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RADIATION CENTRE

Vue.js & TangoGQL at SOLARIS

...or "How we invested many hours of our lives and hopefully you will too"

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Agenda:

1. Why PyQt may not be the best solution
2. Why web apps may be a better solution
3. Examples of web apps at SOLARIS
4. What does the future hold?

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Why PyQt may not be the best solution

- It's slow
- ...like **really** slow
- Customisation with insufficient knowledge may cause disturbance in ~~the Force~~ GUI performance
- Separate instance required at every working station
- Tweaking layout, colours etc is painful (especially with MATE) and PyQt has its limits

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What we use for TANGO web apps at SOLARIS

- Vue.js (ver 2)
  - Vuex
  - Sass
  - Bootstrap
- TangoGQL
- Apollo for Vue.js to handle TangoGQL easily
- for deployment:
  - k8s
  - Ansible
  - AWX

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Why TangoGQL & Vue.js (or React) may be good...

- They're objectively fast (with enough resources for k8s they perform multiple fetch queries in a blink of an eye)
- Only one instance needed, albeit often needed to suit multiple beamlines
- TangoGQL is a ready-to-use solution, no need for a separate backend (like a REST api)
- Tons of libraries/components and (almost) limitless customisation possibilities

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...although not perfect

- TangoGQL only communicates with TANGO device servers/facades, so queries/mutations have to be heavily configured or new DSes/facades implemented
- When package versions collide, fixing npm installation is much more painful than pip/yum/apt installation
- Basic design skills are needed, CSS coding also takes time
- JS is not Python - another language to be learnt

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Now onto some examples

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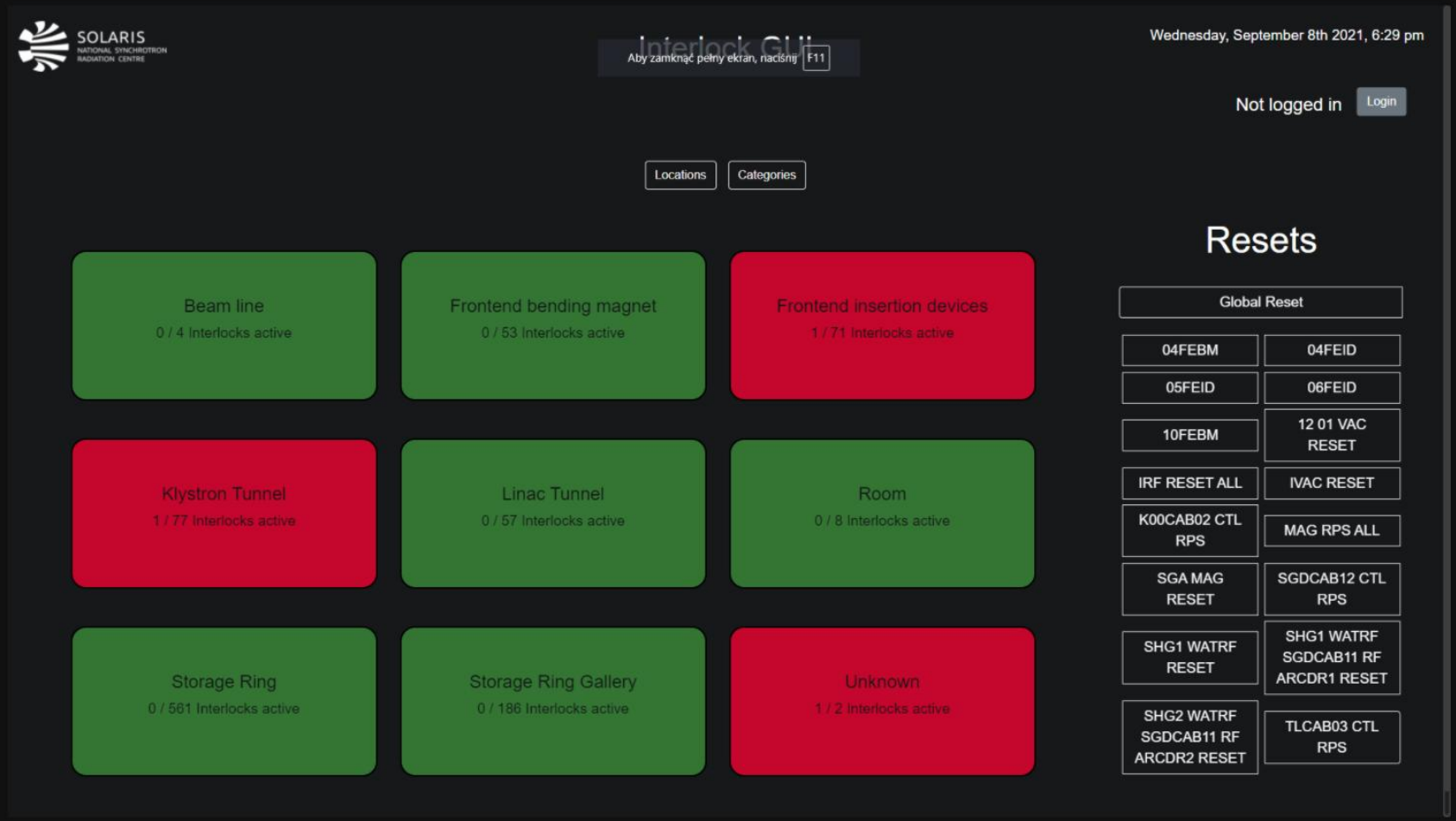
Interlock GUI - web version



