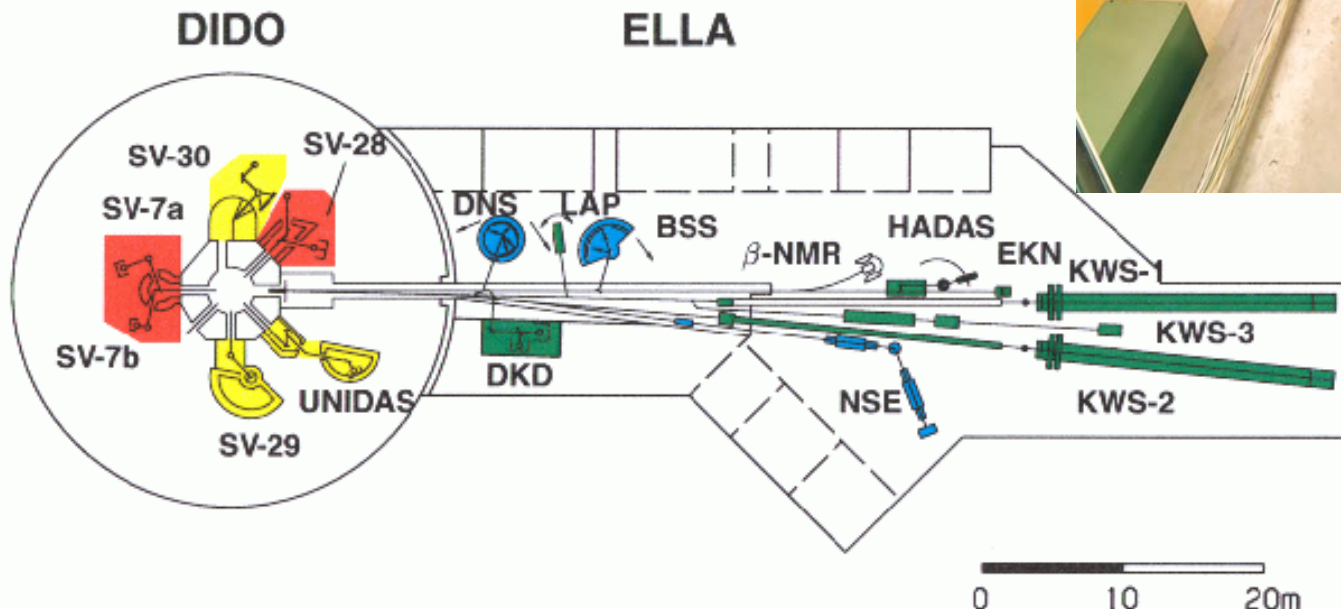
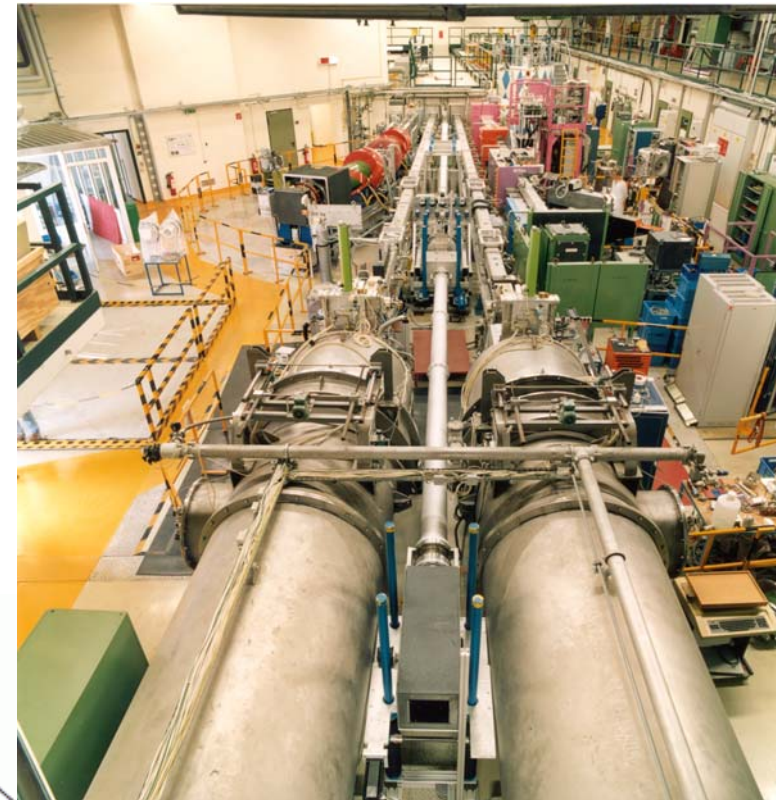


