Taranta Project
Update and Current Status

Yimeng Li, MAX IV Laboratory

Speaker: Matteo Canzari, INAF-OAAB

TARANTA

TANGO ON WEB

ICALEPCS Software User Interfaces & User Experience

13 October, 2023

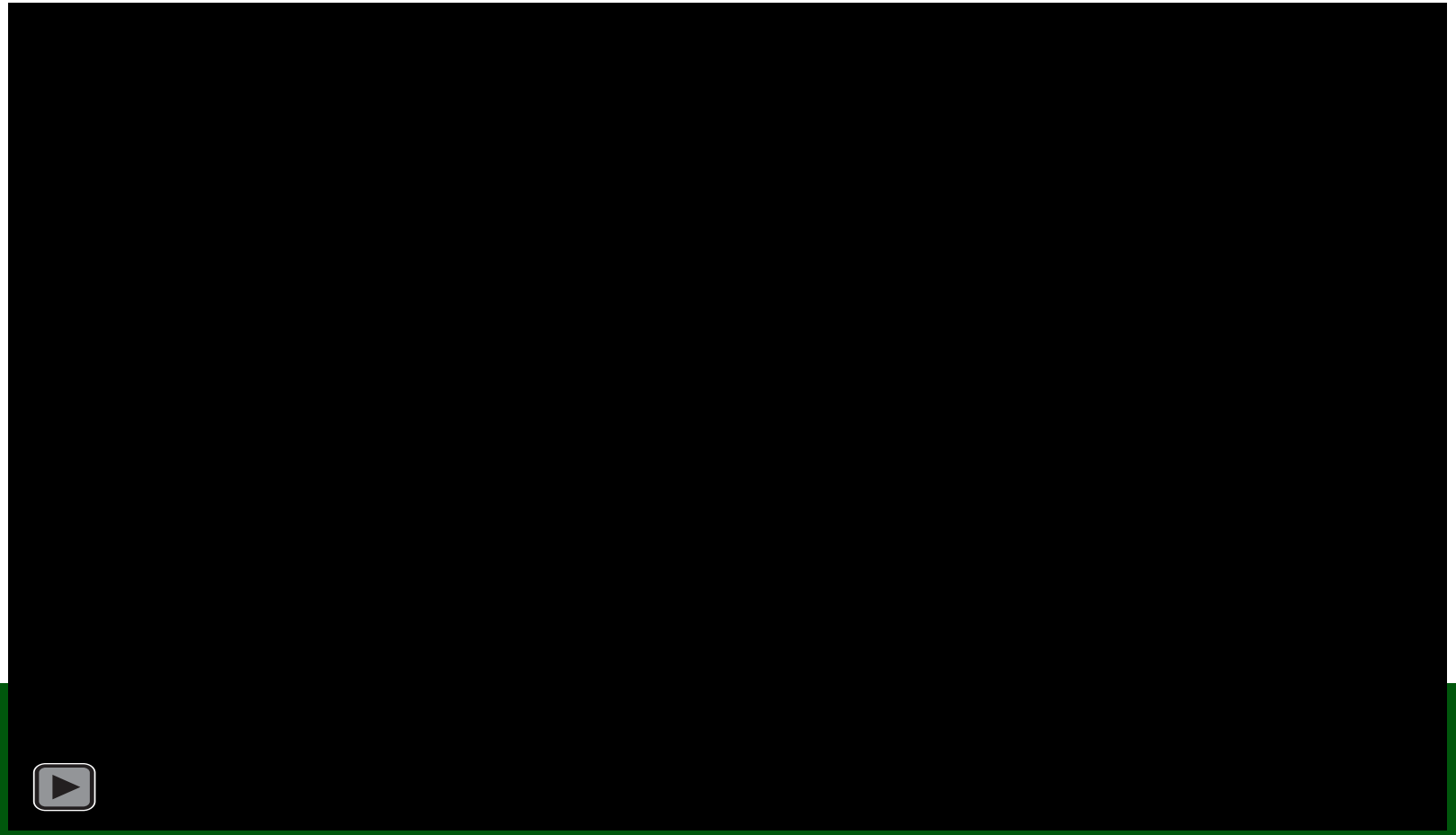
MAX IV TANGO SKAO INAF ISTITUTO NAZIONALE DI ASTROFISICA

What is Taranta?

TARANTA
TANGO ON WEB

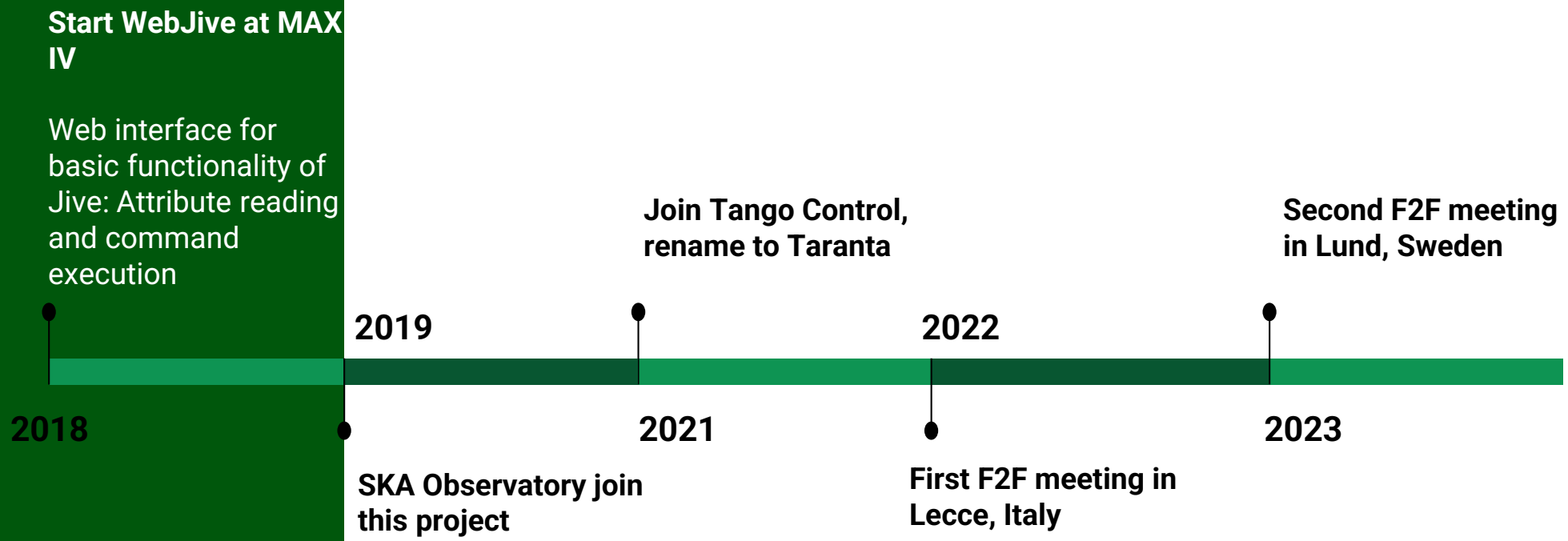
Taranta is a web application that allows a user to:

- **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.



