

# Concepts for continuous quality monitoring and station remote control



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## Continuous quality monitoring

What does it mean?

(external) observer



- ◆ Status of telescopes ?
- ◆ Is the telescope on source?
- ◆ How is the receiving quality?
- ◆ Environmental Information  
e.g.: temperatur

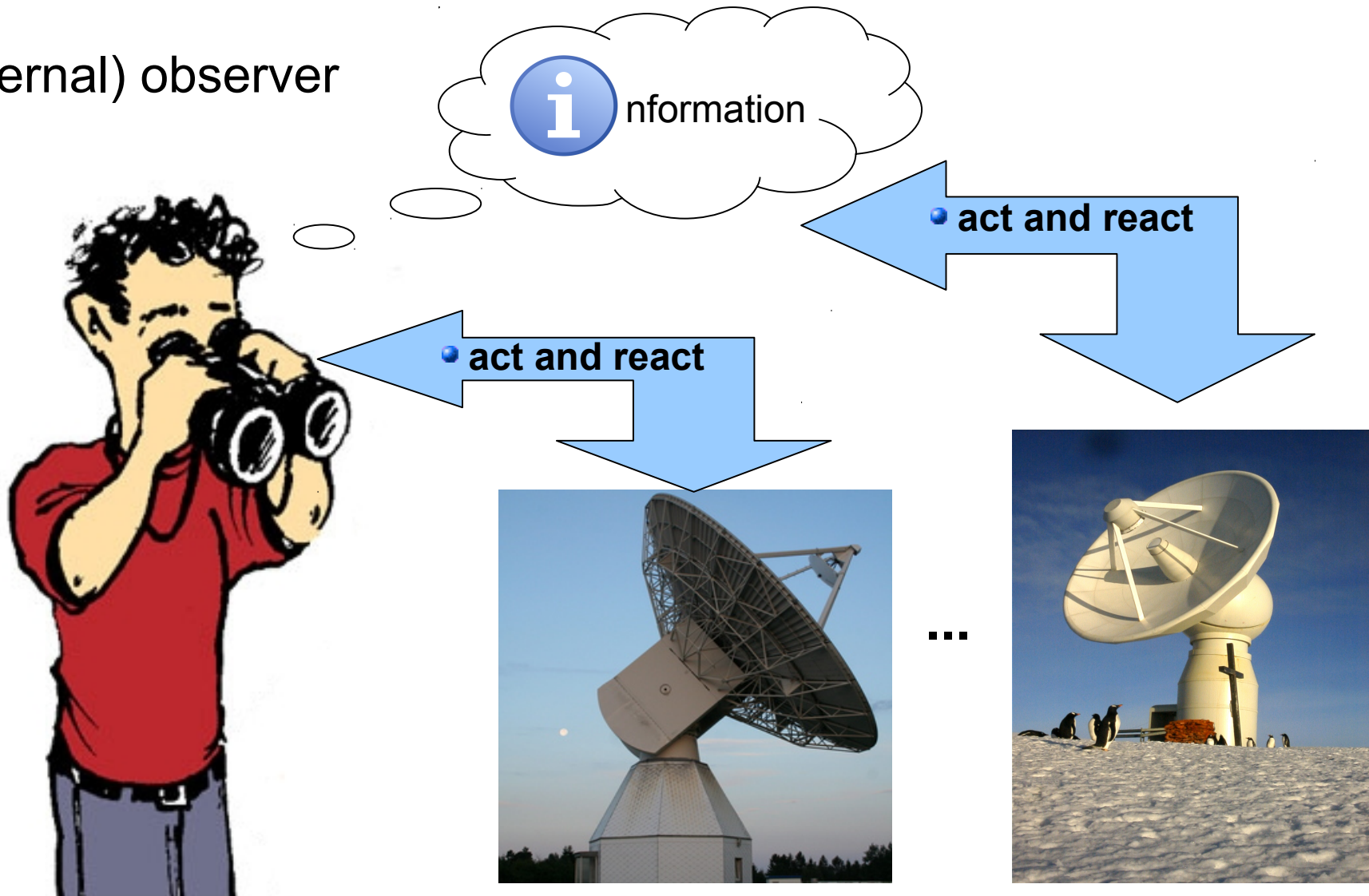


...



