# Guide for FTP tests during NMEs

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Version: 4.0

## Before the NME start

### Make vaxfile

In case Bob has not made it yet:

Log in to **ccsbeta**:

```
ssh -X jops@ccsbeta
cd /ccs/expr/
mkdir <EXP>    # if necessary
cd <EXP>
```

If the experiment has not been introduced into the database yet:

```
cd /ccs/var/log2vex
```

Update the `MASTER_PROJECTS` file including the experiment name and the date of the observation.

The necessary directories (e.g. the ones in `logexp_date` should be automatically populated every hour).

If the *.vax* does not exist, the create it:

```
log2vex.pl
```

Then follow the next steps:

- Select Experiment.
- EOP (Earth orientation parameters).
- TapeLog: prefer e-vlbi (for NMEs).
- Sched: from Skdfile.
- Clock.
- Show Clock graph: do all stations have a clock value? Is the fit OK?

- Compile Vexfile (press BITSTREAMS)
- Print/Save: default name.

And you need to rename the file:

```
mv <exp>.vexfile <exp>.vax
```

## Check vaxfile

You should check at the end of the *.vax* file the clock section. If some values are missed you should ask the station friend about it during the Skype session and update the clocks.

## Step-by-step guide for the SFXC

Log in to **head.sfxc** (where the SFXC resides). There is a copy in **tail.sfxc** in case *head* is not available.

```
ssh -X jops@head.sfxc
cd ~/sfxc/ftp/<session_name>/     # e.g. 2017_may
mkdir <exp>
cd <exp>
scp -p jops@ccsbeta:/ccs/expr/EXP/<exp>.vax .
```

Now you can run *ftptest.py* to create the necessary folder structure for the NME:

```
ftptest.py -h
....................
usage: ftptest.py [-h] [-a ANT] [-e SETANT] [-r REFANT] [-c CHANNELS] [-f
FFT] [-s SCANS] [-d] [-g] vex

Generate shit for an ftp fringe test.

positional arguments:
  vex                   vex-file name

optional arguments:
  -h, --help            show this help message and exit
  -a ANT, --ant ANT     antenna 2-letter codes
  -e SETANT, --setant SETANT
                        Reference setup antenna 2-letter code
  -r REFANT, --refant REFANT
                        Reference antenna 2-letter code
  -c CHANNELS, --channels CHANNELS
```

```
                        channels to use, counting from 1
  -f FFT, --fft FFT     number of fft points to use
  -s SCANS, --scans SCANS
                        ftp-scans to generate stuff for
  -d, --dummy           make a dummy list of file locations
  -g, --gabri           create folders according to Gabriele's taste
....................
```

If you run it as

```
ftptest.py -d -g <exp>.vax
```

it creates all the directories and dummy files for all the ftp-tests that are present in the vaxfile. If you don't use the *-d* option the script looks for real data on *sfxc-h1*.

Remember to modify the *.scan##.ctrl* file according to the data available for SFXC. Or run *ftptest.py* without the *-d* option again just before running SFXC.

In case you decide to prepare everything manually:

```
cd ~/sfxc/ftp/<session_name>/<exp>/
mkdir ctrl
mkdir html
mkdir output
```

and inside each directory create a directory for each scan that will be part of the FTP-tests (check the *.vax* file). Copy the *.vax* file into *ctrl/scan##/* and copy a ctrl file from a previous NME and edit it according to the FTP-test.

## Preparing the website for the NME

Go to **dop288** to prepare the *ftp.html* file by adding the new NME.

```
ssh -X jops@dop288
cd /www/evlbi.org/tog/ftp_fringes/
vim ftp.html    # or your favourite text editor
```

Add the path for the experiment, save it, and close it.

```
mkdir <EXP>
cd <EXP>
cp ../<EXP_OLD>/index.html .
vim index.html     # Modify it accordingly to the NME, save it
mkdir scan##       # Create a directory for each scan
```

Otherwise you can also run *ftptest_report.py* to make a draft of *index.html*.

## Monitor the arriving data

All participating stations send data to JIVE.

```
ssh jops@fringetest.jive.nl
cd /ftp/ftpdata/
ls -ltr *<exp>*00##*      # where ## is the number of the scan

watch -n 2 ls -ltr *<exp>*00##*  # To run auto. the previous command every
2 s
```

check here the right name of the data files and which has arrived. You can also use some features of *ftptest.py* right before running SFXC to include only the files that have arrived.

## Start chat session

Open *Mattermost* and create a new channel for this NME with its name as channel name.

Announce it in the general channel and invite all the interested people.

Provide the times of the FTP tests in the chat window.

**OLD: Skype accounts**.

In case it is necessary: open Skype and start a group chat. Add here all the people from the involved stations. Below there is a list of people (Skype names) for each station:

- **Ef**: Effelsberg Friend (*effelsberg_vlbi*)
  Uwe Bach (*uwe_interwegs*)
- **Wb**: Geert Kuper (*geertkuper*)
  Antonis Polatidis (*apolatid*)
  Richard Blaauw (*blaauw.richard*)
- **Jb**: Jodrell Bank VLBI Room (*jodrell_vlbi*)
  Alastair Gunn (*alastair.gunn*)
- **On**: Jun Yang (*uaoagn*)
  Michael Lindqvist (*ml_nolvik*)
  Observer OSO (*observer_oso*)
  Roger Hammargren (*roger.hammargren*)
- **Mc**: Giuseppe Maccaferri (*gmacc06*)
  Andrea Orlati (*goldenarm1474*)
- **Nt**: Noto Friend (*noto.friend*)
  Salvo Buttaccio (*salvo.b-vlbi*)

