NOVEL REGISTRATION SYSTEM FOR NEUTRON MONITORS. S. I. Böttcher[1] and C. T. Steigies[1], [1]Institut für Experimentelle und Angewandte Physik, Christian-Albrechts-Universität zu Kiel, Leibnizstrasse 11, D-24118 Kiel, GERMANY, steigies@physik.uni-kiel.de.

Introduction: Like many stations, the Kiel Neutron Monitor has upgraded its registration system several times over the years. First in the 1990s an IZMIRAN registration system was installed to make the station capable of registering data in 1-min resolution and provide this on the internet (although with a 1h delay). Within the NMDB project a registration system developed by the University of Alcala[1] was installed in parallel to the IZMIRAN system. This new hardware could submit this data in real-time to NMDB, but has some limitations due to its data storage on SD cards.

We present a novel registration system for counter signals based on an FPGA and a µC with USB, serial Port, and Ethernet interfaces. An interface board for up to 24 counter channels can be configured for a wide range of signal levels. Each channel comes with a programmable discriminator. The FPGA reports the observed pulse length, for frontends that encode pulse height information.

References:

[1] Población, Ó. G., Blanco, J. J., Gómez-Herrero, R., Steigies, C. T., Medina, J., Tejedor, I. G., Sánchez, S. (2014) *Journal of Instrumentation, 9,* T08002.