# Continuous quality monitoring and remote control

(external) observer



## Continuous quality monitoring and remote control

### Status before:

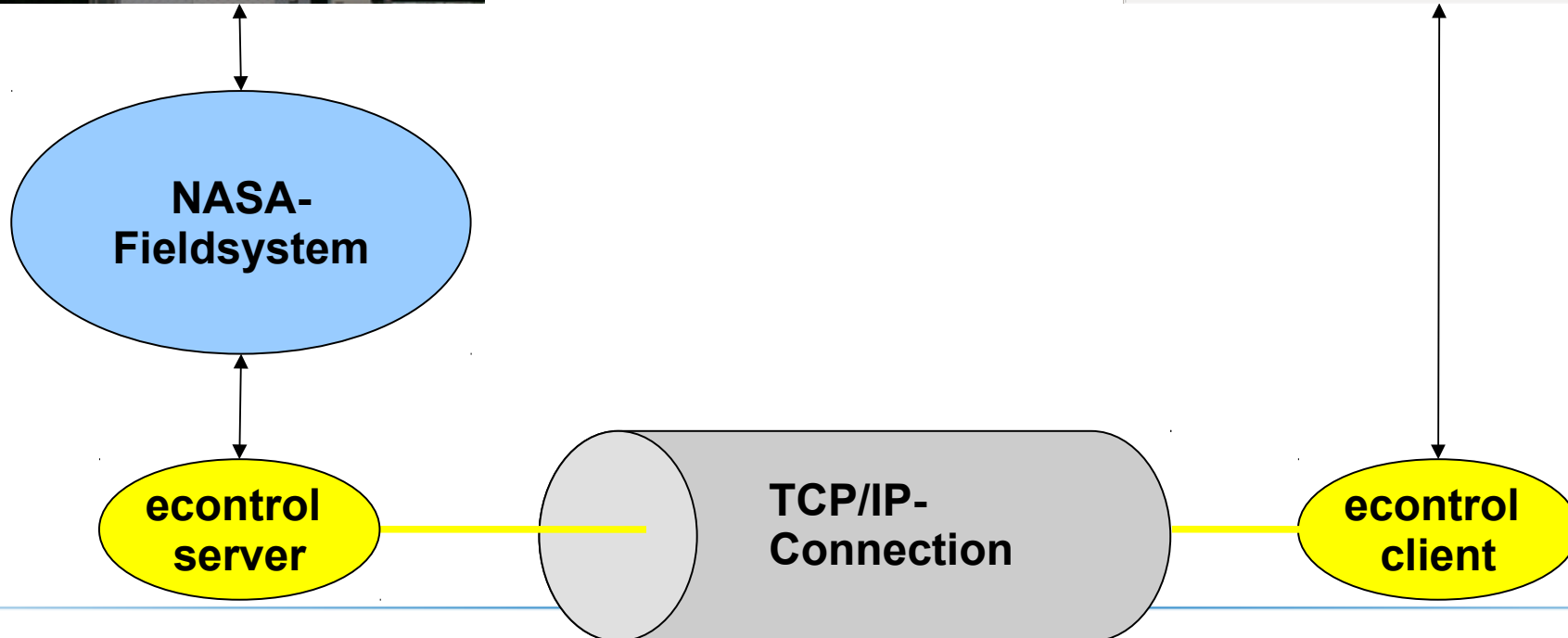
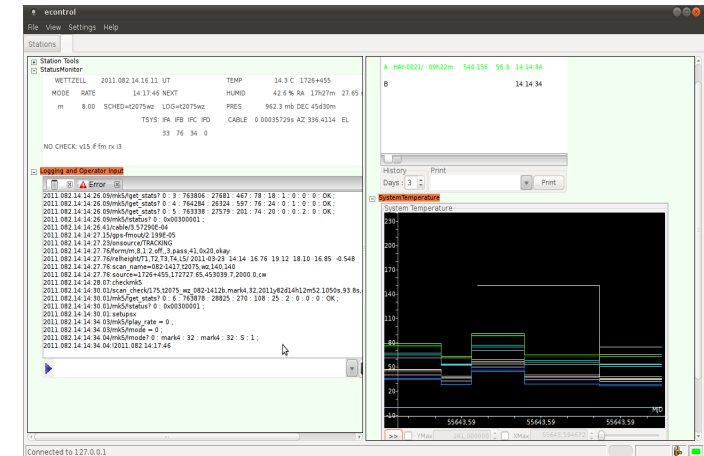
- No realtime access from correlators to read observation status (quality control through fringe checks/logfile monitoring etc.).
- No remote realtime error detection and reaction.
- No direct (read) access to fieldsystem parameters from remote.



