

HYPACK manual



preparation for survey 1 Make new project 1

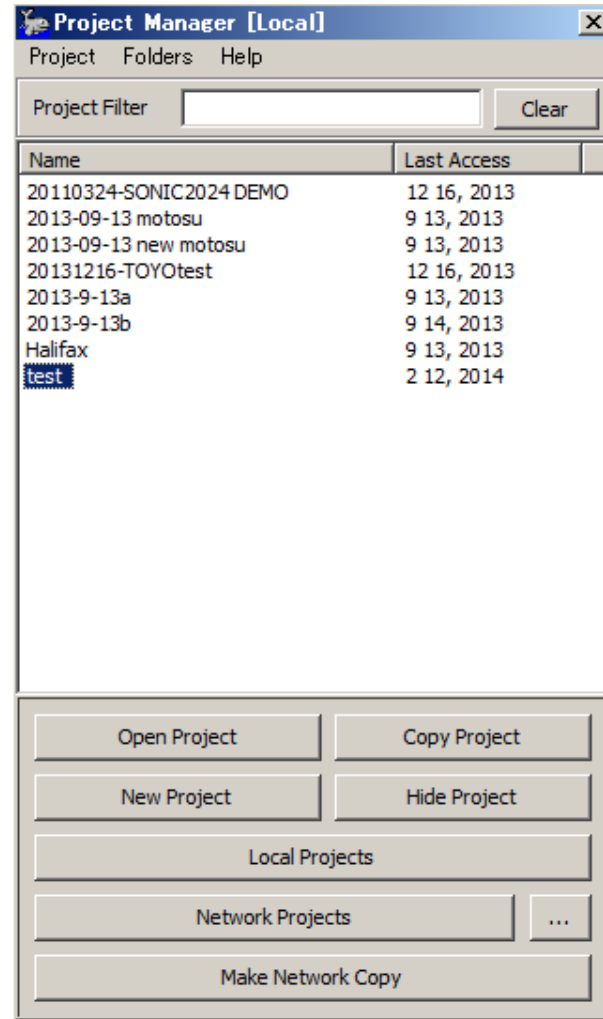
Choose this icon



The screenshot displays the HYPACK 2012A software interface. The title bar reads "(Administrator) HYPACK 2012A - test (32/32)". The menu bar includes File, Draw, View, Settings, Preparation, Survey, Processing, Final Products, HYSWEEP, Side Scan, Utilities, Tools, and Help. The toolbar contains various icons, with a yellow folder icon highlighted by a red box. Below the toolbar is the "Project Manager" section, which is divided into three panes: "Base" (containing Raw Data Files, Edited Data Files, and Sorted Data Files), "Project Files" (containing Channel Files, Background File, Border Files, Channel Plan File, KTD Files, Matrix Files, Planned Line File, Plotting Sheet File, Sound Velocity, Target Files, Template Files, Tide Files, and Bucket Files), and "Archives". The main workspace shows a grid plot with a color scale on the left. The grid is labeled with "Grid: Japan 2000", "Ellipsoid: GRS-1980", "Zone: JGD 2000 Zone IX", and "Distance Unit: Meter". The plot area has a coordinate system with X and Y axes ranging from -5000000 to 5000000. A ruler at the top right shows "Ruler 0.00 m". The status bar at the bottom displays "X :-8110000.36 Y :5760000.24 Out Of Range Out Of Range 0d Scale: 1:75590551.18". The Windows taskbar at the bottom shows the Start button, Internet Explorer, and other applications, with the system clock showing "15:11 2014/05/16".

preparation for survey 2 Make new project 2

After clicked, You can see this window

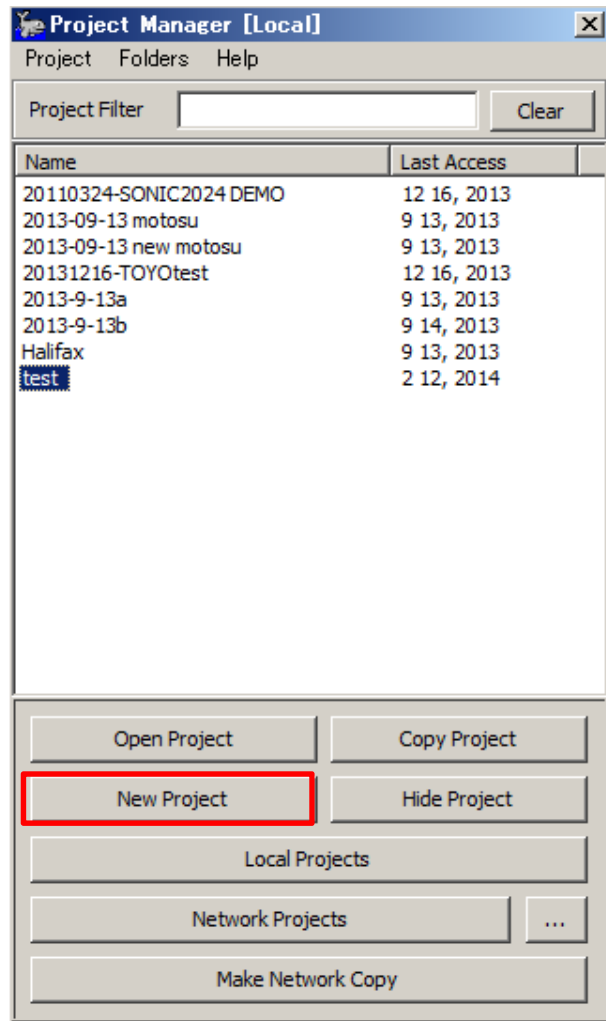


If you want to make “New project”
Please move to P3

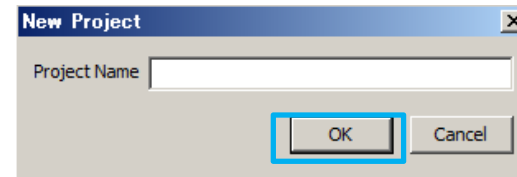
If you want to make “Open project”
Please move to P4

preparation for survey 3 Make new project 3

Choose “New Project”



After chose, You can see this window

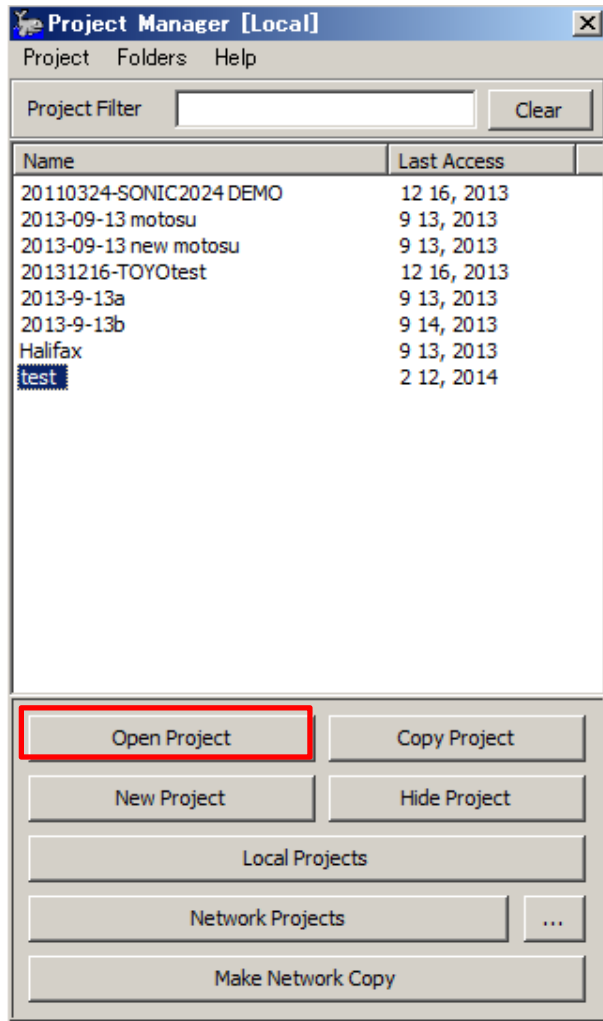


Please make name
I recommend “place + Date”
For example, “Lake Nyos 12242015”

After made name, Click “OK”

preparation for survey 4 Open project

When you want to open file , First choose this icon



Choose "Open prject"

preparation for survey 5 Geodetic parameter 1

Choose this icon



(Administrator) HYPACK 2012A - test (32/32)

File Draw View Settings Preparation Survey Processing Final Products HYSWEEP Side Scan Utilities Tools Help

Project Manager

Ruler 0.00 m path

Grid: Japan 2000 Ellipsoid: GRS-1980 Zone: JGD 2000 Zone IX Distance Unit: Meter

Base

Data Files

- Raw Data Files
- Edited Data Files
- Sorted Data Files

Project Files

- Channel Files
- Background File
- Border Files
- Channel Plan File
- KTD Files
- Matrix Files
- Planned Line File
- Plotting Sheet File
- Sound Velocity
- Target Files
- Template Files
- Tide Files
- Bucket Files

Archives

X: -8110000.36 Y: -5760000.24 Out Of Range Out Of Range 0d Scale: 1:75590551.18

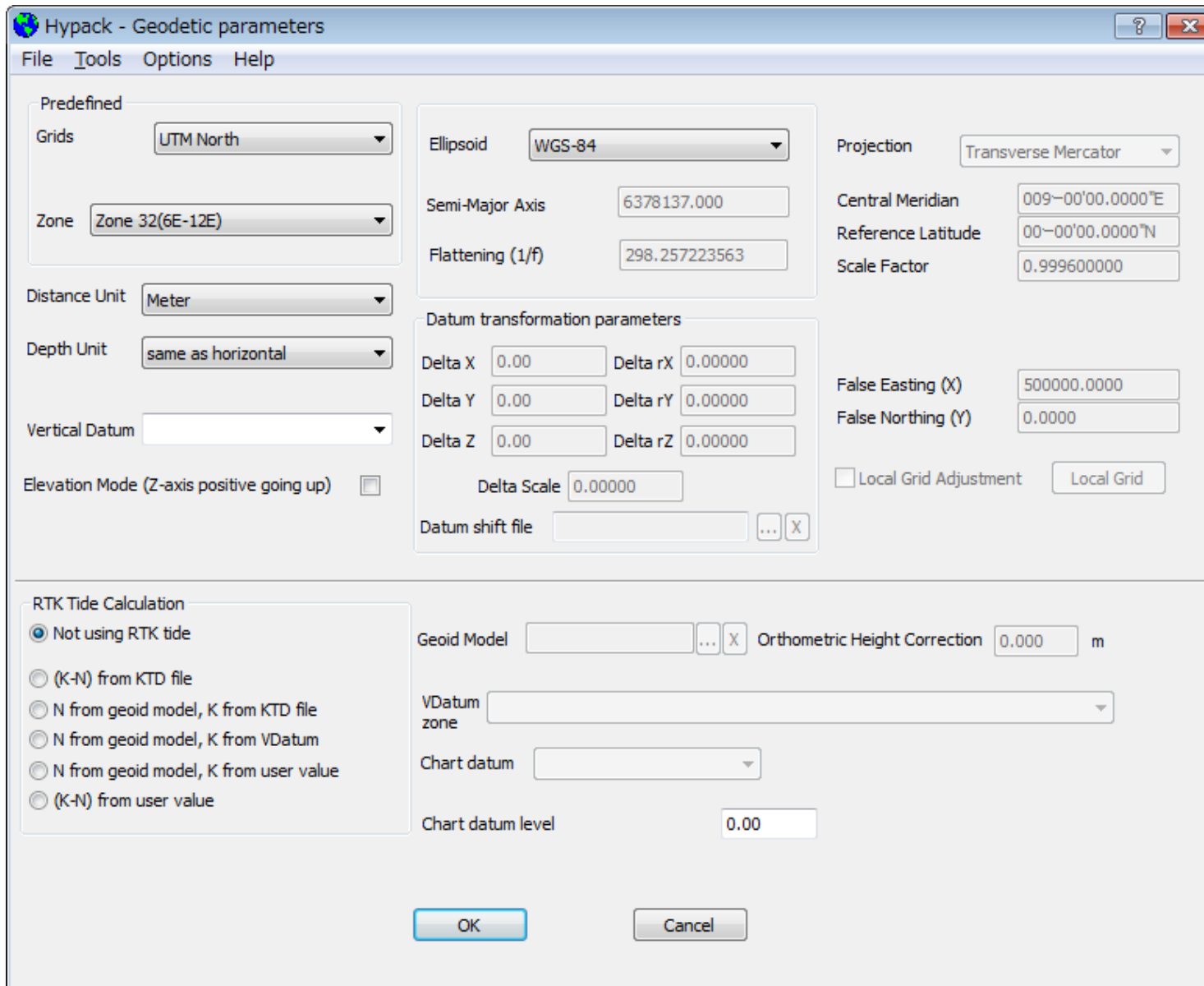
スタート

JP A 般 CAPS KANA

15:11 2014/05/16

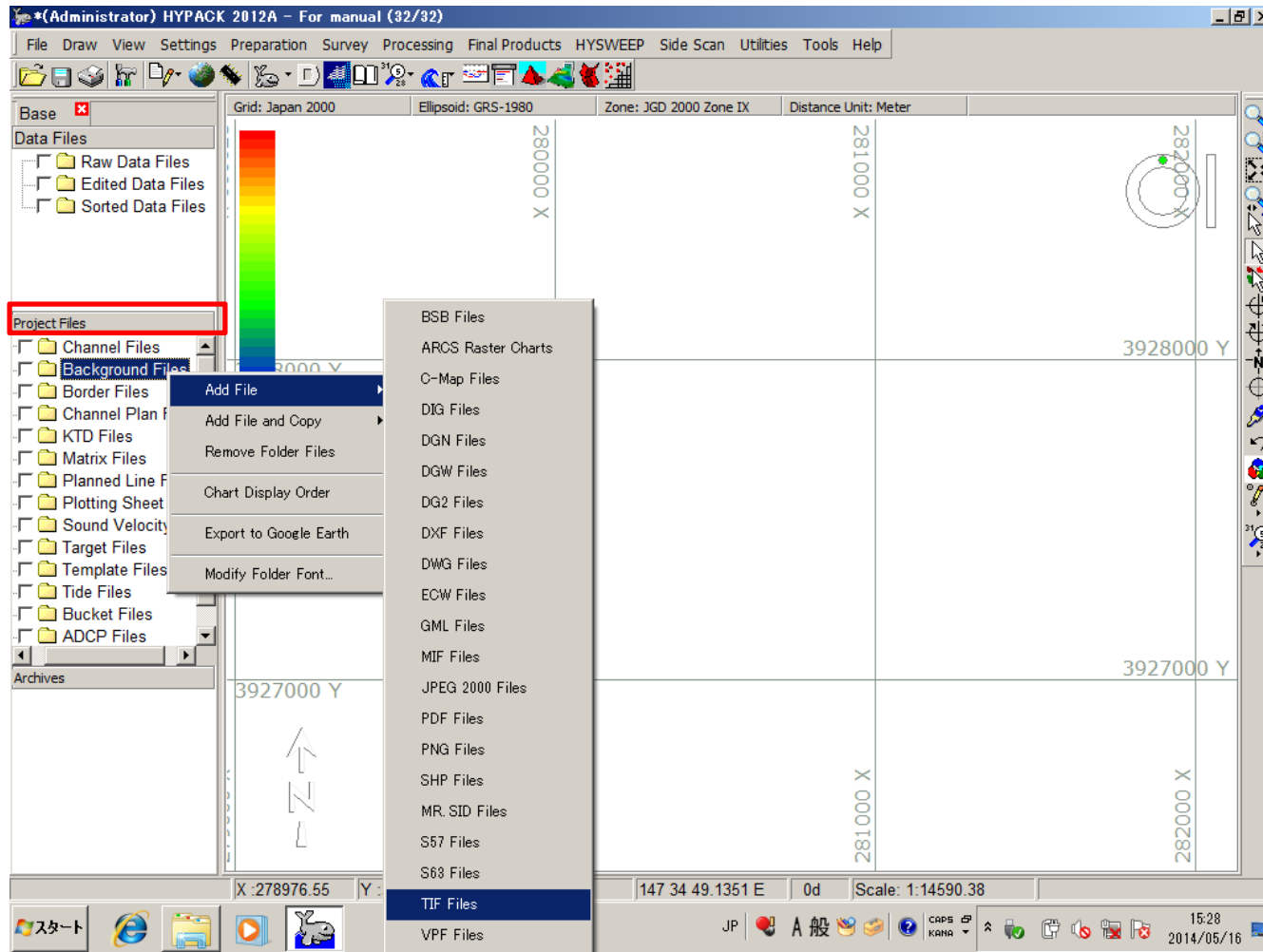
preparation for survey 6 Geodetic parameter 2

Please setting like this



preparation for survey 7

How to add Background file 1

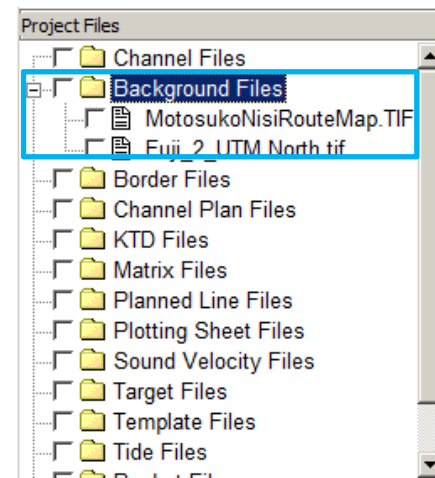
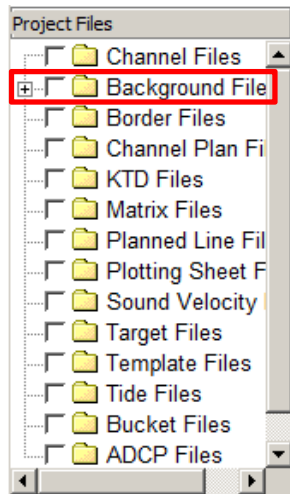


You can see “Background File” in “Project File”
Please right click on “Background file”,and choose TIF Files

Background File→Add file→TIF Files

After add TIF file's data, You can see plus mark on background Files

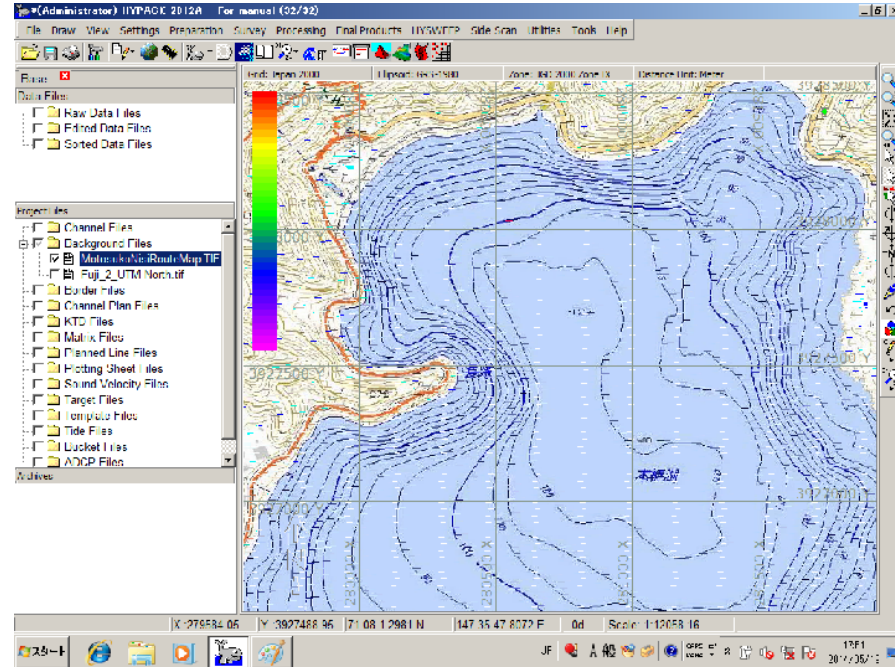
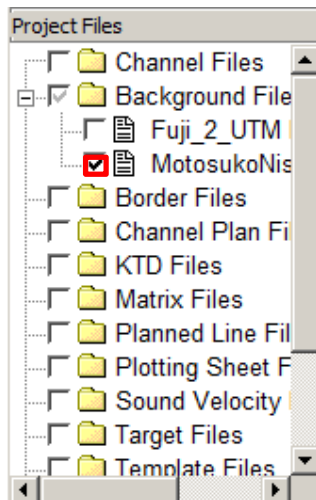
After click plus , You can see Tif file in Background Files



preparation for survey 9

How to add Background file 3

Please click in box, then you can see Background image on HYPACK

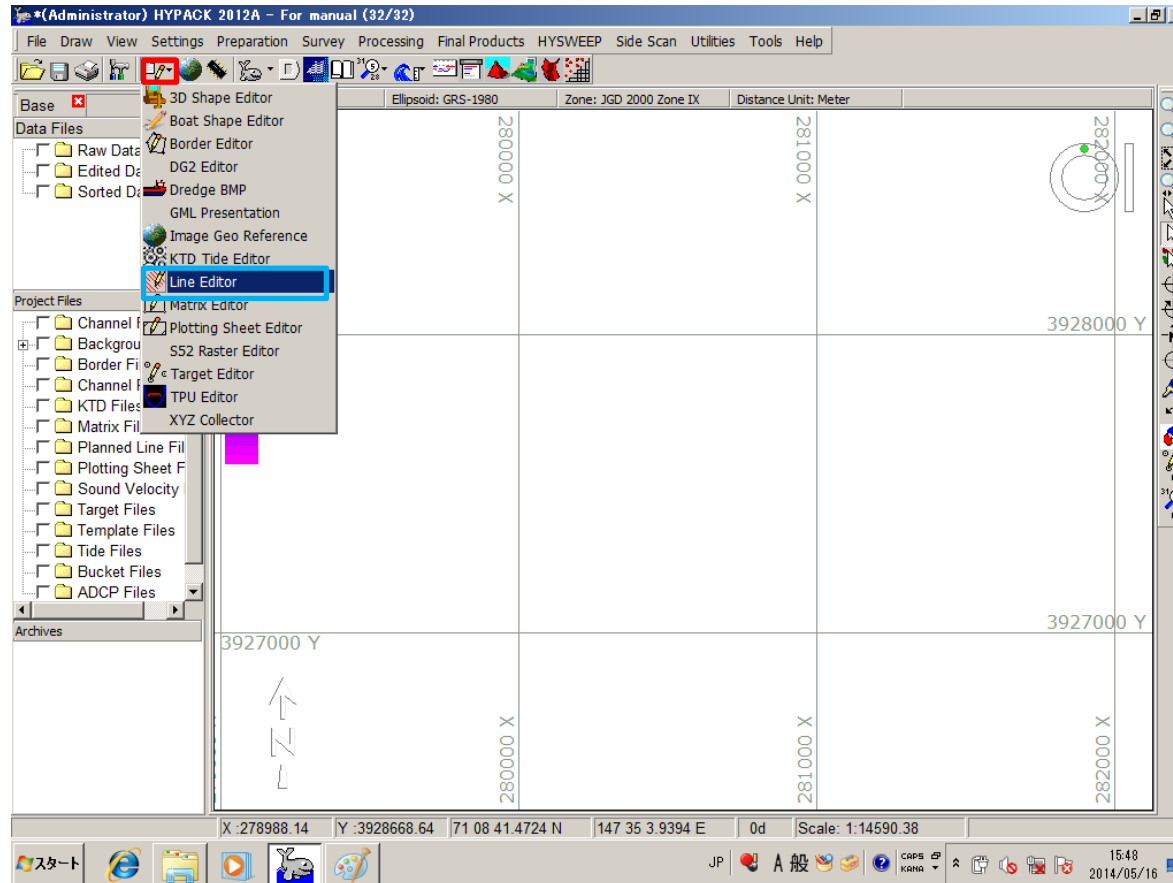


preparation for survey 10 How to make line 1

Click this icon



And choose this icon

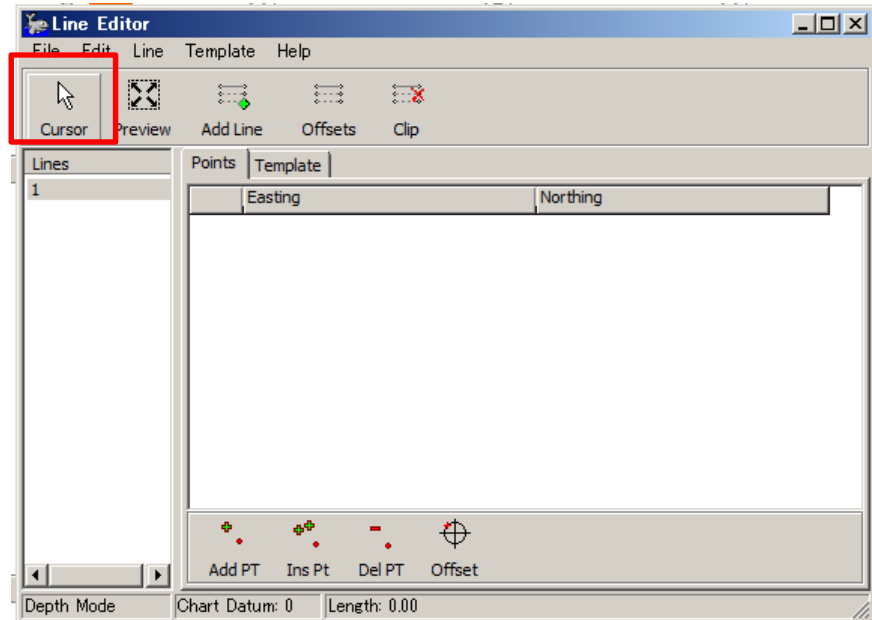
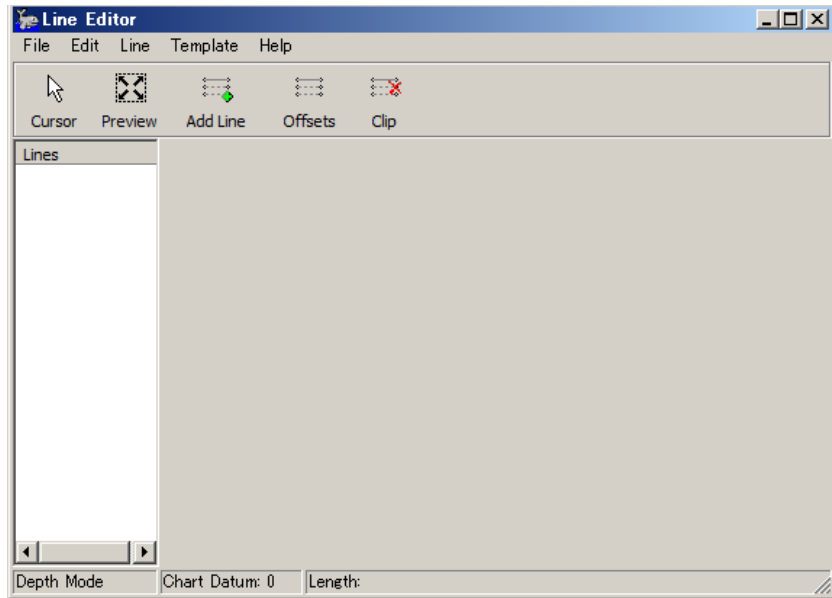


Editors→Line Editors

preparation for survey 11 How to make line 2

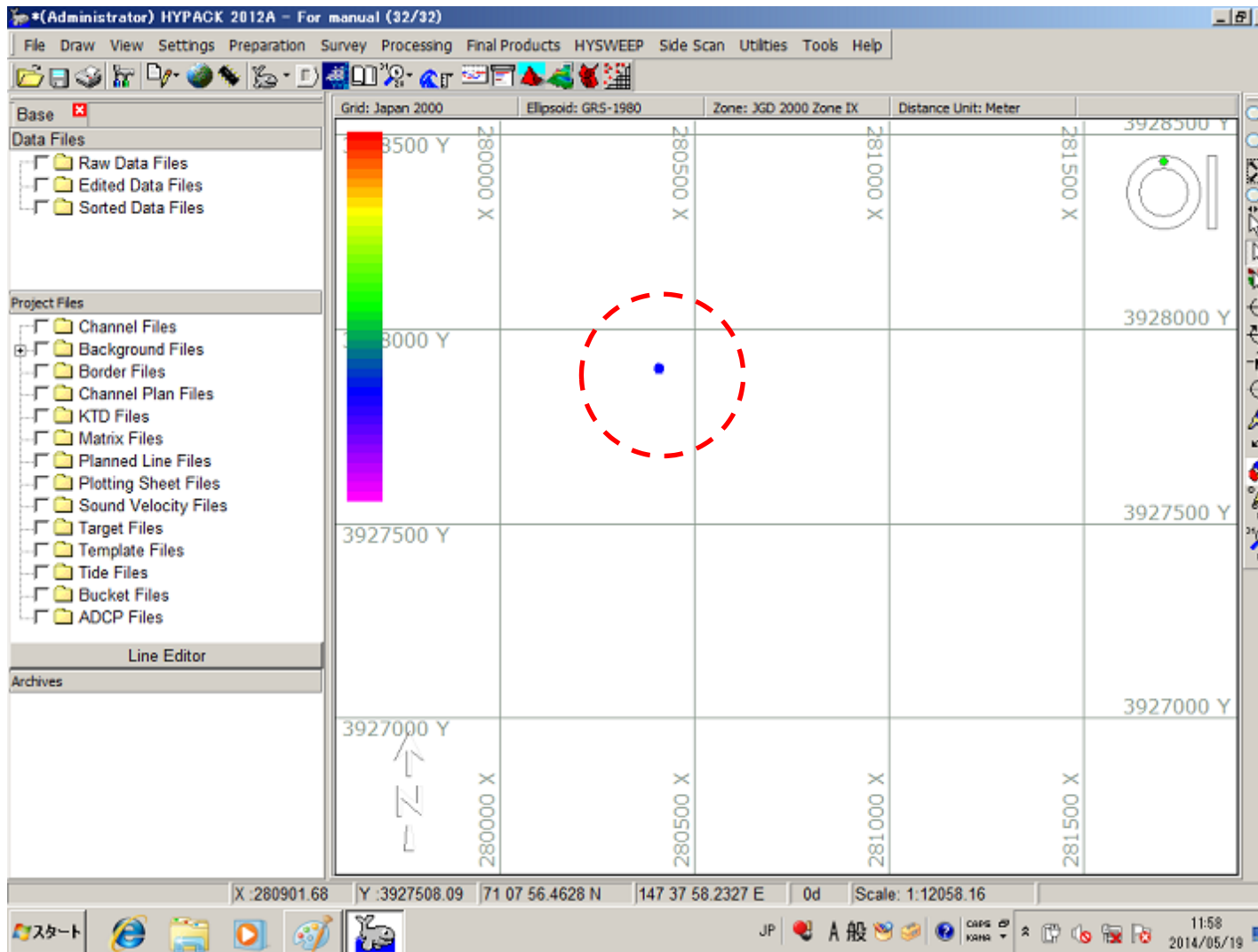
After clicked "Line Editor",
You can see this window

Choose this icon 



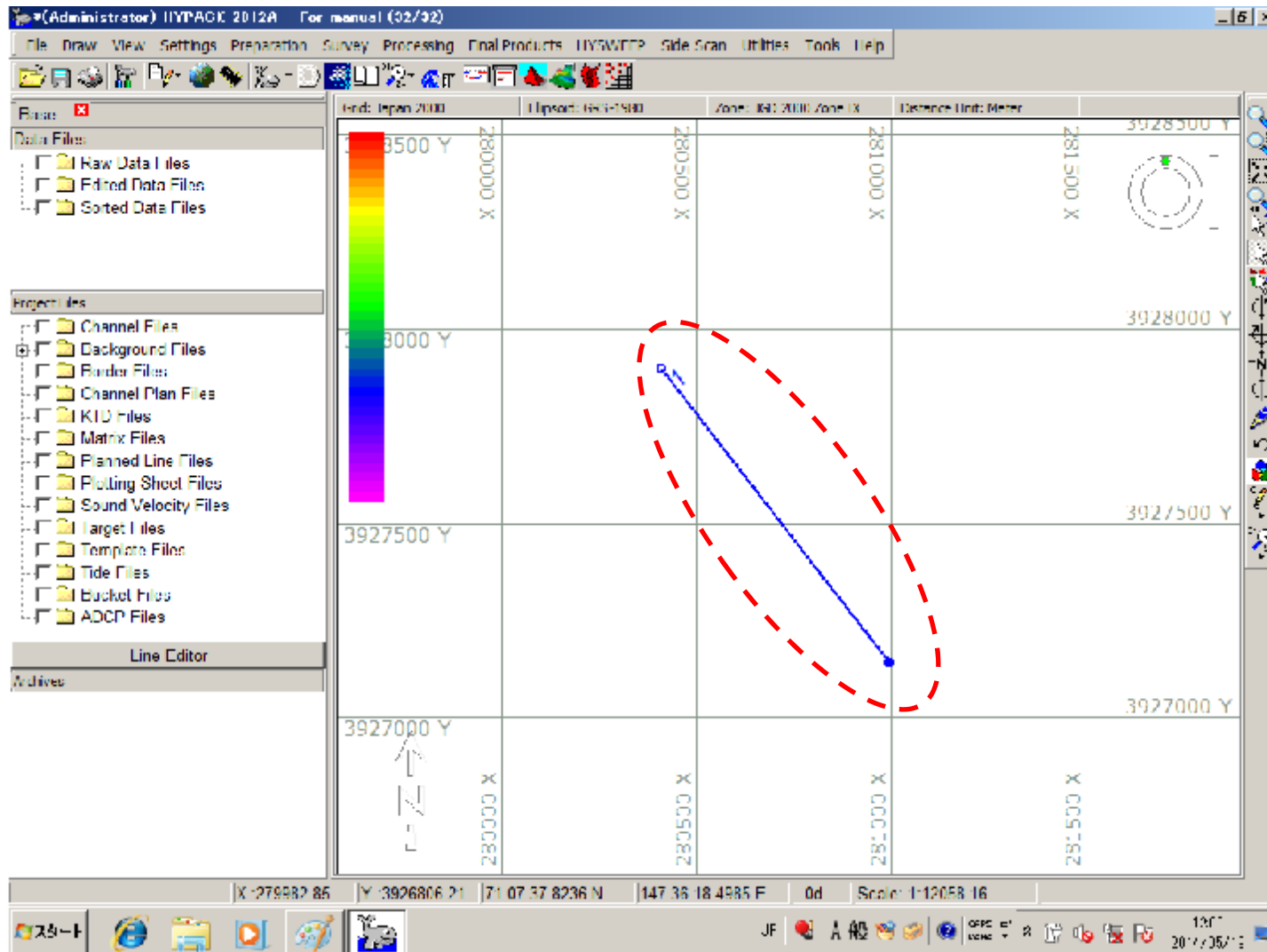
preparation for survey 12 How to make line 4