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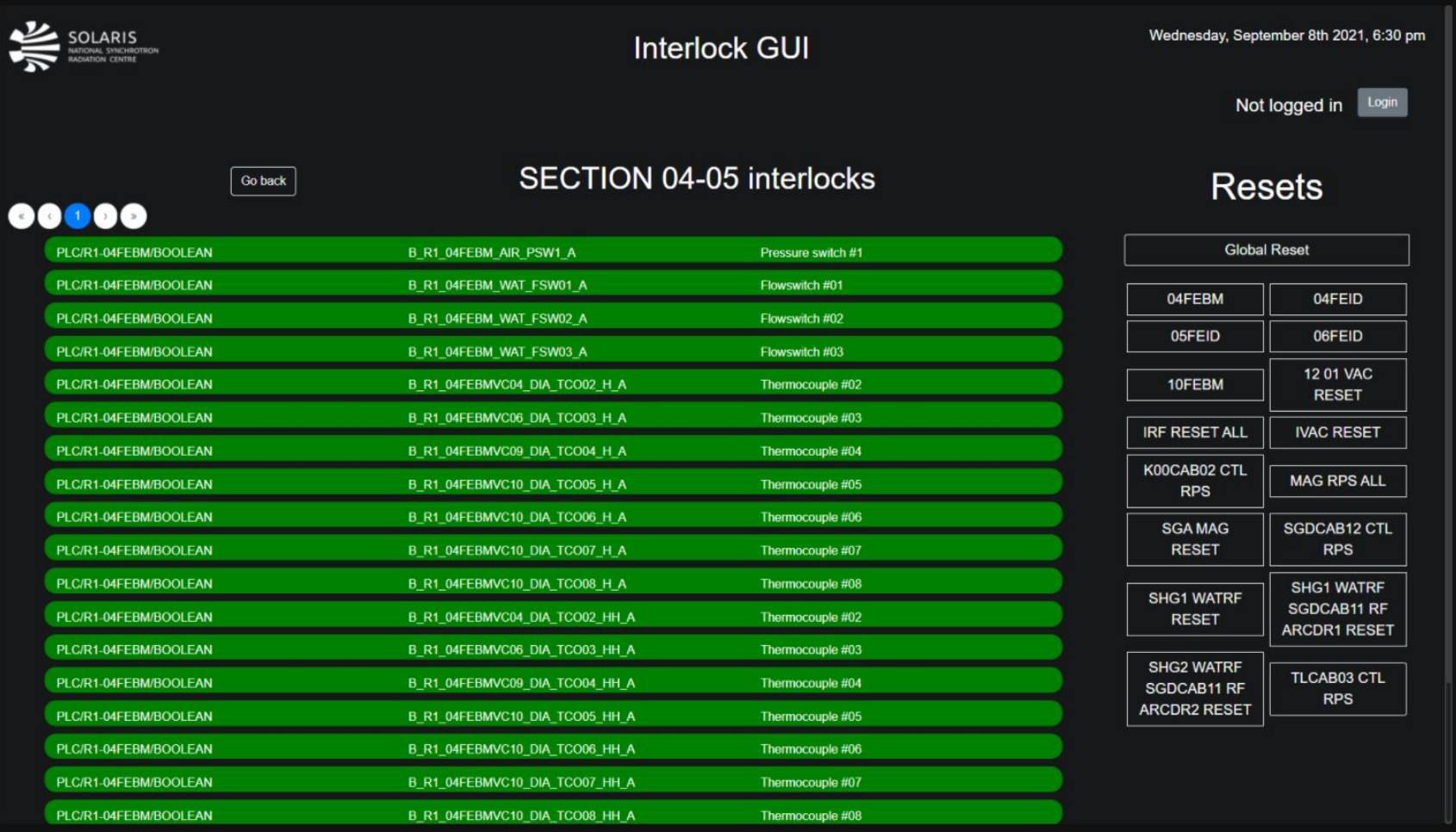

