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Motion Control & Automation

- Update at IKON11 -

Thomas Gahl

Motion Control & Automation Group

www.europeanspallationsource.se

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Motion Control & Automation (MCA)

- Overview-

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1 Evaluation for Generic Motion Control Unit

2 Update on Phase1 Guidelines, v2.3 (ESS-0049514)

3 Motion Control Workshop Series

4 Motion Control Seminar Series

5 Update on MCAG contact persons

6 MCAG confluence pages

Generic Motion Control Unit

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- Decision for an EtherCAT based modular Motion Control System
- Version 1: Beckhoff TwinCAT3 (Windows based)
  - DIN-rail based cabinet installation
  - PLC, PTP and TCP/IP licenses necessary (550 EUR / CPU)
  - Most probably the solution for instruments installations
- Version 2: Open Source Master (Etherlab, Linux based)
  - DIN-rail based 19''sub-frame installation
  - Limited functionality yet
  - Chosen solution for accelerator installations
- More details in the booth presentation on Thursday
- anders.sandstrom@esss.se

Generic Motion Control Unit – Test Crate

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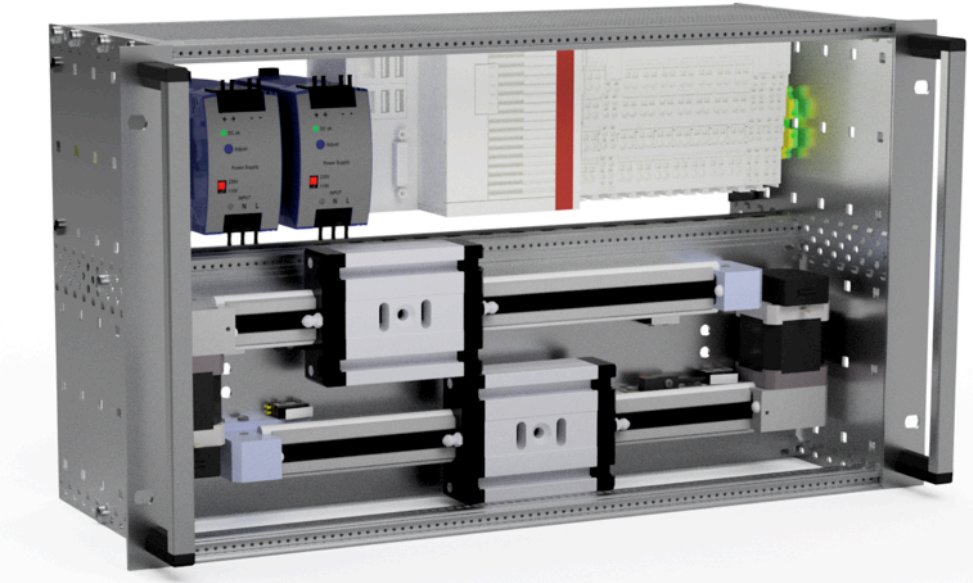
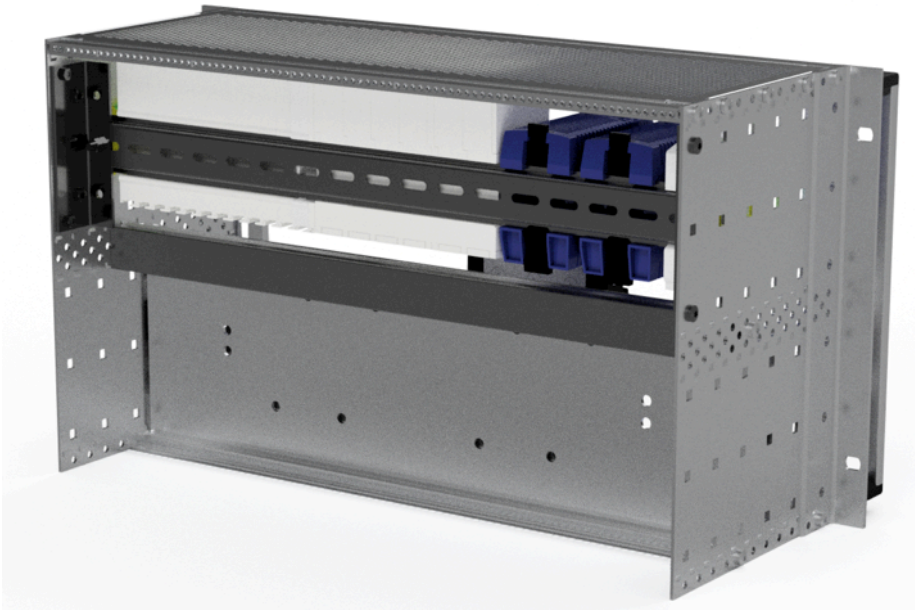
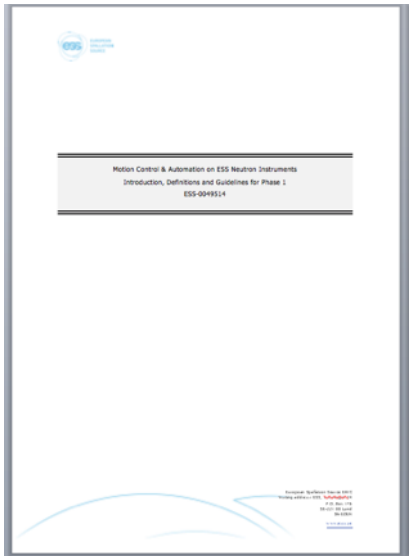
- 19’’- 6HU – subcrate, depth 175mm
- Different configurations for 1 or 2 axes
- Standardised set of IOs per axis
- Mechanics included
- For both OS versions (W7/TwinCAT and Linux/Open Source)
- Test crate for integration and education purposes
- Technical details on the MCAG confluence pages
- federico.rojas@esss.se





