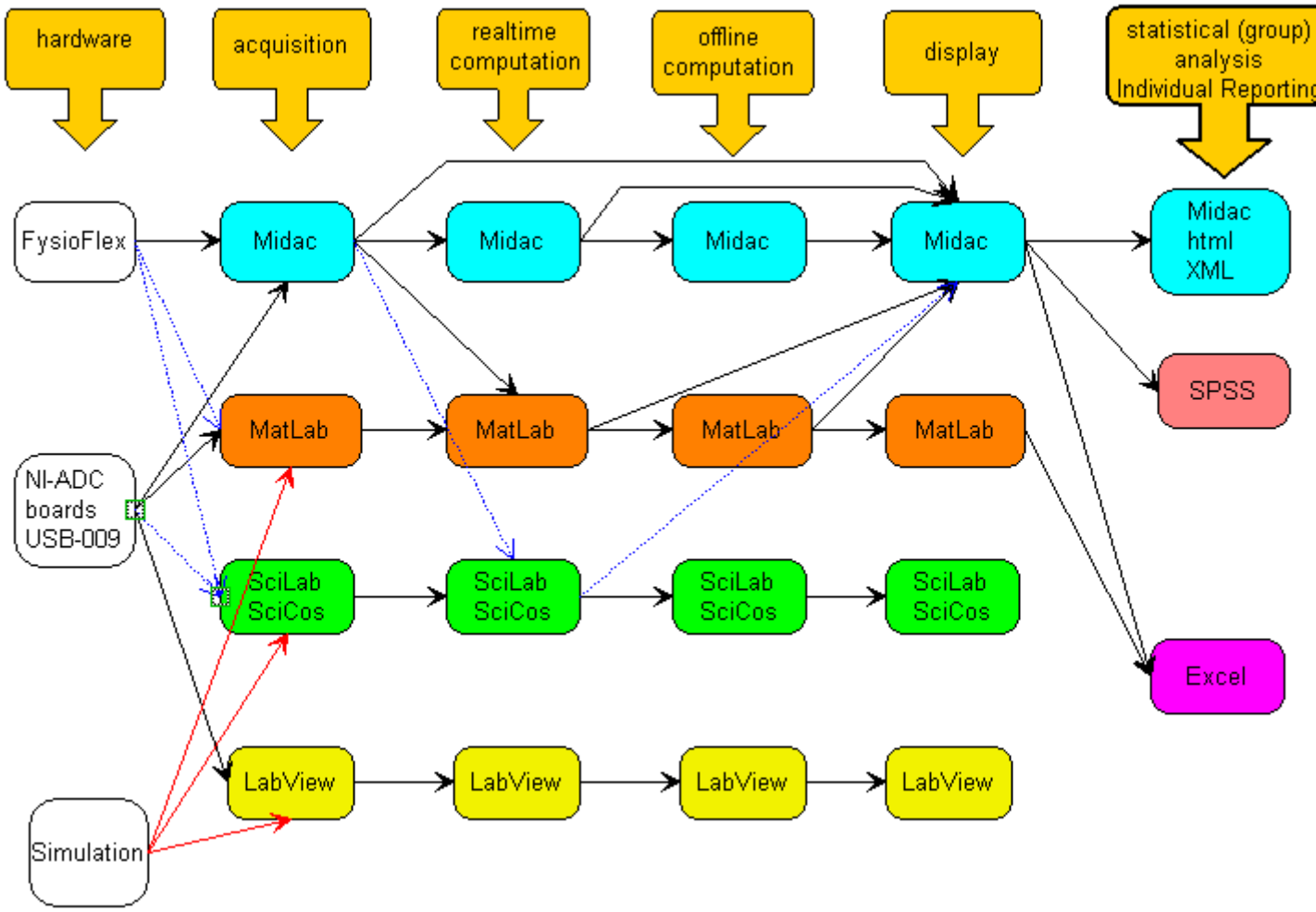
Data Acquisition & Analysis



Midac

Data acquisition and analysis package, specially suited for medical research.

Advantages

- contains only analysis for medical signals
- simple to use
- patient database
- MatLab active-X integration

Disadvantages

- maintenance

MatLab

General computation package, can be extended with simulation (Simulink + ???) and data acquisition (DA-toolbox).

