

Combine Site Overview

Functions of the Central Combine Site

CODAR Ocean Sensors, Ltd.



Combine Site Operation

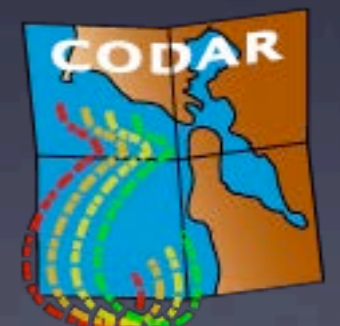
- Gathers Radial data from remote sites
- Hardware (Computer)
- Communications
- Map and Total Vector Grid
- Combine Software
- Combine Products

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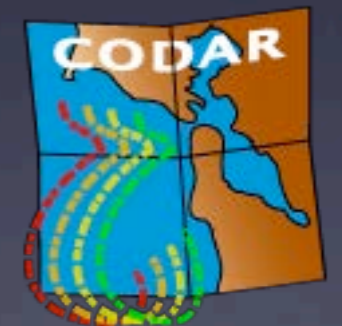
Combine Software



Combine Software

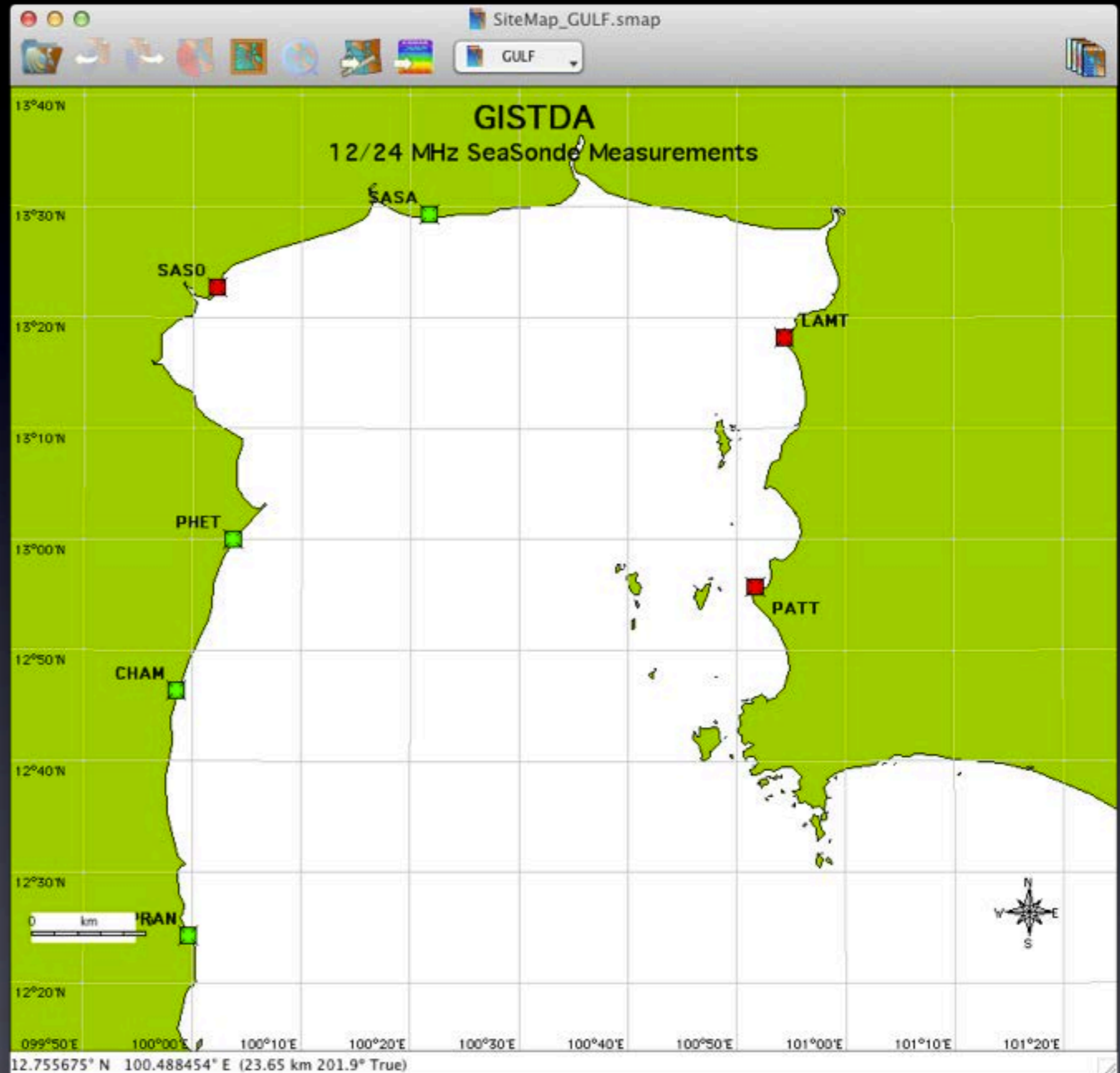


- CODAR Combine Software Suite includes:
- Release 7 Combine Tools
 - Analyze Currents merges up to 6 remote site radials into one total
 - Multiple grid (total) maps, SeaSondeCombine Options
 - SeaDisplaySetup: creates maps and estimated coverages
- Total Vector Data Viewers & Tools
 - SeaDisplay: total vector viewer (and more)
 - SeaDrift: total vector tool for animations
- FileExchange packages
- Extended Combine Software
 - RunMergeTotals allows merging of multiple totals into one map. Super totals.
 - Also allows for 24 sites to be combined



