



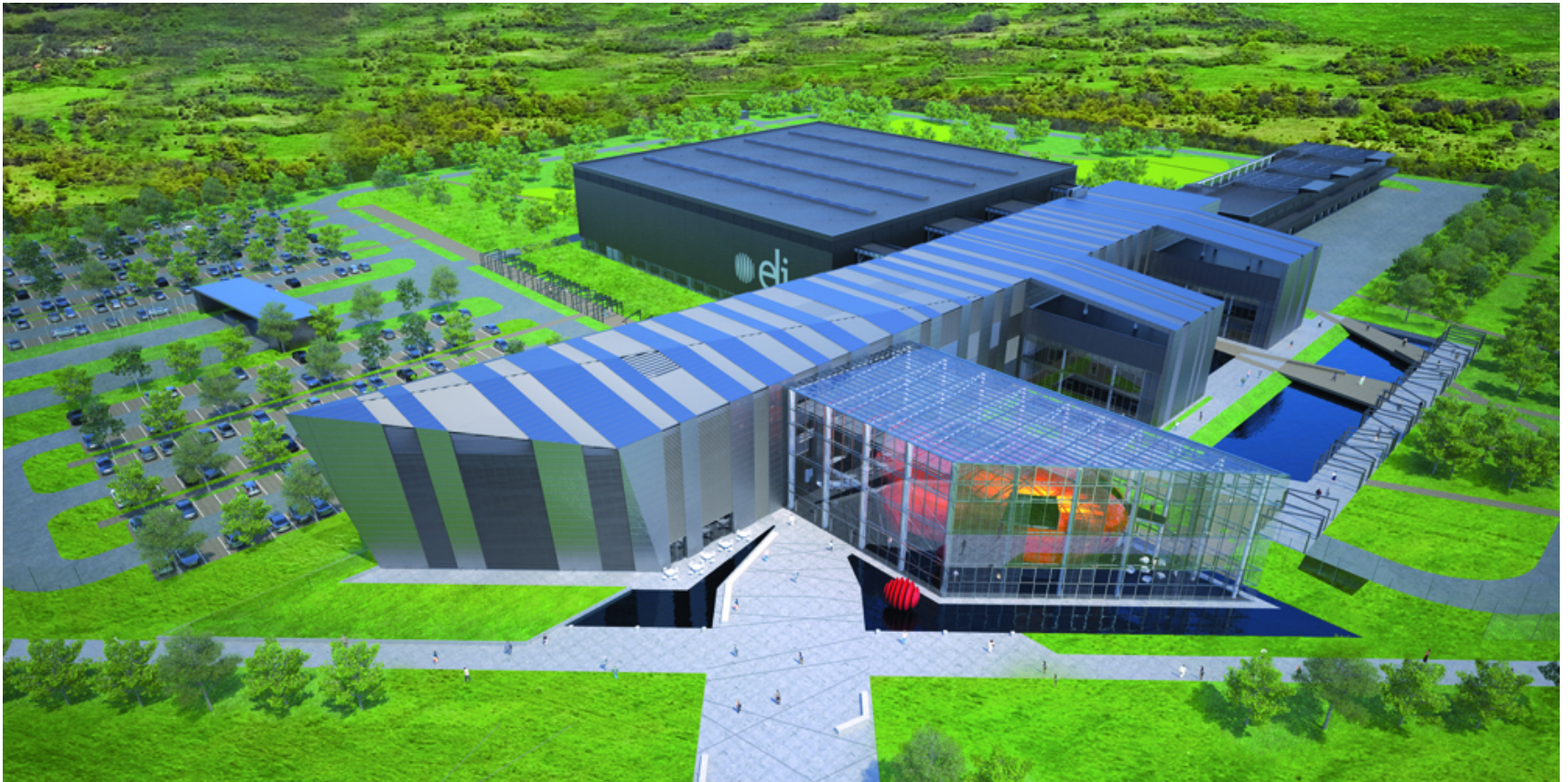
# Control Systems at ELI-ALPS

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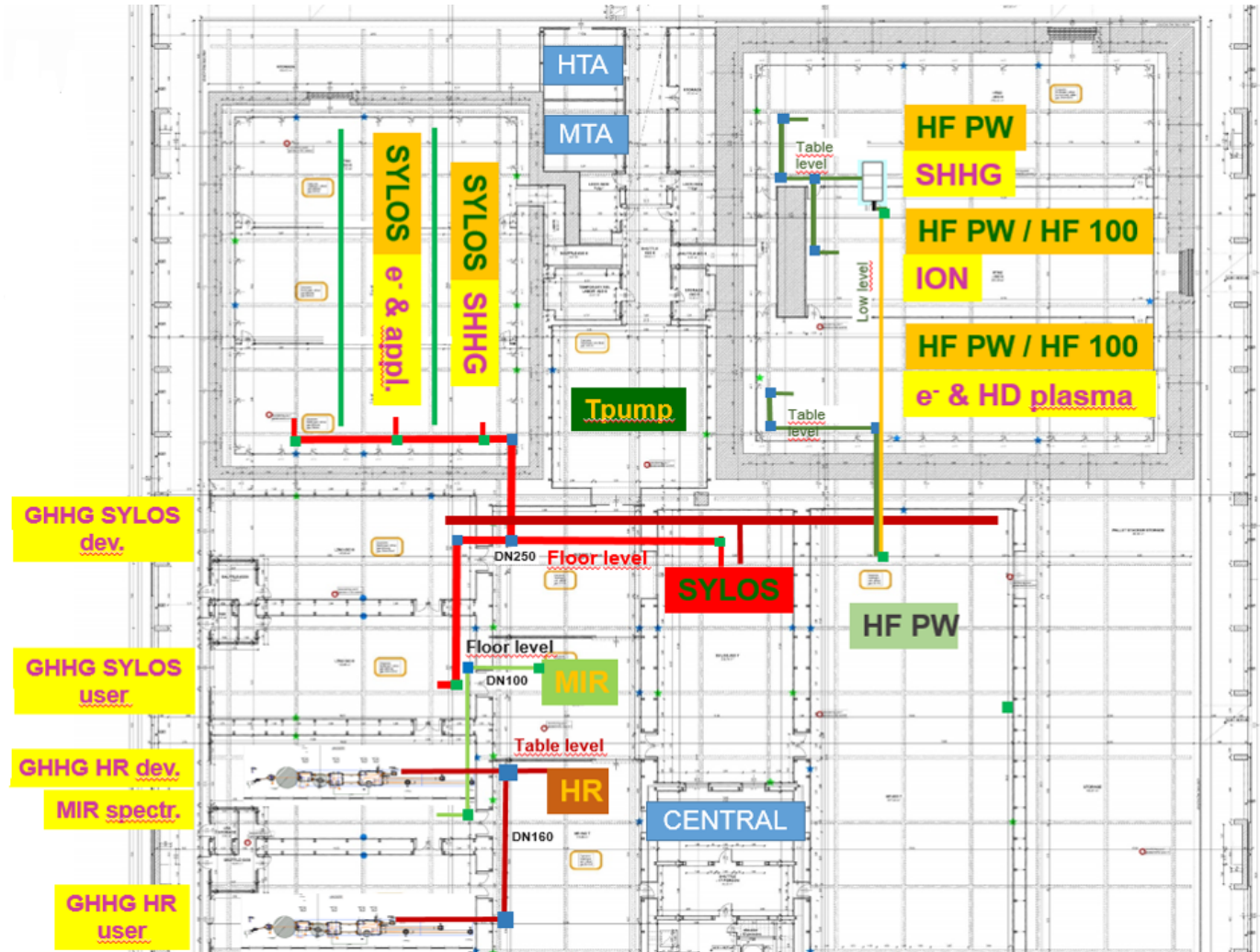
- Introduction
  - Site, construction status
  - Scientific Engineering Division
  - Research technology systems
  - Control systems structure
- TANGO
  - Development
  - Issues
  - Summary



