MATLAB "D850_driver"

This document shows a brief description on how to correctly use the "D850_driver" interface for MATLAB. This version (v1) is able to capture high resolution pictures from the camera and save them as Fine JPEG files in the workspace folder. Furthermore, it can set up live view imaging through direct memory data stream. This version does not support setting custom camera parameters from MATLAB (available for next releases). By now, if you need to change any camera parameter it must be set manually by using the camera menu. This driver only works for the Nikon D850 camera and for a 64-bit MATLAB.

Required files

The following files should be placed in the workspace folder:

FILE	DESCRIPTION
D850_driver_v1.mexw64	MATLAB camera interface as MEX function
NkdPTP.dll	Nikon SDK USB transfer protocol library
Type0022.md3	Nikon SDK routine library for D850 camera
jpeg62.dll	libjpeg-turbo library
test01.m (Optional)	MATLAB example script

Commands

This version (v1) has the following commands for user usage:

COMMAND	DESCRIPTION
open	Initializes the Nikon SDK module and connects with the camera
close	Closes and releases all the resources needed for the driver
live_on	Sets the camera in live view mode
live_off	Disable live view mode
live_get	Returns a low resolution (640x424) live image
capture	Captures high resolution images and save them as fine JPEG files

Usage

For a first use of this driver call:

```
ok = D850_driver_v1('open');
```

If it has been successfully connected with the camera (ok == 1), it can start taking images from the camera by using:

```
ok = D850_driver_v1('capture');
```

If an image has been successfully captured and transferred (ok == 1), the image file is saved into the workspace folder.

For live imaging, set the camera into Live View mode by calling:

```
ok = D850_driver_v1('live_on');
```

And then use the following command to get and RGB matrix of a live image:

```
im = D850_driver_v1('live_get');
```

When finishing, close the live view mode:

```
ok = D850_driver_v1('live_off');
```

Finally, use the "close" command to release driver resources:

```
ok = D850_driver_v1('close');
```

Examples

See "test_01.m" MATLAB script.