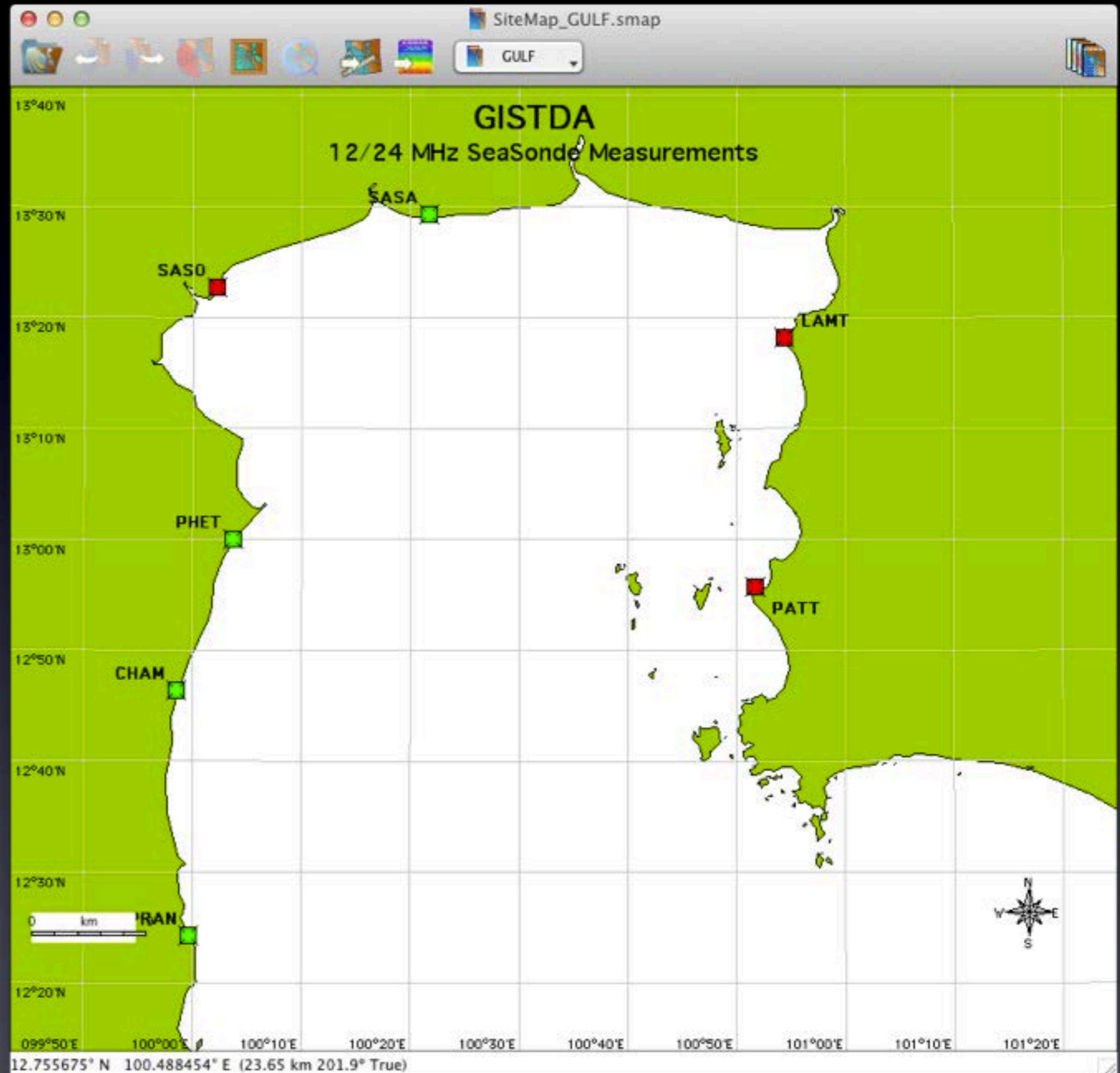
Site Files & Grids

- A Site map is created for the region



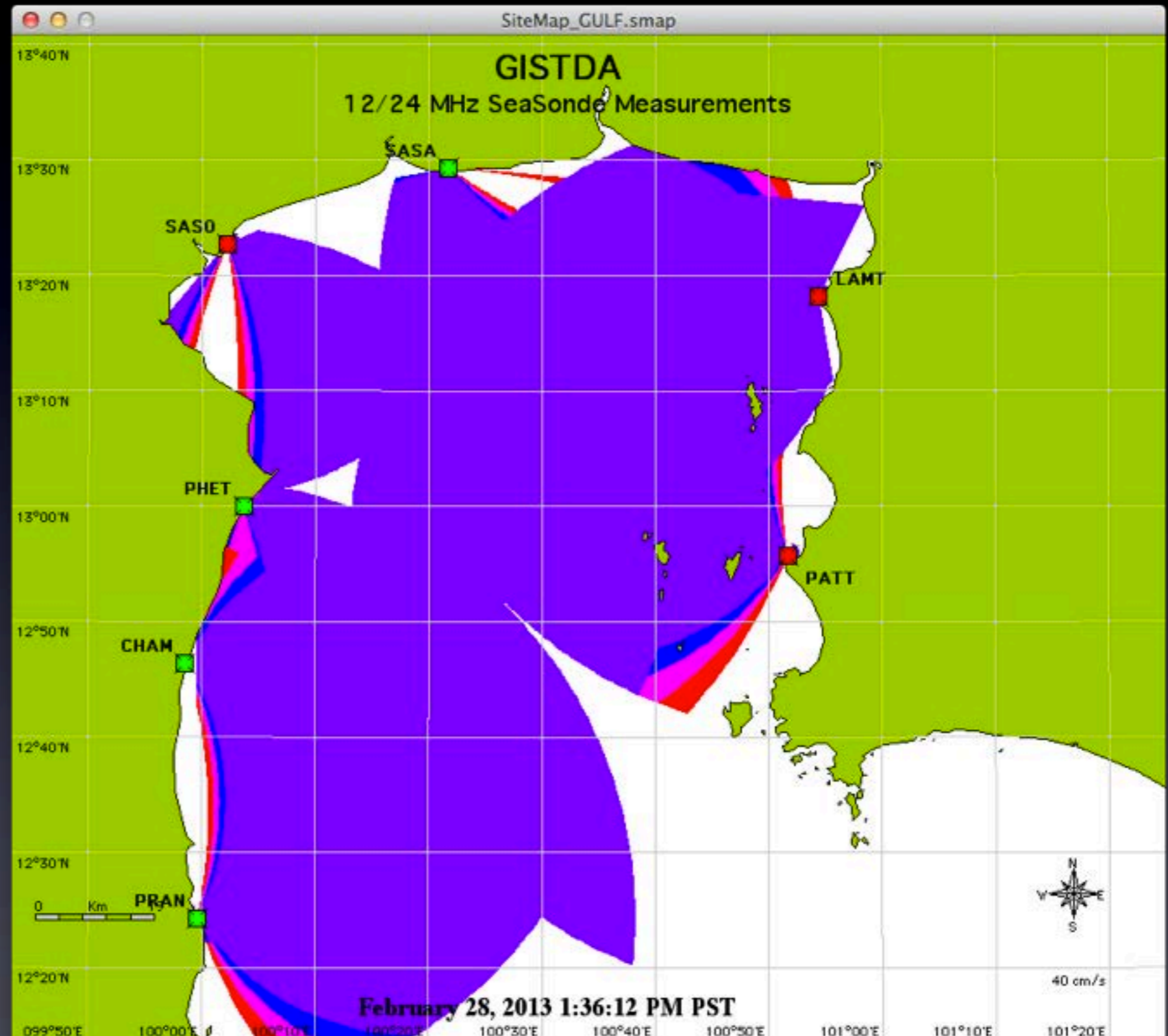
Site Files & Grids

- A Site map is created for the region
- Remote sites are added to define overlapping coverage

