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QGIS 3 : plans, wishes
and challenges

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- « Pure player» OpenSource

- Since 2009

- 11 collaborators (> +30 % / year)

- French company

- Core QGIS Contributors

  - + PostGIS, SFCGAL, Tempus, TinyOWS, GDAL/OGR, PgPointCloud...

- We are hiring:-)

Outline

- **QGIS 3**

  - Why ?

  - When ?

  - API changes

  - Migration « guides »

  - New features / Feature proposals

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QGIS 3 – why ?

- QGIS is not just a desktop application

  - It's a platform with an API

  - Lots of Python plugins in the field

- Major version : keep the API stable

- Backward compatibility in 2.x branch

QGIS 3 – why ?

- API stability is good

  - … but enforced at a high price when new features keep coming

- New features ~= new concepts

- The original API does not always fit well

  - « wrong » past choices

  - Introduce hacks

  - Hard to maintain and extend

  - Increase « Technical debt »

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QGIS 3 – why ?

- Obsolescense

    - Qt4 => Qt5

        - Qt4 is to be discontinued

    - Python 2 => 3

    - PyQt4 => PyQt5

- QGIS 3 :

    - Qt5

    - Python3 API

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New possibilities

- ## Python 3

  - Better unicode support

- ## Qt5

  - Better OpenGL integration

  - Better mobile support

  - New Charts library

  - New webengine

    - Not really yet ...

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QGIS 3 – when ?

- 2.16
  - the « master » branch is forked to « master_2 »
  - the « master » branch is the root of the future « 3.0 »

- 3.0 expected Q1 2017
  - As a « beta »
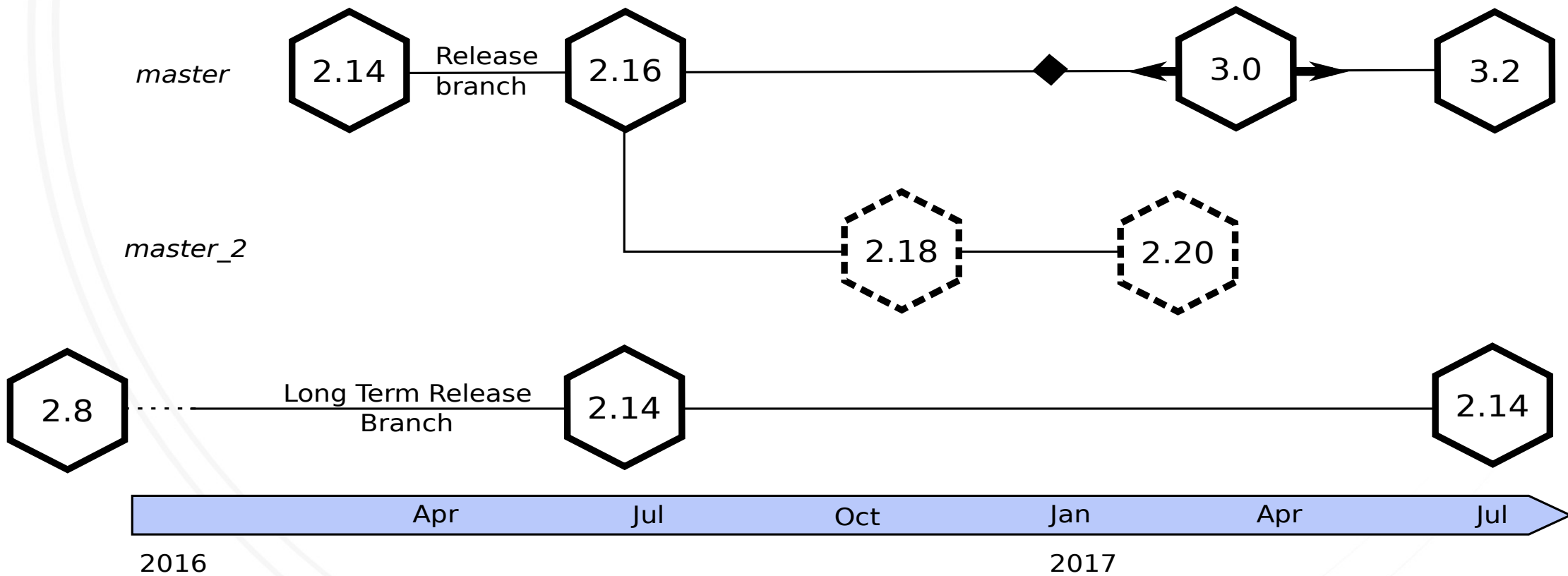 - Date adjustment in January 2017

- Current LTR (2.14) continued until 3.2

- 2.18 will be released
  - 2.20 hopefully not

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QGIS 3 – when ?