- Extend the field system remote control software about with
  - Authentication
  - Authorization
  - User and role management
- Provide a concept for station monitoring to support remote control.

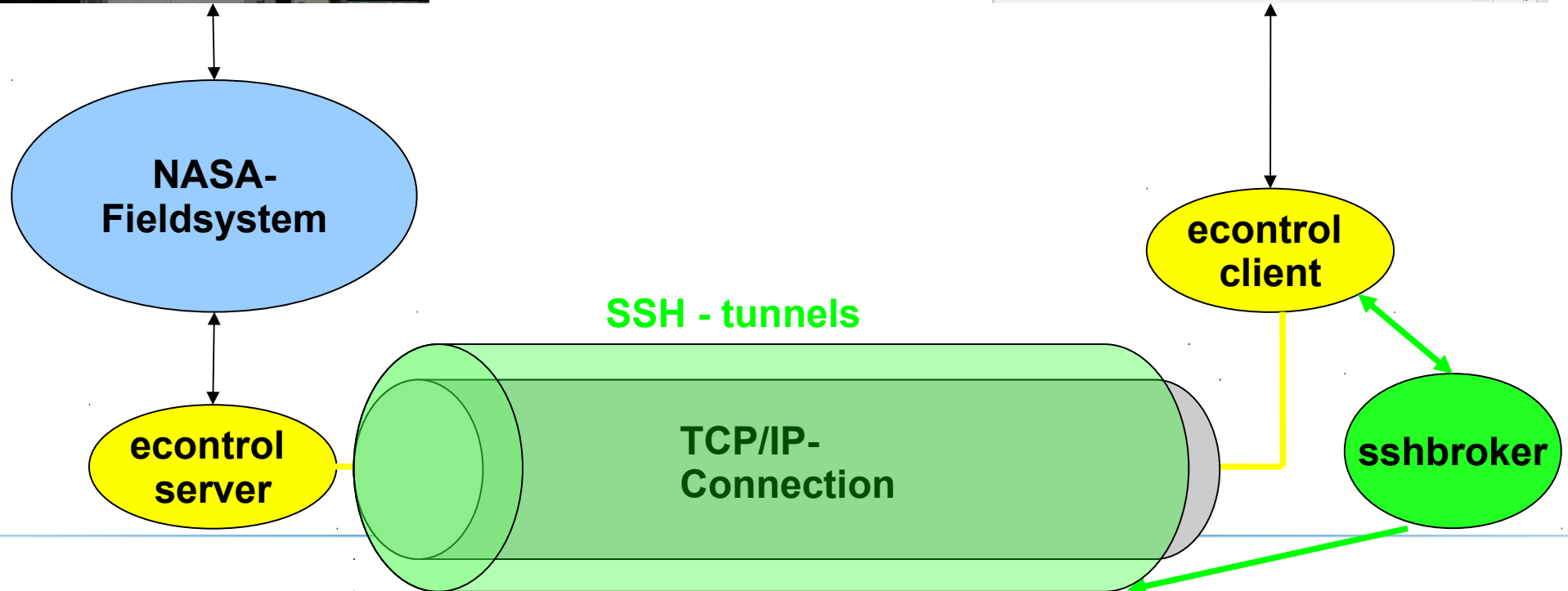
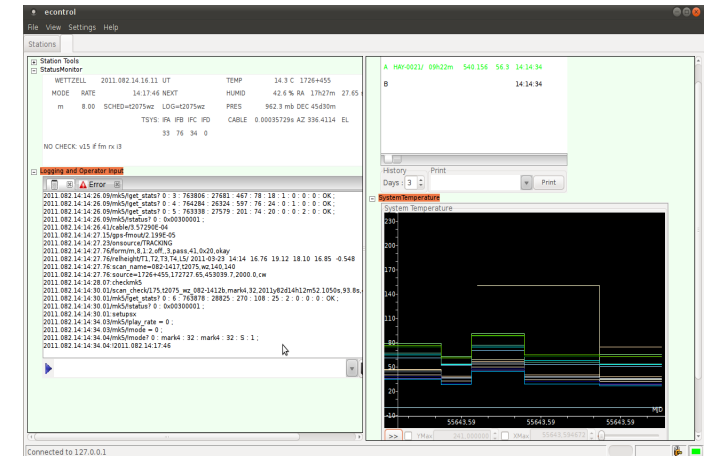
3 years

