FOSS4G 2017

ORFEO ToolBox license change from CeCILL to Apache : diary of a long journey

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Introduction

About me

- My name is Manuel Grizonnet
- I work at CNES (the French Space Agency)
- I am involved in the Open Source library for remote sensing image processing Orfeo ToolBox
- Also an occasional contributor to OSGeo-Live, OSSIM and QGIS

Topic

- Talk about changing the license of a ten years old open source project
- the *strategy* that we used to change the license of a 10 years old project
- Why we decide to make this change, things that we learn
- More generally how the OTB governance works
- Recap of the OTB OSGeo incubation process
- This presentation is not about "Permissive versus copyleft license"

What is Orfeo ToolBox ?

- A C++ library for image processing, based on ITK
- 90+ remote sensing applications
- Monteverdi, a satellite image viewer (hardware accelerated, raw products)
- Accessible from C++, Bash, GUI, Python, QGIS, Monteverdi, WPS (Zoo)
- Big Data (buzzword detected here !) capable, thanks to built-in streaming, multithreading and MPI
- Apache v2.0 license (since release 6.0) before CeCILL v2
- Funded and developed by CNES (French Space Agency)
- Used at CNES, ESA, mission exploitation platforms, remote sensing labs, teaching. . .
- Standing on the shoulders of giants (ITK, GDAL, OSSIM, OpenCV. . .)
- An OSGeo project since July 2017 !
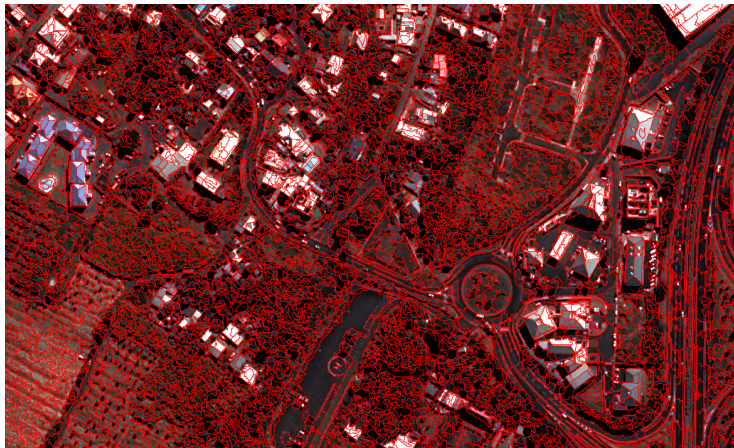
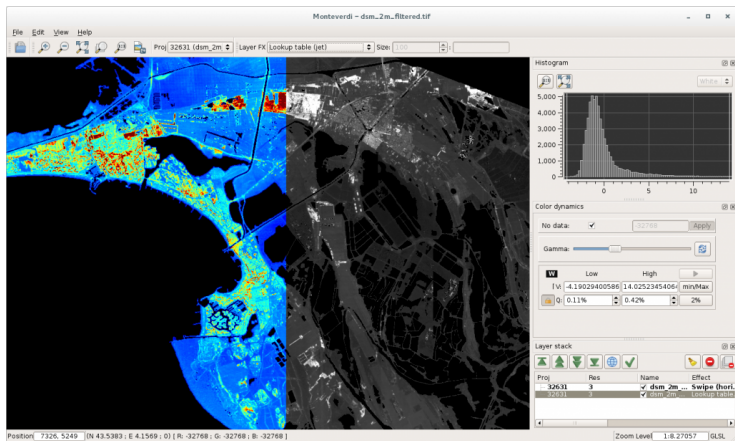# Feature extraction
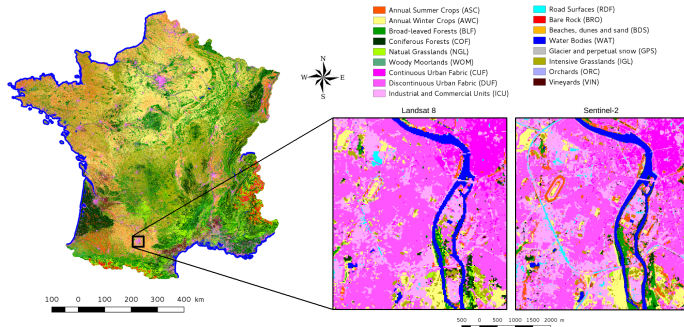
Segmentation

Image visualisation and analysis

Sucess stories

From end users to operational ground segments

- OTB applications are available through QGIS processing framework
- OTB applications are available in Zoo Project (WPS service)
- OTB used to teach remote sensing
- Gnorasi Software (National Technical University of Athens)
- ESA Sentinel-2 for Agriculture
- Geosud project : Spot images mosaic over France
- OTB is a component of Sentinel-2 and Venus ground segments (CNES and ESA)

OSGeo

Large scale supervised classification (CESBIO – OSO project)

France land cover classification, from Landsat 8 to Sentinel-2.

