NOMAD GOES MOBILE
Outline

- What is NOMAD
- Why we need mobile solutions
- Our choice
- NOMAD mobile
- Problems and perspectives
Instrument Control Software at ILL

- Sequencer
- Embedded scan engine
- Live data display
- Central data storage
- Logging
- Parameters survey

Java SWT

NOMAD GUI

Bridge

CORBA

NOMAD Core

C++

Instrument Components

VME, RS232, GPIB ...

Network

Data
Why?

- Evolution towards bigger instruments
  - Control room often far from instrument
  - Sample area difficult to access
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- Remote control
- It’s cool!
Looking Back

- Cable link with electronics
- Limited to motor control
- Limited to 8 axis
- Limited functionalities
- Often broken
- Expensive
Hardware Choice

- Weight
- Screen format and size
- Battery life
- Minimum gadgets
- Quality vs price
Software Choice

ANDROID

- Development on Linux Workstation
- Android SDK
- ADT eclipse plug-in
- USB debugging
NOAMD Integration

NOMAD Core

Bridge

NOMAD GUI

Tablet GUI

Bridge

CORBA

CORBA

Wifi Network

Network

VME, RS232, GPIB ...

Data

Instrument Components
Implementation

- A tablet is affected to one instrument
  - MAC Address verification

- Dedicated screens
  - Use finger instead of a mouse
  - Large icons, Texts, Labels
  - Specifics options for the tablet
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Not replacing the Main GUI
Axis Screen

Det

Actual position: **717.00**

Status: ○ Moving

Set-point **570.00** ○ Relative

Min: **400.00**
Max: **950.50**
Offset: **-528.00**

Manual Move

Down  Up
Sample Environment Screen
Sample Environment Screen

Orange Cryostat

Set-point: 310.00 K Fast Mode

Regulation Temperature: 43.60 K
Sample Temperature: 44.67 K
Set-point Temperature: 319.50 K
Power: 0.00%
Cold Valve Actual: 0.80 mBAR
Cold Valve Set-point: 1.00 mBAR
Helium Level: 50.00%
Nitrogen Level: 60.00%
Status: Changing
Acquisition Screen

**noToF Count**

- **Subtitle**: Test det 3 p1-1 pad3
- **Time**: 10:00
- **Repetitions**: 1
- **Save data**: checked
- **Allow user to choose the count preset**: checked

**Summary**

- **Status**: 100%
- **Finishing at**: 11:00:00
- **Loop**: 0
- **RUN**: 0
- **Detector**: 0.003 (0.000 cts)
- **Monitor**: 1.001 (0.000 cts)
Acquisition Screen

Count
Subtitle: scan tx
- Status: Counting 1%
- Finished at 14:26
- Still 0h 0m 49s
- Loop 1 / 1
- RUN 58105
- Detector: 3.072E5 (5.633E4)c/s
- Monitor 1: 4.918E3 (9.998E2 c/s)
- Monitor 2: 2.459E3 (4.999E2 c/s)
- Running
Problems And Perspectives

- Replace CORBA technology
  → ØMQ, Protocol Buffer and JeroMQ

- Generate view from the main GUI Description
  → XML resource files and Java classes

- Integrate a light plot library

x Security for loose connection!
Conclusion

- Android client operational on several instruments
- Very good user feedback
- Available on Google Market
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But it won’t work for you ...