# The remote control prinziple (local area network)





# The remote control prinziple (internet)



## Software components

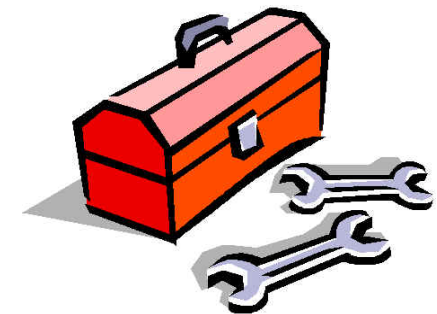
**econtrol  
server**

**econtrol  
client**

**sshbroker**



- based on idl2rpc.pl communication software generator
- remote procedure calls via TCP/IP networks
- establish ssh-connection (s)
- graphical user interface



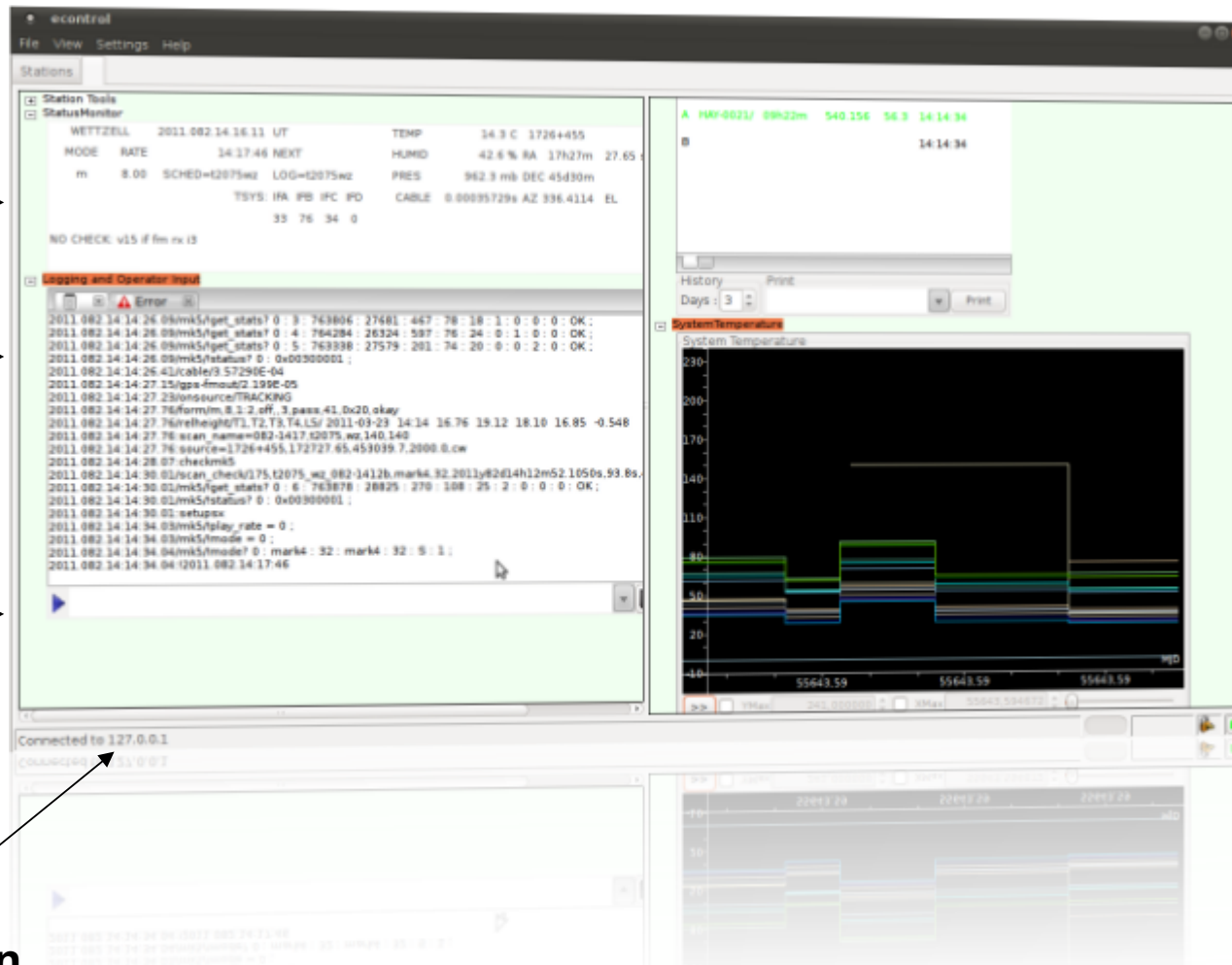
**Wettzell  
Software  
Toolbox**

## econtrol-software

Status  
monitor

Logging

User input

Connection  
informationMark 5  
capacitySystem  
temperatureConnection  
state



