

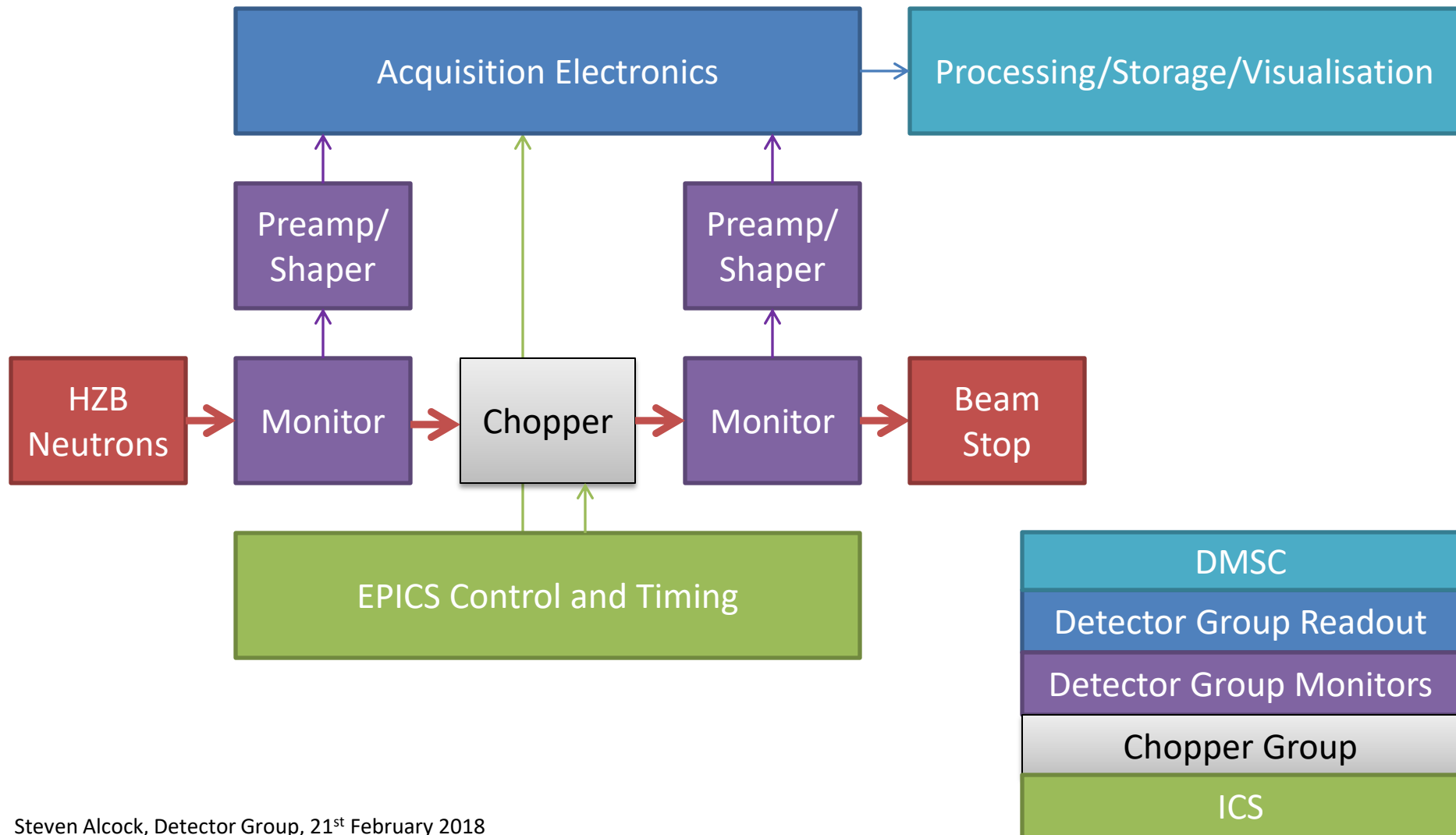


EUROPEAN
SPALLATION
SOURCE

V20 Feedback

Second DMSC Detector Group Readout Meeting
21st February 2018
Steven Alcock (DG)

