

VIE_SCHED

Jing SUN

VieVS User Workshop
7 – 9 September, 2010
Vienna





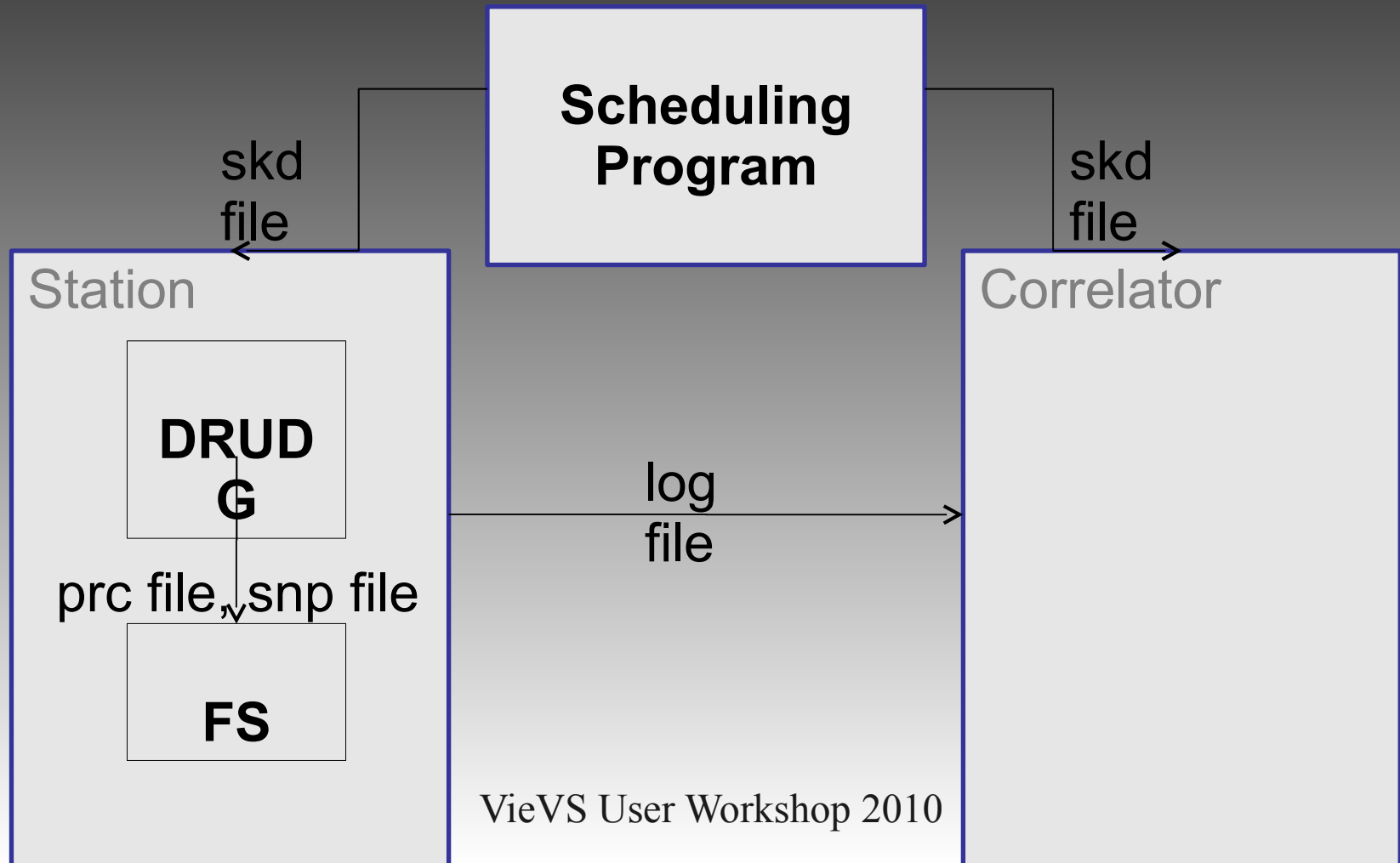
Part I : Background

Part II : Workflow

Part III : VLBI2010 simulations

Part IV : Next step

What's the purpose of a scheduling program ?



Current scheduling program

sked : Goddard, <ftp://gemini.gsfc.nasa.gov/pub/sked/>

sched : NRAO,
<http://www.aoc.nrao.edu/software/sched/index.html>

...