Advantages

- widely used

Disadvantages

- scripting languages, means difficult to debug
- no easy viewing of the data (work around create a display function, see example below)

- global vars needed for display function (otherwise huge parameter passing)
- functions need to be in separate file

SciLab / SciCos

General computation package, comparable with MatLab.

Advantages

- open source (free)
- simulation tool can handle 2-port devices (e.g. resistor)
- seems quit simple to use
- Matlab to SciLab conversion available
- from the demos, easy to use simulation object, with nice hierarchical design. (much much easier than LabView)

Disadvantages

- not widely used
- no active-X component, no data-acquisition, only file import, so only semi-realtime (through shared files) is possible but no feedback loops

LabView

A very extensive package for any data-handling. The graphical programming environment looks very cool and impressive at first sight. But when trying to create larger circuits (it doesn't matter if they are complex or not) you really would wish you had a simple ASCII editor.

Advantages

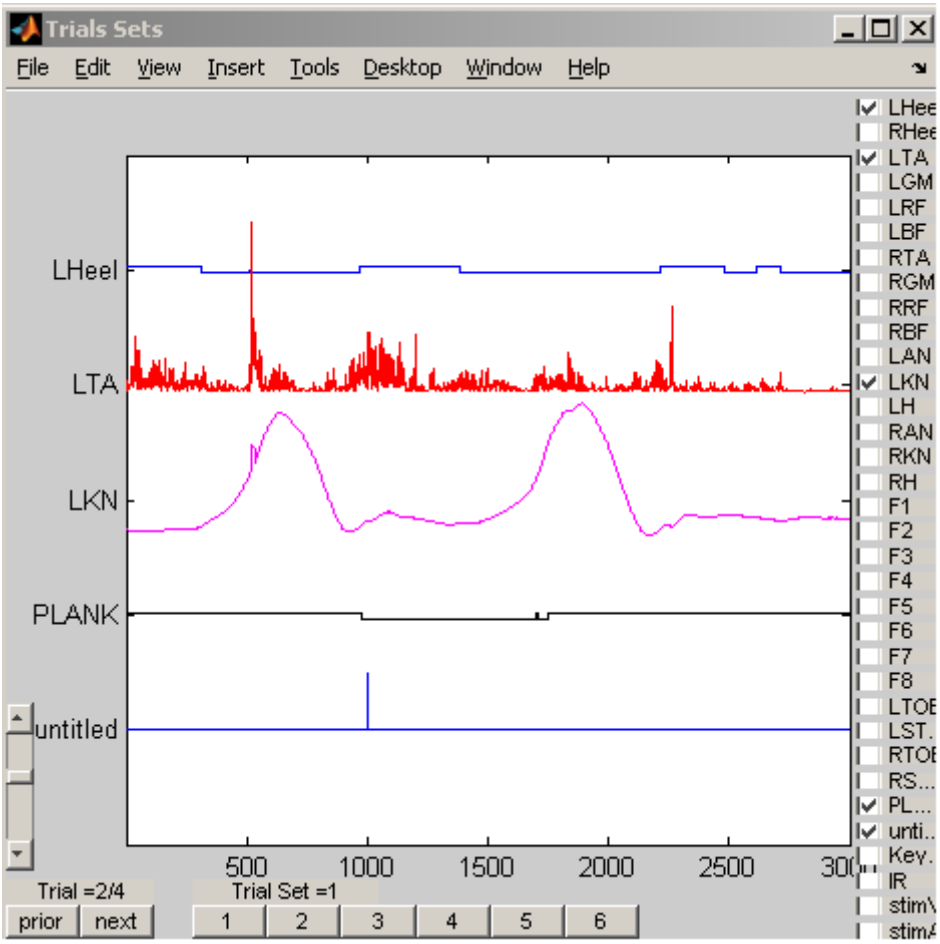
- very extensive in every view

Disadvantages

- very extensive in every view, and thereby making it very complex
- very expensive
- no easy installation (full installation of all components costed me 4 hours)

Matlab display function

Below an example of a function display procedure in MatLab. It gives the possibility to view a small piece of the selected signals around a trigger point. Navigation buttons are available to step in an easy way through the different trials, and to change the amplitude of the automatic scaled signals.
Although this function works fine, you don't want to see what's behind it. Terrible programming, with a large amount of global variables to get it working correct and fast enough.


Trials Sets
File Edit View Insert Tools Desktop Window Help
LHeel
LTA
LKN
PLANK
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500 1000 1500 2000 2500
Trial =2/4
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Trial Set =1
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