WIR SCHAFFEN WISSEN – HEUTE FÜR MORGEN
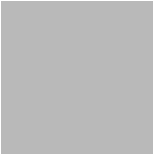
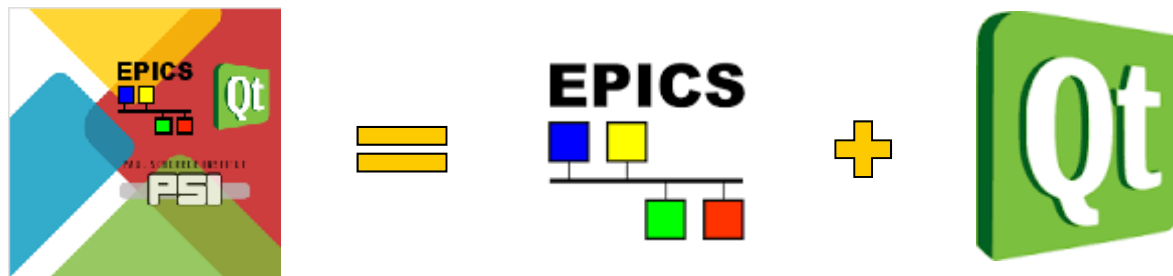Helge Brands, **Anton Mezger** :: Paul Scherrer Institut, Switzerland

caQtDM: future use of a display manager

Spring 2016 EPICS Collaboration meeting, Lund, Sweden, May 2016

Outline of the presentation

- ❑ caQtDM: PSI's new display manager, Version 4.1.0

  - ❑ Multiplatform capability

  - ❑ A new world for .ui file loading using the web

  - ❑ Multiple control system support through plugins

  - ❑ Easy integration of new widgets using the cs interface

- ❑ Latest features

- ❑ To Do's

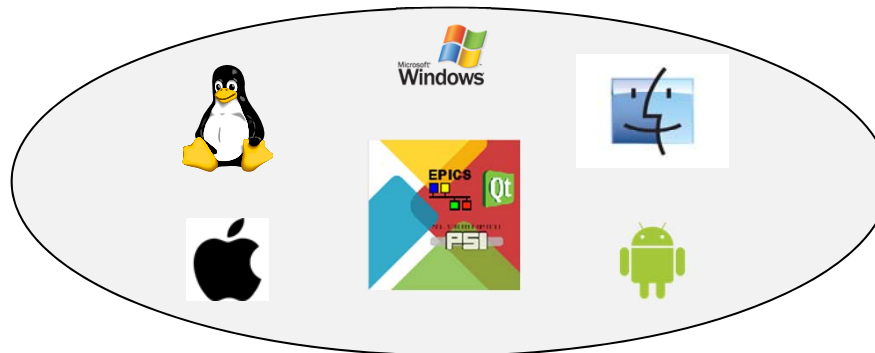- ❑ Statistics (Downloads)

- ❑ Conclusion

caQtDM: PSI's new display manager, V4.1.0

❑ caQtDM is an EPICS display manager written in C++ and uses Qt as graphical user interface:

❑ caQtDM is PSI's actual successor of MEDM and follows its philosophy regarding widget functionality.

❑ caQtDM has been developed as a modern display tool (C++, Qt, plugins)

❑ caQtDM has now many new features, that makes it very versatile (multiplatform, multi-CS, easy integration of new widgets, web support, parallelization of camera data conversion)

❑ caQtDM is very reactive to its users (bug fixes and features)

caQtDM: PSI's new display manager, V4.1.0

Multiplatform capability:

caQtDM runs on Linux's, MS windows, Mac OS X, iOS and Android. In principle on any platform where you find Qt and EPICS.

❑ caQtDM has been tested with Qt4.8 to Qt5.6 with preferentially Qwt6.1.1 (multithreading support) and EPICS 3.14.12 (some users already build caQtDM with EPICS 3.15)

❑ caQtDM will use the local file system when not specified otherwise

❑ caQtDM will need on IOS or Android a WEB server in order to get its description files (.ui). caQtDM will then come then with its start settings display.

caQtDM: PSI's new display manager, V4.1.0

caQtDM: a new world for ui file loading using the web

❑ Standard usage is loading a local file: caQtDM [options] filename

❑ More and more files are located at a web server and versioning becomes important, caQtDM has to account for this new way of life:

- − Actually that is just the way caQtDM is implemented on our handheld devices like tablets and phones.