Before talking about license change

- Changing the license can be a pain to deal with
- But technical details like code review, CLA, Copyright are perhaps not the most important thing at the end
- So I will talk more about governance, about communication with the community...
- ...and less about technical details of the license change
- Explain how OTB starts by setting up a more open governance first with a Project Steering Committee
- And how to deal about big changes like this in the most open "way"

OTB history

- ▶ Start in 2006
- ▶ Always be a Free and Open Source project
- ▶ Mostly supported from the French Space Agency CNES
- ▶ Always encourage and integrate contributions
- ▶ Code, documentation, mailing lists, everything is public since the beginning
- ▶ Try to follow as much as possible open standards
- ▶ People who started the project were great FLOSS advocates
- ▶ But...

OTB decision making process before the PSC

the benevolent dictatorship dynasty

Who makes feature requests

- Users from Orfeo CNES program (main funding source for 8 years)
- CNES team
- Users from mailing list

Who decides

- CNES team with support of CNES contractors

Who actually writes code

- CNES team or CNES contractors
- Other contributors

OSGeo

Why changing in 2015 ?

Transparency

- Users are often informed afterward of major changes
- No insight on motivations behind some decisions
- Difficult to participate in decision making
- OTB is a big project now, someone may want to get involved more deeply

For more, easier contributions

- what was the process for contributing code to OTB ?
- how can I know if my contribution will be accepted ?
- if I contribute a lot, do I get a grip on decision making ?

For sustainability

- What if, one day, CNES stops funding OTB at the current level ?
- We need new actors to be able to get involved in OTB !

OTB project Steering Committee

- In 2015 CNES decided to set-up an open-governance for OTB
- We now have a working PSC, with :
  - Members
  - Rules
  - Decisions
- PSC scope :
  - roadmaps
  - communication
  - contribution management
  - release planning
  - Handling legal issues
- "PSC should help to guarantee that OTB remains open and company neutral."
- Inspired by existing governance (status,rules) and especially by OSGeo projects like GRASS GIS, GDAL, QGIS

OTB decision making process

1. Request for Comments
2. Comments and discussions
3. Developments
4. Requests for changes
5. Review
6. PSC Vote
7. Request for Merge
8. Approval by Release Manager
9. Merge

. . . for users

- Every significant ongoing or passed change is now public and visible
- Users have the opportunity to comment on pending Request for Changes during review
- There are more details available on why and how things were done (and discussions)
- Users can file new Request for Comments to request new features
- Releases are more frequent

. . . for contributors

- There is a clear and detailed process on how to get your code in OTB
- Contributors are guaranteed to be treated with equity
- They know the deadline to get their feature into next release

Are we making a better OTB ?

On the overall, I think that we do.

- ▶ We have more code reviews, from external reviewer (even if PSC is still small)
- ▶ Changes are more consistent because they belong to the same RFC
- ▶ Everyone gets to give his opinion
- ▶ New features are more visible

It creates the structure to deal with more controversial changes

- ▶ License
- ▶ Version control system
- ▶ Refactoring

Orfeo ToolBox

Orfeo ToolBox is not a black box

Start using OTB   Down

Wind of changes

Posted on **January 8, 2015** by **Julien Michel**

Happy new year to everyone! We are considering a few **important changes** regarding **Orfeo ToolBox**. We believe these changes will have a very positive impact on our open source software, however we would like to ensure that you (the Orfeo ToolBox community!) are fine with them. We therefore set up a dedicated page **on our wiki** (also note the ongoing wiki cleanup), so as to gather your feedback. **If you would like to make a comment or suggestions, please write it on the wiki page** in the appropriate discussion section. Hereafter are the three major changes we envision.

Changing license to Apache v2.0

For quite some time now we have been considering a change of license for OTB, to adopt the Apache v2.0 licence. The rational for this change is as follows :

Copyleft is a very good protection for open-source software in general, since it ensures that it will remain open, but in our remote sensing world it can also lesser the dissemination of our software. Many time we heard of situations were OTB was considered by institutions or private companies for their projects and has been wiped off the table because they (or their clients or partners) wanted to distribute the resulting software under different terms. Sometimes, common technical designs are used so as to include OTB

Moving from CeCILL to Apache

- The license change consideration starts in the same time as the governance set up
- Also closely related with the OSGeo incubation process as it was one of the goal of the PSC to complete the application to OSGeo

Why moving from CeCILL to Apache ?