Ein konkretes Beispiel: KWS1

- *Kleinwinkelstreuappatur am FRJII*
- *Selektor: Dornier*
- *Kollimation: 19 Neutronenleitersegmente a 1m, variable Blenden bei 1m, 2m, 4m, 8m, 16m, 19m, 20m*
- *Neuentwicklung Detektor*
- *komplette Neuinstrumentierung*
- *fast identisch mit KWS2*



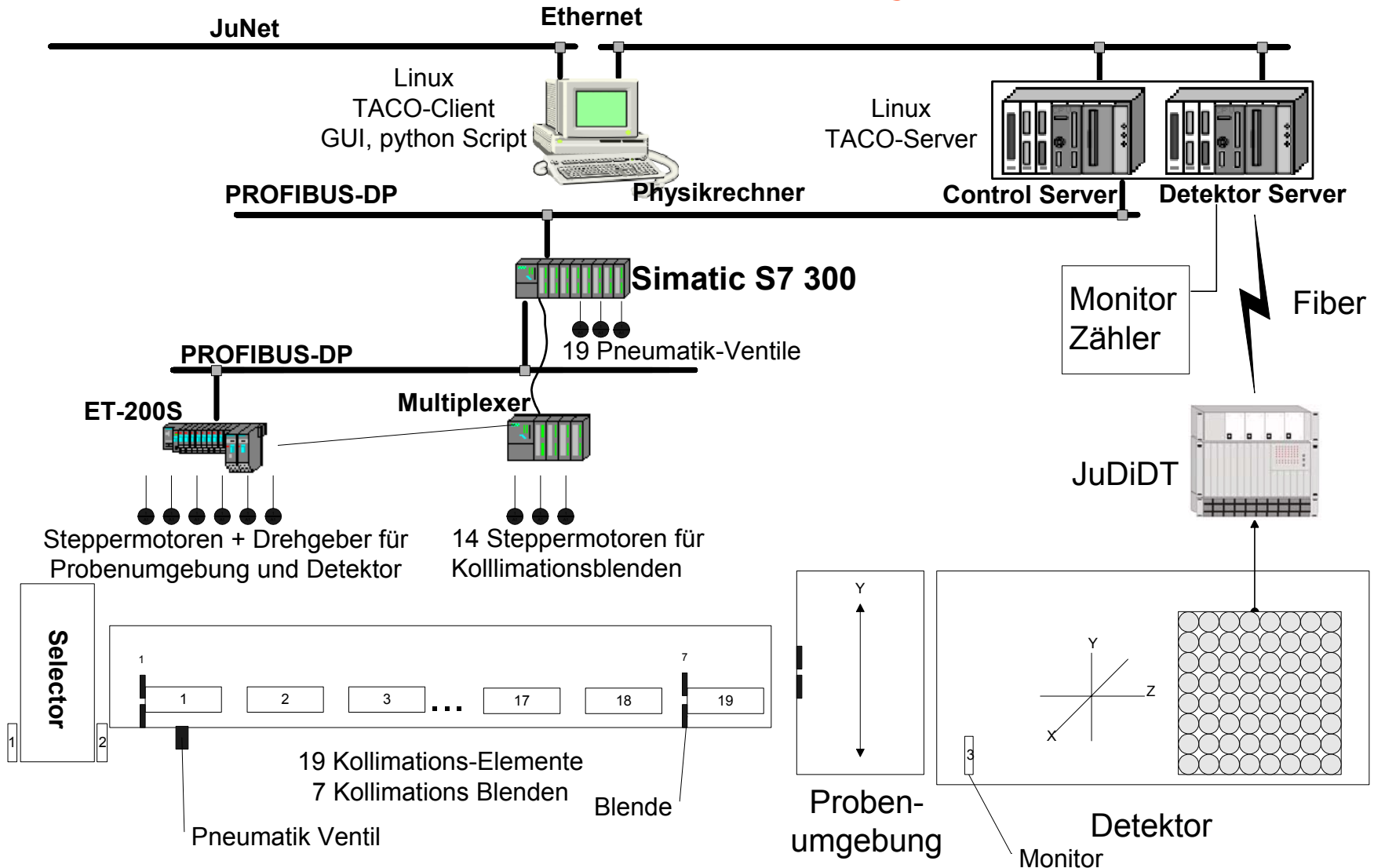


Rahmenbedingungen

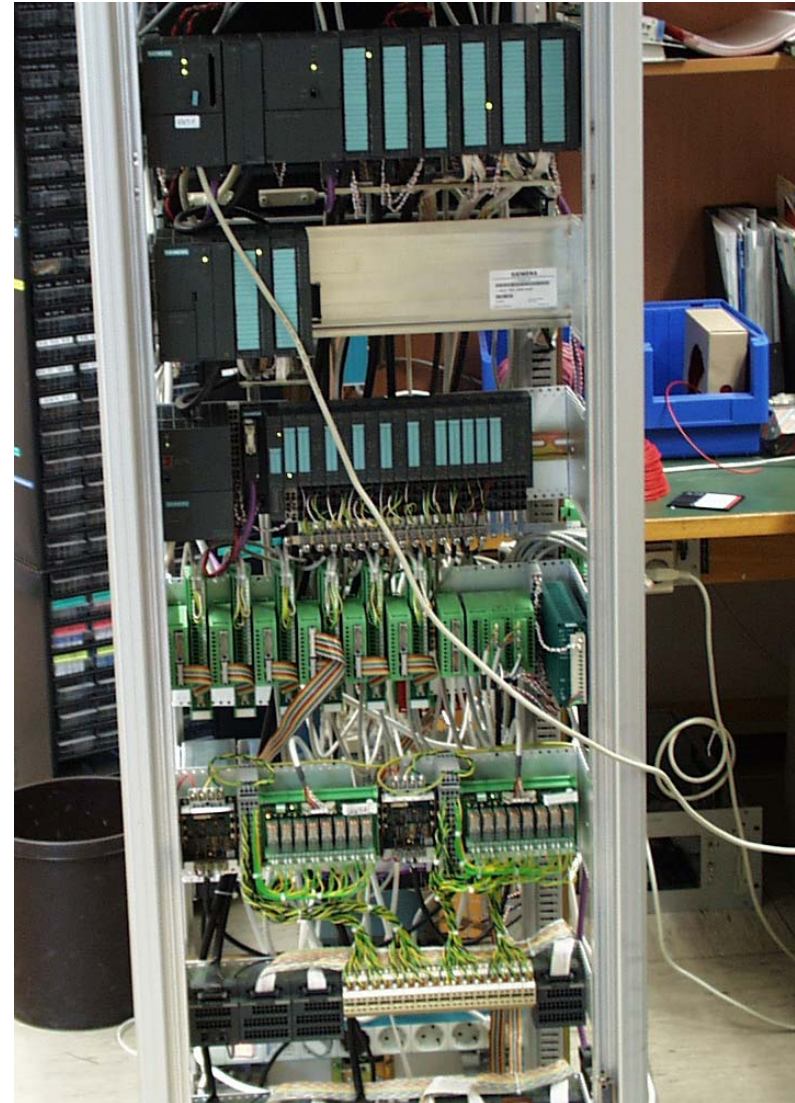
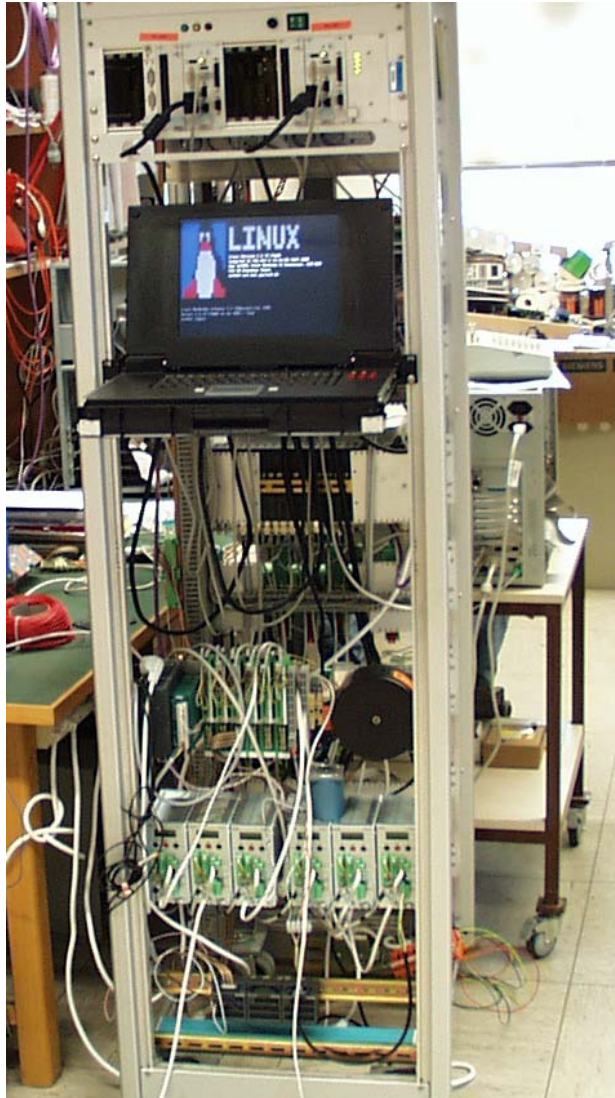
- *Jülich-Münchener Standard für die Neutronenstreuung*
 - *Front-End: S7, ET200*
 - *Prozesskommunikation: PROFIBUS/DP*
 - *“Labor“-Equipment: GPIB*
 - *Hosts: PCs unter Linux*
 - *Programmiersprachen: C++, python*
 - *Oberflächen: Qt*
 - *Geräteabstraktion: TACO*
- *7 Aufträge aus dem IFF mit unterschiedlichen Spektrometern, aber gleicher Systemtechnik*
- *Ausgelastet bis Ende 2003, hoher Projektdruck*
- *Integration von Mitarbeitern aus dem IFF*
- *Heterogene Benutzeranforderungen*
- *Alle Mitarbeiter zu weniger als 50%*



