



A Conceptual Map of Open Source Software for Image Processing

Mr. John Stastny
SPAWAR Systems Center, Pacific

Mr. Bryan Bagnall
SPAWAR Systems Center, Pacific

Mr. Lucas Keenan
SPAWAR Systems Center, Pacific

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Overview

- ▼ Open Source is Everywhere! How does it all fit together?
- ▼ The low-down on OSSIM
- ▼ What's up with OpenCV
- ▼ Basic OSSIM Application
- ▼ Conclusion

Open Source is Everywhere! How does it all fit together?

- ▼ Open Source software is everywhere
 - ▼ Web Servers
 - ▼ Satellite Imaging
 - ▼ Secure Communications
 - ▼ File Storage/Transfer
 - ▼ Word Processing
 - ▼ Web Browsers
 - ▼ Operating Systems
 - ▼ Mathematical Software

Open Source Vocabulary

- ▼ Mailing List
- ▼ Repository
- ▼ Trunk/Branch
- ▼ Binary Distribution
- ▼ Source Distribution
- ▼ GPL/LGPL – Gnu Public License

Where does it all come from?

- ▼ Downloading/Managing the code
 - ▼ Svn
 - ▼ Git
 - ▼ Mercurial
 - ▼ Web browser

- ▼ Making projects using the code
 - ▼ Cmake
 - ▼ Qmake
 - ▼ By hand

Where does it all come from?

- ▼ Building the code
 - ▼ Nmake/Visual Studio Express
 - ▼ Make/Gcc

- ▼ Running the code
 - ▼ Visual Studio Debugger
 - ▼ Command Prompt/Batch Files

OSSIM / OpenCV Map

OSSIM

(Open Source Software Image Map)

Supports many different file formats

Allows us to open satellite images!!

Ortho and Geo rectify images

Basic image processing techniques

Works with very large images

Mosaic/Merge

Tile images \geq TBs

C/C++ Library

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C/C++ Library

ImageLinker

Graphic User Interface (GUI)

Kind of like a photo shop for large images

New filters can be added

QT Library

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C/C++ Library

Image
Linker

OSSIM Planet

Graphic User Interface (GUI)

Free 3D geospacial mapping software

KML , SHP, and OMS support

QT Library

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OSSIM
Planet

OMAR

OSSIM Mapping ARchive

Geospacial archiving software

Display results based on location

Interactive viewing

WMS, KML, and SOAP support

Groovy on Grails

OSSIM / OpenCV Map

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C/C++ Library

Image
Linker

OSSIM
Planet

OMAR

OpenCV

(Open Computer Vision)