MAX IV

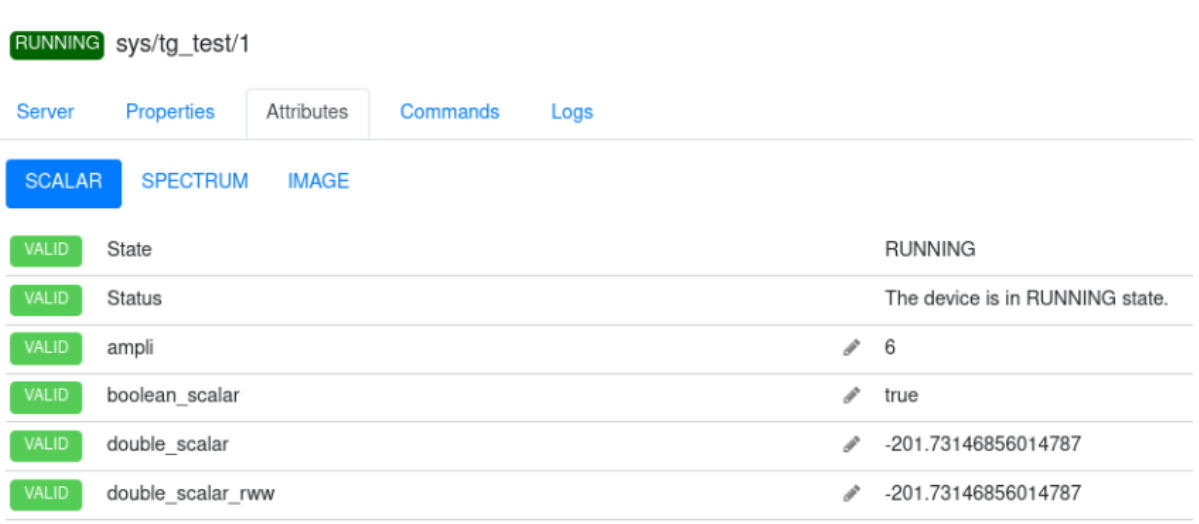
History

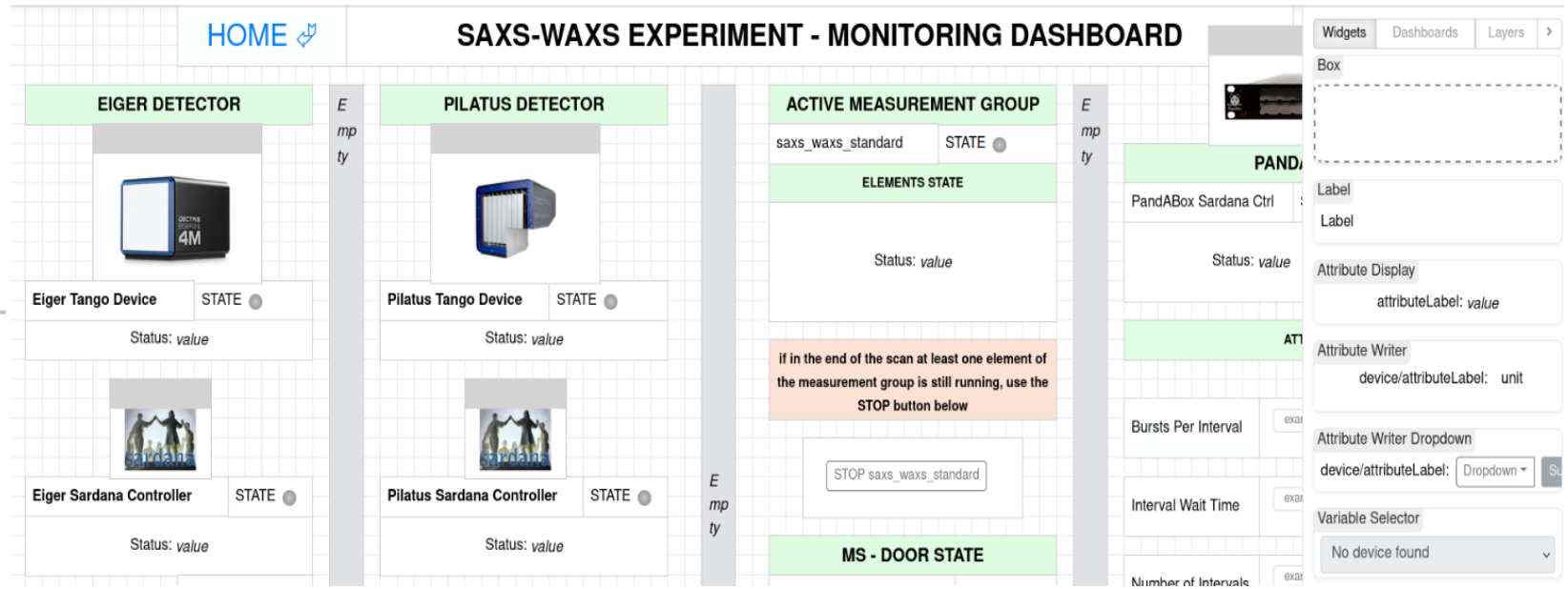

Start WebJive at MAX IV
Web interface for basic functionality of Jive: Attribute reading and command execution
2018
2019
SKA Observatory join this project
2021
Join Tango Control, rename to Taranta
2022
First F2F meeting in Lecce, Italy
2023
Second F2F meeting in Lund, Sweden

