Changes to ossimTileToIplImage

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Overview of Talk

- Introduction
- Making the image a color image instead of grayscale
  - Accessing OpenCV image data
  - Accessing ossimImageData data
  - Allocating an image
  - Displaying images
- Adding a threshold to the image
  - Using what we learned from previous examples
- Blob process the image
  - Allocating an image
  - Converting a color image to grayscale
  - Extracting the individual blobs and printing their information to the screen
- Conclusions

Accessing OpenCV image data

- Image data is stored in an array
- To access all data in an image you will need to use a loop similar to:

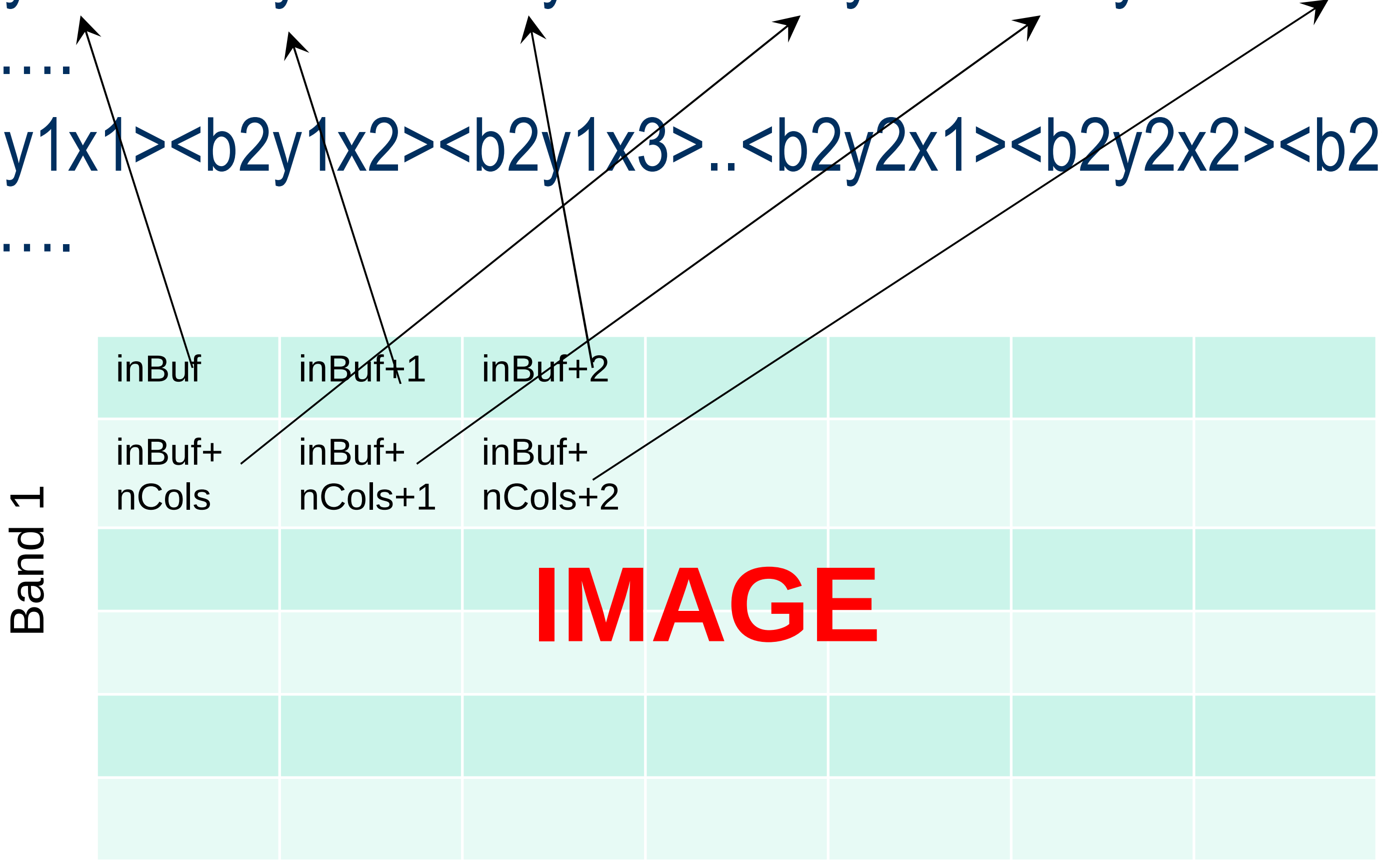
```
for(i=0;i<height;i++){
    for(j=0;j<width;j++){
                    for(k=0;k<channels;k++){
                              data[i*step+j*channels+k]=0;
                    }
    }
}
RGBRGBRGBRGBRGB…
```

