

Taranta Project Update and Current Status

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ICALEPCS Software User Interfaces & User Experience

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TARANTA
TANGO ON WEB

MAX IV

TANGO

SKAO

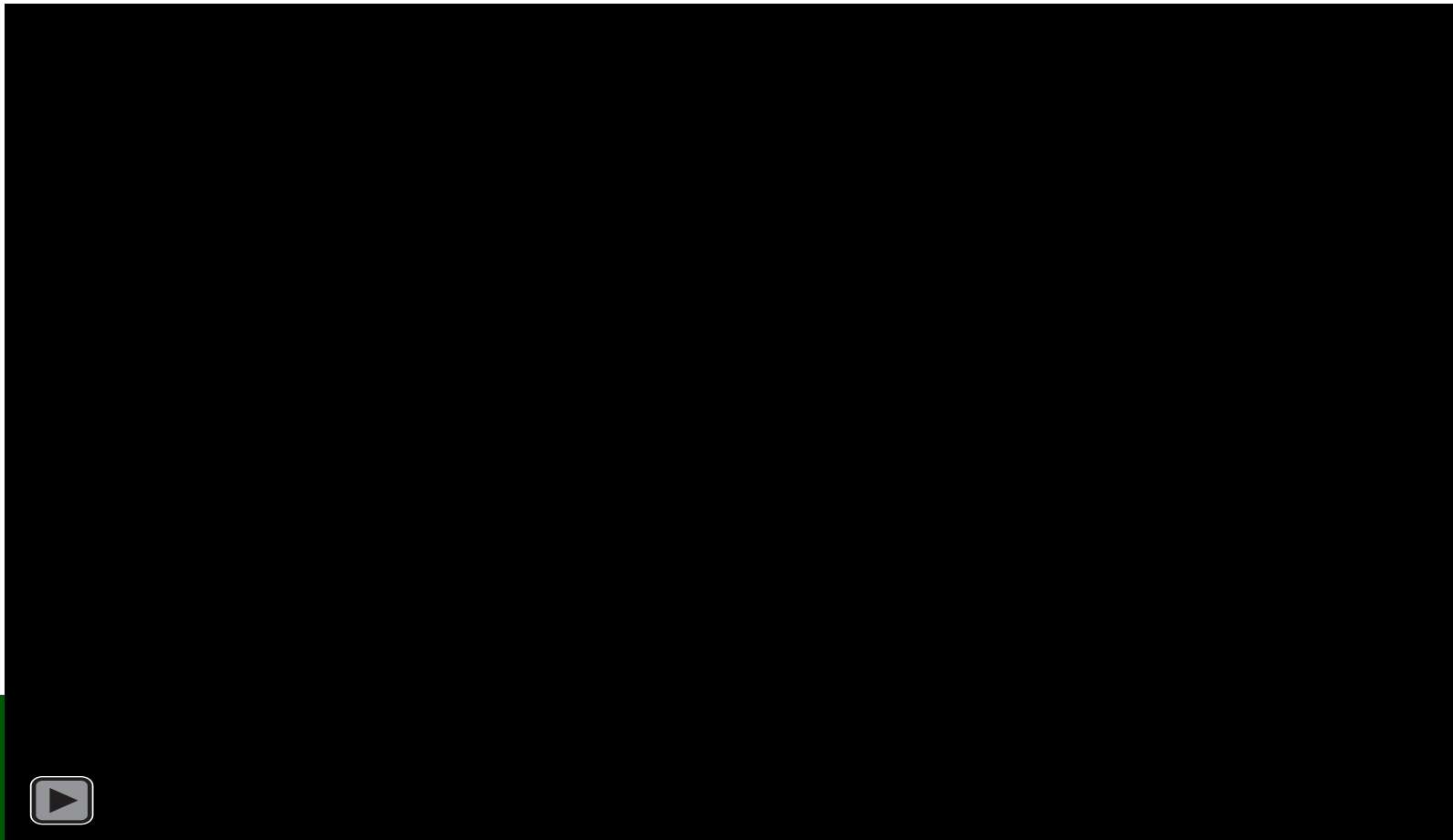
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What is Taranta?