After clicked "Cursor", if you click on map , you can see blue point



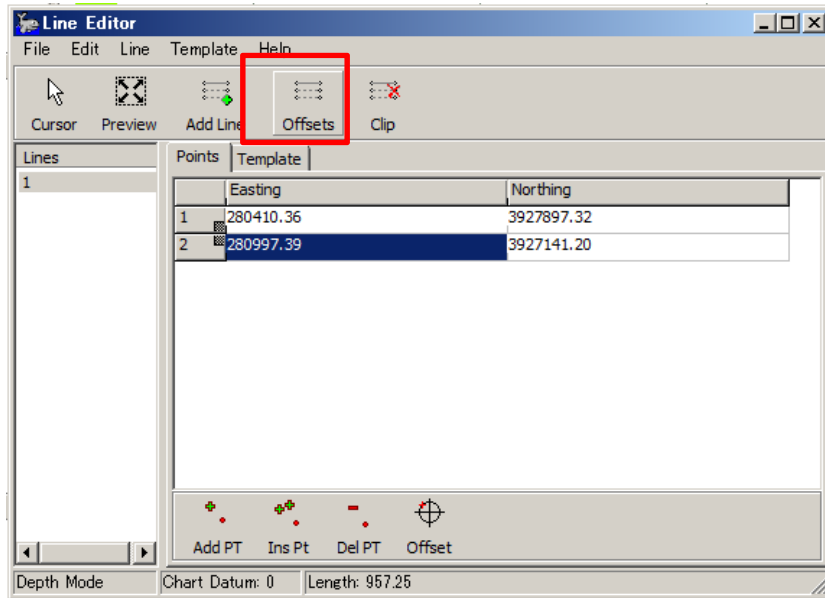
preparation for survey 13 How to make line 5

When you click again on map, You can see blue line



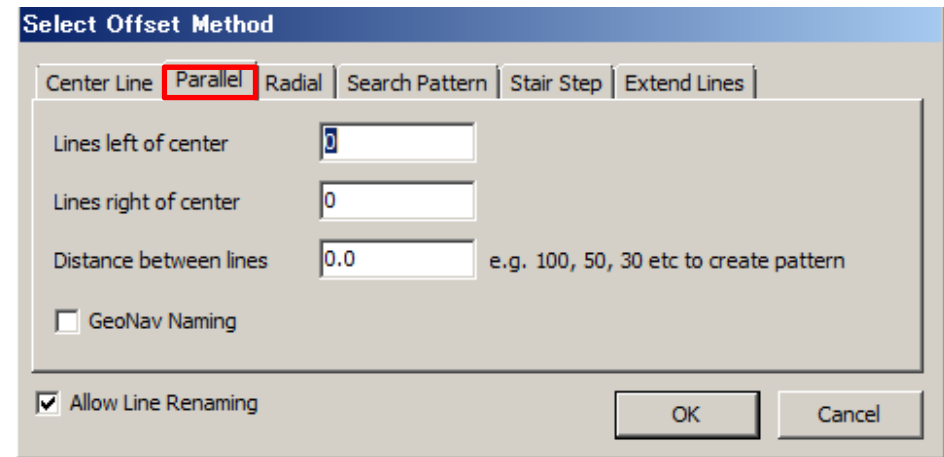
preparation for survey 14 How to increase line 1

Click this icon

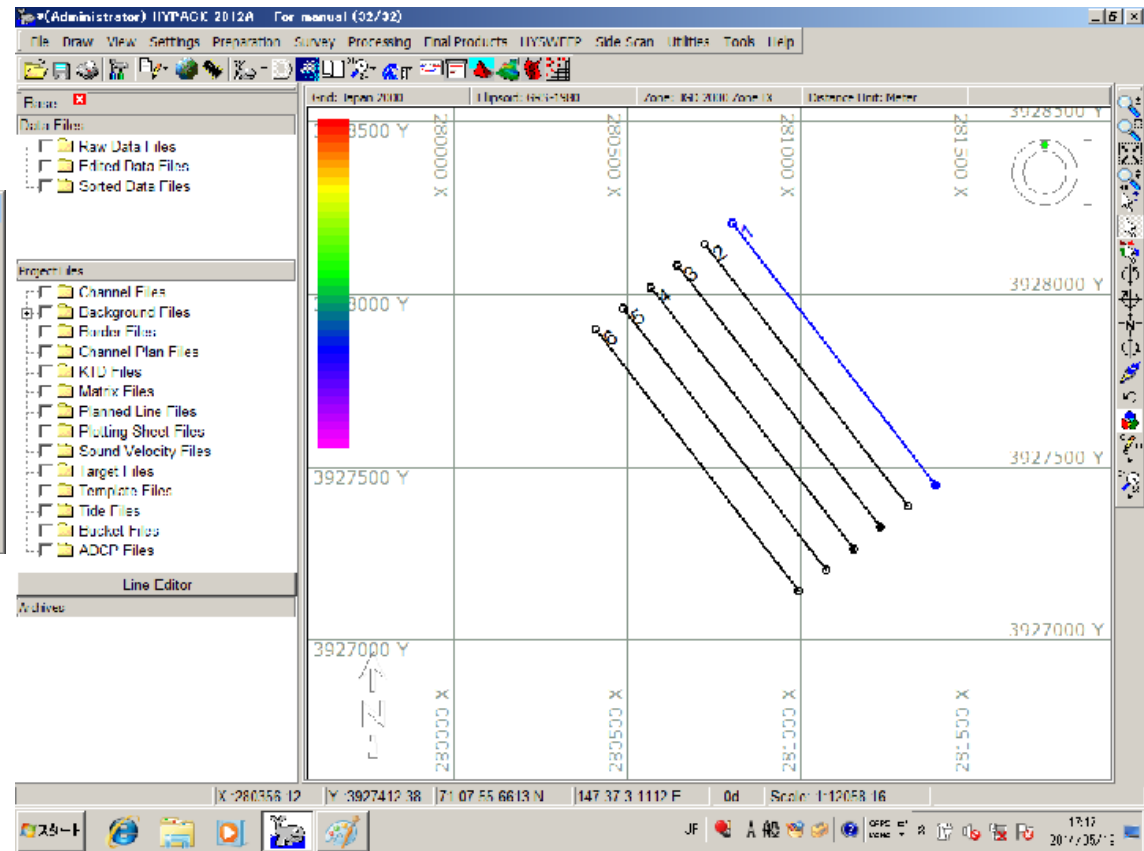
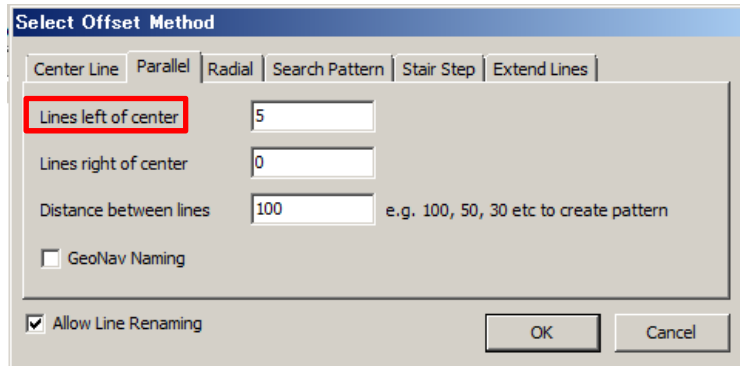


After clicked, You can see this window

Choose Parallel

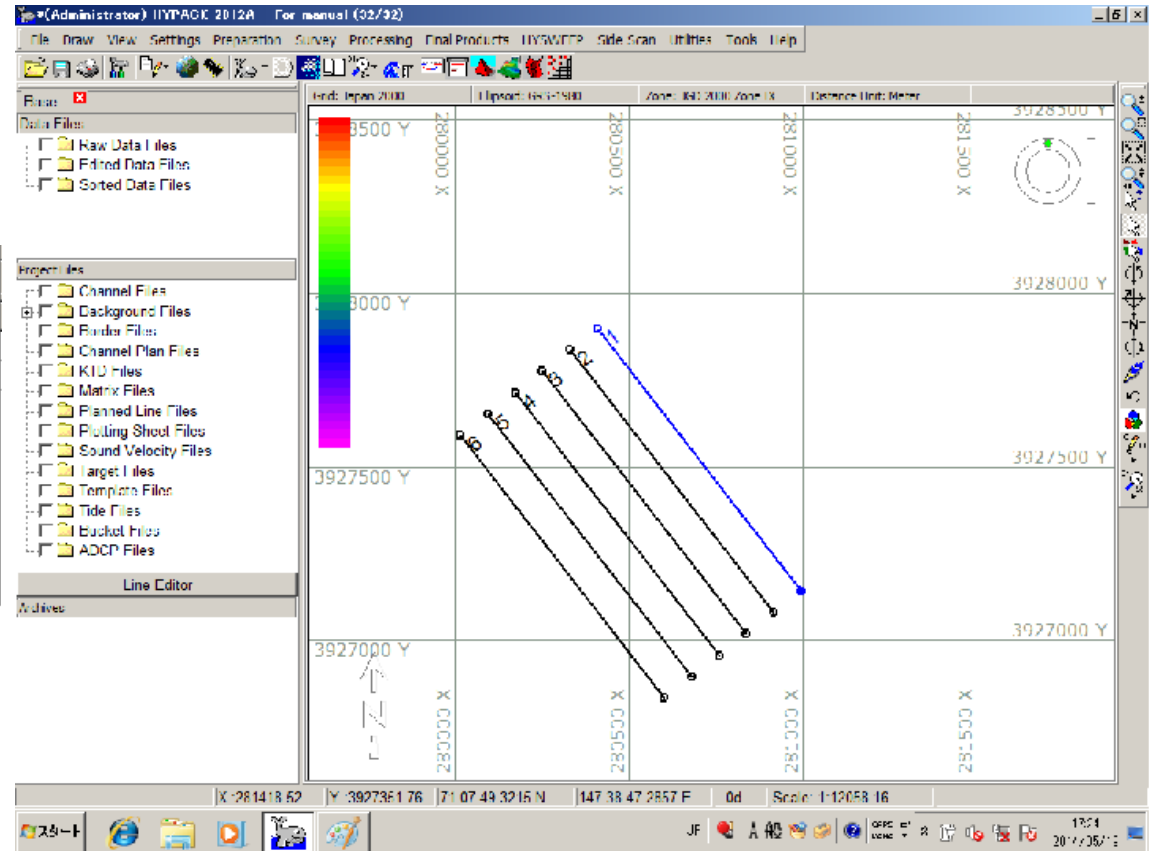
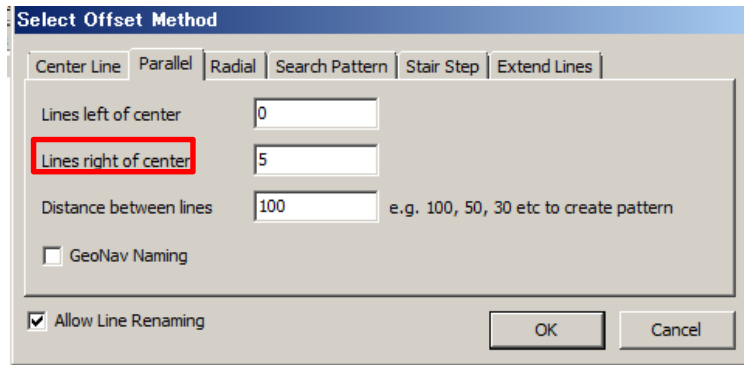


preparation for survey 15 How to increase line 2



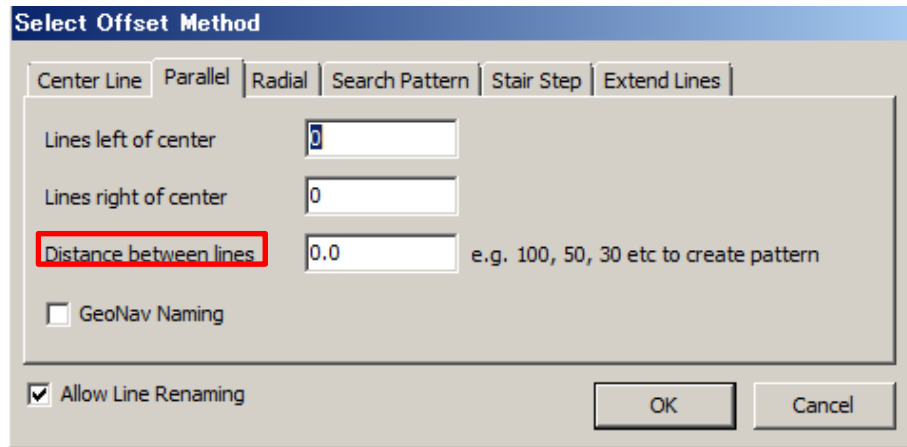
If you choose “Lines left of center” and add 5 lines, you can see 6 lines.
1 line is old one,
5 lines are new one

preparation for survey 16 How to increase line 3

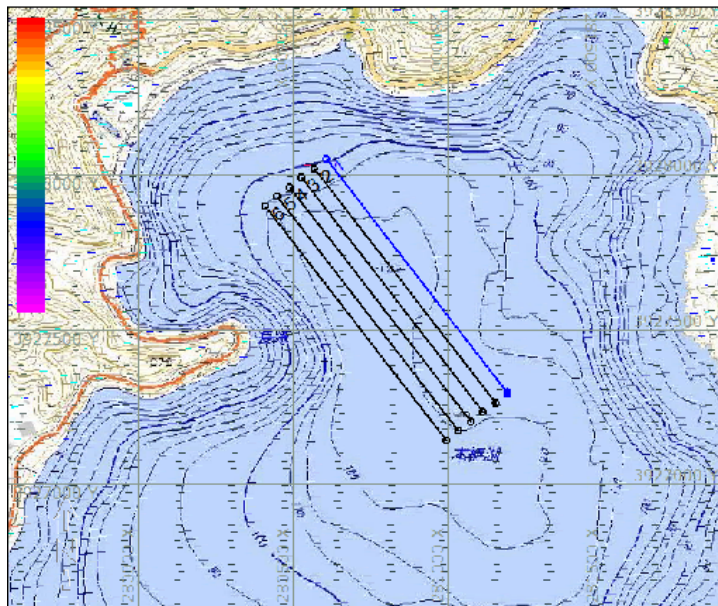


If you choose “Lines right of center” and add 5 lines, you can see 6 lines.
1 line is old one,
5 lines are new one

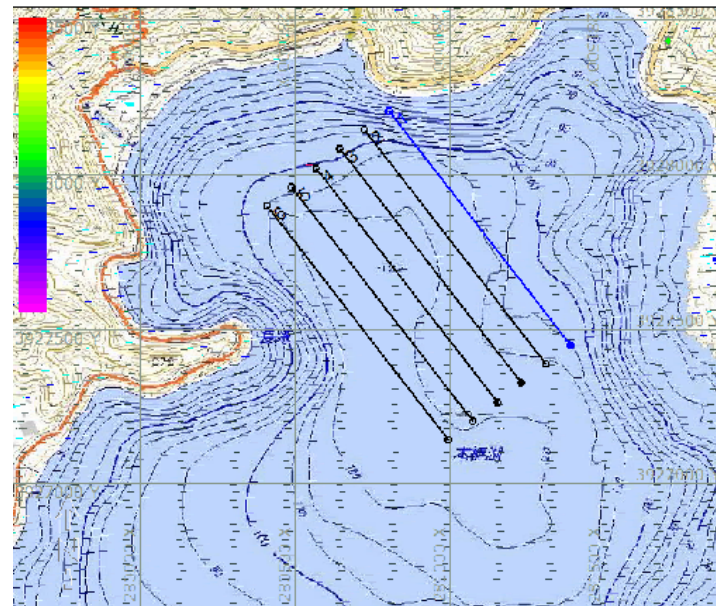
preparation for survey 17 Change distance between lines



When you decide “Distance between lines”, please input twice of depth

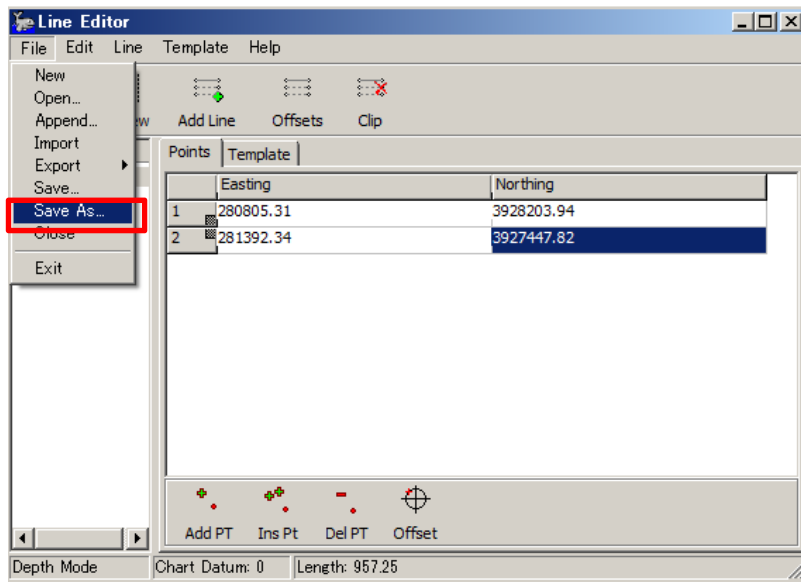


Distance between lines 50

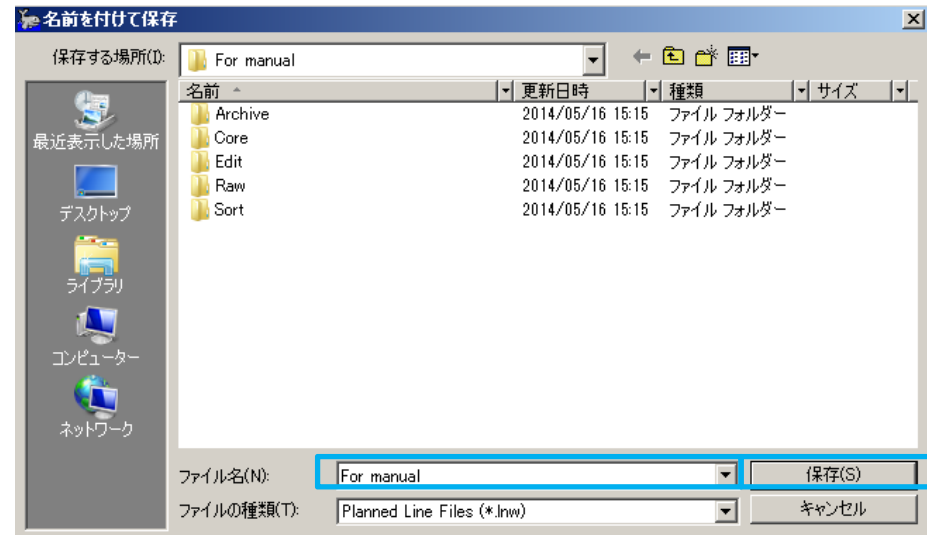


Distance between lines 100

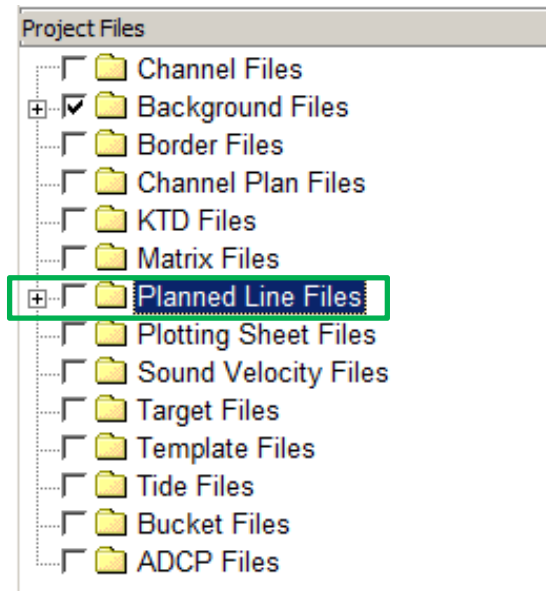
preparation for survey 18 How to save 1



File→save as

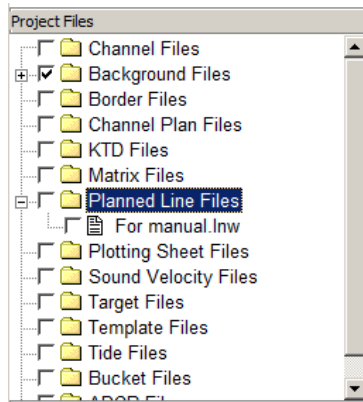


After made name to file, click “(S)”

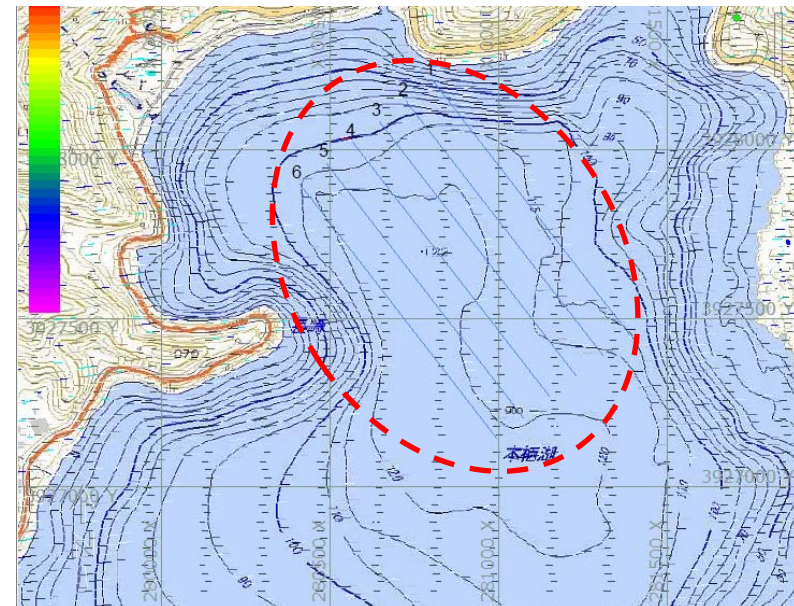
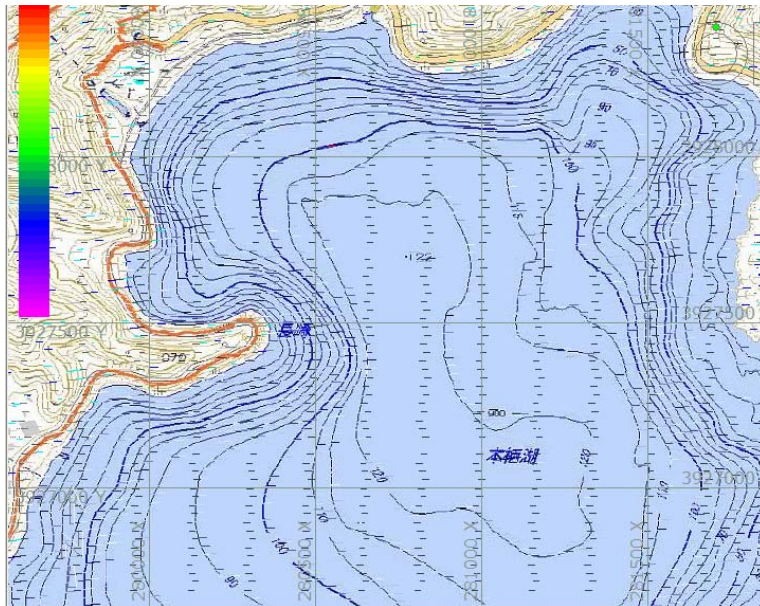
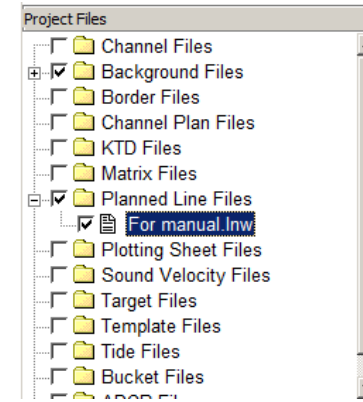


After made file,
You can see plus
mark on Planned
Line files

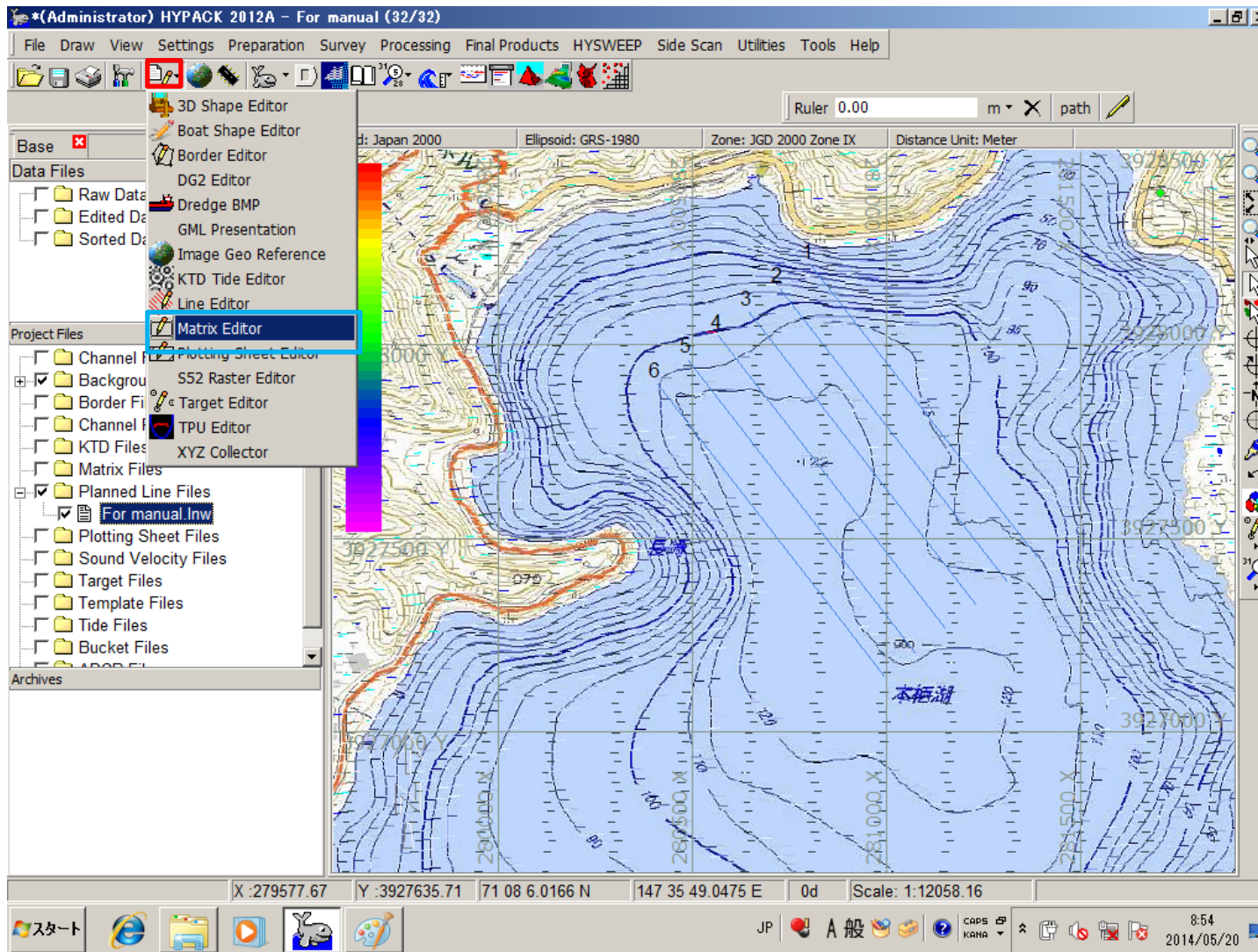
preparation for survey 19



When you add check mark in box, you can see line on map



preparation for survey 20 How to make Matrix file 1



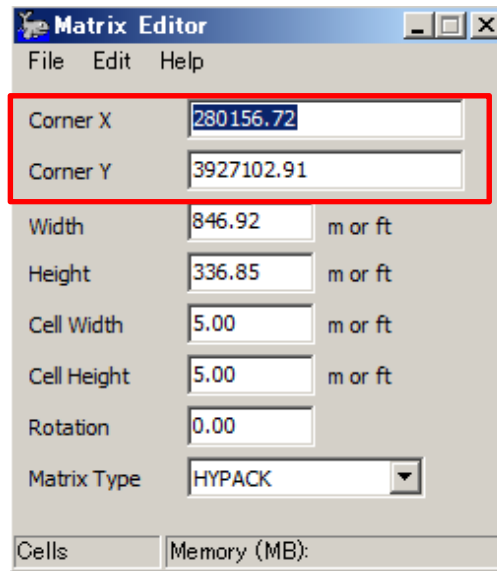
Choose “Matrix Editor”