Accessing ossimImageData data

- For images with bit depth == 8
- unsigned char* inBuf = static_cast<unsigned char*>(inputTile->getBuf(band));
- unsigned char pixVal = (unsigned char)(*inBuf);
- The ossim image data is organized by:
    - R(1,1)R(1,2)R(1,3)…G(1,1)G(1,2)G(1,3)...B(1,1)B(1,2)B(1,3)
- That is the fastest changing data is the data along the rows of the image, then the columns, then the bands

Accessing ossimImageData data

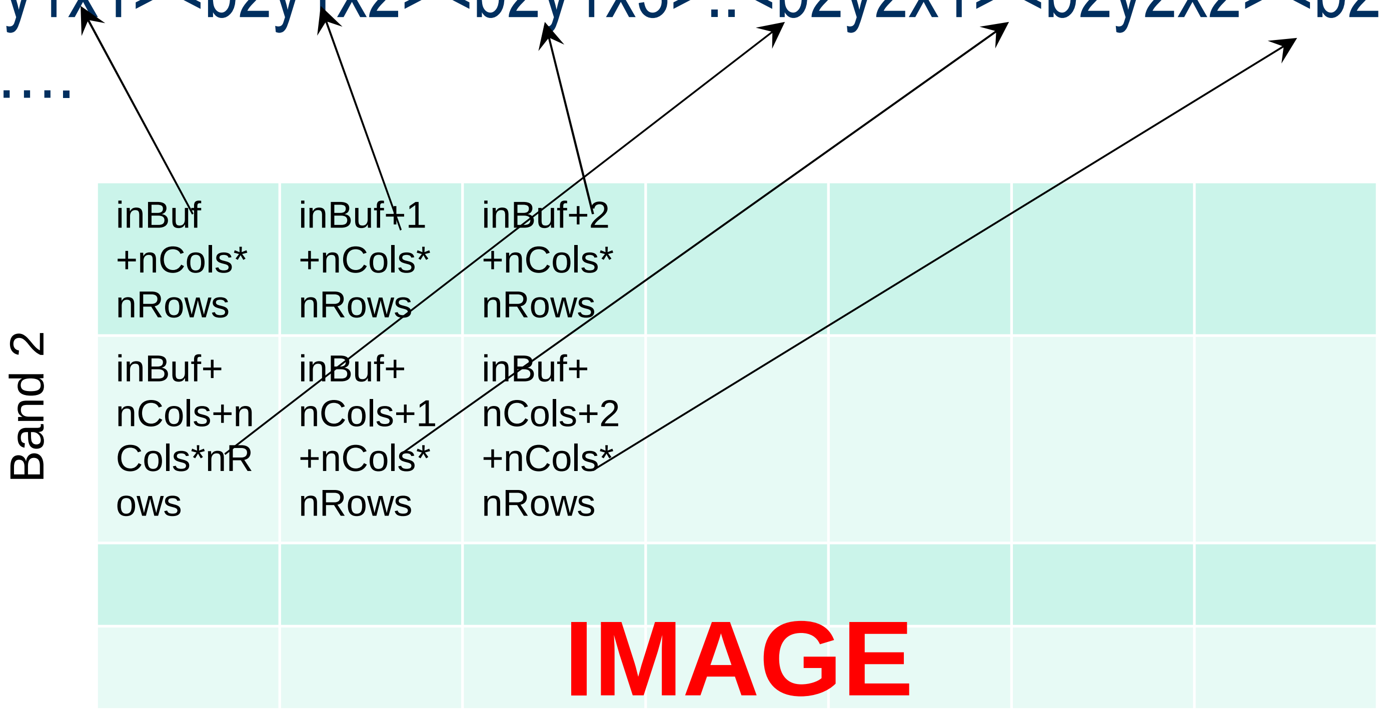
- <b1y1x1><b1y1x2><b1y1x3>..<b1y2x1><b1y2x2><b1y2x3>.......
- <b2y1x1><b2y1x2><b2y1x3>..<b2y2x1><b2y2x2><b2y2x3>.......



inBuf	inBuf+1	inBuf+2				
inBuf+ nCols	inBuf+ nCols+1	inBuf+ nCols+2				

Accessing ossimImageData data

- <b1y1x1><b1y1x2><b1y1x3>..<b1y2x1><b1y2x2><b1y2x3>.......
- <b2y1x1><b2y1x2><b2y1x3>..<b2y2x1><b2y2x2><b2y2x3>.......