Supports only a few file formats

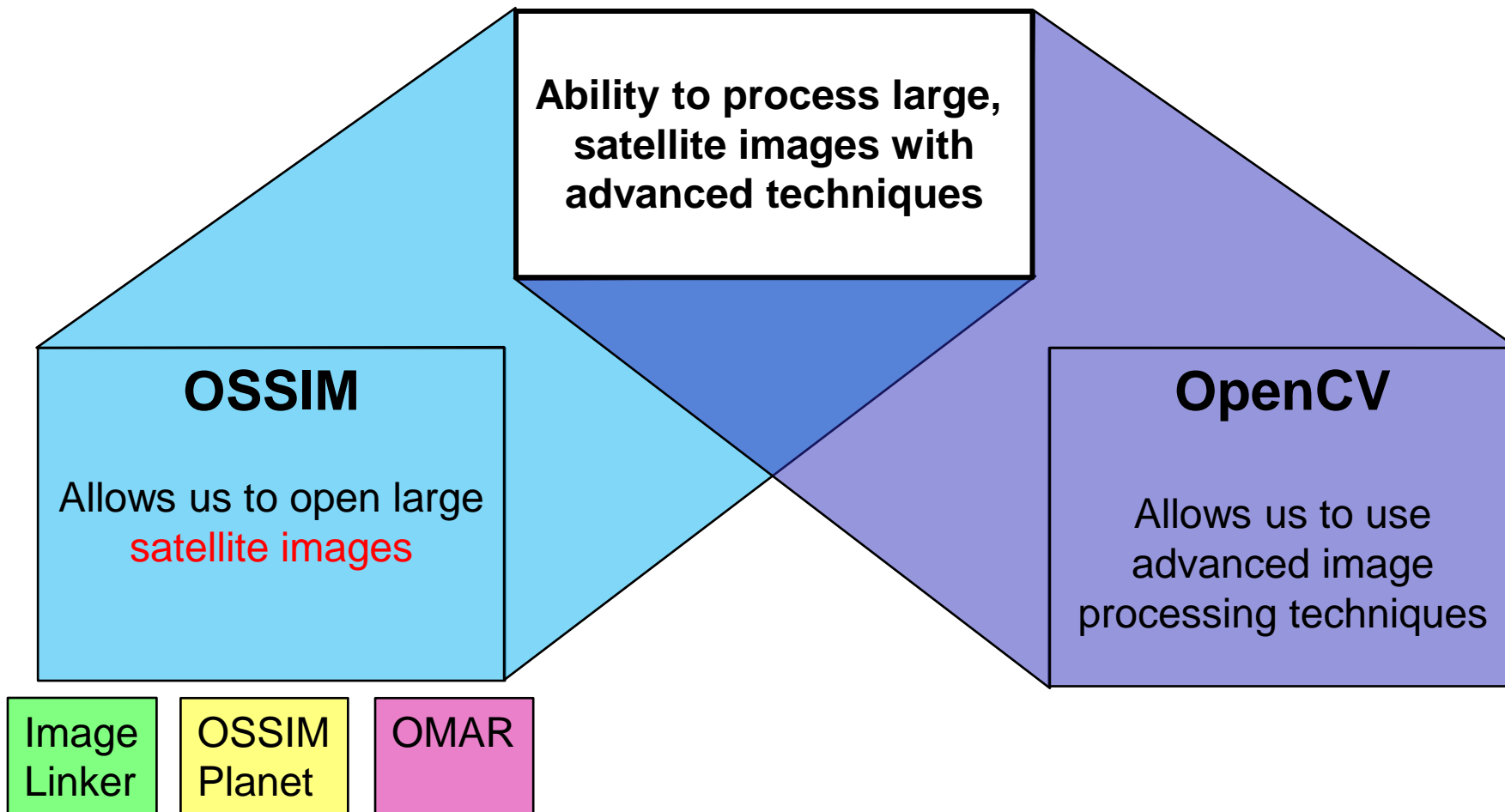
No GUI

Advanced image processing algorithms

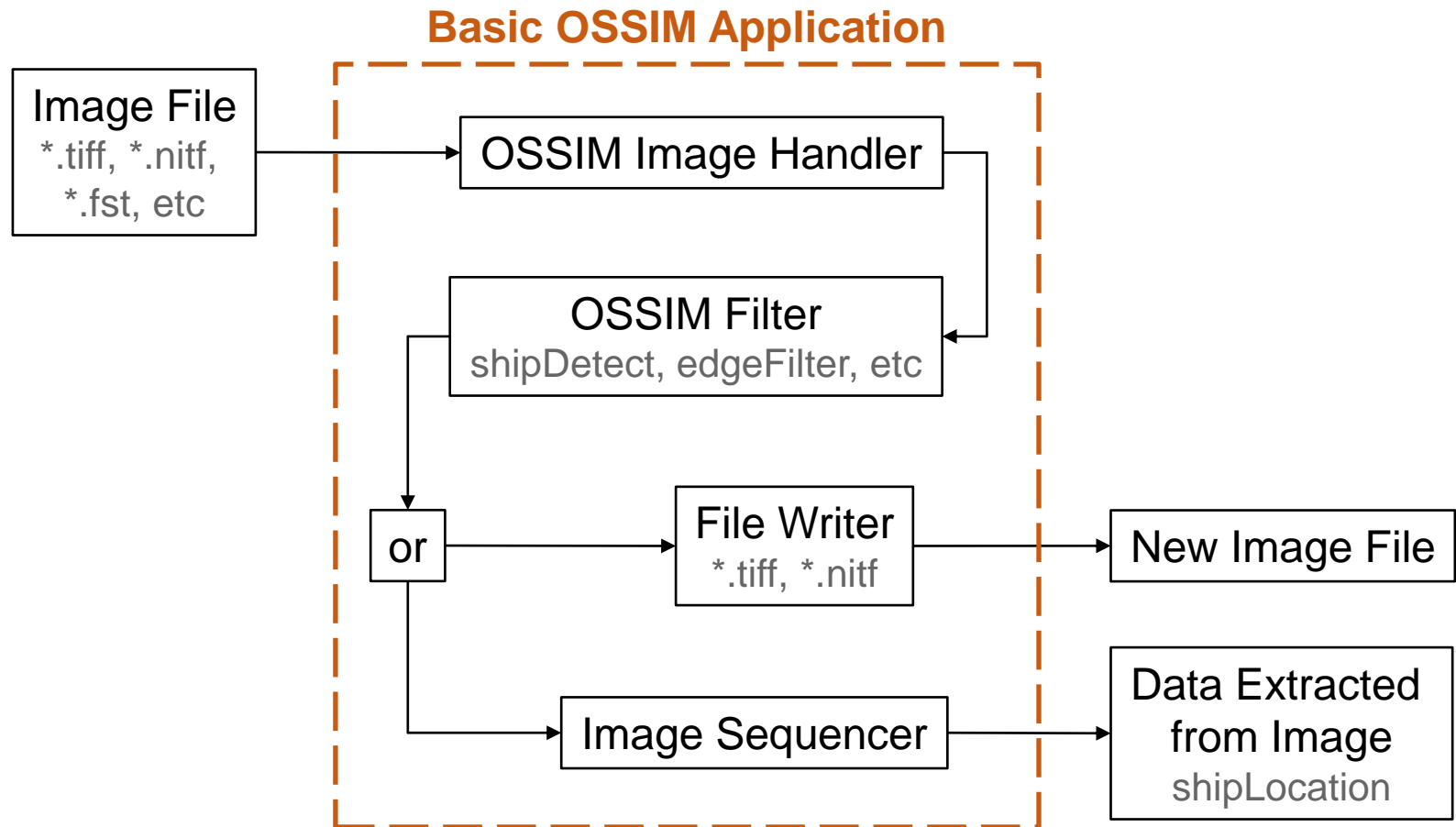
Works with motion and still imagery

C/C++ Library

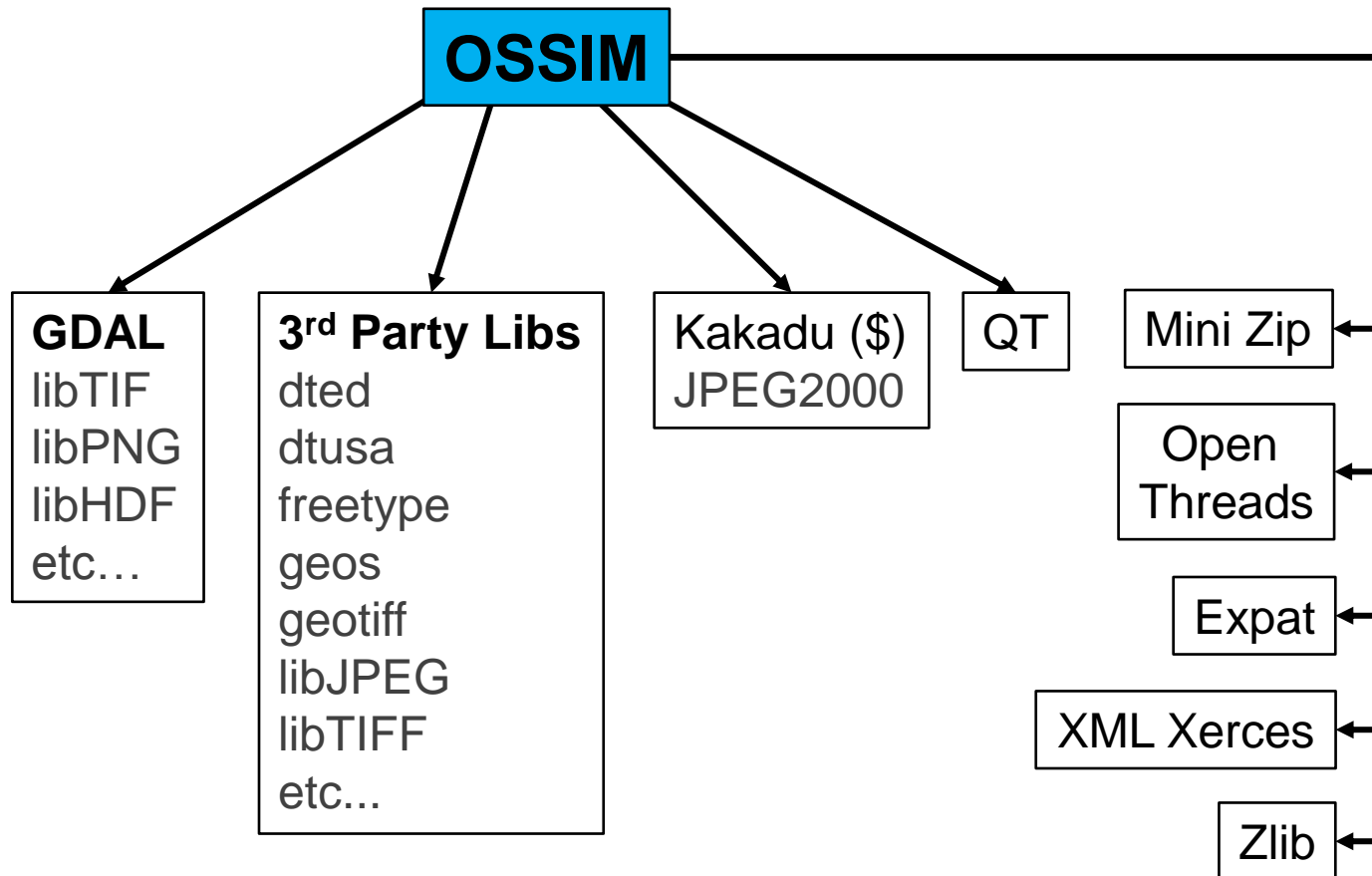
OSSIM / OpenCV Map



Basic OSSIM Application Map



Some OSSIM Dependencies



Conclusion

- ▼ Open Source is everywhere
- ▼ OSSIM allows us to work with satellite images
- ▼ OpenCV allows us to use advanced image processing algorithms
- ▼ ImageLinker, OSSIM Planet, and OMAR use OSSIM to power applications for images