

# GTAC WALSH SOP FOR CONTROL ROOM

## \*IMPORTANT NOTES\*

While doing GTAC observations using Walsh scheme please note points:

1. **Walsh scheme is only available in GWB release mode on a shared risk basis. This scheme can be used for Band-3, 4 & 5 seamlessly.**
2. **GWB will not be usable along with GWB as it doesn't have Walsh demodulation facility like GWB.**
3. **Walsh scheme can't be used along with the RFI scheme due to FPGA resources limitations.**
4. The scheme auto removes non-synchronized and non-fringing antennas from applying the Walsh scheme.
5. The status of Walsh Enable/Disable of each antenna is made available to the user as mentioned in the SOP.
6. **Please ensure in GWB release mode antsys.hdr is restored after RFI scheme usage with following command before starting:**  
**>g4\_rfi\_restore\_setup.sh**
7. **Walsh observation requires disabling Front-end monitoring.**
8. **At the end of the observation/experiment please restore back to No Walsh status as mentioned at the end of SOP.**
9. **Avoid setting Front-end after Walsh initial setup.**
10. **"set\_walsh\_conf"** : This command is a subset of **"set\_walsh\_auto"** and disables non-synced antennas. Non-fringing antennas can be disabled manually.
11. **"set\_walsh\_auto"**: This command disables antennas not fringing after Walsh Enable & post sequency synchronisation.

## \* GTAC OBSERVATION USING GMRT WALSH COMMAND SEQUENCE \*

- Run below command in the beginning : **>g4\_rfi\_restore\_setup.sh**
- **Start GWB in Release Mode with Walsh = On and RFI = Off**
  - Get fringes on point source.
  - Start the scan.  
(Scan must be ON so that **"set\_walsh\_auto"** command can record fringe for NoWalsh & Walsh, then disable Antenna/s not fringing in Walsh but was/were fringing in NoWalsh. This must be done before recording lta file)
- **Walsh initial setup and synchronisation :**
  - This setup is used once during the starting of observation.
  - Non-sync Antenna/s and non-fringing antennas after Walsh gets disabled in this step. **GWB scan must be started & running before this command.**  
BOTH CHANS WALSH ENABLED (CH-1 : WP1/ CH-2 : WP2), run command depending upon user requirement :  
**>set\_walsh\_auto(0,3,<rffband\_no>,chan=<fftchan no>)**  
OR  
**>set\_walsh\_conf(0,3,<rffband\_no>,chan=<fftchan no>)**
- **To get antenna Walsh status : >get\_walsh\_stat()**  
Copy the output of this command in GTAC log which is in below format:  
<date time> Walsh enabled antennas :

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## END OF THE OBSERVATION SETUP FOR WALSH SETTINGS

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Total Time taken is ~5minutes.

- **If Noise switches On:** Switch off noise at ABR, run below command to just enable walsh in Antenna & GWB without sequency synchronization check & fringe check for only Walsh enabled antennas:

```
> antlist = get_walsh_stat()
```

```
> set_walsh_conf(antlist,3,<rffband_no>,seq_chk=False,chan=<fftchan>)  
OR
```

```
> set_walsh_conf(0,3,<rffband_no>,chan=<fftchan no>)
```

- **Recording of a GTAC LTA file must start from this point.**

- **Additional Commands to disable/enable Walsh for full setup:**

- 1) Get antenna Walsh status: `> get_walsh_stat()`

- 2) At the end RESTORE the system to No Walsh status with command:  
`>set_walsh_auto(0,0,<rffband_no>)`

`Set_walsh_auto` : Please note that for running this command GWB scan must be started & running.

The said command does following :

1. Disable Walsh scheme at the start `set_walsh_conf(0,0,<rffband_no>, seq_chk=True, chan=<fftchan no>)`
2. Checks fringes without Walsh scheme.
3. Enable Walsh scheme using `set_walsh_conf(0,3,<rffband_no>)`
4. Checks fringes with Walsh scheme.
5. If antenna/s fringe is no/low <15% in any of the polarisation where Walsh is enabled, then disable Walsh scheme.
6. Append Antenna Walsh status in a log file located at :  
`/opt/tangoworkspace/CentralNode/MNCLogs/Scripting/Walsh/Walsh_status.log`
7. Immediate status file generated using `set_walsh_conf(0,3,<rffband_no>,chan=<fftchan no>)` is used to display Live Walsh Status on the web page.  
`http://192.168.70.101/TGC/system/walsh.html`