Taranta is a web application that allows a user to:

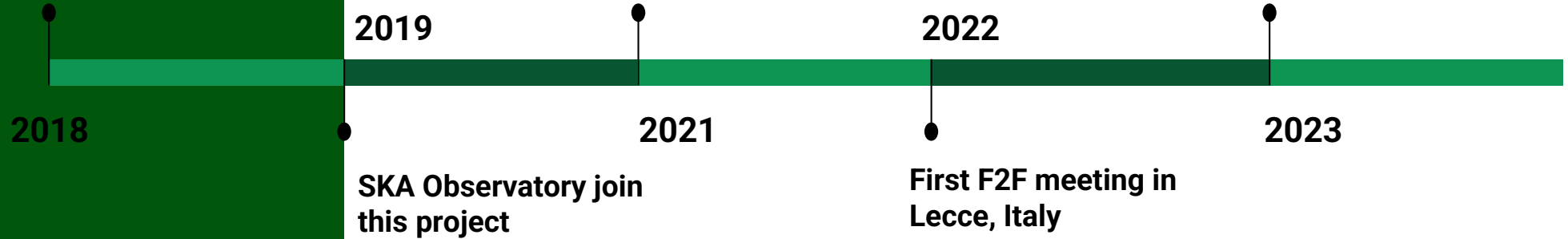
- **easily browse devices of a Tango server, inspect** them and **interact** with them, all using web browser of choice.
- **quickly develop and change interactive dashboards** with widgets that allow you to monitor and interact with Tango devices. Once created, dashboards can be run, saved, and exported.



History

Start WebJive at MAX IV

Web interface for basic functionality of Jive: Attribute reading and command execution



Taranta

Devices

- ▼ sys
 - ▶ access_control
 - ▶ database
 - ▶ rest
 - ▼ tg_test
 - 1
 - 2

RUNNING sys/tg_test/1

Server Properties **Attributes** Commands Logs

SCALAR SPECTRUM IMAGE


VALID	State	RUNNING
VALID	Status	The device is in RUNNING state.
VALID	ampli	6
VALID	boolean_scalar	true
VALID	double_scalar	-201.73146856014787
VALID	double_scalar_rww	-201.73146856014787

Dashboards

HOME ↵

SAXS-WAXS EXPERIMENT - MONITORING DASHBOARD


EIGER DETECTOR



Eiger Tango Device STATE ●

Status: *value*

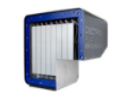
Eiger Sardana Controller



Eiger Sardana Controller STATE ●

Status: *value*


PILATUS DETECTOR



Pilatus Tango Device STATE ●

Status: *value*

Pilatus Sardana Controller



Pilatus Sardana Controller STATE ●

Status: *value*

ACTIVE MEASUREMENT GROUP

saxs_waxs_standard STATE ●

ELEMENTS STATE

Status: *value*

if in the end of the scan at least one element of the measurement group is still running, use the STOP button below

STOP saxs_waxs_standard

MS - DOOR STATE

PAND

PandABox Sardana Ctrl

Status: *value*

ATI

Bursts Per Interval

Interval Wait Time

Number of Intervals

Widgets Dashboards Layers

Box

Label

Label

Attribute Display

attributeLabel: *value*

Attribute Writer

device/attributeLabel: unit

Attribute Writer Dropdown

device/attributeLabel: Dropdown

Variable Selector

No device found

Usage at MAX IV

R3-301L RGA

DISABLE ● Sensor MKS104-J0113006 is controlled by Process Eye v.MKS Spectra, by host: 10.0.107.40.

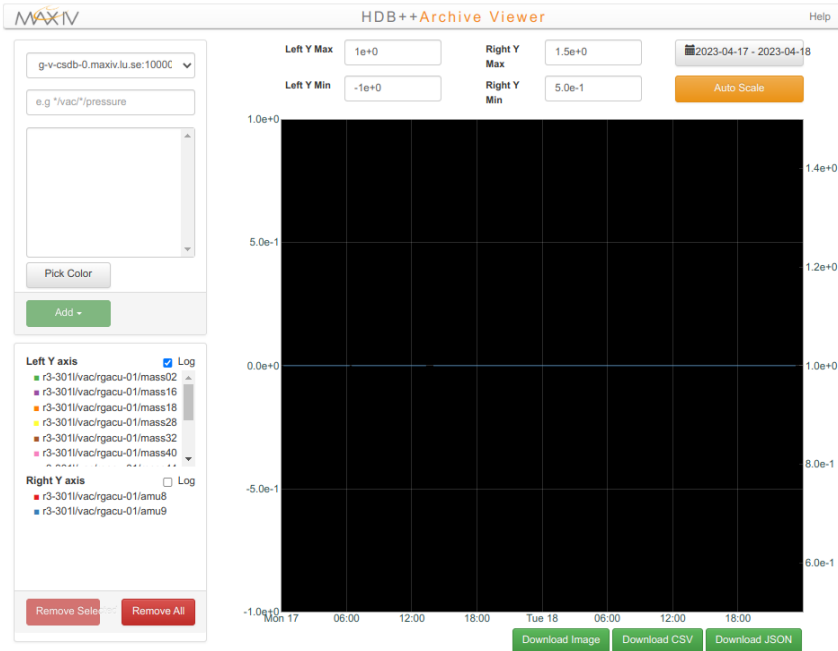
Active Filament: 1 Filament State: OFF Filament X-Trip State: Emission_ Ion Energy: 5.5 eV
 Active Filament: Submit Filament State: Submit Ion Energy: eV