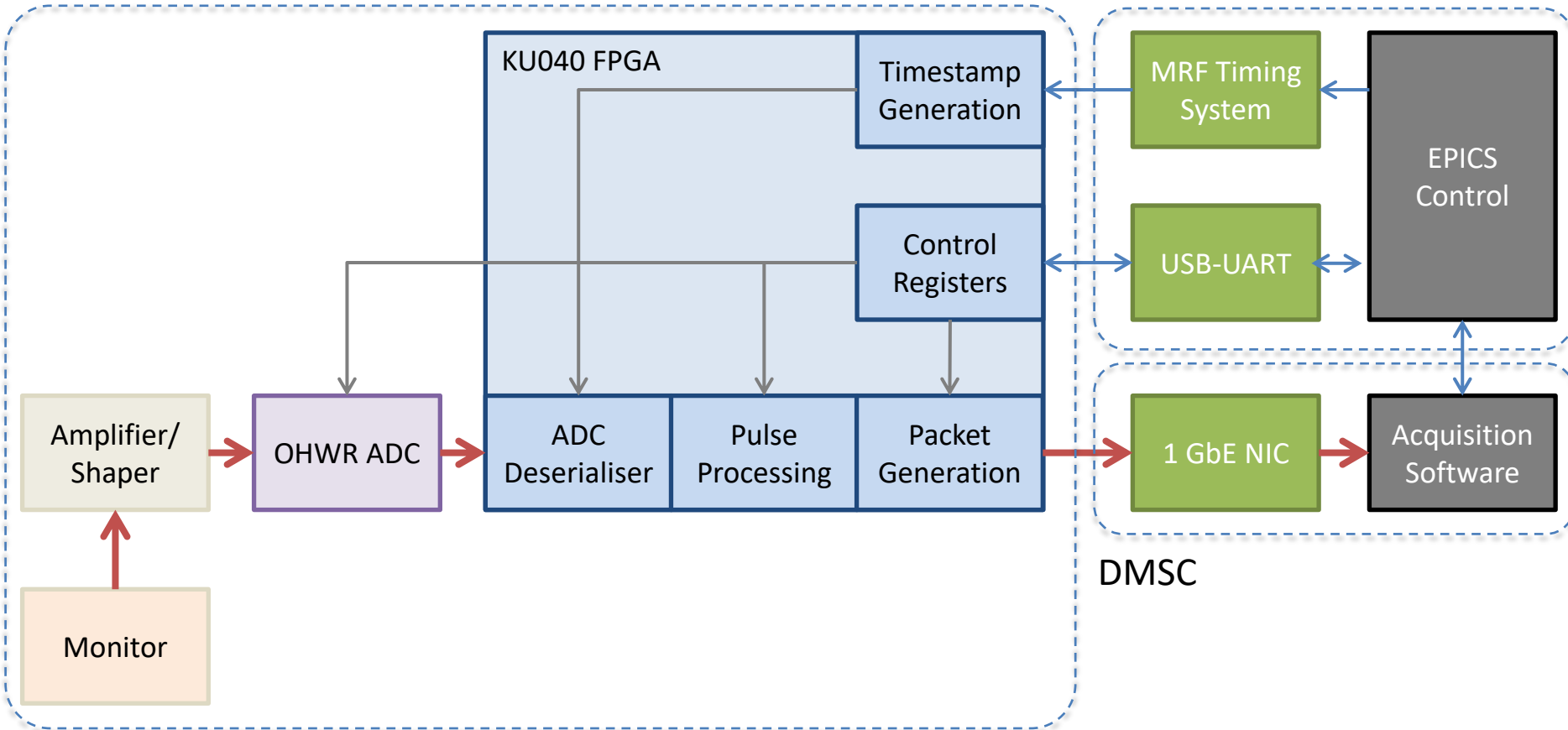
V20 Architecture



ESSIIP ADC Readout Demonstrator Architecture

Detector Group

ICS



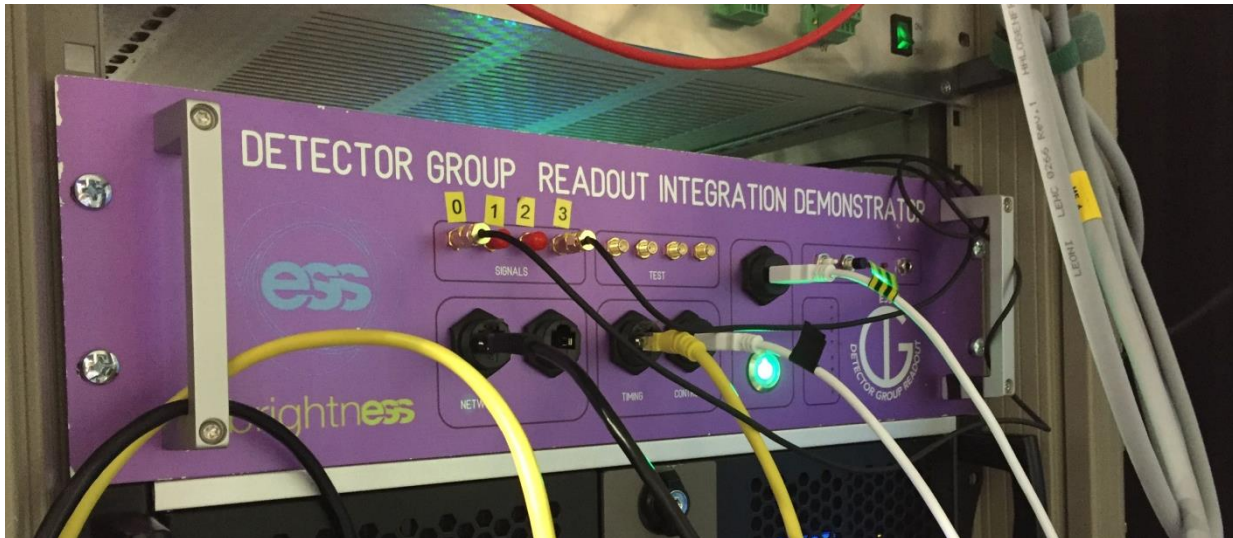
V20 Requirements



- Commission ESSiIP demonstrator at V20.
- Specifically, provide timestamped readout for two beam monitors:
 - Analog connectivity to shaper outputs,
 - Digitisation,
 - Rate reduction via pulse thresholding,
 - ICS-synchronous timestamp generation,
 - EPICS control,
 - UDP streams in pre-agreed format.

Successes

- Everything worked (most of the time): Niko was able to demonstrate the correct functionality of the mini chopper.
- Collaborative and cooperative working.
- Seemingly excellent signal quality from monitors.
- Pain-free integration with DMSC software, thanks to early engagement and testing.
- Remote programming, configuration and diagnostics via ICS VPN tunnel.



Lessons Learned



- Documented protocol definitions are important.
- Coverage of firmware testbenches should be improved.
- EPICS monitoring should be improved.

Conclusions



- Generally positive experience.
- Platform is viable for limited use cases.