Struktur des Kontrollsystems

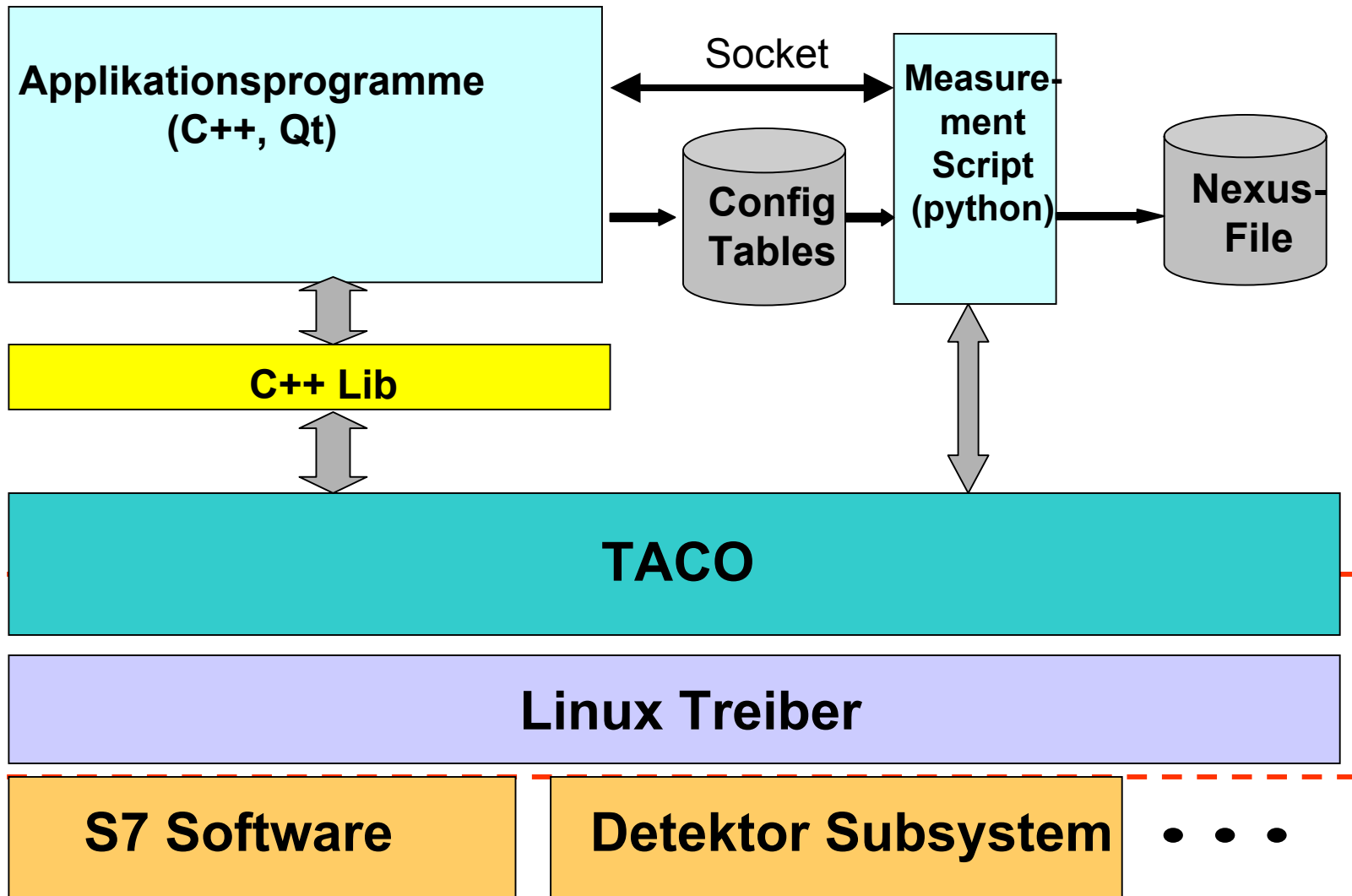