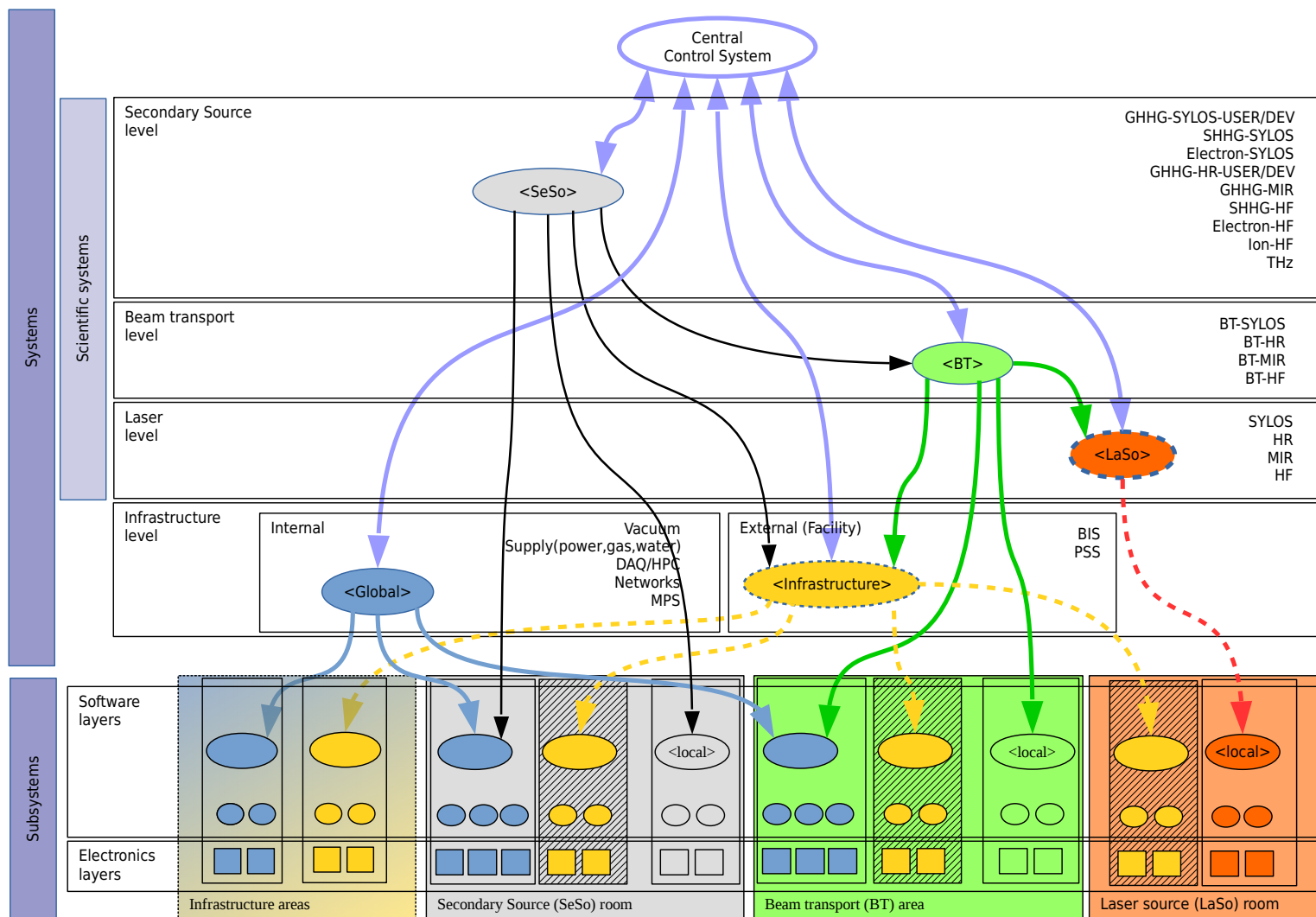
## Groups

- Infrastructure Liaison
- Mechanical Engineering
- Electrical Engineering
- Laser and Radiation Safety
- Integrated Control Systems