[Go to Archive Viewer](#)

Start Mass: 1 Accuracy: 5
 Start Mass: Accuracy:
 End Mass: 100 Detector Type: SEM1
 End Mass: Detector Type: Submit

Last scan started at:

AMU	Pressure [mbar]	Threshold (in) [mbar]	Threshold [mbar]	State
2	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
16	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
18	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
28	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
32	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
40	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
44	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
69	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
<input type="text" value="1"/>	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●
<input type="text" value="1"/>	null mbar	<input type="text" value="1.00"/>	1.00e+0 mbar	●



Fast Shutter

Shutter

Beam Conditioning Unit (BCU)

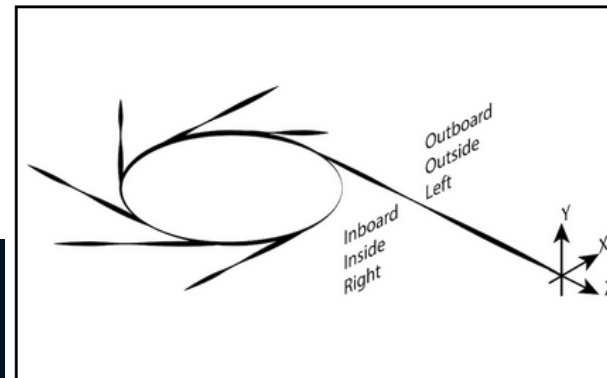
Laser In beam

Slit 1

- b304a-ea01/opt/slit-01-hgap 1.50 mm
- b304a-ea01/opt/slit-01-hoff 0.16 mm
- b304a-ea01/opt/slit-01-vgap 1.50 mm
- b304a-ea01/opt/slit-01-voff -0.03 mm

Attenuator

- Filter 1 (Ni 25um) In beam
- Filter 2 (Ni 50um)
- Filter 3 (W 25um)
- Filter 4 (W 50um)
- Filter 5 (W 100um)
- Filter 6 (W 200um)
- Filter 7 (W 400um)



PXRD2D

PXRD diode In beam
 Pilatus cover

Slit 2

- b304a-ea03/opt/slit-02-hgap 0.04 mm
- b304a-ea03/opt/slit-02-hoff 0.07 mm
- b304a-ea03/opt/slit-02-vgap 0.10 mm
- b304a-ea03/opt/slit-02-voff -0.09 mm

HUBER rotation stage

- b304a-ea03/dia/sams-02-ry 360.000 deg

Capillary spinner

ALARM b304a-ea03/dia/sams-01-r Power is off.
 velocity: deg/s

Detectors

BE AWARE OF POTENTIAL COLLISIONS WHEN MOVING DETECTORS!

PILATUS 2M - Close cover before moving

- b304a-ea03/ct/ppm-03-mlo1 276.990 mm

Status: Idle

Energy: 35000 eV Threshold: 17500 eV
 nTriggers: 5 nFramesAcquired: 5
 Temperature: 27 C Humidity: 5.10 %

XRF detector

- b304a-ea03/dia/tailed-02-z 99.999 mm

Taranta @SKA

Taranta is used by **engineers, integrators** and **commissioners** for monitoring, controlling and debugging Tango devices for the telescope.

Key selling points:

- quick development of UIs
- easy to modify existing UIs
- no need for UI-related skills
- no need to use other tools

Taranta users

The following Users are set on SKA Taranta-Auth:

User	Password
ATLAS	
BUTTON	
CIPA	
CREAM	
DEFAULT	
HIMALAYA	
KAROO	
MCCS	
NAKSHATRA	
NALEDI	
NCRA	
OMC	
PERENTIE	
PSS	
PST	
SAYADRI	
SKANET	
SYSTEM	
TOPIC	
VIOLA	

19 SKA teams use Taranta or ask to use it





MID Telescope - CSP Local Monitoring and Control - 3 subarrays

versionId: value

CSP - LMC Admin Mode: mid-csp/control/0/ example value

	state	healthState	adminMode	obsState	simulationMode
Controller	STATE ●	value	value		<input type="radio"/>
Subarray 01	STATE ●	value	value	value	<input type="radio"/>
Subarray 02	STATE ●	value	value	value	<input type="radio"/>
Subarray 03	STATE ●	value	value	value	<input type="radio"/>

