



The JCOP Framework Redesign

Framework Team



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Context

- Version 1.0 released in June 2001
 - Merge of COMPASS and JCOP Frameworks
 - Followed Architecture Design
- Experience gained with usage of Framework and PVSS
 - LHC testbeams and integration activities
 - Fixed target experiments
 - LHC Cryo (UNICOS)
 - LHC Gas Control System (GCS)
- Improved knowledge of hardware
- Better understanding of requirements for LHC
 - Operation, Hardware



Shortcomings in FW 1

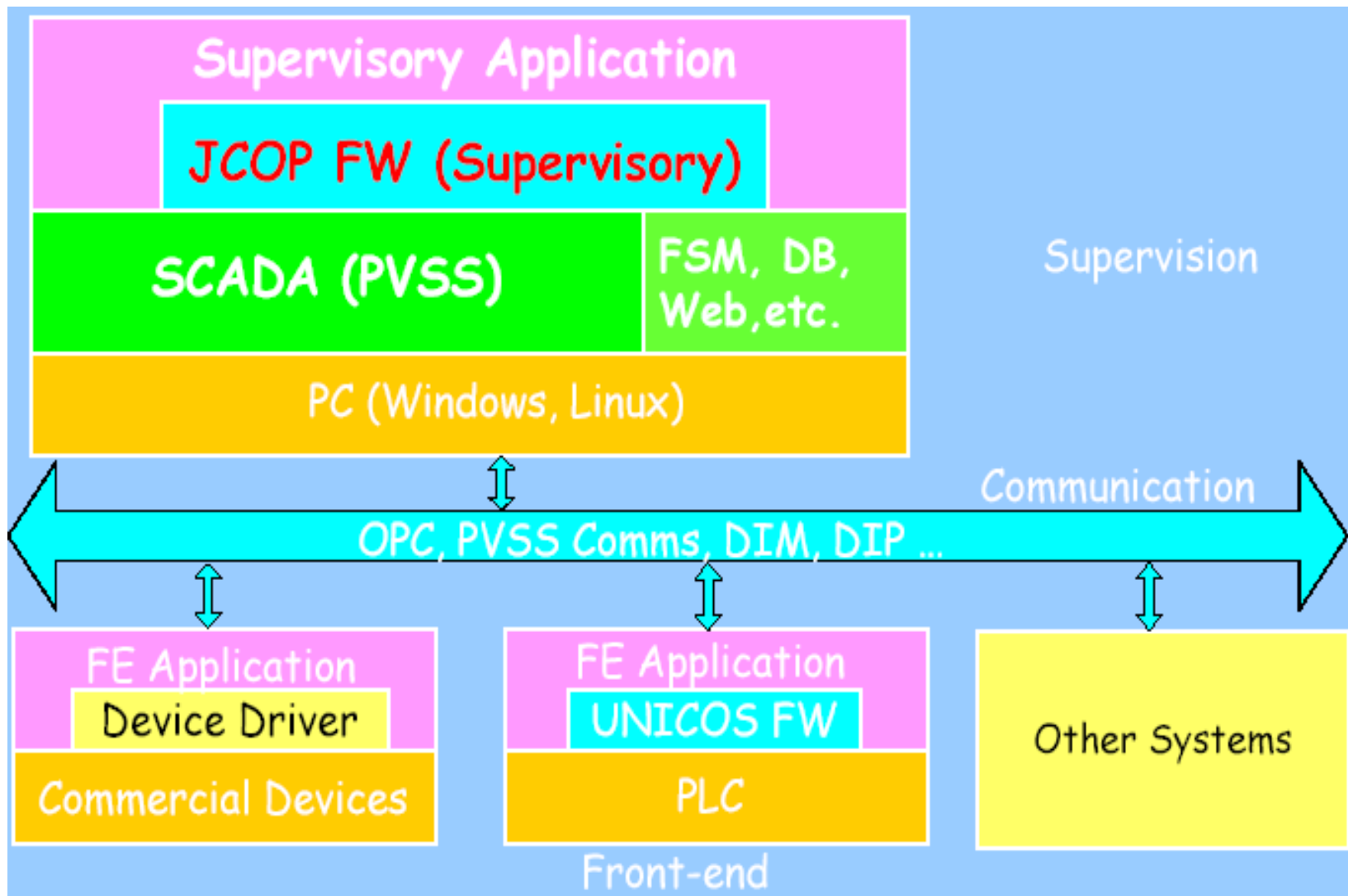
- Hierarchy based on pointers
 - Flexible concept
 - Misleading (FW and PVSS views differ)
 - Difficult to maintain coherency
- Distributed systems
- Framework tools not fully integrated
- Overall application development concept missing
- Perceived to be complex to set up
- Easy to get lost in the documentation



