

# DeltaTau PowerBrick

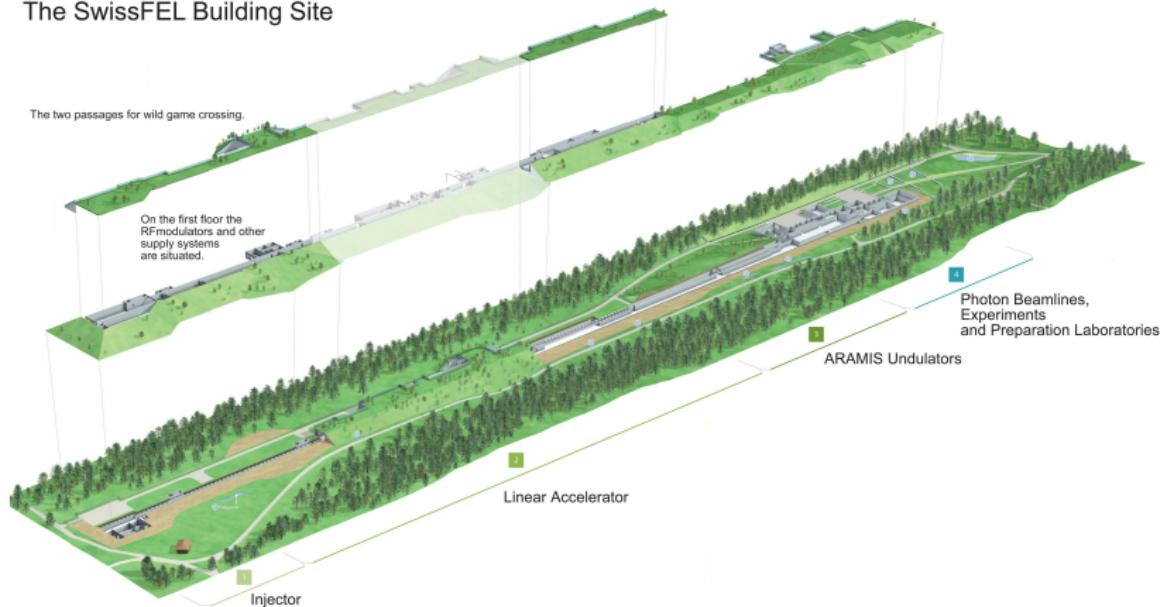
## is it any good, or just a waste of resources?

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## The SwissFEL Building Site



# Motion components overview

## controllers

- DeltaTau PowerBrick LV IMS PSI (65)
- Schneider Electronics (MForce, MDrive)
- SmartAct MCS (18 ch Rack version and stand-alone versions)
- various others (Newport, PI, ...)

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## motors

- in service ( $> 800$ )
  - $\simeq 350$  controlled by PB
  - $\simeq 120$  Schneider Steppers
  - $\simeq 80$  SmarAct actuators
  - Beckhoff EtherCAT for insertion devices

# DeltaTau PowerBrick LV-IMS PSI

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- all-in-one controller (servo, stepper, PUL/DIR, ...)
- versatile and powerful
- real-time PLC
- 8 axes, 8 encoders
- GPIOs
- Linux machine ... can run EPICS

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## con

- absolute overkill for many applications
- very complicated setup
- 1400+ pages reference manual
- IDE Windows only
- auto-tuning practically useless
- fixed micro-stepping → high phase-freq necessary



# DeltaTau PowerBrick wish-list

- NO motor\_record !!!
- holding current
- auto-tune support for steppers
- brake support for steppers
- smart set-up (auto-detect scale factors, ...)
- variables in PLC-code
- predictable PLC behaviour
- higher arithmetics for coordinated motion
- Linux and macOS IDE

# Conclusions

is it any good, or just a waste of resources?

