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# **VisLab Dataset**

## **User Manual**

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## Revision history

<i>Date</i>	<i>Version</i>	<i>Description</i>	<i>Author</i>
05/10/10	1.0	Initial version	PPP
09/03/11	1.1	Porting to new datasheet template	PPP

## 1. Usage of the data set

All the data contained in the dataset can be used solely by the buyer. The dataset can't be used or sold to third party.

## 2. Datasets files

### 2.1. Calibration data

The configuration files are organized as a tree of nested sections. A section begins with a line with the syntax:

```
[SECTION section_name]
...
[END]
```

Each section contains a set of Name,Value Pairs (NVP) lines and 0 or more sections. The root section is not marked by any SECTION tag.

The NVP lines have the following syntax:

```
NAME = VALUE #COMMENT
```

where #COMMENT is optional, spaces can be added in any order, NAME is a string supporting spaces ("FIRST VALUE" is a valid Value identifier)

Comment line are also supported. Comments markers are '#' and ';'.

Section can also be specified for clarity purposes using a different file:

```
[SECTION scheduler = scheduler.ini]
```

There is no [END] marker in this case.

Sections are used to generate a path for the NVP. For example

```
[SECTION A]
  [SECTION B]
    [SECTION C]
      VALUE_1 = 13
    [END]
  [END]
[END]
```

Each sensor category has a separate section with calibration data and other information for each. The following table details each item.

<i>Value</i>	<i>Type</i>	<i>Description</i>
POSITION	FLOAT,FLOAT,FLOAT	This is the sensor position vector. Coordinates are <X, Y, Z> where X is positive in the vehicle motion direction and Z is positive toward the sky. Measurement unit: meters
ORIENTATION	FLOAT,FLOAT,FLOAT	This is the orientation vector. The values are respectively YAW, PITCH and ROLL. Measurement unit: radiants
INPUT FILENAME	STRING	Describes the filename format of the saved frames.
FB	IMG_TYPE, UNSIGNED, UNSIGNED	This parameter describes the internal buffer. IMG_TYPE is a string belonging to: MONO8, RGB8, Bayer_RGGB, Bayer_GBRG, Bayer_GBGR, Bayer_BGGR. IMG_TYPE must match the type of the image produced by the camera. The other two values are the Buffer WIDTH and HEIGHT in pixel. The specified size must match with the camera sensor (not the ROI)
ANGULAR FOV	FLOAT, FLOAT	Angular field of view (aperture) of the installed optic: horizontal and vertical.
OPTICAL CENTER	FLOAT, FLOAT	Coordinates of the optical center, in pixel
PIXEL ASPECTRATIO	FLOAT	This parameter specifies the ratio between the height and the width of the pixels. This parameter is used only for display purposes.

## 2.2. The MEF file (version 2.0)

The Master Event File is a text file used to log all the event related to the dataset.

The first line identifies the version of the MEF, if no line is present, the version number 10 has to be assumed.

Then information is divided in 4 tokens. Each token is left aligned and padded with spaces, the separator between tokens is a Tab.

<i>Token</i>	<i>Format</i>	<i>Lenght</i>	<i>Description</i>
Time	HHHH:MM:SS.FFFFFFFF	31 chars	Timestamp of the event starting from the beginning of the recording session.
Event ID	STRING	15 chars	The ID associated to each event, in case of sensor data it will be the sensor name.
Event number	UNSIGNED {0,6}	16 chars	Number of the occurrences of the event

<i>Token</i>	<i>Format</i>	<i>Lenght</i>	<i>Description</i>
Data	STRING	unlimited	Some devices do not have an external file to store data (such as for example GPS, INS,...) and the information is stored in this field.

NOTE: The lines may NOT be ordered timewise.

Example of MEF:

VisLab MEF 20			
0000:00:18.259362	TRIGGER	000000	
0000:00:18.261054	GPS0	000000	\$GNRMC,083415.10,A,4445.8[...]
0000:00:18.265934	INS0	000000	yawrate=-0.140761,pitchra[...]
0000:00:18.262005	LS-RIGHTFRONT	000000	
0000:00:18.275502	LS-DITCH	000000	
0000:00:18.283735	LS-LEFTFRONT	000000	
0000:00:18.301846	LS-RIGHTFRONT	000001	
0000:00:18.308950	INS0	000001	yawrate=-0.130725,pitchra[...]
0000:00:18.307742	CAMLEFT	000000	
0000:00:18.207460	SYNC	000181	
0000:00:18.313593	LUX	000000	
0000:00:18.307729	CAMCENTER	000000	
0000:00:18.307722	CAMRIGHT	000000	
0000:00:18.316999	LS-DITCH	000001	
0000:00:18.323997	LS-LEFTFRONT	000001	
0000:00:18.341886	LS-RIGHTFRONT	000002	
0000:00:18.355626	LS-DITCH	000002	
0000:00:18.359938	TRIGGER	000001	
0000:00:18.362986	GPS0	000001	\$GPGGA,083415.20,4445.884[...]
0000:00:18.363752	LS-LEFTFRONT	000002	
0000:00:18.369958	GPS0	000002	\$GNRMC,083415.20,A,4445.8[...]
0000:00:18.373961	INS0	000002	yawrate=-0.14748,pitchrat[...]
0000:00:18.381777	LS-RIGHTFRONT	000003	
0000:00:18.393351	LUX	000001	
[...]			

### 3. Multisensor datasets

To be sure to use always the data referring to the same time frame, you should use the SYNC event. This event is generated once the data from all the sensor referring to a single timeframe have been acquired.

## 4. Contacts

For any question or other information do not hesitate to contact us at

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