



From IRA to ORA what is happening to the Italian VLBI

Matteo Stagni - IVTW 2015 Auckland - 23 November 2015

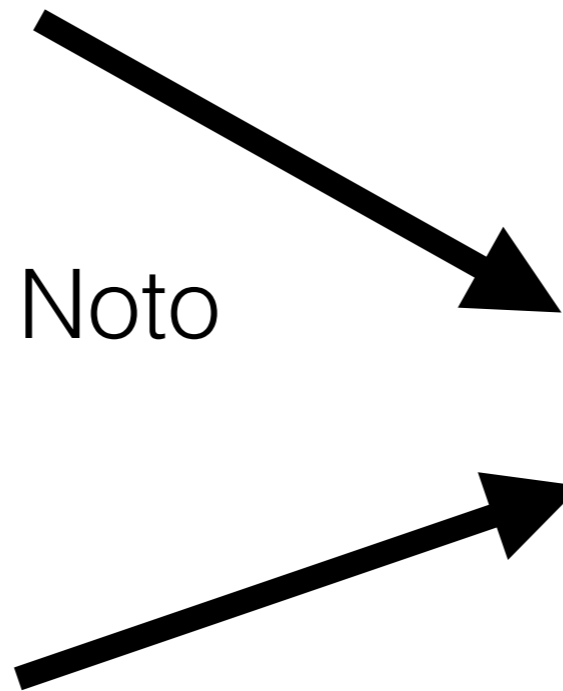
What is *legally* happening



Bologna + Medicina + Noto







Cagliari



Bologna + Medicina + Noto
+ **Cagliari (SRT)**

Italian VLBI recap

STATIONS		Dish	Backend	Formatter	Recorder	Network Link to Bologna
Medicina		32 mt	dBBC	Fila10G	Mark5C	10 Gbit
Noto		32 mt	dBBC	Fila10G + Mark5B	Mark5B	10 Gbit
SRT		64 mt	dBBC	Fila10G + Mark5B	Mark5B + Mark5C	-
Matera (ASI)		20 mt	VLBA	Mark5B	Mark5B	500 Mbit

VLBI - IT astro



+



=

Fringes
on
IJ15K
Mc + Nt + Tr

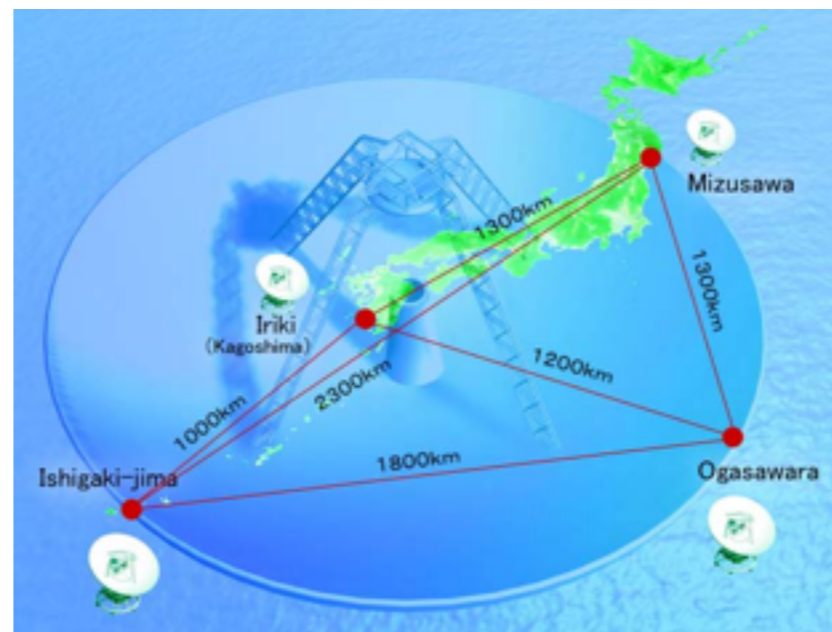
Torun (Poland)

Data transfer to Bologna 1 Gbit

VLBI - IT astro



+



Feb 2015

= Fringes
for VLBI - IT!
(Mc - Nt - Sr)

VERA (Japan)

Data transfer to Tokyo ~10 Mbit

Why not fringes for VLBI-IT + VERA (*atm*)?