Aufbau des Schaltschranks

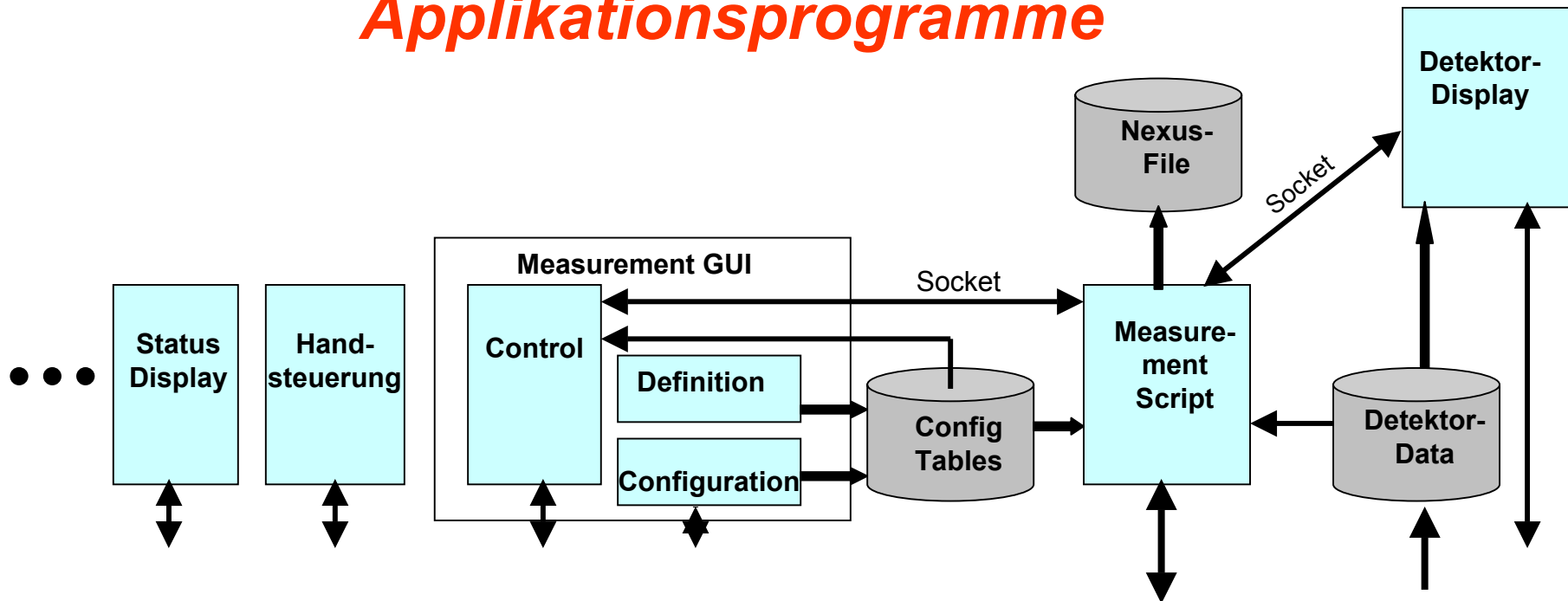




Software-Hierarchie

