and 'LAO 44°'. On the left side, there is a patient information panel with the following details: ID: 06015213018, Birth Date: 1/6/1952, Sex: Male. Below this, there are three icons labeled 1, 2, and 3, each showing a different view of the heart. A '3 Live' section contains the text: 'Interaction with the volume is possible, however the volume will snap back to its registered position when the mouse button is released.' Below this, there is a 'Place a tag' section with the following instructions:

- Select the segment you want to tag.
- Place a tag in Live view.
- Select the correct tag position on the target line using the tools in the toolbars in the side or review window.
- Confirm the correct tag position in the side or review window.

 At the bottom, there is a 'Segment to tag' dropdown menu set to 'Left atrium and PV' and a 'Presets' dropdown menu set to 'Tag 1'.

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The myth of waterfall



The common goal of Agile & legislation



IEC 62304



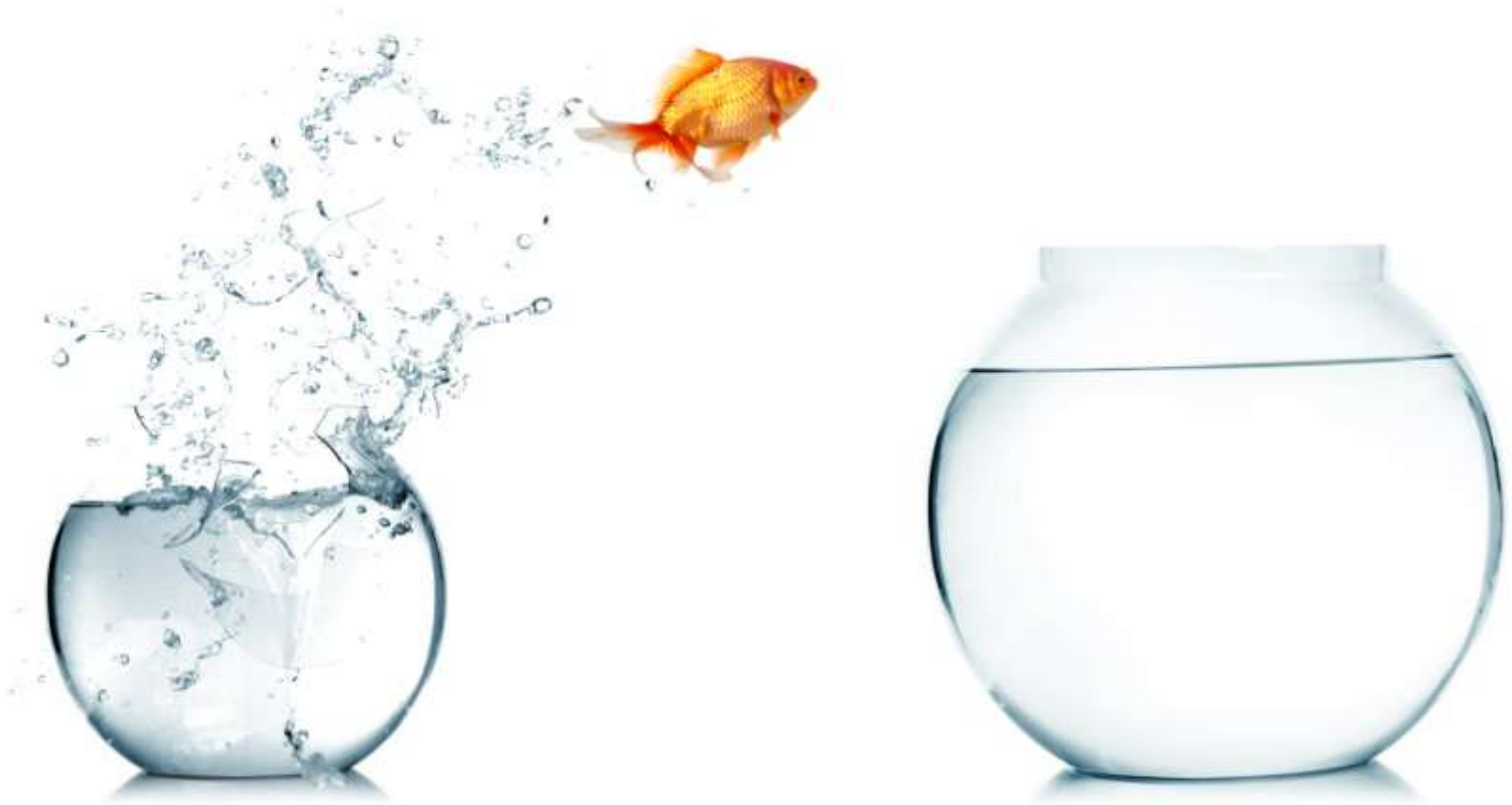
Individuals & interactions over processes & tools