Taranta

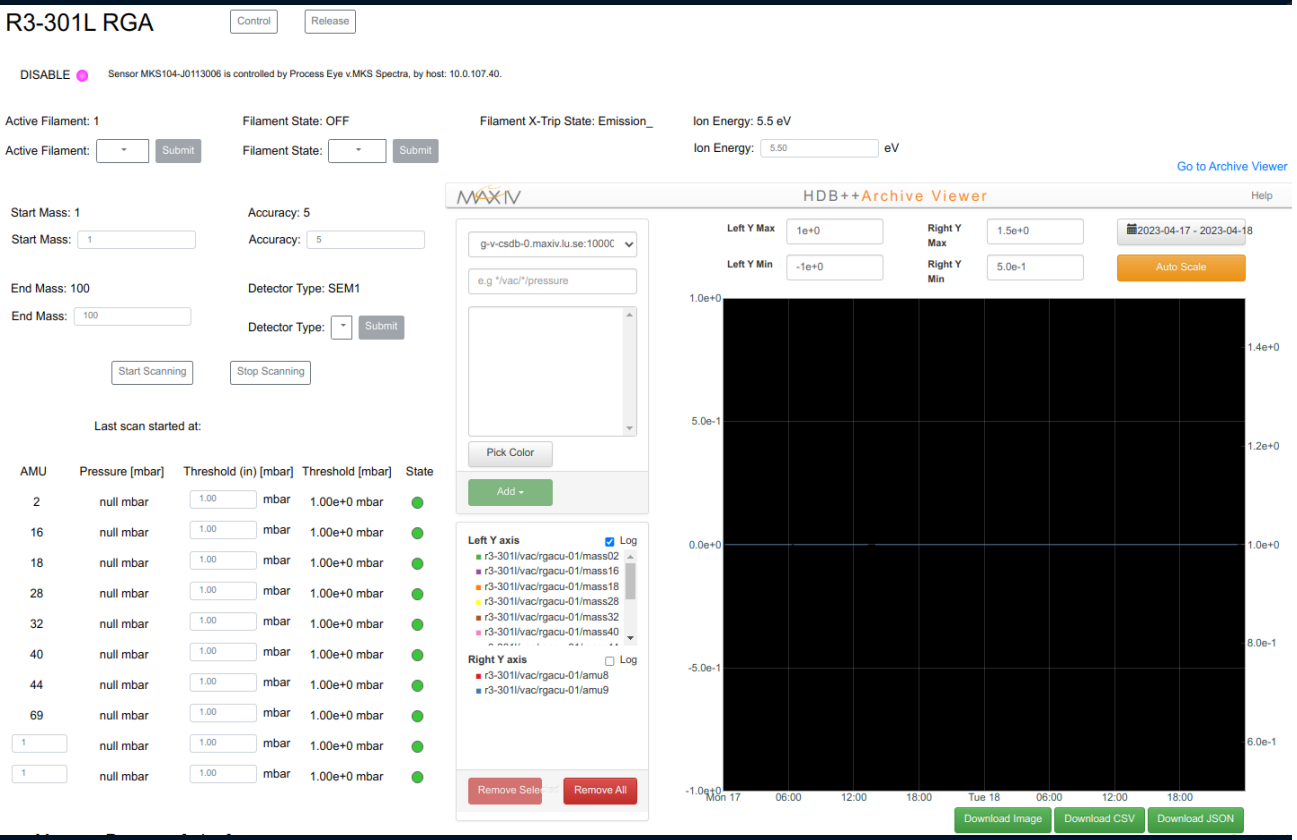
Devices

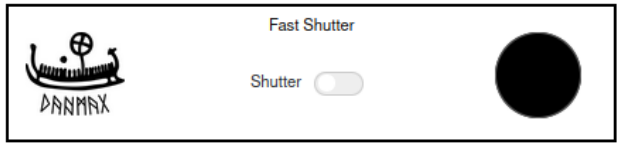
Dashboards

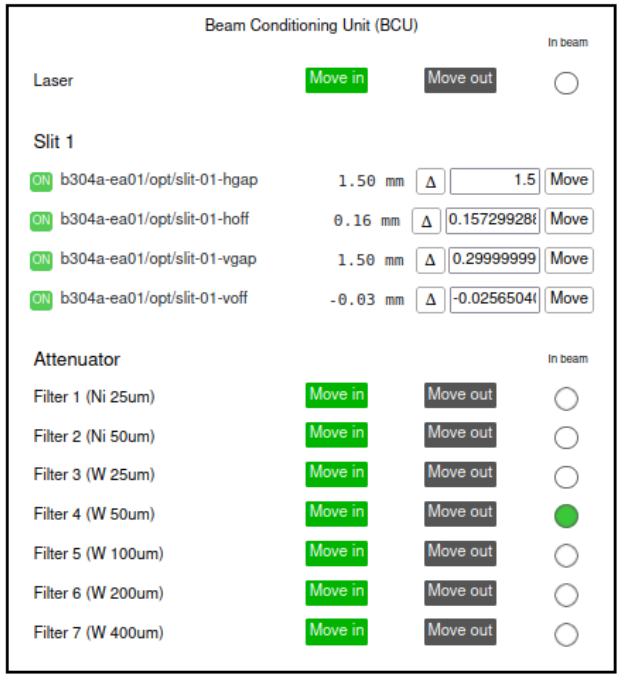


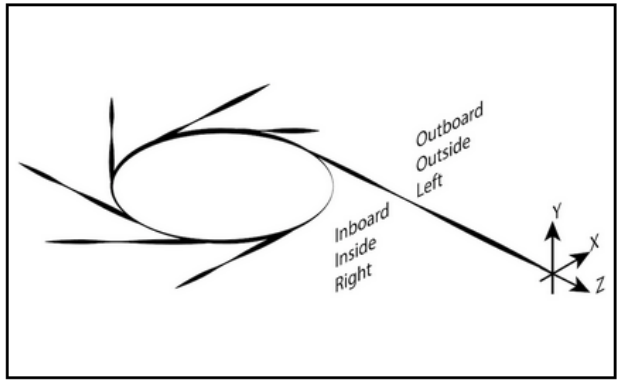


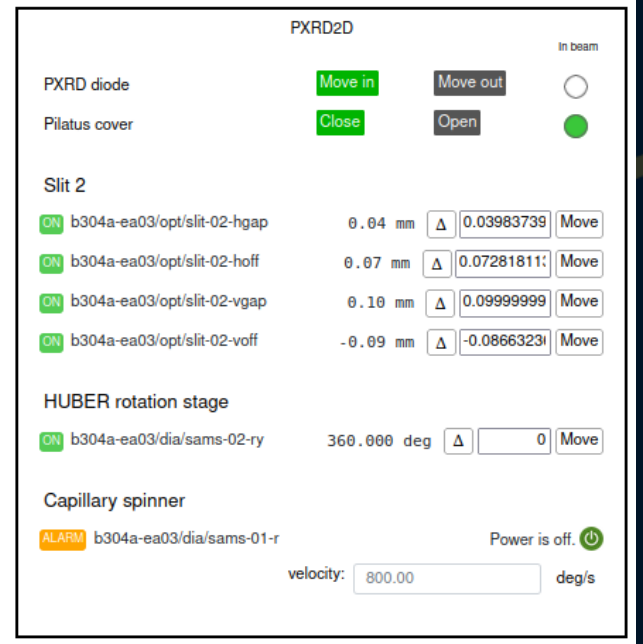