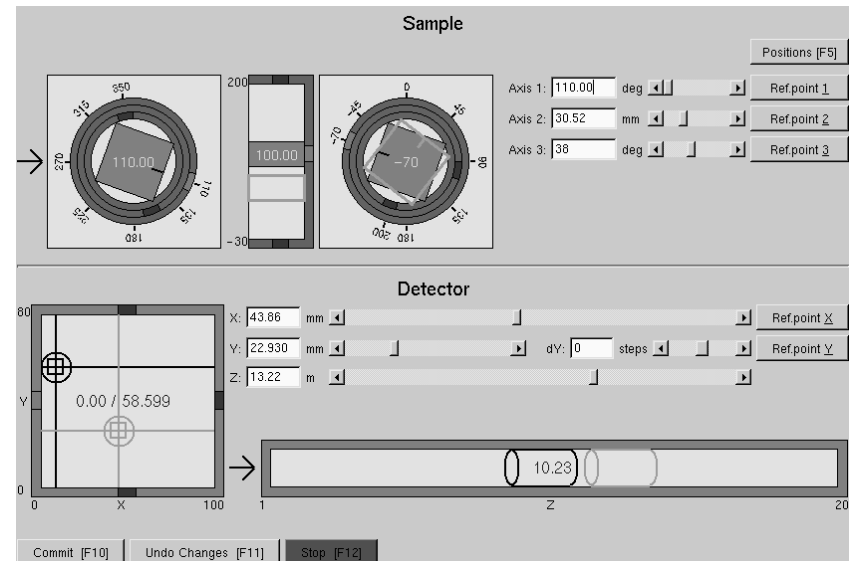
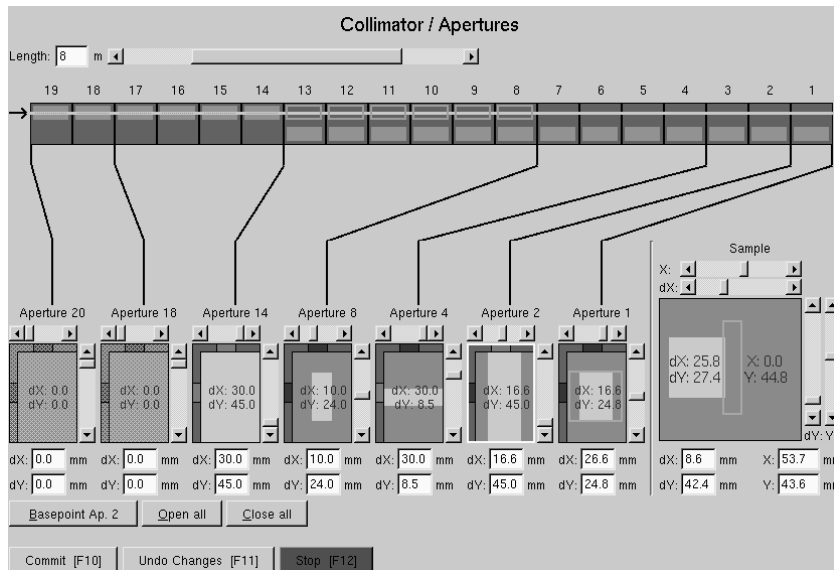