C B F

Controller	STATE ●	value	value		<input type="radio"/>
Subarray 01	STATE ●	value	value	value	<input type="radio"/>
Subarray 02	STATE ●	value	value	value	<input type="radio"/>
Subarray 03	STATE ●	value	value	value	<input type="radio"/>

CSP Controller

STATE ● Unassigned receptors IDs

10	25	38	135	9856
----	----	----	-----	------

commandResult value value

On: DevV Submit Standby: DevV Submit

Reset: Submit Off DevV Submit

	state	healthState	adminMode
CBF	value	value	value
PSS	value	value	value

CSP SubArray

Name No device found On Off Reset

STATE ● obsState: value

assignedReceptors

10	25	38	135	9856
----	----	----	-----	------

commandResult value value

Upload File Send AssignResources

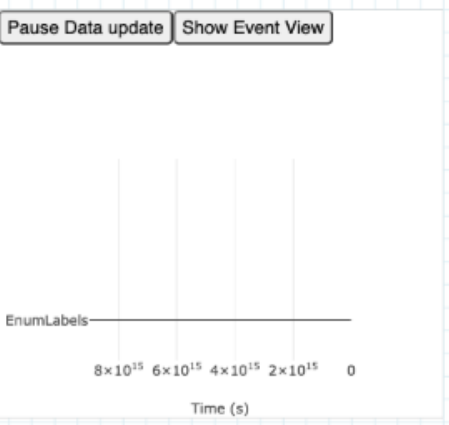
Upload File Send Configure

Upload File Send Scan

GoToIdle EndScan ObsReset

Abort Restart ReleaseAllResources

Upload File Send ReleaseResources



elastic Search Elastic

Discover mid-csp/control/0 5s update messageOnly Options New Open Share Inspect Save

sk_a_tags_field.tango-device: "mid-csp/control/0" KQL Last 1 minute Show dates Refresh

+ Add filter

filebeat-* 84 hits Reset search Chart options

Search field names Filter by type 0 Selected fields 1

```

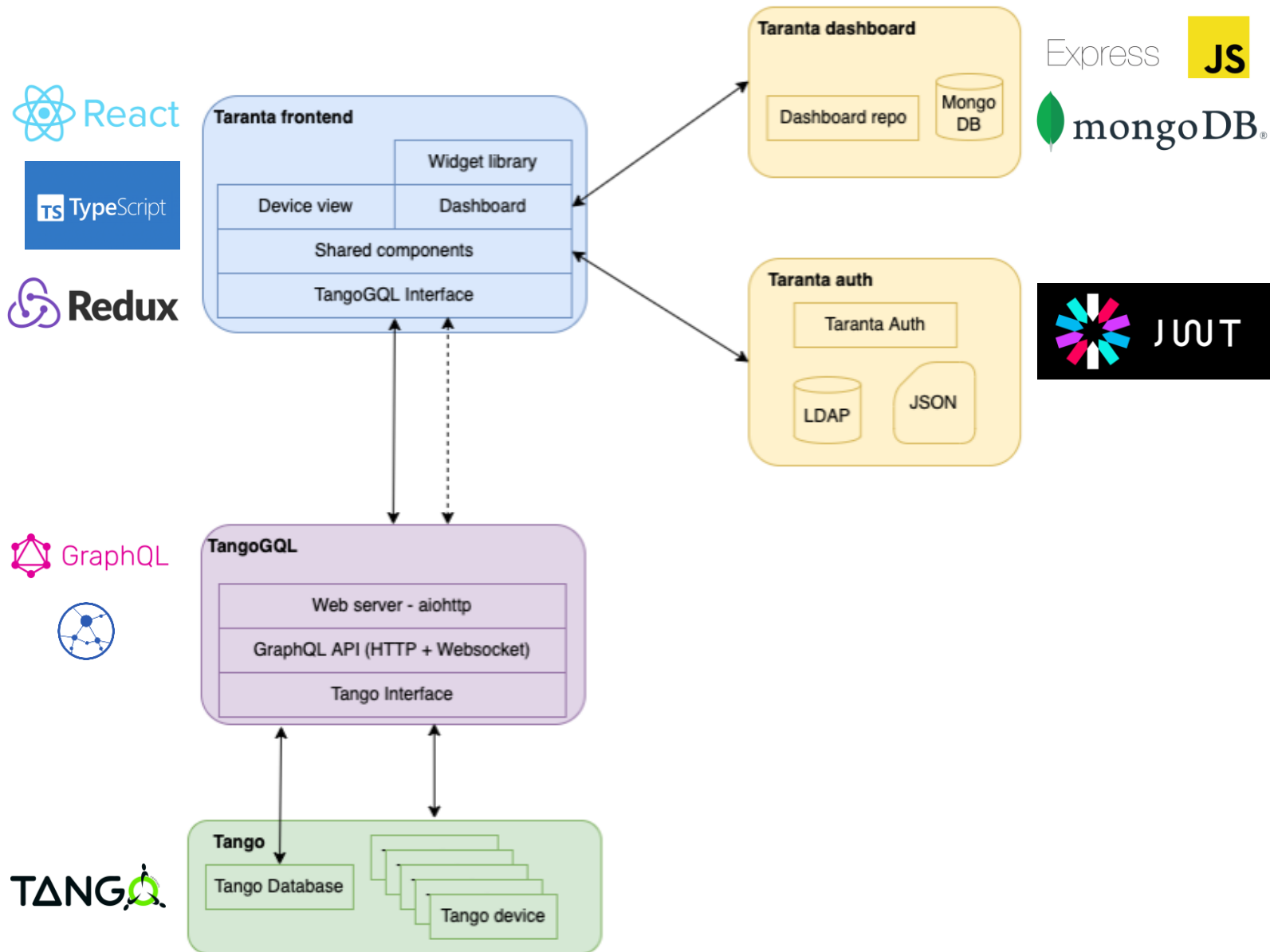
message
> 1|2022-06-08T13:13:01.429Z|INFO|Dummy-1|get_vcc_receptor_map|mid_ctr1_componen
t.py#328|tango-device:mid-csp/control/0|Read the VCC to Receptors map
> 1|2022-06-08T13:13:01.429Z|ERROR|Dummy-1|get_vcc_receptor_map|mid_ctr1_compone

