Taranta, the No-Code Web Dashboard in production

Mikel Eguiraun on behalf of MAX IV and SKAO Taranta teams

Outline

- Taranta Arquitecture and main components
- Device Panel
- Dashboard & widgets
- Lessons learned

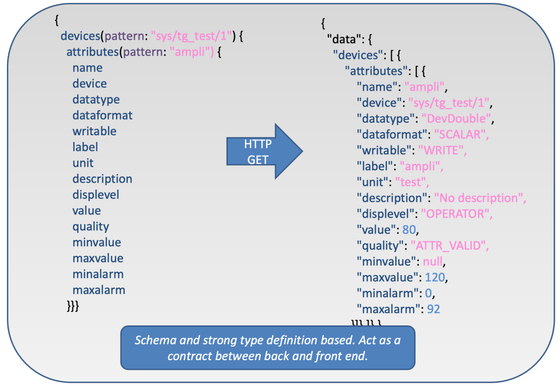
Background

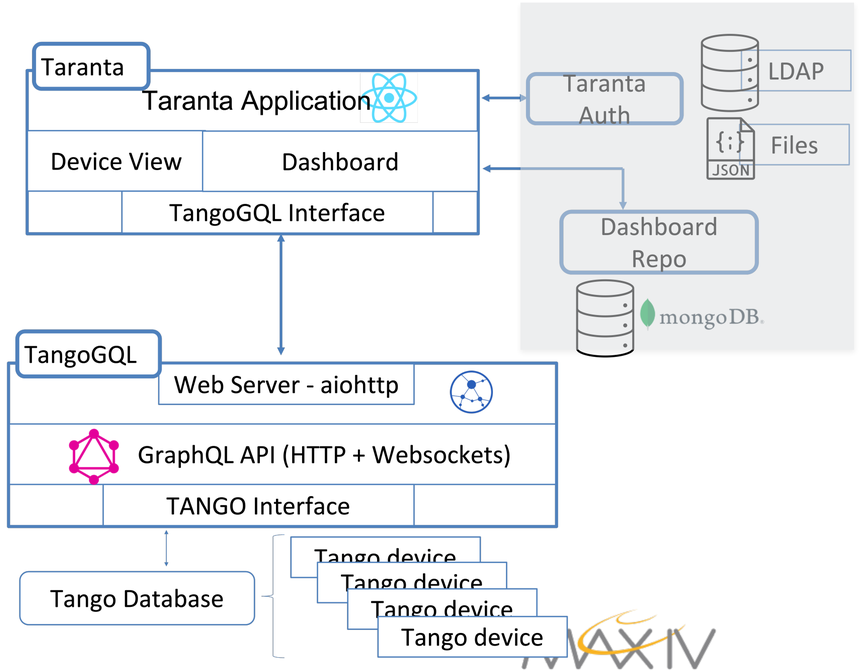
- Started in MAX IV (2018), at that time it was called Webjive
- 2019 joint effort between MAX VI and SKAO
- Renamed to taranta recently
- Active development!

Architecture

- GraphQL interface on top of tango
  - Get what you want: Declarative data fetching (API Schema)
  - A query returns only the data you ask for
  - Mutation for writing to tango attributes or command execution
  - Subscription: real-time connection with the server in order to get informed about events via websockets
    - Tango subscribe_event (fallback to polling)

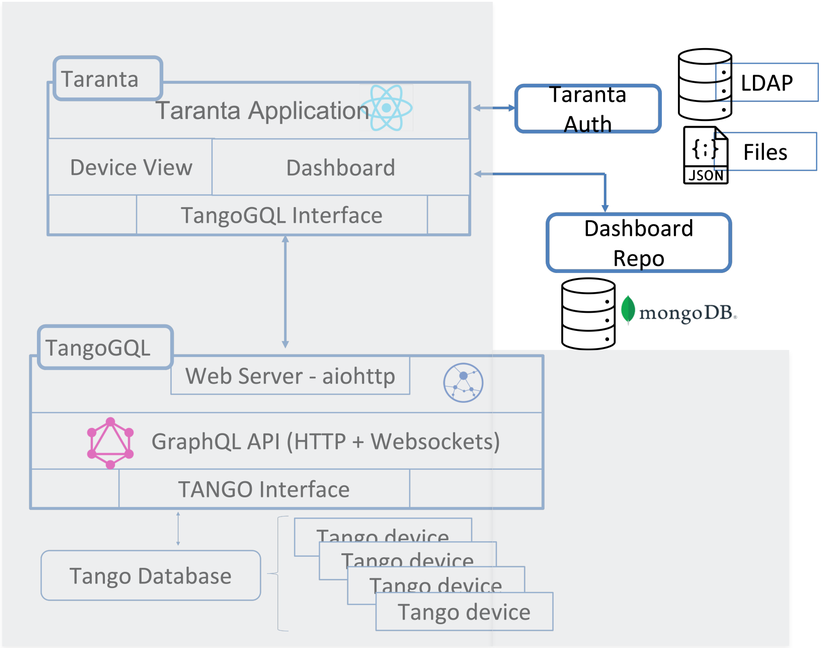
- Taranta Web APP
  - ReactJS TypeScript
  - Single app for device and dashboard