Working software over comprehensive documentation



Responding to change over following a plan



High-level activities

Iterations:



Start:

- High level project plans (scoping)
- 0-order backlog preparations
- Prototyping design aspects



High-level activities

Iterations:



At start

- Minimal set of high level features committed
- Backlog high level prioritized

At end:

- Release verification & validation
- Release documentation



Mid-level activities

Iterations:



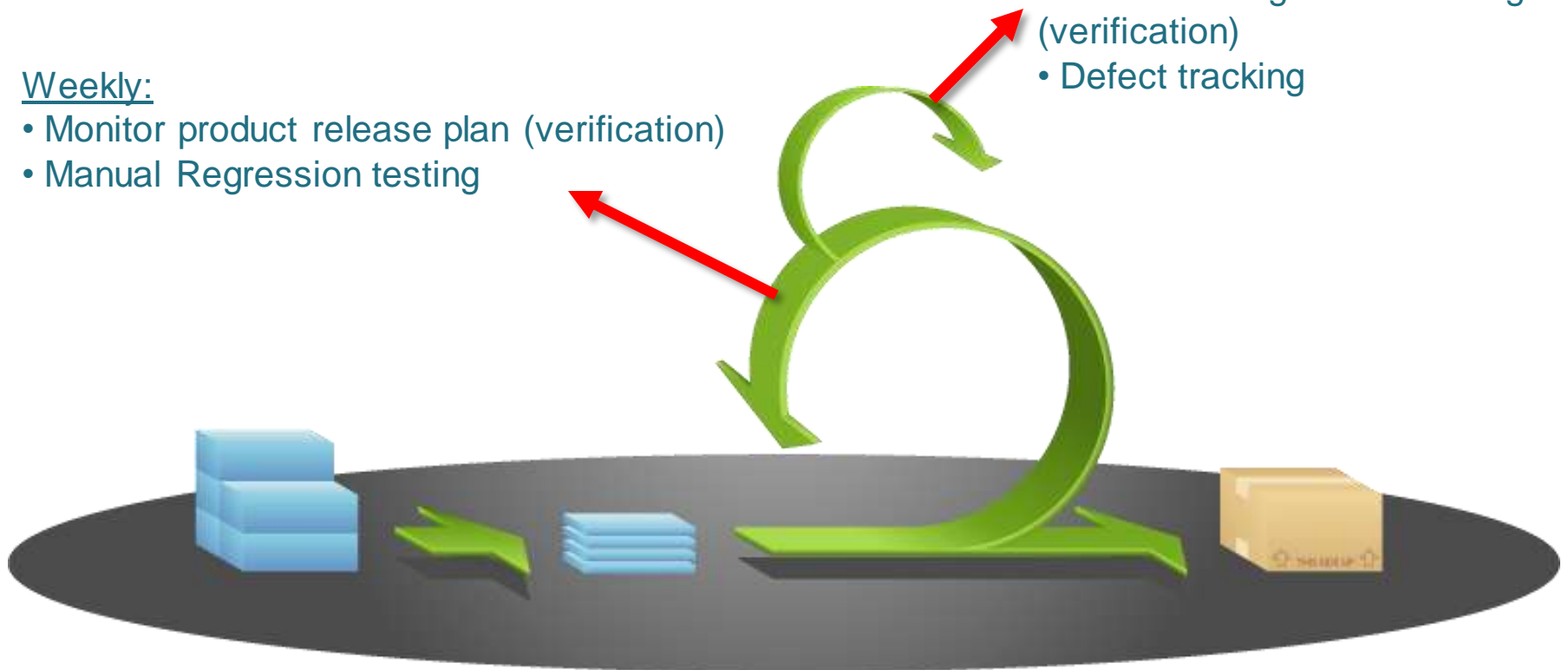
Release level:

Weekly:

- Monitor product release plan (verification)
- Manual Regression testing

Daily:

- Automatic regression testing (verification)
- Defect tracking



Mid-level activities

Iterations:



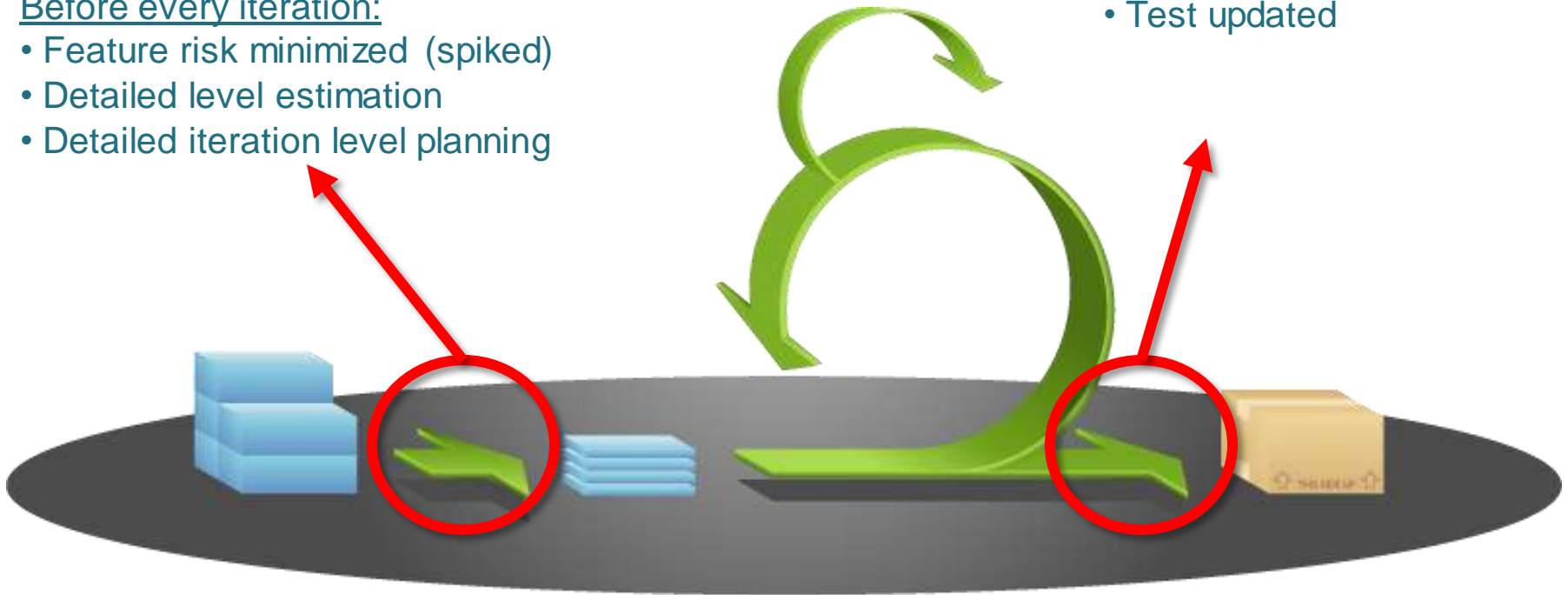
Iteration level:

Done, when:

- Unit tested
- Requirements updated
- Design updated
- Test updated

Before every iteration:

- Feature risk minimized (spiked)
- Detailed level estimation
- Detailed iteration level planning