- CeCILL is not a very common license (even if it is compatible with GPL and OSI approved since 2013)
- Strategy : OTB position in the GIS and image processing pipelines
- Strong relationship with ITK (image processing library) distributed under the Apache v2 license
- OTB modular architecture : nothing prevent to contribute OTB module with an other license
- In the current context where OTB can be useful, copyleft may also restrict the use of the library for some potential users and contributors
- This licensing change also means in our case better management of contributors (CLA and ICLA)

Personal thoughts

- Copyleft is a very good protection for open-source software in general
- But OTB was considered by many institutions and companies as part of their projects
- Cause individual and expensive schemes to include OTB in projects and still respect the license requirements
- From a practical standpoint, think that a more permissive license could only increase interest in OTB
- From both a strategic and an operational point of view I think that it is a good decision for OTB

OSGeo

License change feedback

- Follow guidelines provided by OSI, GNU, Apache foundation...
- Doing a code review is a long and hard work (especially for a library like OTB -> more than 500k lines of code)
- But you always learn things doing a code review
- Think twice before integrating code/libs without a license
- It helps a lot for OTB to maintain properly contributions since the beginning
- Helps from a lawyer at CNES (P. Maurette) and S. Dinot from the dev team
- Changing license should follow at the end the same acceptance mechanism as new features (pull request, RFC...)
- For most users changing the license will not change a lot the way that they use OTB
- Communication is important

OSGeo incubation

Once upon a time OTB started the OSGeo incubation...

OSGeo incubation

- ▶ Effort to welcome new projects into OSGeo foundation
- ▶ Designed to promote open source and inclusive development of software projects
- ▶ Formal process :
  http://www.osgeo.org/incubator/process/process.html

How does it start ?

#501 **closed task** (duplicate)

Opened 8 years ago
Closed 3 years ago

OSGeo incubation for Orfeo Toolbox (OTB)

Reported by:	melaneum	Owned by:	jive
Priority:	normal	Milestone:	
Component:	Incubator	Keywords:	application
Cc:			

Description

After participating to Foss4g last week in Sydney and discussing with some OSGeo members, we realized that it would be good for our project to be associated with OSGeo. The project is the Orfeo Toolbox (OTB) available at ⇨ http://www.orfeo-toolbox.org. This is a project started by CNES (the French Space Agency) in 2006 to provide open source tools to process satellite images and extract information. There are several links with other OSGeo project such as Gdal and ossim. The project is currently released under the CeCILL license (compatible with GPL).

FOSS4G 2010 : Starting the journey

Incubation revamp

#664 closed task (fixed)

OSGeo incubation for Orfeo Toolbox (OTB)

Reported by:	manuelgrizonnet	Owned by:	jive
Priority:	normal	Milestone:	
Component:	Incubator	Keywords:	application
Cc:			

Description

After participating to Foss4g 2009 and 2010 and discussing with some OSGeo members, we realized that it would be good for our project to be associated with OSGeo. The project is the Orfeo Toolbox (OTB) available at ➭ http://www.orfeo-toolbox.org. This is a project started by CNES (the French Space Agency) in 2006 to provide open source tools to process satellite images and extract information. There are several links with other OSGeo project such as Gdal and ossim. The project is currently released under the CeCILL license (compatible with GPL).

Next step ? Find a mentor in 2013 (thank you Landon !)

How OSGeo helps during the all process ?

- Open governance
  - How to set up the PSC
  - Decision making strategy
  - Documentation license
- Take time to set up the governance. . .
- We wait to complete the license migration before restarting the incubation process in 2017
- It took time. . .
- . . . But it was perhaps the time needed by the project

Conclusion

- OSGeo incubation starts in 2011 (first application)
- Being an official OSGeo software will perhaps not change lots of thing...
- I think that the incubation helps OTB to have a more open process and overall
- Moving to GPL to Apache was also quite a huge work
- The OTB governance is still young but works well
- Number of RFC in 2 years : 103

OSGeo

Thanks

- Thanks to the incubation committee and the OSGeo board for the acceptance of OTB
- This is great news for us !
- Special thanks to :
  - All people of OTb community who participates in some way to the incubation
  - Our mentor Landon Blake
  - Jody Garnett and Brian M Hamlin who helped in the final stretch
  - Other OSGeo projects related to OTB : GDAL, OSSIM, QGIS, OSGeo-Live…
  - Angelos Tzotsos, Even Rouault, Alexander Bruy, Victor Olaya, Paolo Cavallini, Vincent Picavet, Yves Jacolin, Gérald Fenoy, Markus Neteler…
  - And many others !

Questions ?