- ## Refactoring effort

  - ### Cleanup
    - More C++ good practices (const correctness)
    - Get rid of old things (QgsLabel, ...)

  - ### Overall consistency and readability
    - Class / method names : no more « V2 » suffix, capitalization
    - Helps newcomers (as well as experienced ones)

  - ### Reduce complexity and « technical debt »

- ## Refactoring effort

  - Allow fixes that were not possible so far

    - Because they would have broken the API

    - **9-year old bug** #777 : QgsFeature geometry accessor

  - Possible improvements

    - C++11/14

    - Multiple geometry columns

    - Custom data providers in Python

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- Status

  Good, compilation OK, already usable

  - Qt5/Python3 now default on master

  - Each API change has big impacts, tests needed

  - Things still missing (some unit tests – pyspatialite …)

- Documentation

  - Nice to have in QGIS 3

    - https://github.com/qgis/qgis3.0_api/issues

  - API breaks

    - http://qgis.org/api/api_break.html

    - https://github.com/qgis/QGIS/blob/master/doc/api_break.dox

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Migration guide

- Core :

  - 3.x (a.k.a master) branch first

  - No more Qt4

  - Backport to « master_2 » if you will

- Plugins :

  - No more Python 2

- Don't use « from PyQt4.QtCore import * »

- Use explicit lists of class imports

```
from PyQt4.QtCore import (
    QDate,
    QTime,
    QDateTime,
    QVariant
)
```

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Migration guide : plugins

- **« 2to3 » script :**

  - Convert a python file

  - From Python 2 to Python 3

  - From PyQt4 to PyQt5

- **If you want to write a plugin for both Qt versions**

  - « Wrapping » packages
    - Qgis.PyQt will choose the right version

  - Compatibility module

- **Python is interpreted**

  - write more unit tests !

  - test !

New features

- ## QEP 20 – auxiliary storage

  - Updateable joins

  - New project file format (zip) that can embed layers

  - Shortcuts to rapidly create « auxiliary fields » for a data-defined property

  - Primary target : transparent manual label placement

- ## QEP 28 – label connectors
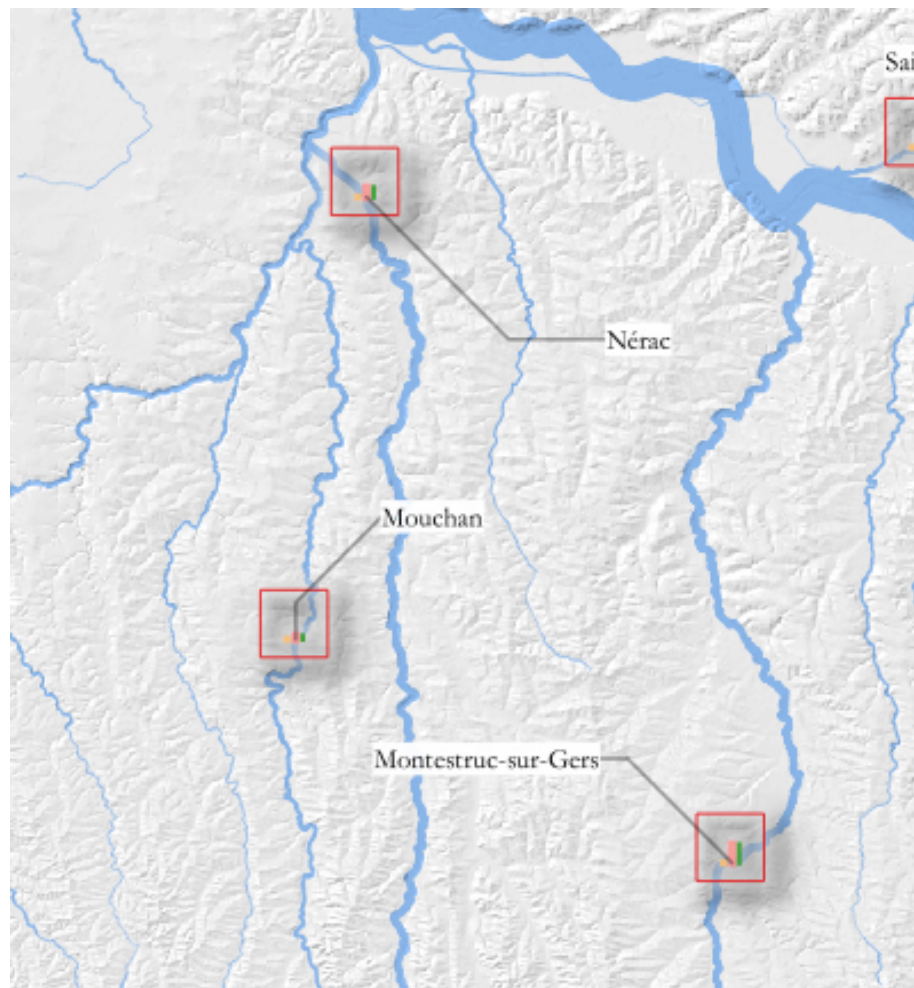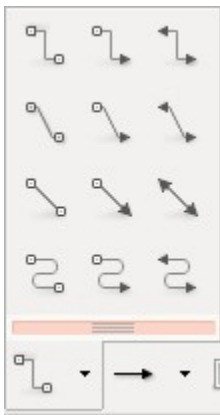
-