```

VIOLA

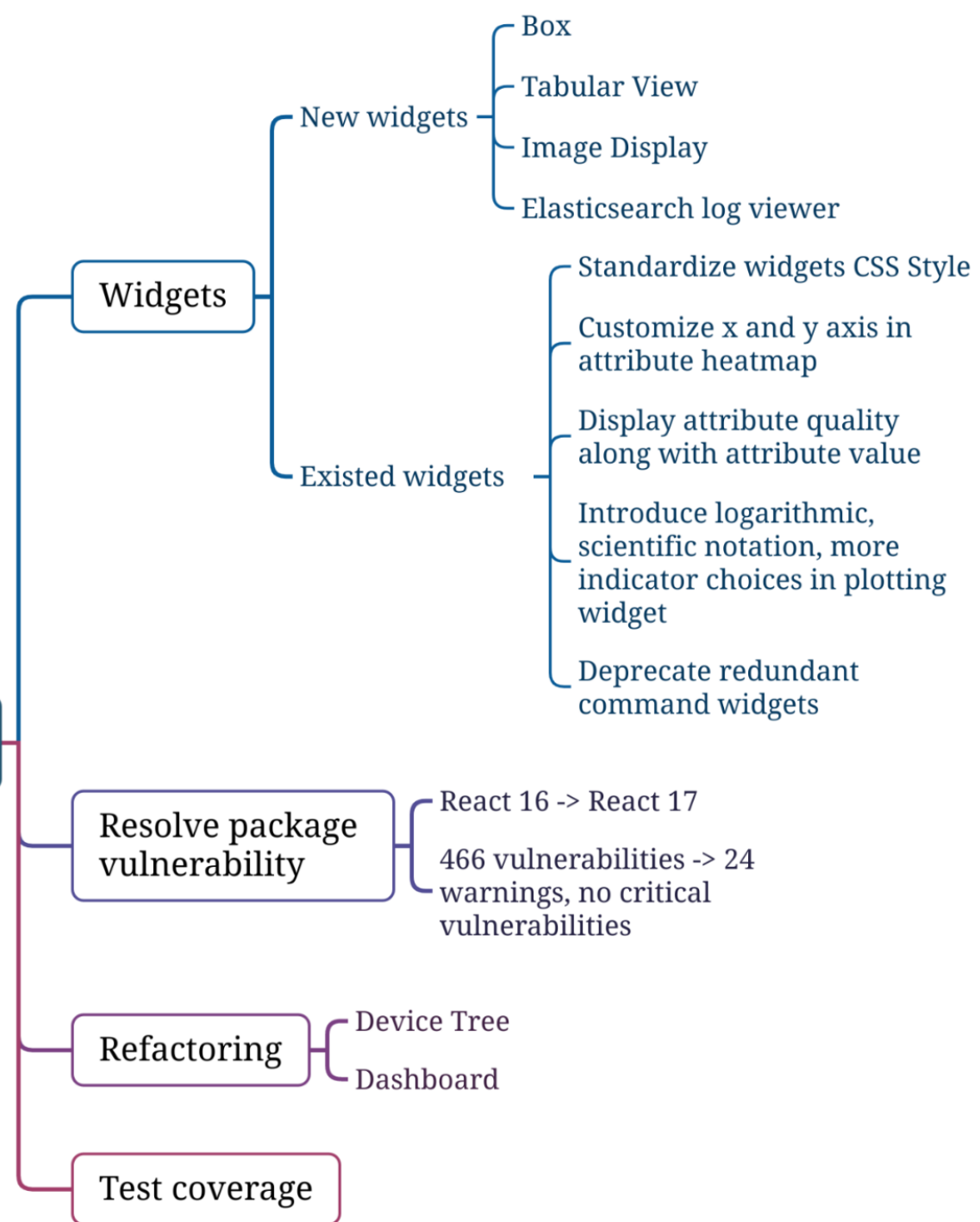


Taranta Structure

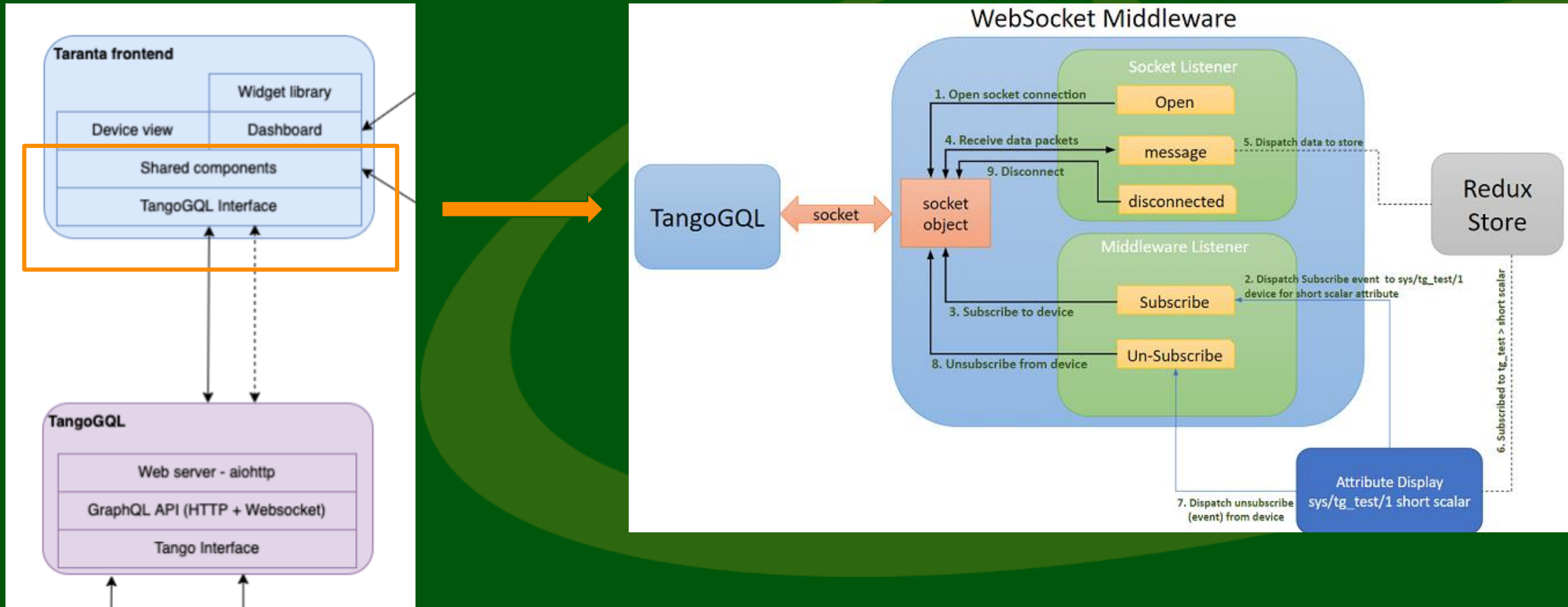


What have been improved on Taranta

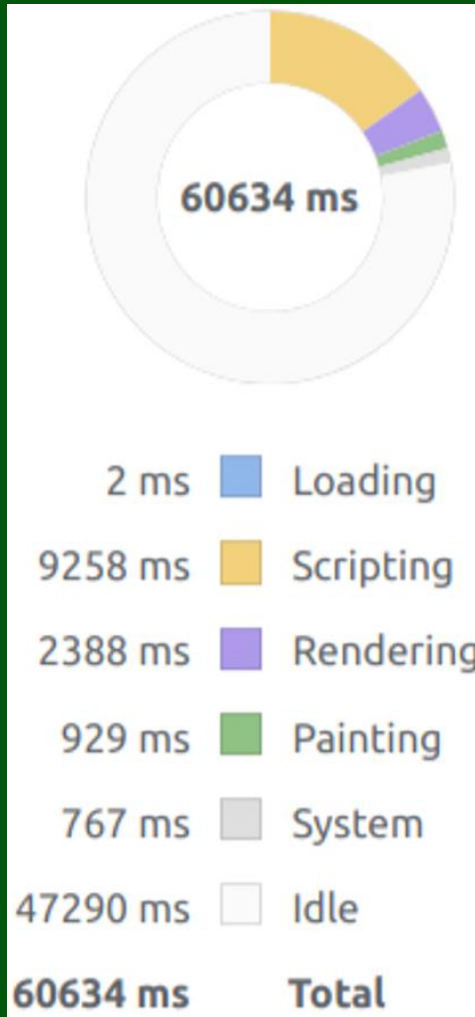