Background



VLBI2010 Project

1 mm measurement accuracy on global baselines

continuous measurements for time series of station positions and EOP

turnaround time to initial geodetic results of less than 24 hrs.

VIE_SCHED

small fast-moving antennas

broadband frequency (2–14 GHz)

two or more antennas at a site

...



Workflow



Input

Station

antenna.cat : antenna information catalog file

position.cat : station x,y,z locations catalog file

equip.cat : equipment IDs catalog file

mask.cat : horizon and coordinate masks catalog file

Source

source.cat : source positions file

flux.cat : source fluxes file

Read station info from cat files, Read source info from cat files
Calculate rise/set

Schedule subconfiguration

Calculate slewing time to the new
source

Calculate start time of the
observation

Calculate scan lengths

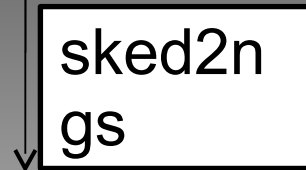
Check source position at the end of
the observation

loop

Output scheduling info

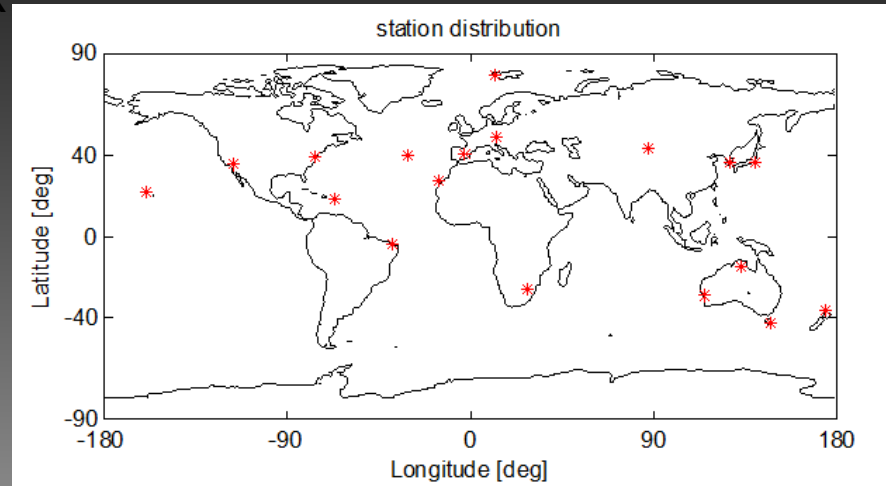
Output

skd file (sked/sched)