Usage at MAX IV

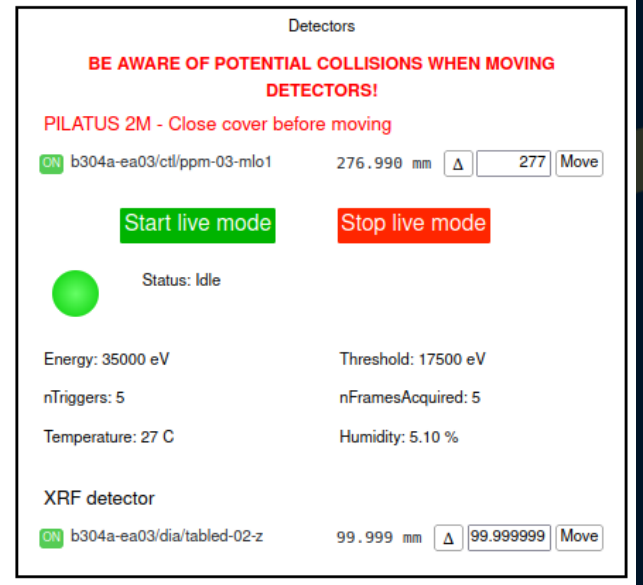










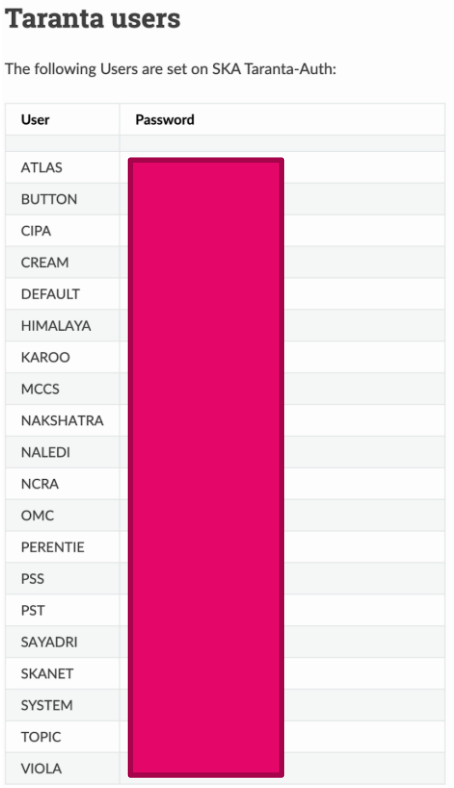


Taranta @SKA

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

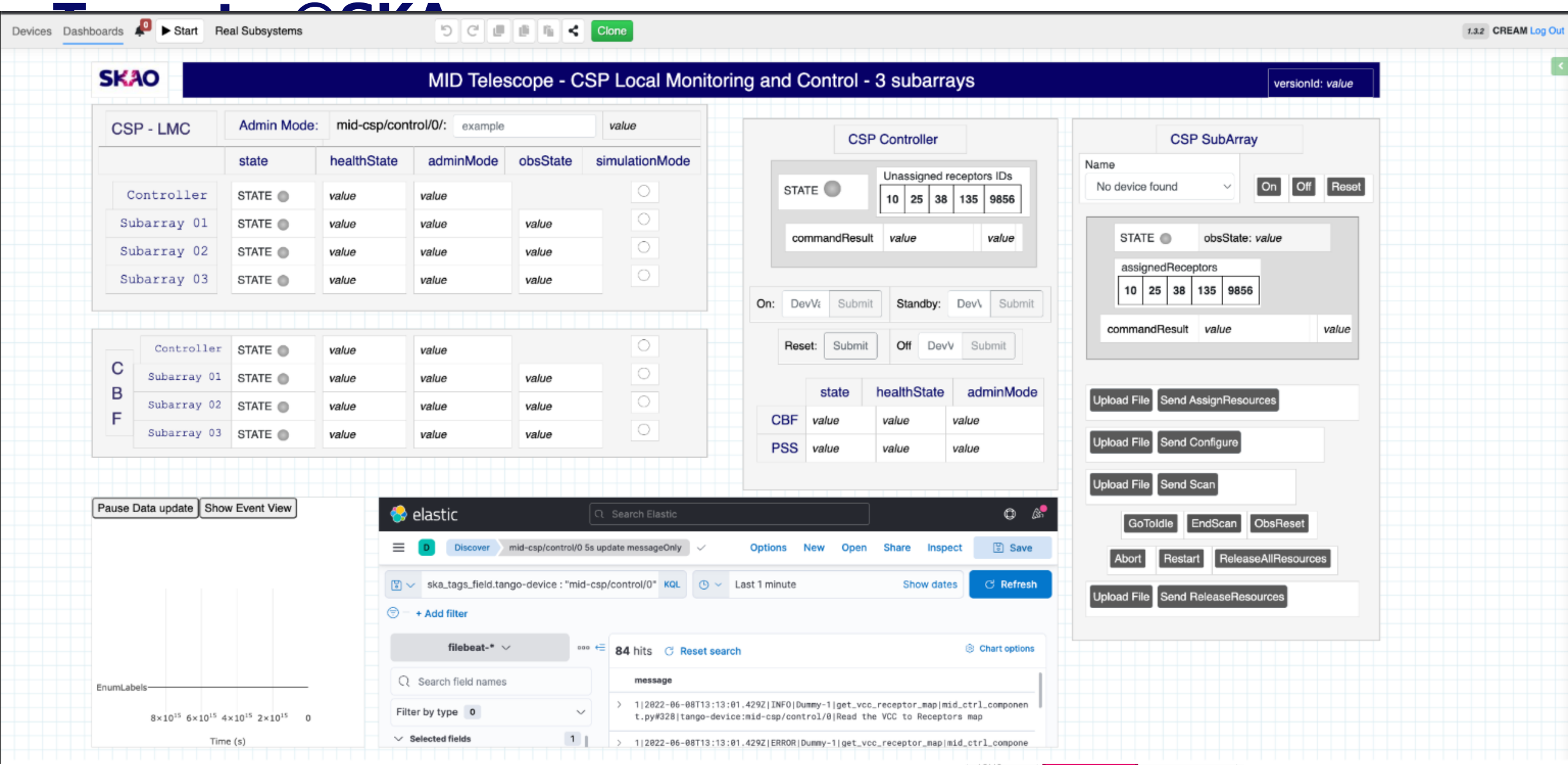


Taranta users