Editors→Matrix Editor

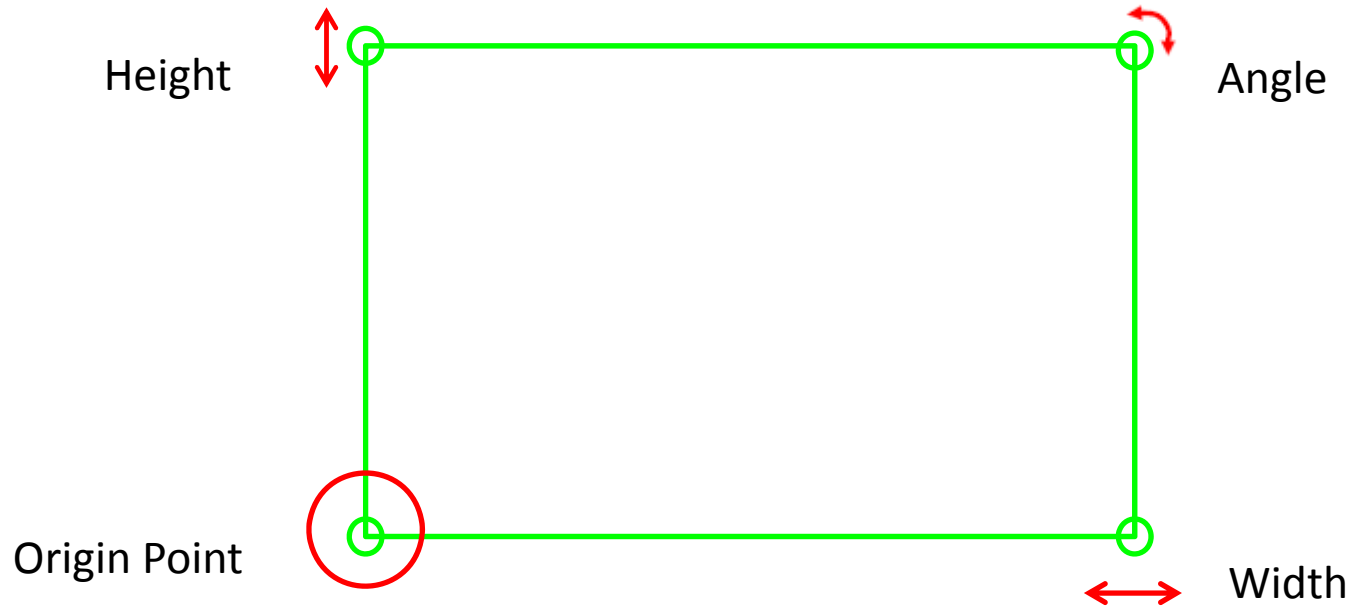
preparation for survey 21

How to make Matrix file 2

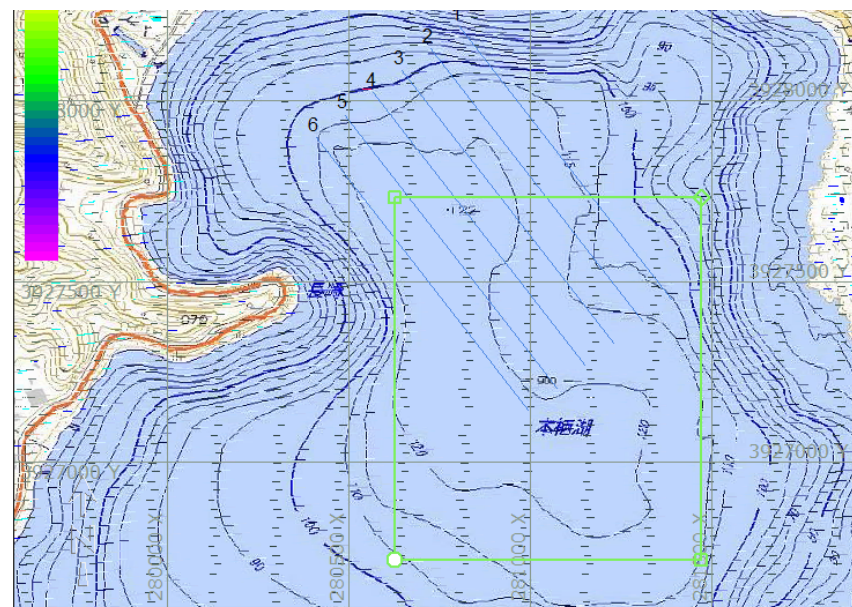
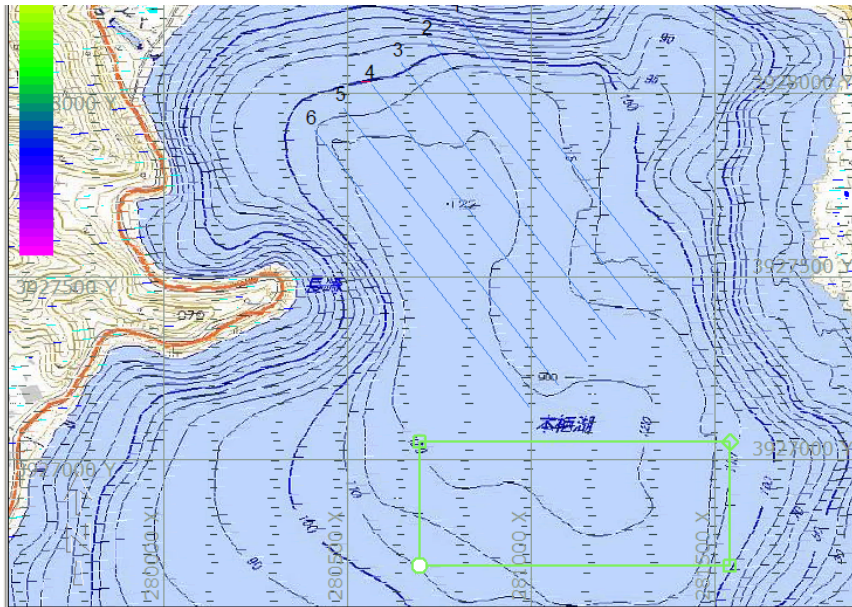
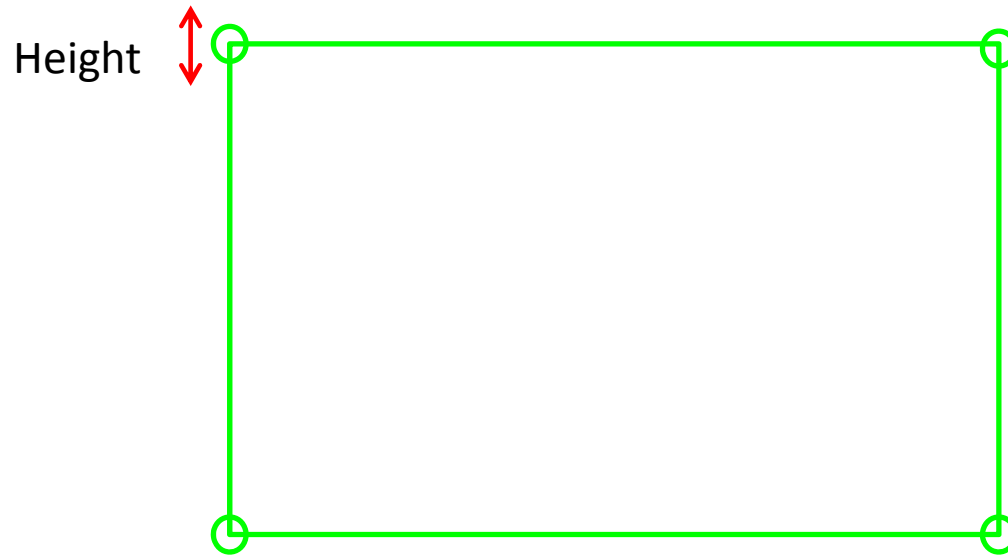
After click "Matrix Editor",
you can see this window



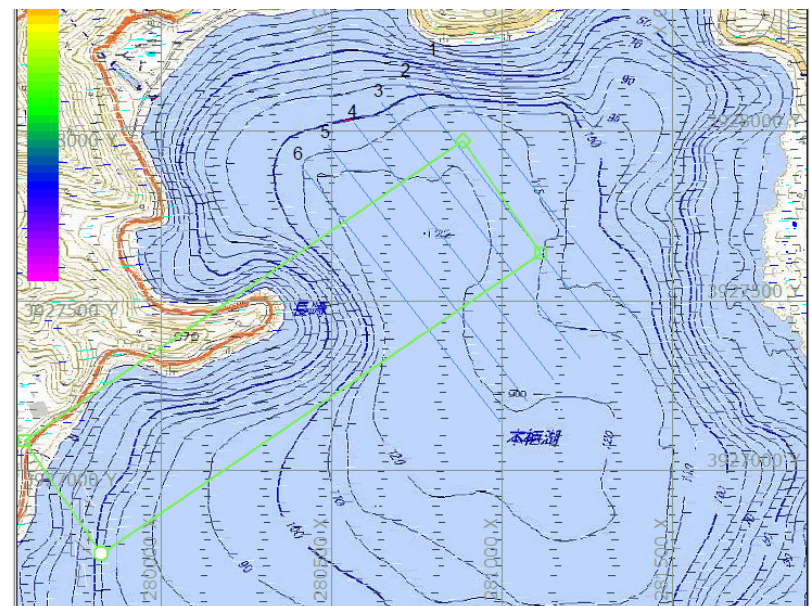
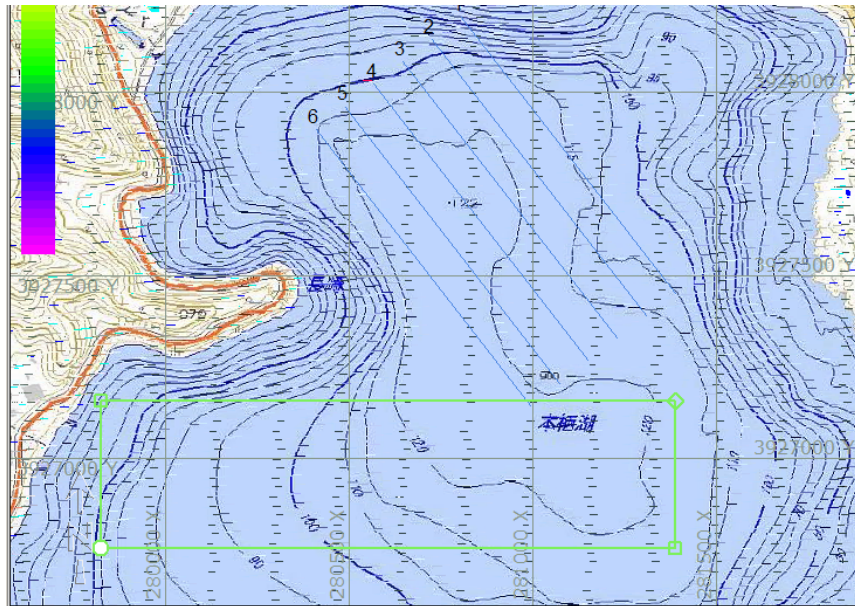
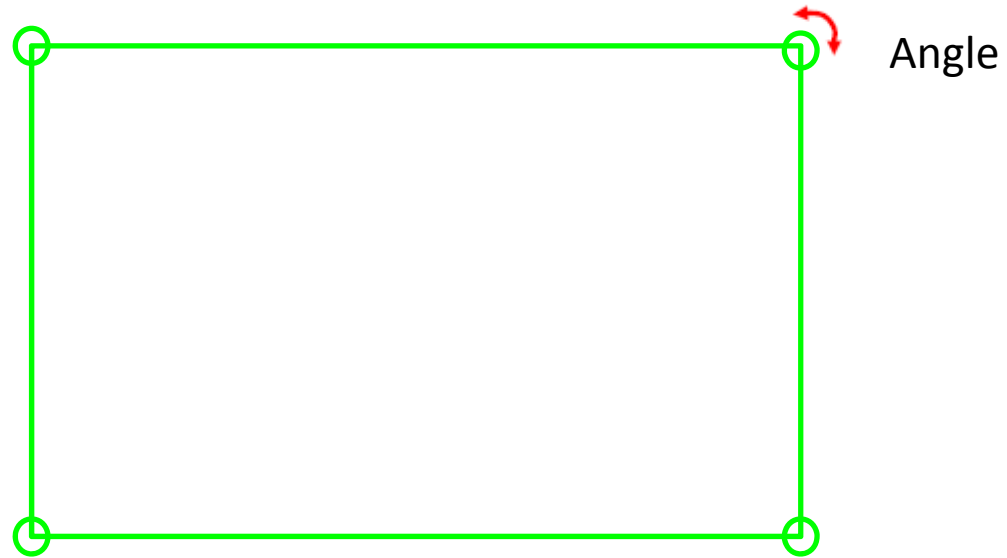
We can move matrix by change
value of "Corner X" and "Corner Y"
or hold of matrix corner by mouse



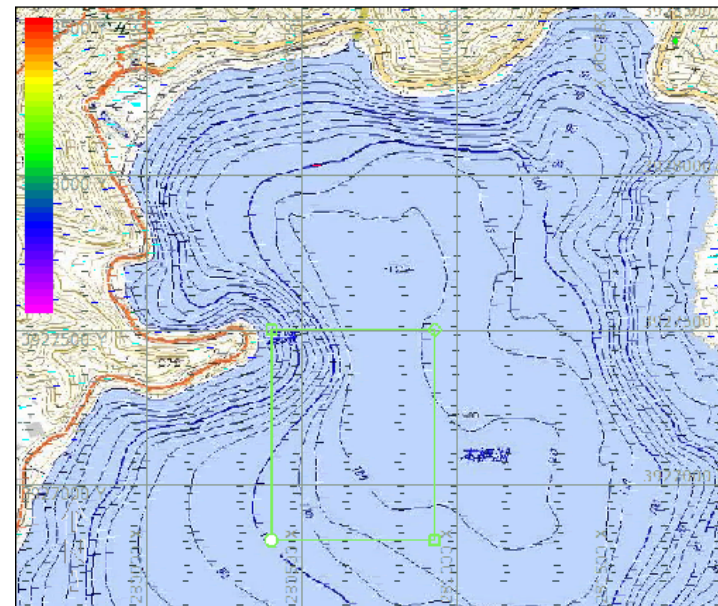
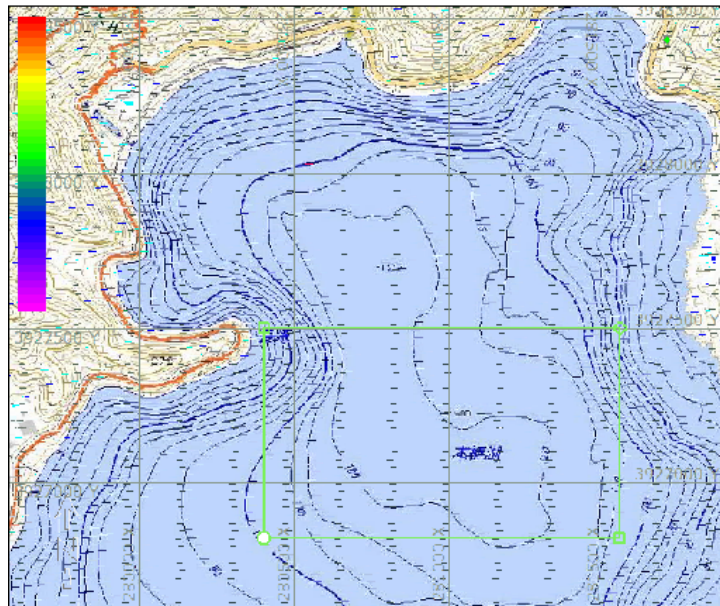
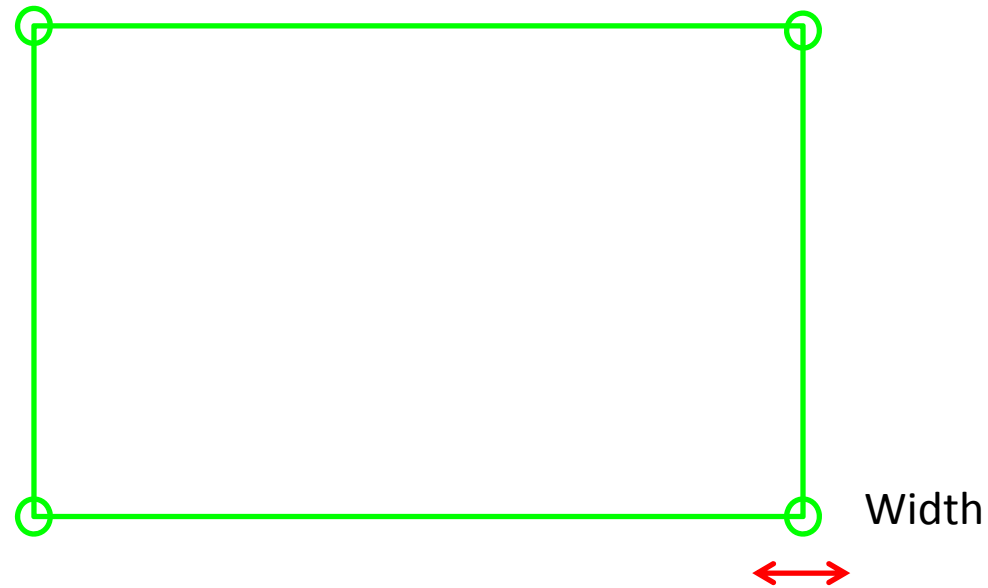
preparation for survey 22 How to change height



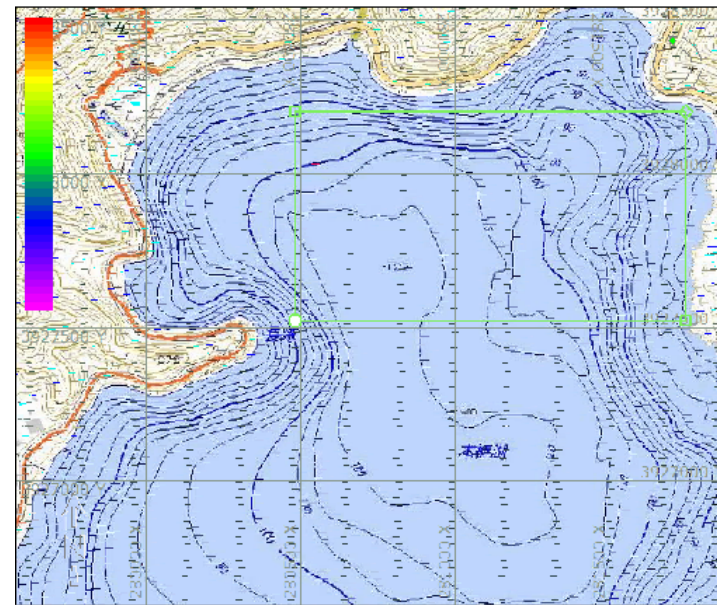
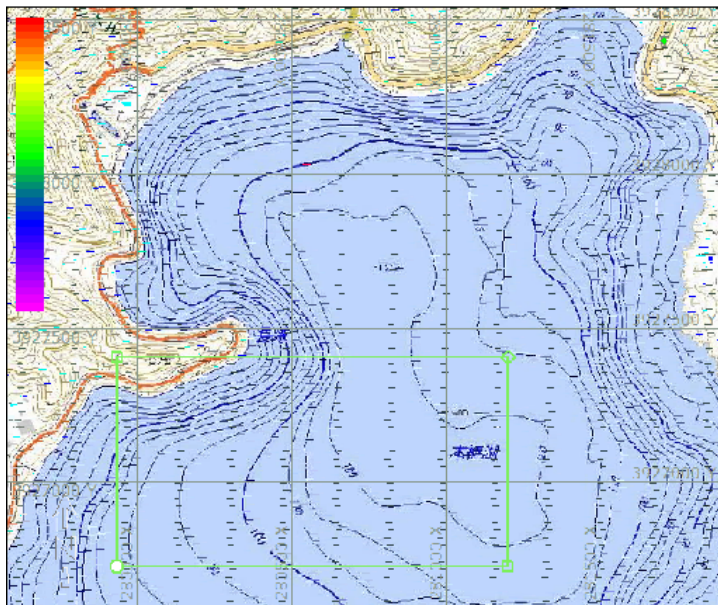
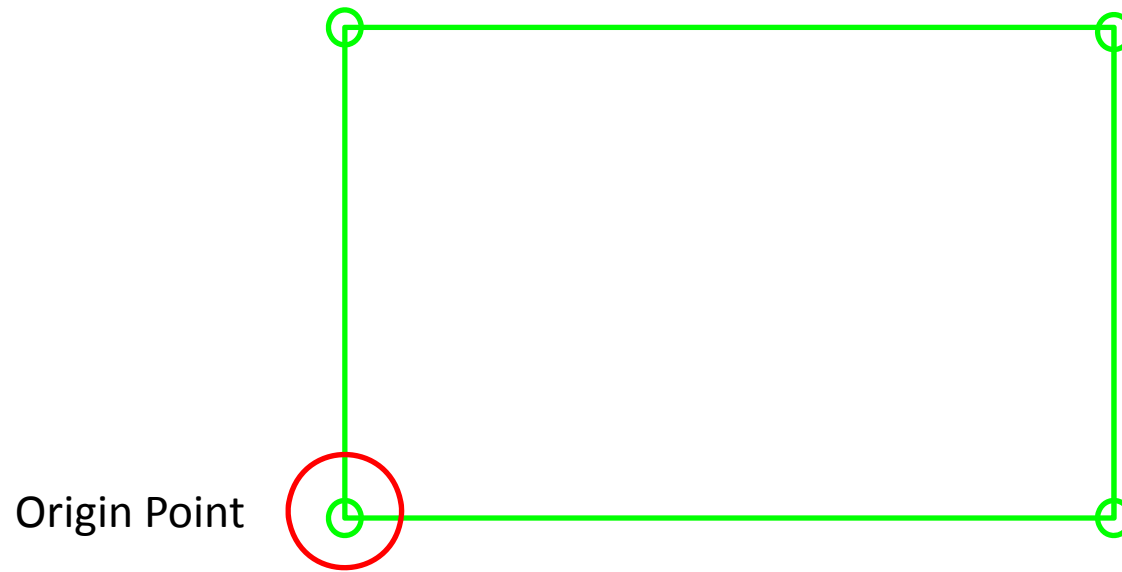
preparation for survey 23 How to change angle



preparation for survey 24 How to change width

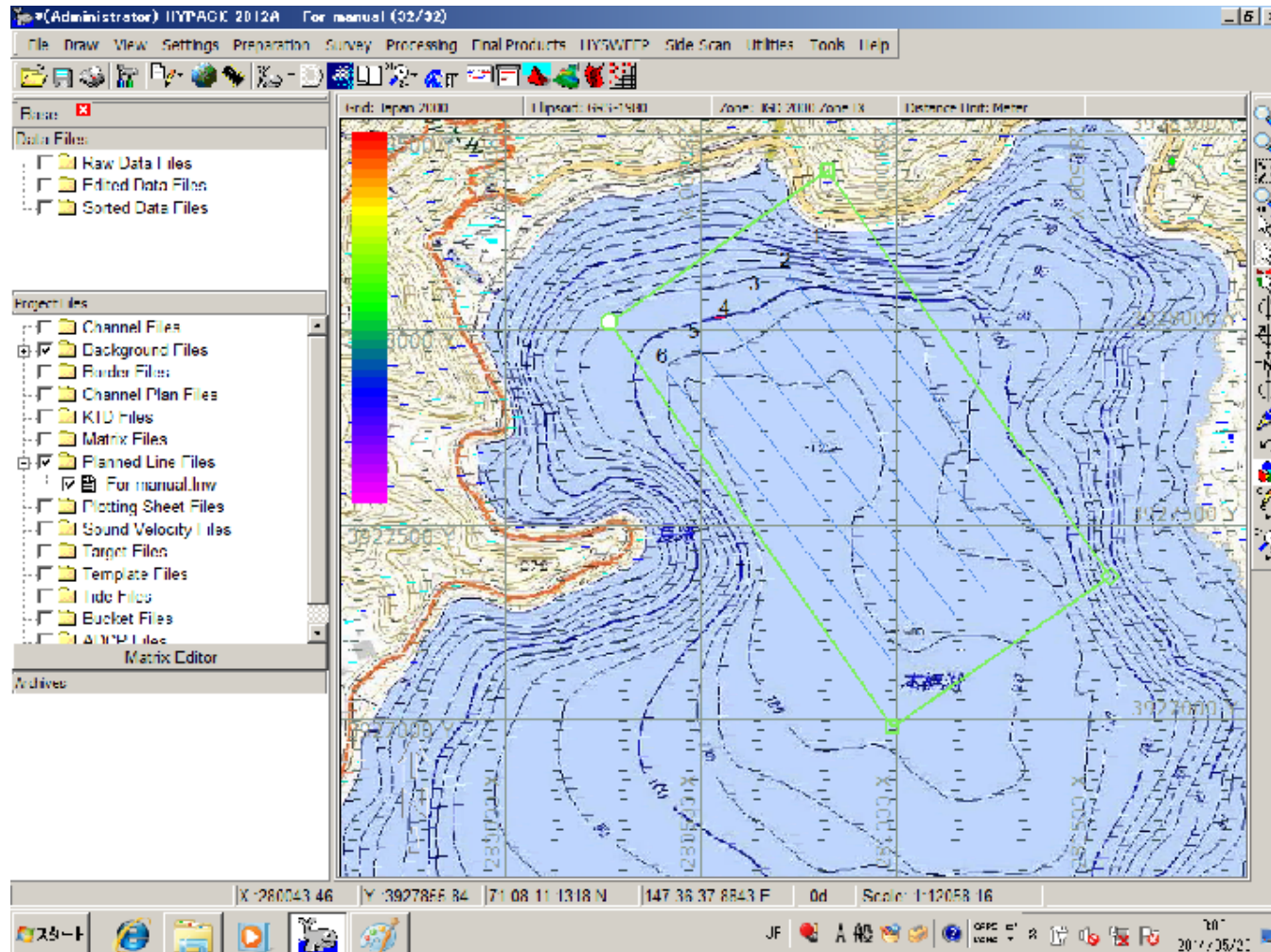


preparation for survey 25 How to move

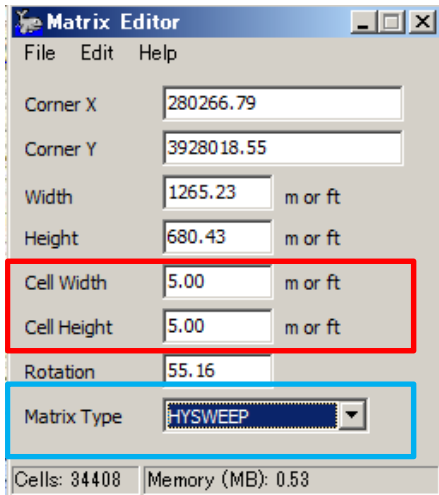


preparation for survey 26

When make Matrix, please make big more than line

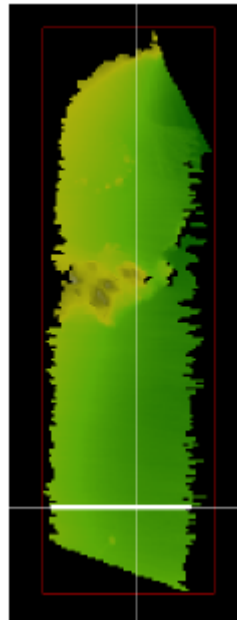


preparation for survey 27

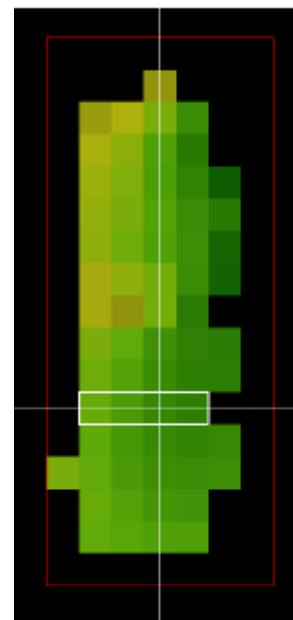


Please input Cell size about 1/10~1/20 of depth

Change Matrix type from HYPACK to HYSWEEP



Cell size 2m

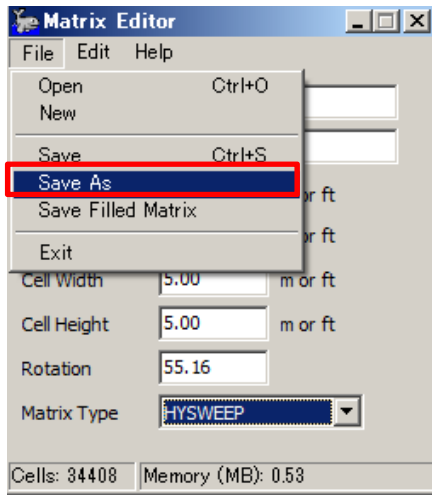


Cell size 30m

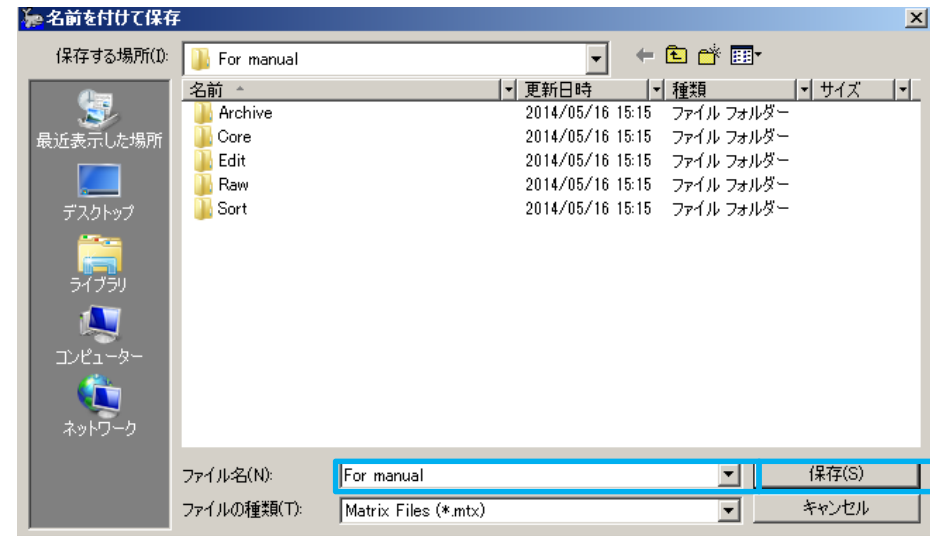


Cell size 0.1m

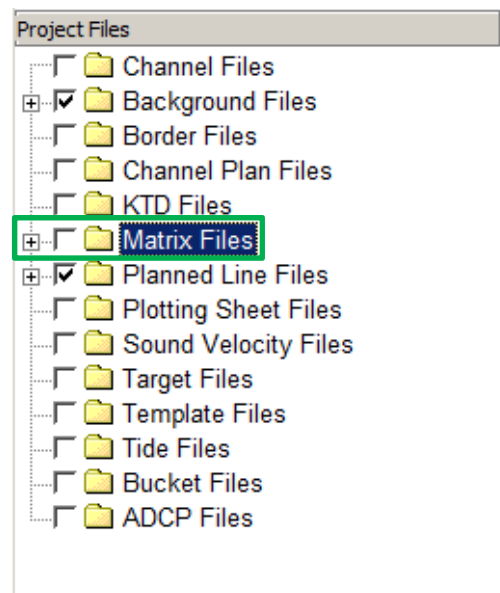
preparation for survey 28



File→save as

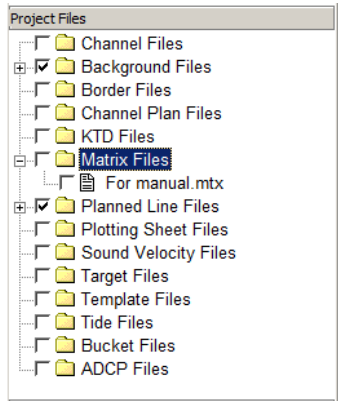


After made name to file, click "(S)"

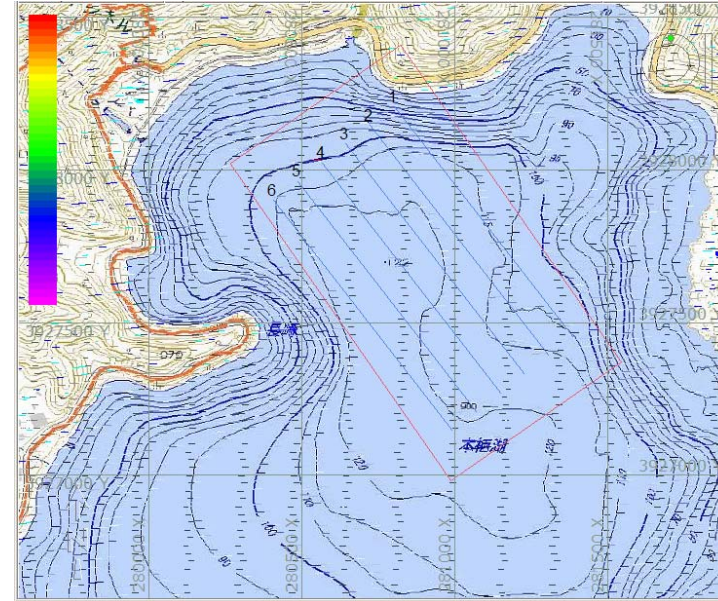
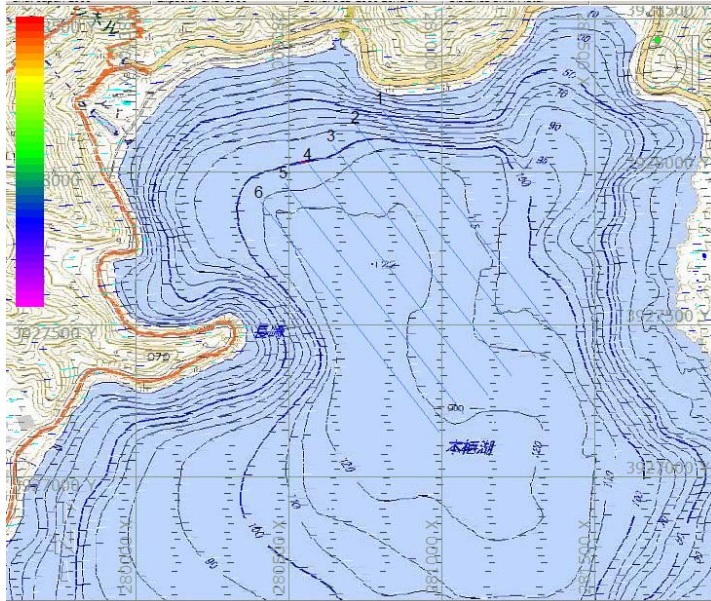
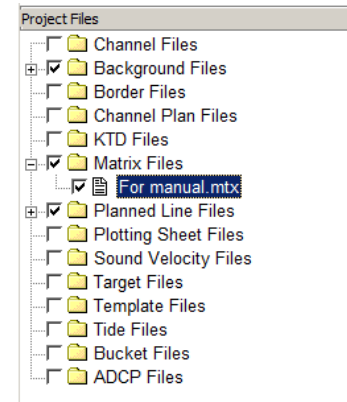