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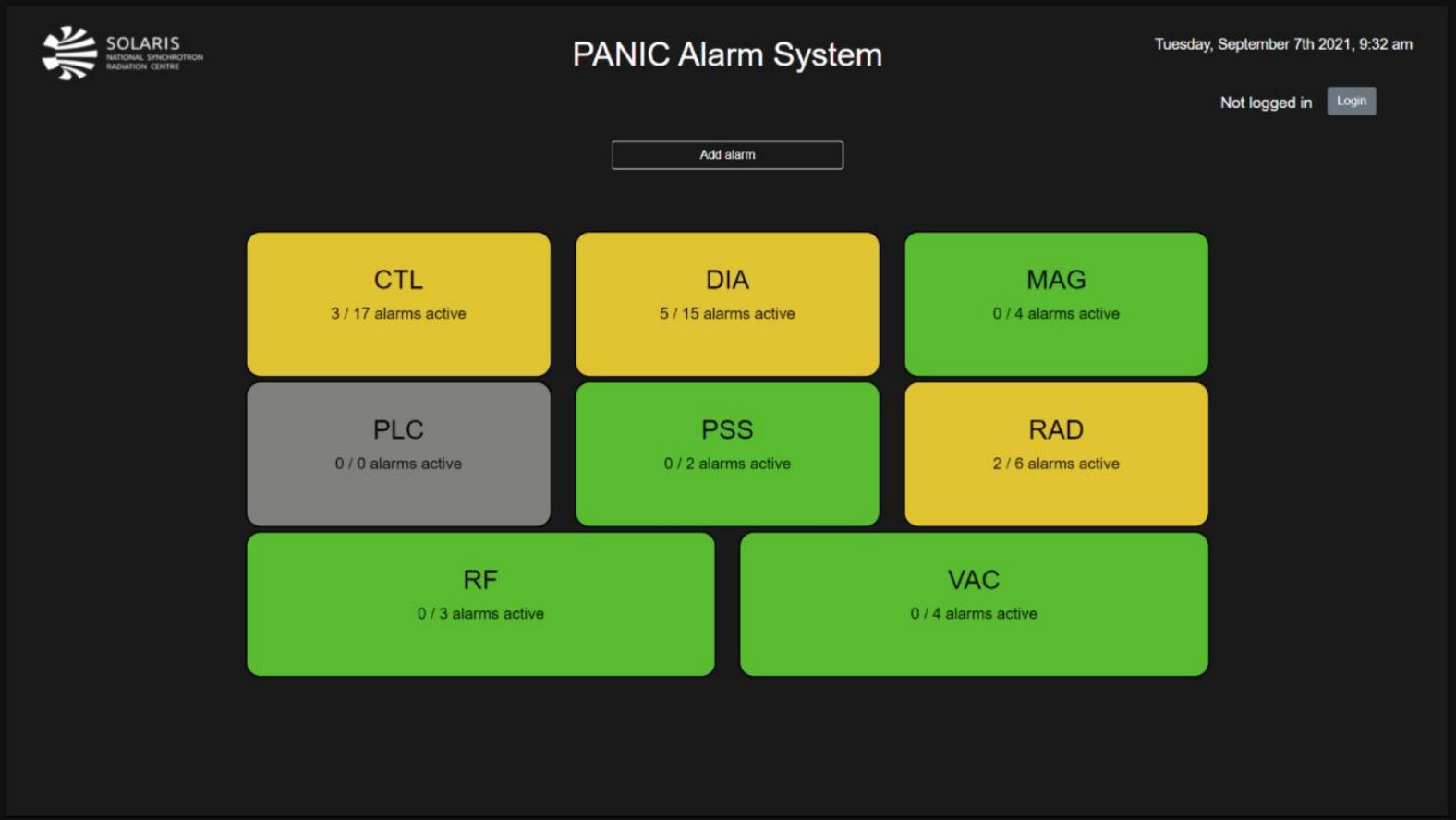
PANIC web app



