PySide

overview

Marc Poinot
(ONERA/DSNA)

ONERA

THE FRENCH AEROSPACE LAB

retour sur innovation

Outline

Quite short but practical overview

- Qt
  - Toolkit overview
  - Model/View
- PySide
  - pyQt4 vs PySide
  - Designer & Cython
  - Widget bindings
  - Class reuse

Qt - Facts

- Qt is cute
  - Cross platform application framework for GUI

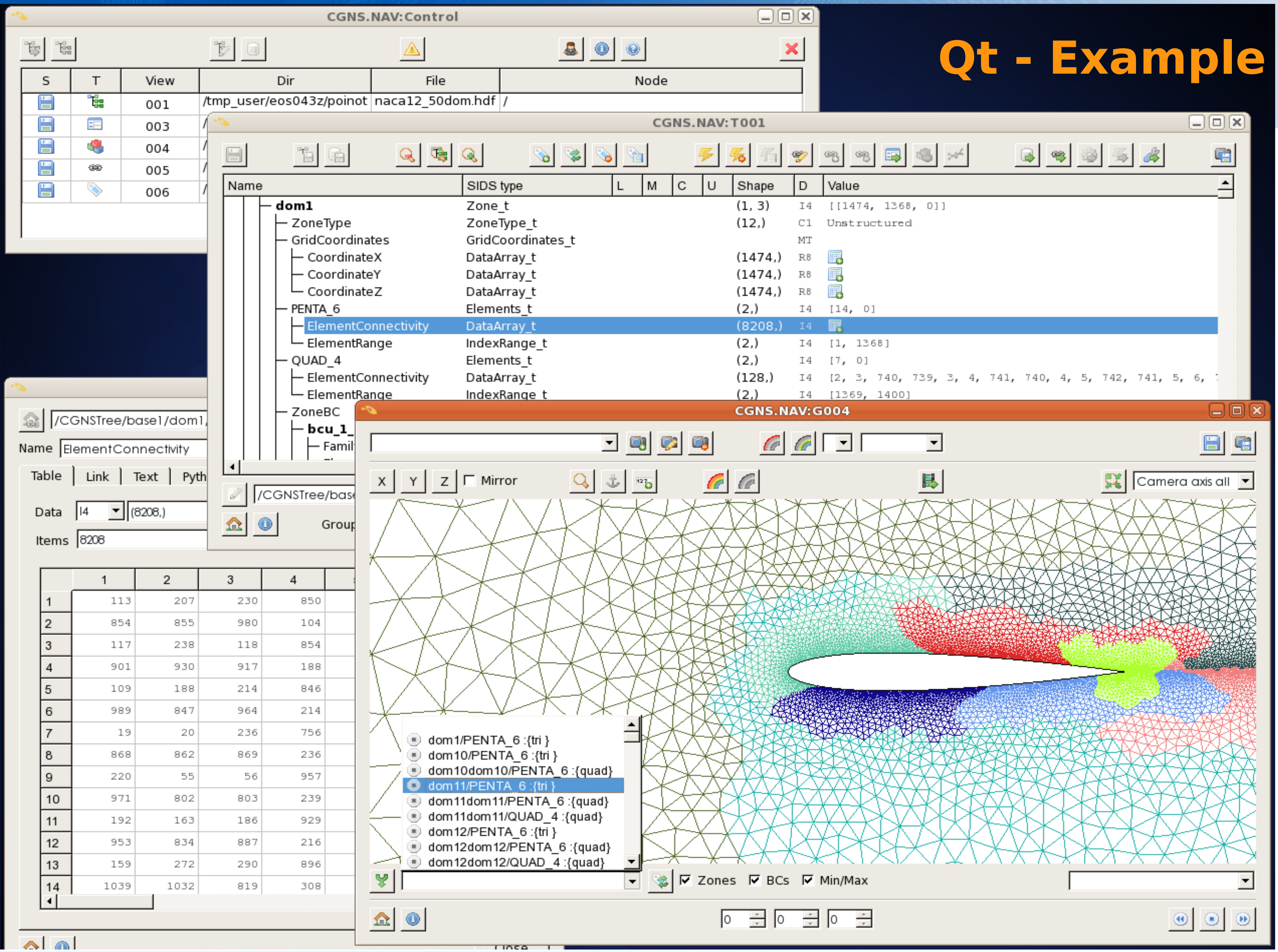
    X Window System, Windows...
  - C++ kernel + many bindings

    Including Python
  - Release v5.3 05/2014
  - License GPL+LGPL+Commercial

    Contact your own lawyer...

- Components
  - Core: QtCore, QtGui...
  - Specialized: QtWebKit, QtSVG, QtSQL...
  - Tools : Creator, Designer...