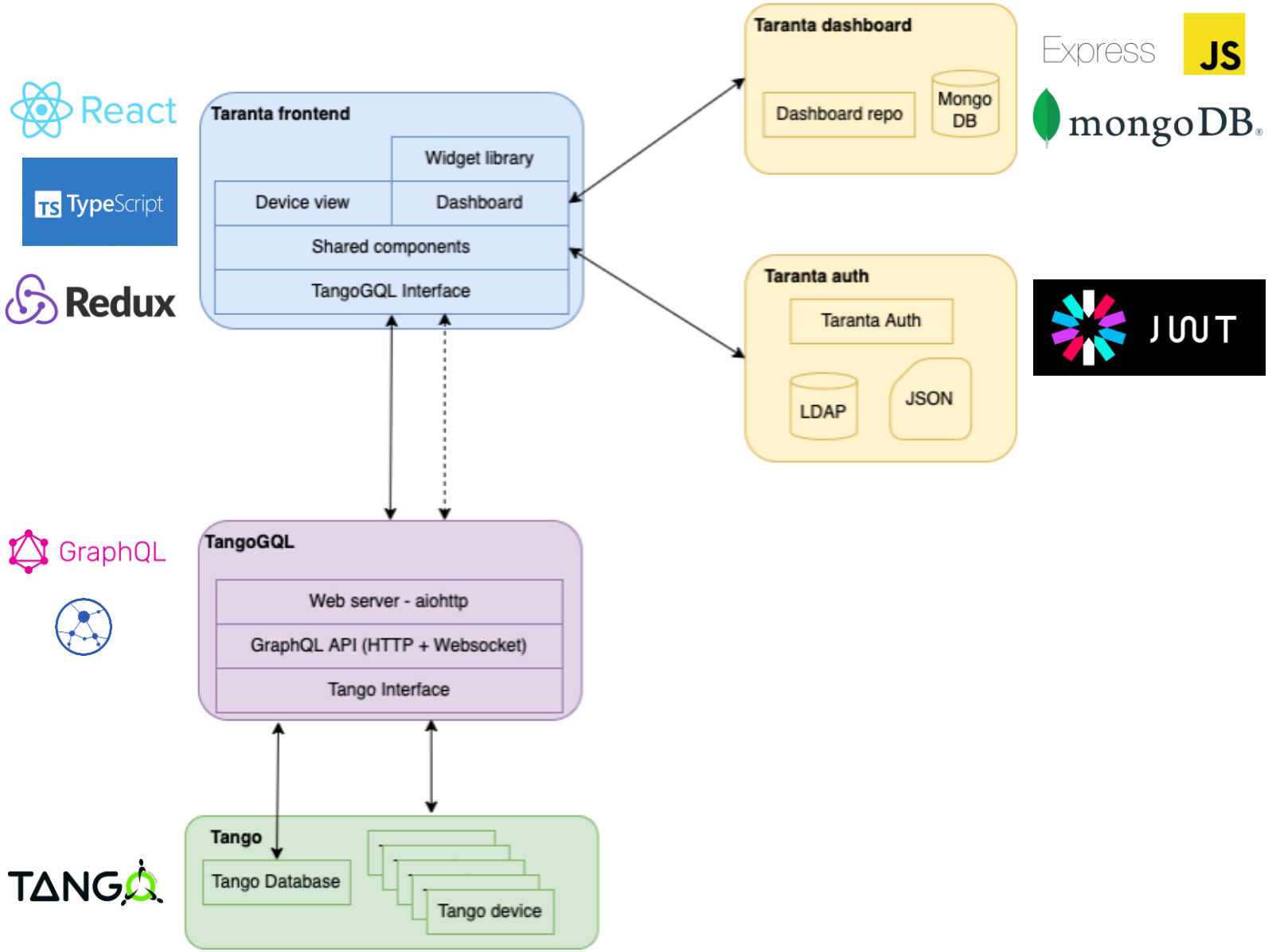
The following Users are set on SKA Taranta-Auth:

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

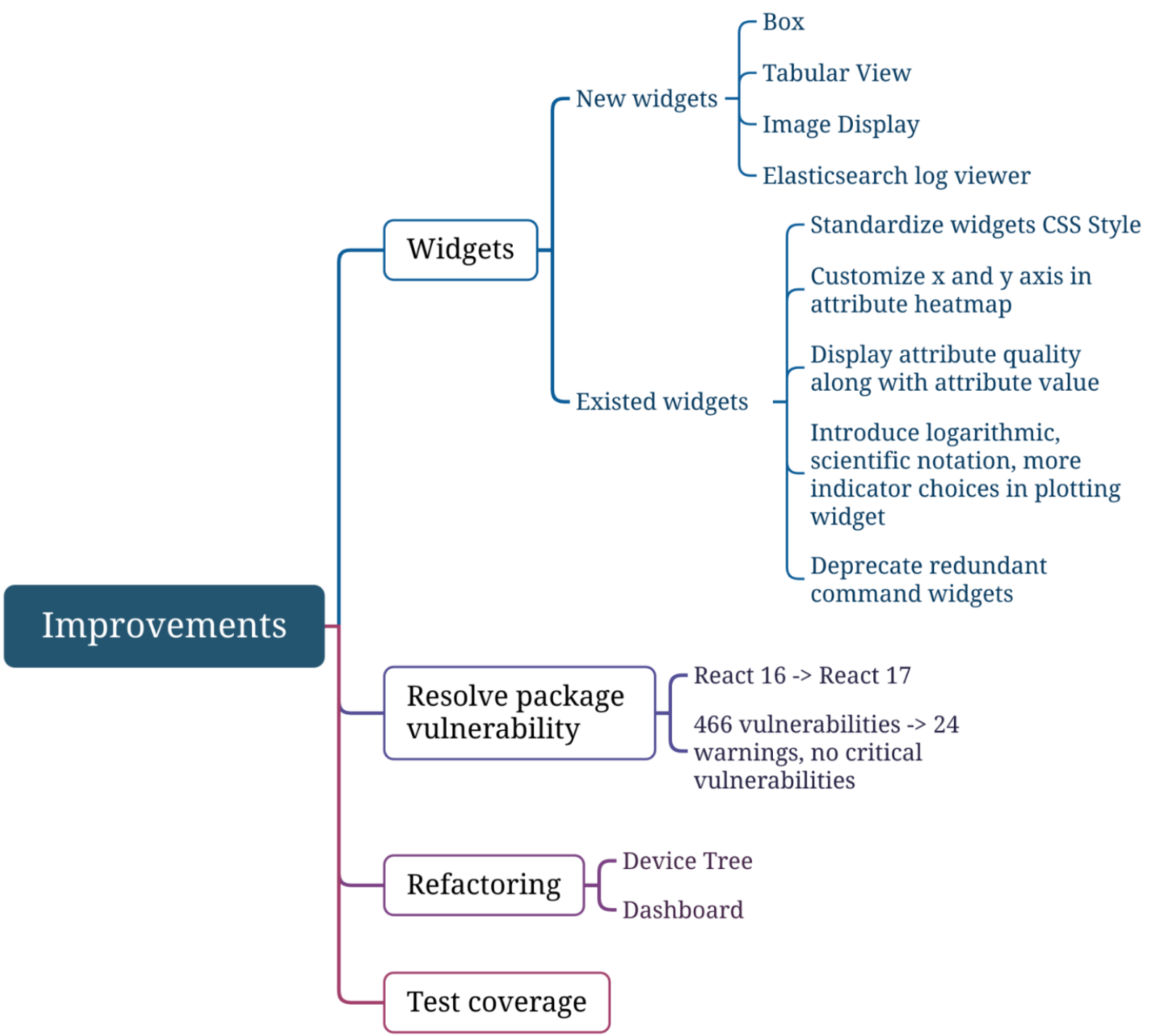
19 SKA teams use Taranta or ask to use it