Applikationsprogramme



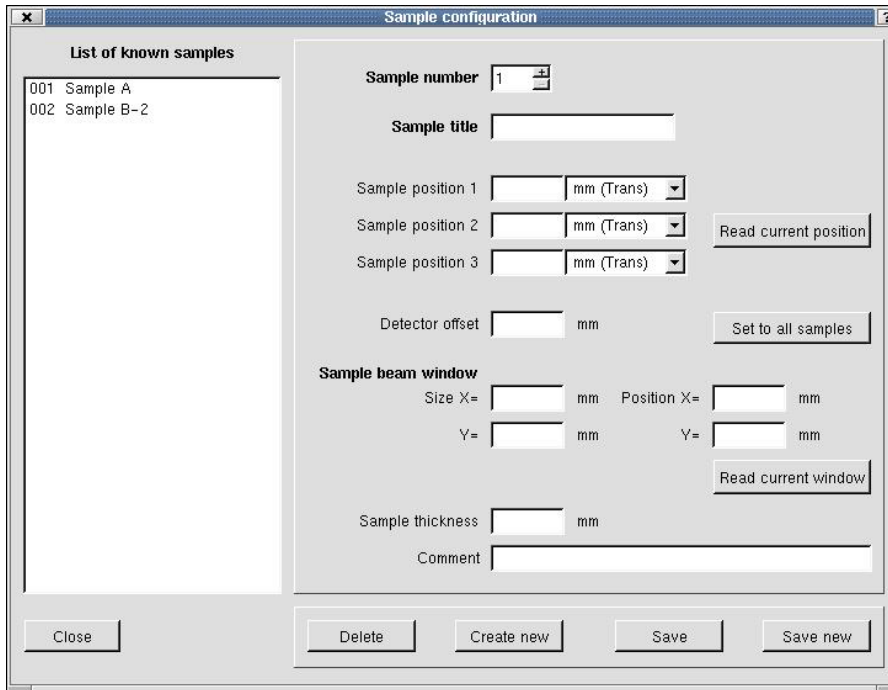
- *Handsteuerung: Inbetriebnahme, Justage,....*
- *Measurement Configuration: Experiment Setup*
- *Measurement Definition: Experiment-Ablauf (Scans)*
- *Measurement Control: Monitoring + Bedienung*
- *Konfigurationsdaten: XML-Files*

Applikation „Handsteuerung“

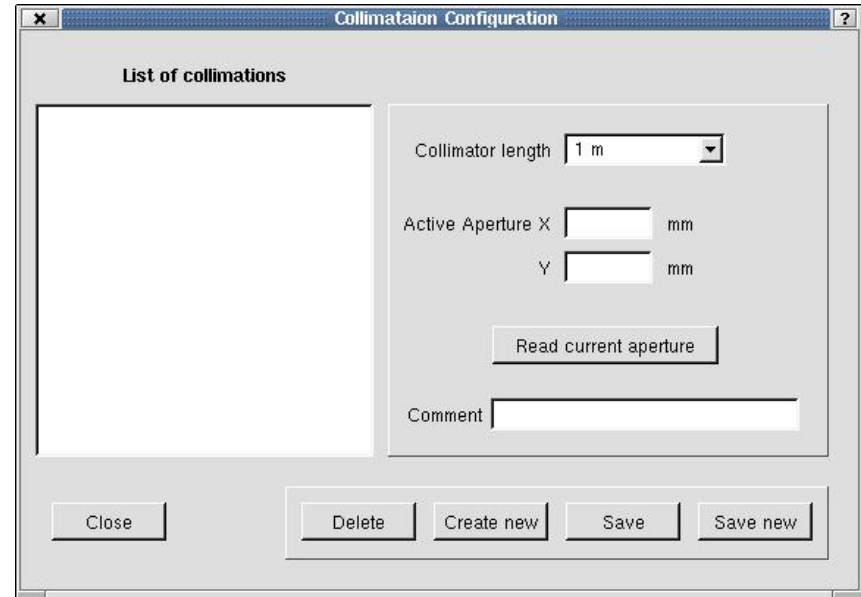


- *Notebook mit Funknetz*
- *Visualisierung der Mechanik, Fehleranalyse*
- *Maschineneinrichtung*
- *Kommunikation mit TACO-Datenbasis und TACO-Servern*

Applikation „Measurement Configuration“



The 'Sample configuration' window is used for defining sample parameters. It features a 'List of known samples' on the left with entries '001 Sample A' and '002 Sample B-2'. The main area contains fields for 'Sample number' (set to 1), 'Sample title', and three 'Sample position' fields (1, 2, 3) with units in 'mm (Trans)'. There is a 'Detector offset' field and a 'Sample beam window' section with 'Size X=' and 'Y=' fields, and 'Position X=' and 'Y=' fields. A 'Sample thickness' field and a 'Comment' field are also present. Buttons for 'Read current position', 'Set to all samples', 'Read current window', 'Close', 'Delete', 'Create new', 'Save', and 'Save new' are located at the bottom.