Qt - Example



CGNS.NAV:Control

S	T	View	Dir	File	Node
		001	/tmp_user/eos043z/poinot	naca12_50dom.hdf	/
		003	/		
		004	/		
		005	/		
		006	/		

CGNS.NAV:T001

Name	SIDS type	L	M	C	U	Shape	D	Value
dom1	Zone_t					(1, 3)	I4	[[1474, 1368, 0]]
ZoneType	ZoneType_t					(12,)	C1	Unstructured
GridCoordinates	GridCoordinates_t						MT	
CoordinateX	DataArray_t					(1474,)	R8	
CoordinateY	DataArray_t					(1474,)	R8	
CoordinateZ	DataArray_t					(1474,)	R8	
PENTA_6	Elements_t					(2,)	I4	[14, 0]
ElementConnectivity	DataArray_t					(8208,)	I4	
ElementRange	IndexRange_t					(2,)	I4	[1, 1368]
QUAD_4	Elements_t					(2,)	I4	[7, 0]
ElementConnectivity	DataArray_t					(128,)	I4	[2, 3, 740, 739, 3, 4, 741, 740, 4, 5, 742, 741, 5, 6,
ElementRange	IndexRange_t					(2,)	I4	[1369, 1400]
ZoneBC								
bcu_1_								
Famil								

/CGNSTree/base

Group

/CGNSTree/base1/dom1/

Name ElementConnectivity

Table | Link | Text | Pyth

Data I4 (8208,)

Items 8208

	1	2	3	4
1	113	207	230	850
2	854	855	980	104
3	117	238	118	854
4	901	930	917	188
5	109	188	214	846
6	989	847	964	214
7	19	20	236	756
8	868	862	869	236
9	220	55	56	957
10	971	802	803	239
11	192	163	186	929
12	953	834	887	216
13	159	272	290	896
14	1039	1032	819	308

CGNS.NAV:G004

X Y Z □ Mirror

Camera axis all

- dom1/PENTA_6 :{tri }
- dom10/PENTA_6 :{tri }
- dom10dom10/PENTA_6 :{quad}
- dom11/PENTA_6 :{tri }
- dom11dom11/PENTA_6 :{quad}
- dom11dom11/QUAD_4 :{quad}
- dom12/PENTA_6 :{tri }
- dom12dom12/PENTA_6 :{quad}
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☑ Zones ☑ BCs ☑ Min/Max

0 0 0

Python bindings

- pyQt
  - The first to come

    Some services have hard coded `import PyQt4`
  - GPL - Use only in free software

- PySide
  - Some syntactic & behavior differences
  - LGPL - Use allowed in proprietary software

