LOG2ANT
EVN ANTAB formatting program
Version 4.2

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JIVE
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1 News

This version represent a rewritten version that have been tested over two sessions giving 100% correctly formatted ANTAB files for **ALL EVN** antennas. It is easy to use and queries the user if there are any problems with the logfile. On a 486 Linux machine it processes a standard logfile in under 20 seconds.

2 What is LOG2ANT

LOG2ANT is a **UNIX** script based program that will produce an **ANTAB** formatted calibration file from a log file. The program automatically takes into account observation frequency, number of **VC**'s used, different stations, **SX**-band observations (it produces a separate output for **S** and **X**), modes(**A - E**), and most other standard things.

3 How to use LOG2ANT

3.1 Installation

As stated in the the introduction **LOG2ANT** is script based and thus doesn't need any compilation to run. The program heavily uses the **sed** and the **awk** programs to create the correct output, thus these two programs must be in the search path. On any normal **UNIX** system setup both programs should be available.

3.1.1 How to get LOG2ANT

LOG2ANT can be found on **ASTBO1.BO.CNR.IT**.

1. Log in as **EVN** using the password you can obtain from a friendly local Friend of VLBI.
2. The tar archive can be found in **[EVN.ANCAL]** under the name **log2ant.tar**. To get there just issue the command **cd ANCAL** after you login.
3. Select binary transfer by typing **bin**.
4. Type **get log2ant.tar** to get the archive.
5. After successful transfer type **quit**.

In the same directory as the tar archive you can find this document.

3.1.2 First Installation

1. Put the **tar**file in the directory where your binaries are stored, typically in **/usr2/oper/bin** in a standard field-system setup.

2. Unpack the **tar**file with the commando **tar xvf log2ant.tar**.

3. If you put the files in a different directory than specified above you will need to edit the path specified inside the script program. Edit the line in the **log2ant** script file that says:
   dir_for_scripts="/usr2/oper/bin/scripts/script"
   to say:
   dir_for_scripts="your-new-path-goes-here/script"
   Remember that the **/script** must be tagged to the end of the path.

4. Place the two document files (**log2ant.tex and log2ant.ps**) wherever you place your documents. I recommend that you print out the PS-file so that you can have the manual to help you out the first times you run the software.

5. You are now done with the installation.

3.1.3 Updating an old log2ant installation

With this version the names of the script-files have changed, so before doing an installation (see first installation), take away all old scripts in **/usr2/oper/bin/scripts**, **/usr2/oper/bin/ascripts**, **/usr2/oper/bin/headers**, and **/usr2/oper/bin/aheaders**.

3.2 Usage

The usage is really simple, but before running **log2ant** you should check that the logfile fulfills the following criteria which are all mandatory for **log2ant** to function correctly:

1. The FS in use should be 9.0 or newer.

2. For **MEDICINA** it is assumed that there are **4** TSYS lines with the order:

   tsys1(odd,if1)
   tsys1(even,if2)
   tsys2(odd,if1)
   tsys2(even,if2)

3. For **METSAHOEVI** it is assumed that there are **4** TSYS lines with the order:

   tsysa(usb)
   tsysa(lsb)

tsysc(usb)
tsysc(lsb)

4. For **ALL OTHER** stations it is assumed that there are only one set of defined TSYS lines for each TSYS measurement i.e. TSYS1 and TSYS2 or TSYSA and TSYSC etc. As long as each TSYS(1,2,A,B,C,D,etc) pair is uniquely defined then **log2ant** takes care of it. Among the many possible setups are:

   TSYS1=ODD,IF1 & TSYS2=EVEN,IF2
   TSYS1=ALL
   TSYS1=VC01,VC02,...,VC04,IF1 & TSYS2=VC05,...,VC14,IF2
   etc

   To this date this software has handled all setups during the last two sessions without any problems.

5. There can only be two defined TSYS lines at maximum with the exception of **MEDICINA** and **METSAHOEVI**. If there are more than two definitions the program lists all definitions and asks the user to select the two appropriate ones. If only 1 is used then when the software asks for the 2nd TSYS line then just press return.

6. The observing is determined from the LO line in the log, if this line is missing or the LO frequency is unknown the program presents a list of observing frequencies from which the user can select the appropriate one.

7. There is only one type of setup, i.e. each VC should be uniquely defined, there should only be one LO frequency defined, and the definition for the TSYS lines should not be different at different parts in the log. This is the most frequent problem as some stations initialize the FS with a SX setup and later goes on to set it up with the correct frequencies for the experiment. **Check that there is only one setup, typically the "false" ones are found at the beginning, at the end of the experiment, or at points where the system where restarted.**

8. To identify whether the observations are with **Dual** or **Single** polarization the program looks at the **IFD** parameters. If they are **NOR, NOR** it assumes that it is a dual polarization experiment, otherwise it assumes that it is a single polarization experiment. If the program is unable to determine the polarization it will query the user which of the two cases was used for the experiment.

If your setup and the logfile fulfills these criteria then **log2ant** should produce a valid **ANTAB** formatted file from the logfile. **Note:** The spectral line VLBI observations typically have very odd setups, even in these cases **log2ant** usually manages to produce a valid output but extra care should be taken when checking the resulting INDEX line.

1. Change your working directory to that where you have your log-files.

2. Check that the files all have the correct **EVN** naming standard, ie **[exptname]log.[station]**. If not please change the names to conform to this standard (a script called **fs2evn** has been written and can be sent on request, use the email address below).

3. Run the program by **log2ant *.log**. The script will go through all your log-files and create a corresponding number of **ANTAB** formatted calibration files with names **[exptname]ant.[station]**. Any **S**band files will be named **[exptname]sbant.[station]**, while the **X**band files will keep the standard names given above.

4. Any problems encountered by the program will be given. See section 3.2.1 for further information. The previous section that described the criteria for a "correct" logfile should also be consulted if anything goes wrong.

5. Wait for the program to finish and you are done.

6. Check the final **ANTAB** formatted file so that the INDEX line makes sense and there are a correct number of columns.

3.2.1 Error messages

There are not many error messages but that is hopefully not needed if the files are somewhat standard. The existing error messages are:

1. **No TSYS information.** No **TSYS** lines could be found in the log file. This can be due to a nonstandard setup of the **TSYS** output or due to that there is no information. In the first case contact me so that your nonstandard setup of **TSYS** can be put into the program, or if you are familiar with **sed** and **awk** you can make the appropriate changes to the script (please, send a copy of the updated file to me).

2. **Nonstandard frequency.** The program couldn't recognize the frequency used. See item **1** above for what to do.

3. **No VC information.** There is no information on the frequency for each VC, thus the BBCs can't be sorted in frequency order. See item **1** above for what to do.

4. **Nonstandard VC setup.** This is caused by an nonstandard number of **VC**'s or other strangeness. See item **1** above for what to do.

Please, if you send any bugreports, give information on the logfiles too.

4 How to contact the author

I can be contacted by email at **fredrik@ira.bo.cnr.it**. Please send any bugreports, comments and/or suggestions that you have to this address.