ASTRO2
1US
1UM
2US
2UM
3US
3UM
4US
4UM
9US
9UM
10US
10UM
11US
11UM
12US
12UM
1LS
1LM
2LS
2LM
3LS
3LM
4LS
4LM
9LS
9LM
10LS
10LM
11LS
11LM
12LS
12LM



m5btok5

MK5.k5a ---- for group#1 in info_file (**usually ch01-04**)
MK5.k5b ---- for group#2 in info_file (**usually ch05-08**)
MK5.k5c ---- for group#3 in info_file (**usually ch09-12**)
MK5.k5d ---- for group#4 in info_file (**usually ch13-16**)

Setup CLASH!



IRA-INAF Station Manager
Choose what you would like to do:

Antenna **Mc** selected

Select antenna	Storage status Delete old data	New experiment	Reserve space Clear reserve table	Schedule observations Delete scheduled job
→	→	→	→	Ω

Administration options

[Global partition status](#) [Global jobs queued](#) [Users Management](#)


VSM

Vibi Storage Manager

Schedule observations

vibi-mgr.ira.inaf.it/iravsm/sched.php

NEXPRES



scheduling

<input type="checkbox"/>	Host	Obs	Path	Filename	StartTime	LastingTime	Command
X	Ordinato per: StartTime crescente						
<input checked="" type="radio"/>	tank-01.ira.inaf.it	testNewITA	/space1/local-2013-7/testNewITA	Mc	2013-12-20 17:34:10	86400	captureUDPVDIF 2222 test
<input type="radio"/>	tank-01.ira.inaf.it	ggg	/space1/local-2012-2/ggg	Mc	2014-09-18 12:49:07	86400	vbs_record test

<< < Aggiungi Visualizza Modifica Copia Cancella > >> Vai a 1 :

5.089 milliseconds

Pagina: 1 / 1 Voci: 2

To confirm submission please select Continue to insert the jobs into the machine(s) queue:

Continue

Home

Recording tools

testing tools to try recording
VDIF and MARK5 data
providing more automation

VSM Scheduler

- Parses the vex file and produces a recording schedule for jive5ab
- Python wrapper for scheduling
- Recording capability using VSM Scheduler = up to what a RAID can withstand! (4 Gbit/s tested)

VSMScheduler

```
Configuring jive5ab on telnet port 2620 in Fila10G Mark5B mode
telnet: connect to address 127.0.0.1:
Trying 127.0.0.1...
Configuration done!
```

You are scheduling the following scans for experiment ij15l :

```
Scan ij15l_mc_no0001 @ 2015-02-19 13:00:00
Scan ij15l_mc_no0002 @ 2015-02-19 13:01:15
Scan ij15l_mc_no0003 @ 2015-02-19 13:02:30
Scan ij15l_mc_no0004 @ 2015-02-19 13:03:45
Scan ij15l_mc_no0005 @ 2015-02-19 13:14:00
Scan ij15l_mc_no0006 @ 2015-02-19 13:28:00
Scan ij15l_mc_no0007 @ 2015-02-19 13:29:15
Scan ij15l_mc_no0008 @ 2015-02-19 13:30:30
Scan ij15l_mc_no0009 @ 2015-02-19 13:31:45
Scan ij15l_mc_no0010 @ 2015-02-19 13:42:00
Scan ij15l_mc_no0011 @ 2015-02-19 13:56:00
Scan ij15l_mc_no0012 @ 2015-02-19 13:57:15
Scan ij15l_mc_no0013 @ 2015-02-19 13:58:30
Scan ij15l_mc_no0014 @ 2015-02-19 13:59:45
Scan ij15l_mc_no0015 @ 2015-02-19 14:10:00
Scan ij15l_mc_no0016 @ 2015-02-19 14:24:00
Scan ij15l_mc_no0017 @ 2015-02-19 14:25:15
Scan ij15l_mc_no0018 @ 2015-02-19 14:26:30
Scan ij15l_mc_no0019 @ 2015-02-19 14:27:45
Scan ij15l_mc_no0020 @ 2015-02-19 14:38:00
```

Waiting for start time ... first scan should begin recording at 2015-02-19 13:00:00