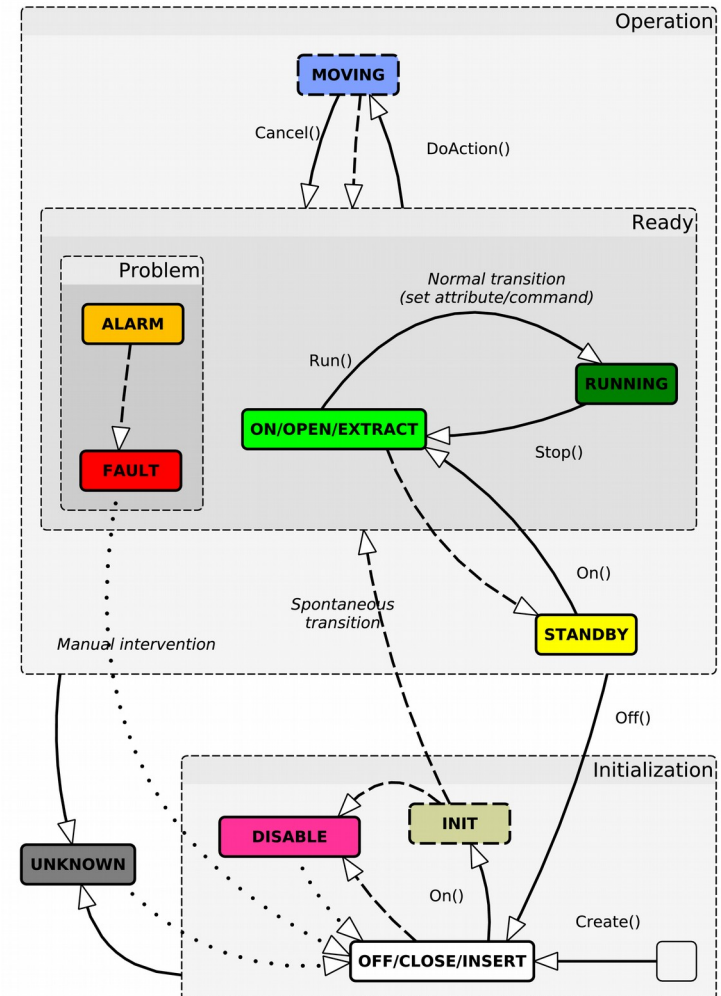
# Control Systems Structure



## Site standards/concepts

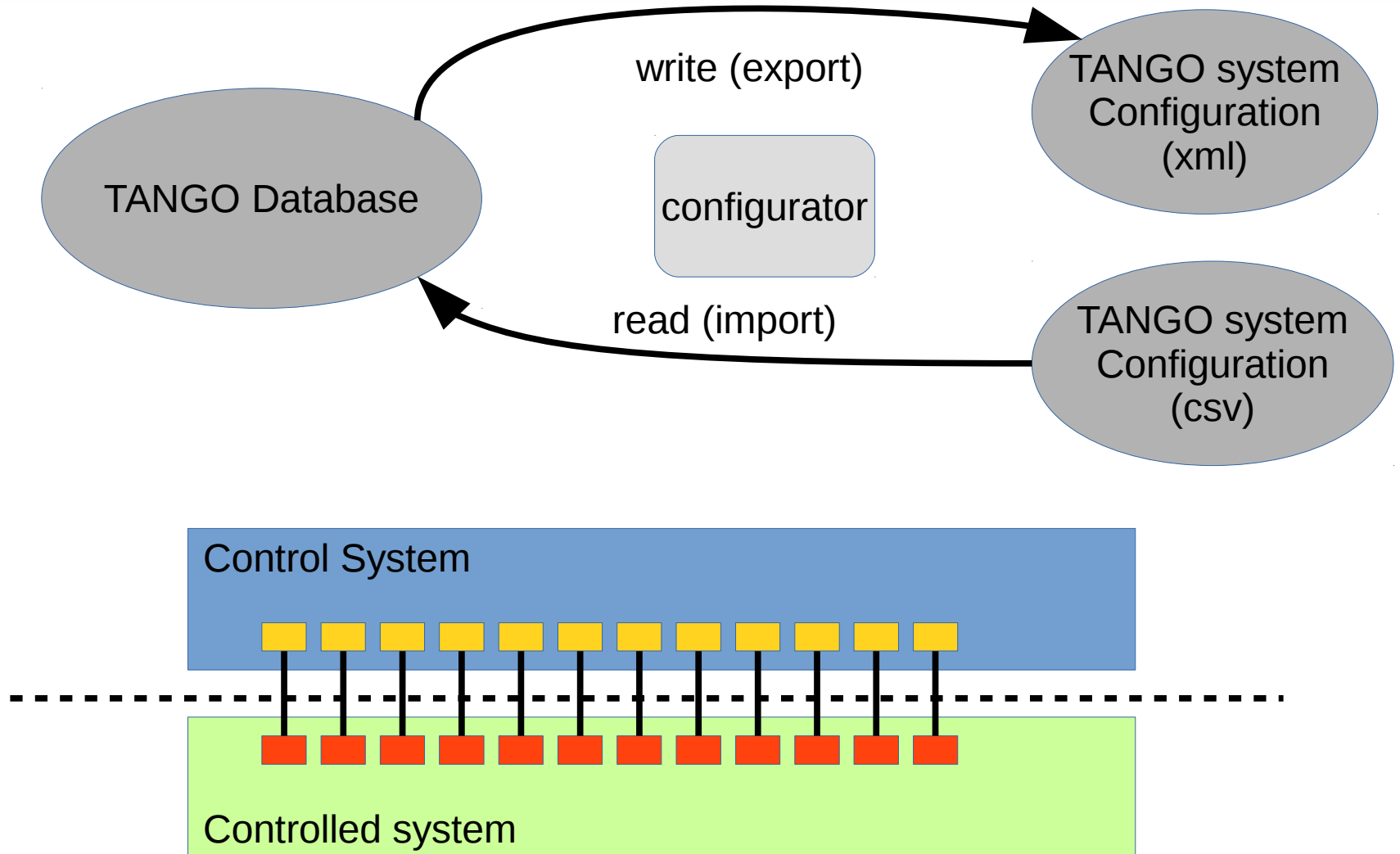
- ELIALPSDevice
  - TANGO state handling
  - Logging
- System configuration
- Simulation concept
- Data acquisition/collection
- Services/gateways

- TANGO state handling
- Logging
  - Important to analyse the behaviour of distributed systems
  - Utilized syslog for
    - defining targets
    - collecting logs accumulated at multiple hosts