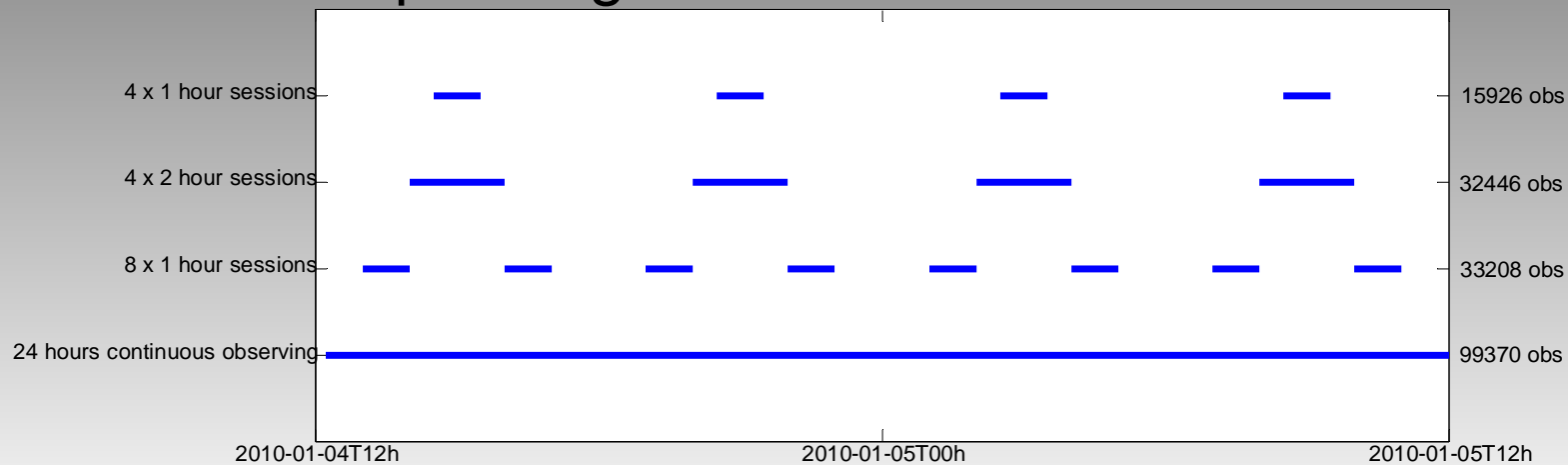


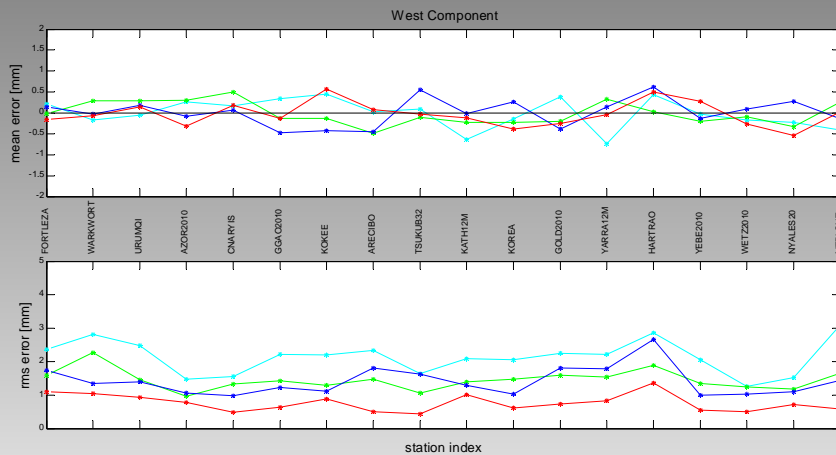
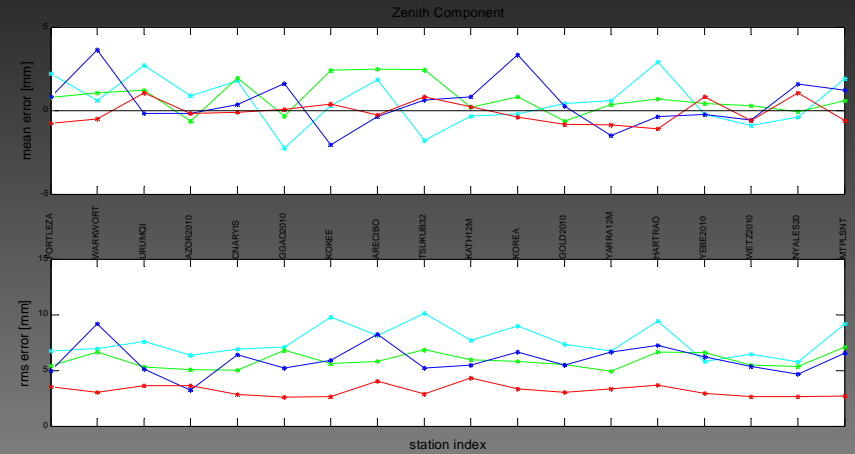
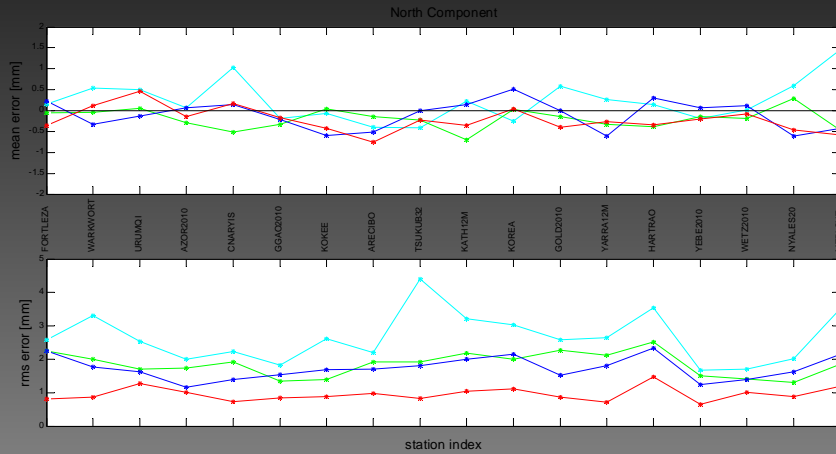
NGS file

