Inivation (the makers of DVS and DAVIS cameras) provide an API to extend the functionality of their software DV-GUI, which communicates with the event camera and enables recording and visualization of data (in particular events, frames and IMU data). Though this API does not enable a direct communication with the camera, it is still possible to build upon the available modules and create new ones to expand functionality (for example, this module implements stereo SLAM <https://gitlab.com/inivation/dv/dv-stereo-slam>).

Every module is essentially a CMake project, and compiles to .so (Linux), .dylib (macOS), or .dll (Windows). Module’s library files are in: /usr/share/dv/modules (Linux), /usr/local/share/dv/modules or /opt/homebrew/share/dv/modules (macOS), C:\Program Files\DV\runtime\dv\_modules (Windows).

Each module has a set of inputs and outputs. The predefined types are

* Event
* Frame
* IMU
* Trigger
* BoundingBox

defined as

in.addEventInput(**const** std::string &name, **bool** optional = false)

in.addFrameInput(**const** std::string &name, **bool** optional = false)

in.addIMUInput(**const** std::string &name, **bool** optional = false)

in.addTriggerInput(**const** std::string &name, **bool** optional = false)

in.addBoundingBoxInput(**const** std::string &name, **bool** optional = false)

but custom inputs can be defined.

The standard outputs are the same, defined as

out.addEventOutput(**const** std::string &name)

out.addFrameOutput(**const** std::string &name)

out.addIMUOutput(**const** std::string &name)

out.addTriggerOutput(**const** std::string &name)

out.addBoundingBoxOutput(**const** std::string &name)

though writing to files (jpg, csv) is also allowed, but not considered one of these inputs, and is instead embedded in the code.

The code inside is dependent on the functionality, but Boost libraries and OpenCV libraries, to name two, are supported.

For a better analysis on how to implement new modules, it is advised to check the official documentation, under “DV API” (<https://inivation.gitlab.io/dv/dv-docs/docs/getting-started/>).

Also, to see the source code for the modules that are available from Inivation, check this repo <https://gitlab.com/inivation/dv/dv-runtime>.