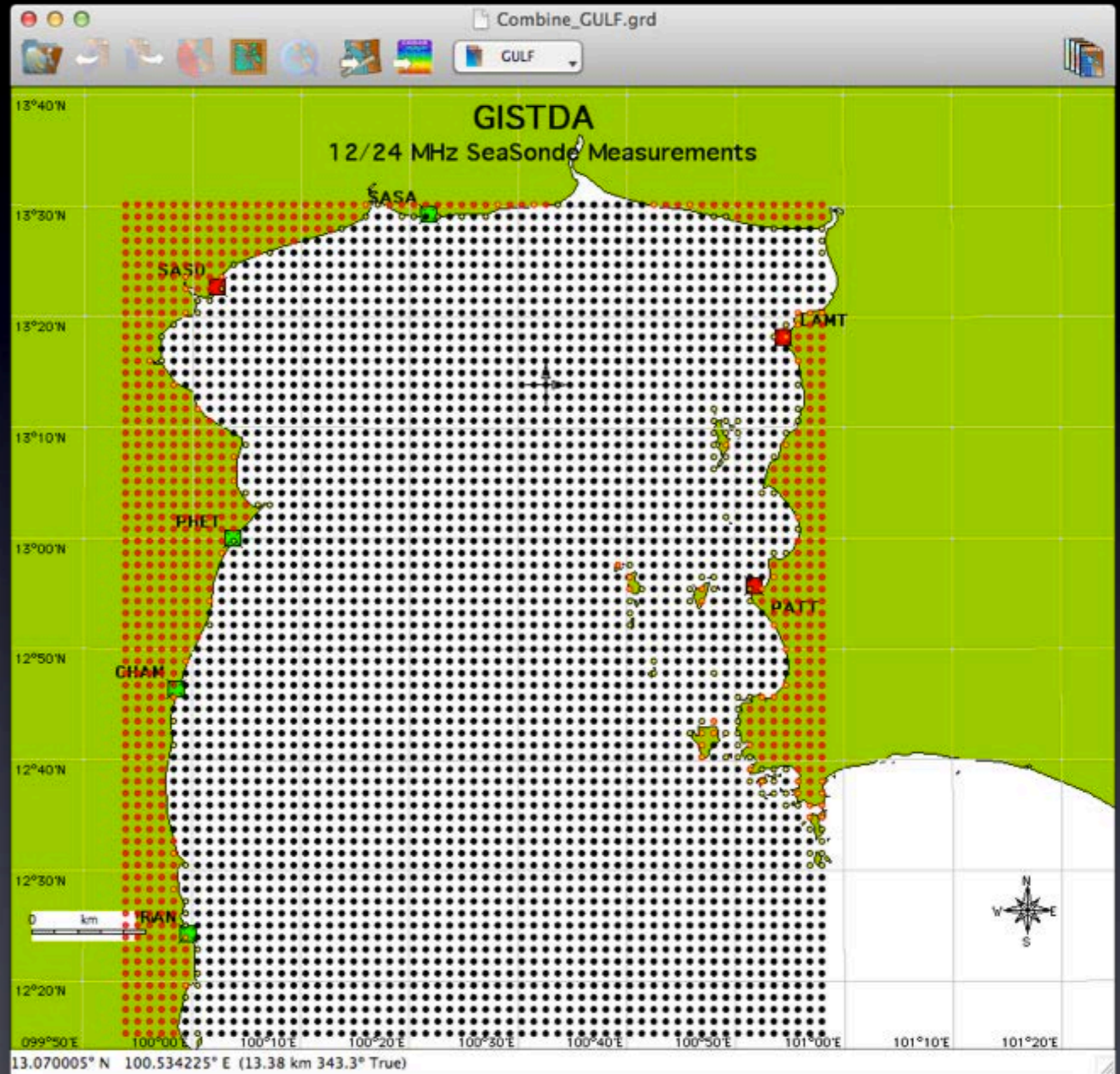


Site Files & Grids

- Combined coverage is calculated taking GDOP (Geometric Dilution of Precision) into account

