



Workshop

Device-related functions

Christian Hillbricht

- Introduction
- Device-related usage scenarios
- MASP UI and Device Control - similarities and differences
- Candidates for device-related apps

Device related usage scenarios

- Chain execution has been stopped. Standard operations didn't help. Perform structured error analyses —> by executing matching tasks in Sequencer
- Monitor values (set-actual-comparison and similar)

- What are the scenarios for dealing with statuses of devices?
- What are the scenarios for dealing with position statuses of devices?

- Find more!
- What are problematic situations or situations where something can be improved / optimized?
- What could help in this situation?
- Restrict to device-related situations!

Device Control / MASP UI

Similarities / Differences

Device Control

Context: [SIS18_FAST_HHD_20181216_134344_C1](#)
 Origin → destination: TK → HHD ¹⁰⁷AG⁴⁵⁺ 11.0MeV/u

Device table

Selection mode	Device type	Device Grid																					
Measure	Fast clos. valve																						
Drive	Gate valve	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘	⌘		⌘										⌘	⌘
No selection	---																						
Drive	Profile grid																						
Drive	Slit																						
Drive	Pneumatic actuator																						
No selection	---																						
Drive	Ionisation chamber																						
Drive	sec.electr.monitor																						

Device Selection
 Device status: All Acc.Section: All Ring Devices: All

Device type:

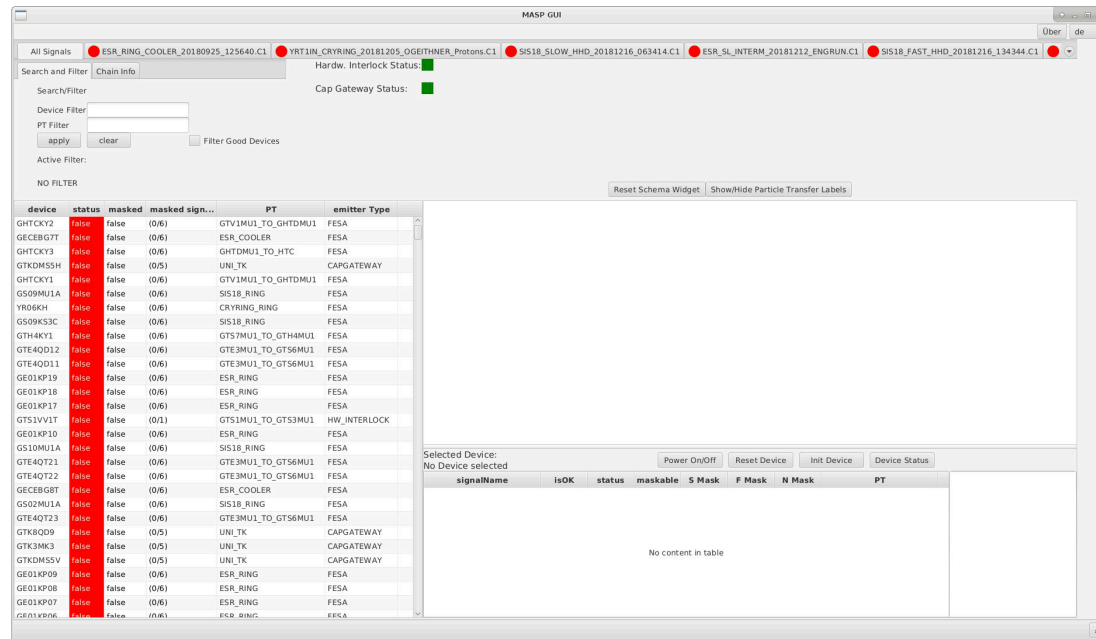
Device Legend:

- GTK7MUS
- GTK7BC1L
- GTK9MB1V
- GS12MU3I
- GTK9DT_S
- GS12ME1I
- GS00BE_F
- GS01MU1A
- GS06MU4
- GS01VV1T
- GS01DT_ML
- GS01BO1EH
- GS01KM3QS
- GS01MB3
- GS01KS1C
- GS01QS1F
- GS01KM2DV
- GS01QS2D
- GS01KS3C
- GS02MU1A
- GS02BE1

Select All Select nothing 0 from 200 devices selected On Off Reset Status Distance

