PYTINE 3.4

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TINE and Python

- Python :
    - widely used
    - large community with lots of libraries (scientific, graphic)
    - Open source (it's free!)
- PyTine : EMBL ~2007 (stopped at Python 2.7)
    - Simple client-side interface
        - Asynchronous links and callbacks !
    - Only the 'basic' data type supported
    - Last version only for Linux.
- Current State:
    - Full-blown client and server interface
    - Uses Python 3.4
    - Windows, Linux, and Mac supported.

TINE and Python

- PyTine
  - Makes use of the tine core library + the buffered server library and listener utilities
  - A la 'LabView', 'MatLab', IDL, (or just plain C, C++).
  - The API is already 'easy'.
- Command line
  - Non GUI Python scripts at the command line
  - Debugging tools available.
- PyQt
  - Use PyQt for GUI applications
  - Caveat: Do NOT access GUI widgets inside callbacks! (Send signals instead …)
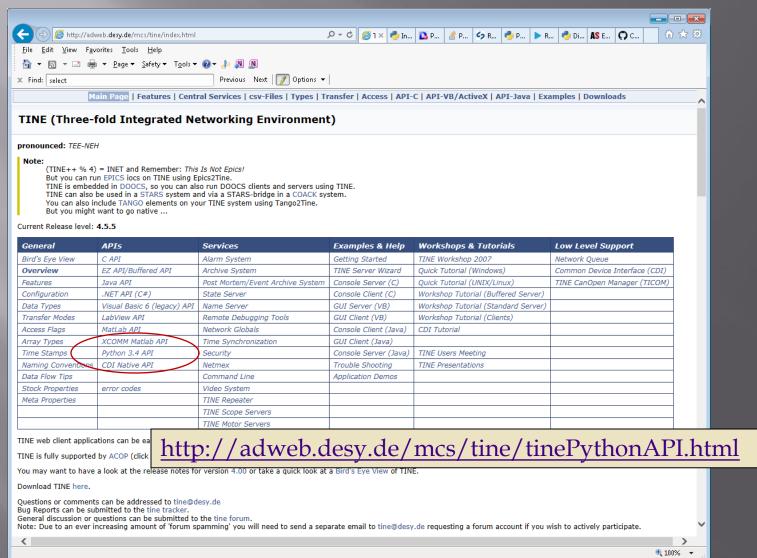
TINE and Python

- PyQt callback paradigm:

```python
import pyqtgraph as pg
import pyqtgraph.exporters
from pyqtgraph.Qt import QtCore, QtGui

from PyQt4.QtCore import QObject, pyqtSignal, pyqtSlot

import os
import threading
import ctypes as C
import numpy as np

import PyTine as tine
import time

class Update(QObject):
    update = pyqtSignal();
    def __init__(self):
        QObject.__init__(self);
    def do_update(self):
        self.update.emit();
```

```python
@pyqtSlot()
def on_update():
    p1.setData(y=yd, x=xd);

upd = Update();
upd.update.connect(on_update);


xd = np.arange(0,32768);
yd = np.arange(0,32768);

def ptrain_cb(a,b,c):
    global yd
    yd = c['data'][0:32768];
    upd.update.emit();
```

TINE and Python

http://adweb.desy.de/mcs/tine/tinePythonAPI.html

TINE and Python

- ▫ Time for a demo ....