- **Tr**: Torun Telescope Operator (*torun_telescope_operator*)
  Sebastian Soberski (*torun-ssober*)
  Kaz Borkowski (*tr-kaz*)
  Grzegorz Hrynek (*vario_vlbi*)
- **Sh/T6**: VLBI-SH (*vlbi_sh*)
- **KVAZARs**: Andrey M. (*agm.iaa*)
- **Hh**: HartRAO Friend (*vlbi_hh*)
  Jonathan Quick (*jfhquick*)
- **Ys**: Pablo de Vicente (*pablo.d.vicente*)
  Yebes40m (*yebes40m*)
- **Ur**: (*uaonanshan*)
- **Sr**: Carlo Migoni (*carlo.migoni*)
  Control Room SRT (*srtcontrolroom*)
- **Ar**: Tapasi Ghosh (*tghosh9*)
- **Km**: (*kunming40*)
- **Ir**: Vladislavs Bezrukovs (*slavabezrukov*)
  Miks (*mikskapers*)
- **Mh**: Kurpro (*kurpro*)
- **KVN**: AOC KVN (*kvn.aoc*)

# Correlation with SFXC

Once the NME starts and you have data from the stations you can run SFXC in *head.sfxc*:

```
cd ~/sfxc/ftp/<session_name>/<exp>/ctrl/scan##
run_sfxc.py <exp>.vax <exp>.scan##.ctrl
```

It generates all the html that are in `~/sfxc/ftp/<session_name>/<exp>/html/scan##/`

You can look at the *index.html* file by running Firefox. If everything looks OK you can copy all the files to **dop288**:

```
scp -r
jops@head.sfxc:/home/jops/sfxc/ftp/<session_name>/<exp>/html/scan##/\*
/www/evlbi.org/tog/ftp_fringes/<EXP>/scan##
```

# After the NME

You should send an email to *EVNtech@jb.man.ac.uk* (with copy to Bob, *jops@jive.eu*) with the subject: *EVNtech: N17C1 FTP Fringe Test Results*.

In the body of the email you have to write something like:

```
Version: 1
```

Summary:
Ftp data arrived from:
Ef, Wb, Jb, On, Mc, Nt, Tr, Ys, Sh, T6, Td, Yd, Md, Sd.

Selected results can be found here:
http://www.evlbi.org/tog/ftp_fringes/N14M1

Legend:
Y = Performed as expected
N = Did not perform as expected
? = No feedback available from station
Blank = Not applicable or waiting for further tests

F14M1, Freq= 6662.52-6674.52 MHz; Mode=1024 ch-128 Mbps-16x2MHz-2sec; obs date=01/03/2014

|            |Ef|Jb|Wb|On|Mc|Nt|Tr |Ys|Sh|T6|Td|Yd|Md        |Sd|
|------------|--|--|--|--|--|--|---|--|--|--|--|--|----------|--|
| Observed   |Y |Y |Y |Y |Y |Y |Y  |Y |Y |Y |Y |Y |Y         |Y |
| Frng.(ftp) |Y |Y |Y |Y |Y |Y |Y  |Y |Y |N |Y |Y |Y         |Y |
| Record. OK |Y |Y |Y |Y |Y |Y |Y  |Y |Y |Y |Y |Y |Y         |Y |
| Crs.pols OK|Y |Y |Y |Y |Y |Y |Y  |Y |Y |Y |Y |Y |Y         |Y |
| Check VCs  |  |  |  |  |  |  |7,8|  |  |  |  |  |1,2,3,4,5 |  |
| See notes  |  |  |  |  |  |  |a  |  |  |  |b |c |d         |e |

Notes:

general: the calibrator used in scan02 (3C48) is much weaker than calibrator
used in scan21 and scan59 (DA193). This is the reason of the lack of fringes
for scan02.

a) Tr: no fringes in BBCs 7 and 8.

b) Tr also sent DBBC data designated as 'Td'.

c) Ys also sent DBBC data designated as 'Yd'.

d) Mc also sent DBBC data designated as 'Md'. Md shows weaker fringes than Mc,
this could be the reason of no fringes in DBBCs 1 (LL-USB & LSB), 2 (RR-LSB),
3(LL-USB & LSB), 4(RR-LSB), 5 (LL-LSB)

e) T6 also sent DBBC data designated as 'Sd'.

questions/comments - please email surcis@jive.nl

```
    Regards,


    ------------------------
```

# Automatic Fringe Test

In ccsbeta in the directory where *.vax* is you should type:

```
ssh -Y jops@ccsbeta
cd /ccs/expr/<expname>

# If needed:
log2vex.pl
 - tapelog evlbi
 - EOP
 - Sched from Skdfile
 - Clock
 - Compile vexfile

vex2db <exp>.vexfile
schedule_fringe_test -h  # if you need help

schedule_fringe_test -e EXP -n No00## -s EfJbO8 -m email
 -t START -d DURATION


                          |      |           |       |
       name of the experiment   |           |       |
                          |      |           |       |
                            scan you want    |       |
                            to correlate     |       |
                                             |       |
                              list of station you    |
                                want to correlate     |
                                (don't use spaces)     |
                                (no vdif supported)     |
                                                       |
                                      your email address
```

example: `schedule_fringe_test -e N16M1 -n No0002 -s EfJbO8 -m surcis@jive.eu`

You can specify either the scan number or the time from when you want the data in vex format (e.g. 2017y290d12h42m00s).

The data are in `ssh -X jops@sfxc.h0.sfxc` in `/scratch/sfxc/fringetest/<EXP>/`

if you wish to recorrelate, type in ccsbeta

```
recorrelate_fringe_test -e name.experiment -n No0000
                                 |                  |
                   name of the experiment          |
                                                    |
                                            scan you want
                                            to recorrelate


recorrelate_fringe_test -e N16M1 -n No0002  # for example
```

In case of questions contact eBob (eldering@jive.eu)