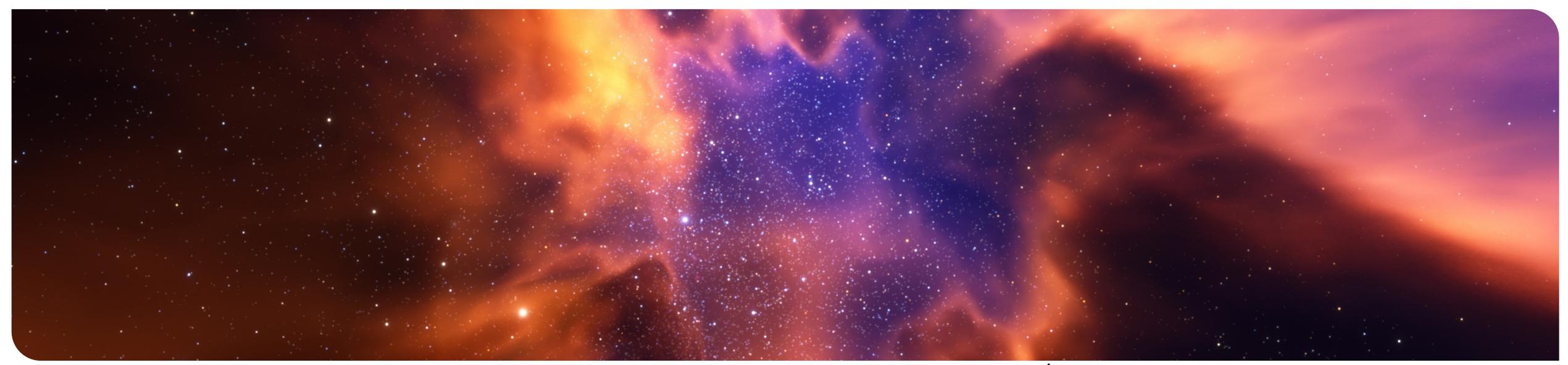


Project Plan DELight: December until April

by Greta Heine



Project Scope

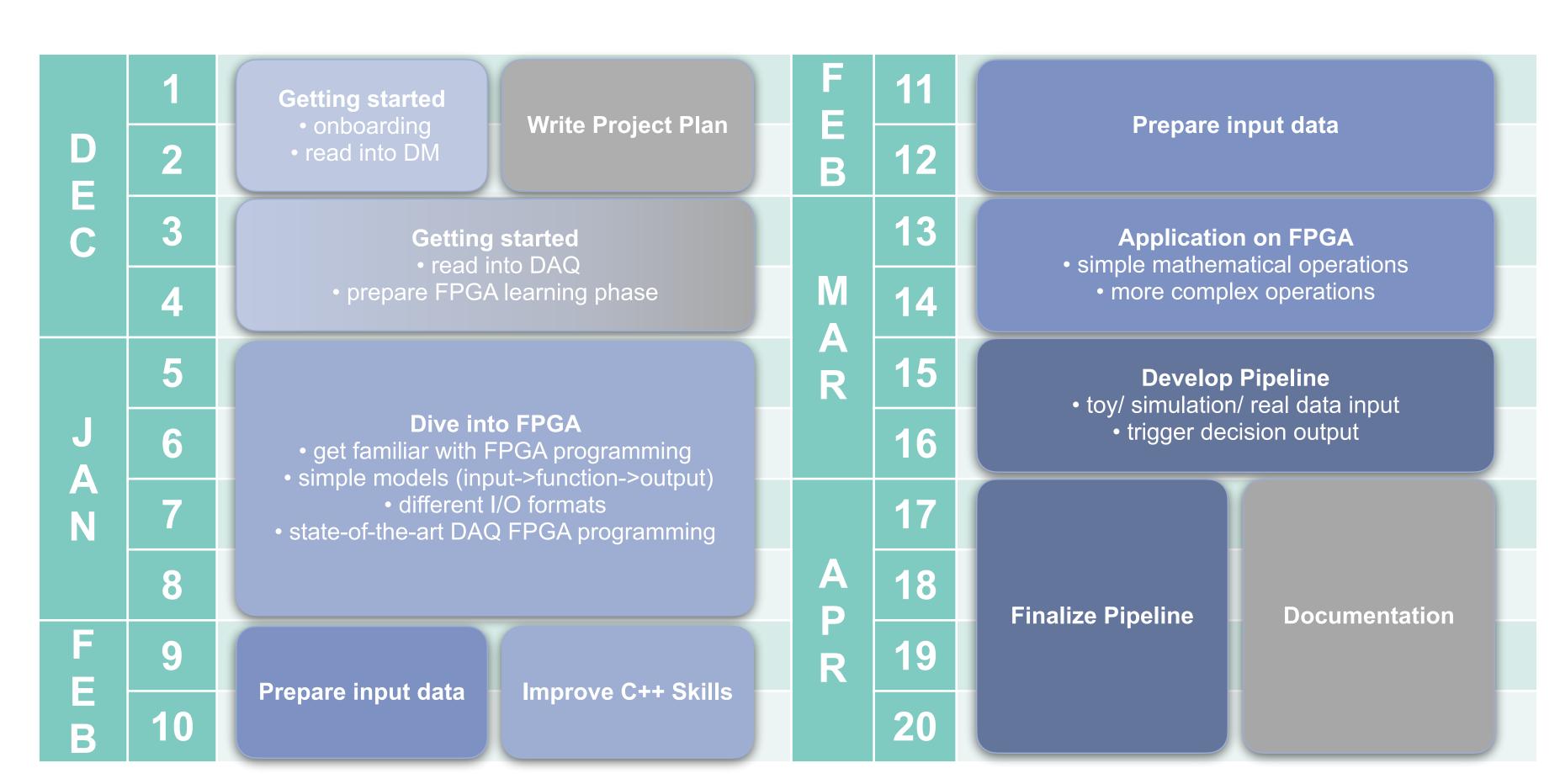


- time scale: December 2022 to April/ May 2023 (20-24 weeks)
- deliverable: a pipeline for DELight detector (MCC) data streaming through FPGA with trigger-like output
 - data input: MMC data or SuperCDMS data or toy data
 - FPGA function: from simple mathematical operators to more complex data processing functions and implementation of ML (via hls4ml) in best case
 - FPGA output: trigger-like output

Time Plan



5 months = 20 weeks





Time Plan



6 months = 24 weeks

| | 1 | Getting started | | | 13 | | |
|-------------|----|---|--------------------|-------------|----|---|---------------|
| D E C | 2 | • onboarding • read into DM | Write Project Plan | M | 14 | | |
| | 3 | Getting started | | A R | 15 | Application on FPGA • simple mathematical operations • more complex operations • implement ML via hls4ml | |
| | 4 | read into DAQprepare FPGA learning phase | | | 16 | | |
| J A N | 5 | Dive into FPGA • get familiar with FPGA programming • simple models (input->function->output) • different I/O formats • state-of-the-art DAQ FPGA programming | | | 17 | | |
| | 6 | | | A P R | 18 | | |
| | 7 | | | | 19 | Develop Pipeline • toy/ simulation/ real data input | |
| | 8 | | | | 20 | trigger decision output | |
| F E B | 9 | Prepare input data | Improve C++ Skills | | 21 | Finalize Pipeline | Documentation |
| | 10 | | | M | 22 | | |
| | 11 | | | A | 23 | | |
| | 12 | | | | 24 | | |