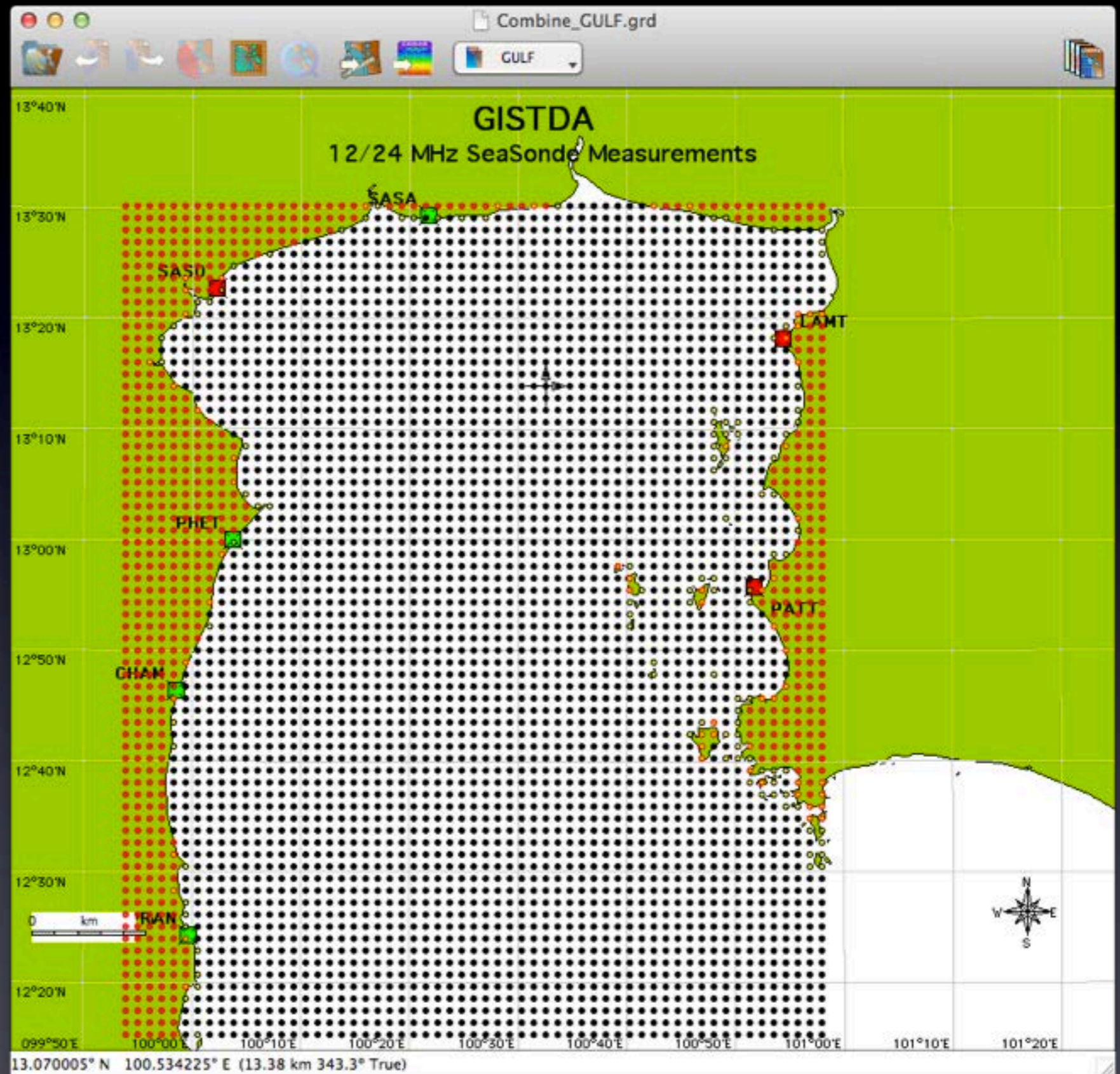


Site Files & Grids



Site Files & Grids

- A Cartesian grid is added over the area of coverage
- Spacing is determined by radar resolution
- Points over land are removed for quality control