- with a lot of fiddling it does what it's supposed to do
- comes with most features out-of the box (no BiSS)
- 95% of the cases can be done with simpler solution
- Those applications that benefit from the PB functions bring it to the limit (DCM, OM)

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Yes, it's good, but far from perfect. I'd jump to another system any day of the week

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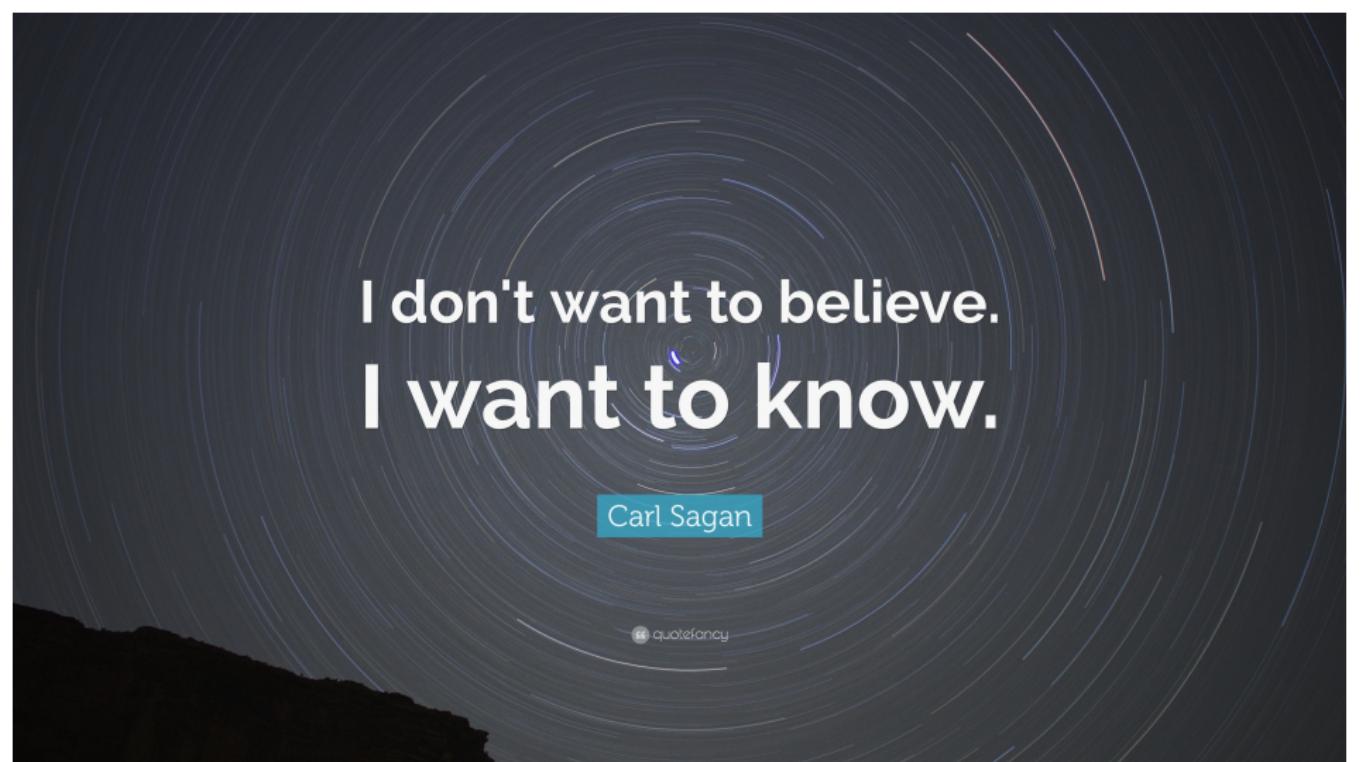
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- What will replace it?
  - We don't know yet ... it most likely will involve EtherCAT.  
it's not going to be a vendor-bound solution (Omron, Beckhoff, ...)



I don't want to believe.  
I want to know.

Carl Sagan

 quotefancy

Thank you