# econtrol-software (logging and operator input)

Permanent logfile filter

The screenshot displays two windows from the econtrol-software. The left window, titled 'Logging and Operator Input', shows a list of log entries with timestamps and technical data. The right window, also titled 'Logging and Operator Input', shows a list of error messages, including 'Tsys value for device i3 overflowed or was less than zero.' and 'Tsys value for device i2 overflowed or was less than zero.'.

Operator Input

Commandline history

Safe logfiles

Filter logfiles by userdefined tokens

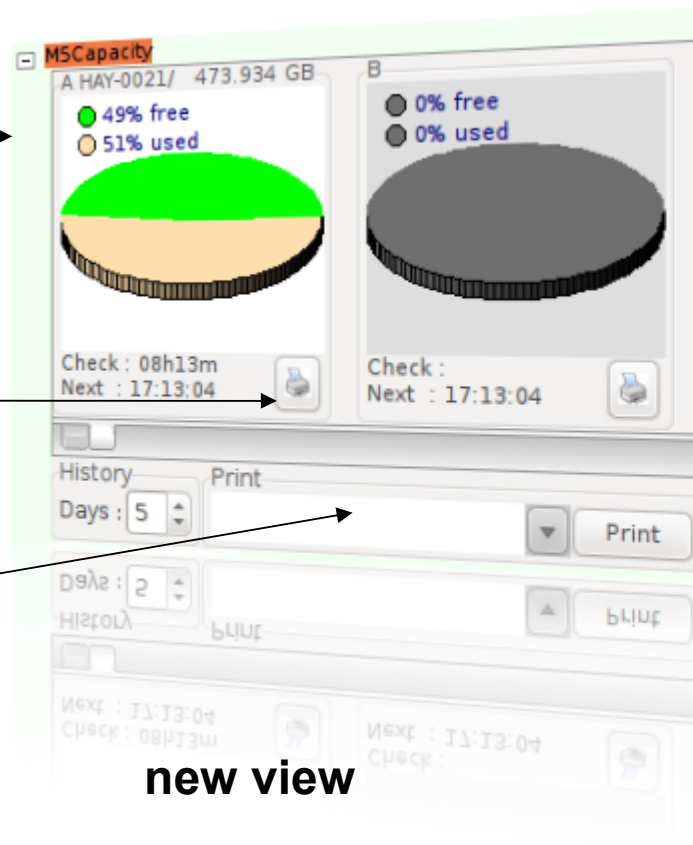
Alarm sound (on/off)

