

# Inside SeaSonde

## How Combine Suite CheckForRadials determines what to Combine.

In Combine Processing, the tool CheckForRadials 10.x determines what radials, if any, to combine next into totals. The processing script runs CheckForRadials in a periodic check loop until CheckForRadials returns that it found a set of radials to process.

### **a. Find Enabled Sites.**

The grid option 'Combine\_XXXX.opt' file is opened and line five is read to determine which sites are enabled by having a non zero value.

### **b. Check Existing Site folders.**

The default is to look in "/Codar/SeaSonde/Data/RadialSites/" to look for site folders. It looks to find each enable site folder with the name "Site\_#" where # is the site index number for the grid. First site is "Site\_1"; it will also recognize "Site 1", "Site\_1 ", "Site1", Site1 ", "Site 1 " folder names. These folders are where FileTransfer software or manual copy places radials from the remote Radial sites to be combined. If a site folder is not found, then the site is assumed to be disabled.

If less than two site folders are found and enabled, then CheckForRadials will output an error. We currently do have any software to combine a single site.

### **c. Read the grid origin.**

The grid 'Combine\_XXXX.grd' file is read to get the lat,lon origin to use for xyuv conversion later.

### **d. Read the catalogs of the totals folder and enabled radial site folders.**

The folders are filtered so that:

Only files that are not open and are not locked are considered.

The filename must start with 'A' to 'Z' or 'a' to 'z' or else it's ignored.

The file must have a least 16 bytes in size or else it's ignored.

The file must have a valid time stamp. First looks for valid LLUV CTF timestamp, then Radial time stamp, and last use the filename date encoding for 'Tot\_' files.

Reading the file catalogs is limited to 10000 files, but Archivalist is usually configured to keep the radials and totals down to 168 files (a weeks worth) to keep the CheckForRadials search speedy.

### **e. Search the file lists for radial candidates to combine.**

CheckForRadials first looks for complete sets of radials (a valid radial from each enabled site folder) and no total file of the same time stamp. The radial set with the

earliest time stamp is used first.

If a complete set of radials is not found with no total file is not found then look for at least two radials and either no existing total file or a total which its modification is less than the radials' modification date or radials' backup date. This way a total will be created when at least two site radials exist and later when the other radials sites are transferred then the total will be updated.

CheckForRadials will accept old style radial and totals as well as newer LLUV files.

**f. If no radials are found to be need to combine then CheckForRadials returns 0(zero).**

**g. If a set of radials are found...**

A file called "RadialTime.txt" is created in Processing folder containing time stamp for the future total.

Each radial file is read internally in a LatLonUV format. They are changed to use the Grid's lat,lon origin and then written out into Processing folder as a old style radial, new LLUV and, a xyuv file format into three separate folders. This then gives the combining tool RadialsToCurrents the option of selecting which type to use. The current version is told to use the xyuv files.

**h. Create three list files pointing to the previous created temporary files.**

Create RadialsToCombine.txt for radials, XYUVToCombine for xyuv files, LLUVToCombine for LLUV files. Each line in each list contains the site number and file path to the converted file. One of these file lists is used by the combine tool to figure out which files to process depending on which type of source files combining wants. Currently, they are the xyuv files.

**i. Create an empty total vector file in Processing.**

This empty total vector file contains a comment 'Fault in Current Processing.' and if the combining tool RadialsToCurrents fails to create a total file (due to crash or other unforeseen reasons) then TotalArchiver tool will copy this file to the Totals folder so that the same Radials will not be processed continuously. Someone will then need to look into why RadialsToCurrents is failing.

**j. CheckForRadials then returns with a 1(one) indicating that there is a set of radials to combine.**

**k. Debugging.**

CheckForRadials is fairly quiet in its operational mode, that is, it does not output messages unless something really dire has happened. This is because CheckForRadials is normally runs in a loop along with a sleep delay until it returns 1 indicating that there is work to be done. However, like all the processing command line tools, it can be told to output more information about what's going on.

If not already running, launch the Terminal application.

Open a new Terminal window.

Locate CheckForRadials icon. It's in

`"/Codar/SeaSonde/Apps/CombineTools/CombineProcessing/"`.

Drag CheckForRadials icon onto the new terminal window. This will put the above path plus the name of CheckForRadials into the terminal window. (You could have typed it; but this is easier).

In the Terminal window type a space followed by 999.

The line in Terminal should now look like this

```
/Codar/SeaSonde/Apps/CombineTools/CombineProcessing/CheckForRadials 999
```

Press the return key.

You should now get a lot of detailed information about what CheckForRadials finds.

This will hopefully help you to find why nothing is being combined but you are sure you have radials available. Typical problems are that the radials are in the wrong location or folder named incorrectly or other setup problems.

When done you can close the Terminal window.