The 'Collimation Configuration' window is used for defining collimation parameters. It features a 'List of collimations' on the left. The main area contains a 'Collimator length' dropdown menu (set to '1 m'), 'Active Aperture X' and 'Y' fields with units in 'mm', and a 'Read current aperture' button. A 'Comment' field is also present. Buttons for 'Close', 'Delete', 'Create new', 'Save', and 'Save new' are located at the bottom.

- *Definition von „Basis-Setups“ für Meßreihen
(Proben, Detektor, Kollimation, Regler)*
- *Grundlage für die Zusammenstellung von Scans*



Applikation „Measurement Control“

kws1meas

File Help

Current Values | Loop Definitions | Error / Status Messages | Config Files

Login
Current User: -username-
Logout

Lock
Unlock

Start
Continue
Stop
Abort

Selector informations
Name -name-
Wavelength 7 Å
Speed 300 /sec
- comment -

Collimation informations
Length 20 m
Aperture X 18 mm
Y 18 mm
- comment -

Monitor counter
Selector in 10000
Selector out 10000
Detector 10000

Sample informations
Title: TextLabel6
Position 1: 1234 mm
Position 2: 1234 mm
Position 3: 1234 °
Sample Thickness: thick
- Comment -

Sample beam window
Size X: 18 mm Y: 18 mm
Position X: 20 mm Y: 20 mm
Detector offset: detoff

Timer
Measurement start: 12:20:00
Duration: 100 sec
Time left: 10 sec

Detector informations
X: 1234 mm
Y: 1234 mm
Z: 1234 m
Angle: 5 °
- Comment -

System-Table
Index 3
-status-

FZ-Jülich, ZEL / IFF, 2001

kws1meas

File Help

Current Values | Loop Definitions | Error / Status Messages | Config Files

Login
Current User: -username-
Logout

Lock
Unlock

Start
Continue
Stop
Abort

Active devices

	1	2	3
1			
2			
3			
4			
5			

Current Scan position

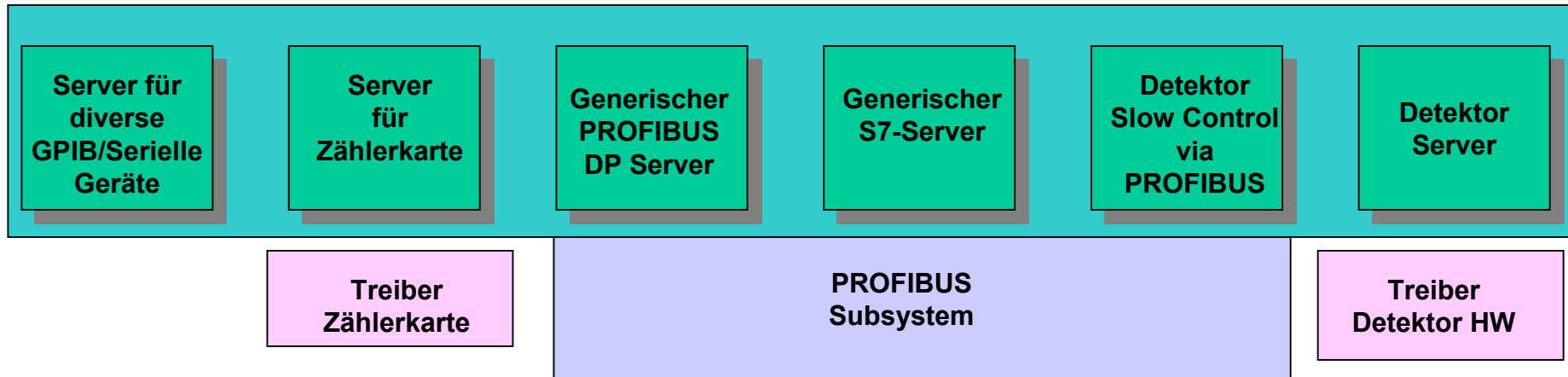
	1	2	3
1			
2			
3			
4			
5			

FZ-Jülich, ZEL / IFF, 2001

- *Steuerung eines Scans*
(Auswahl, Start/Stop, Überspringen von Scan-Punkten)
- *Status Informationen* (Scan, Monitor, Regler, Zeit)



TACO-Server



- *Generischer S7-Server:*
Bedient die generische DP-Schnittstelle für die S7
- *Detektor Slow Control via PROFIBUS:*
Einstellen von Hochspannung, etc.
- *Regler für die Probenumgebung:*
noch unklar