# econtrol-software (mark5 capacity)

Pie-charts →

Direct-  
labelprint →

Label  
selection →



	VSN	Time	GB	%	Check UT
A	HAY-0021/	08h13m	473.934	49.4	17:13:04
B					17:13:04

History Days: 5 Print

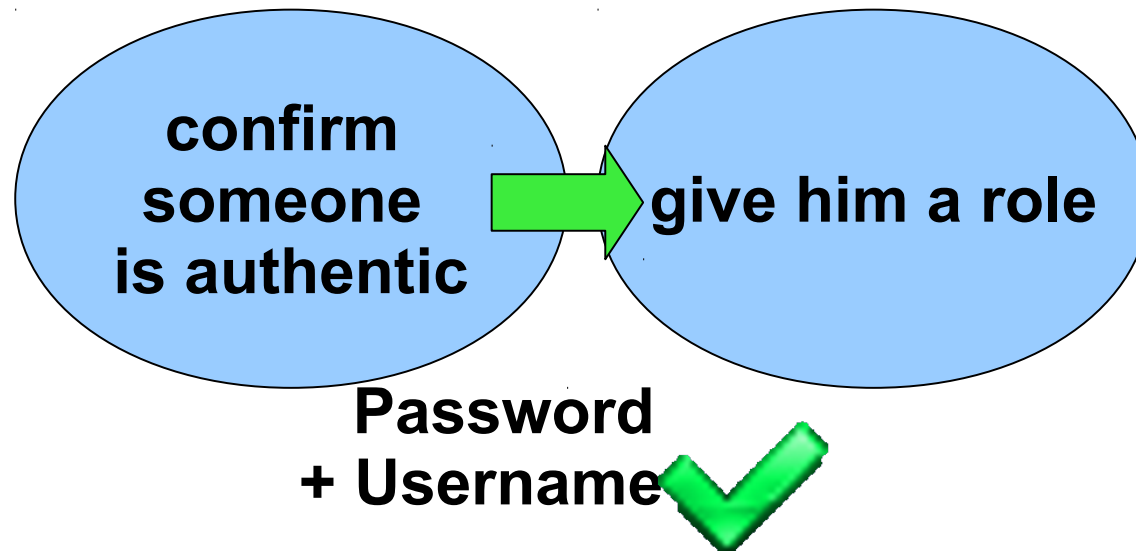
Days: 2 Print

History Days: 2 Print

**classic view**

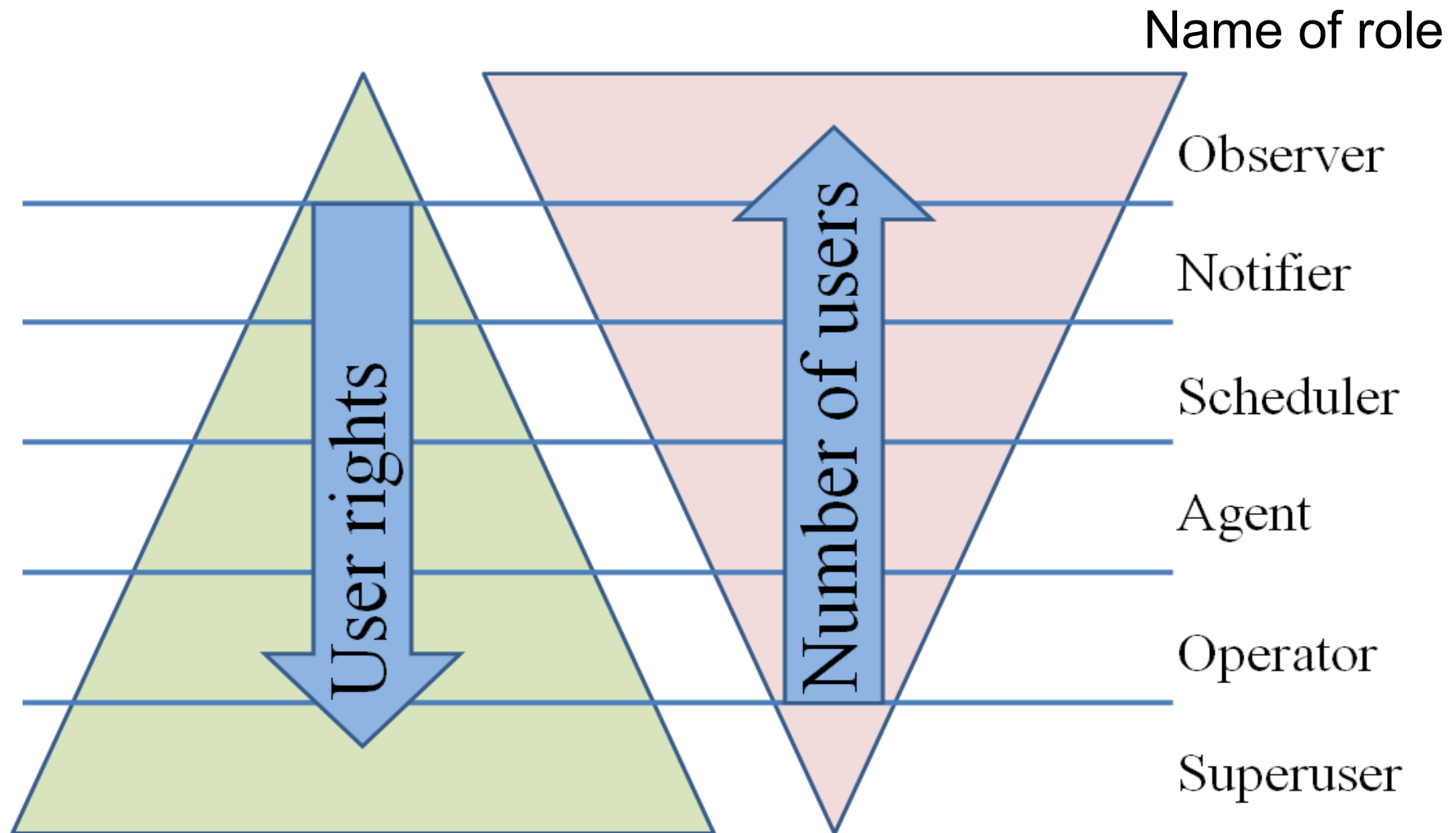
## Authentication and authorization

- This requires an authentication and authorization mechanism.



- Each station manages dedicated access rights for every individual client.
- Configure fine grained access levels, e.g:
  - allow monitoring only
  - allow/deny changing source coordinates during session
  - ...