Architecture

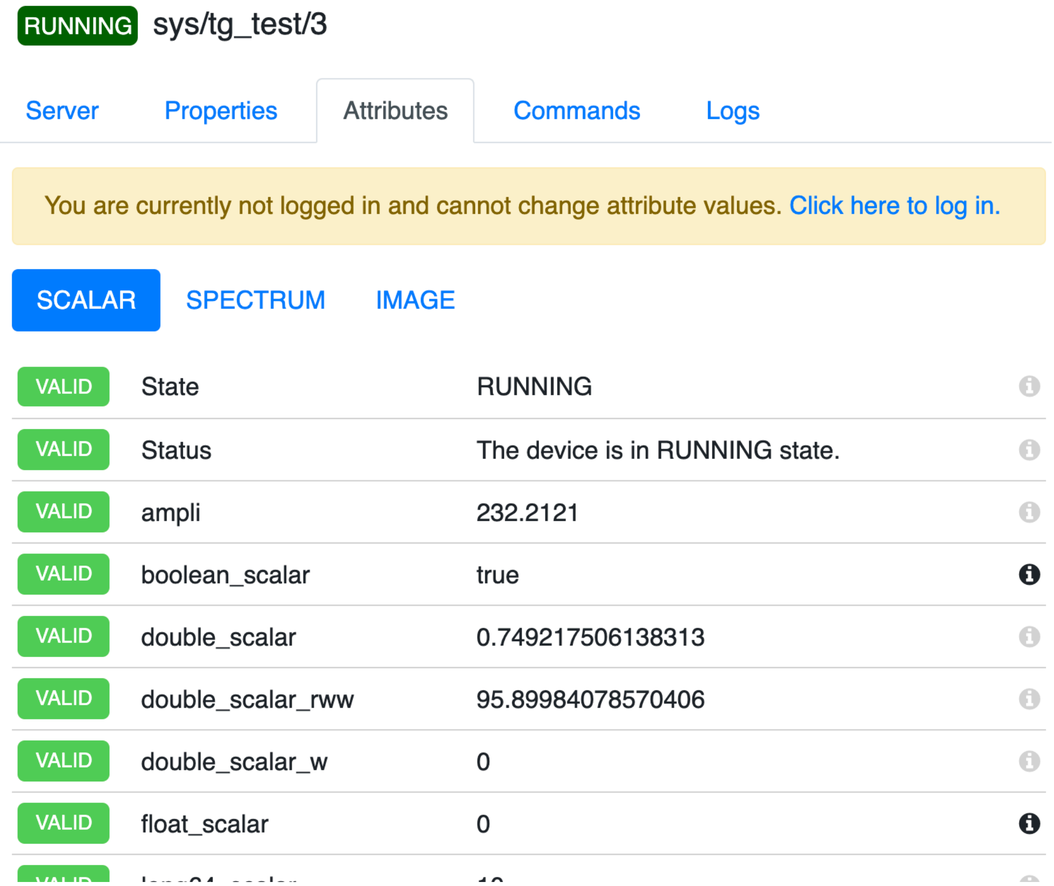
- Authentication (json, LDAP), view is always free, actions needs login
  - JSON web tokens
- Dashboard repo (mongodb), stored for users or groups, auth required



Connect taranta to your own tango environment just play: https://gitlab.com/tango-controls/web/taranta-suite