Improvements



Refactoring on communication



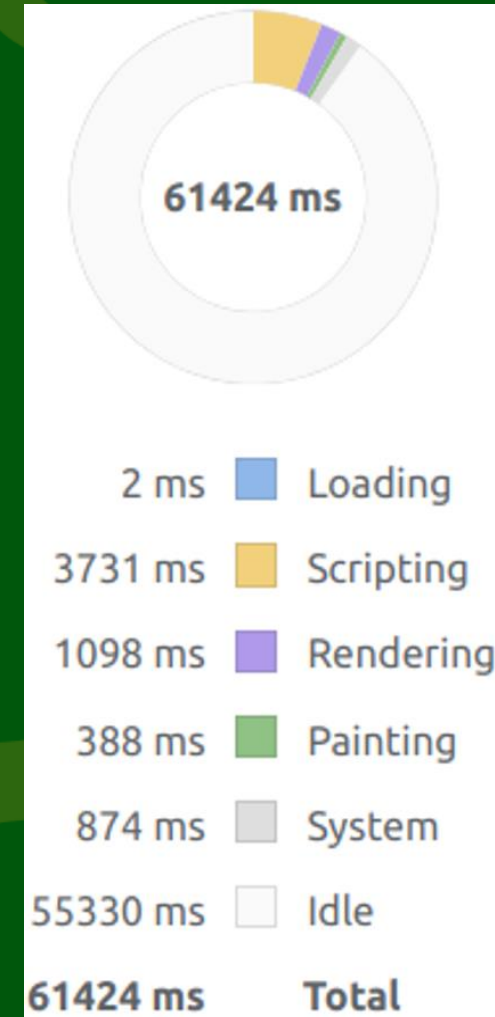
Runtime Performance Analysis (normal dashboard)



Version 1.3.12

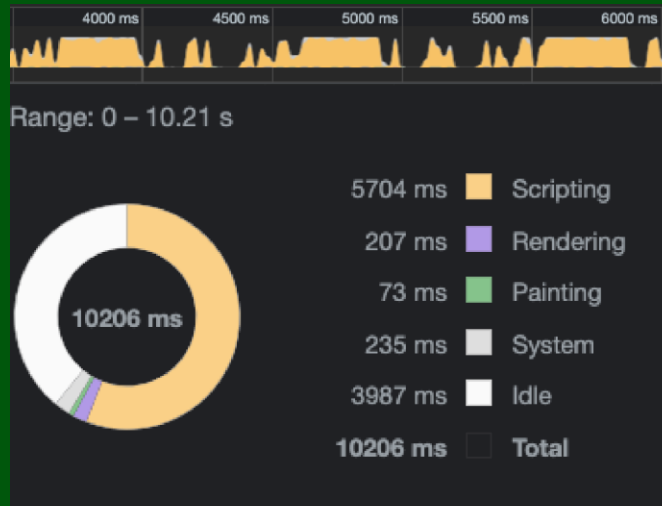
Improvement:

- Only render components with changed events
- Reduces 50% of scripting time compared to the old structure
- Improves real time performance for large database (~15000 defined tango devices)



