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Modular Software for MicroTCA.4 Based Control Applications

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The MicroTCA.4 crate standard provides a powerful electronic platform for digital and analogue signal processing. Besides excellent hardware modularity,
it is the software reliability and flexibility as well as the easy integration into existing software infrastructures that will drive the widespread adoption of the standard.

The DESY MicroTCA.4 User Tool Kit (MTCA4U) is a collection of C++ libraries which facilitate the development of control applications. The
device access library allows convenient access to hardware with an extensible register based interface. Starting from PCI Express, which is used inside a MicroTCA.4 crate, the introduction of new, network based protocols extends its reach beyond a single crate and even MircoTCA itself.
Features like register name mapping and automatic type conversion provide a level of abstraction which makes the software robust against firmware and even hardware changes. Bindings to widely used scripting tools like Matlab and Python as well as
a graphical user interface complete the protfolio needed for fast prototyping and firmware development.

We give an update on the project status and present new features which have recently been introduced or are currently being implemented.

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