PySide overview hereafter mixes Qt/PySide features

PySide - Facts

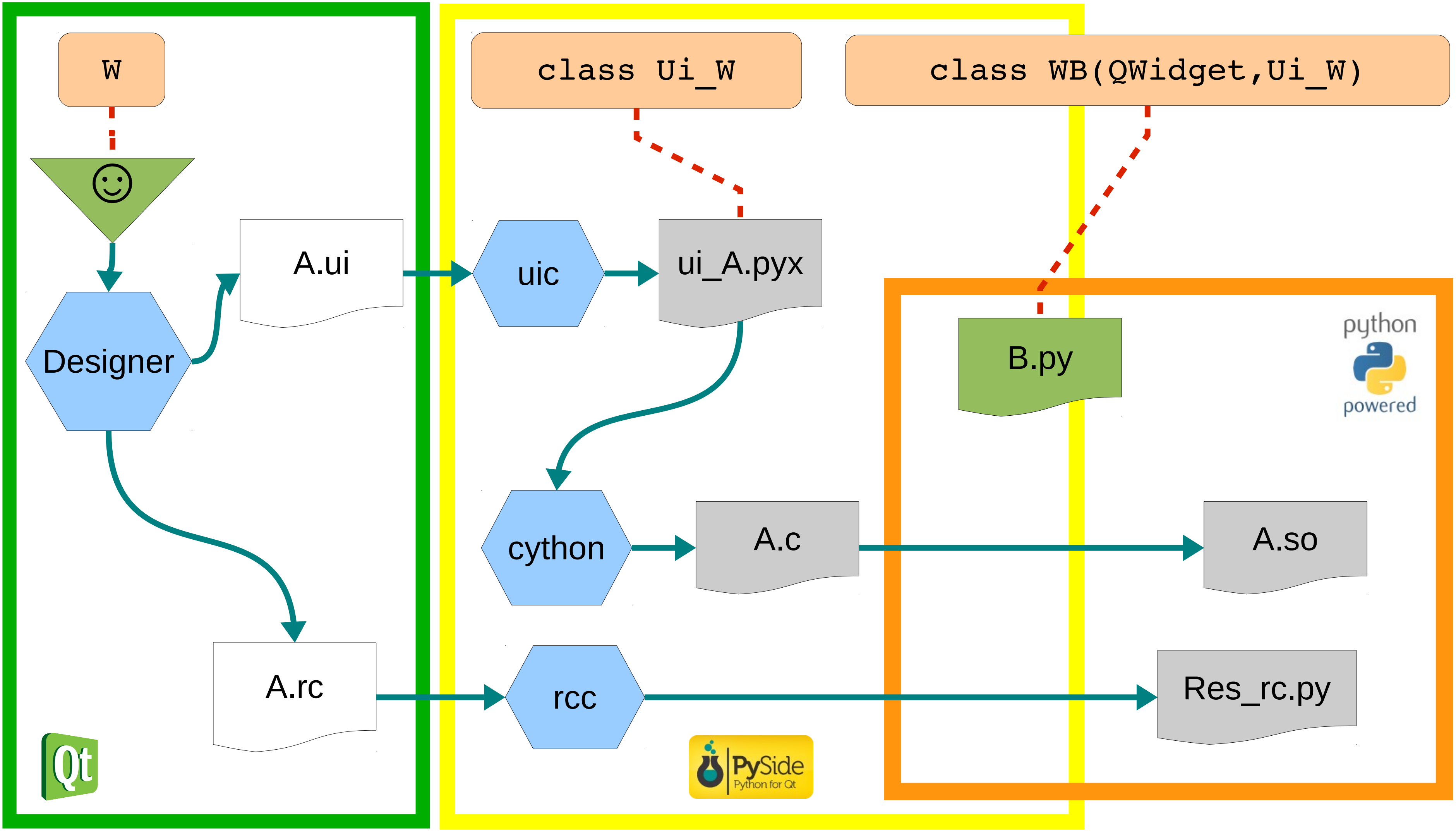
- Full Python binding
  - Qt classes as Python classes
  - Python types as parameter types

- Release 1.2.2 04/2014
- Reference documentation

```
http://pyside.github.io/docs/pyside/
```

- Production process
  - Uses many steps
  - Better with setup & source management

