SLR-2.0

An overview about the new SLR/LLR control software from Wettzell

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SLR 1.0 (historically grown)

Issues:
- old computer
- LabView 5.0
- upgrade?
- NI-card (hardware)
- nearly no documentation
- switching between satellites takes too long

redesign
Decomposition into modules

- Telescope
- Dome
- Laser
- Eventtimer
- Receiver
- Camera
- e-SysMon
- Database
- TRU
- Operator
- Scheduler
- Datacenter
Hierarchical Structure
Separation of concerns

- strict separation between representation, processing and communication
Multiple Layers

wxWidgets
remote procedure client
Network
remote procedure server
device access

Graphical User Interface (GUI) Client
communication
server functionality
RPC-Middleware, based on generic programming

1. Step: create interface description
2. Step: call code generator
3. Step: implement generated server code (e.g.: call telescope driver)
4. Step: use generated client code in representation layer

Graphical User Interface (GUI)
Main Goals

- individual and independent interfaces
- semi-automation
- extensible and flexible design
- standardized and reliable (poster nr. 47)
- based on low-level but well proven communication protocols
- generic programming techniques to avoid individual network programming
- open source, nearly no proprietary software dependencies
- ANSI – C/C++ compliant software
- works on old and new Linux systems (32/64-Bit)
Graphical User Interface
On the way towards LLR observations

Diploma Thesis:
- comparison of LLR-prediction software (Grasse vs. Texas software)
- verification of Wettzell routines

Next steps:
- implement LLR observation mode in SLR 2.0

http://www.nasa.gov/centers/goddard/images/content/191431main_Apollo_laser_reflector.jpg
Apollo 15 seen from Wettzell
Thank you!