After made file,
You can see plus
mark on Matrix
Files

preparation for survey 29

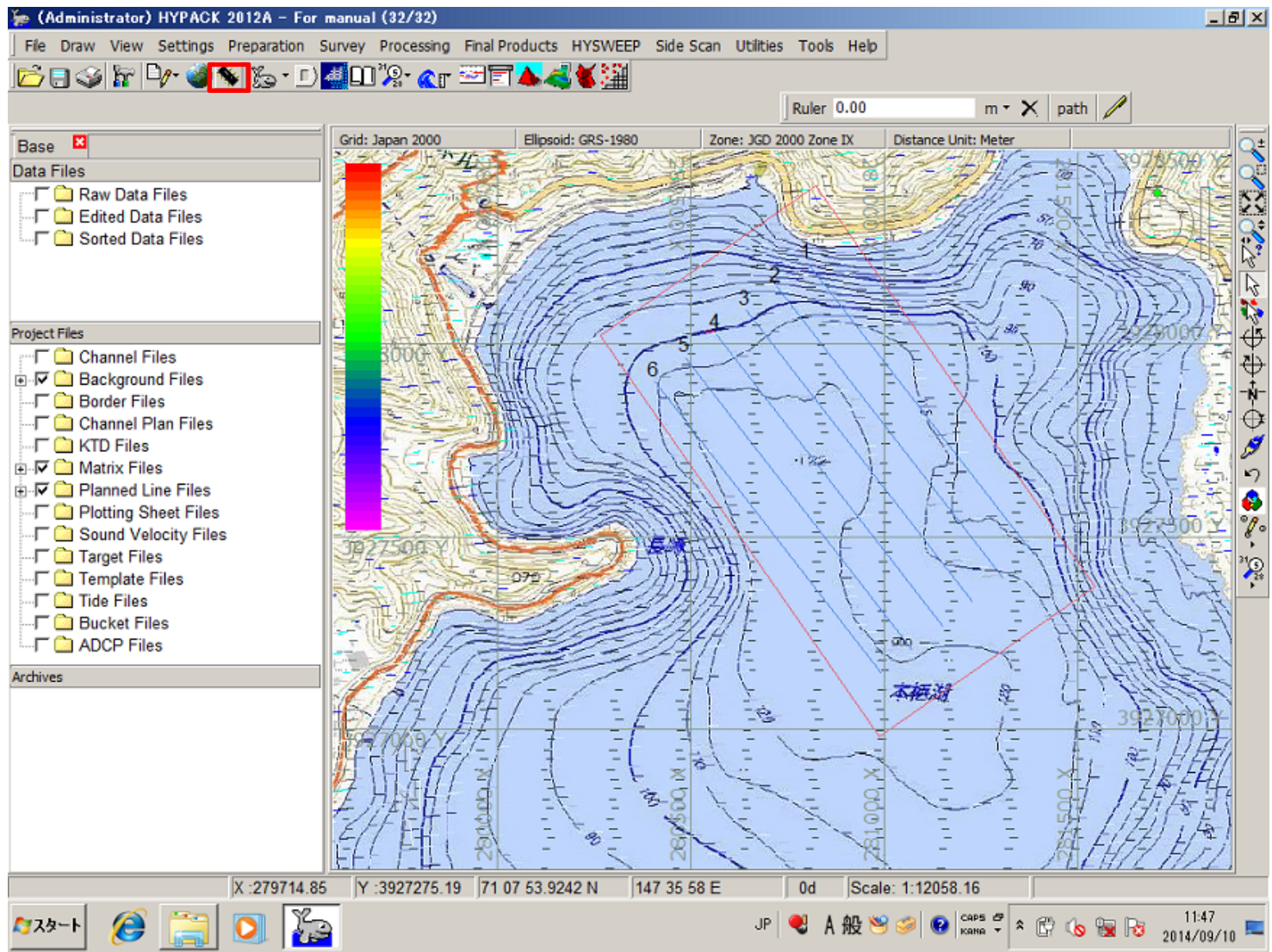


When you add check mark in box, you can see line on map
Matrix is indicated by red line



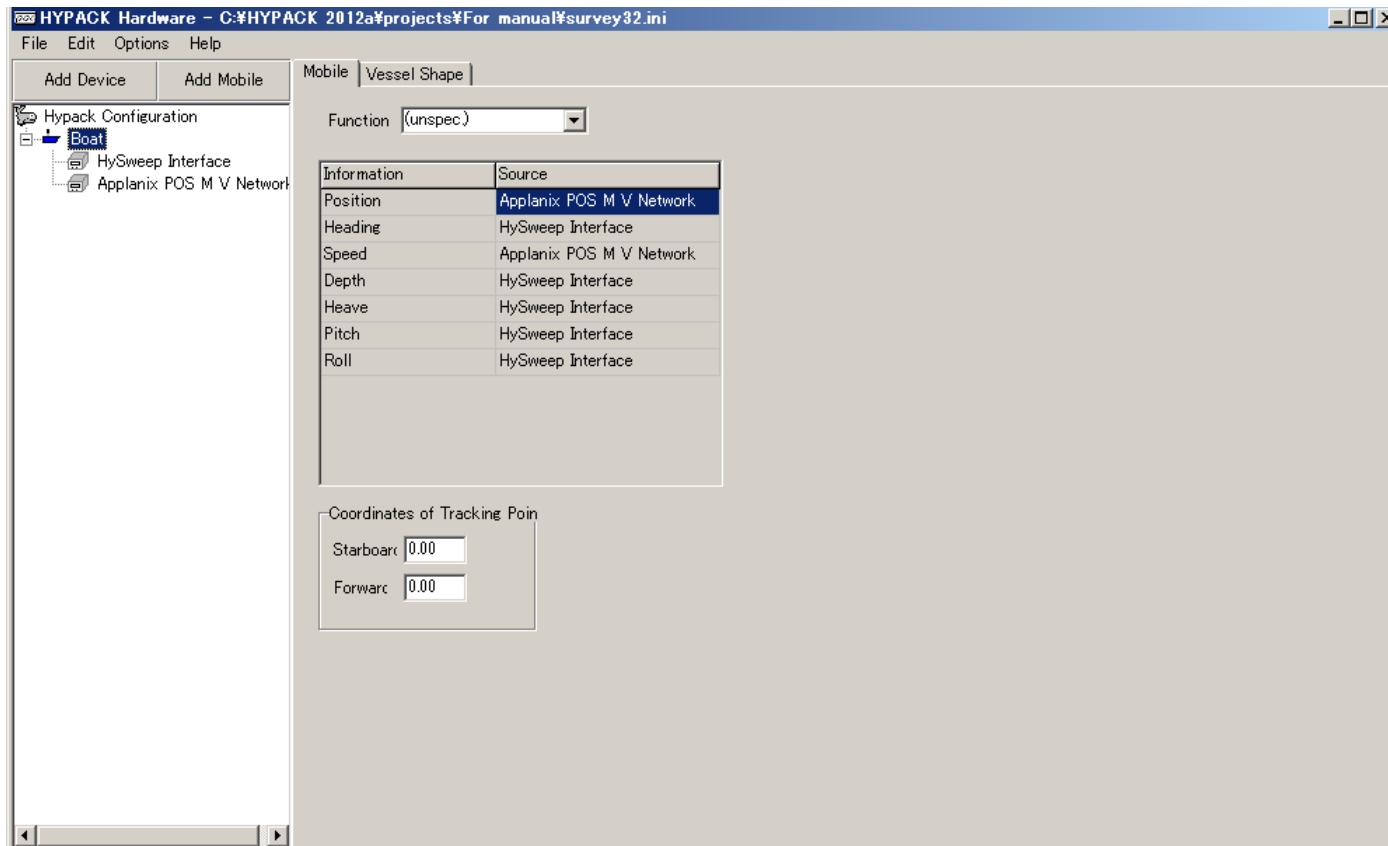
Setting of HYPACK HARDWARE 1

Click this icon 



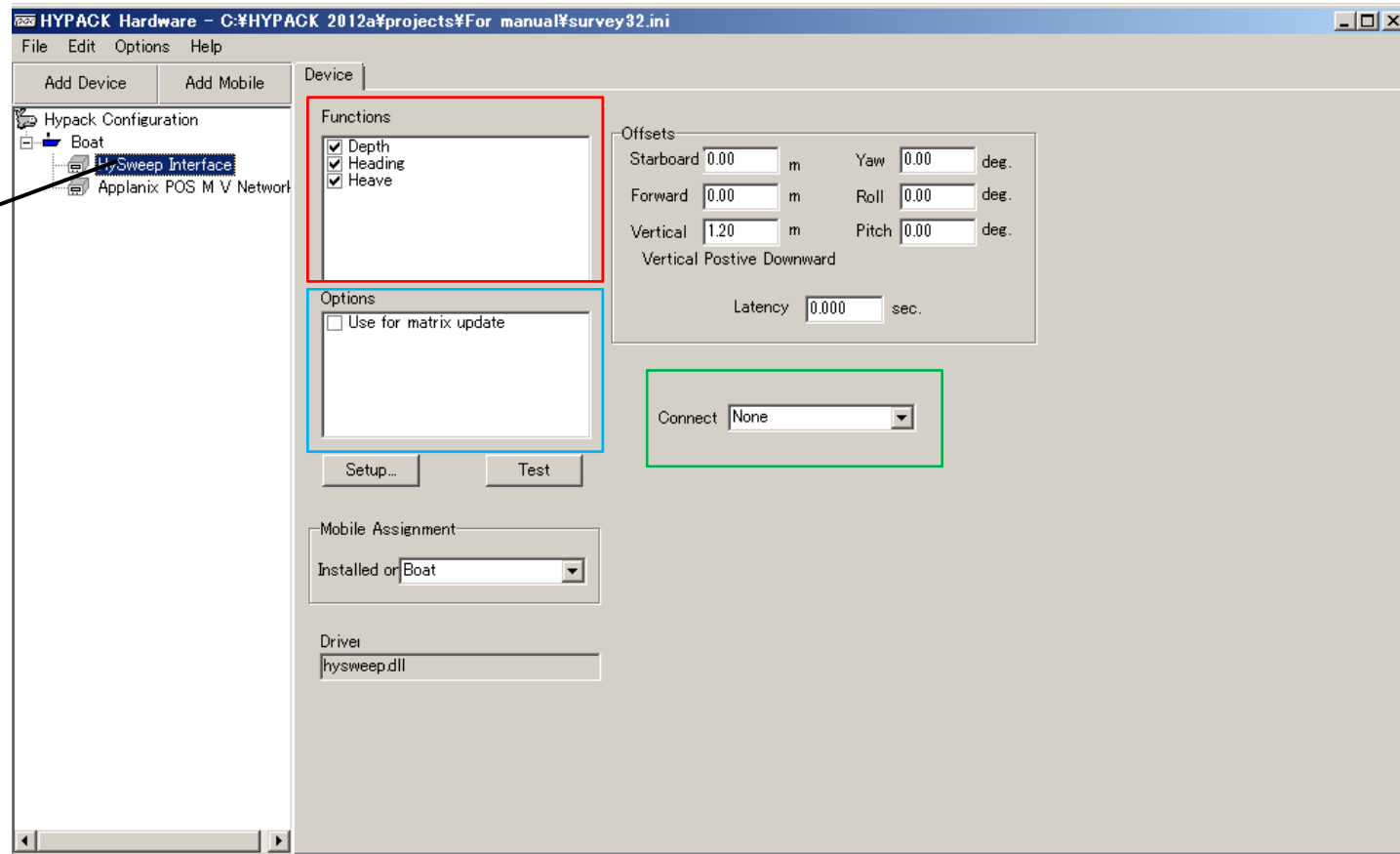
Setting of HYPACK HARDWARE 2 Boat

After click, You can see this window



Setting of HYPACK HARDWARE3 HYSWEEP Interface

Can choose by left click



Function: Choose all

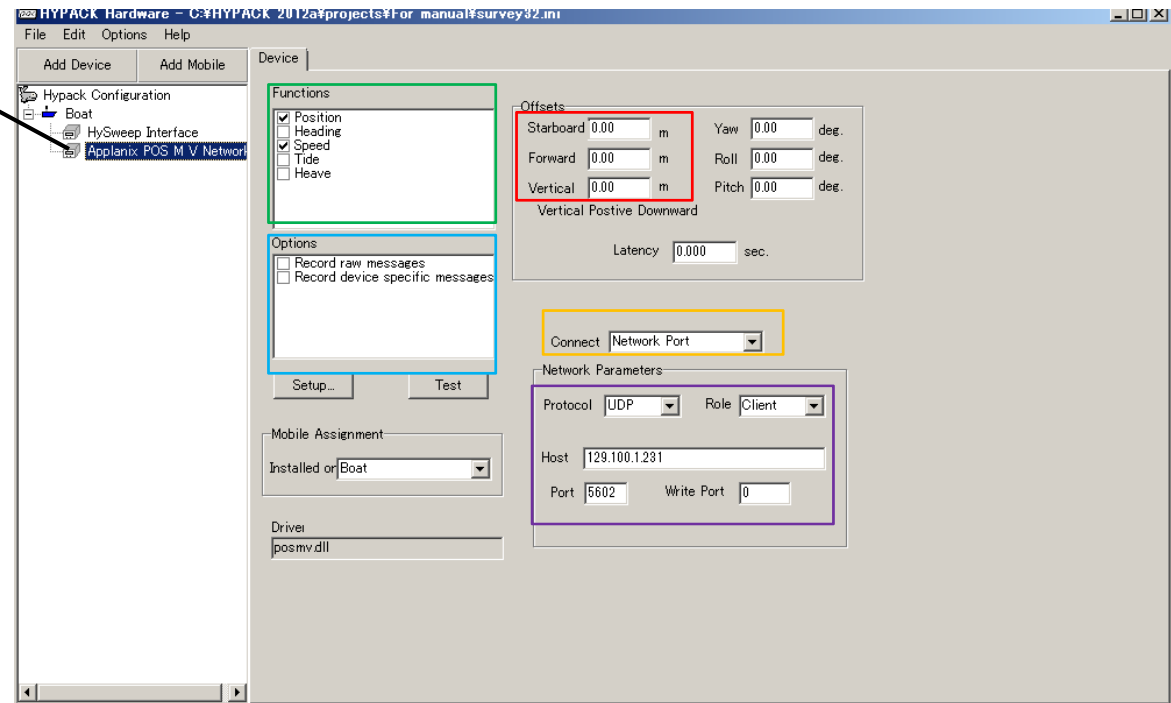
Option: During getting data, can decide about color of depth value

Connect: Choose None

Setting of HYPACK HARDWARE4 POS MV

Can choose by left click

	POS MV Offset
Starboard	0m
Forward	0m
Vertical	- m



Offsets: Input about Offsets of POS MV(Starboard/Forward/Vertical)

Function: Input check mark to Position and Speed

Options: Input check mark to both

Connect: Choose Network Port

Network Parameter: Protocol→UDP

Role →Client

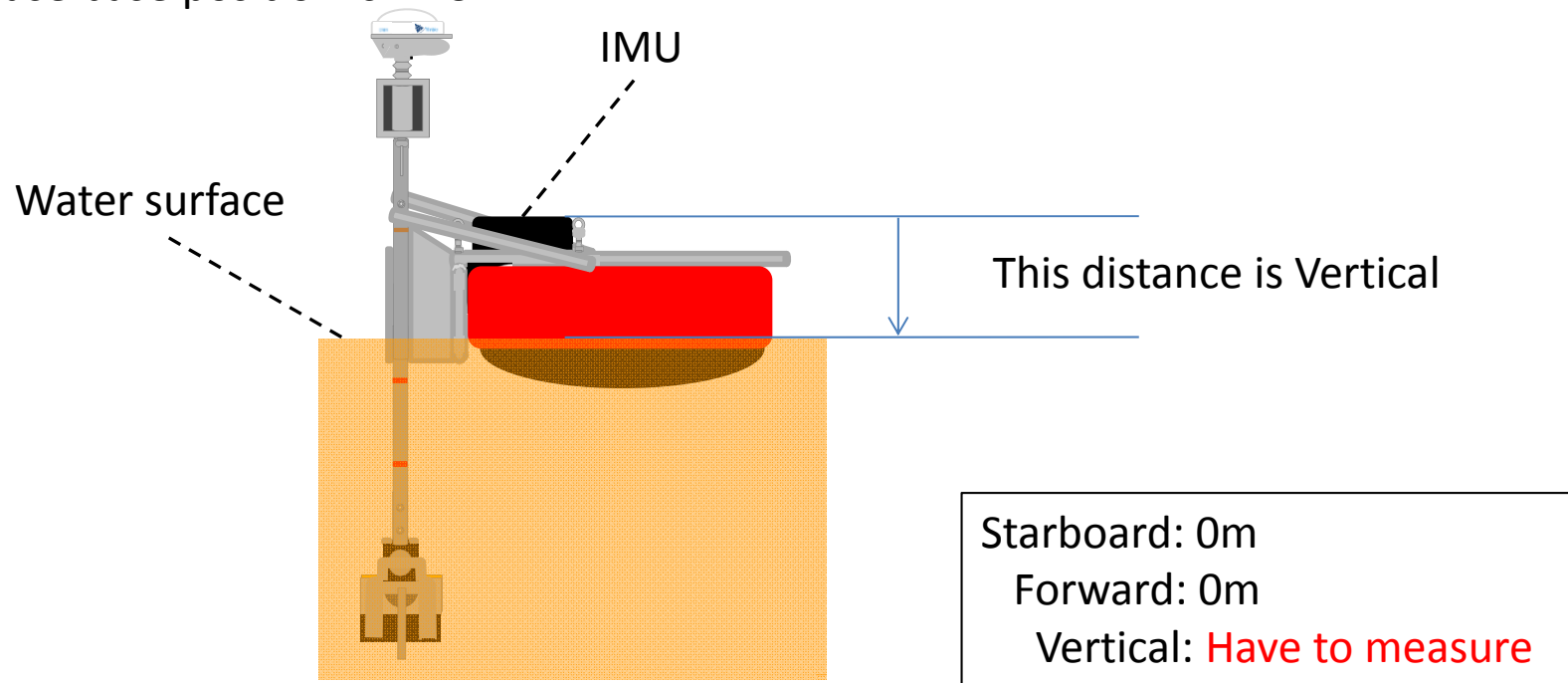
Host →IP address of POS MV

Port →5602

Write Port→0

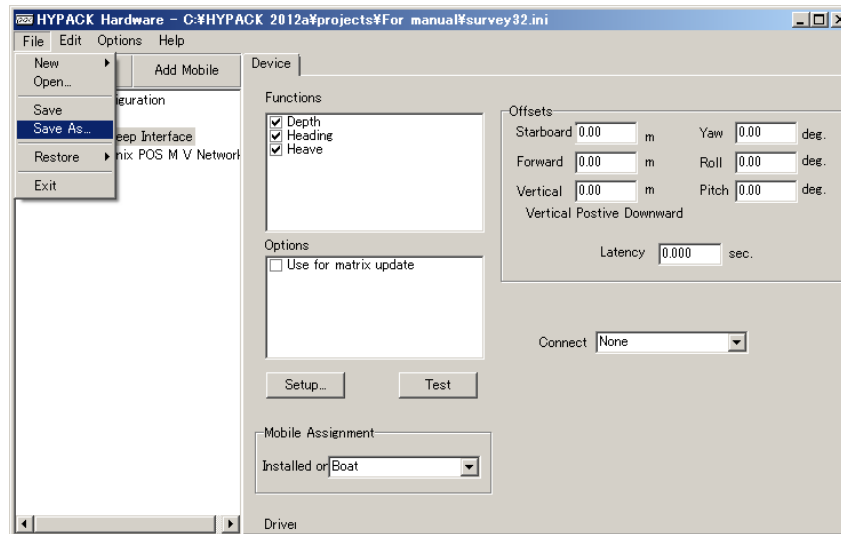
About Offsets of POS MV, we need only Vertical value

Because base position is IMU

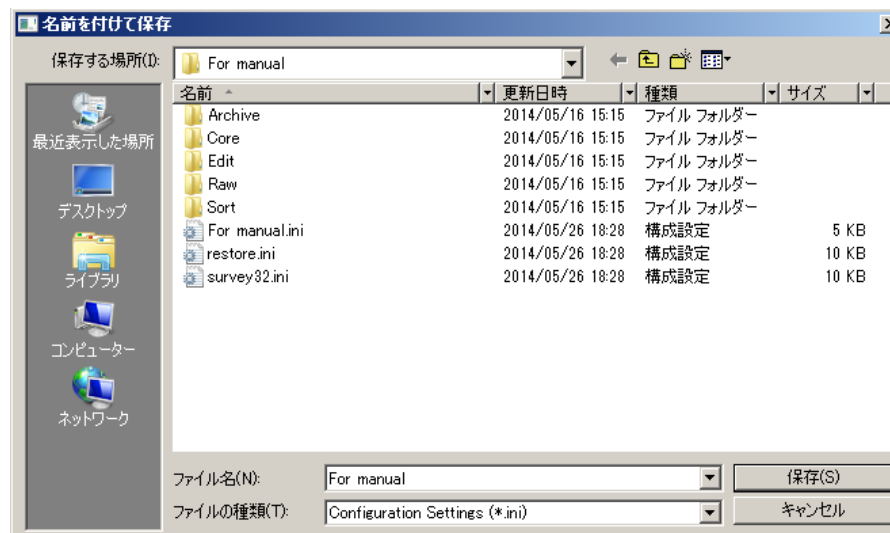


When we measure vertical of POS MV off set, we measure from IMU surface to water surface. And then value is “—”.

Setting of HYPACK HARDWARE6

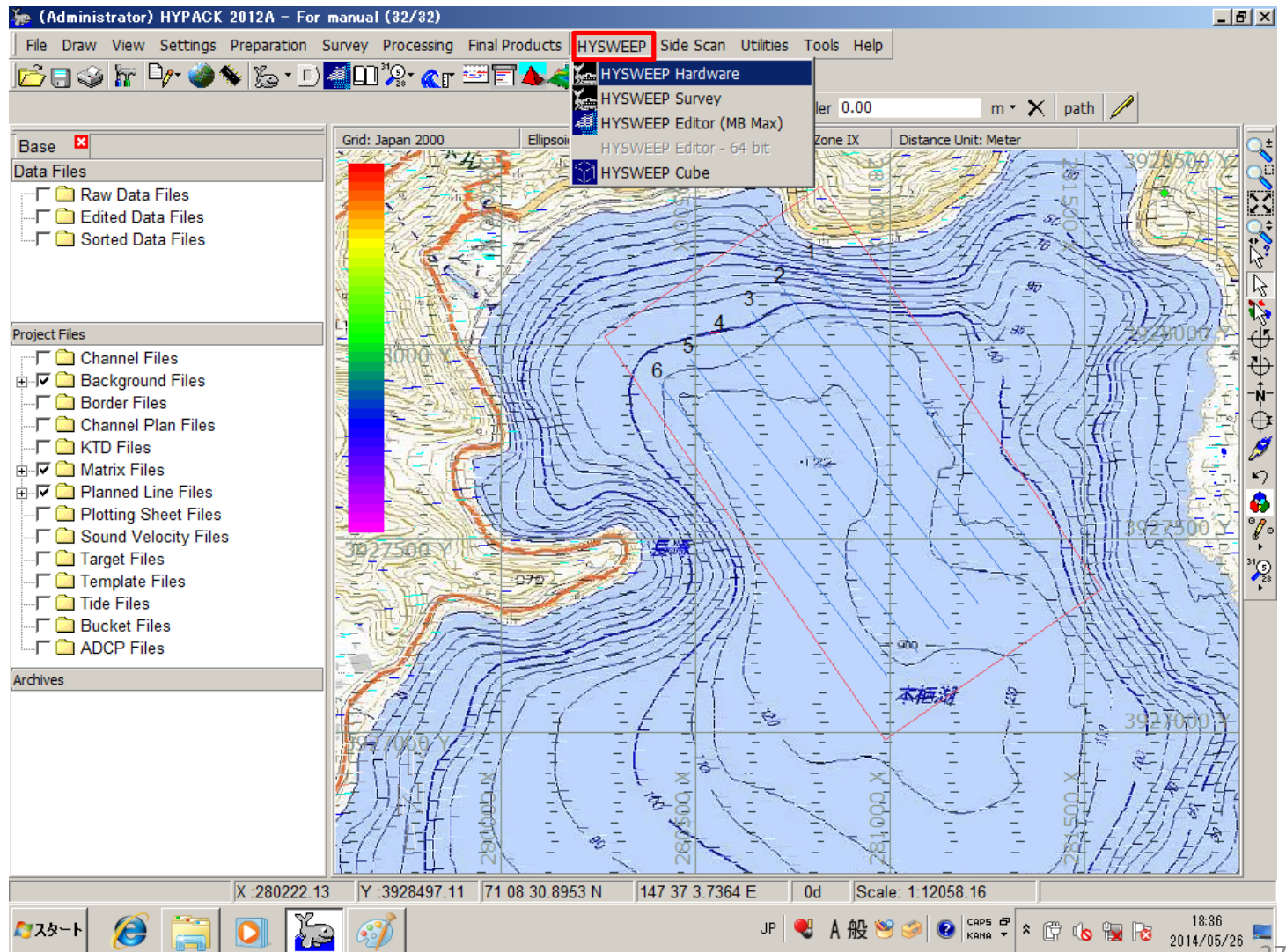


Save as



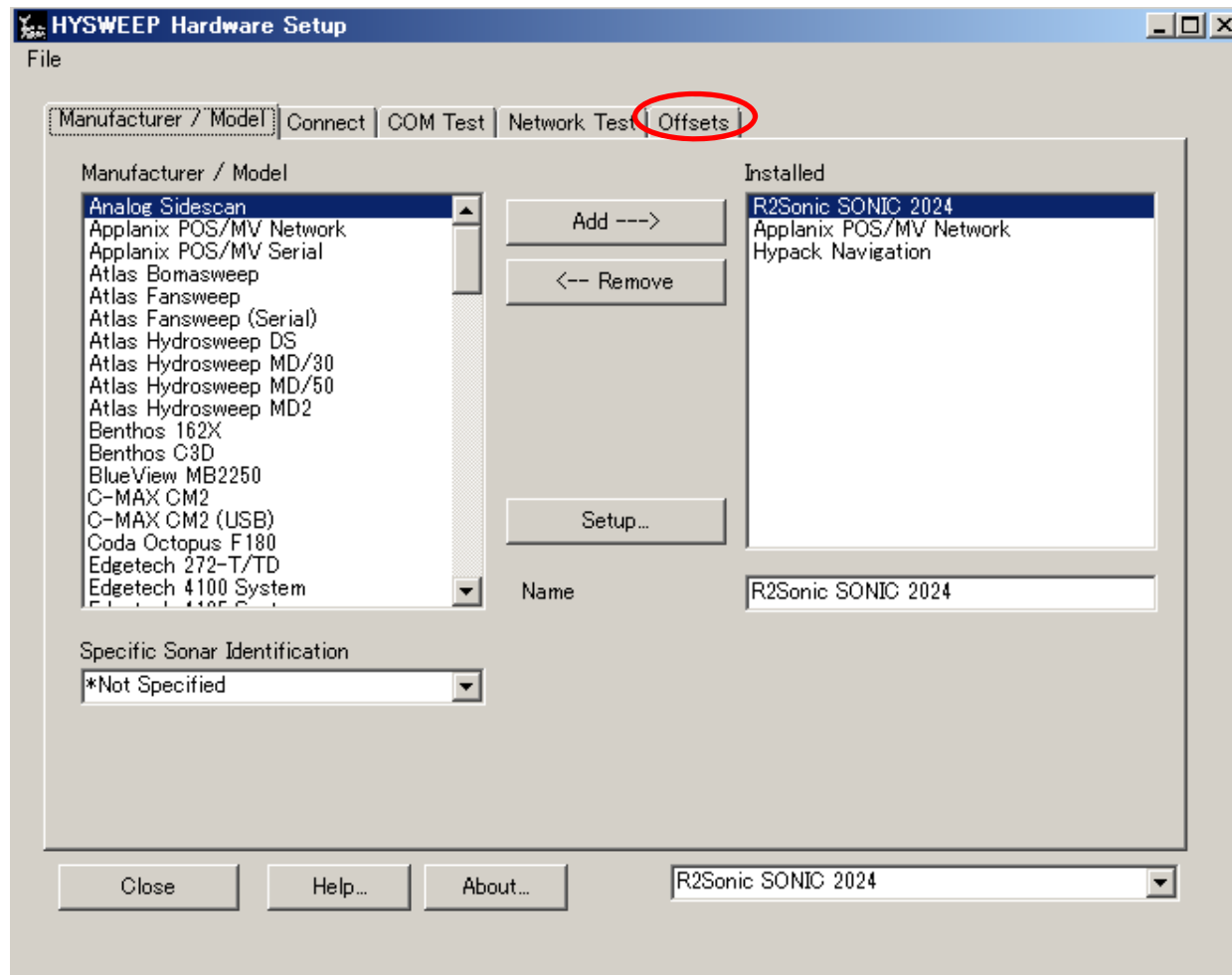
Setting of HYSWEEP Hardware1

HYSWEEP→HYSWEEP Hardware



Setting of HYSWEEP Hardware 2

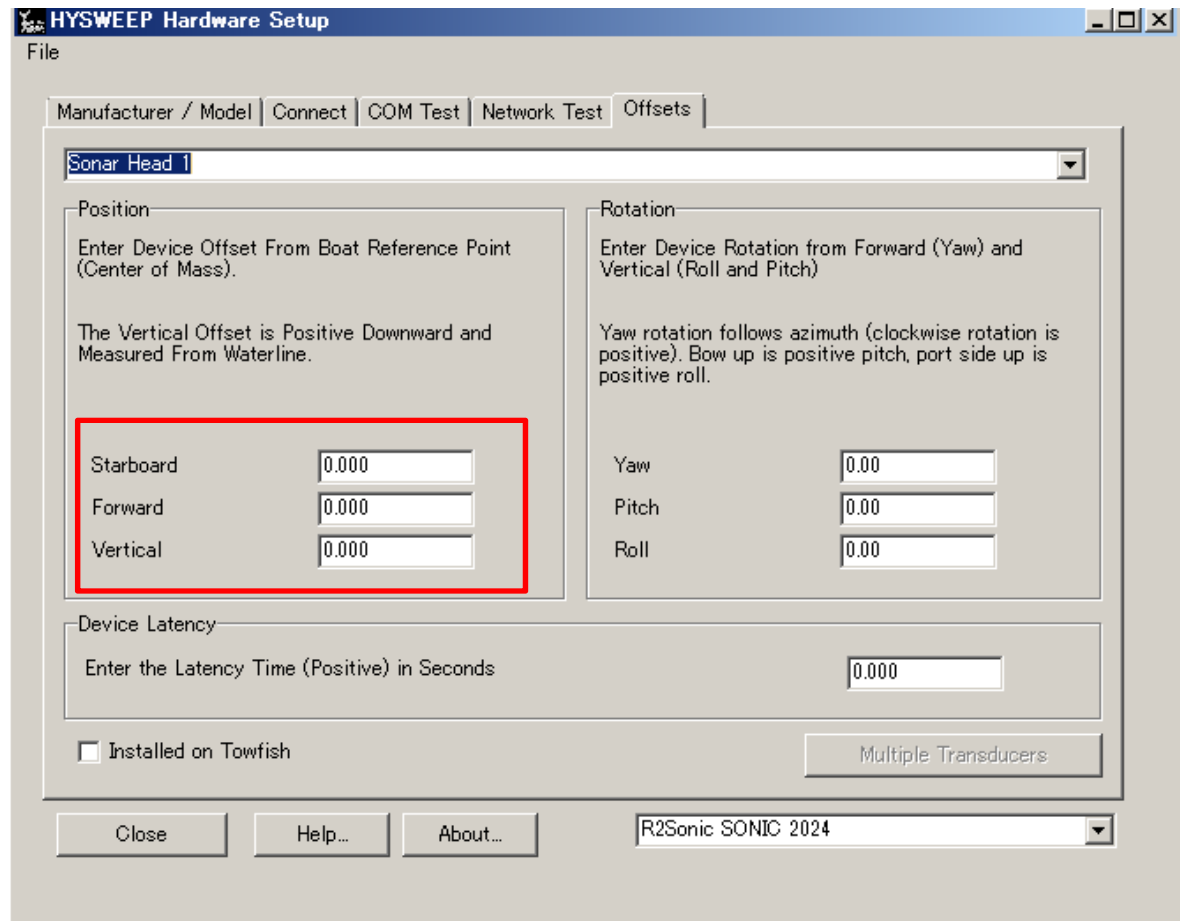
R2Sonic SONIC 2024



Choose "Offsets"