Device panel

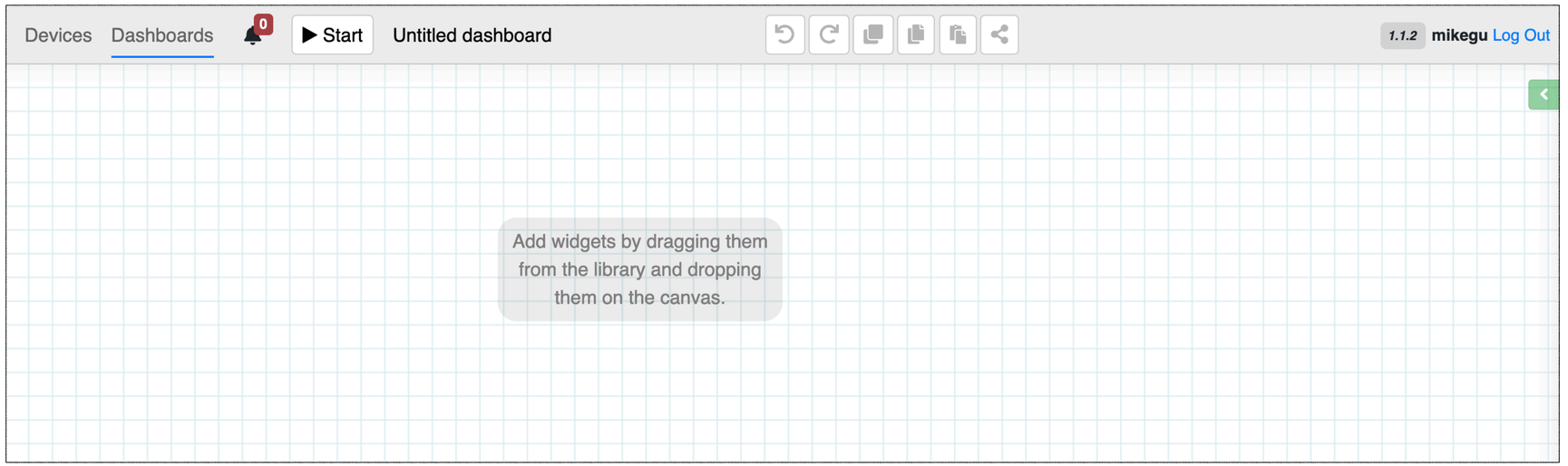
- Same philosophy as ATK monitor (jive), recreate the UI based on what the tango device offers
- Attributes, commands, properties



https://taranta-demo.maxiv.lu.se/

Dashboard

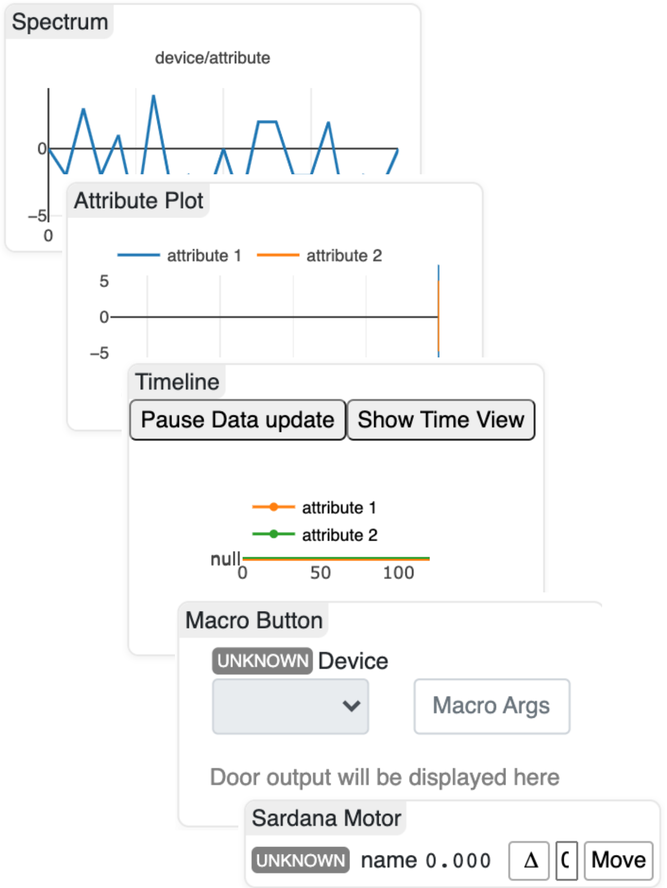
- We offer an empty canvas for our users, complete **freedom** for making their UIs themselves
- A new dashboard is available immediately, configure&run
  - Same page for editing and running
- **No delay** due to SW development
- No-Code for our users (drag&drop), no software developer involved