Devices
Dashboards
Start
Real Subsystems
Clone
1.3.2 CREAM Log Out
SKAO
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
Subarray 01
Subarray 02
Subarray 03
STATE
value
CBF
CSP Controller
Unassigned receptors IDs
10
25
38
135
9856
commandResult
On:
Standby:
Reset:
Off
Submit
CBF
PSS
CSP SubArray
Name
No device found
On
Off
Reset
obsState: value
assignedReceptors
Upload File
Send AssignResources
Send Configure
Send Scan
GoToIdle
EndScan
ObsReset
Abort
Restart
ReleaseAllResources
Send ReleaseResources
Pause Data update
Show Event View
EnumLabels
Time (s)
elastic
Search Elastic
Discover
mid-csp/control/0 5s update messageOnly
Options
New
Open
Share
Inspect
Save
ska_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
Selected fields
message
1|2022-06-08T13:13:01.429Z|INFO|Dummy-1|get_vcc_receptor_map|mid_ctrl_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_ctrl_compone
VIOLA

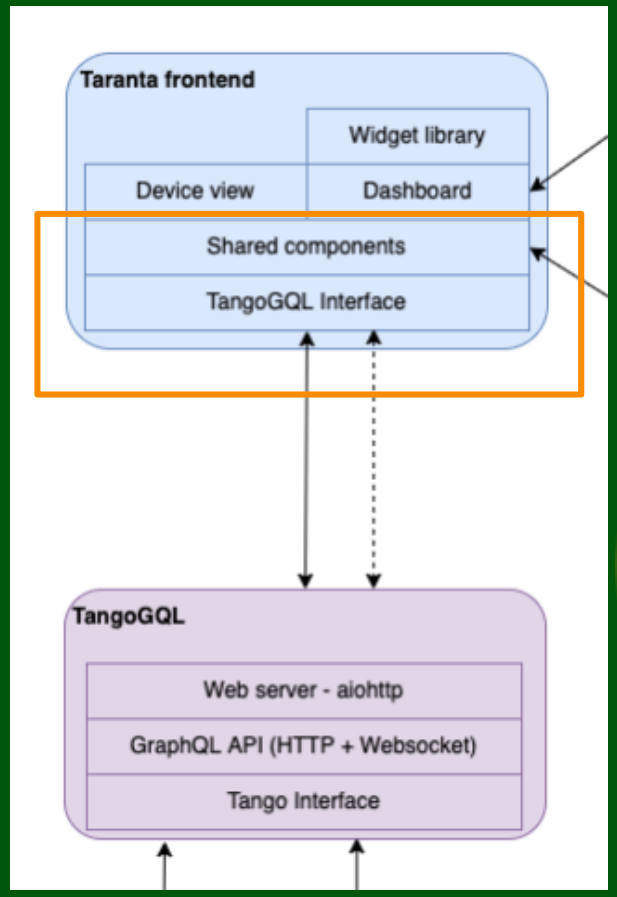
Taranta Structure

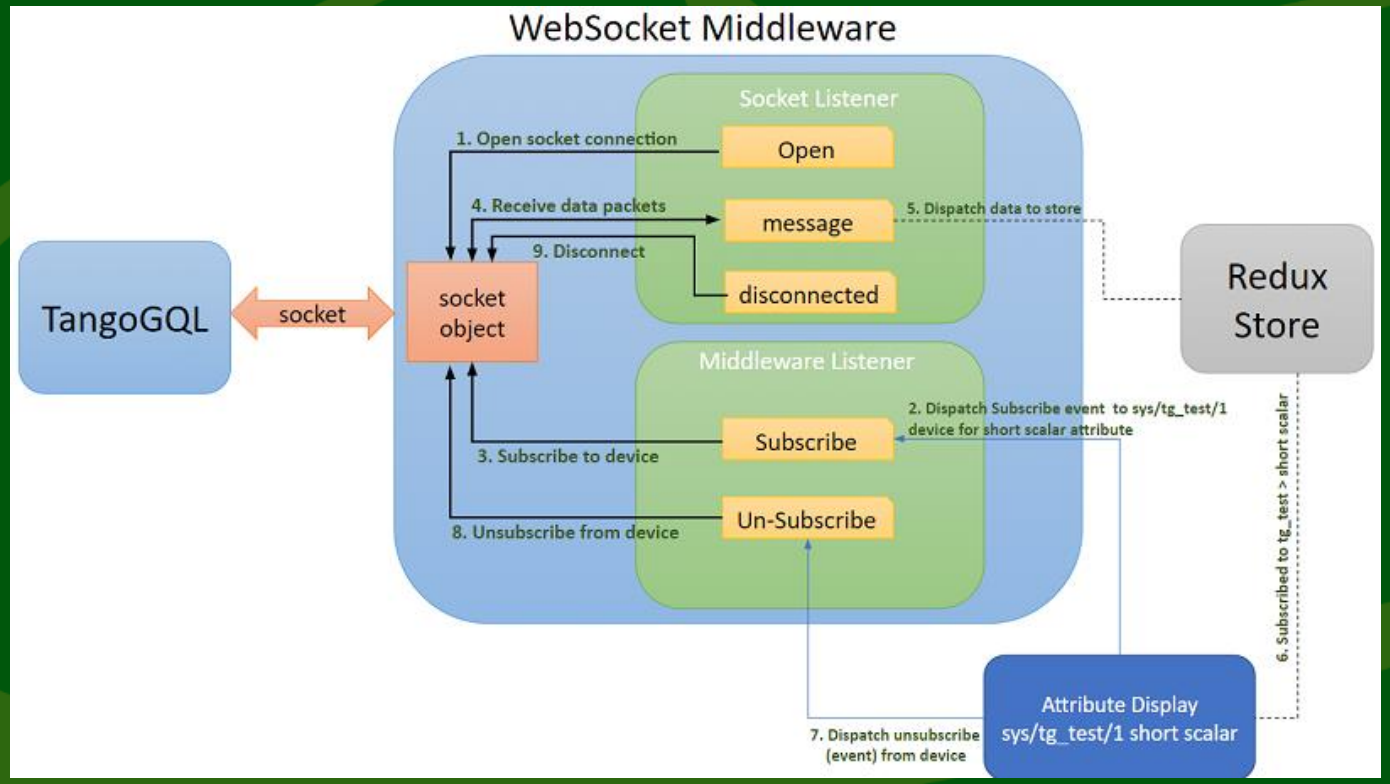

React
TypeScript
Redux
Taranta frontend
Widget library
Device view
Dashboard
Shared components
TangoGQL Interface
Taranta dashboard
Dashboard repo
Mongo DB
Express
JS
mongoDB.
Taranta auth
Taranta Auth
LDAP
JSON
JWT
GraphQL
TangoGQL
Web server - aiohttp
GraphQL API (HTTP + Websocket)
Tango Interface
Tango
Tango Database
Tango device
TANGO