- v 18 stations network



- v 4 different 24 hour operating schedules



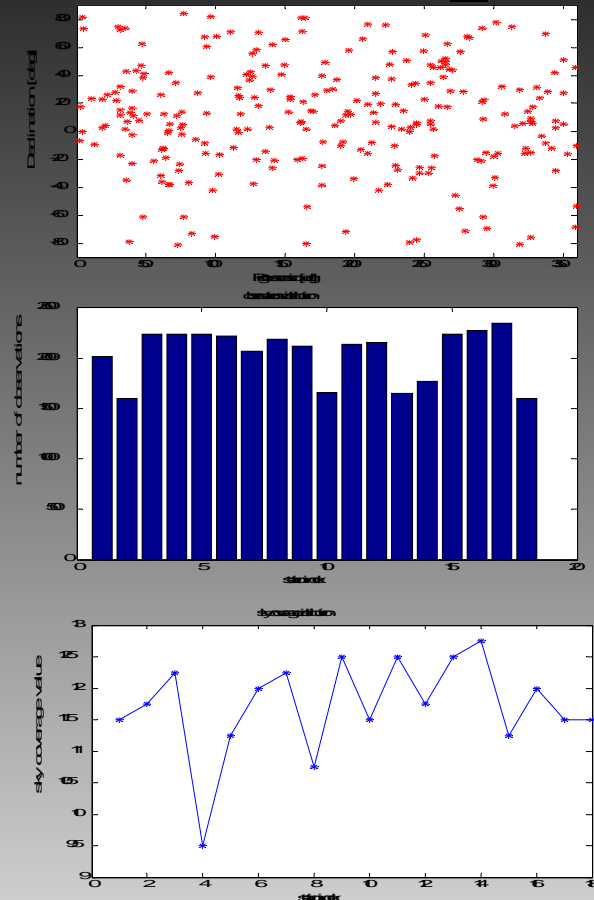
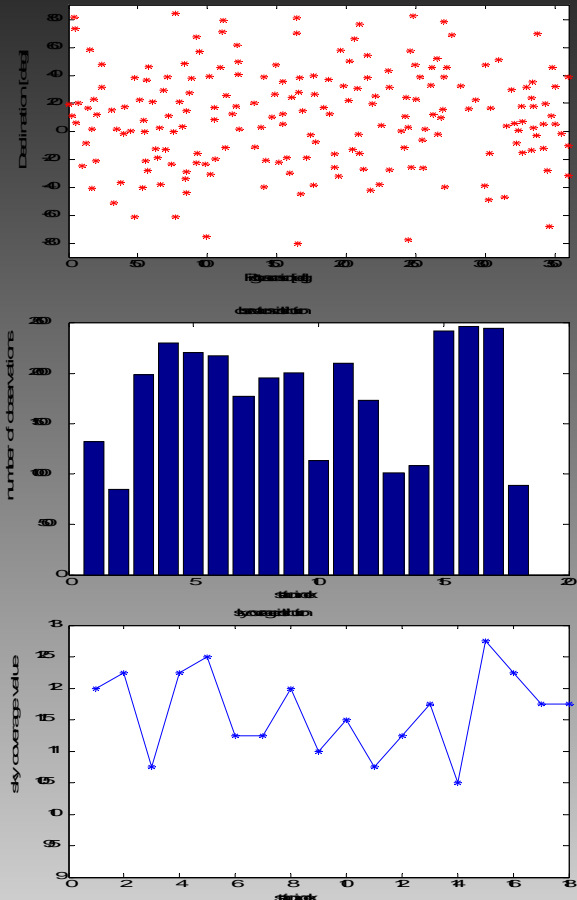


schedule	3D RMS (mm) from IGG	3D RMS (mm) from GSFC
41 hour session	8.17	8.4
42 hour session	6.25	5.8
1 hour session	6.11	5.6
24 hours continuous session	3.30	3.3

schedule	Xp,Yp,UT1 (uas,uas,uas) from IGG	Xp,Yp,UT1 (uas,uas,uas) from GSFC
41 hour session	[34 41 24]	[28 19 15]
42 hour session	[27 28 16]	[15 9 12]
1 hour session	[27 27 16]	[18 10 11]
24 hours continuous session	[10 12 6]	[10 7 9]

Schedule from sked

Schedule from VIE_SCHED



	4*1 hour session from VIE_SCHED	4*1 hour session from SKED
number of scans	480	653
number of sources	263	163
number of obs	18383	15927
3D RMS (mm)	11.2	12.4



Next step



logical algorithm

optimization criteria

twin/multiple telescopes

interactive interface

Thanks for your attention !