- − Therefore a natural extension used by command line on other platforms

file based:
- nfs/smb
- local environment
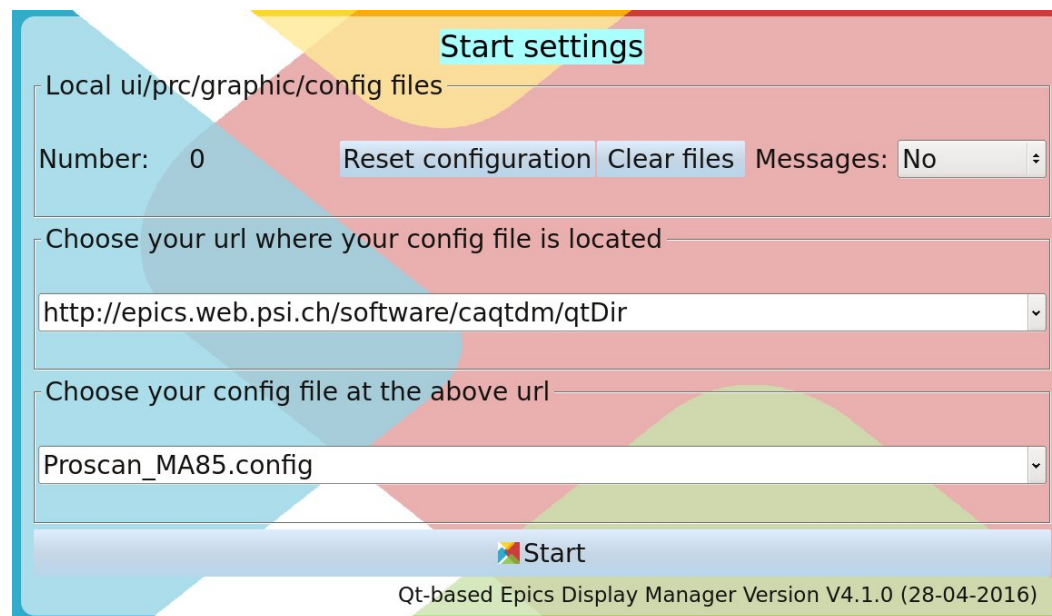- command line needed

http based:
- local view
- versioning
- encapsulated config/environment

caQtDM: a new world for ui file loading using the web (implementation)

caQtDM has multiple ways to get files from a web server:

By using a environment variable or the option –url or the option –httpconfig.

Last option is default for handheld devices; caQtDM will popup with:

caQtDM: PSI's new display manager, V4.1.0

Multiple control system support since version 3.9.4:

An effort was made to fully separate the display part from the data acquisition part by introducing a plugin scheme for the control system support:

- Easy integration of other systems (databases, control systems, any data source)
- Writing a plugin will not need new code in caQtDM and does not need a rebuild.

Actual plugins: EPICS 3.14, BSREAD (a beam synchronous data acquisition using ∅ MQ), EPICS4 (obsolete old version, not really tested and not used), a demo plugin as simple example.

caQtDM: PSI's new display manager, V4.1.0

Easy integration of new widgets (work initiated by Zai Wang from Australia):

❑ gives the possibility of an easy integration of widgets, the control system can be addressed from within a widget.

❑ The advantage is to give an user the possibility to integrate its own widget, avoiding that he has to dig into the main code.

❑ A simple demo widget has been integrated that can be used as template for new widgets: caLineDemo. This widget is almost equivalent to caLineEdit, but uses less CPU.

caQtDM: PSI's new display manager, V4.1.0

caQtDM is continuously updated with new features suggested by its user community; the most important ones:

❑ Piping: it is possible now to pipe the output of some utility to caQtDM giving the possibly to dynamically build ui files for display.

❑ Stylesheets can be used now (option –stylefile). But take care not to disturb basic behavior.

❑ caSlider is behaving now better and has the possibility to display its value (thanks Josh Dassinger from Argonne)

❑ caThermo will display now also its value when requested

❑ caCamera uses now multicore parallelism of calculations for converting a waveform to an image)

❑ Bug fixes and performance optimization

❑ An edl converter (in collaboration with Wang Zai Huai from Australian light source)