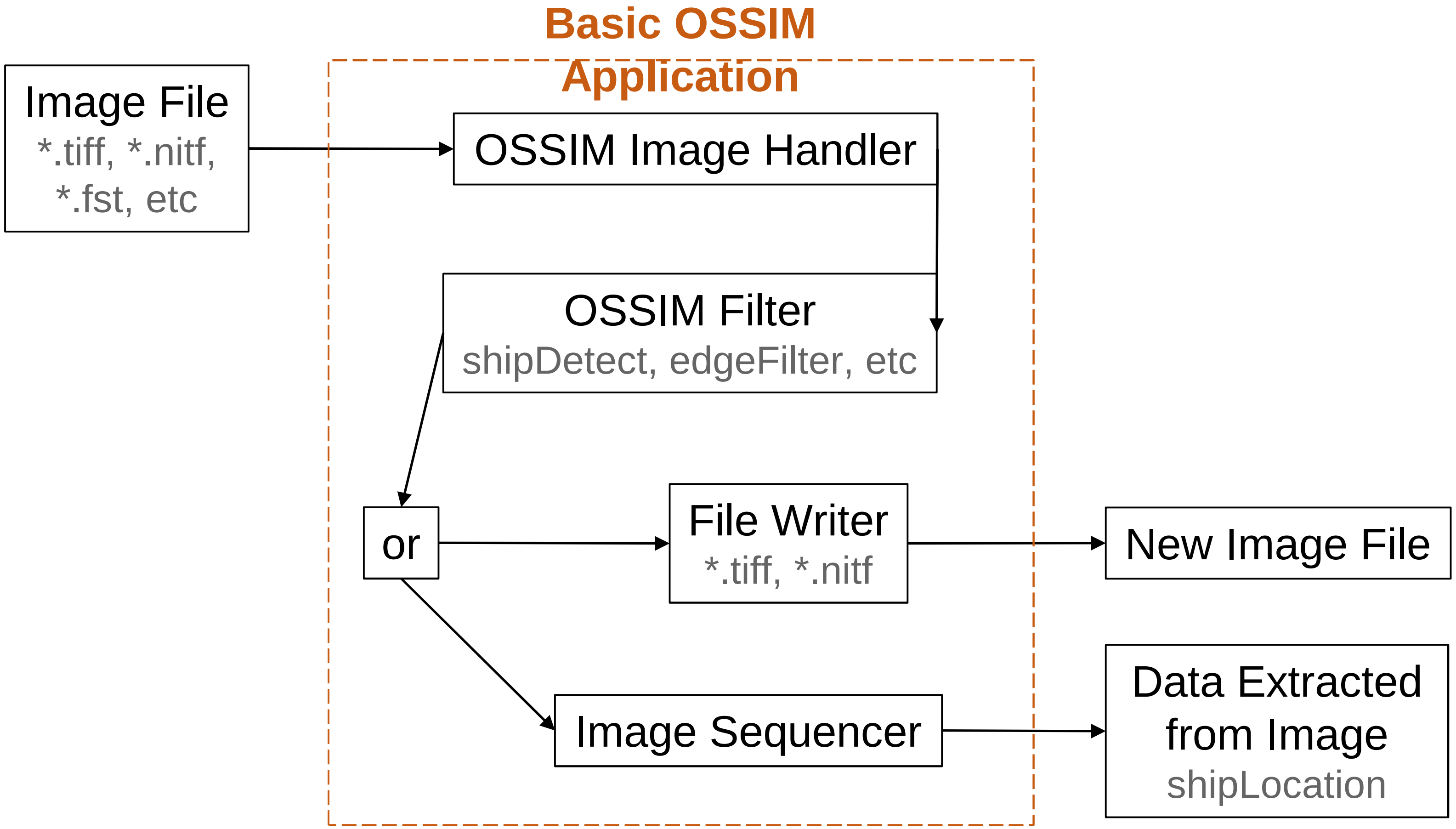


inBuf +nCols* nRows	inBuf+1 +nCols* nRows	inBuf+2 +nCols* nRows				
inBuf+ nCols+nCols*nRows	inBuf+ nCols+1 +nCols* nRows	inBuf+ nCols+2 +nCols* nRows				