What have been improved on Taranta

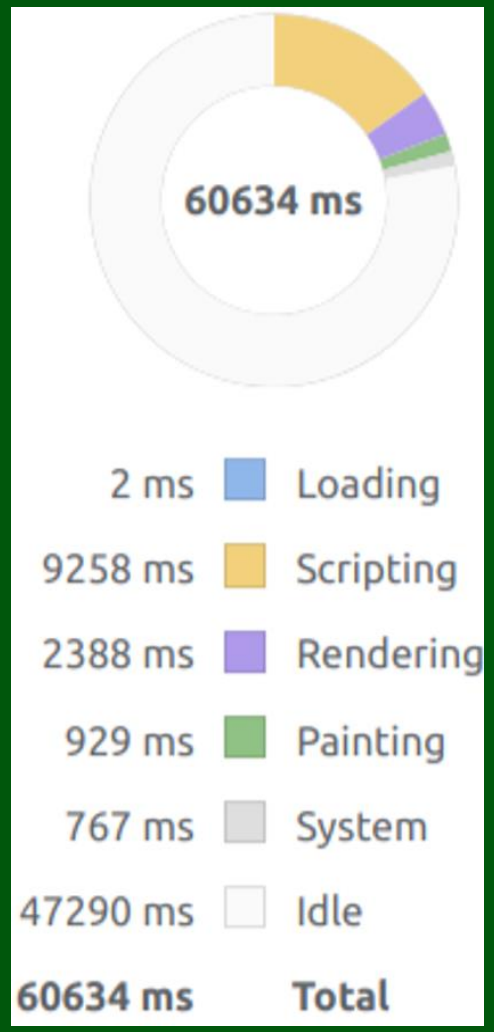


Refactoring on communication





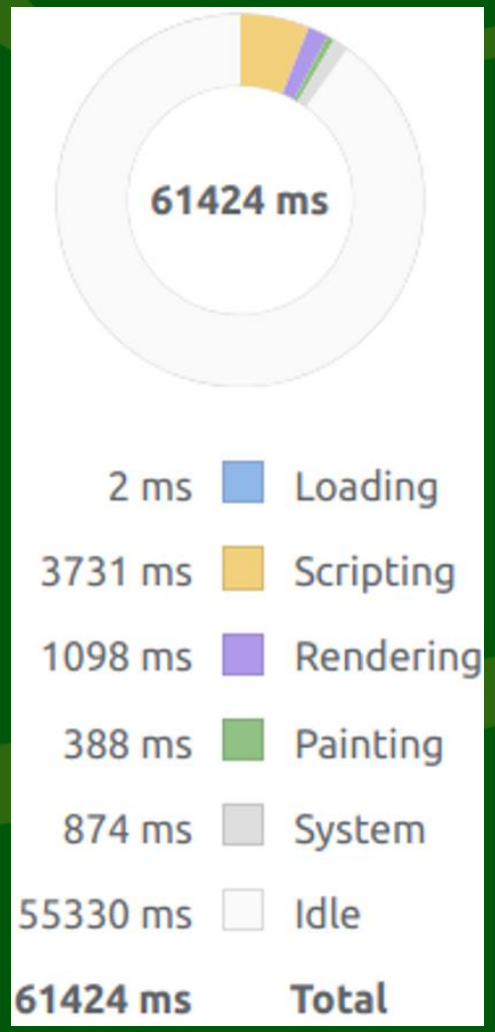
Runtime Performance Analysis (normal dashboard)



Version 1.3.12

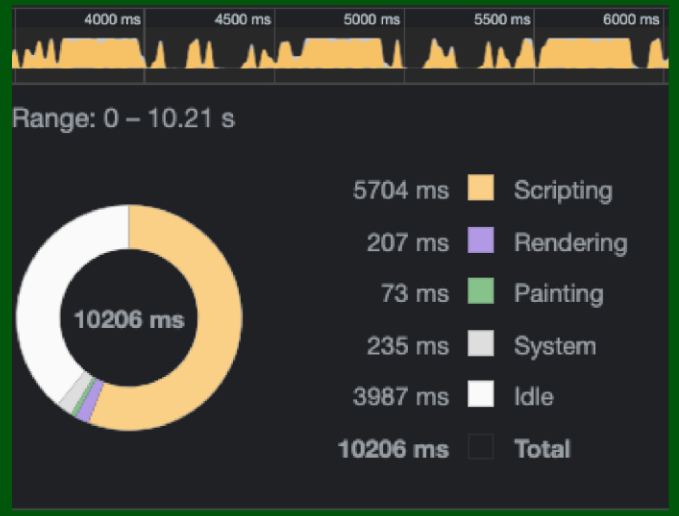
Improvement:

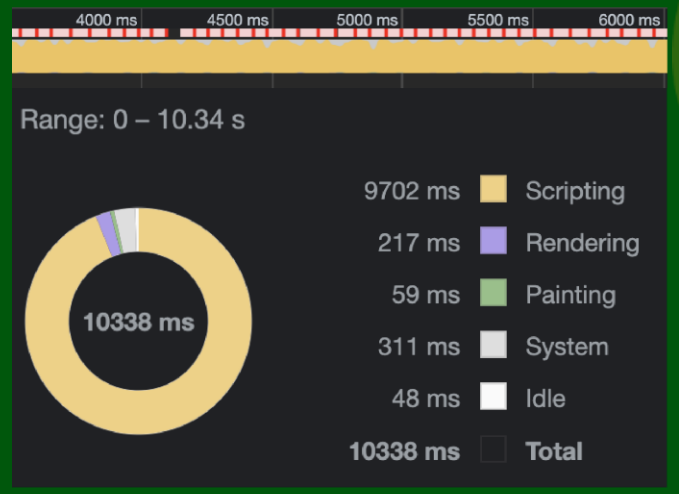
- Only render components with changed events
- Reduces 50% of scripting time compared to the old structure
- Improves real time performance for large database (~15000 defined tango devices)