❑ Github for issues and collaboration or as display versioning system

caQtDM: PSI's new display manager, V4.1.0

The to Do's list gets smaller; Users have to trigger new ideas.
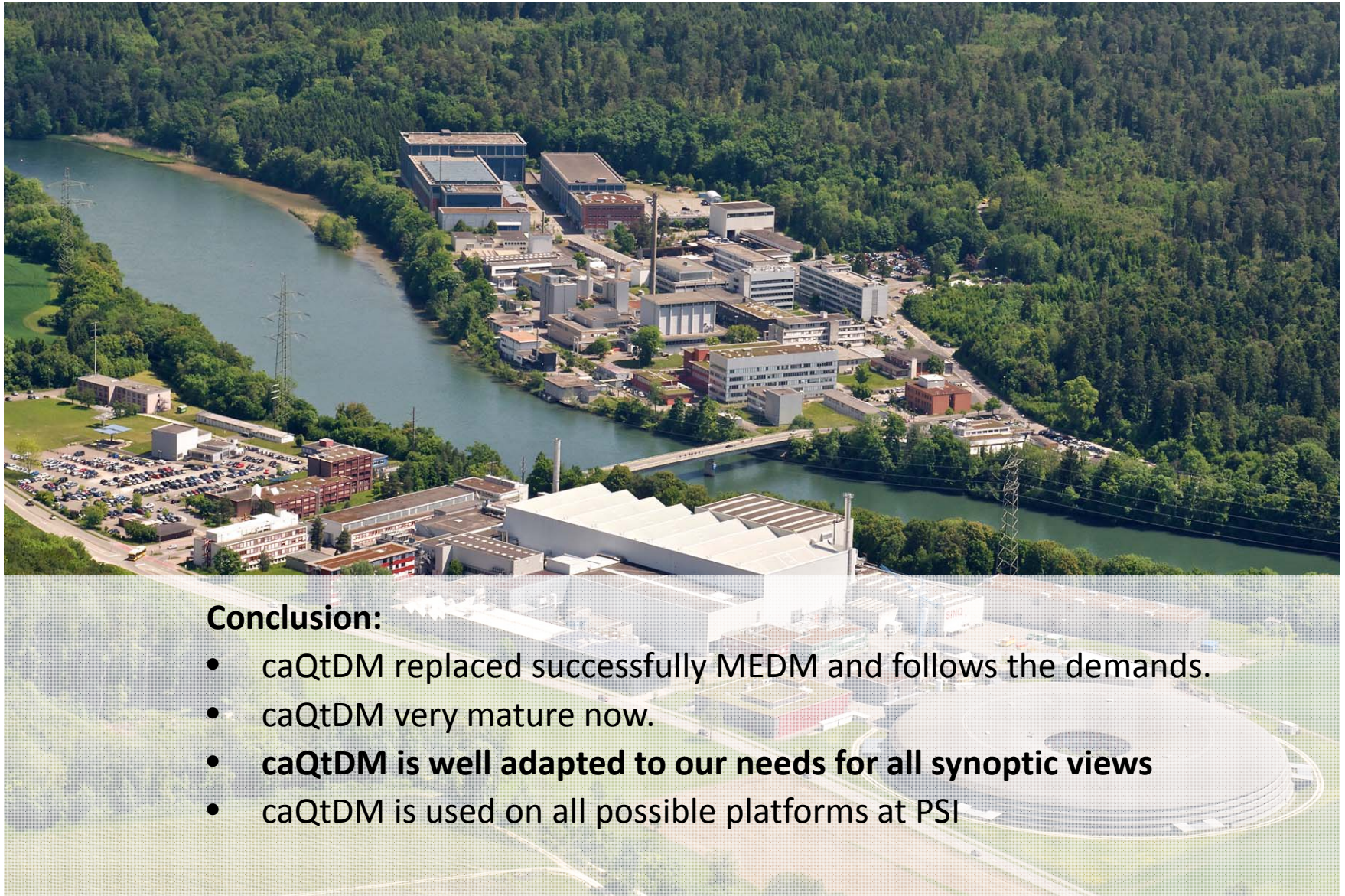
Next:

- ☐ Linux configure script
- ☐ Build with epics 3.15
- ☐ CS new Plugins (database, epics4?, Tango?)
- ☐ Bug fixes
- ☐ Performance enhancements
- ☐ https enable
- ☐ Last but not least: Documentation and complete designer tooltips for property description

caQtDM: PSI's new display manager, V4.1.0

Statistics:

Github downloads(17.5.16)	count
caQtDM_4_0_2.msi	5
caQtDM_4_0_2_x64.msi	47
caQtDM_4_0_2_x86.msi	16
caqtdm_4_0_0.apk	14
caqtdm_4_0_0.dmg	33
caQtDM_4_0_0.msi	53
caQtDM_4_0_0_x64.msi	81
caQtDM_4_0_0_x86.msi	16

Would also be nice to have some feedback from all these!

Conclusion:

- caQtDM replaced successfully MEDM and follows the demands.
- caQtDM very mature now.
- **caQtDM is well adapted to our needs for all synoptic views**
- caQtDM is used on all possible platforms at PSI

My thanks go to

- The authors of MEDM for their powerful application
- All contributors for their input and code
- All users for their suggestions and bug finding

caQtDM: PSI's new display manager, V4.1.0

❑ Thank you for your attention
and have a look at:
http://epics.web.psi.ch/software/caqtdm/

Downloads:

Linux: sources (you may also clone github/caqtdm or download a zip)

MS windows: binary installation package (msi)

Mac OS X: binary distribution package (dmg)

iOS : binary distribution package from apple store (iPad and iPhone)

Android : binary distribution package