

## Robotics Systems Types - Tasks #1182

### Add Initial OpenCV IplImage / CVMat Converters for Python

10/01/2012 01:15 PM - S. Wrede

<b>Status:</b>	Resolved	<b>Start date:</b>	10/01/2012
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	J. Wienke	<b>% Done:</b>	100%
<b>Category:</b>	python	<b>Estimated time:</b>	4.00 hours
<b>Target version:</b>	rsb-0.7		
<b>Description</b>			
Or whatever the corresponding type in Python is.			
cf. <a href="http://opencv.willowgarage.com/wiki/PythonInterface">http://opencv.willowgarage.com/wiki/PythonInterface</a>			

#### Associated revisions

---

##### Revision b2078765 - 10/10/2012 12:42 PM - J. Wienke

Initial python project for rst converters with dummy contents

refs #1182

##### Revision e0cecd2 - 10/10/2012 12:42 PM - J. Wienke

Initial python project for rst converters with dummy contents

refs #1182

##### Revision a8caa9f6 - 10/10/2012 12:43 PM - J. Wienke

Provide a simple roundtrip test for the IplImageConverter.

This test only checks a single format so far and several assumptions need to be removed later.

refs #1182

##### Revision d93e3b2d - 10/10/2012 12:43 PM - J. Wienke

Provide a simple roundtrip test for the IplImageConverter.

This test only checks a single format so far and several assumptions need to be removed later.

refs #1182

##### Revision fb583363 - 10/10/2012 12:43 PM - J. Wienke

For the moment, state the assumptions.

We have to remove them later, but so far we can live with simple BGR images.

refs #1182

**Revision 7fab88b - 10/10/2012 12:43 PM - J. Wienke**

For the moment, state the assumptions.

We have to remove them later, but so far we can live with simple BGR images.

refs #1182

**Revision 7296cd27 - 10/12/2012 12:49 PM - J. Wienke**

State missing type assumption in serialize method of IplImageConverter.

Added an assert statement.

refs #1182

**Revision 0ae4a8e1 - 10/12/2012 12:49 PM - J. Wienke**

State missing type assumption in serialize method of IplImageConverter.

Added an assert statement.

refs #1182

**Revision 7ff005e1 - 10/12/2012 06:11 PM - J. Wienke**

Merge branch 'pythonconverters' into 0.7

Conflicts:

cpp/cpack/CPackDebianConfig.cmake

refs #1182

## History

---

**#1 - 10/09/2012 08:55 AM - J. Wienke**

- Status changed from New to In Progress

**#2 - 10/09/2012 07:10 PM - J. Wienke**

Basic roundtrip is working in my private branch. However, only for BGR images. gstreamer sends YUV422 and I could not find a way to instruct gstreamer to send something different, because for YUV422 there is no cvCvtColor operator to use. So I would have to code the conversion in python. This will get horribly slow.

Jan, do you know a way to send RGB images with a gstreamer pipeline? I tried using ffmpegcolorspace and a video element afterwards, but the

results were somehow wrong and definitely not a BGR or RGB image.

### #3 - 10/09/2012 07:53 PM - J. Moringen

I used

```
gst-launch-0.10 videotestsrc ! video/x-raw-rgb ! rsbvideosink scope=
```

and the logger said

Payload (RST.VISION:IMAGE)

#<IMAGE {100A02AB23}>

```
Data   : 0000 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
        0018 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
        0030 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
        ... [omitting 153,528 of 153,600 octets]
```

Width : 320

Height : 240

Channels : 3

Depth : DEPTH-8U

Color-Mode: COLOR-RGB

Data-Order: DATA-INTERLEAVED

### #4 - 10/09/2012 08:09 PM - J. Wienke

This is not supported by most cheap webcams.

### #5 - 10/09/2012 08:14 PM - J. Moringen

Johannes Wienke wrote:

| *This is not supported by most cheap webcams.*

Since the question was

| *do you know a way to send RGB images with a gstreamer pipeline?*

I though, RSB images were required only for testing purposes.

Why is the following not possible?

```
gst-launch-0.10 WEBCAMSOURCE ! ffmpegcolorspace ! video/x-raw-rgb ! rsbvideosink scope=
```

### #6 - 10/09/2012 08:16 PM - J. Wienke

Payload (RST.VISION:IMAGE)

#<IMAGE {100B240493}>

Data : 0000 CC 9C ED 9C 0E AD ED AC AE A4 CE AC 2F AD 2F AD 30 AD AE 9C 0F AD EF AC 0F  
0019 AD CE A4 8C 9C AD A4 10 A5 10 A5 92 9D 71 9D 50 95 30 95 0F 95 2F 9D 4F 9D  
0032 2F 9D 0F A5 EE 9C 6D 94 CF A4 30 AD 30 AD ... [omitting 2,621,376 of 2,621,440 octets]

Width : 1280

Height : 1024

Channels : 3

Depth : DEPTH-8U

Color-Mode: COLOR-RGB

Data-Order: DATA-INTERLEAVE

My webcam definitely does not support 1280x1024 and images look completely broken.

**#7 - 10/09/2012 08:23 PM - J. Wienke**

Ok, I can workaround this by using the rsb video sender. But I would have liked to prevent that hacky thing from leaking into the isy project.

**#8 - 10/09/2012 08:24 PM - J. Moringen**

@Johannes: Can you please post the pipeline which triggers the bug?

Or maybe file a bug in project:rsb-gstreamer.

**#9 - 10/09/2012 08:25 PM - J. Wienke**

```
gst-launch-0.10 v4l2src ! ffmpegcolorspace ! video/x-raw-rgb, width=640, height=480 ! rsbvideosink scope=/video
```

**#10 - 10/09/2012 08:55 PM - J. Moringen**

I think, I found the bug in project:rsb-gstreamer.

**#11 - 10/09/2012 11:32 PM - J. Moringen**

See #1194. I tried to commit a fix, but the project:rsb-gstreamer repository seems to be read-only :(

**#12 - 10/10/2012 10:06 AM - J. Wienke**

we could use this as an opportunity to migrate to GIT ;)

**#13 - 10/10/2012 12:46 PM - J. Wienke**

- % Done changed from 0 to 50

I have added my initial version to the pythonconverters branch. Can someone please have a look at this. If it is fine, we can merge this back to master and 0.7.

**#14 - 10/10/2012 07:42 PM - J. Moringen**

I looked at the branch and I did not see any problems. However, I would prefer at least some cleanup before merging this into master.

Unrelated note: I think, Python docstrings use `"""..."""`, not `"..."`.

**#15 - 10/12/2012 12:37 PM - J. Wienke**

Which clean up do you mean? I don't have much time to implement all the other formats.

**#16 - 10/12/2012 12:45 PM - J. Moringen**

When I looked at the code, there were lots of TODO, little error handling and few comments.

Maybe we can make a branch for ISY now and merge it into master when we manage to finish it?

**#17 - 10/12/2012 12:47 PM - J. Wienke**

The TODOs exist, apart from a few more formats implemented in C++, in same way there.

For error handling we do not have a specific exception class in python as far as I remember. So the assertion error should do the desired thing to my mind.

**#18 - 10/15/2012 11:11 AM - J. Wienke**

- *Status changed from In Progress to Resolved*
- *Target version changed from rsb-0.9 to rsb-0.7*
- *% Done changed from 50 to 100*

I have merged the feature branch to 0.7. We can see what we do with that branch for 0.8 some time later.