VSM Scheduler

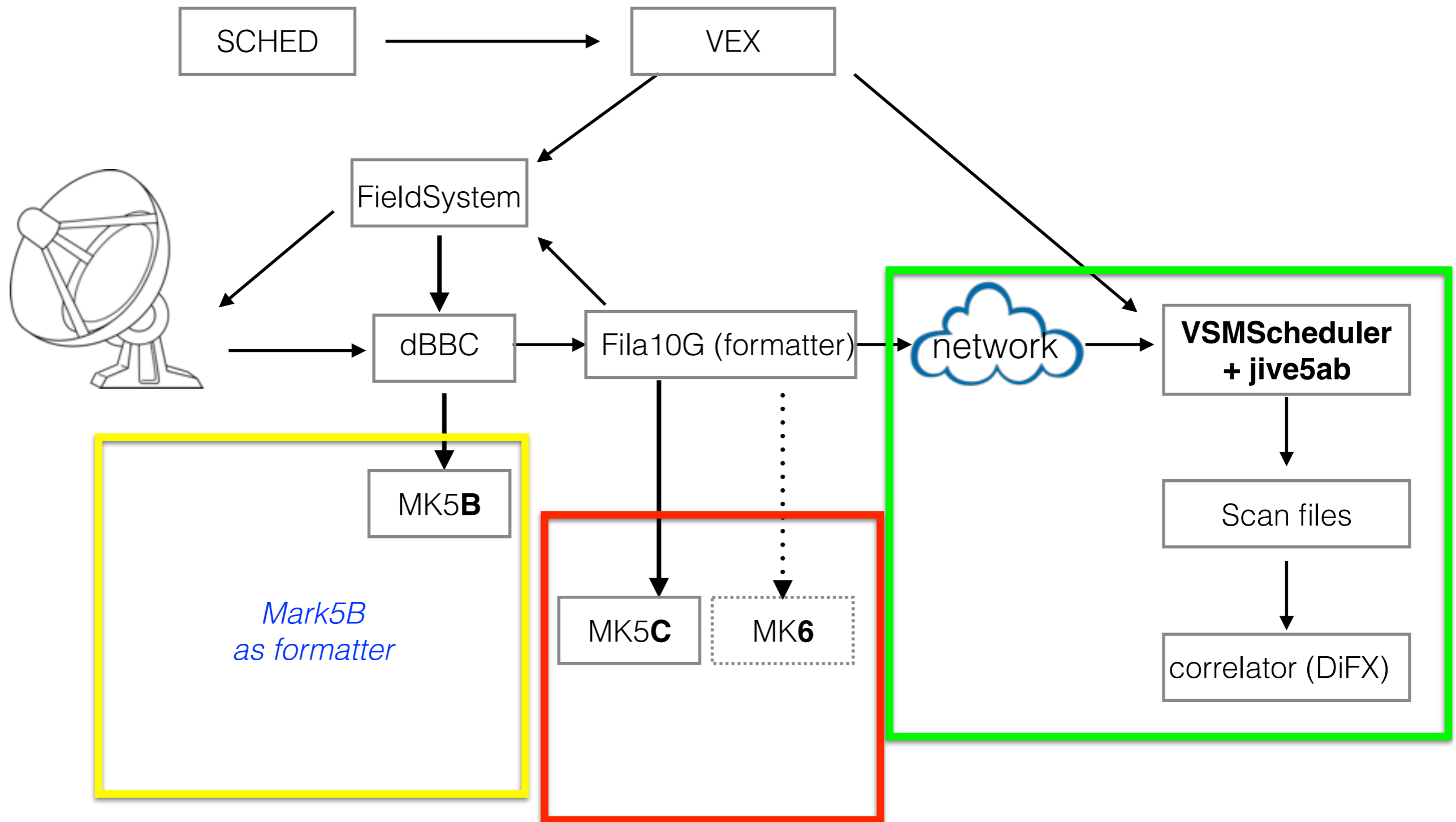
- 1 @4 Gbit (2 TB written)

PACKET LOSSES	Mark5B on SATA disks	Mark5B on SAS disks	VDIF on SAS disks
Mc -> Bo	1.4%	0.01%	
Nt -> Bo			0.00001%

Writing 8032 bytes packets with jive5ab

Assembling 2 5008 bytes packets con jive5ab

VSMScheduler



Italian Link for Time and Frequency (LIFT)

- 642 Km from INRIM (Turin) to UNIFI (Firenze) through Medicina station
- double round trip on a single fiber



Italian Link for Time and Frequency (LIFT)

- Matera will be the next station to be connected
- Plans to connect also Noto and Cagliari