- Table with beam diagnostic devices
 - Position status for each device
 - Functions for movable devices
- List of all devices
 - Device status
 - List filters
 - Basic device functions
 - Detailed status
 - Distance

MASP UI (Working title)



- MASP = Master Accelerator Status Processor
- Displays devices which prevent chain execution
- Operations like Reset or Init for solving a status problem
- MASP is now armed

Product Owner: Dr. P. Schütt
Developer: M. Müller

- List of devices
 - Status
 - Masking status
 - List filters
 - Basic device functions

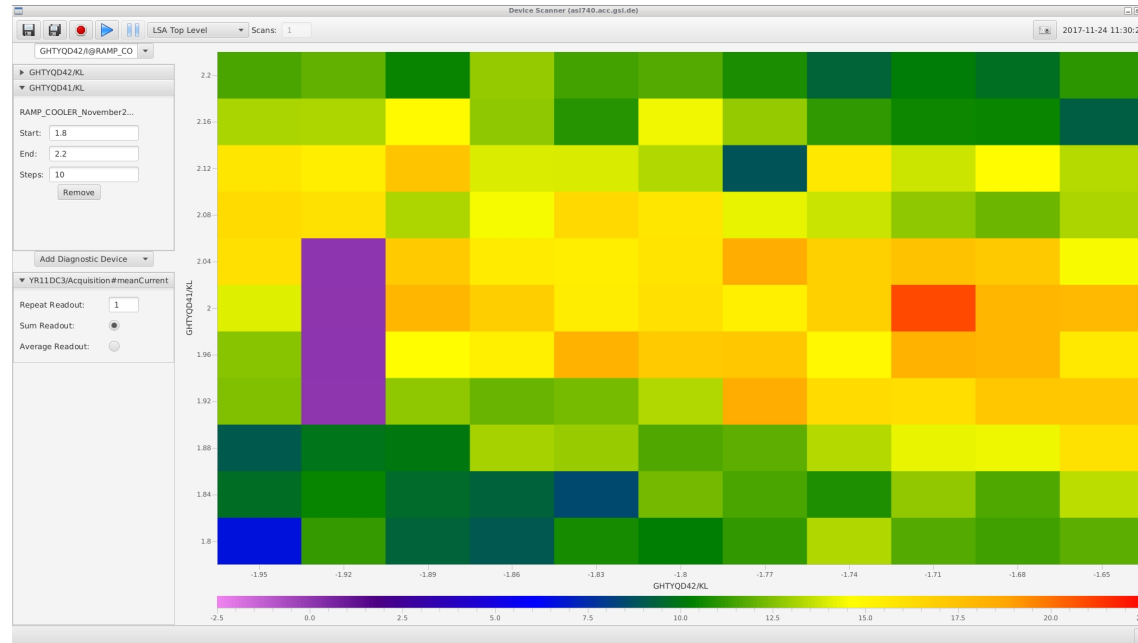
- Both apps display a display status
- Both apps display all devices in a chain
- Both apps display the detailed status
- Both apps provide filter mechanisms

- MASP UI handles more than just the physical devices of a chain
- MASP UI has an ,Init‘ function
- MASP UI considers maskings
- Device Control can handle issues with device positions
- Device Control has a distance between devices function

- Device order
 - Device Control: Always sorted ascending by beam line order
 - MASP UI: Sort criteria and order can be changed
- List orientation: Horizontal / vertical
- Device Control makes use of device type pictograms
- MASP UI displays status visually for each particle transfer