Redesign

- Request by Experiments in March/April 03
- Many discussions to define the scope
- Representatives from all experiments
- Difficult but constructive
 - Not always a “best approach”
 - Decisions by consensus
- Scope and schedule defined by June 03
- No need for backwards compatibility
- Experiments participated in development

Framework 2: Architecture





Framework 2: Features

- All tools integrated in DEN
- Standardized views/hierarchies
 - Hardware (DP name)
 - Logical (DP alias)
 - General for FSM and others (pointers)
- Set up further simplified for non experts
 - Defaults for parameters wherever possible
 - Try to do as much as possible at creation time
 - Devices contain everything necessary to connect to hardware



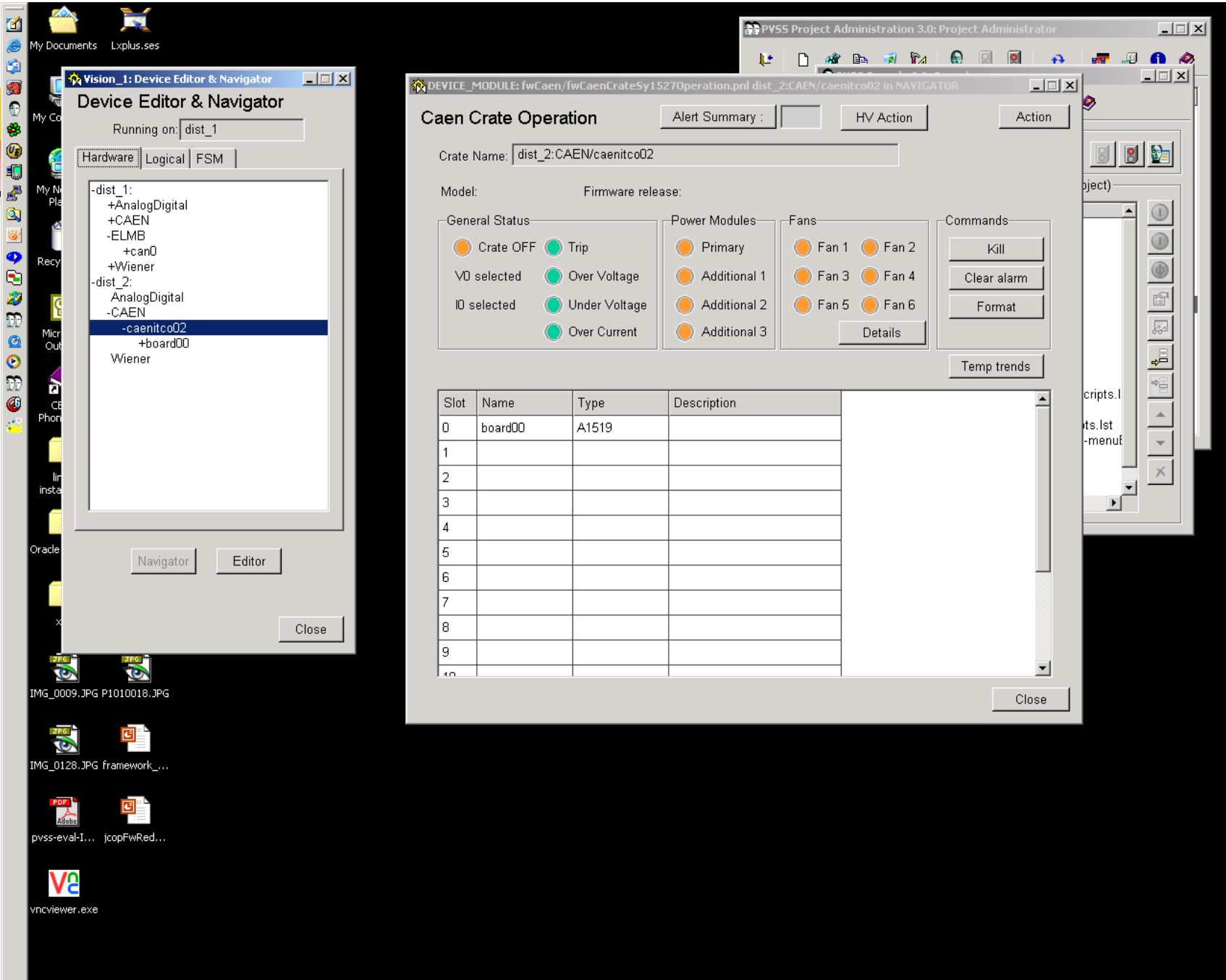
Framework 2: Features (II)