Low-level activities

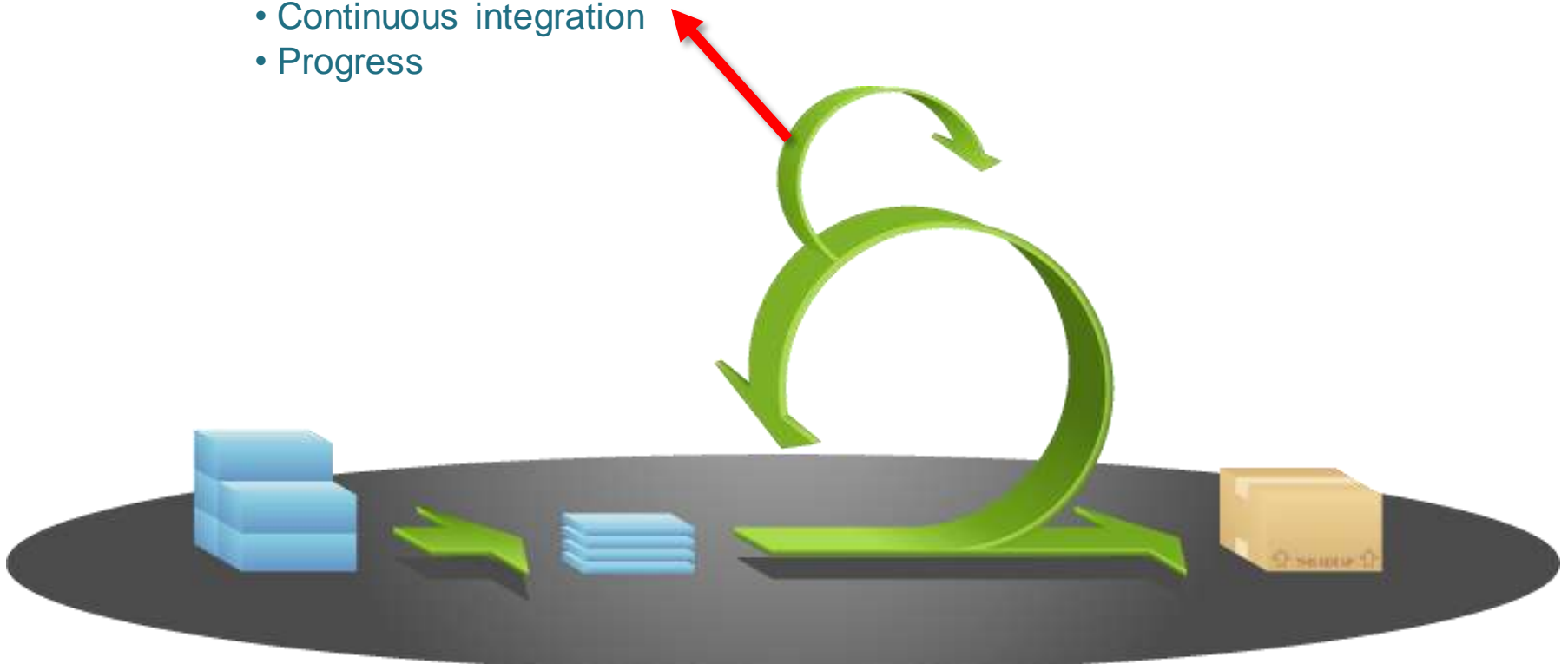
Iterations:



Iteration level:

Daily:

- Automatic integration testing
- Continuous integration
- Progress



Sharing knowledge



Courage



Resources

- *“Adopting Agile in an FDA Regulated Environment”* (Abbott 2009)
- *“Agile Software Development with Verification and Validation in High Assurance and Regulated Environments”* (Leffingwell, 2011)
- *“Guidance on the use of AGILE practices in the development of medical device software”* (AAMI, 2011)
- *“Verandering is ook in de medische technologie een prima basis”*
(Bits & Chips nr. 13, 4 november 2011)
- <http://davidfrico.com/afei-2010.doc>