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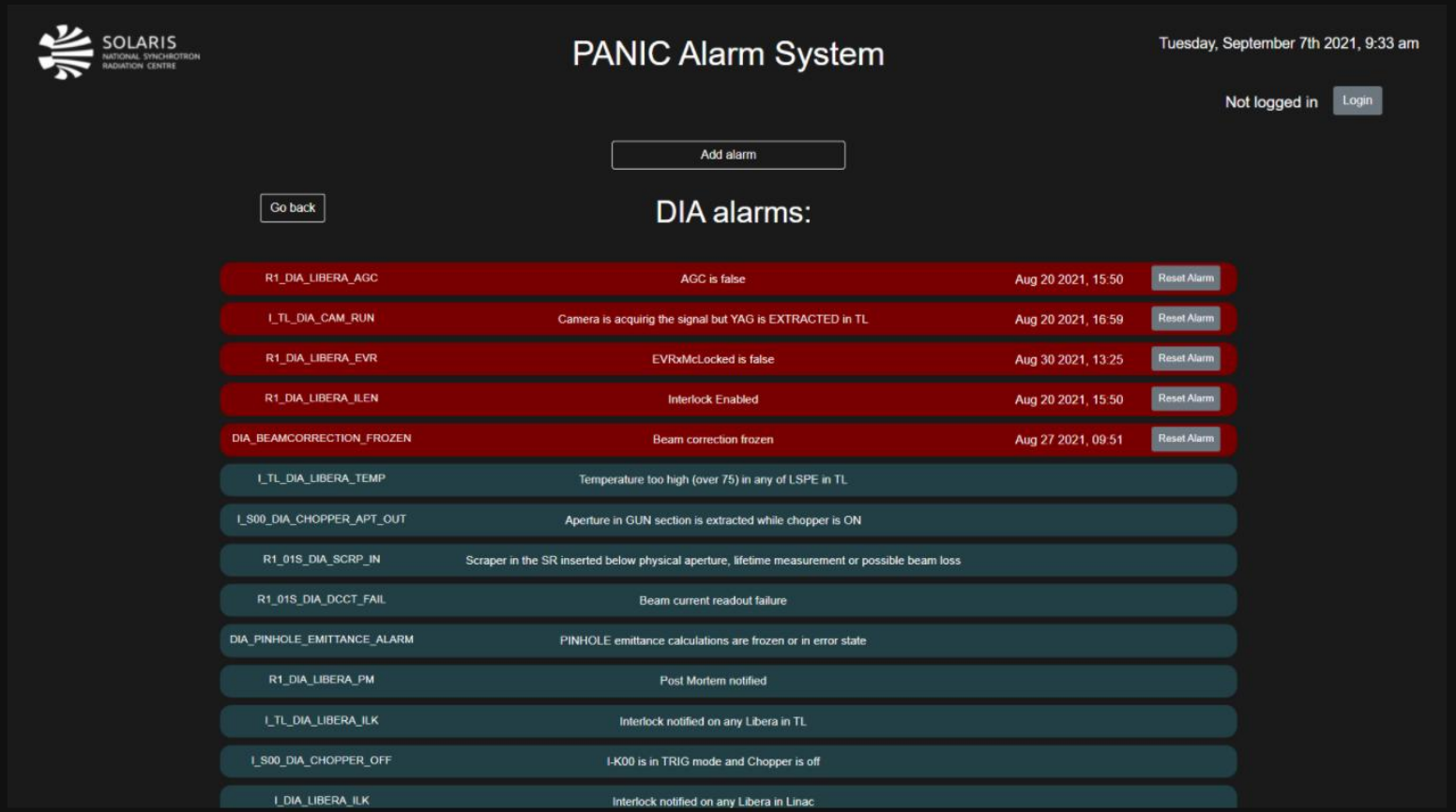
PANIC web app