- Easy integration of new device types
 - Data driven device configuration
- Consolidated common behaviour
 - E.g. Device library
- Reorganization of files
- Upgrade to PVSS 3.0
 - Benefit from new features



FW 2: Distributed systems

- DEN allows to browse remote Hardware and Logical Views
- Other operations disabled (e.g. create, set up)
 - Chosen philosophy
 - Source of confusion
 - Current limitation of PVSS
- Only FSM tree can cross system boundary





Released Components

■ Core

- Device Editor Navigator
- FSM
 - LHCb development
- Device common facilities
- PVSS configs

■ Devices

- Analog Digital
- CAEN
 - Standard CERN hardware
- Wiener
 - Contains Crate and Power Supply
 - Commercial OPC server
- ELMB
 - ATLAS development



Released Components: Tools

- Installation
 - Independent installation of subcomponents
- Trending
 - Template mechanism
 - Distributed systems
 - Trend tree updated
- Configuration DB
 - Prototype based on Oracle
- Access Control
 - Only API



Development Process

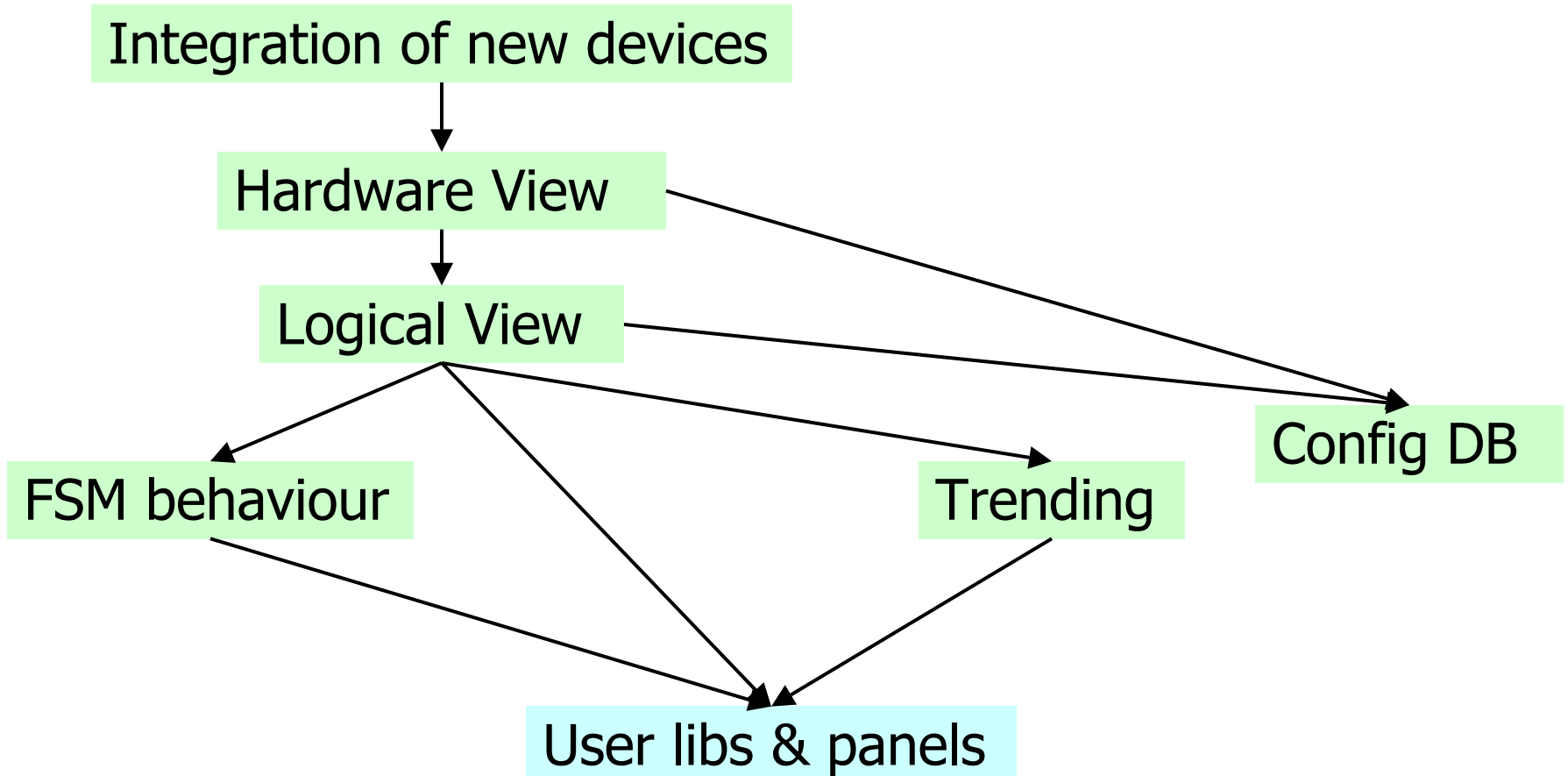
- Introduction of Savannah
 - LCG development portal
 - Used to keep track of improvements/bugs
 - User can follow status
 - Report for each release
 - Remedy still main interface with the user.
- Frequent releases
 - ~1-2 per month
- Documentation

