MUSST

The NIM module 'MUSST' was designed at the ESRF to produce trigger patterns enabling synchronisation with external events (usually used to synchronise several components of a beamline). Its design allows scientists to adapt the output trigger signals to any specific needs of a particular experiment (events can be chained in order to produce specific trigger sequences).

The detection of events is achieved by hardware comparators that guarantee the proper synchronisation of trigger patterns and minimum delays in the generation of output signals. A programmable sequencer is in charge of executing application specific programs that can be written by the user in a high-level language and transferred to MUSST through one of the available communication ports: GPIB or serial line.

The functionality of this module covers a wide range of the requirements found at the ESRF beamlines in what concerns synchronisation and triggering.

Existing applications that could benefit from the features of the module are among others: *Continuous scans at constant or variable steps, 2D mapping, synchronous operation of shutters or fast scans with special detectors like CCD sensors in kinetics mode.*

Features

- **Easy programmable language.**

- **Communication established by GPIB or RS232/RS422.**

- **Built-in compiler.**

- **Interface to single-ended TTL or differential RS422 quadrature signals from position encoders.**

- **Daughter cards available to adapt the circuit if working with analog inputs or absolute encoders (SSI) .**

- **Data storage capability which can be used as data acquisition unit.**