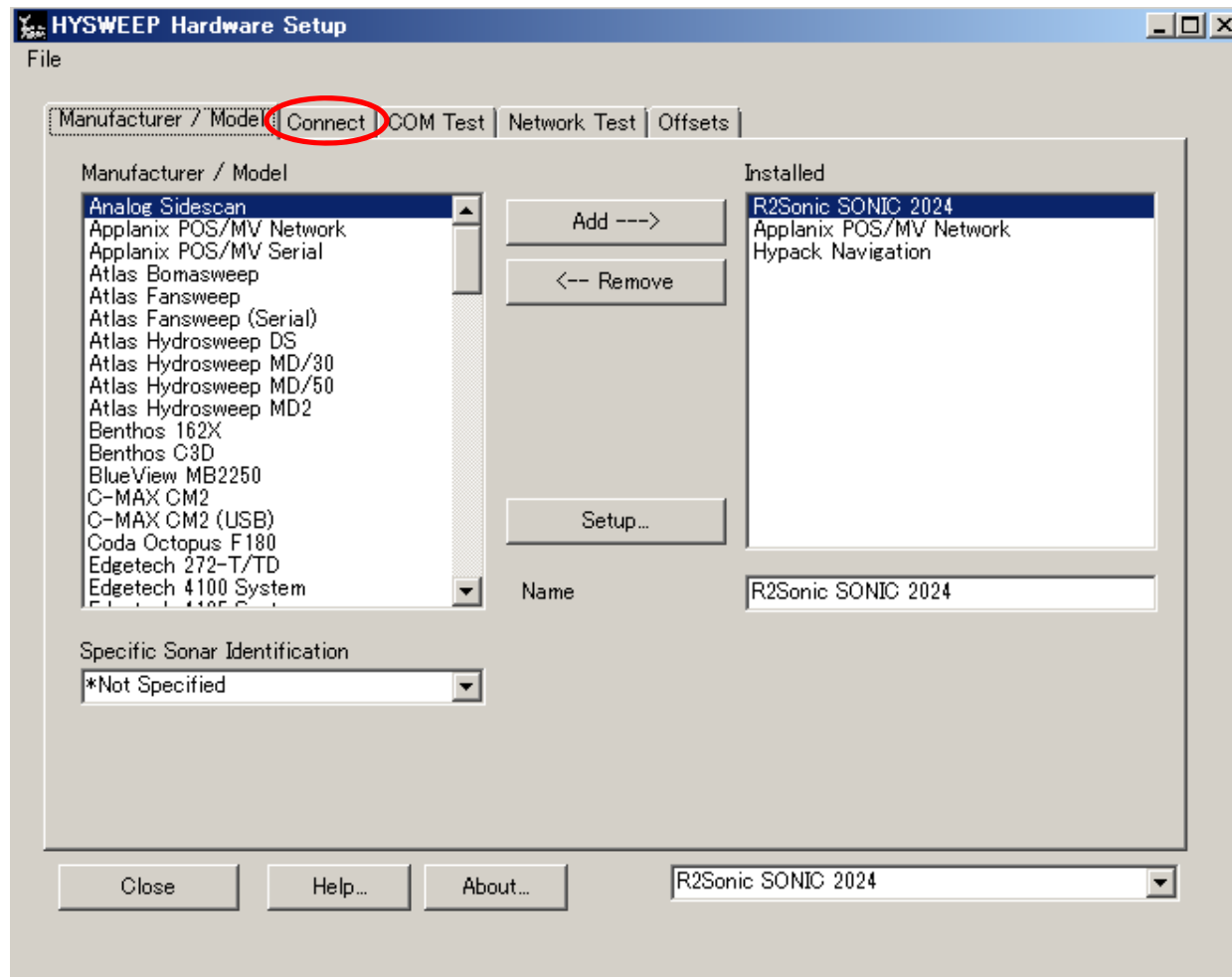
Setting of HYSWEEP Hardware 3 R2Sonic SONIC 2024

	Sonar head 1	
Starboard	-	m
Forward	-	m
Vertical		m



Input about Offsets of R2Sonic SONIC 2024 (Starboard/Forward/Vertical)

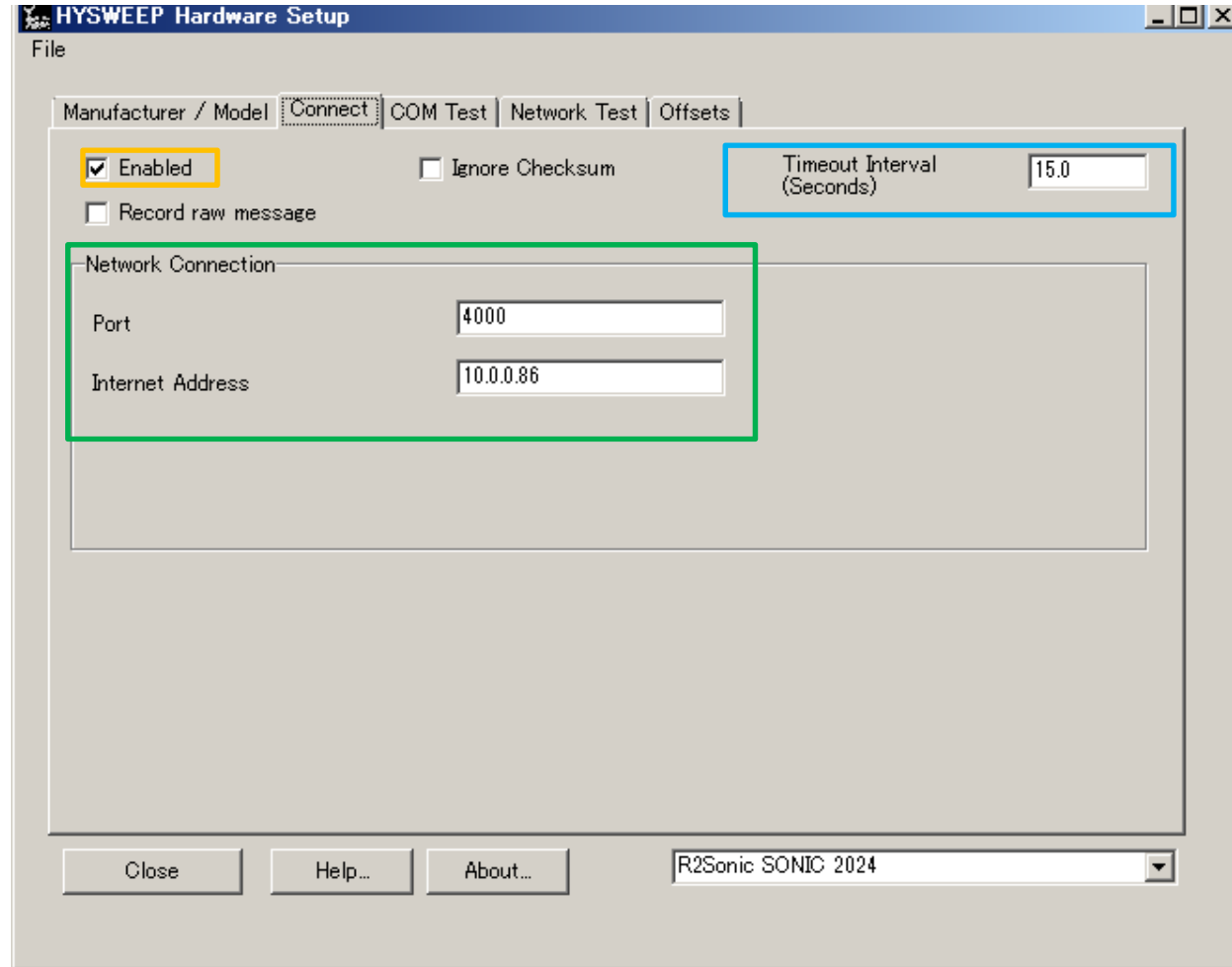
Setting of HYSWEEP Hardware 4 R2Sonic SONIC 2024



Choose "Connect"

Setting of HYSWEEP Hardware 5 R2Sonic SONIC 2024

Please check
"Enabled"

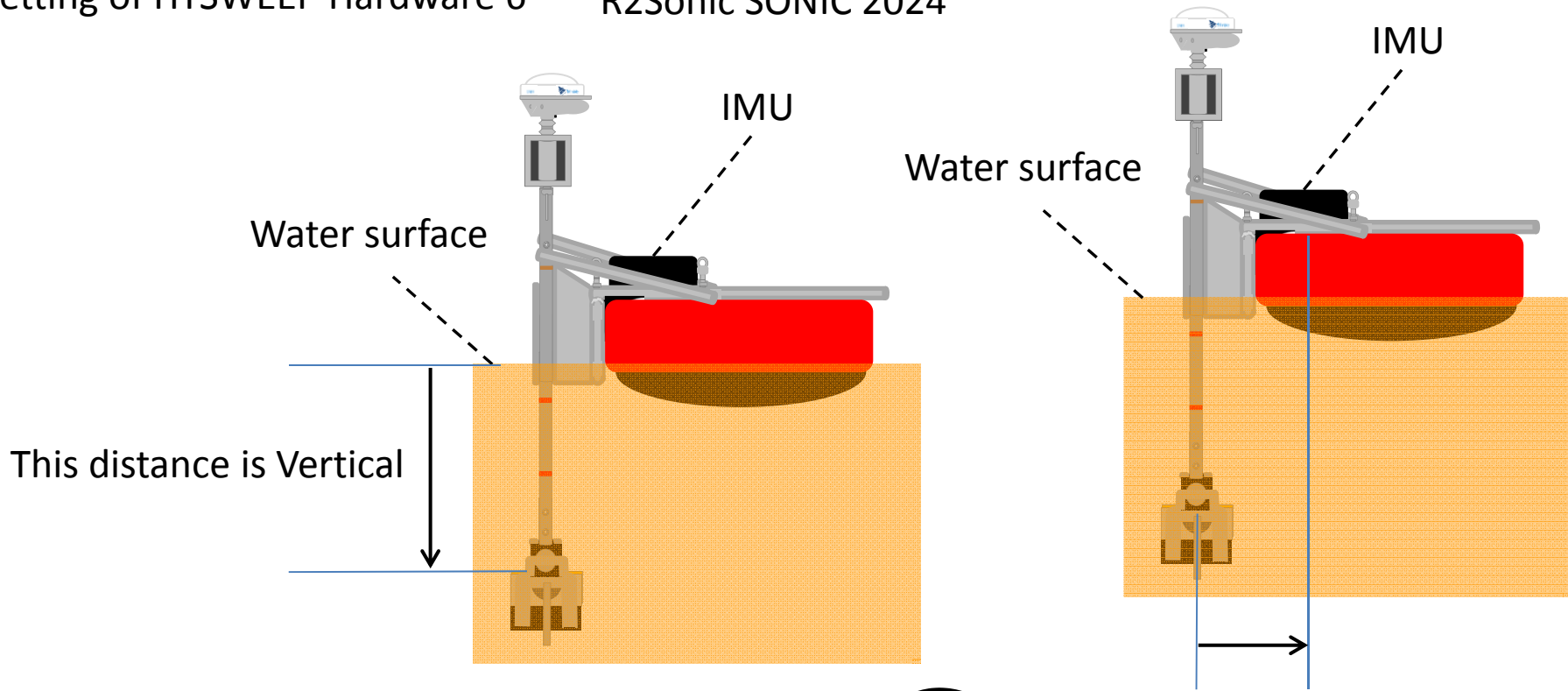


Please check about Port and Internet address

Input to "Timeout Interval" 15.0 seconds.
Of course you can change value

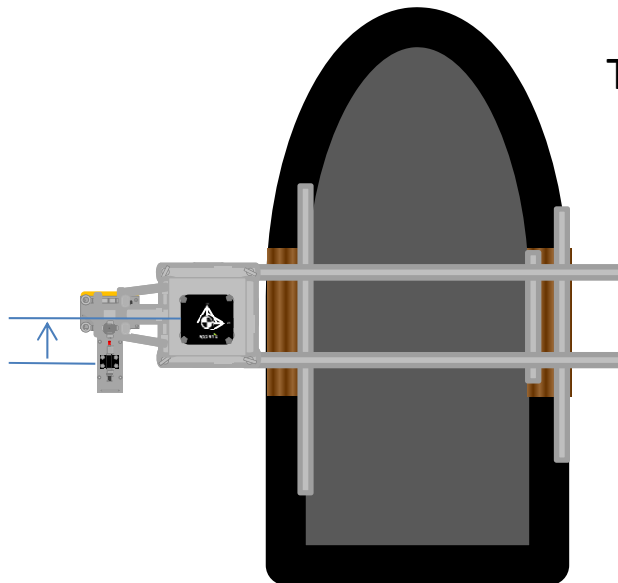
Setting of HYSWEEP Hardware 6

R2Sonic SONIC 2024

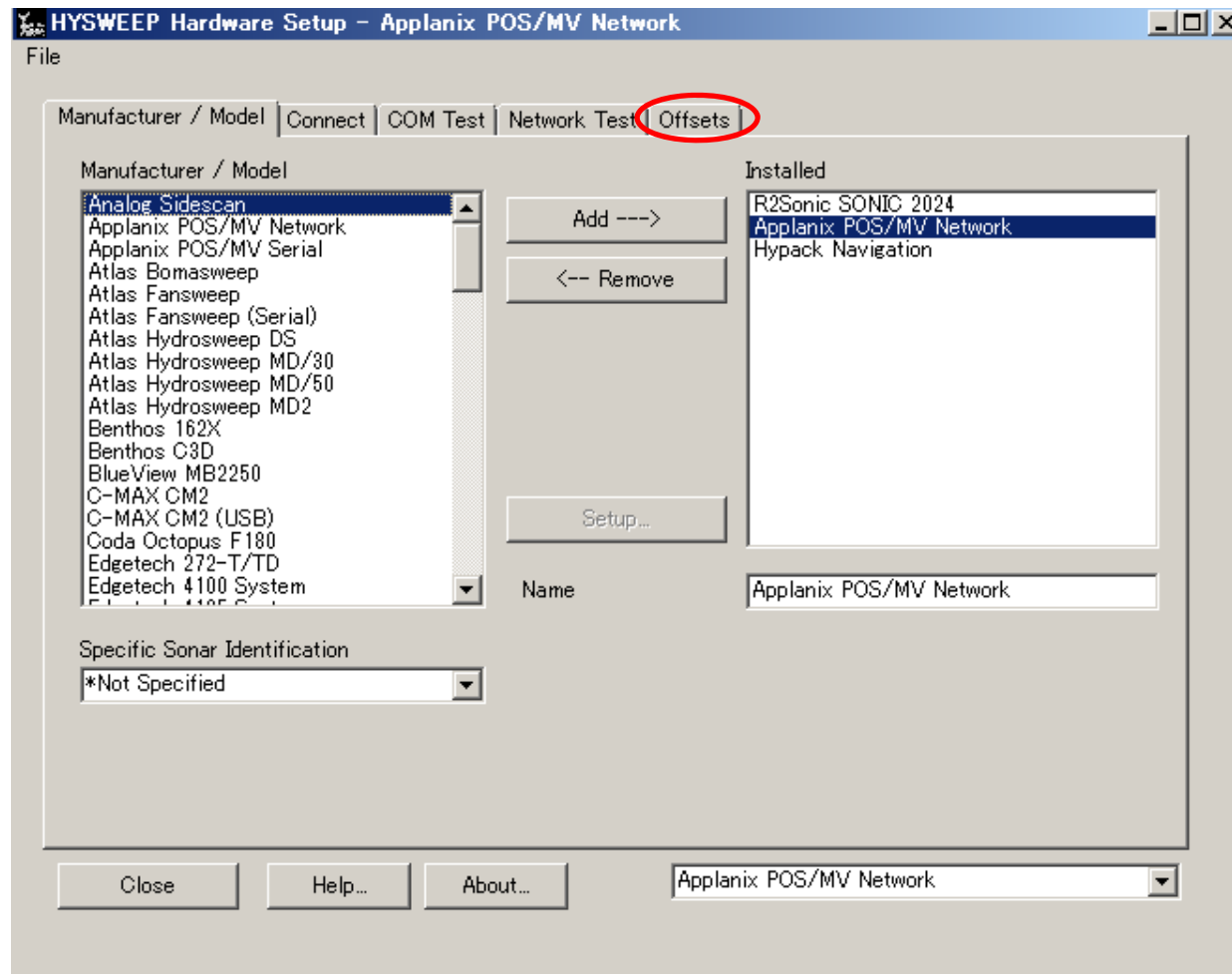


Starboard: **Have to measure**
Forward: **Have to measure**
Vertical: **Have to measure**

This distance is Foward



Setting of HYSWEEP Hardware 7 Applanix POS/MV Network



Choose "Offsets"

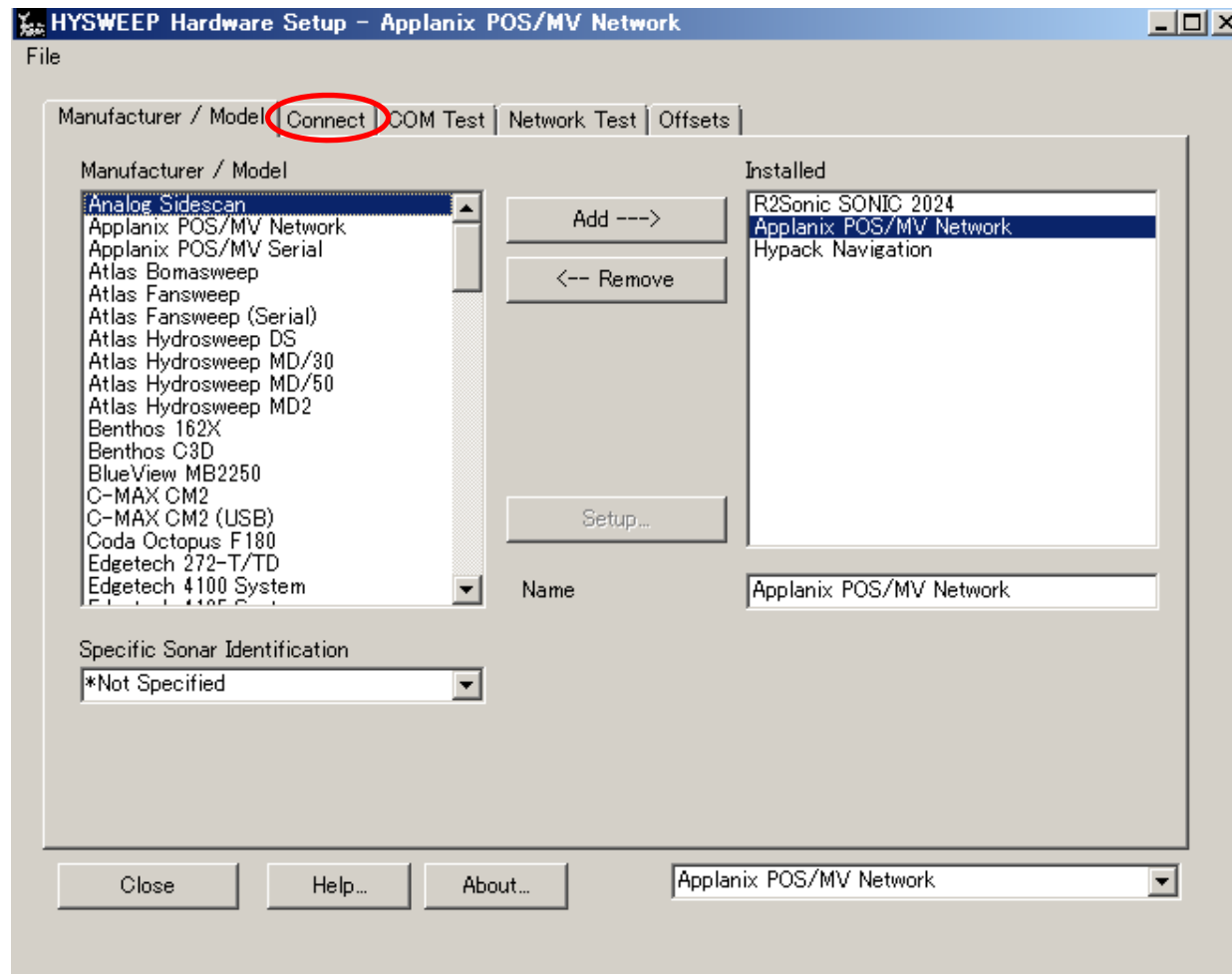
Setting of HYSWEEP Hardware 8 Applanix POS/MV Network

MRU Offsets	
Starboard	0m
Forward	0m
Vertical	- m

The screenshot shows the 'MRU Offsets' configuration window. The 'Position' section contains three input fields: Starboard (0.000), Forward (0.000), and Vertical (0.000). The 'Rotation' section contains three input fields: Yaw (0.00), Pitch (0.00), and Roll (0.00). The 'Device Latency' section has an input field for latency time (0.000). A checkbox for 'Installed on Towfish' is present and unchecked. A 'Multiple Transducers' button is located at the bottom right of the main configuration area. The window title is 'HYSWEEP Hardware Setup - Applanix POS/MV Network'.

Input about Offsets of Applanix POS/MV Network (Starboard/Forward/Vertical)

Setting of HYSWEEP Hardware 9 Applanix POS/MV Network



Choose "Connect"

Setting of HYSWEEP Hardware 10 Applanix POS/MV Network

Please check
"Enabled"

HYSWEEP Hardware Setup - Applanix POS/MV Network

File

Manufacturer / Model Connect COM Test Network Test Offsets

Enabled Ignore Checksum

Record raw message

Timeout Interval (Seconds) 15.0

Network Connection

Port 5602

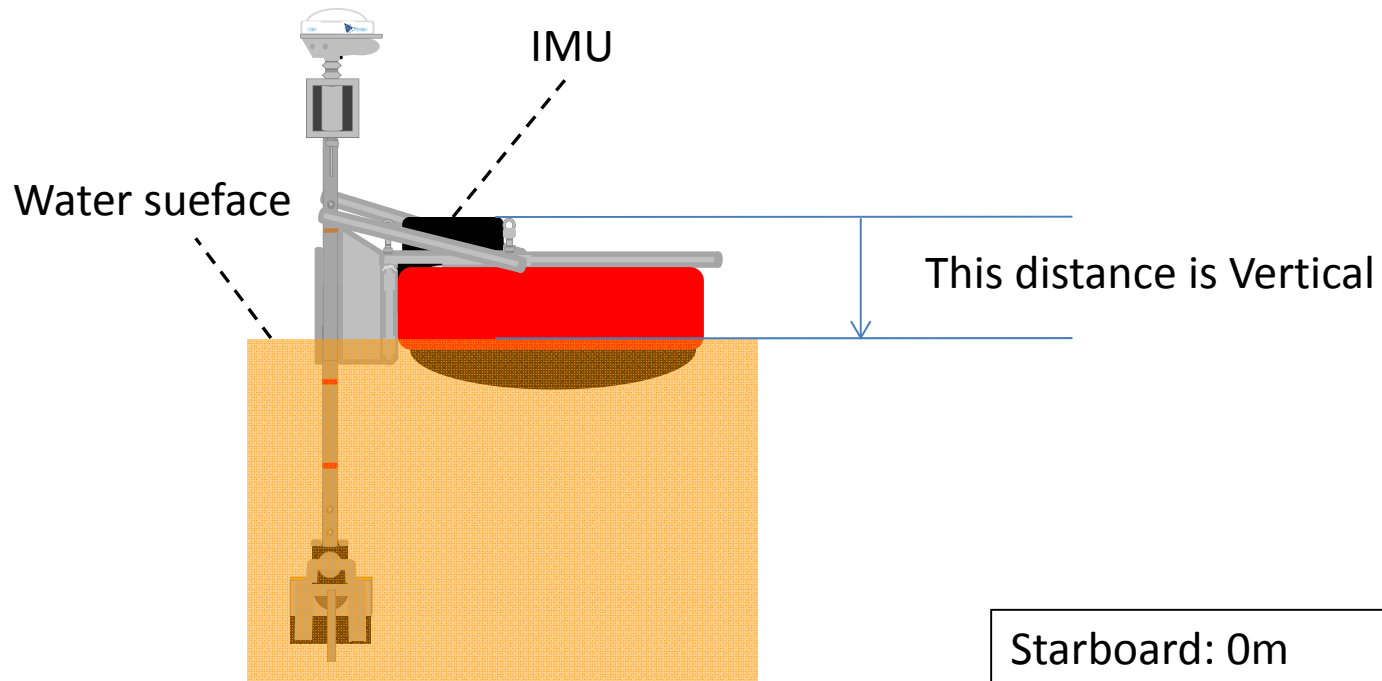
Internet Address 192.168.53.100

Close Help... About... Applanix POS/MV Network

Please check about Port and Internet address
Internet address is same with POS/MV's IP address

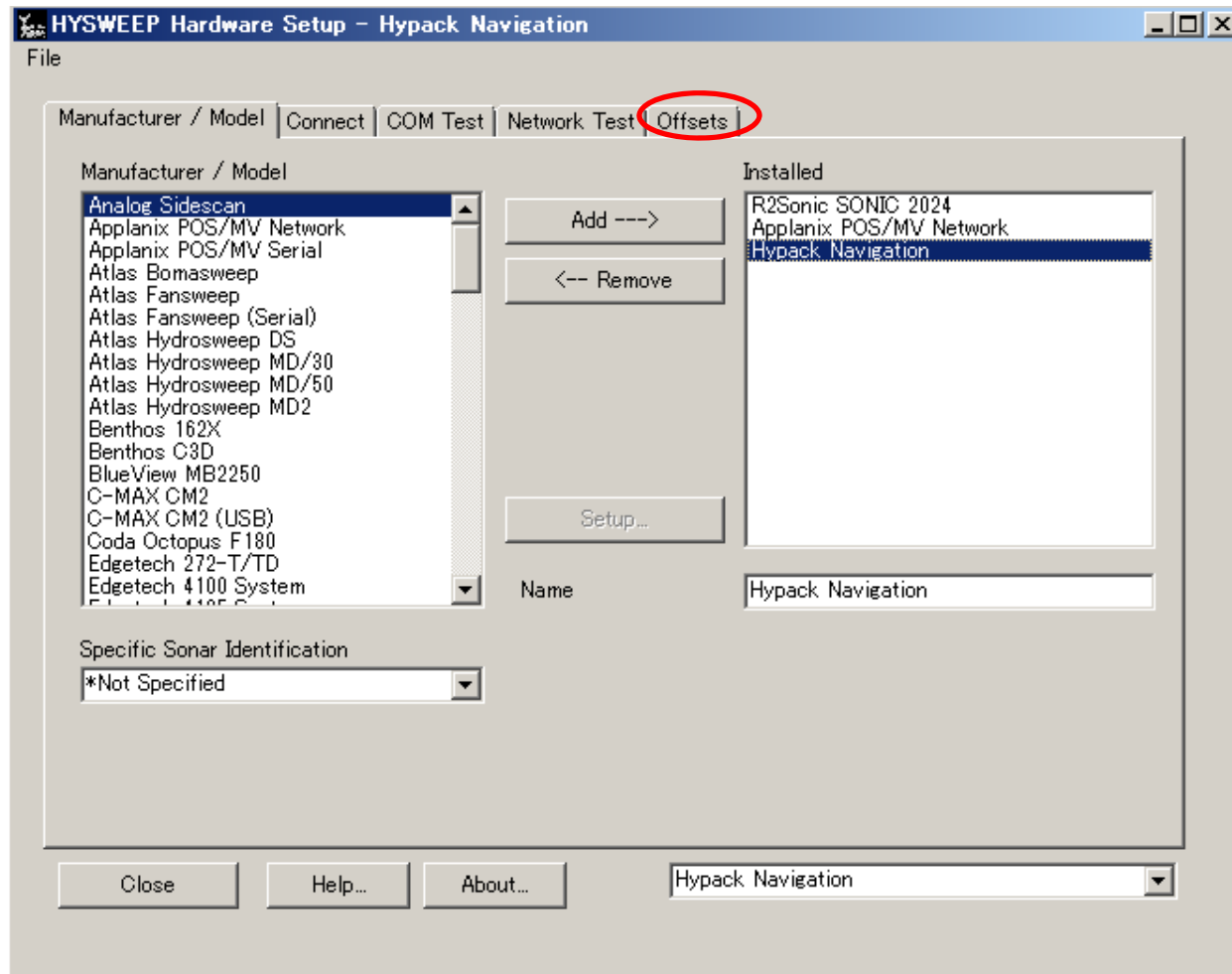
Input to "Timeout Interval" 15.0 seconds.
Of course you can change value

Setting of HYSWEEP Hardware 11 Applanix POS/MV Network



Starboard: 0m
Forward: 0m
Vertical: **Have to measure**

Setting of HYPACK Navigation 1



Choose "Offsets"

Setting of HYPACK Navigation 2

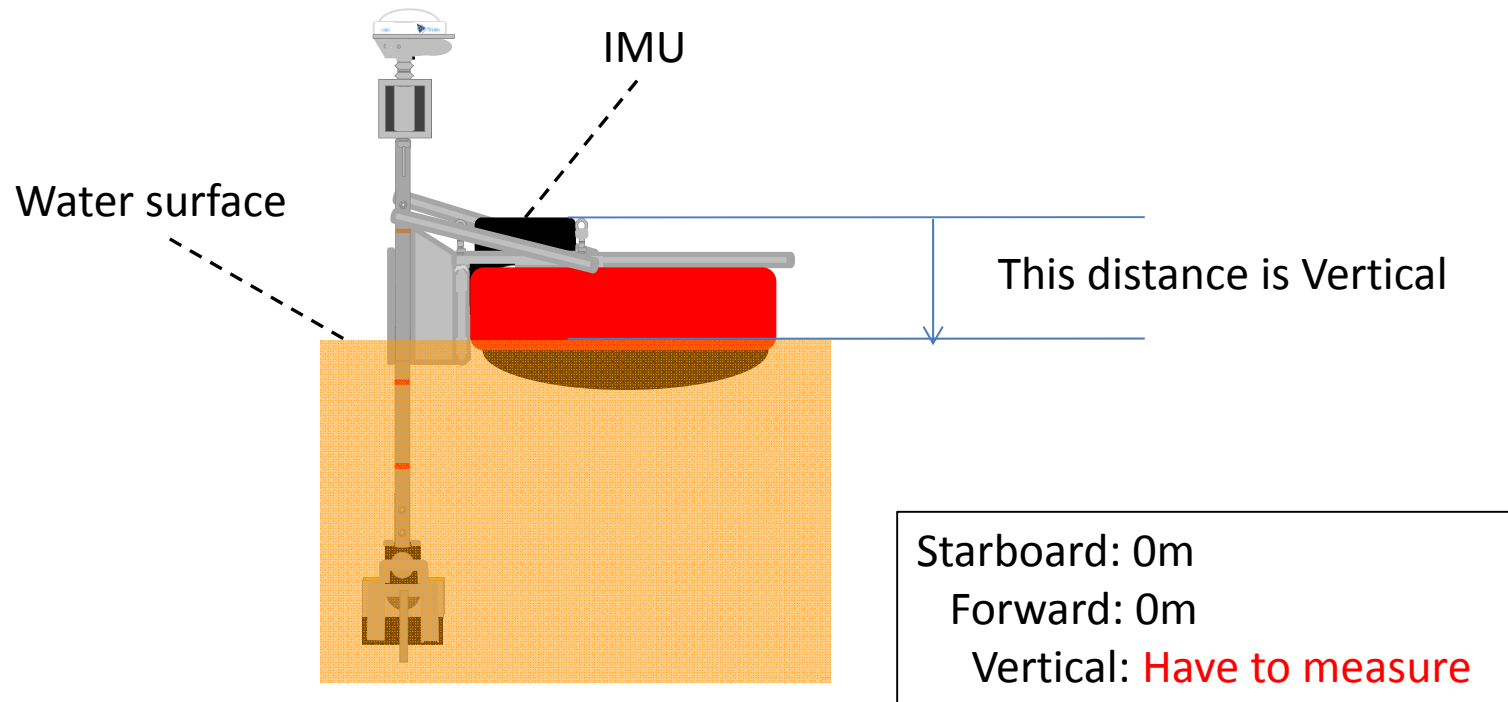
	Position Antenna Offsets
Starboard	0m
Forward	0m
Vertical	- m

The screenshot shows the 'HYSWEEP Hardware Setup - Hypack Navigation' window. The 'Position Antenna Offsets' section is highlighted with a red box. It contains three input fields: Starboard (0.000), Forward (0.000), and Vertical (0.000). The 'Rotation' section contains three input fields: Yaw (0.00), Pitch (0.00), and Roll (0.00). The 'Device Latency' section contains one input field: Enter the Latency Time (Positive) in Seconds (0.000). The 'Multiple Transducers' button is also visible.