PySide - Production process

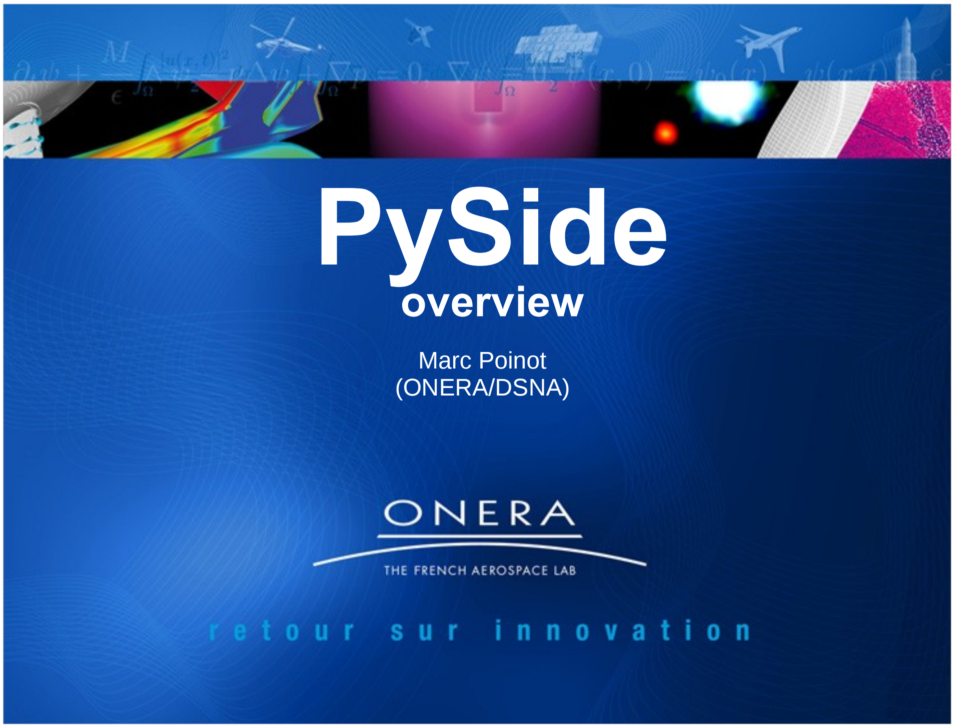


PySide - Example

```
from PySide.QtCore import *
from PySide.QtGui  import *
from Gview import gui

import numpy as NPY
import vtk
from os.path import splitext

class GMain(QWidget,gui.Ui_controlWindow):
  # -------------------------------------------
  def __init__(self):
     QWidget.__init__(self,None)
     self.setupUi(self)
     self.b_load.clicked.connect(self.b_loadOneFile)
     self.b_X.clicked.connect(self.b_xaxis)
  # -------------------------------------------
  def b_xaxis(self,pos=None):
     if (self.c_mirror.isChecked()): self.setAxis(pos,-1)
     else: self.setAxis(pos,1)
  # -------------------------------------------
  def closeEvent(self, event):
     print '*** Gview: close'
     event.accept()
```



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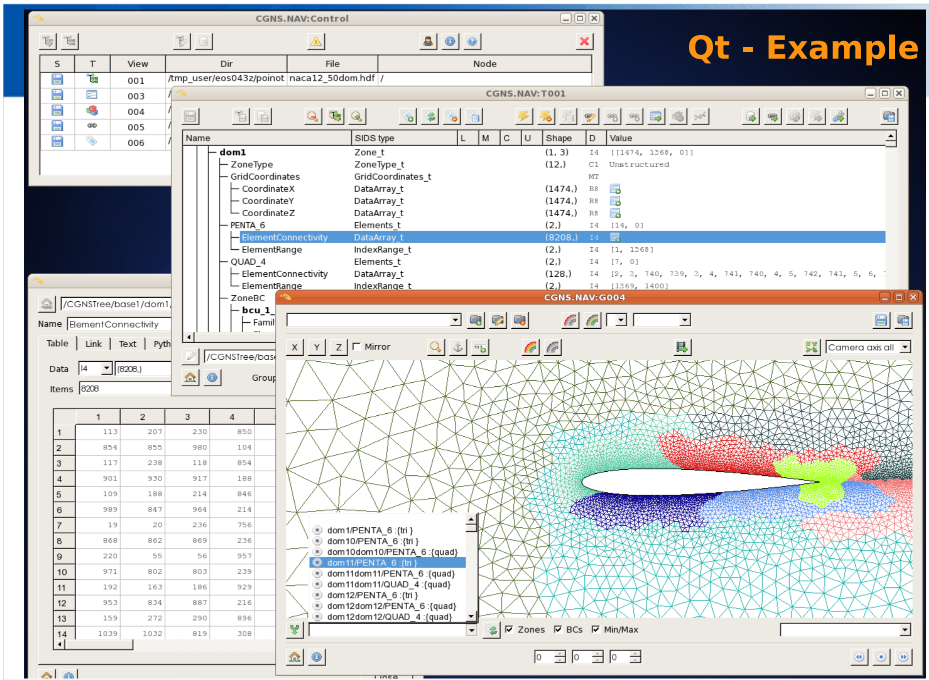

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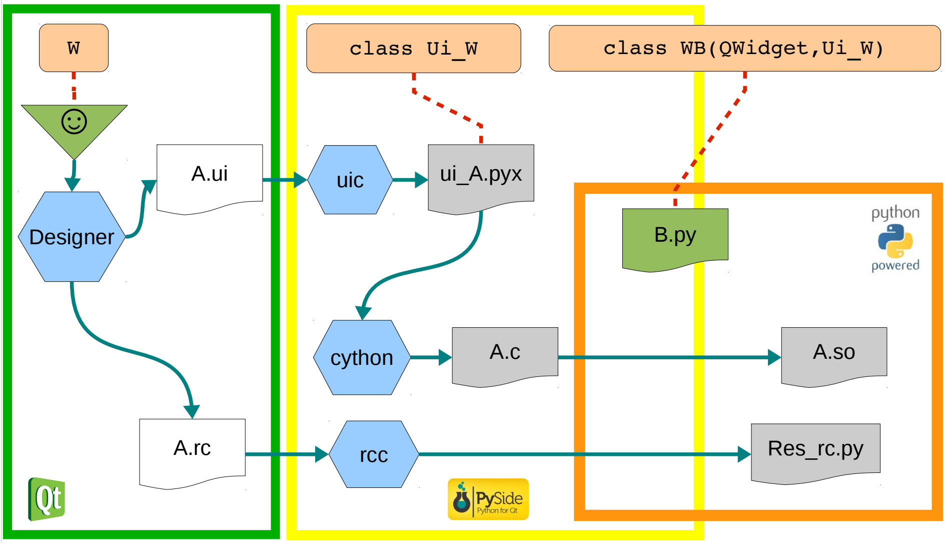

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