Ximea XiApi Camera Plugin for Lima

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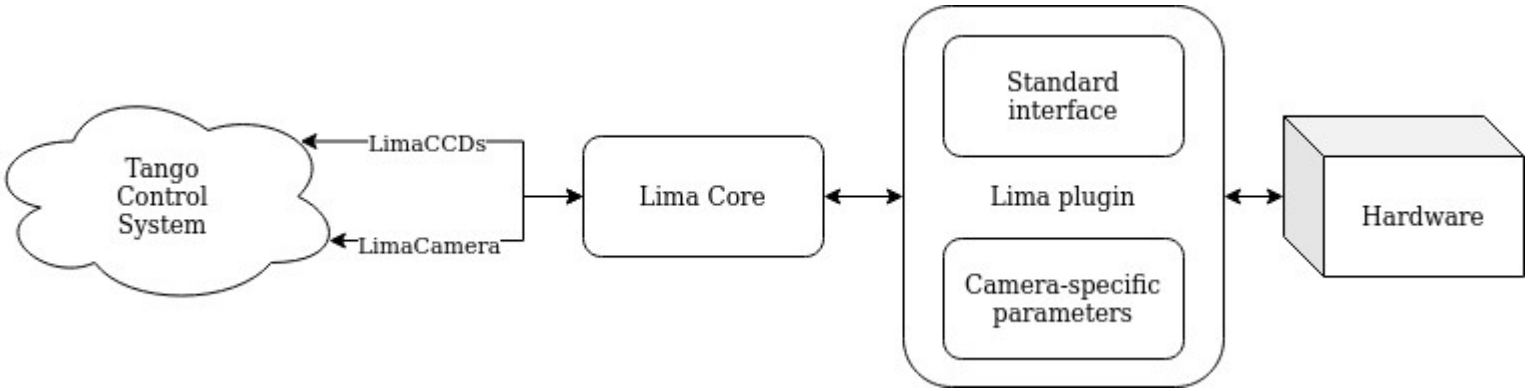
Lima

LimA (Library for Image Acquisition) is a project for the unified control of 2D detectors. Created and developed at ESRF it is now widely used at numerous scientific facilities with wide range of cameras and other detectors.

At the core of the project is separation between hardware specific code and standard interface available for the user. It is written in C++ but comes with Python binding and PyTango based device server integration.

New hardware is integrated by means of C++ plugins.



Ximea xiX series cameras

The Ximea xiX series is an extremely diversified and highly modular camera family. It offers multiple choices of combining sensors and interfaces.

Together with minimal latencies and CPU load, the cameras are a perfect fit for embedded vision and multi-camera applications. Thanks to flat flex cabling, the board-level and semi-housed variants allow integration in tight spaces and close proximity between cameras.

xiAPI

xiAPI is a new common software interface for all XIMEA cameras, and represents a simplified version of previous, generic M3API.

It provides all camera features over very simple interface and supports acquisition over GenTL.

xiAPI supports all Ximea PCIe and USB3 cameras and runs on Linux and Windows.

lima-camera-ximea plugin

The plugin encapsulates xiAPI calls into standard Lima interface. It takes care of translating Lima acquisition coniguration into camera settings.
It can both set up camera for hardware image processing or delegate this task to the Lima core.

The acquisition buffers are managed by Lima which frees both the plugin and xiAPI from memory management.

The plugin runs with minimal overhead enabling full speed acquisition at 16.1Hz frame rate with HDR mode and full 6144x6144 resolution.

The plugin implements a subset of parameters available via xiAPI. Currently it was tested only with MX377MR camera, but it should support any Ximea camera supported by xiAPI.

Majority of the plugin is written in C++ with Python used for Tango binding.