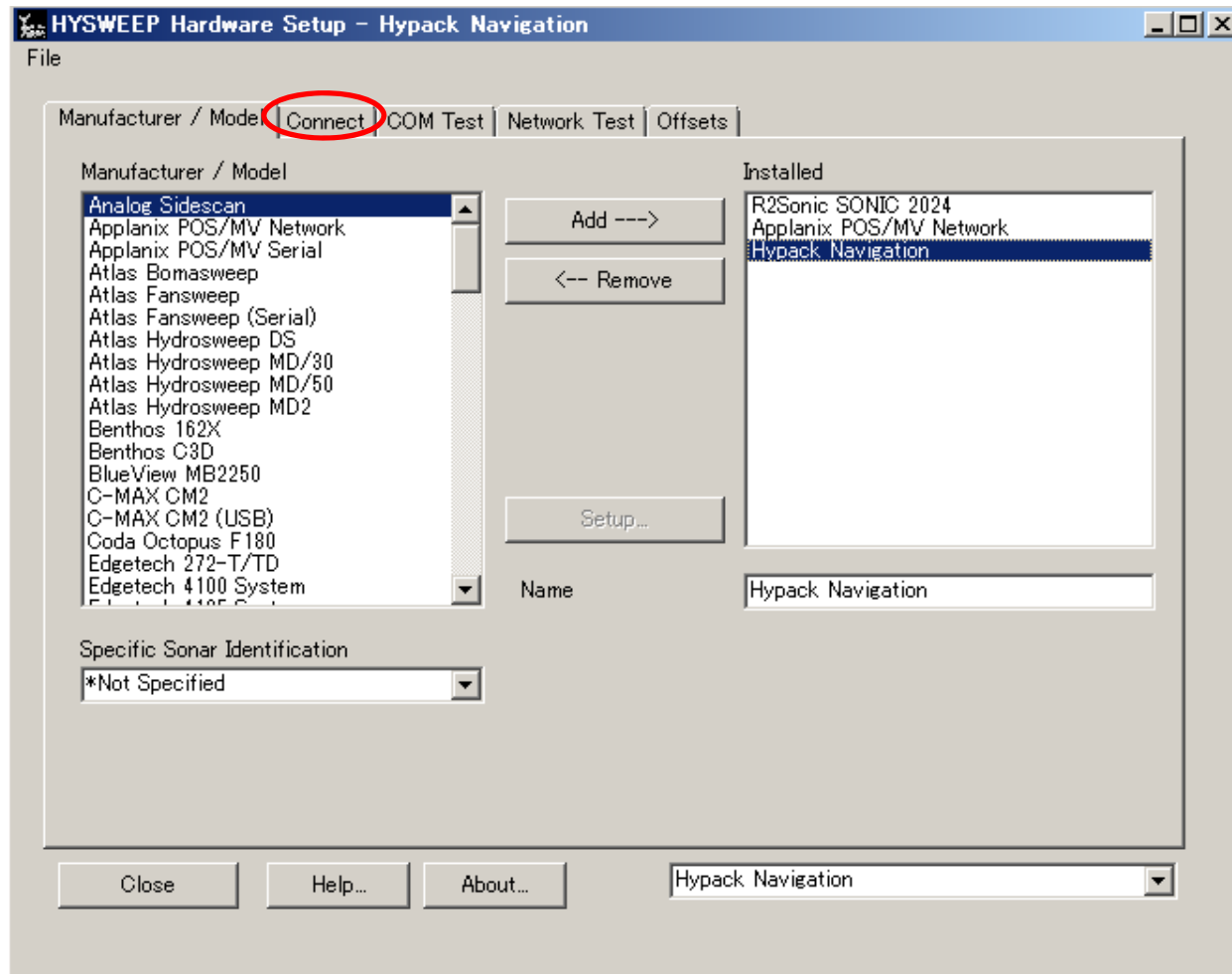
Input about Offsets of HYPACK Navigation (Starboard/Forward/Vertical)

Setting of HYPACK Navigation 3

About Offsets of GPS, we need only Vertical value
Because base position is IMU

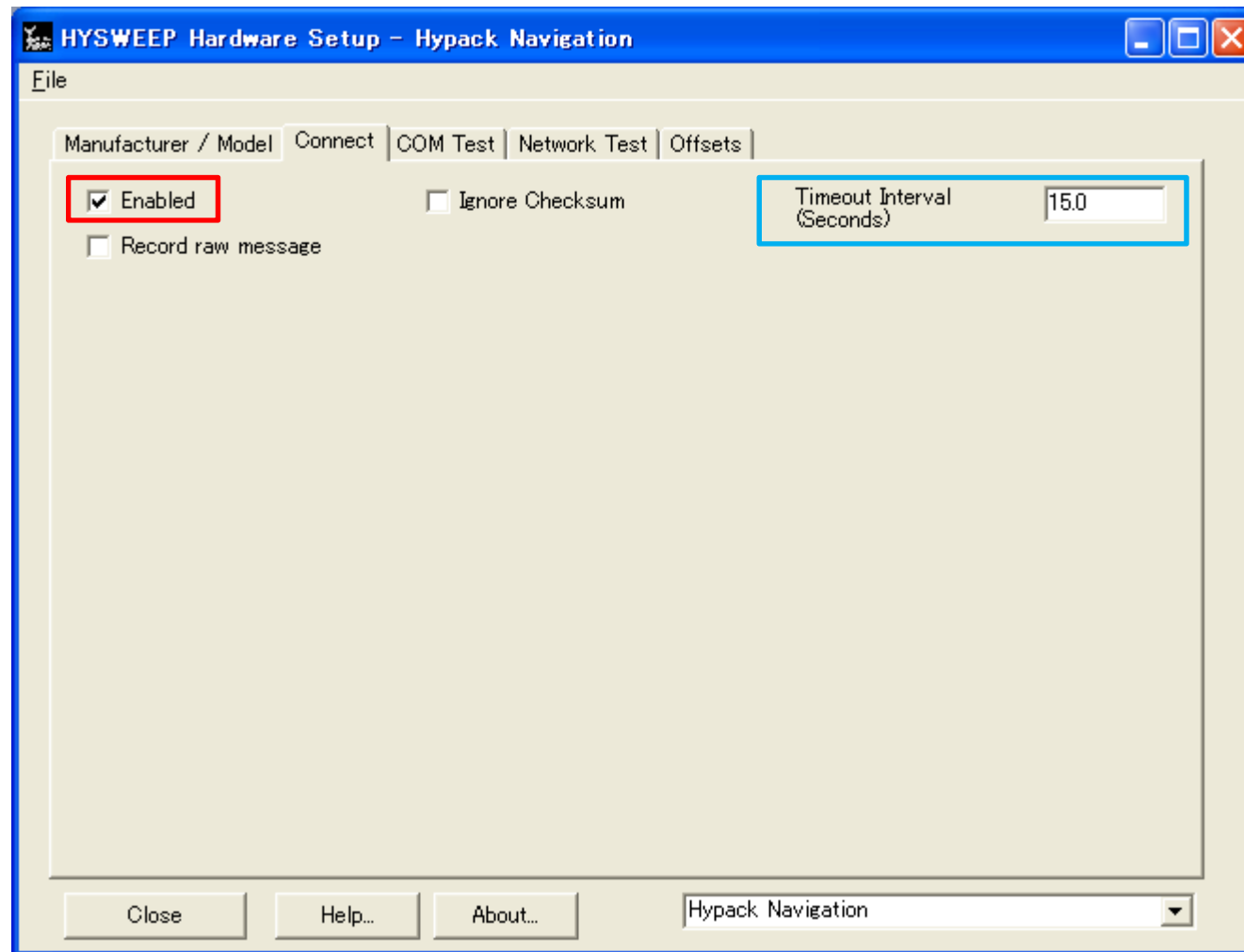


Setting of HYPACK Navigation 4



Choose "Connect"

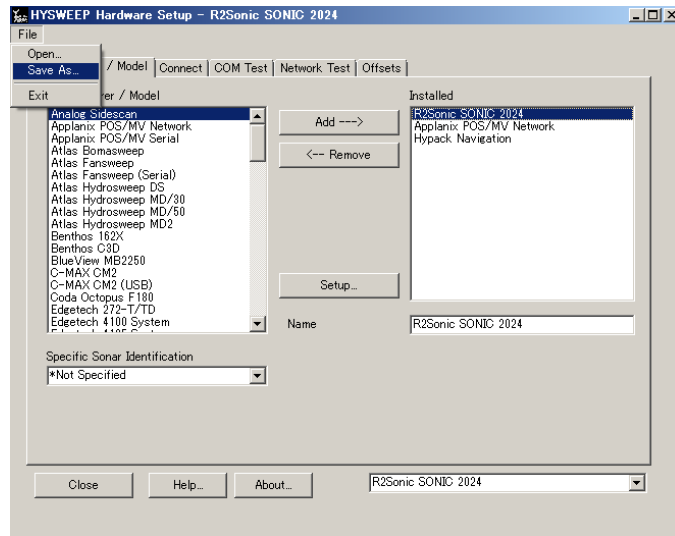
Setting of HYPACK Navigation 5



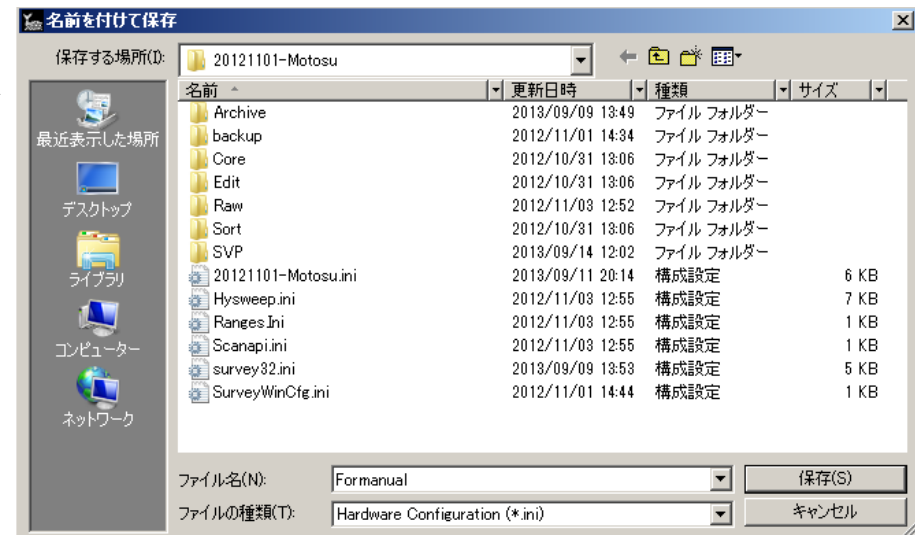
Input check mark to “Enabled”

Input to “Timeout Interval” 15.0 seconds.
Of course you can change value

Setting of HYPACK Navigation 6



Save as



Setting of POS MV 1



Choose MV-POSView 6.13

If equipments are connected, you can see green lump about Attitude/Heading/Position/Velocity

The screenshot shows the MV-POSView software interface with the following data:

Status	
POS Mode	Nav: Aligned
IMU Status	OK
Nav Status	CA
GAMS	Ready Offline
Disk Status	Idle
Disk Usage	0%

Accuracy	
<input checked="" type="checkbox"/>	Attitude
<input checked="" type="checkbox"/>	Heading
<input checked="" type="checkbox"/>	Position
<input checked="" type="checkbox"/>	Velocity
<input type="checkbox"/>	Heave

Attitude	
	Accuracy (deg)
Roll (deg)	-0.157 0.018
Pitch (deg)	-0.557 0.018
Heading (deg)	354.970 4.318

Speed (knots)	0.000	Track (deg)	0.000
---------------	-------	-------------	-------

Position	
	Accuracy (m)
Latitude	43°51'40.3155" N 2.206
Longitude	79°22'46.5131" W 2.033
Altitude (m)	168.619 4.182

Velocity	
	Accuracy (m/s)
North (m/s)	0.000 0.005
East (m/s)	0.000 0.005
Down (m/s)	0.000 0.003

Dynamics		
	Angular Rate (deg/s)	Accel. (m/s ²)
Longitudinal	0.000	0.000
Transverse	0.000	0.000
Vertical	0.000	0.000

Events		
	Time	Count
Event 1		
Event 2		
PPS	17:21:50.000000 GPS	8524

8/11/2011 | 17:21:50 GPS | 2:22:03 POS | Monitor

Setting of POS MV 2

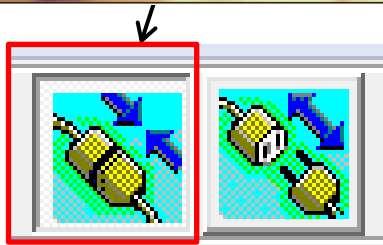
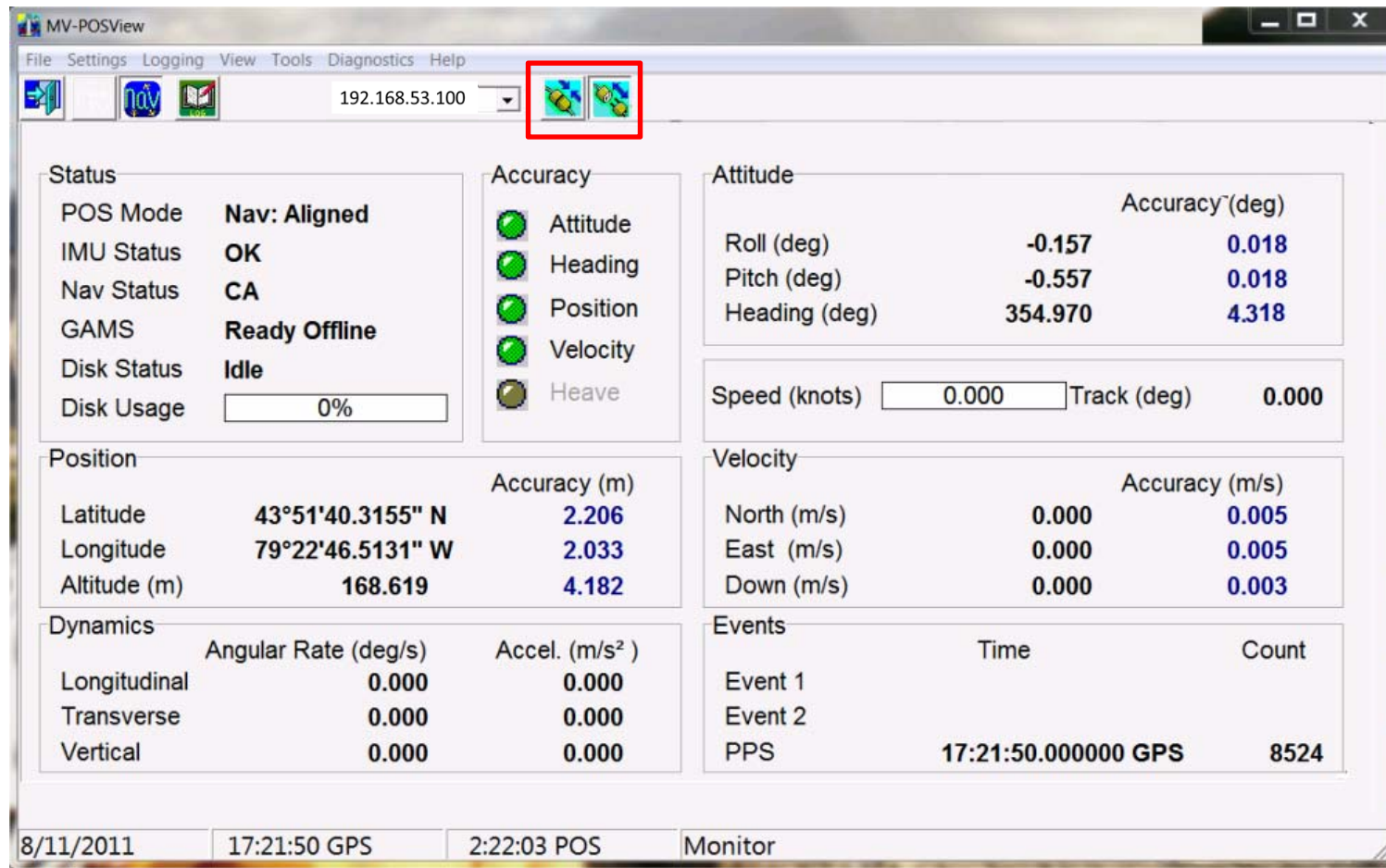


Choose MV-POSView 6.13

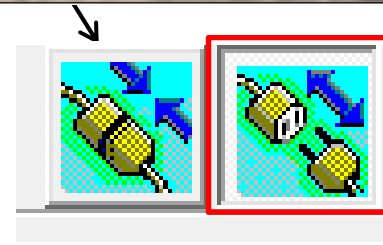
If equipments are not yet connected, you can see red lump about Attitude/Heading/Position/Velocity

The screenshot shows the MV-POSView software interface. The window title is "MV-POSView". The menu bar includes "File", "Settings", "Logging", "View", "Tools", "Diagnostics", and "Help". The toolbar contains icons for "Standby", "Log", and a dropdown menu showing the IP address "192.168.53.100". The main display area is divided into several sections: "Status" (POS Mode, IMU Status, Nav Status, GAMS, Disk Status, Disk Usage: 0%), "Accuracy" (Attitude, Heading, Position, Velocity, Heave), "Attitude" (Roll (deg), Pitch (deg), Heading (deg), Accuracy (deg)), "Position" (Latitude, Longitude, Altitude (m), Accuracy (m)), "Velocity" (North (m/s), East (m/s), Down (m/s), Accuracy (m/s)), "Dynamics" (Longitudinal, Transverse, Vertical, Angular Rate (deg/s), Accel. (m/s²)), and "Events" (Event 1, Event 2, PPS, Time, Count). The "Accuracy" section is highlighted with a red box, and the status indicators for Attitude, Heading, Position, and Velocity are shown as red circles, indicating they are not yet connected. The "Speed (knots)" field shows "0.000" and "Track (deg)" is empty. The "Waiting" status is shown at the bottom right.

Setting of POS MV 3



When change Offsets, choose this



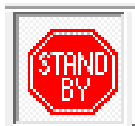
Except change Offsets, choose this

Setting of POS MV 4 Setting of Offsets

The screenshot shows the 'Settings' window of the POS MV 4 software. The window title is 'Settings' and it has a menu bar with 'File', 'Settings', 'Logging', 'View', 'Tools', 'Diagnostics', and 'Help'. The address bar shows the IP address '192.168.53.100'. The interface is divided into several sections:

- Status:** Includes POS Mode, IMU Status, Nav Status, GAMS, Disk Status, and Disk Usage (0%).
- Accuracy:** A vertical list of red circular indicators for Attitude, Heading, Position, Velocity, and Heave.
- Attitude:** Includes Roll (deg), Pitch (deg), and Heading (deg), with an Accuracy (deg) label.
- Speed (knots):** A text input field containing '0.000' and a 'Track (deg)' label.
- Position:** Includes Latitude, Longitude, and Altitude (m), with an Accuracy (m) label.
- Velocity:** Includes North (m/s), East (m/s), and Down (m/s), with an Accuracy (m/s) label.
- Dynamics:** A table with columns for 'Angular Rate (deg/s)' and 'Accel. (m/s²)'. Rows include 'Longitudinal', 'Transverse', and 'Vertical'.
- Events:** A table with columns for 'Time' and 'Count'. Rows include 'Event 1', 'Event 2', and 'PPS'.

At the bottom of the window, there are four fields: 'Date', 'Time1', 'Time2', and 'Waiting'.

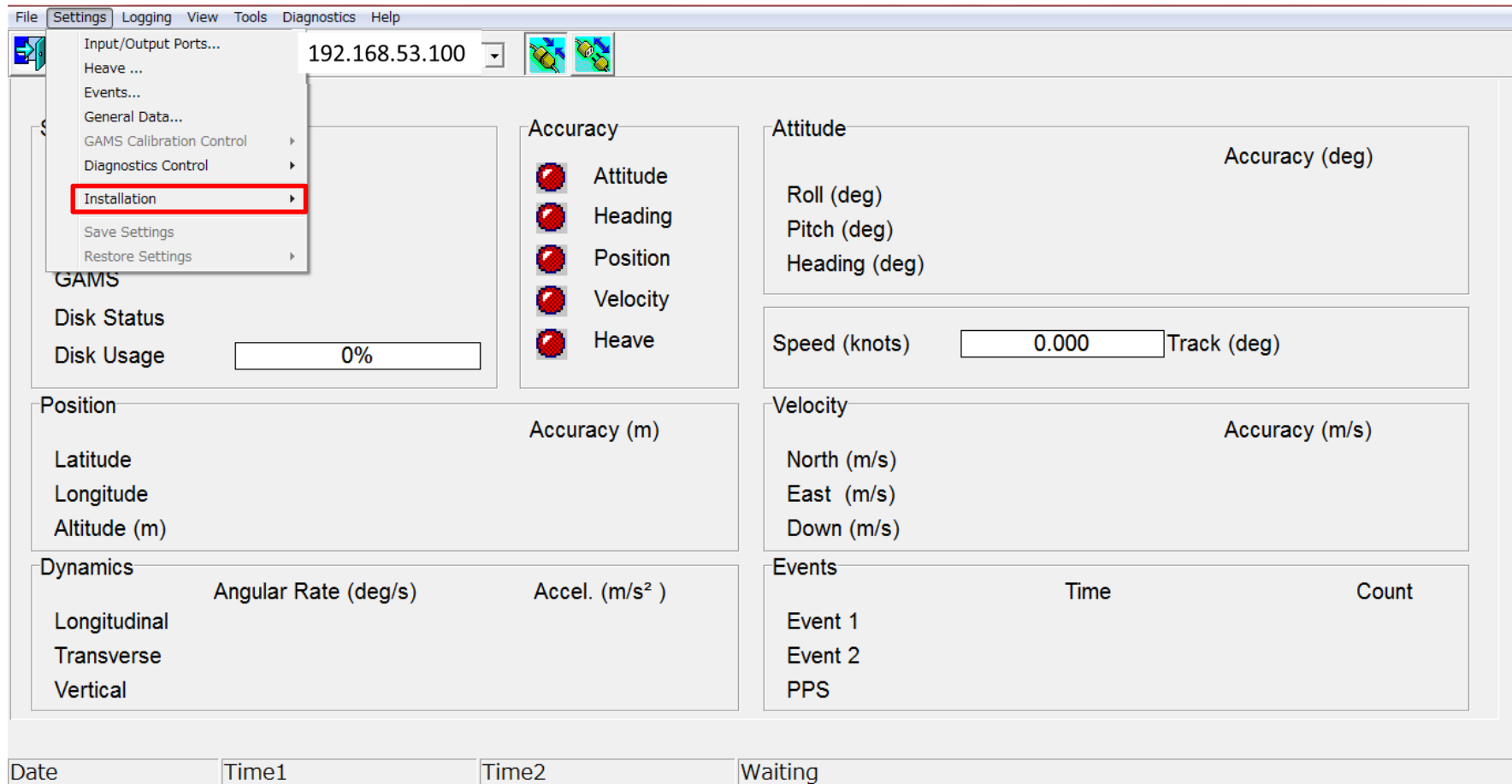


Click "STAND BY"

After ckicked "STAND BY",left click "Setting"

Setting of POS MV 5

Setting of Offsets

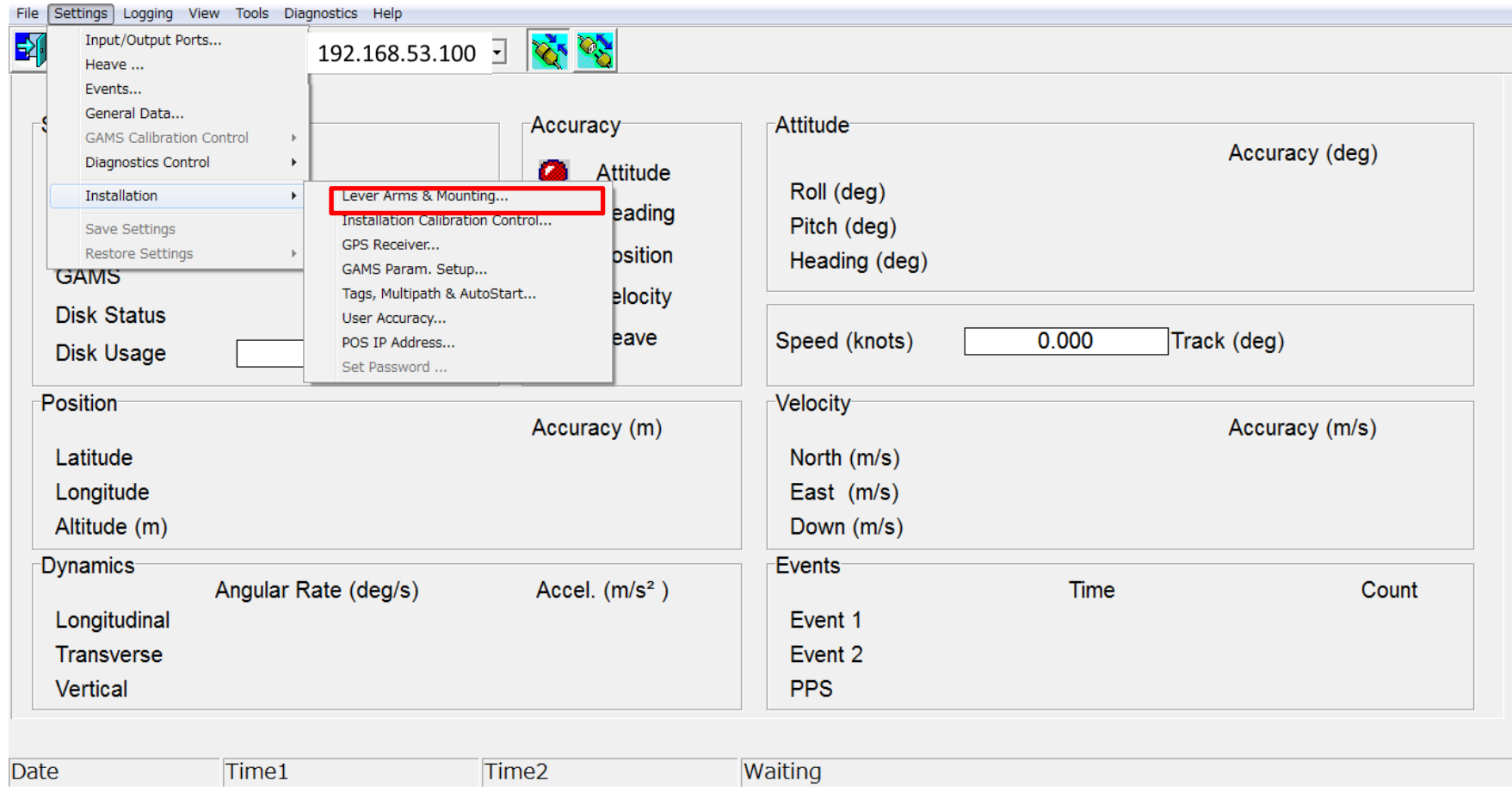


Setting → Installation

Choose "Installation"

Setting of POS MV 6

Setting of Offsets



Setting→Installation→Lever Arms & Mounting

Choose “Lever Arms & Mounting”

Setting of POS MV 7 Setting of Offsets

When choose “Lever Arms & Mounting”, you can see this window

The screenshot shows a software window titled "Lever Arms & Mounting Angles". It has three tabs: "Lever Arms & Mounting Angles" (selected), "Sensor Mounting", and "Tags, AutoStart". The window is divided into several sections for data entry:

- Ref. to IMU Target:** X (m) 0, Y (m) 0, Z (m) 0
- IMU Frame w.r.t. Ref. Frame:** X (deg) 0, Y (deg) 0, Z (deg) 0
- Target to Sensing Centre:** X (m) -0.008, Y (m) -0.031, Z (m) 0.130
- Resulting Lever Arm:** X (m) 0.000, Y (m) 0.000, Z (m) 0.000
- Ref. to Primary GPS Lever Arm (highlighted with a red box):** X (m) 0, Y (m) 0, Z (m) 0
- Ref. to Vessel Lever Arm:** X (m) 0, Y (m) 0, Z (m) 0
- Ref. to Centre of Rotation Lever Arm:** X (m) 0, Y (m) 0, Z (m) 0

Below the input fields, there are "Notes":

1. Ref. = Reference
2. w.r.t. = With Respect To
3. Reference Frame and Vessel Frame are co-aligned

At the bottom, there are buttons for "Ok", "Close", "Apply", and "View".

	Distance from IMU to primary Antenna
X(Forward)	- m
Y(Starboard)	- m
Z(Vertical)	- m

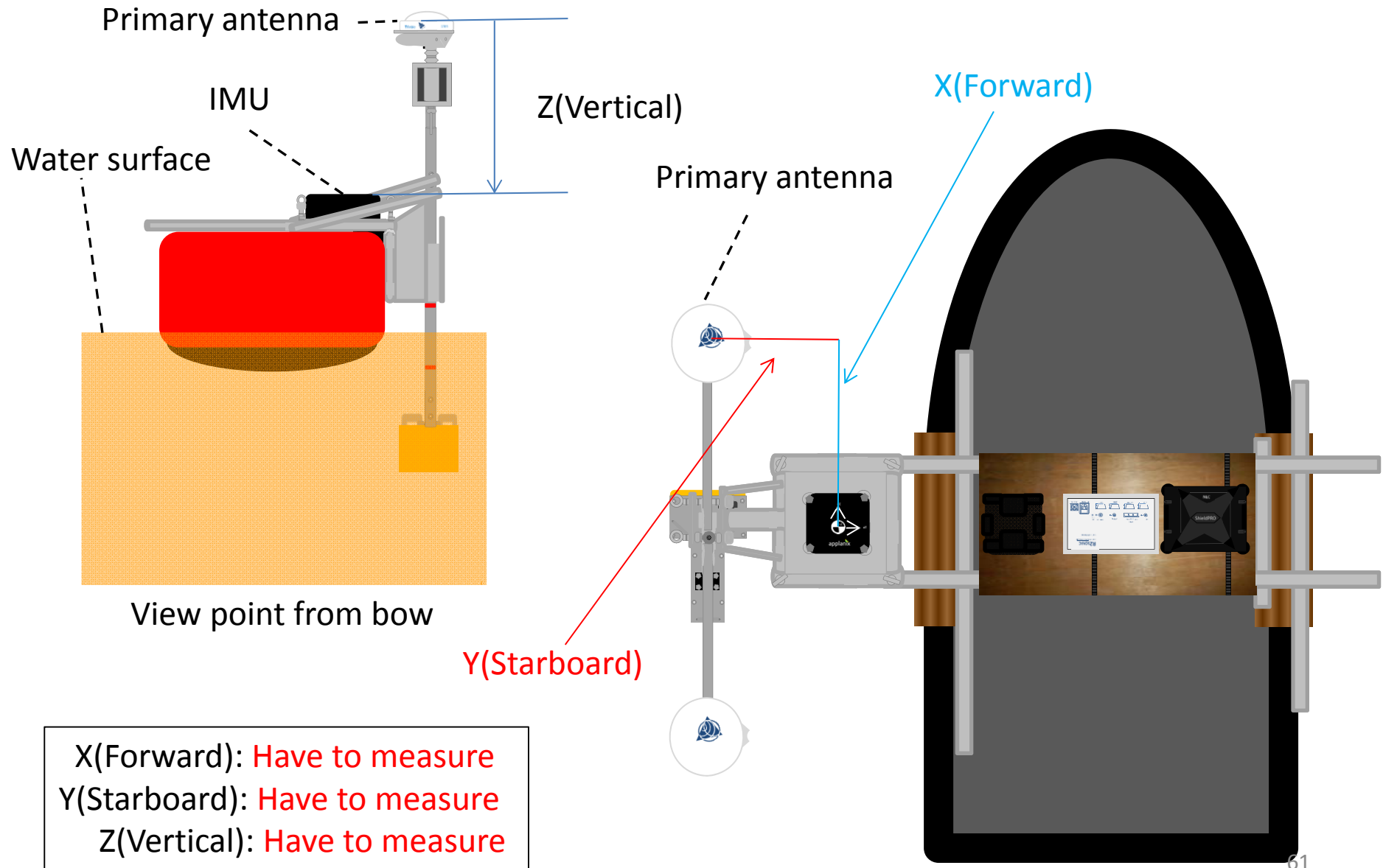
Input value to “Ref. to Primary GPS Lever Arm”