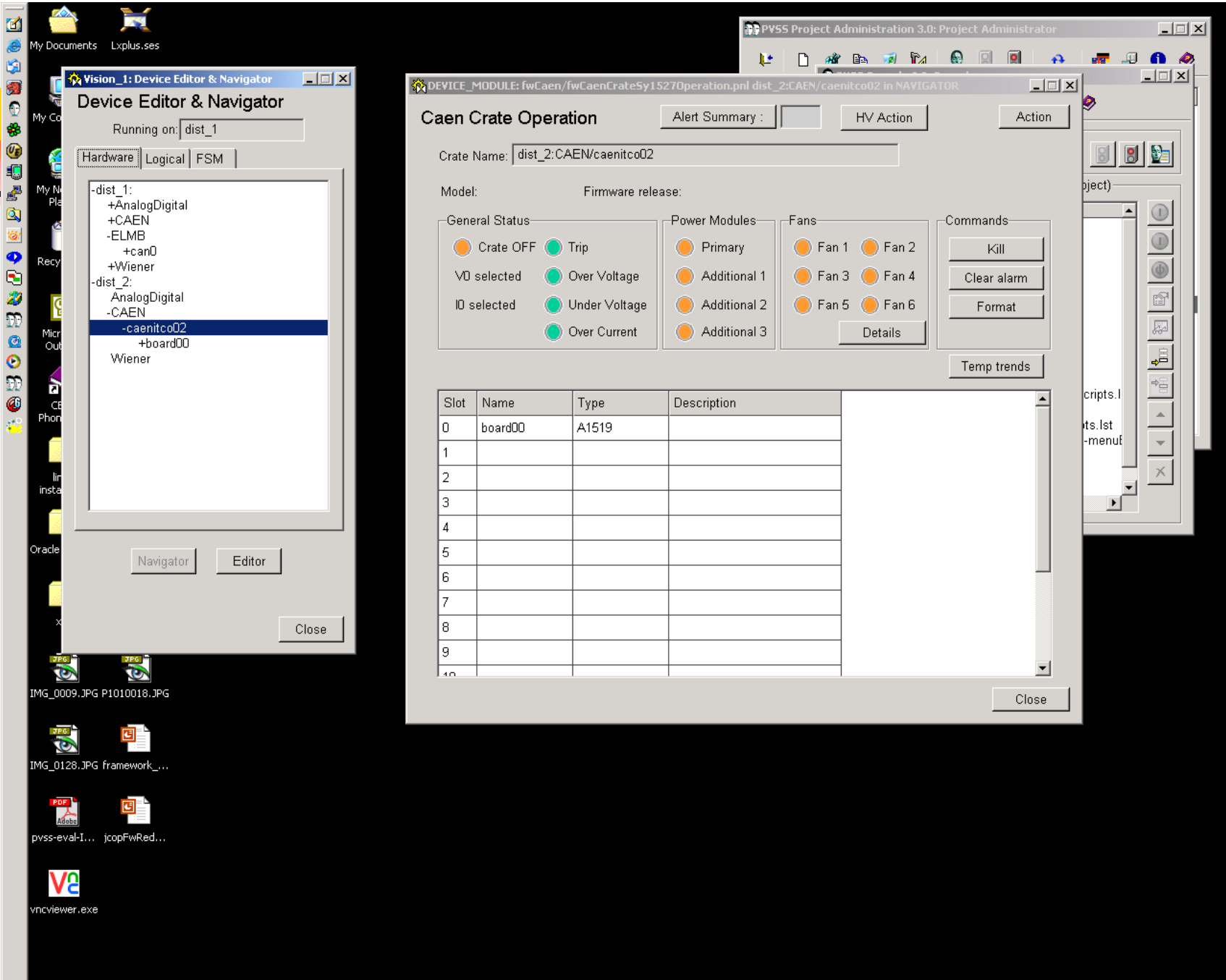


Application development (I)

1. Contact Experiment Central Team
 - Hardware to be used
 - Guidelines for development
 - Constraints to fit in DCS
2. Attend course
 - Standard hardware, OPC basics
 - PVSS & Framework
3. Best usage of tools
 - Experiment's central team experts
 - IT/CO experts
4. Follow up of problems
 - Itcontrols.support@cern.ch
 - Experiment contact person

Application development (II)







Current Work (I)

- ISEG
 - ALICE development
 - Prototype exists
- Rack control
 - CMS development just started
- PS/SPS machine data
 - Upgrade to new core
- Integration of Data Interchange Protocol (DIP)
 - Layer on top of DIM
 - PVSS driver/manager
 - First release June 04
- Configuration Database Tool
 - New version of DB schema
 - Performance measurements/optimizations



Current Work (II)

- Performance measurements of PVSS configs
 - Measured different alternatives
 - ETM discussion and code review
- Wizard to include new device types
- New CAEN hardware
 - Easy system
 - CMS MDT custom system
 - Control of Wiener PL500 (ALICE HMPID)
- Generic External Handler
 - Upgrade to PVSS 3.0



Current Work (III)

- Integration of XML parser
 - Evaluating DOM/SAX models
 - Gathering user requirements
- Upgrade to PVSS 3.0 final
 - Minor changes foreseen



Conclusions

- Redesign is one more step forward
 - Not a complete change in direction
 - Consensus among LHC experiments
 - Delivered in time
- Open issues
 - Distributed systems
 - Archiving to Oracle
 - Commercial OPC servers
- Crucial time to get subdetectors involved
 - Foresee a big effort on support
- Detailed presentations of FW components
 - FSM, Trending, Configuration DB