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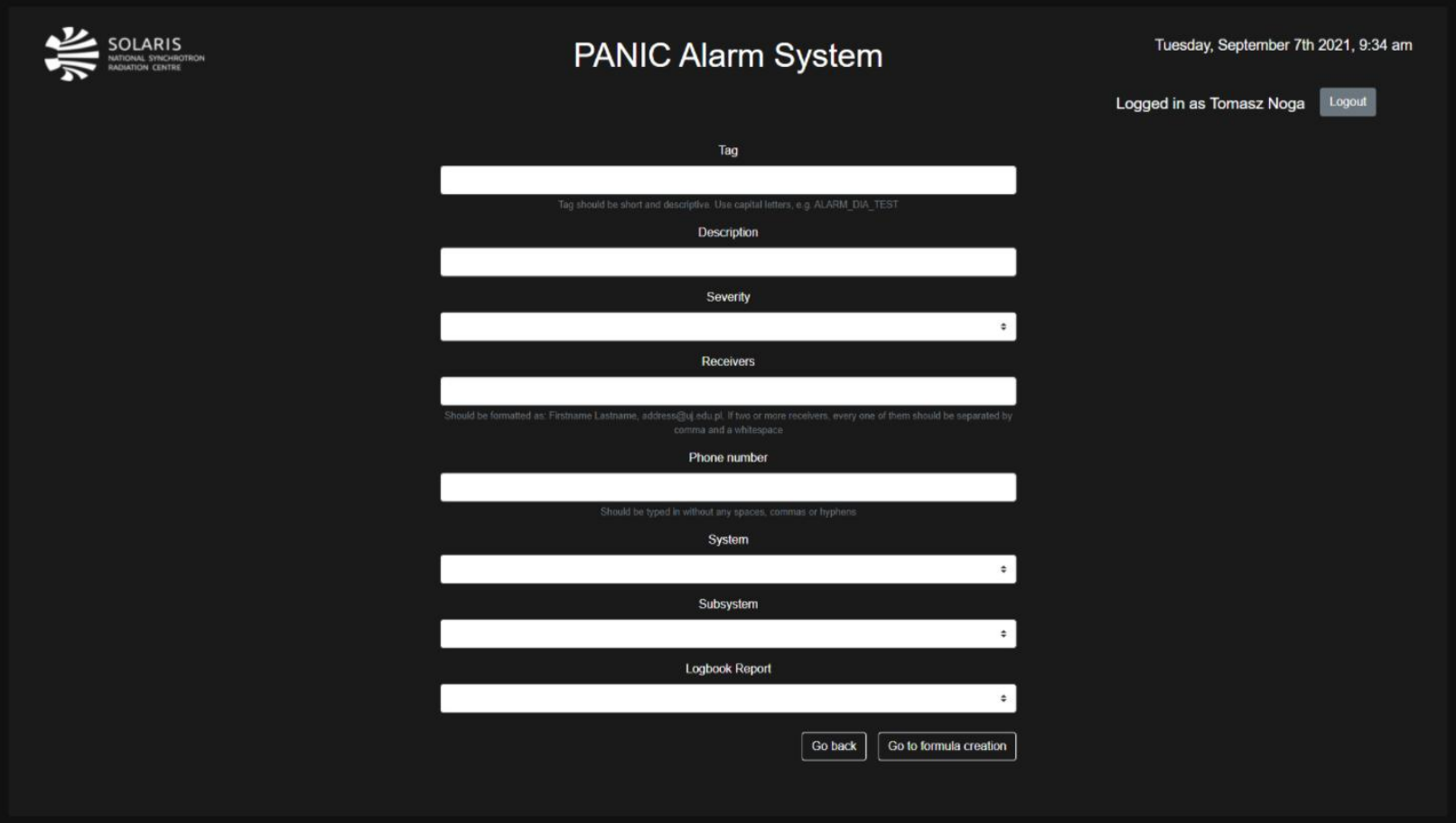
PANIC web app