Time & Frequency

Medicina Lab with optical
laser infrastructure

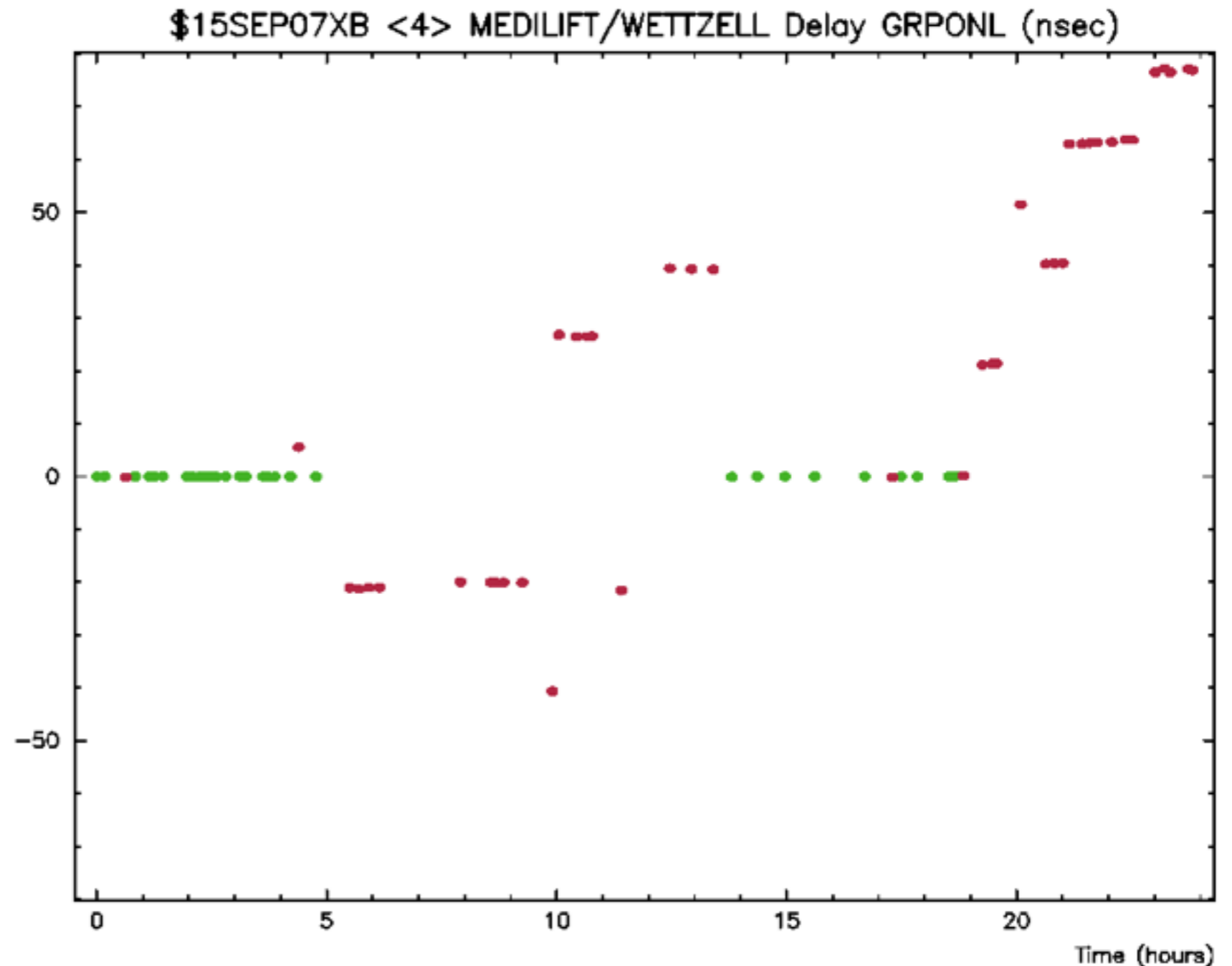


EUR137 INRIM clock @ Medicina

Solutions ok for a few hours

Re-syncs form Turin

Need to investigate
about
changing clock rates
and backend sync



Archive

Bologna

- Prepare an XML file parsing the VEX file to provide key experiment information to be processed in Trieste
- The XML 'digested' produces an entry (row) in a database table

Create a tar file containing:

- FITS files
- antab files (gain curve and tsys from antennas)
- log files (from antennas)
- Correlation notes

Archive

WEB

[Home](#)

[Decimal degrees](#)



Radio Archive

File name

RA Dec Radius

Observation Date From: To:

Frequency MIN: MAX:

Project ID

VLBI-IT

SD

Telescope

PI Name

Exposure Time

Antenas

Data Rate



Questions?

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