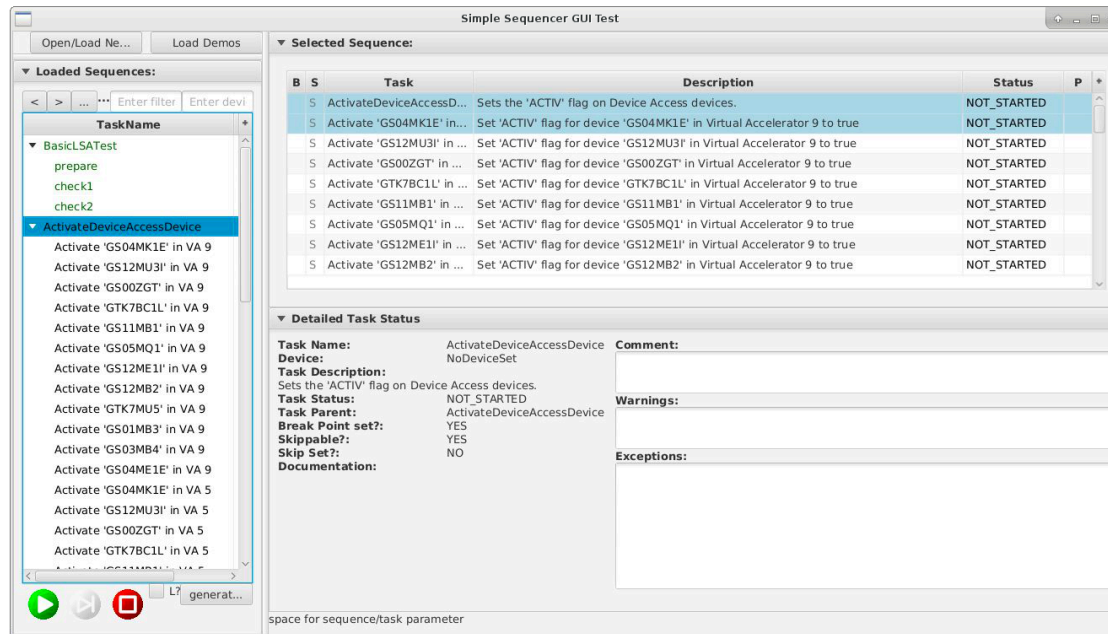
- Filters:
 - Device Control:
 - 1:n selection: Device status
 - 1:n selection: Section
 - 1:n selection: Ring device types
 - m:n selection: Device types
 - MASP UI:
 - Full text search: Device name
 - Full text search: Particle transfer
 - m:n selection: Display okay devices

Candidates for device-related apps



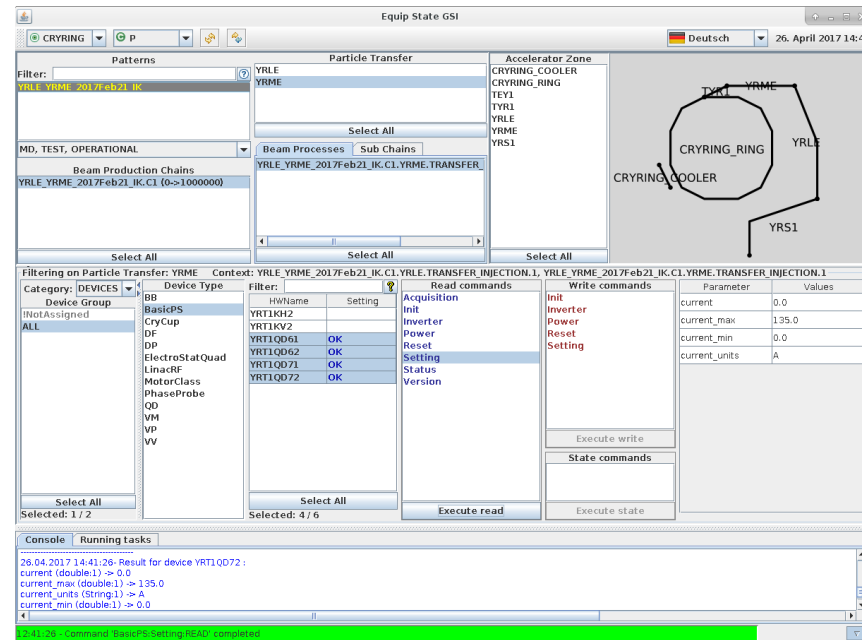
- Passing-through of parameters
- Selectable diagnose device
- Different scan algorithms: Brute-force or Genetical