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SOLARIS Machine Status Portal

Tuesday, September 7th 2021, 12:23 pm

Current	Energy
0.00 mA	0.00 GeV

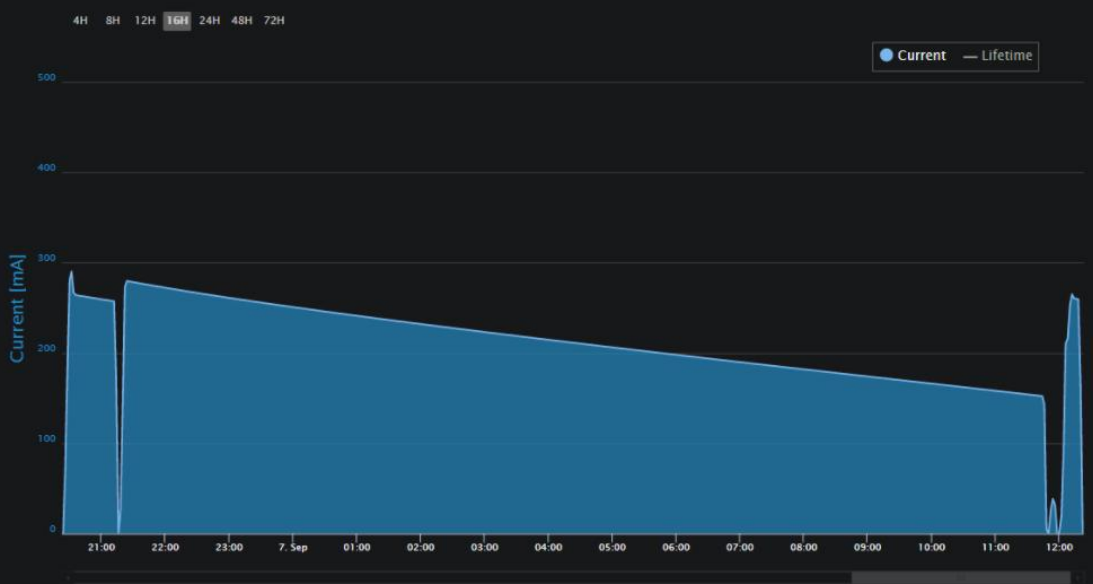
Lifetime	I·τ product
0.00 h	0.00 Ah

ID Beamlines

Name	Gap	State
PHELIX	200.00 mm	CLOSED
UARPES	200.00 mm	CLOSED
DEMETER	288.00 mm	CLOSED
SOLCRYS	N/A	under construction

BM Beamlines

Name	State
XAS	CLOSED
SOLABS	under construction
SOLAIR	under construction
POLYX	under construction



Storage Ring Status: Ring Standby

Operation Mode: Machine Day

Next injections:

8:00 am, 3:00 pm and 9:00 pm during User Operation mode

OPERATOR MESSAGE

21-09-06 21:33	BL04ID undulator FF table measurement

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Some future plans

- Spock component for Vue.js, based on some terminal library (status of the project is worse than pre-alpha, so no screenshots available)
- ...and maybe more Sardana stuff as Vue components
- ...and maybe some Taurus-like widgets for Vue apps
- Test graphql-resuest to replace Apollo
- Migration of more GUIs to Vue.js apps

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Thanks!

If you have any questions, e-mail me at tomasz.noga@uj.edu.pl