CombineProcessing AnalyzeCurrents

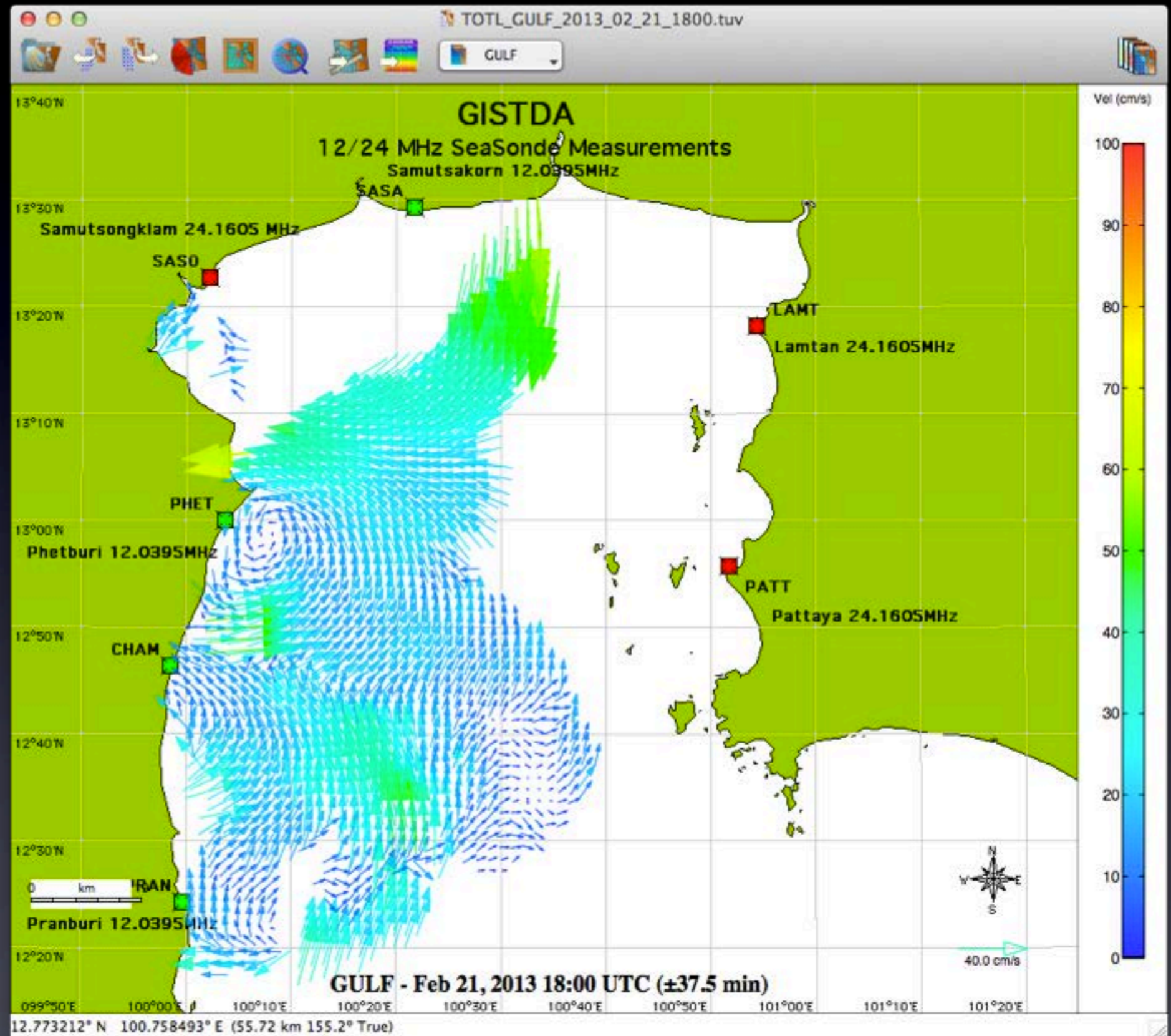


- Runs in the terminal window
- Suite of programs that sort the radial data and processes them into totals
- Algorithm uses a least squares method for combining radials into 2D total vectors

```
codar — AnalyzeCurrents — GetParameter — 96x30
#####
# CODAR Ocean Sensors, Ltd
# SeaSonde 10
# Total Vector Processing 10.5.1
#####
Thu Feb 28 14:03:20 PST 2013
# Waiting for next set of Radials/Ellipticals...
Thu Feb 28 14:03:37 PST 2013
Found Combine Set at 2013 02 21 01 00 00 UTC
Output Total will be 2013 02 21 01 00 00 UTC Atlantic/Reykjavik
Site SASO_Ideals LLUV "RDLi_SASO_2013_02_21_0100.ruv"
Site PHET_Ideals LLUV "RDLi_PHET_2013_02_21_0100.ruv"
Site PRAN_Ideals LLUV "RDLi_PRAN_2013_02_21_0100.ruv"
Site CHAM LLUV "RDLi_CHAM_2013_02_21_0100.ruv"
Success: OK to Combine.
Combining GULF
Running Combiner 10.5.5
Warning: No Site 7 or empty source.
Running TotalArchiver 11.2.2
Processing Folder is /Codar/SeaSonde/Data/Processings/Processing_GULF/
Output Folder is /Codar/SeaSonde/Data/Totals/Totals_GULF/
Source is "/Codar/SeaSonde/Data/Processings/Processing_GULF/Tot_XXXX_00_00_00_0000.tv"
Writing /Codar/SeaSonde/Data/Totals/Totals_GULF/TOTL_GULF_2013_02_21_0100.tuv
Running TotalDerive 1.0.0
Must be reprocessing since new entry is older than latest report entry. Archiving Report.
./AnalyzeCurrents: line 723: DoOMAScript: command not found
Thu Feb 28 14:03:43 PST 2013
# Finished processing one total.
```

Site Files & Grids

- Total vectors are created on valid grid points from overlapping radials



Combine Software & Products



Combine Software & Products

- Combine Software also includes:
- Combine Sentinel
- Combine Archivalist
- SeaSondeCombineOptions