Form / edit widgets

- Custom widgets (registered by plugins) for some data types (C2C)

- Support for array and dictionary types

- Primary target : display and manipulation interlinked complex features (INSPIRE)

Feature proposals

- ## QEP 27 – label path

  - Curved labeling on a simplified / smooth version of the geometry
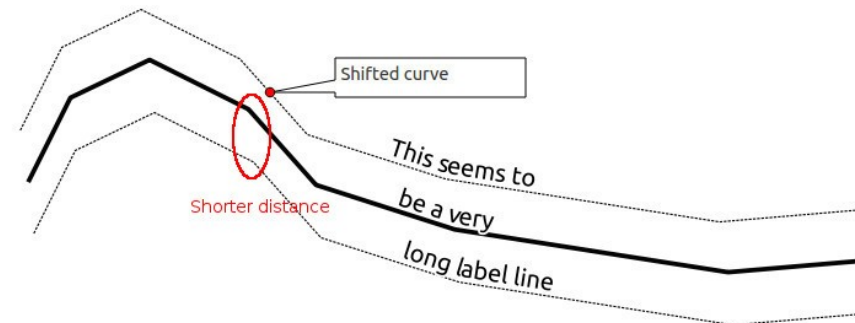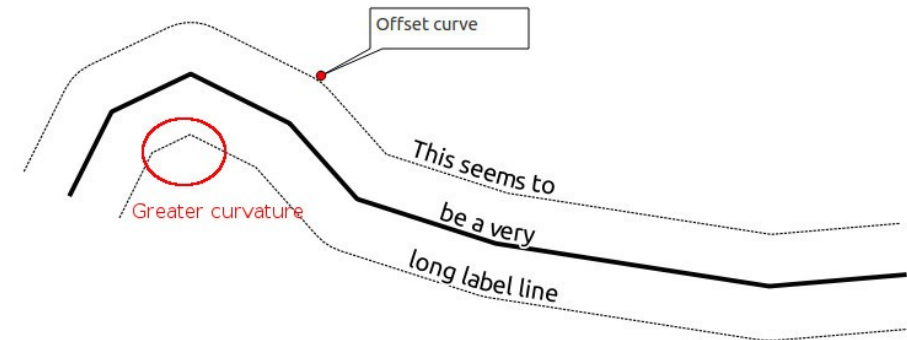
- ## QEP 30 – label mask