## Role management



## System monitoring

- Collect data  
from several sensors at the telescope and site
- Visualize  
the data with graphs and diagrams
- Archive  
the collected data
- ( React  
according to predefined rules )



- Get a better knowledge about the system behavior during
1. Session
  2. Post processing

# System monitoring



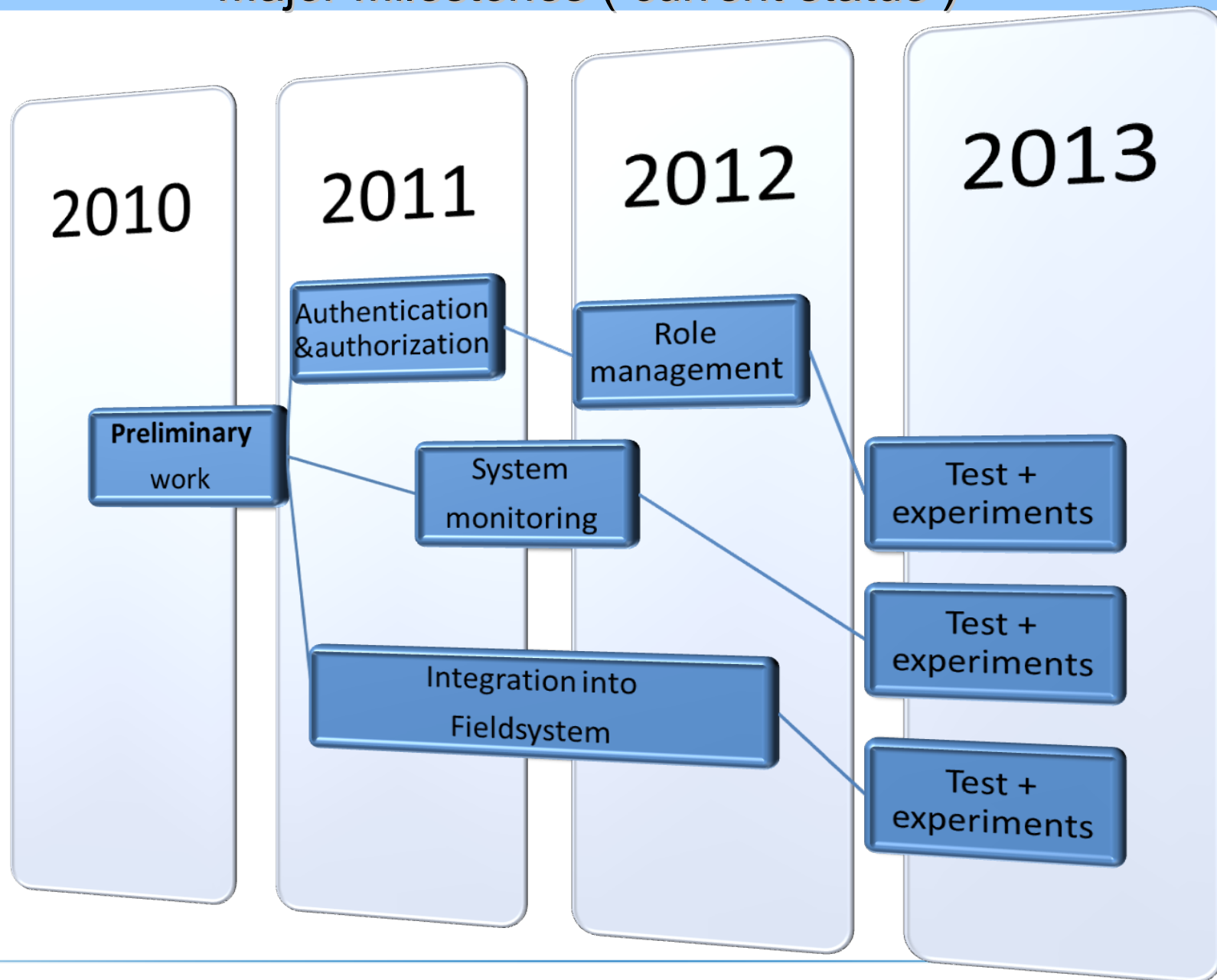
**Safety-system display**



**Windsensor display**



## Major Milestones ( current status )





Thank you!