MCA Phase 1 Guidelines – ESS-0049514

- v2.2 issued, v2.3 work in progress
- Changes after input from partners
  - Better definition of Table of Motion
  - Definition of precision/accuracy/resolution
  - Spatial distribution of axes
  - Risk analysis
  - Ph1 assessment, TG2 review
  - Appendix: TG2 check list
- More info about the check list in Federico's talk
- Latest issued version on the instrument projects confluence pages
- paul.barron@esss.se



MCA Motion Control Workshop I – April 2016

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- First in a series of workshops to gather in-kind partners of ESS who will work with motion control on instruments in the different instruments consortia currently being set up.
- Round table discussions on
  - Motors
  - Encoders
  - Switches
  - Cables & Connectors
  - Electrical Design
  - Project Workflow
  - MCA Lab visit & presentations
- More info soon on confluence pages
- paul.barron@esss.se

MCA Motion Control Workshop II – Nov 2016

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- The area of focus will shift from field components to the motion controller itself and electrical design in general with further details following at a later date.
- Doodle poll is out
- Possible subjects
  - Generic Motion Controller for ESS
  - Open source solution vs. industrial controller
  - Discussing real use-cases
  - Measuring and diagnostic tools
  - Lab and workshop space
  - Commissioning workflow
  - MCA Lab visit & presentations
- More info soon on confluence pages
- paul.barron@esss.se

MCA Seminar Series 2016

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- This seminar series is aiming primarily to the members of the MCA Group (MCAG) at ESS. We are happy to invite anybody interested at ESS in the subjects to join. We haven't manage yet to transmit the talks through video link.
- Started in Jan. 2016, 20 talks until now.
- Another 10 talks are scheduled this year.
- To be continued in 2017.
- Subjects: Neutron Sources, Neutron Instrumentation, Motion Control, Components (Motors, Drivers, Encoders, Harsh Environment), Robotics.
- Not all of the abstracts, talks and background information are uploaded yet (will be done in the next weeks), but you can have a look on the MCA confluence pages.
- federico.rojas@esss.se

Motion Control & Automation Group

- Key Contact for Instrument Projects -

1.	LOKI	Kristina Jurisic
2.	NMX	Paul Barron
3.	ODIN	Paul Barron
4.	BEER	Paul Barron
5.	DREAM	Anders Sandström
6.	SKADI	Anders Sandström
7.	C-SPEC	Anders Sandström
8.	ESTIA	Federico Rojas
9.	T-REX	Anders Sandström
10.	FREIA	Kristina Jurisic
11.	BIFROST	Thomas Gahl (com.)
12.	HEIMDAL	Thomas Gahl (com.)
13.	MAGIC	Federico Rojas
14.	MIRACLES	Federico Rojas
15.	VESPA	Kristina Jurisic

Latest information on confluence page:

https://ess-ics.atlassian.net/wiki/display/SD/CONTACTS

MCAG Confluence Pages

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- Motion Control & Automation Group page
  - https://ess-ics.atlassian.net/wiki/pages/viewpage.action?pageId=47448632
- Motion Control Test Crates
  - https://ess-ics.atlassian.net/wiki/display/MCAG/Motion+Control+Test+Crates
- Phase 1 documents and templates
  - https://ess-ics.atlassian.net/wiki/display/MCAG/Instrument+Projects
- Motion Control Workshops
  - https://ess-ics.atlassian.net/wiki/display/MCAG/1.+ESS+MCA+Workshop+2016.04
- Motion Control Seminars
  - https://ess-ics.atlassian.net/wiki/display/MCAG/MCAG+Seminar+Series+2016

Questions?