X is Forward, Y is Starboard, Z is Vertical

This value meaning is distance from IMU to Primary antenna

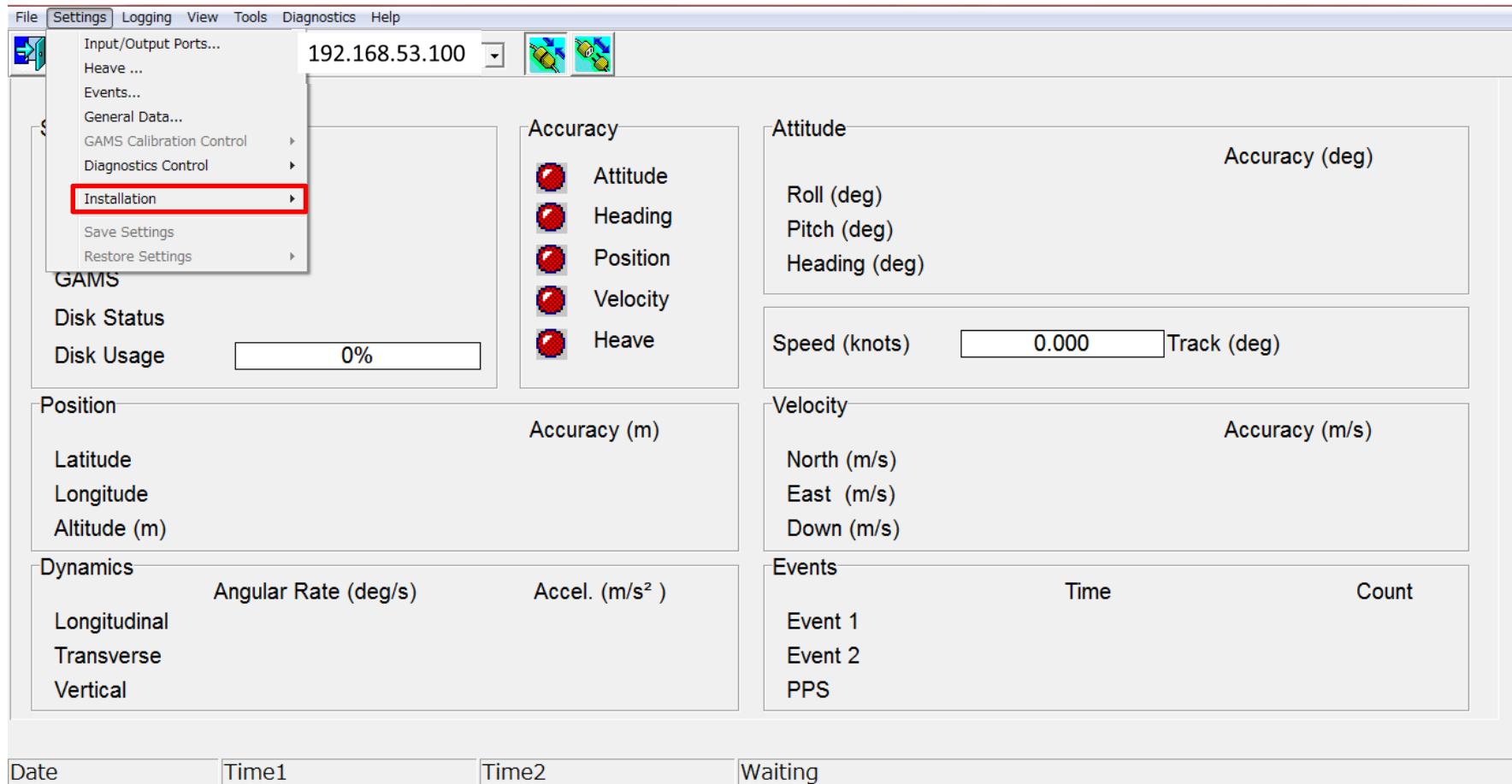
Setting of POS MV 8

Setting of Offsets



Setting of POS MV 9

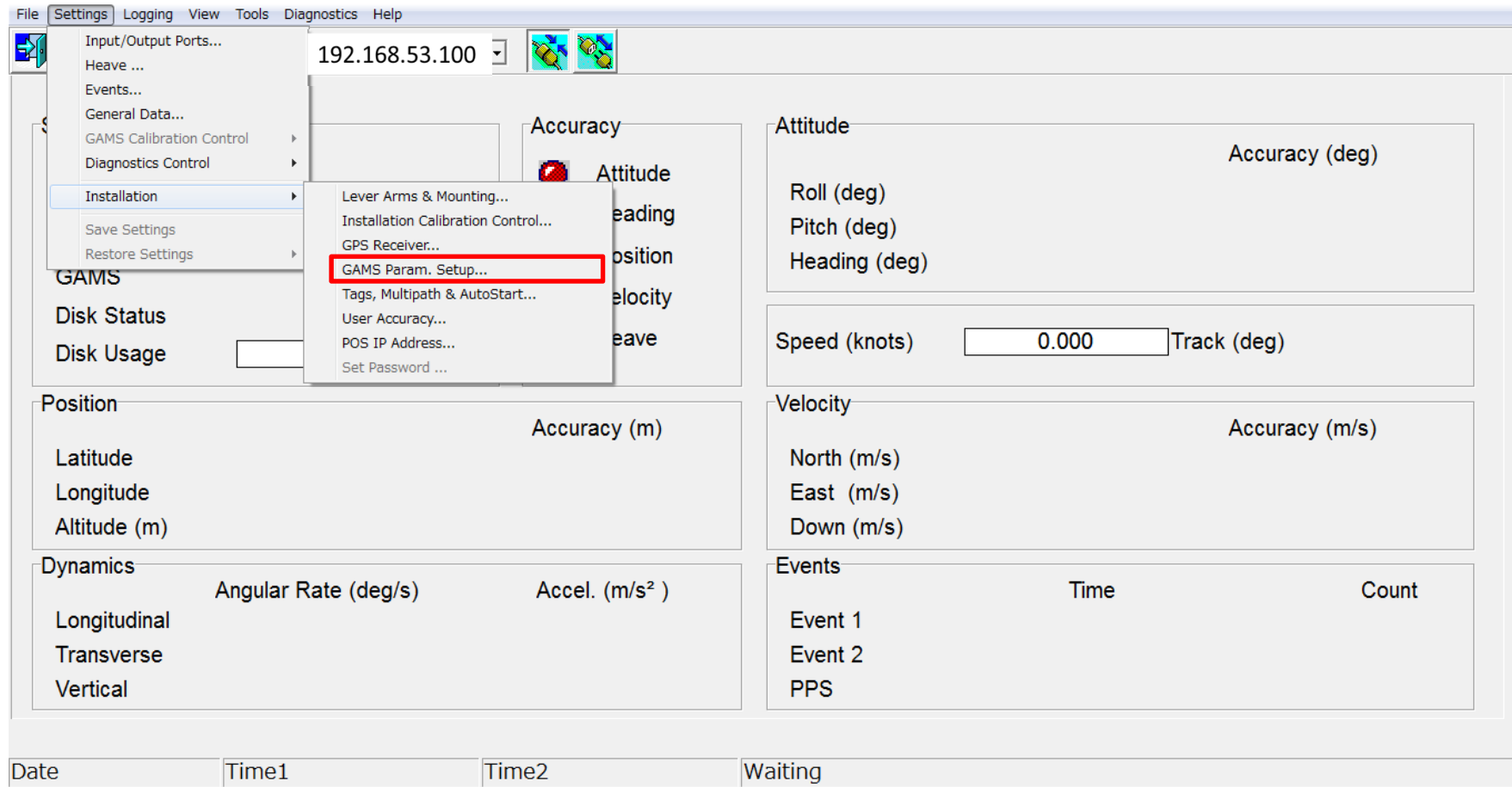
Setting of Offsets



Setting→Installation

Choose Installation

Setting of POS MV 10 Setting of Offsets

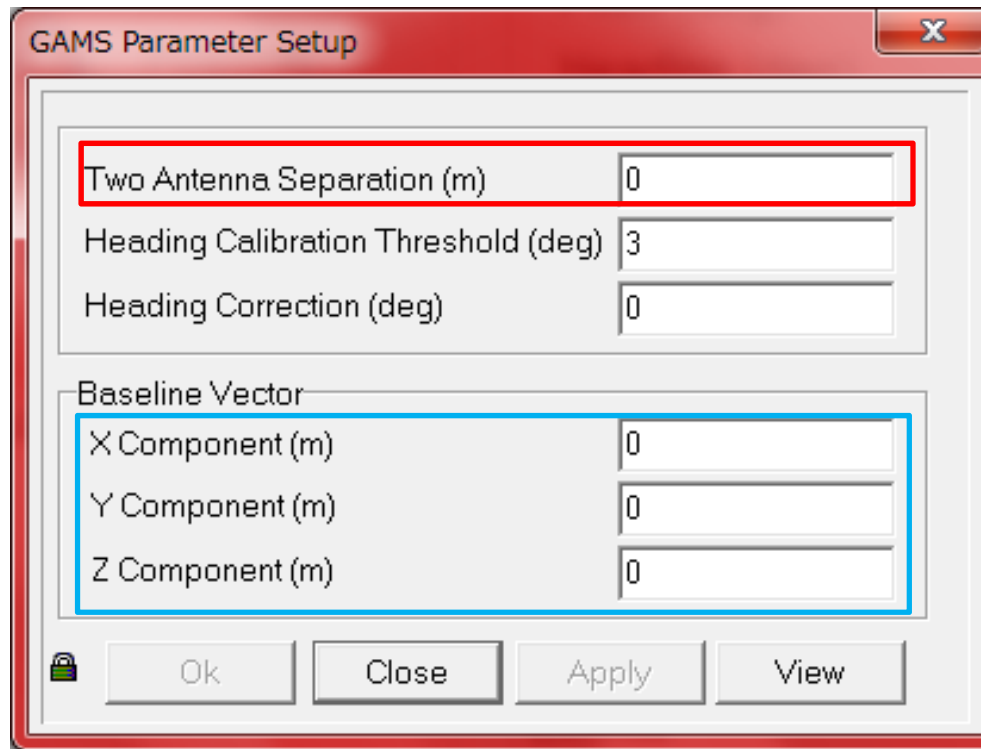


Setting → Installation → GAMS Params Setup

Choose "GAMS Params Setup"

Setting of POS MV 11 Setting of Offsets

When choose “GAMS Params Setup”, you can see this window



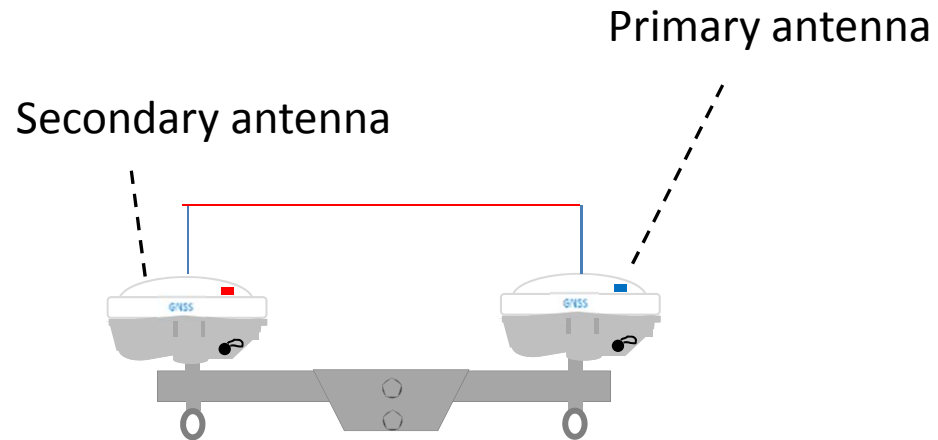
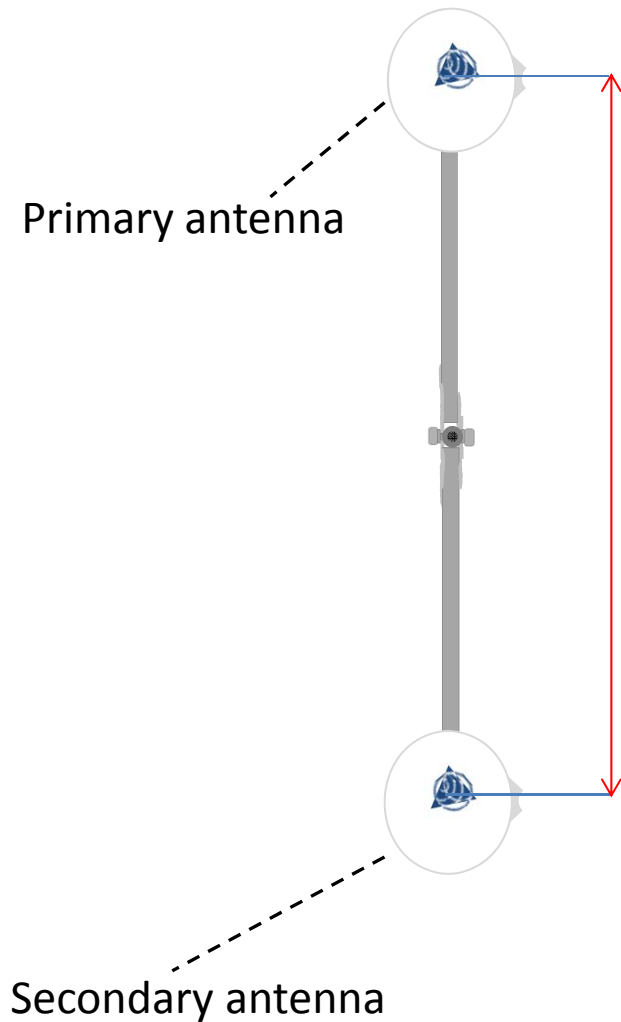
Input value to “Two Antenna Separation

Input value to “Baseline Vector”

X is Forward, Y is Starboard, Z is Vertical

Setting of POS MV 12

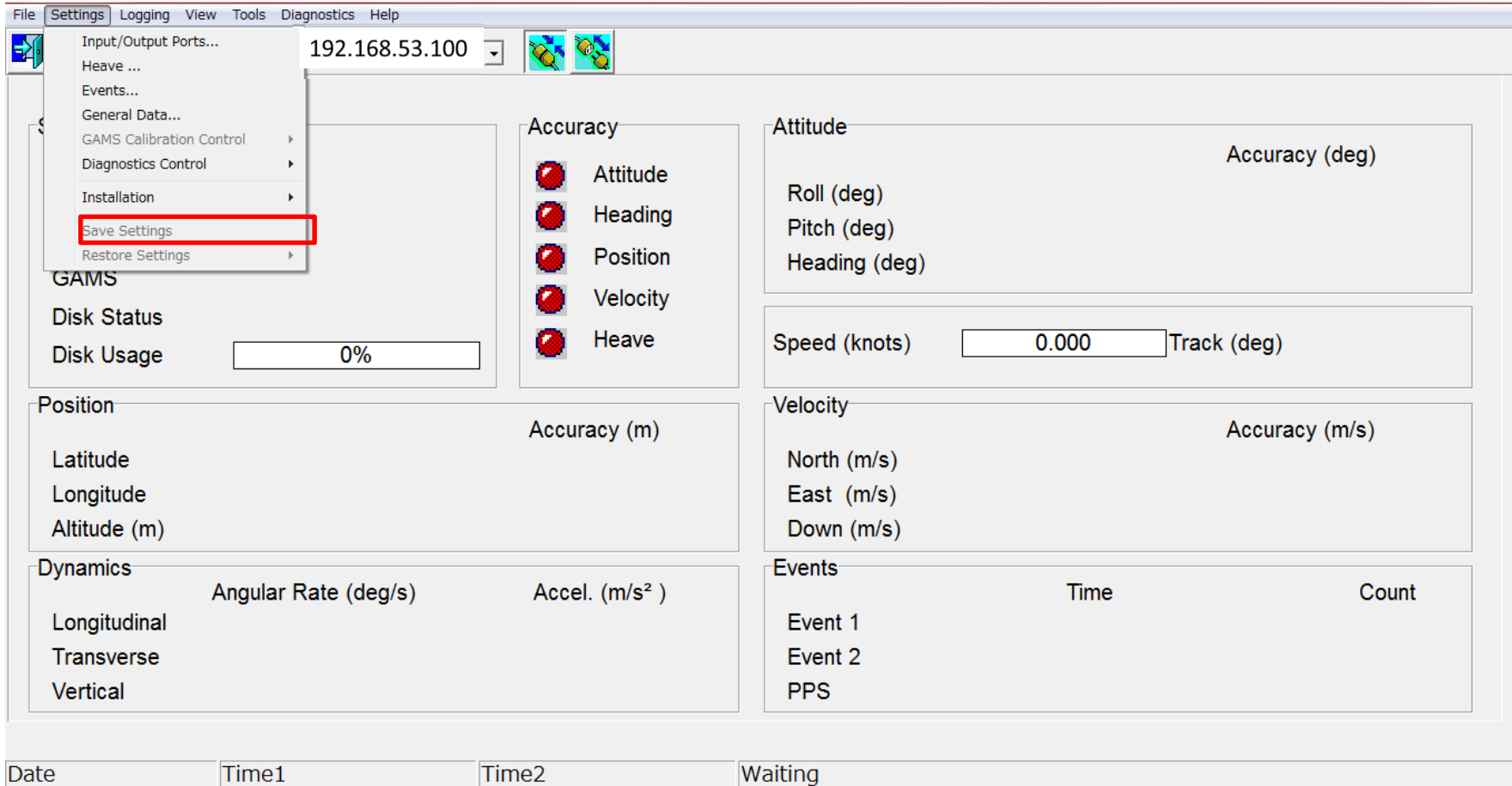
Setting of Offsets



Two antenna Separation: **Have to measure**
X(Forward): **Have to measure**
Y(Starboard): 0m
Z(Vertical): 0m

When we measure X(Forward), measure from “primary” to “secondary”

Setting of POS MV 13 Setting of Offsets



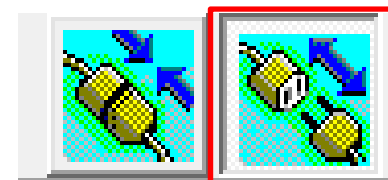
Setting → Save setting

Save as

After "Save as" first click "NAV"



And second click this

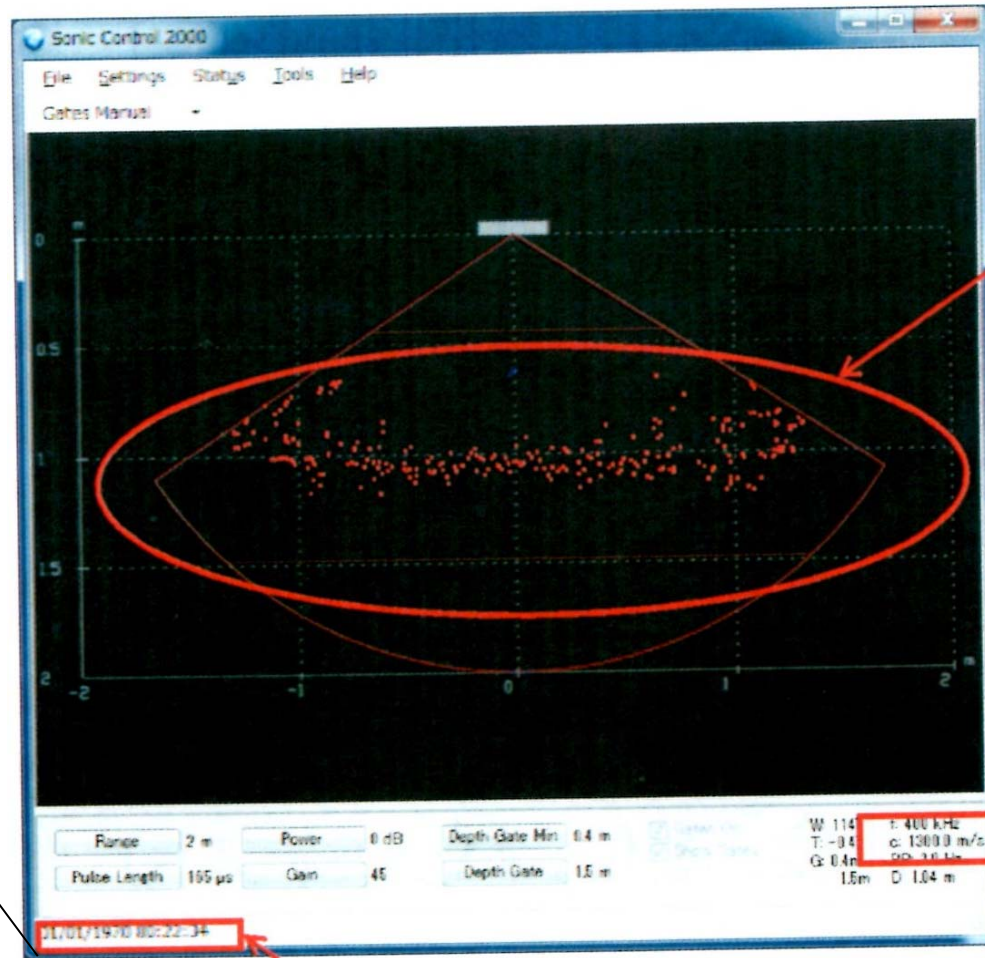


Check of Sonic 2022 1

Click this icon



If equipment is connected, you can see this window
(This screen is when Sonic 2022 is in water)

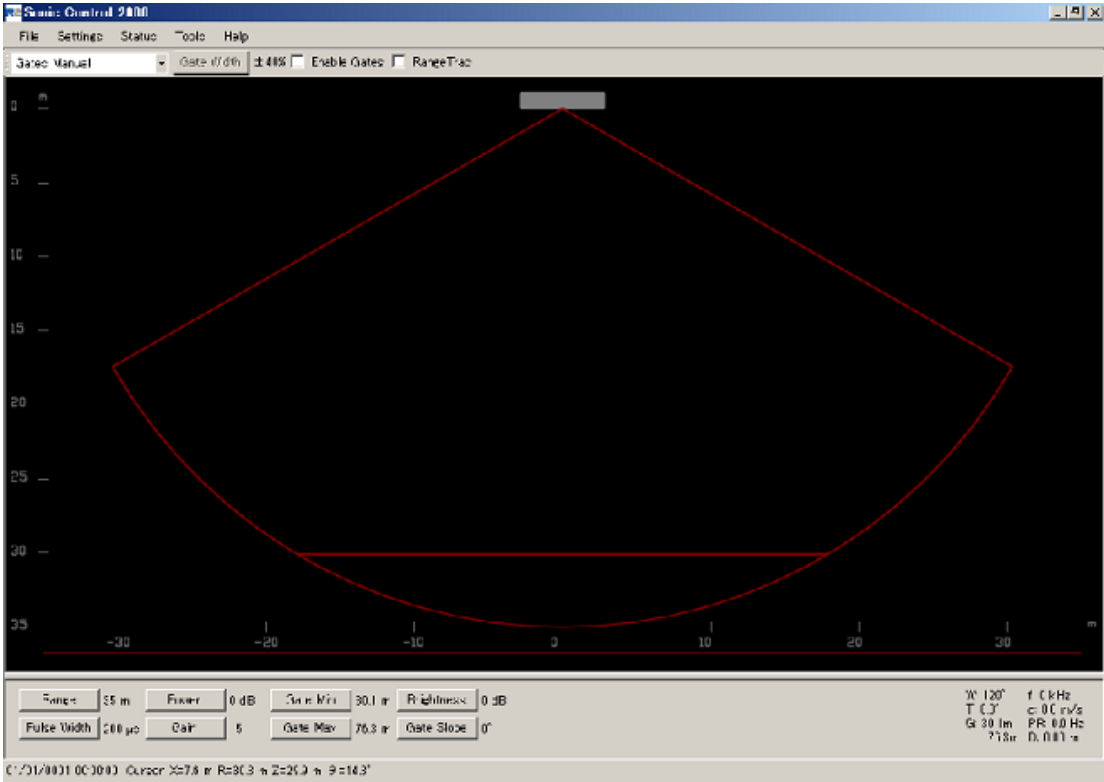


If "year and month and date" is true, this is ok, but if you see "1997" this is not ok

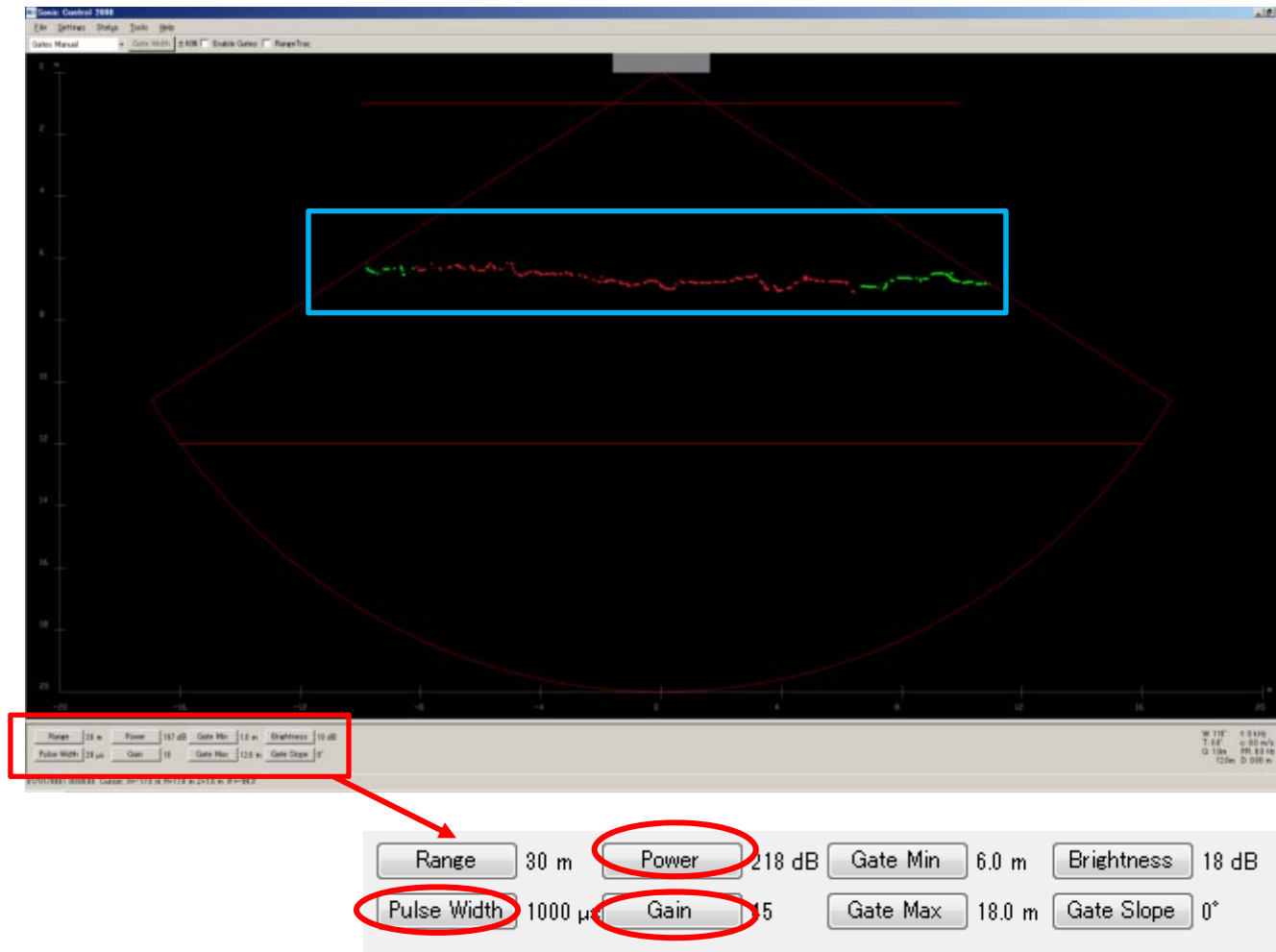
Normally value undergo a change (When R2Sonic power on)

Check of Sonic 2022 2

If equipment is not yet connected, you can see this window
(This screen is when Sonic 2022 is in air)



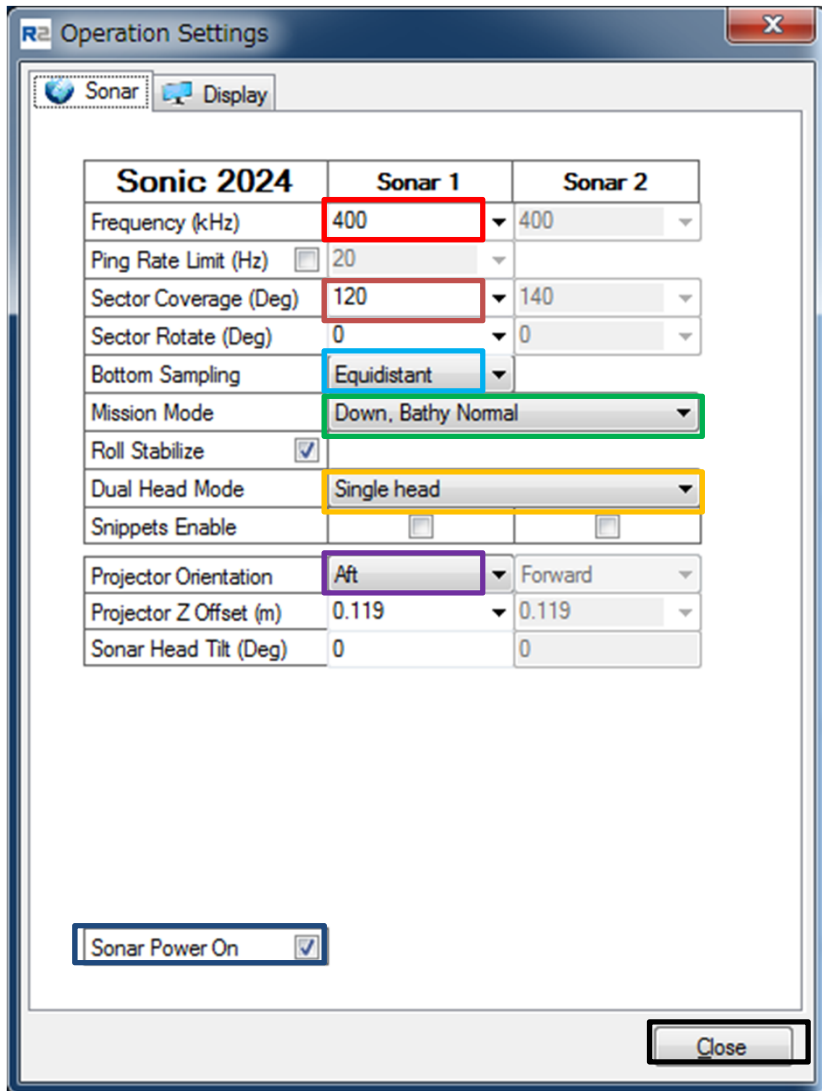
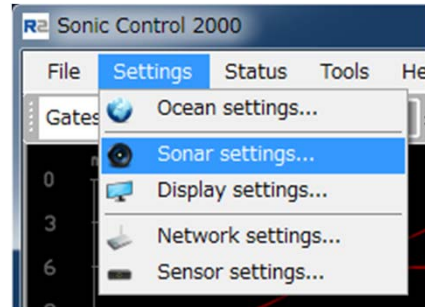
Check of Sonic 2022 3



If you do right click, value increase
When you do left click , value decrease

Red dots are bottom of lake

Check of Sonic 2022 4



If depth is under 100m, please input 400

If depth is over 100m, Please input 200

Choose "120"

Choose "Equidistant"

Choose "Down, Bathy, Normal"

Choose "Single head"

Choose "Aft"

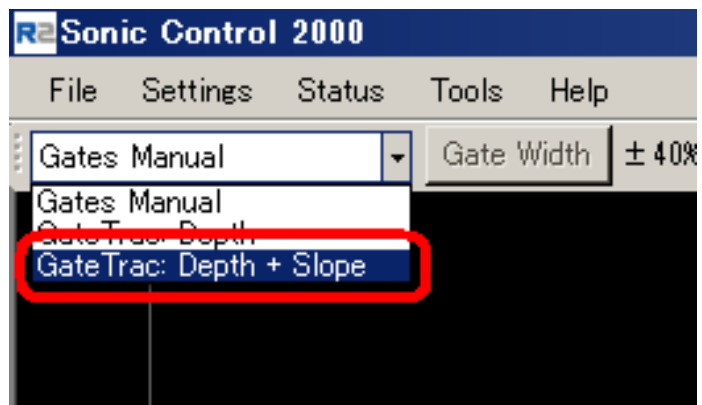
Check to "Sonar Power On"

Click "Close"

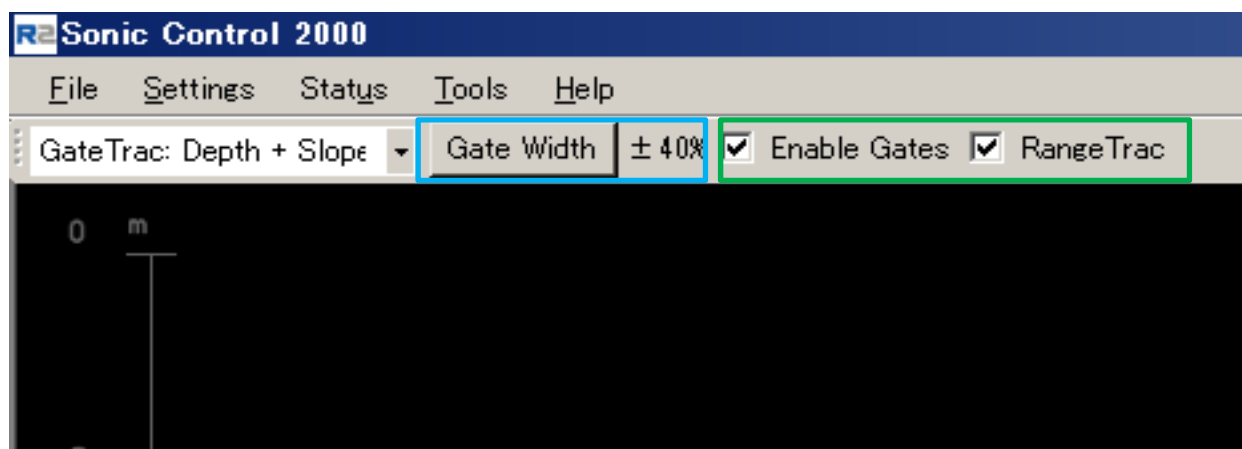
For example

Depth	Frequency setting	Power setting	Gain setting	Pulse Width setting
Under 20m	400 kHz	191	3	20
20~50 m	400 kHz	194	3	25
50~70 m	400kHz	203	3	60
100~200 m	200 kHz	215	15	200
200~300 m	200 kHz	221	23	500
Over 300m	200 kHz	221	30	700