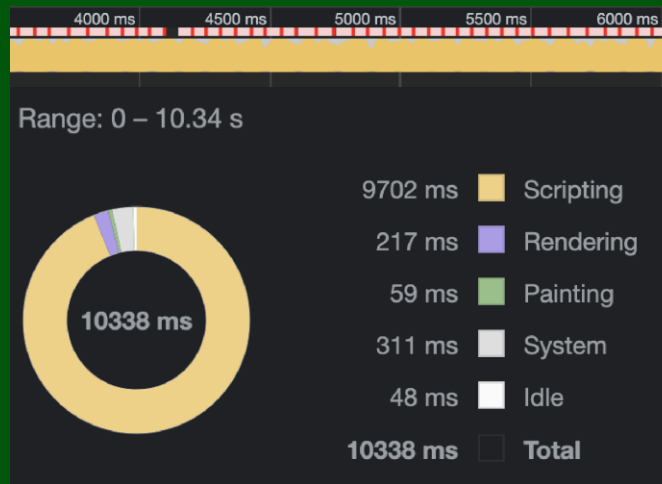
Version 2.4.0

Runtime Performance Analysis (benchmark dashboard)

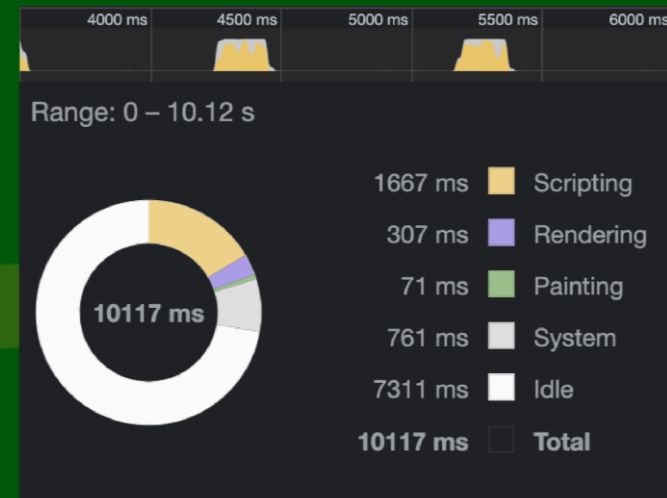
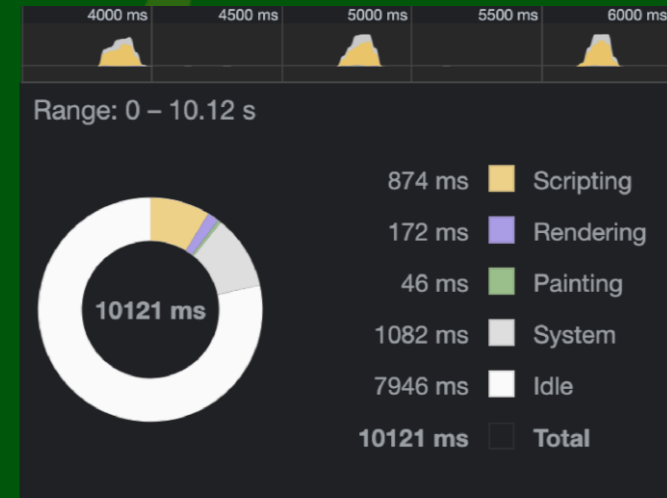


300 widgets dashboard

Improving Performance of Taranta: Analysis of Memory Requests and Implementation of the Solution – Poster (TUPDPO44) Tuesday, 16:15-17:45



600 widgets dashboard



What have been improved on TangoGQL

TangoGQL Improvements

Replacement of graphql-ws to support python 3.10

Enable properties access on non-running devices

Properly handle subscription cancelling in the backend

Exclude excessive logging in normal cases

Improve linting in CI Pipeline

Improve documentation for local development

Road Map & Future

Short term

- **Multiple Tango Databases**
 - One default tango database
 - Access multiple tango databases from widgets
- **Web Synoptic**
 - Desktop -> Web
 - Support SVG synoptic view
 - Interaction with tango devices from synoptic
- **Improvement from a wishlist**
 - Improving UX following requests coming from our communities
- **Popup System**
 - Generate Tango device with functionalities
 - Easy create and apply to Taranta

Long term

- **Enhance user friendliness and stability**
- **Remote experiments support**
- **Modularize widget development**
- **Easy management of dashboard layers**
- **Connection with other data sources?**

Thanks!



Home page

<https://taranta.readthedocs.io/en/latest/>

Community

<https://gitlab.com/tango-controls/web>

Taranta Suite

<https://gitlab.com/tango-controls/web/taranta-suite>