Sentinel



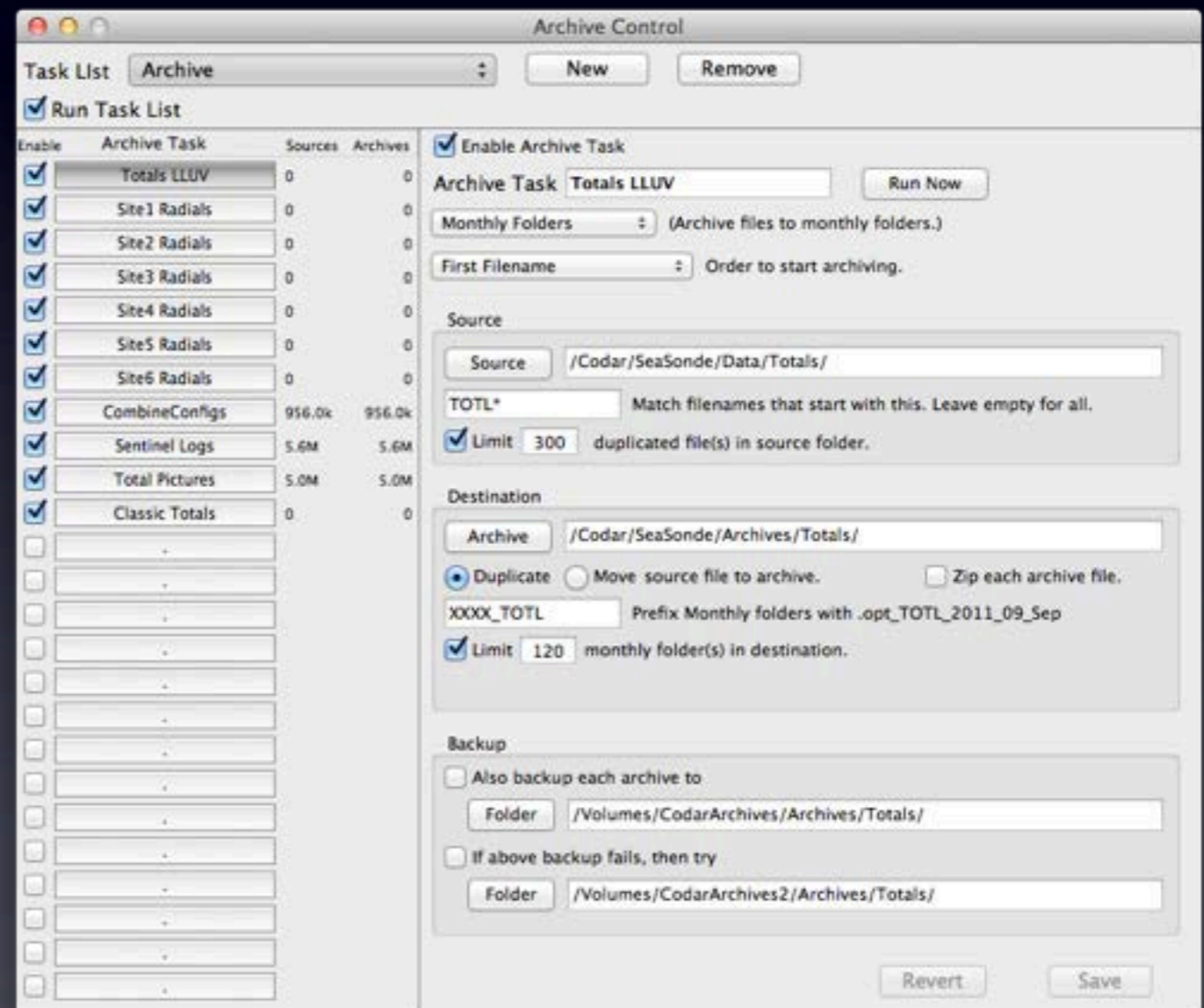
- Restarts the computer every day
- Launches operational applications

```
System Status Events
20130228 135051 Sentinel 00027 Notice Process found 30328 "SeaDisplay" pid(303
20130228 135051 Sentinel 00028 Notice Process found 30385 "Preview" pid(30385)
20130228 135051 Sentinel 00029 Notice Process found 30435 "TextEdit" pid(30435)
20130228 135051 Sentinel 00030 Notice Process found 30680 "Sentinel" pid(30680)
20130228 135051 Sentinel 00031 Success Sentinel will restart computer at 23:59
20130228 135051 Sentinel 00032 Generic Sentinel Started
20130228 135051 Sentinel 00033 Notice Running Startup items for Sentinel.plist
20130228 135102 Sentinel 00034 Success Launched File Archivalist
20130228 135102 Sentinel 00035 Notice Process found 30693 "Archivalist" pid(30
20130228 135102 Archivalist 00001 Startup Archivalist 11.4.2 Starting
20130228 135102 Archivalist 00002 Notice Archive Task Lists are in /Codar/SeaSond
20130228 135103 Archivalist 00003 Notice Loading Task List Archivalist_Combine_Si
20130228 135103 Archivalist 00004 Notice Loading Task List Archivalist_Total_1_So
20130228 135103 Archivalist 00005 Generic Archivalist Started
20130228 135106 Sentinel 00036 Success Finder is Opening File RunCurrentAnalysi
20130228 135106 Sentinel 00037 Notice Finished Startup items for Sentinel.plis
20130228 135106 Sentinel 00038 Warning KeepUp: Enabled.
20130228 135106 Sentinel 00039 Warning KeepUp: Watching Archivalist to be down
20130228 135106 Sentinel 00040 Notice Process found 30695 "Terminal" pid(30695)
```

