*Project scoping:* UCN Kicker Sequencer Module (KSM) firmware

**Proponent: TRIUMF UCN group**

**TRIUMF contact: Thomas Lindner**

**Commitment #: ???**

**Motivations and overall goals**

We need a control system for UCN kicker magnet that will direct a fraction of beam bunches to the UCN beamline. Using either a PPG or IO-32 or Altera Cyclone V SoC evaluation card, the STD should provide firmware for the proposed Kicker Sequencer Module (KSM). This firmware will need to provide a configuration interface that can be used by an EPICS IOC program.

**Related Documentation**

The document kicker\_control\_request.pdf provides significantly more details about the overall kicker magnet control, as well as the necessary functionality for the KSM module.

**Deliverables**

* Firmware:   
  - provide firmware that supports KSM  
  - provide help integrating firmware with EPICS IOC.

**Synergy with other projects**

None.

**Task list**

|  |  |  |
| --- | --- | --- |
| Task | Responsibility | Weeks of work |
| Provide KSM firmware | XXX | XXX |
| Provide support for EPICS control | XXX | XXX |

**Scheduling:**

Requested by proponents:

* Complete functionality: July 15, 2016

Scheduled by STD:

* ???

**Other Considerations**

* I will probably ask the control groups whether they would prefer a VME processor based solution or a Altera Cyclone V based solution. This hardware decision will need coordinated between whoever does the firmware and the EPICS.
* The schedule above is based on the rest of the UCN beamline being ready for first tests in July/August. If that slips (ie because the rest of the beamline controls are not ready), then the schedule for KSM firmware can be pushed back.