

Ximea XiApi Camera Plugin for Lima



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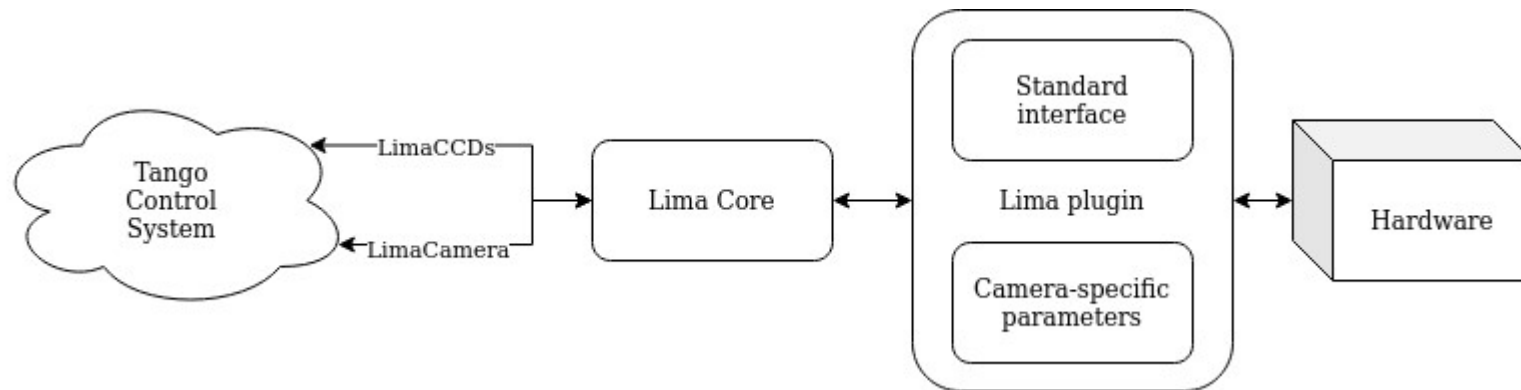


Lima

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 configuration 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.

lima-camera-ximea plugin

AtkPanel 5.9 : ID16NI/limaccd/ximea (på pico2)

File View Preferences Help

ID16NI/limaccd/ximea

The device is in ON state.

lima_version	1.9.9	
lima_type	Ximea	
camera_type	PCIe	
camera_model	MX377MR-GP-FE-X4G3-MTP-W	
user detector name	PCIe	Not initialised
instrument/beamline name	instrument	Not initialised
acq_status	Ready	
acq_status_fault_error	No error	
acc_expo_time	-1.00	
acc_nb_frames	-1	
acc_dead_time	-1.00	
acc_live_time	-1.00	
acc_saturated_active	<input type="checkbox"/>	True
acc_saturated_threshold	18	▲▲▲▲▲ ▼▼▼▼▼ 0
acc_saturated_cblevel	-1	▲▲▲▲▲ ▼▼▼▼▼ 0
acq_mode	SINGLE	Not initialised

Scalar camera_pixelsize valid_ranges image_roi image_sizes
image_max_dim image_bin image_flip saving_common_header
saving_header_delimiter saving_statistics debug_modules_possible
debug_modules debug_types_possible debug_types video_roi
video_bin plugin_type_list plugin_list shared_memory_names
config_available_module config_available_name

AtkPanel 5.9 : ID16NI/limaximea/ximea (på pico2)

File View Preferences Help

ID16NI/limaximea/ximea

The device is in ON state.

trigger_polarity	HIGH / RISING	Not initialised
software_trigger	<input type="checkbox"/>	True
gpi_selector	PORT_1	Not initialised
gpi_mode	OFF	Not initialised
gpi_level	0 N/A	
gpi_level_at_exp_start	----	
gpi_level_at_exp_end	----	
gpi_debounce	<input type="checkbox"/>	
gpo_selector	PORT_1	Not initialised
gpo_mode	OFF	Not initialised
led_selector	LED_1	Not initialised
led_mode	ON	Not initialised
mode	2_12_HDR_HL	Not initialised
gain_selector	ALL	Not initialised
gain	0 dB	▲▲▲▲▲ ▼▼▼▼▼ 0
is_cooled	1 N/A	
temp_control_mode	AUTO	Not initialised
temp_target	0.00 *C	▲▲▲▲▲ ▼▼▼▼▼ 0.00
thermometer	SENSOR_BOARD	Not initialised

Scalar

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!