Archivalist



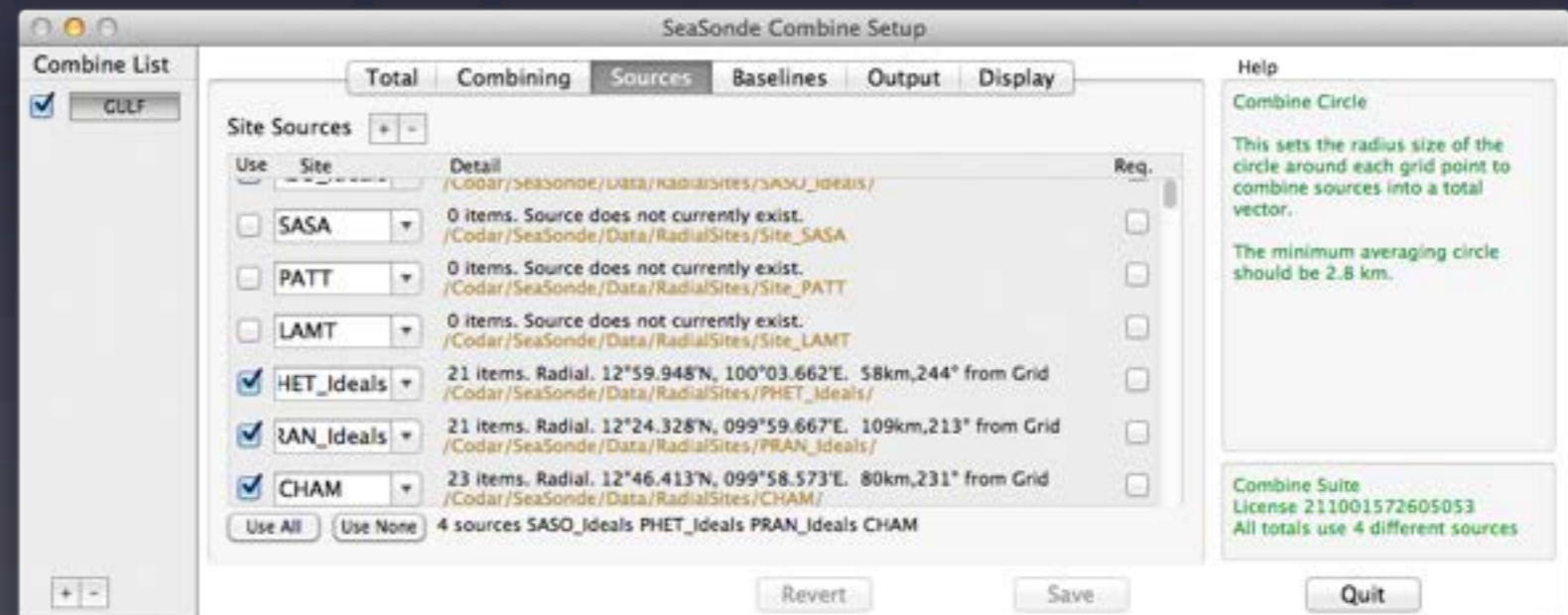
- Archives data into separate folders



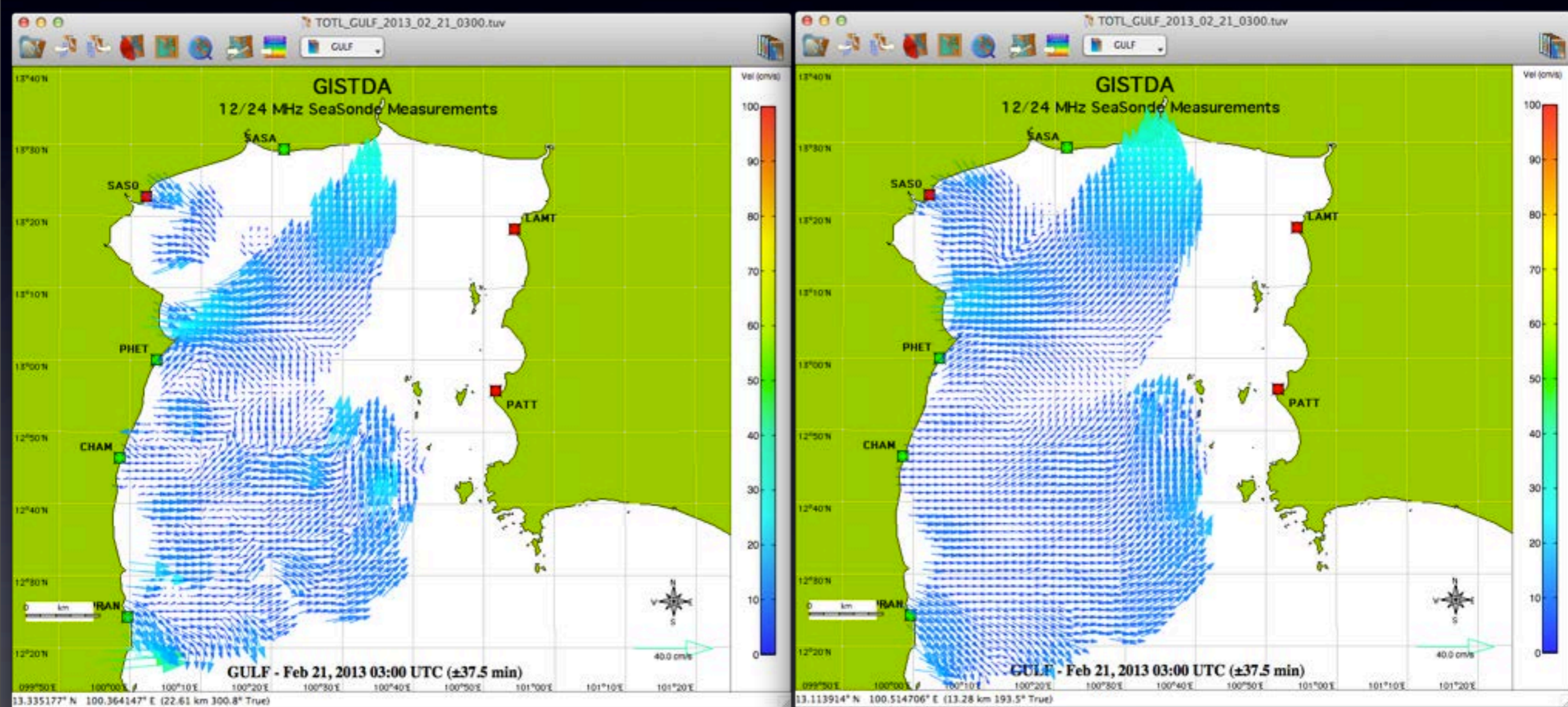
SeaSondeCombineOptions



- Make changes to total vector processing parameters; averaging radius, max velocity, GDOP
- Choose which sites to include in processing
- Save KML files and images for web display
- Display total vectors in different formats



Total vectors with 5 km vs. 10 km averaging radius



Total vectors with 20 d vs 30 d GDOF limit