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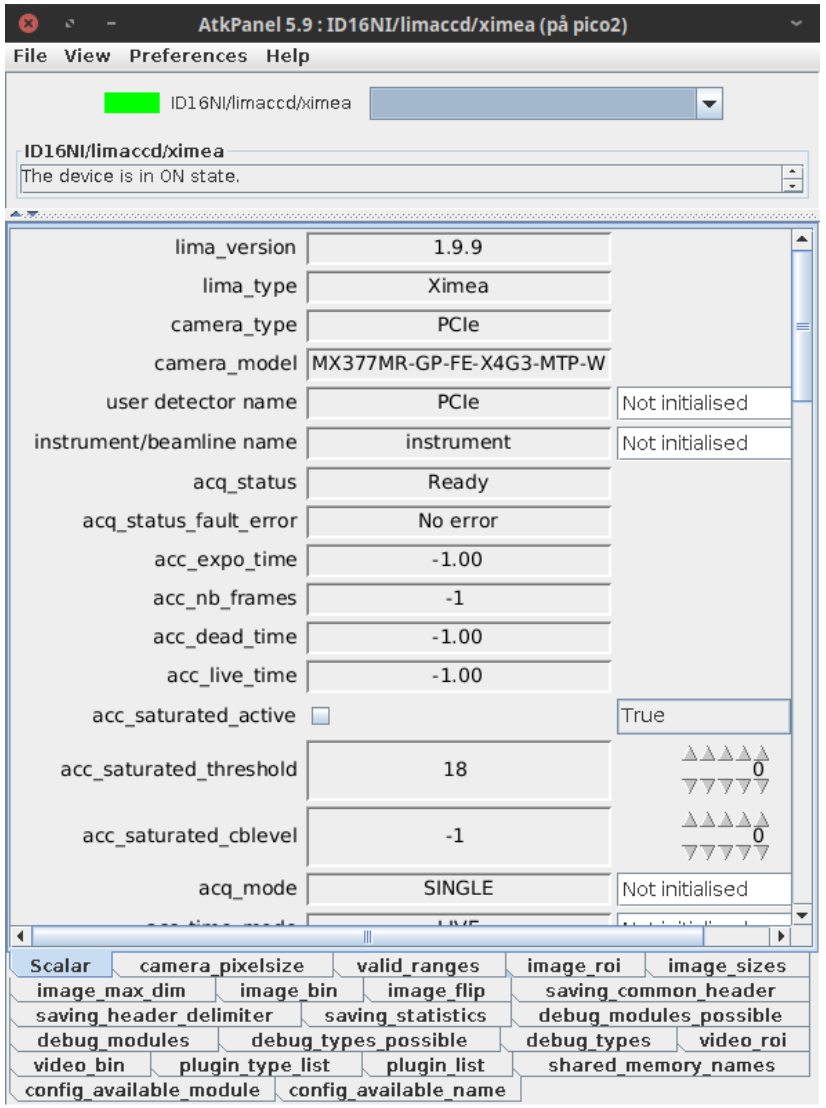

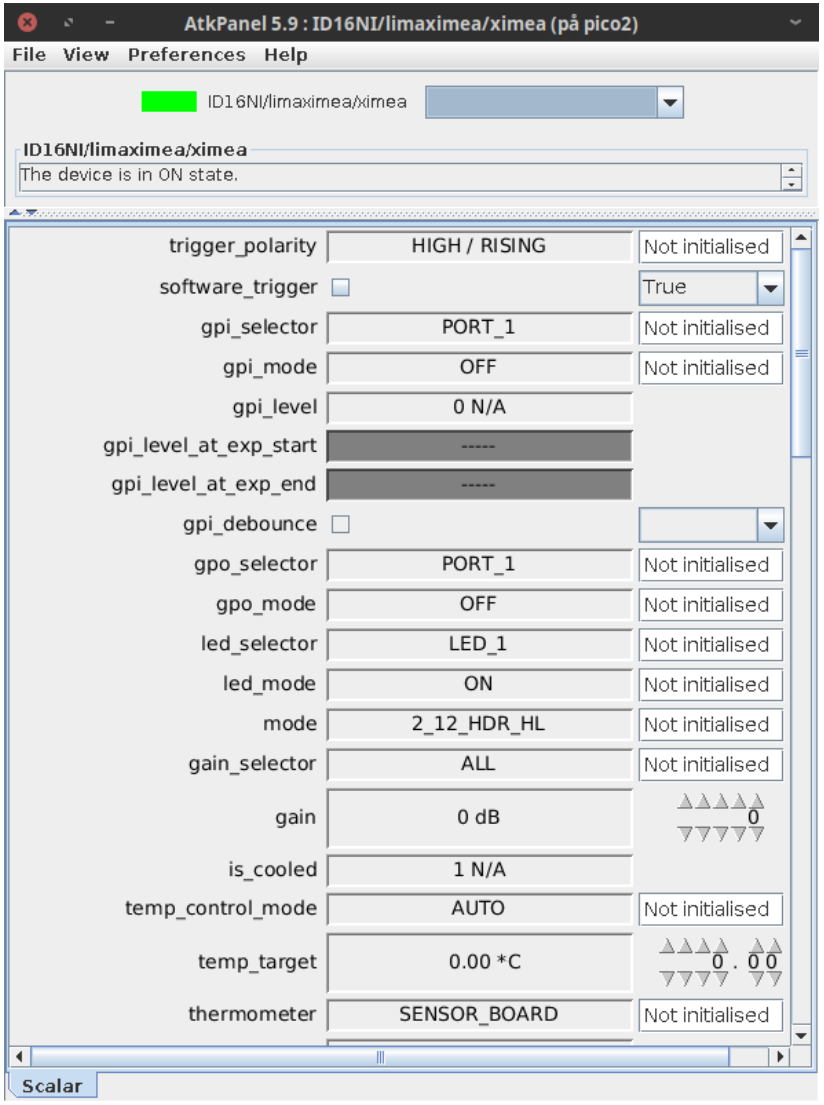

Links

Ximea plugin: https://gitlab.esrf.fr/limagroup/lima-camera-ximea

Lima docs: https://lima1.readthedocs.io/en/latest/

Lima repo: https://github.com/esrf-bliss/LImA

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Thank you!