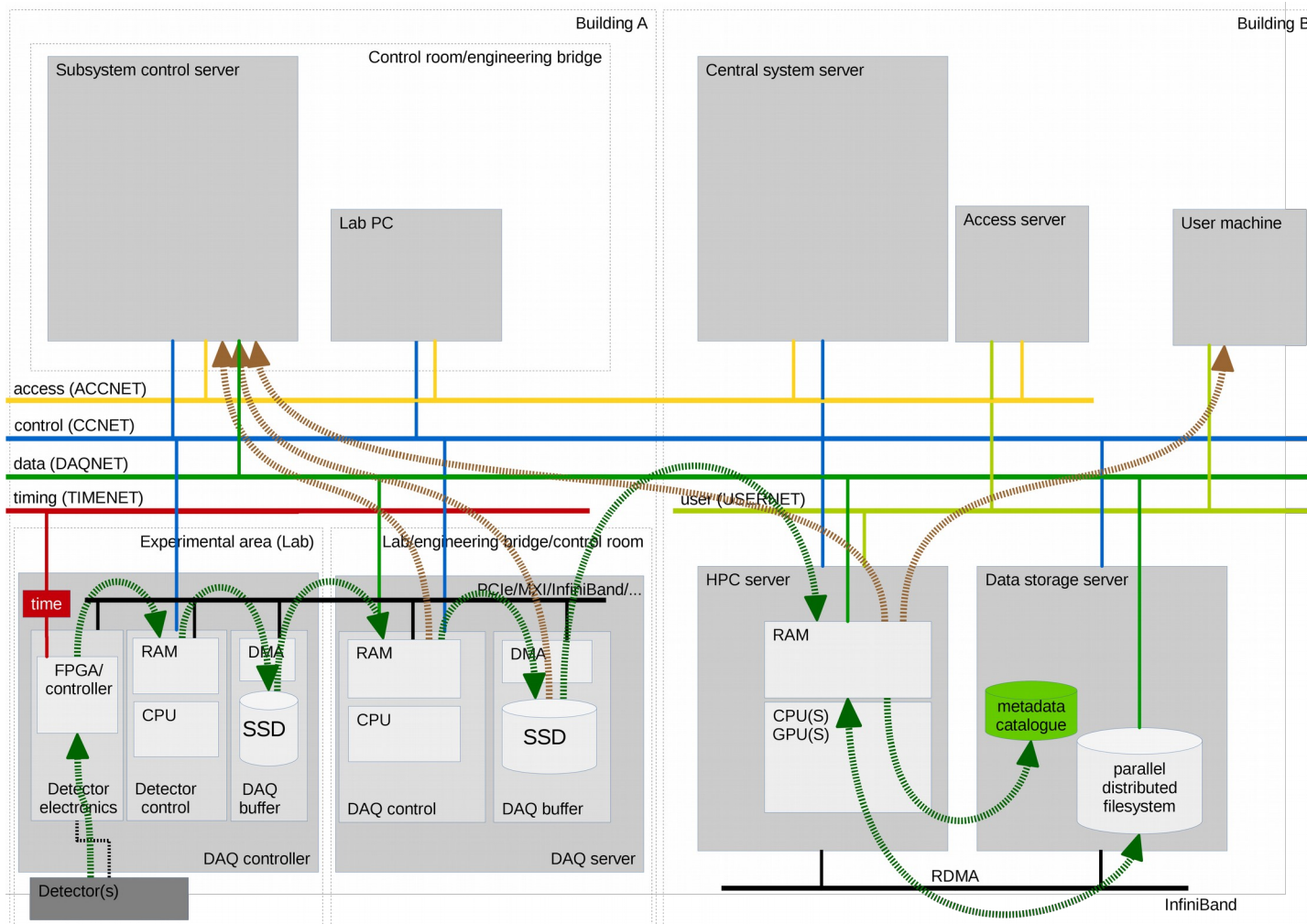


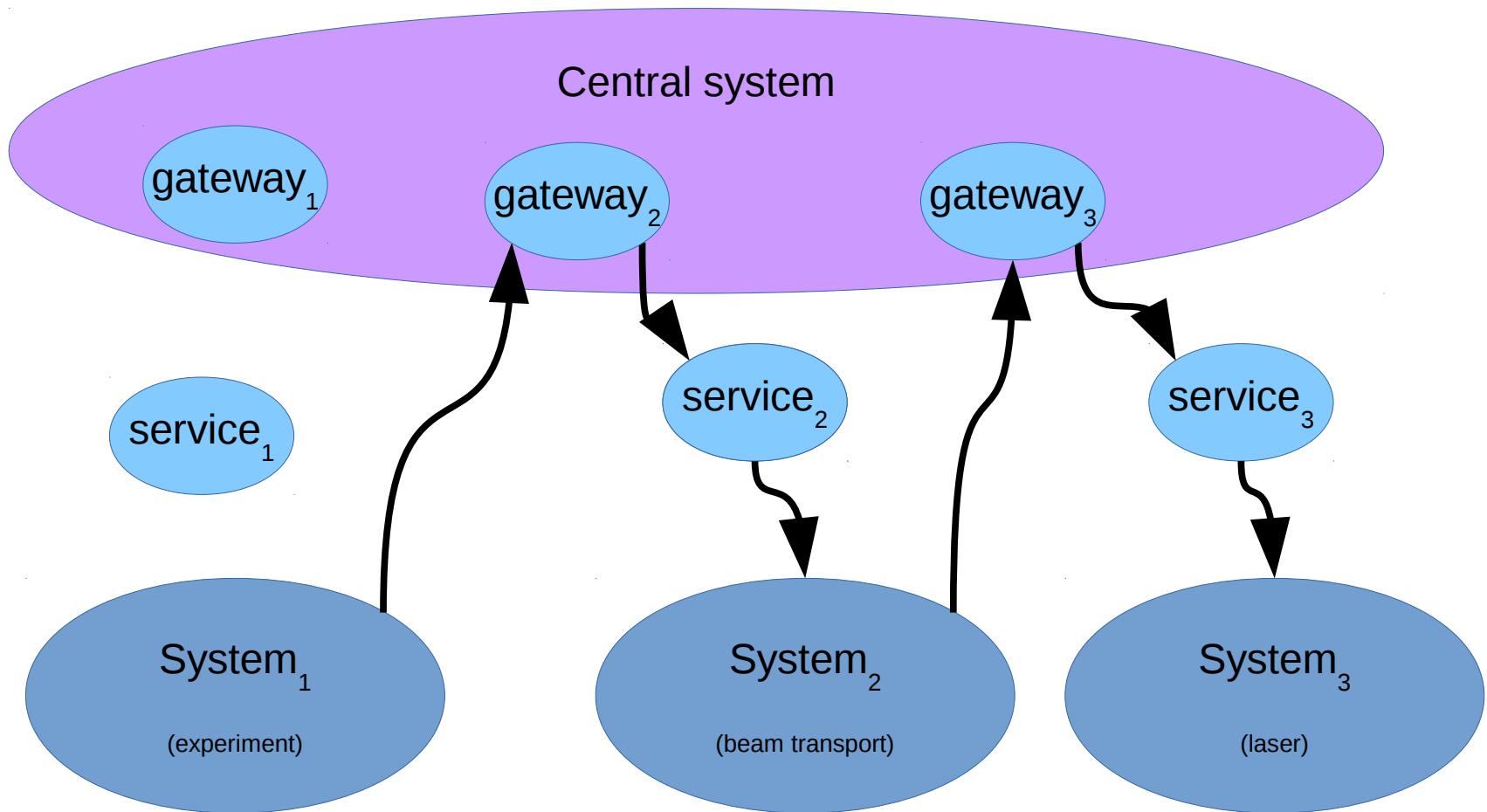
# Configuration/Simulation



- Replaceable control system environment
  - For development
  - For (automated) testing
- Simulation levels
  - Interface (no functionality)
  - Basic functionality (main state changes)
  - Basic behaviour (disregarding physics)
  - ...
  - Realistic behaviour (too expensive)

# Data acquisition/collection







- Releases, versions
- Feature set, documentation
- Bugs / stability
- Availability of stock devices
- (Lack of) middleware support
  - TANGO device – TANGO client
- TANGO device – hardware connection
  - Polling vs. event driven control

- TANGO is transitioning from a small & closed community to an open & large community
- Things that work in the small do not necessarily work in the large
  - New approach is needed
- Well defined product
  - Maintained, supported versions (not only the latest one)
  - Packages/components that
    - have a well-defined relationship to the TANGO core
    - can be used off-the-shelf
  - Documentation that can be used without expert support
  - ...



# THANK YOU FOR YOUR ATTENTION!

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