Allocating an Image

- IplImage* image = cvCreateImage(size,depth,numChannels);
- size = cvSize(width, height)
- depth =
  - IPL_DEPTH_8U – 8 bit unsigned
  - IPL_DEPTH_16U – 16 bit unsigned
  - IPL_DEPTH_16S - 16 bit signed
  - IPL_DEPTH_32F – 32 bit floating point
- numChannels = number of channels in the input image

OSSIM Basics



OSSIM Basics

```
ossimInit::instance()->initialize();
```

```
ossimRefPtr<ossimImageHandler> ih = ossimImageHandlerRegistry::instance()->open(image_file);
```

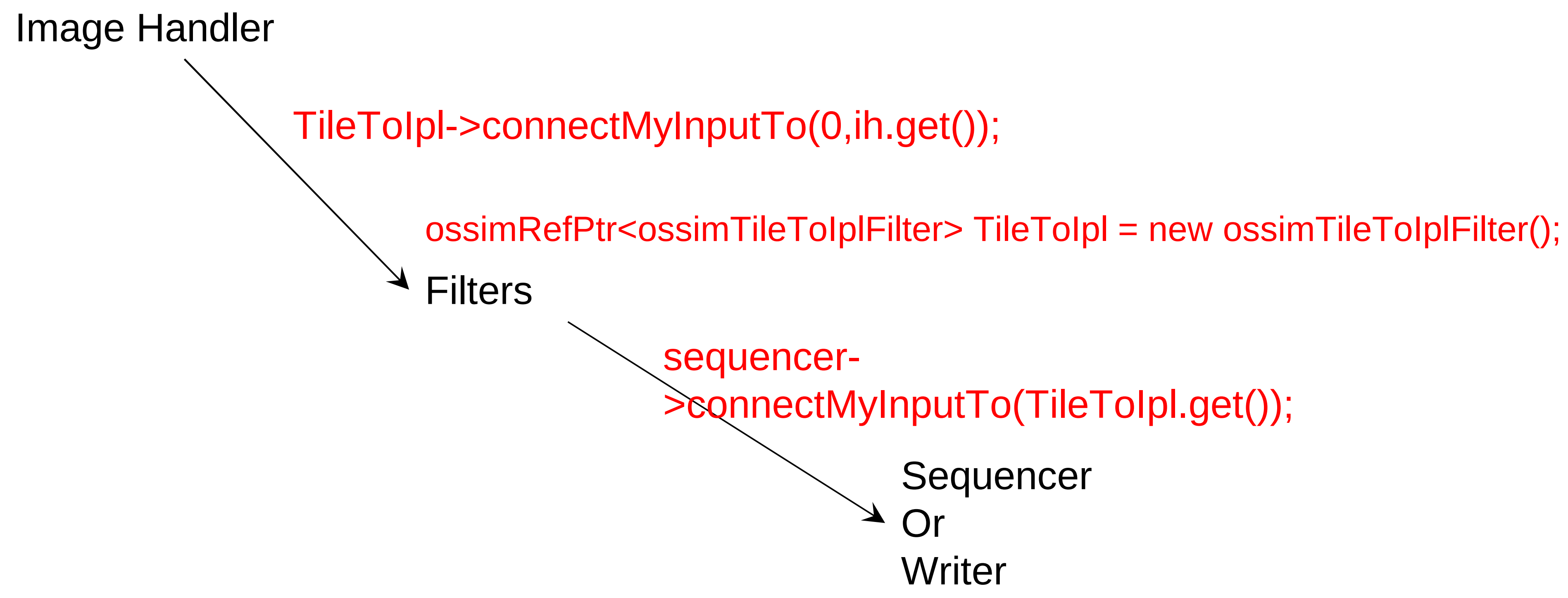


Image Handler

```
TileToIpl->connectMyInputTo(0,ih.get());
```

```
ossimRefPtr<ossimTileToIplFilter> TileToIpl = new ossimTileToIplFilter();
```

Filters

```
sequencer->connectMyInputTo(TileToIpl.get());
```

Sequencer
Or
Writer

```
ossimRefPtr<ossimImageSourceSequencer> sequencer = new ossimImageSourceSequencer();
```

RUN THE CHAIN

```
while( (dataObject=sequencer->getNextTile()).valid() );
```