  -
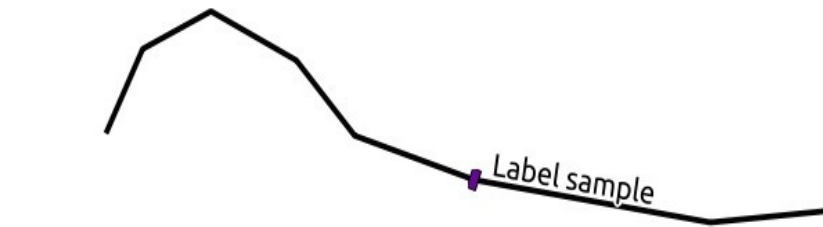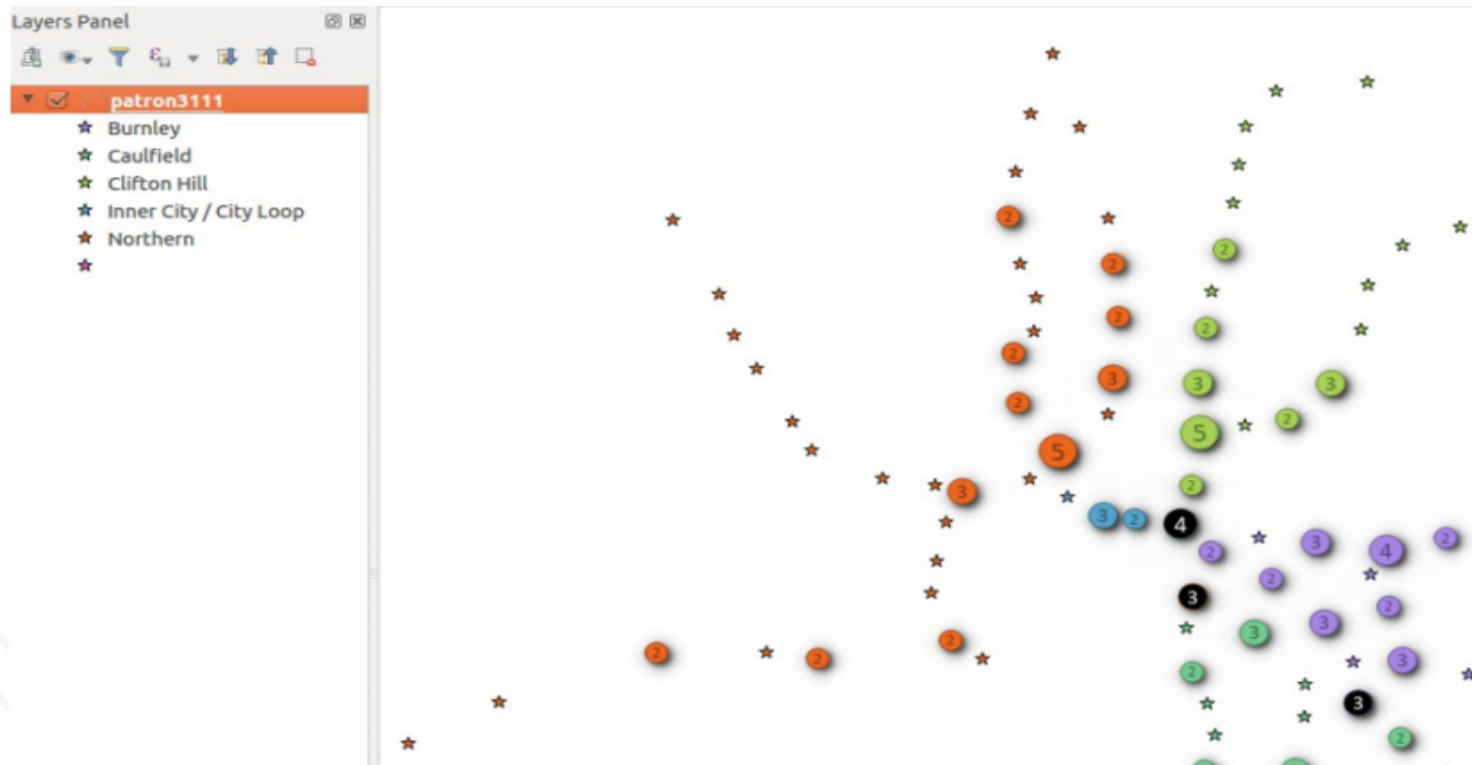
  -
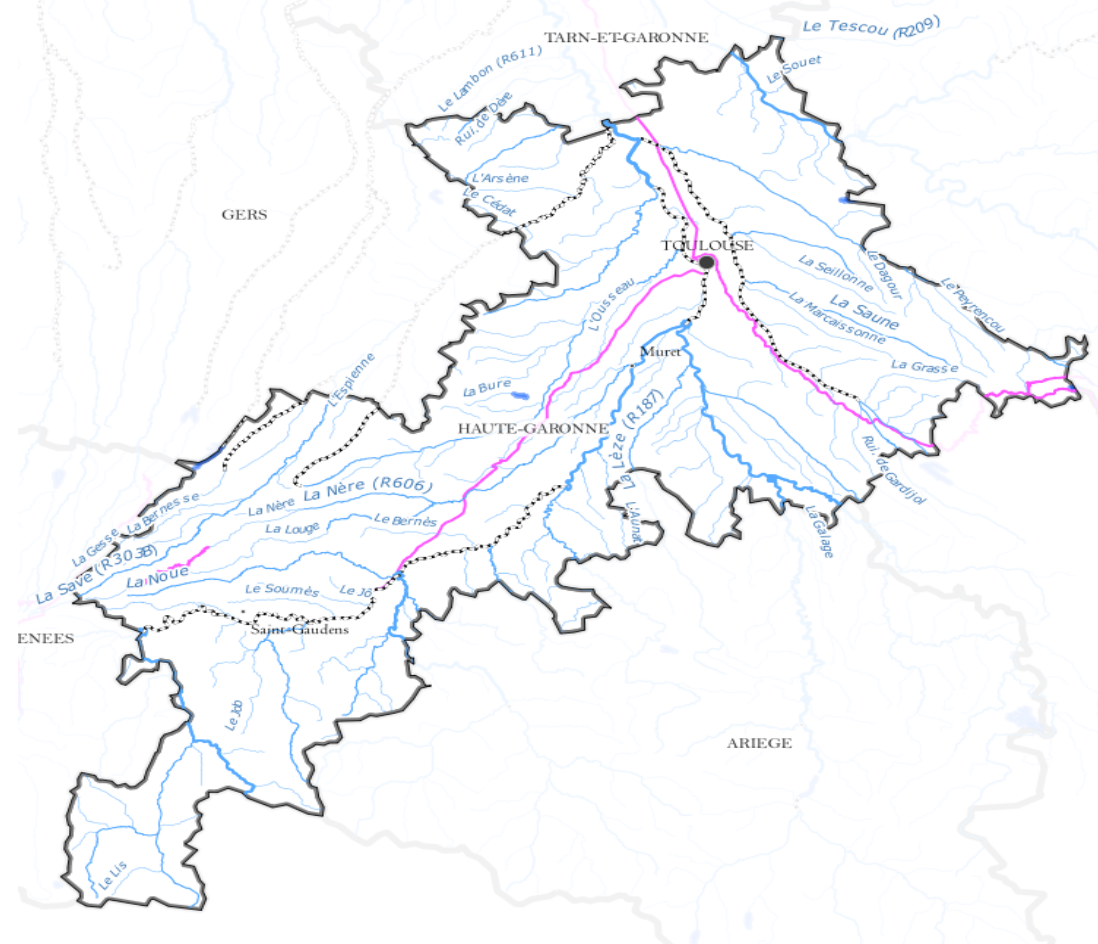
- ## QEP 41 – curved labels improvements
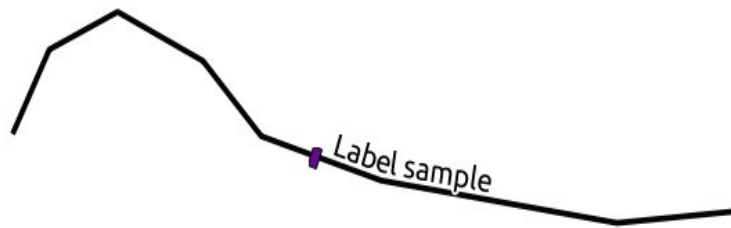
Symbol clipping

- Buffer around labels / symbols that « removes » drawing from underlying layers.

- Cluster renderer (Nyall Dawson)

- Thank you for your attention !

Sources

- Tim Sutton, Report back: 15th QGIS hackfest in Girona

- (FR) Médéric Ribreux, Sortie de QGIS 2.16 « Nødebo », LinuxFr.org

- Larry Shaffer, State of the QGIS Project, FOSS4GNA 2016

- Nyall Dawson, The road to QGIS 3.0

- Nyall Dawson, QGIS 3 is underway

- Matthias Kuhn, Prepare your plugins for QGIS 3