Version 2.4.0

Runtime Performance Analysis (benchmark dashboard)

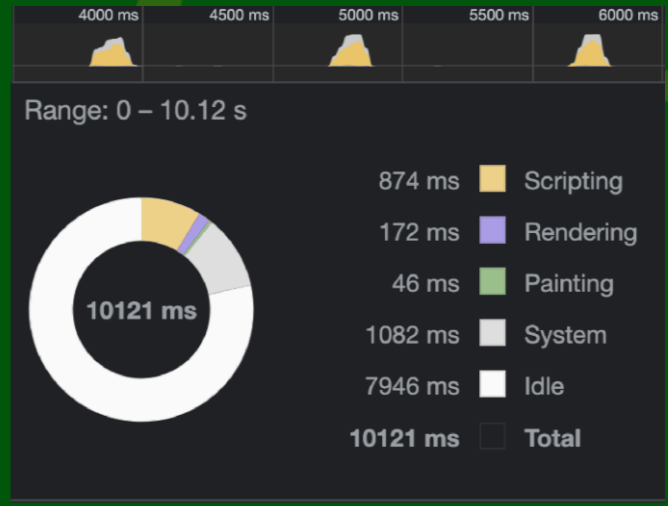


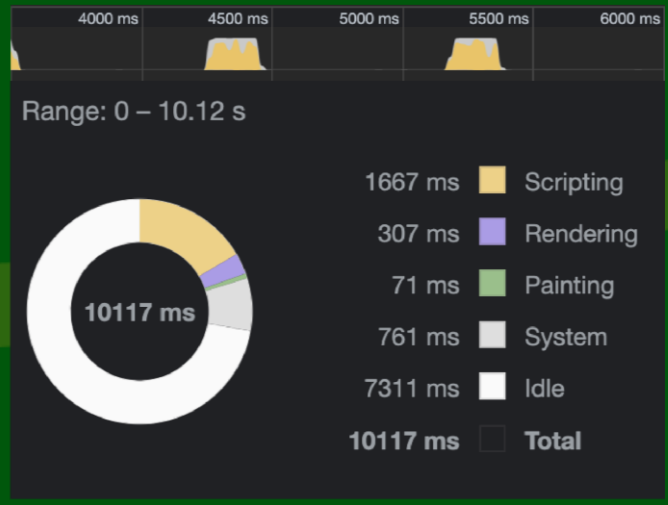


300 widgets dashboard

Improving Performance of Taranta: Analysis of Memory Requests and Implementation of the Solution – Poster (TUPDP044) Tuesday, 16:15-17:45

600 widgets dashboard

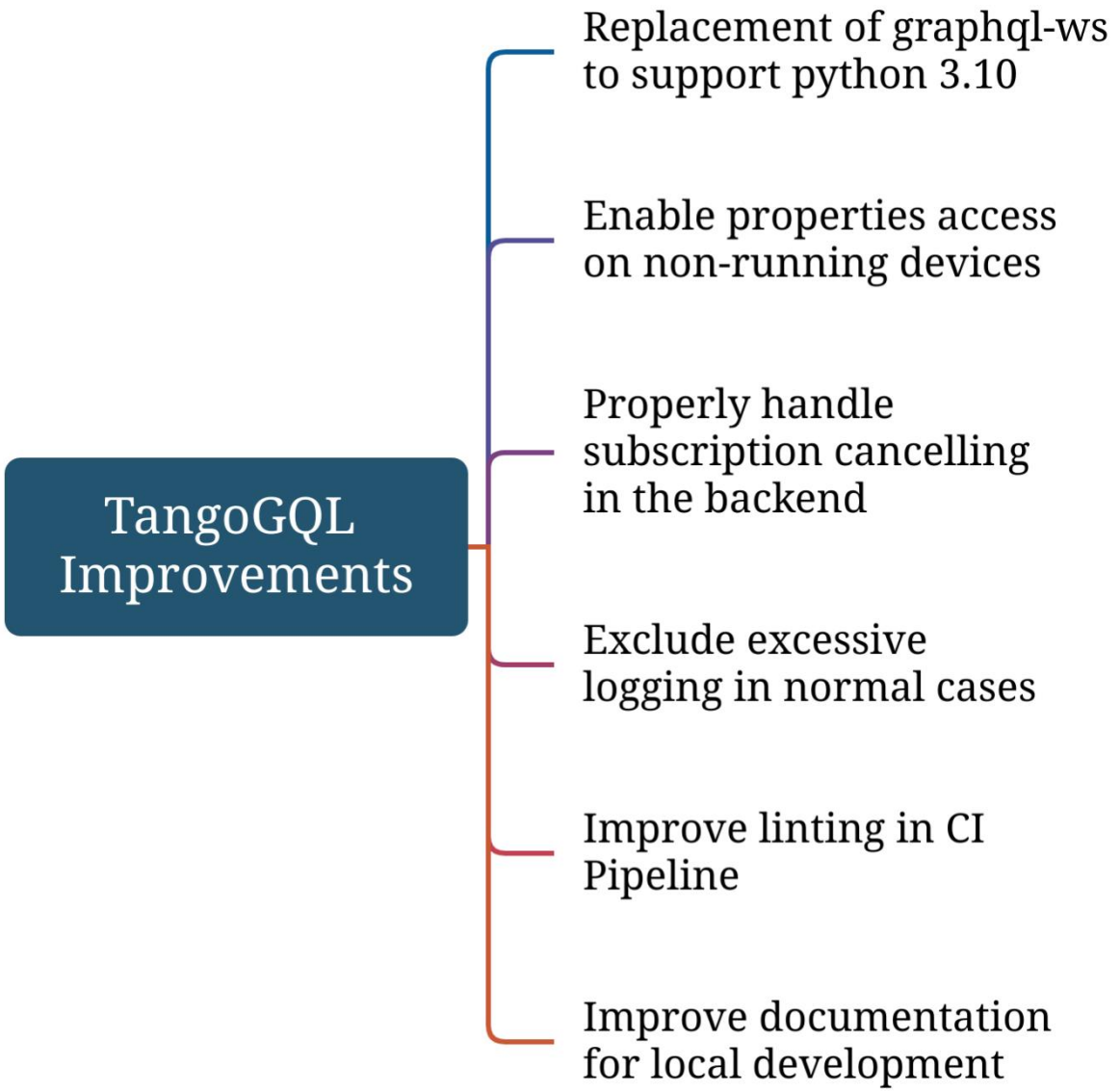




Version 1.3.12

Version 2.4.0

What have been improved on TangoGQL



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