Widgets

- Currently 25 different widgets developed
  - More under development
- Dealing with attributes (RW), commands, plotting…

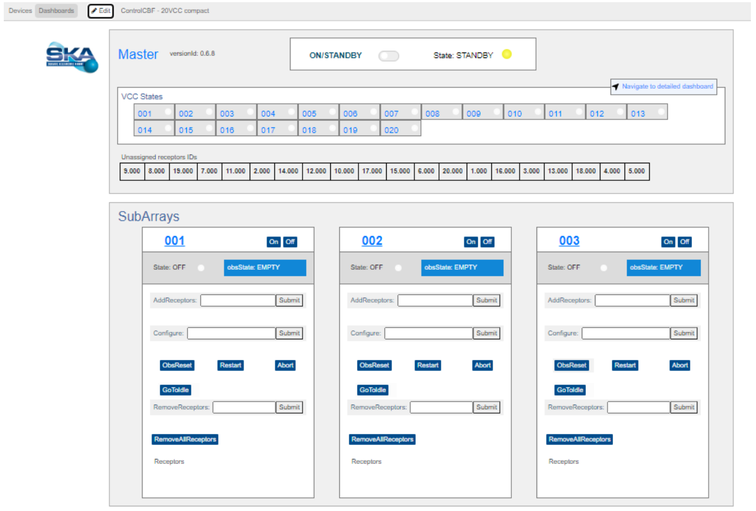
- A new widget is created with just two files
  - A configuration file: styling and inputs (e.g. a tango attribute)
  - React component: making use of a *input* prop
  - Add to the recipe the functionality you want
  - … yes.. a bit of code

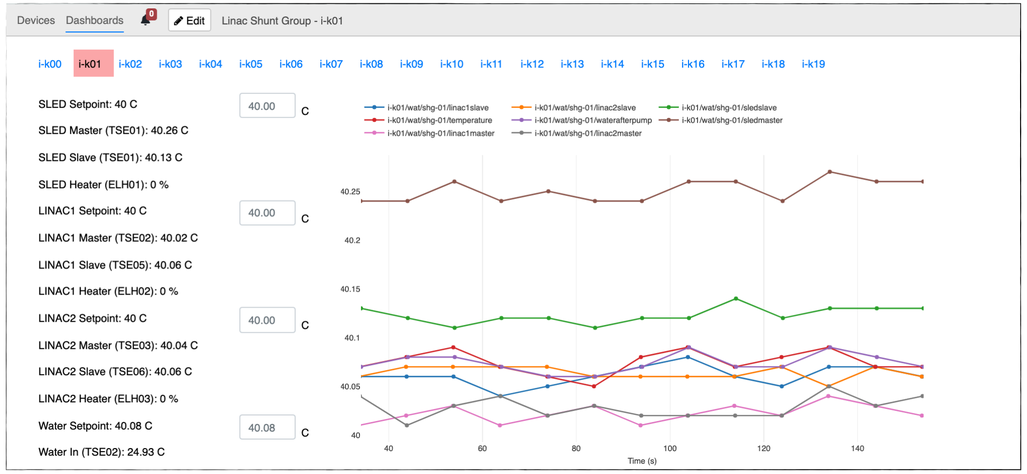


More on Y. Li's demo on the Tango workshop!

Experience and lessons learned

- Taranta core development needs important knowledge of web development, but a minimal knowledge is needed for creating new widgets (streamlined process)
- Slow adoption in the beginning (web? low number of widgets?)
  - Ramping up now
  - A quick demo is usually enough to get users started on their own
    - And to start making request
- New dashboards are created by our users without our knowledge (db stats)





Future

- Widget of widgets, aka Box widget
- Better image support
- Synoptic (is this the place?)
- More widgets means a widget *library* is needed soon
- yeah… bug fixing and improvements

Thank you for you attention on behalf of the MAXIV and SKAO Taranta teams!!