Developer: W. Geithner

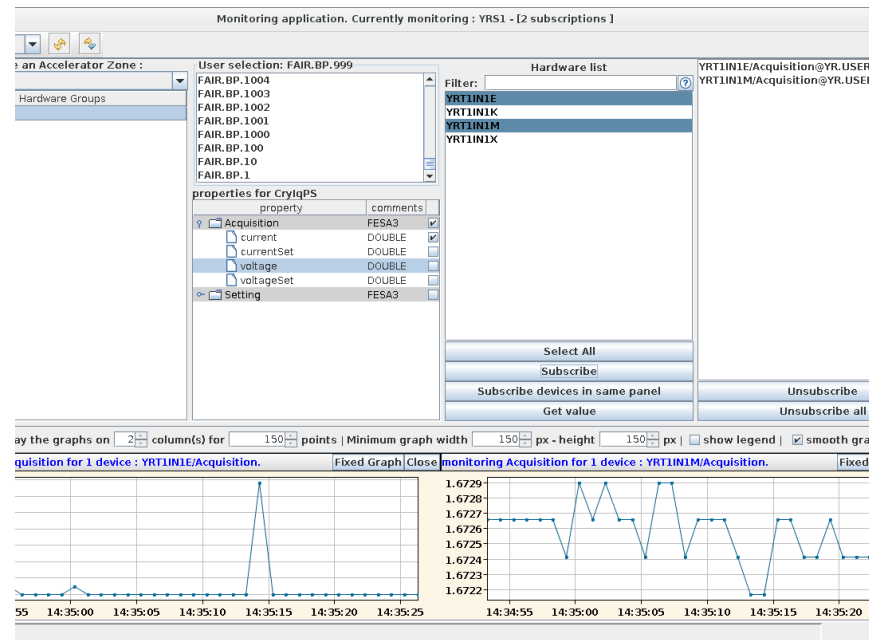


- Execute a bunch of tasks, can be combined to larger sub-sequences
- Saves a lot of manual work
- Helps with diagnosis and to clearly identify problems

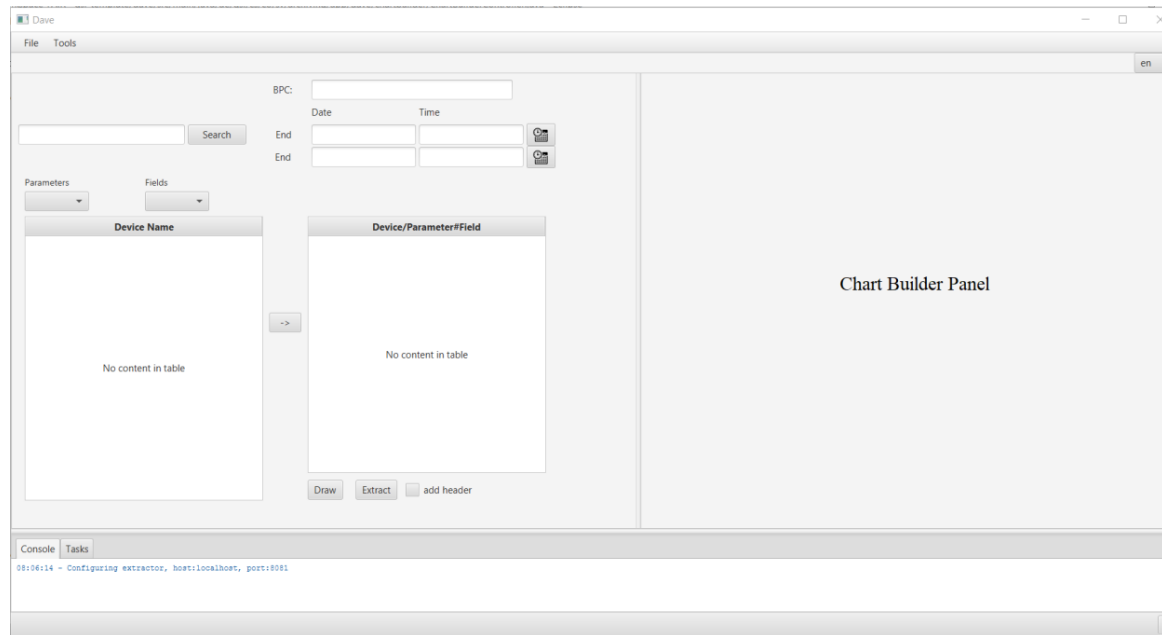
Developer: R. Steinhagen



- EquipState: Set/Read all properties of the devices (comparable to FESA Explorer, bit less „low-level“)
- Used for Dry Runs, Commissioning, Error diagnosis



- Subscribe to all properties of the devices
- Will be replaced in the future by the Archiving System GUI (DAVE)



- Select device, parameter and field
- Filter by chain or timespan
- Display as chart or export to file

Product Owner: Peter Owner
Developer: Dave Developer