Check of Sonic 2022 6



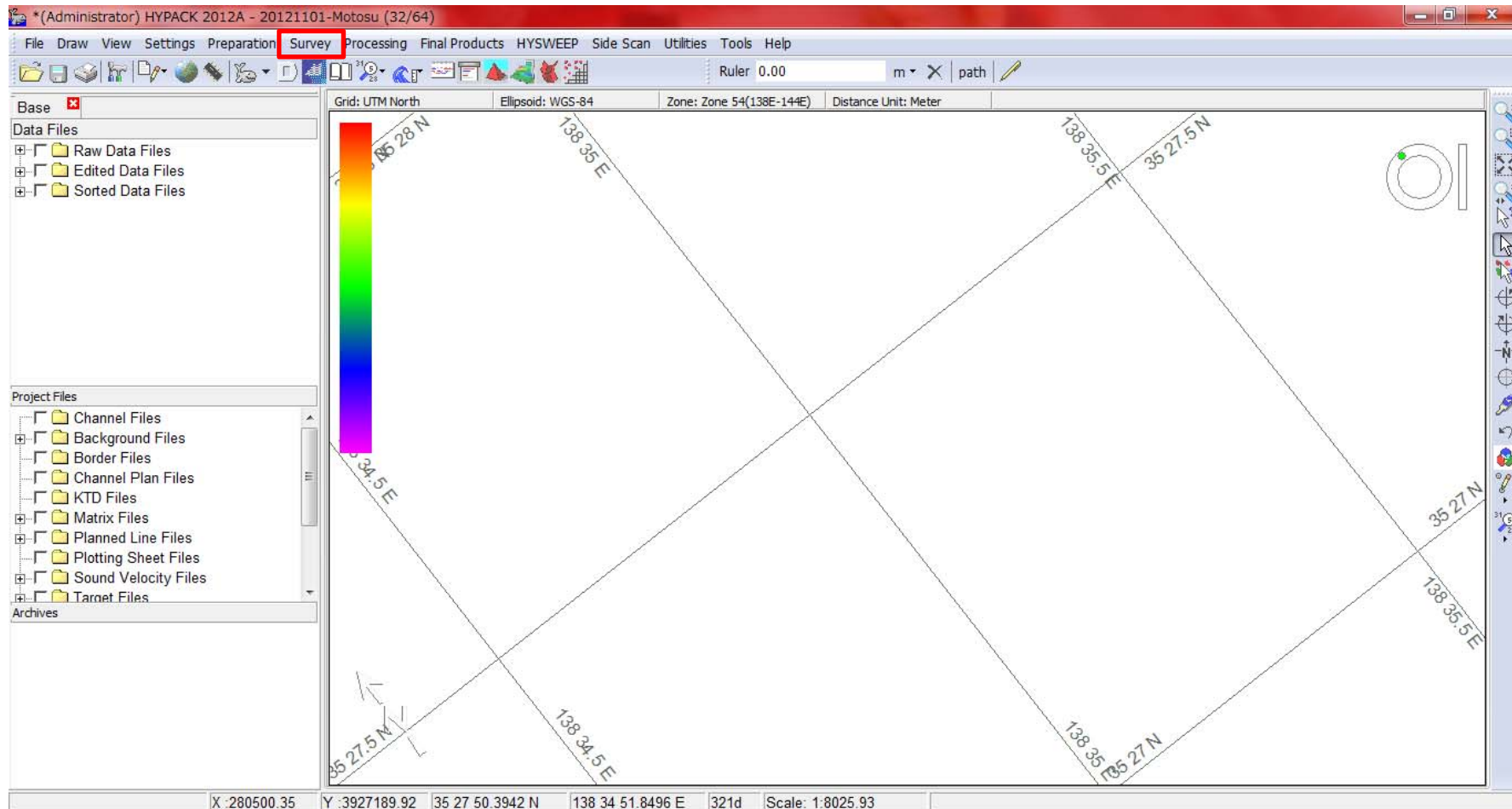
Choose "Gate Trac: Depth + Slope"



Please choose $\pm 40\%$
this can change left and right click

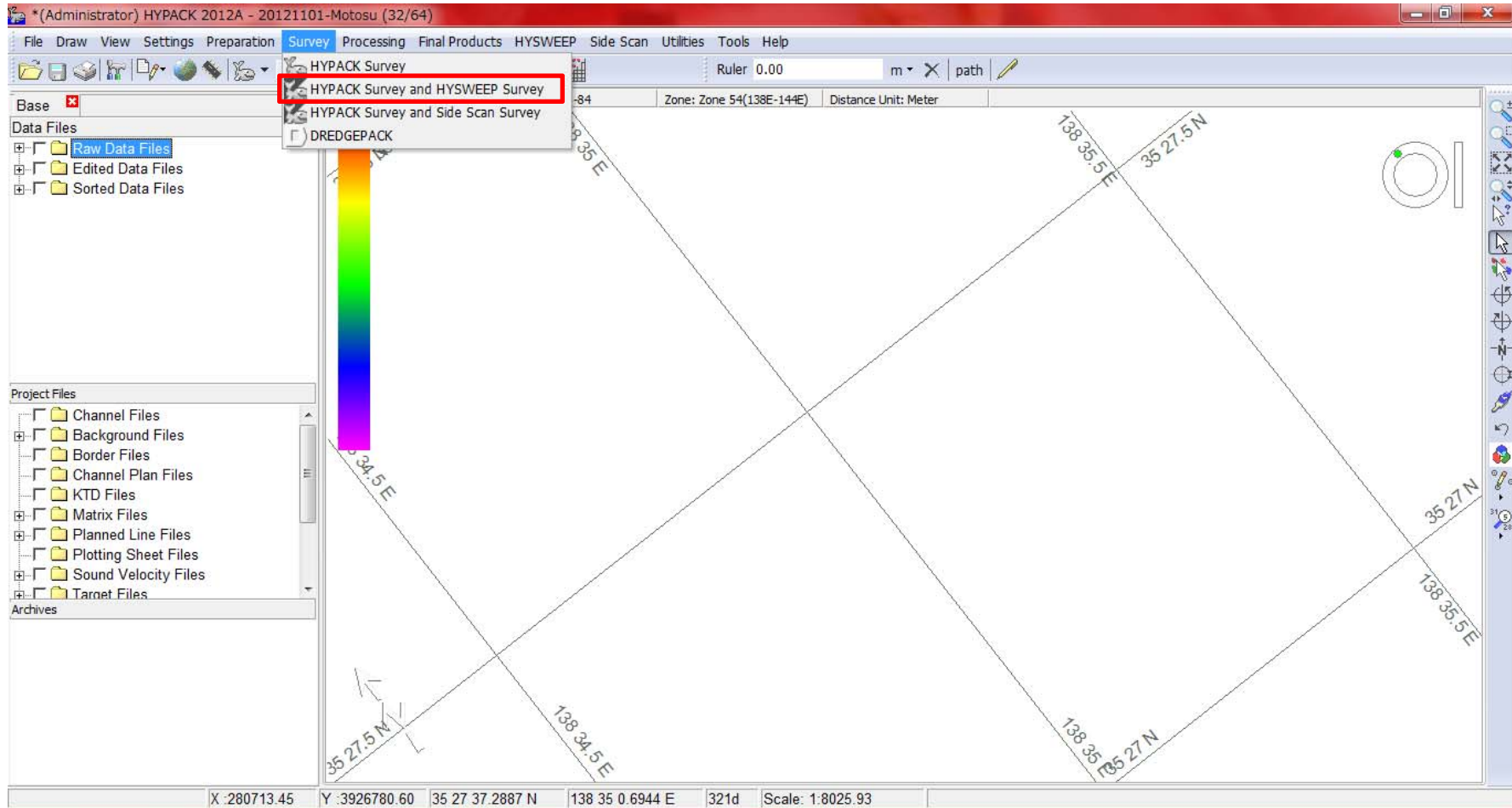
Please put check to both

How to control during surveying 1



Choose "Survey"

How to control during surveying 2

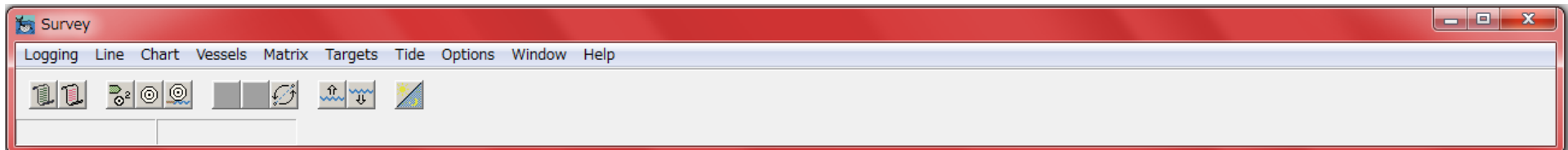


Survey → HYPACK Survey and HYSWEEP Survey

Choose “HYPACK Survey and HYSWEEP Survey”

How to control during surveying 3

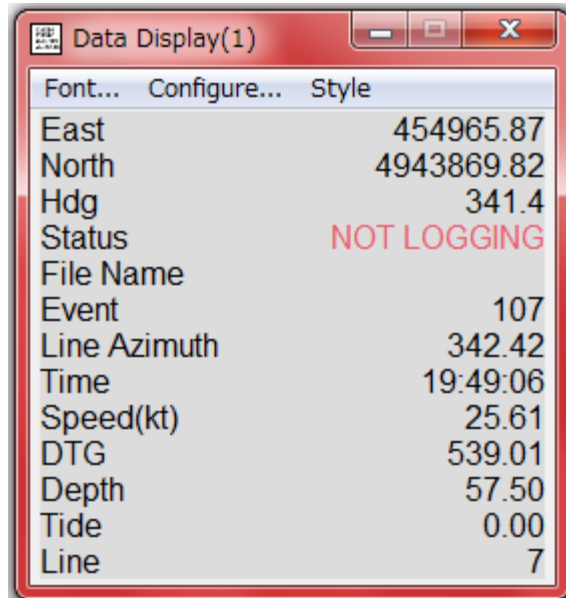
When you choose “HYPACK Survey and HYSWEEP Survey”, You can see this window



Survey window is like menu of during survey

How to control during surveying 4

Typical window 1

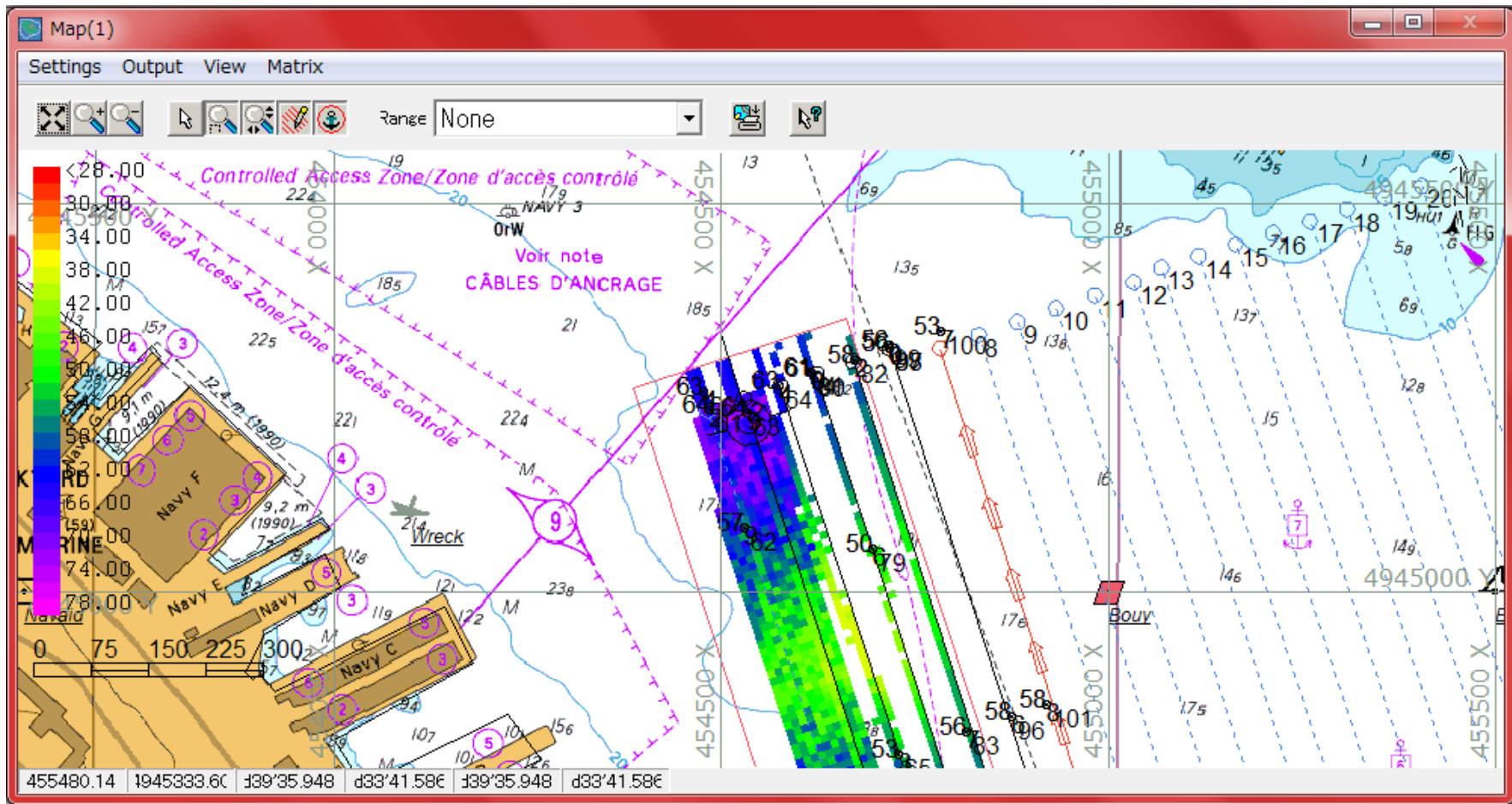


You can check various data of during survey

Survey→Window→New→Data Display

How to control during surveying 5

Typical window 2

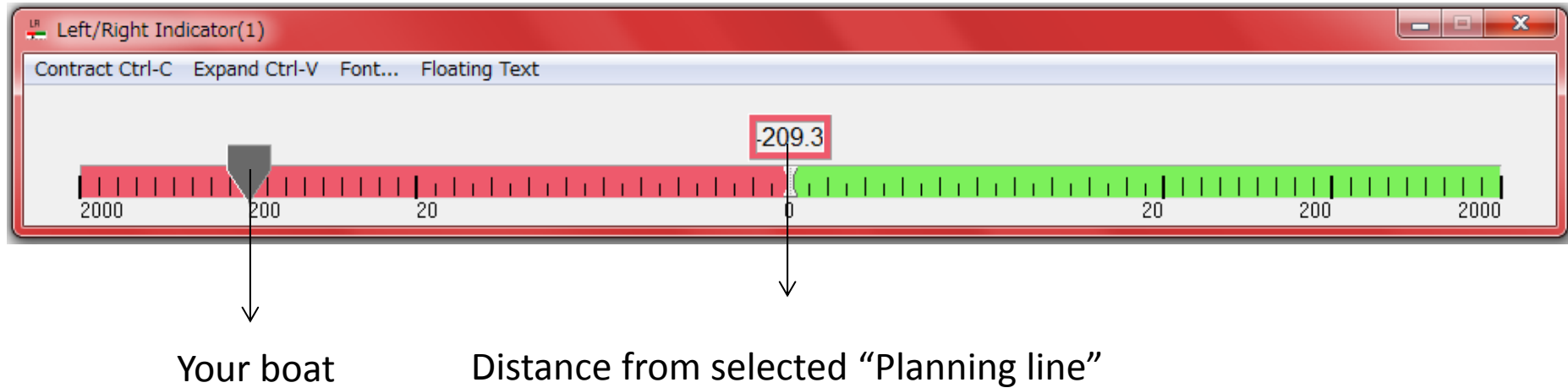


Survey → Window → New → Map Window

You can check where is our boat on map

How to control during surveying 6 Typical window 3

Survey→Window→New→Left/Right Indicator

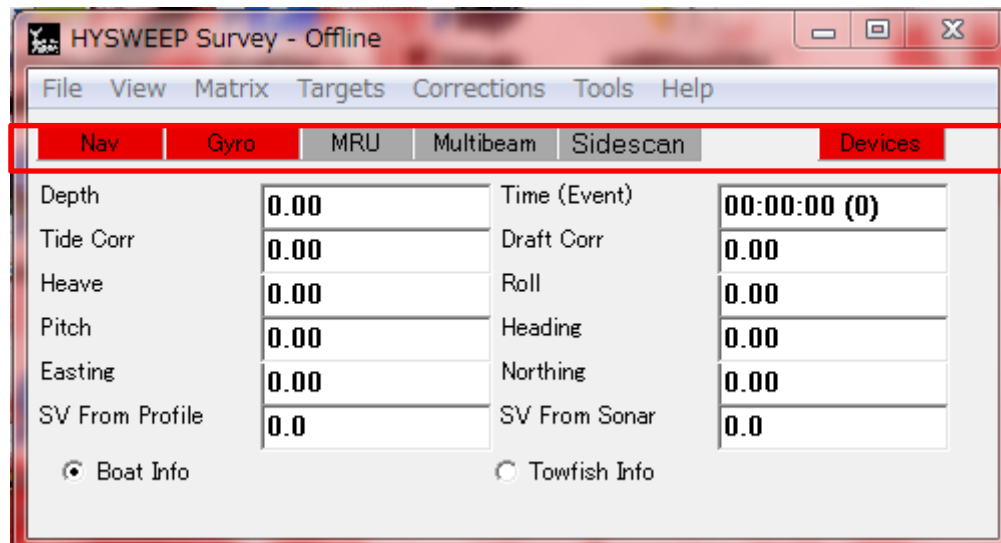
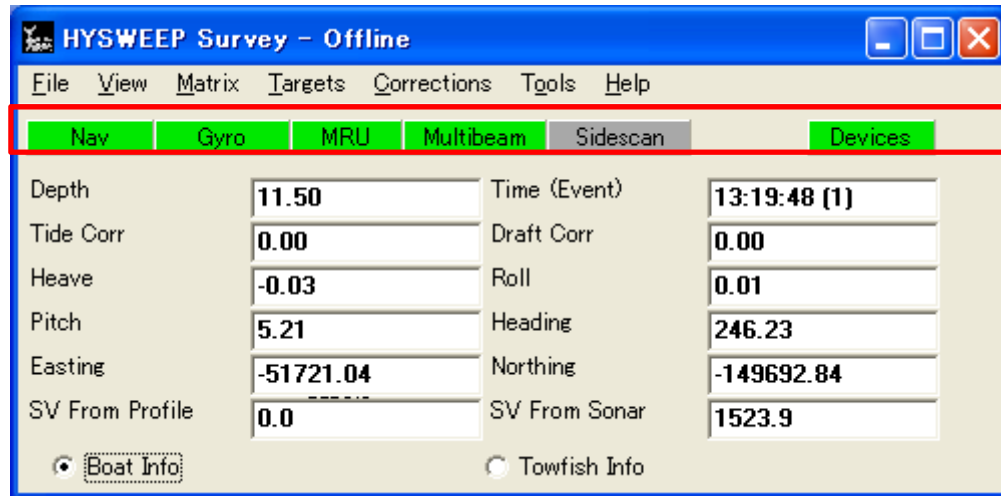


You can check about how to far from line to boat
Red territory is direction to left side
Green territory is direction to right side

How to control during surveying 7

HYSWEEP Survey

Menu of "HYSWEEP Survey"

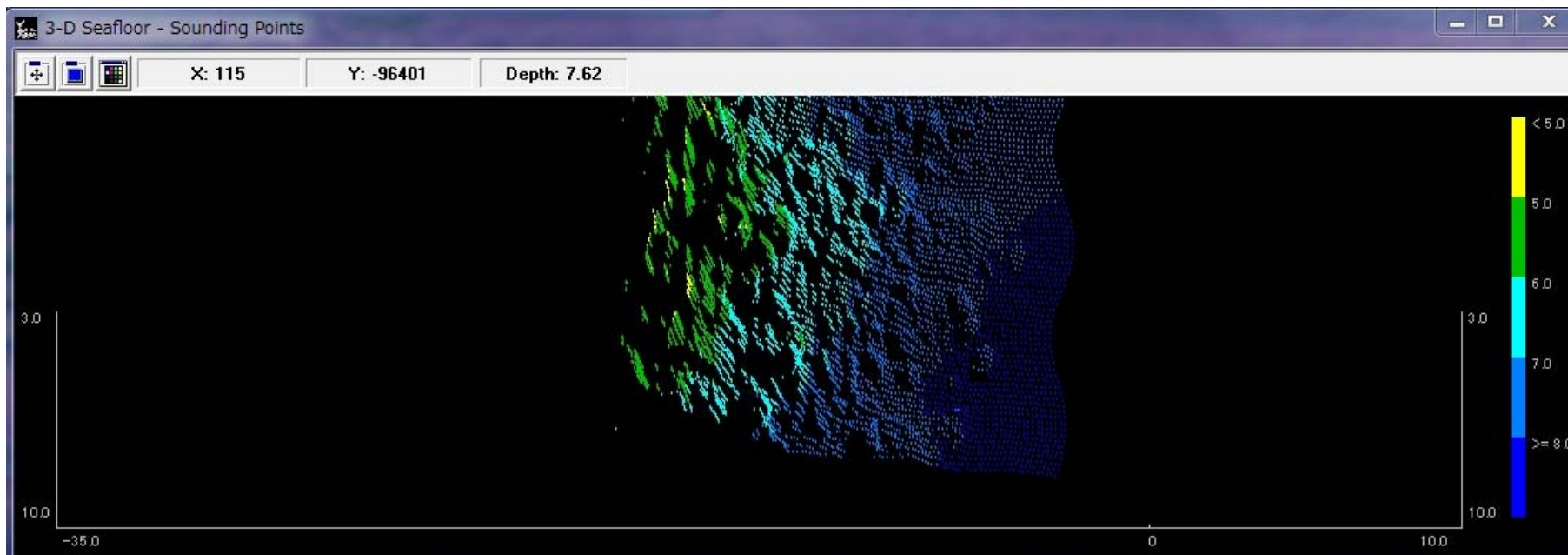


If you can see all equipments are green except "Sidescan", this is OK.

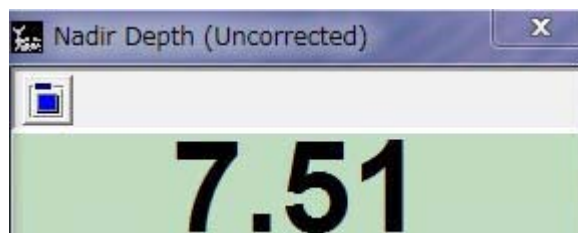
But if you see some equipments are red lump, this is problem. So you have to check connection.

How to control during surveying 8

HYSWEEP Survey



HYSWEEP Survey Window → View → 3D Seafloor



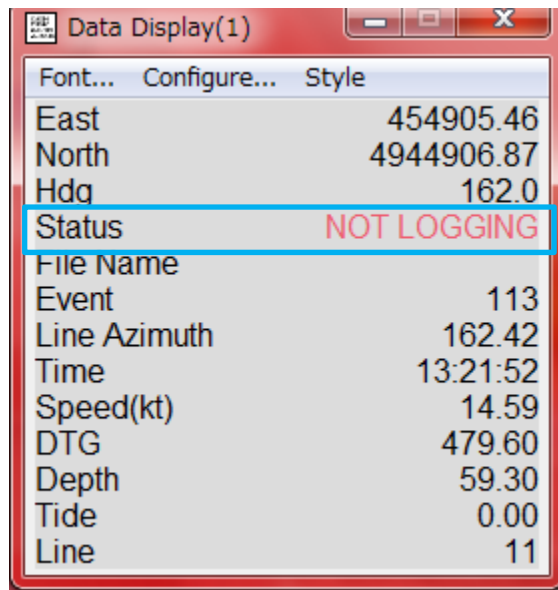
HYSWEEP Survey Window → View → 3D Seafloor

About recording of data

- Start and end of recording

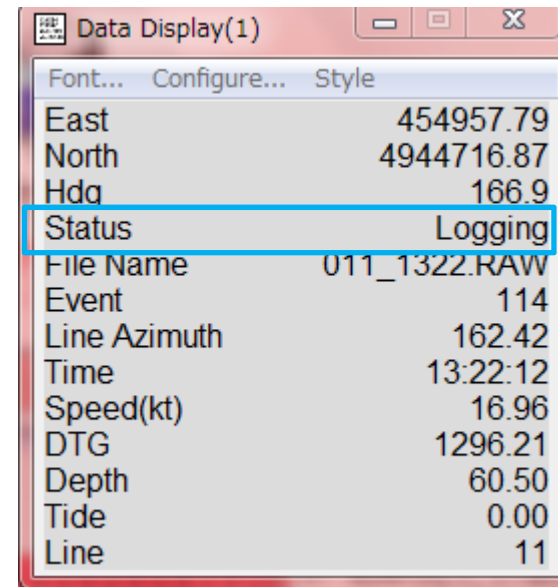
Start : Ctrl + S

End : Ctrl + E



A screenshot of a software window titled "Data Display(1)". The window contains a table with various data fields. The "Status" field is highlighted with a blue border and displays "NOT LOGGING" in red text. Other fields include East, North, Hdq, File Name, Event, Line Azimuth, Time, Speed(kt), DTG, Depth, Tide, and Line.

Field	Value
East	454905.46
North	4944906.87
Hdq	162.0
Status	NOT LOGGING
File Name	
Event	113
Line Azimuth	162.42
Time	13:21:52
Speed(kt)	14.59
DTG	479.60
Depth	59.30
Tide	0.00
Line	11



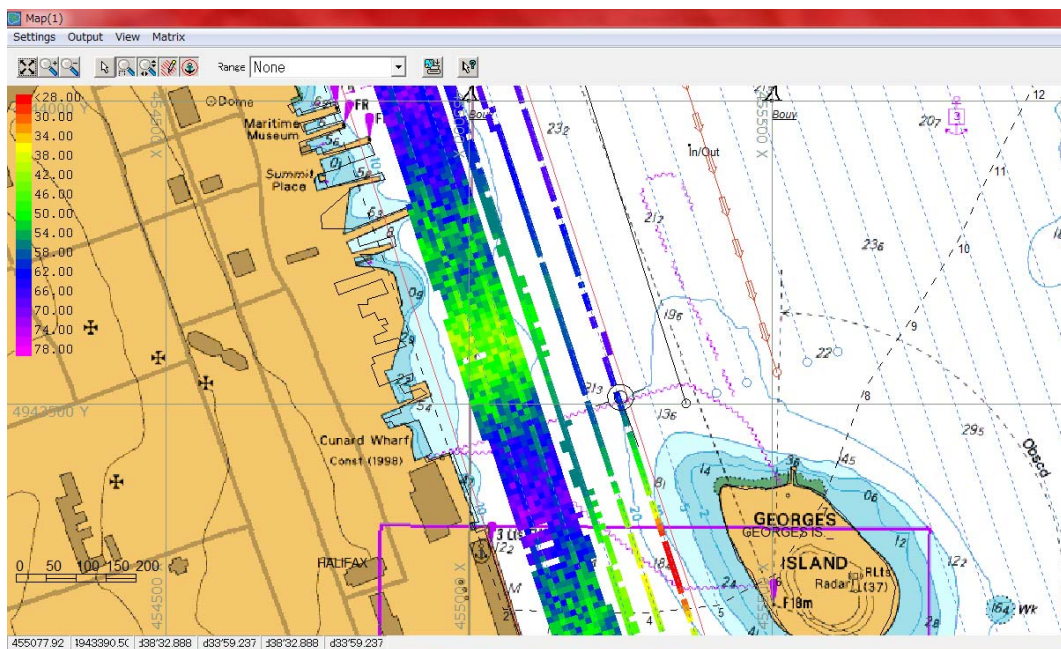
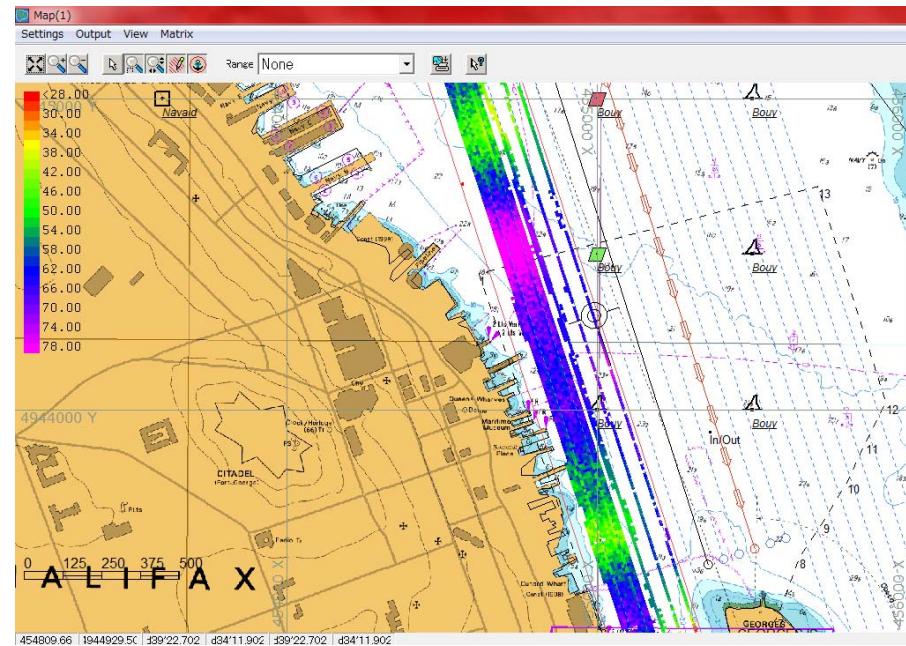
A screenshot of a software window titled "Data Display(1)". The window contains a table with various data fields. The "Status" field is highlighted with a blue border and displays "Logging" in black text. Other fields include East, North, Hdq, File Name, Event, Line Azimuth, Time, Speed(kt), DTG, Depth, Tide, and Line.

Field	Value
East	454957.79
North	4944716.87
Hdq	166.9
Status	Logging
File Name	011_1322.RAW
Event	114
Line Azimuth	162.42
Time	13:22:12
Speed(kt)	16.96
DTG	1296.21
Depth	60.50
Tide	0.00
Line	11

You can check already start or not yet start by "Status
" indication "NOT LOGGING" or "LOGGING"

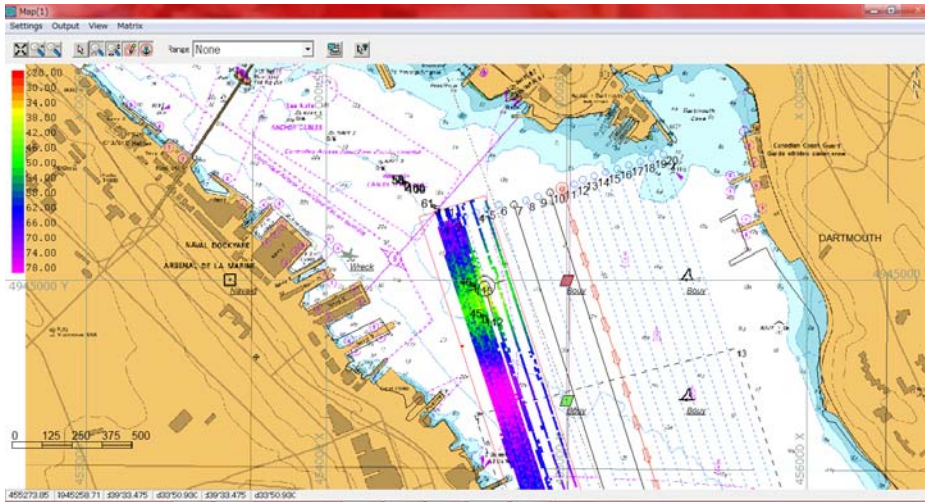
● Indication of screen(Zoom and Zoom out)

“Shift key” and “+”



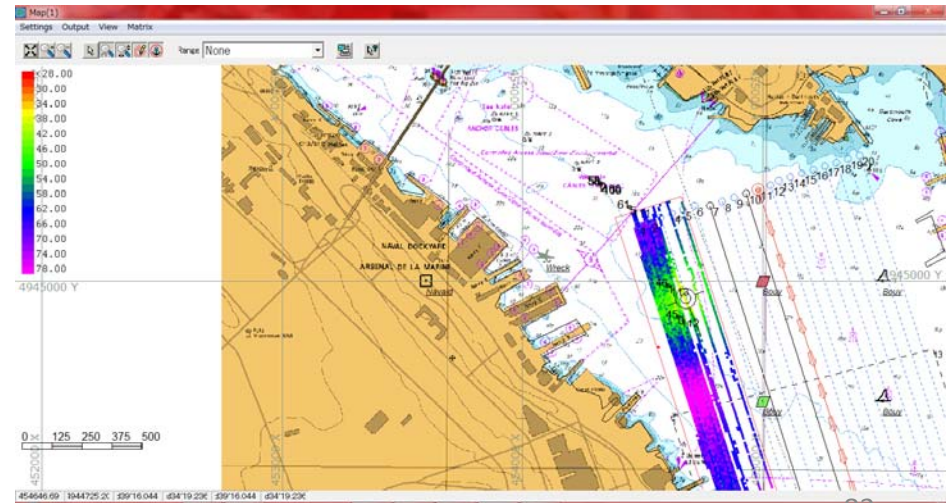
“ - ”

● Indication of screen(Left and right scrolls)



“→”key

“←”key

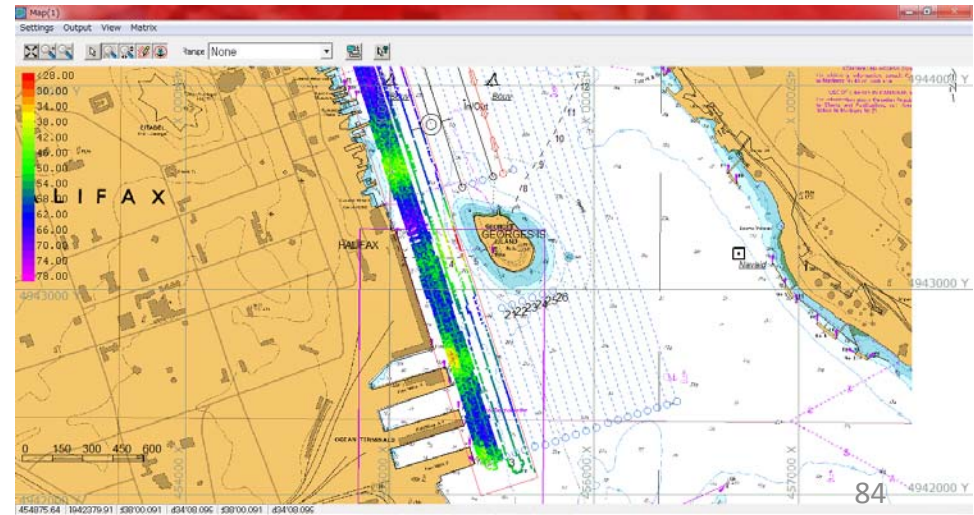


● Indication of screen(Up and down scrolls)



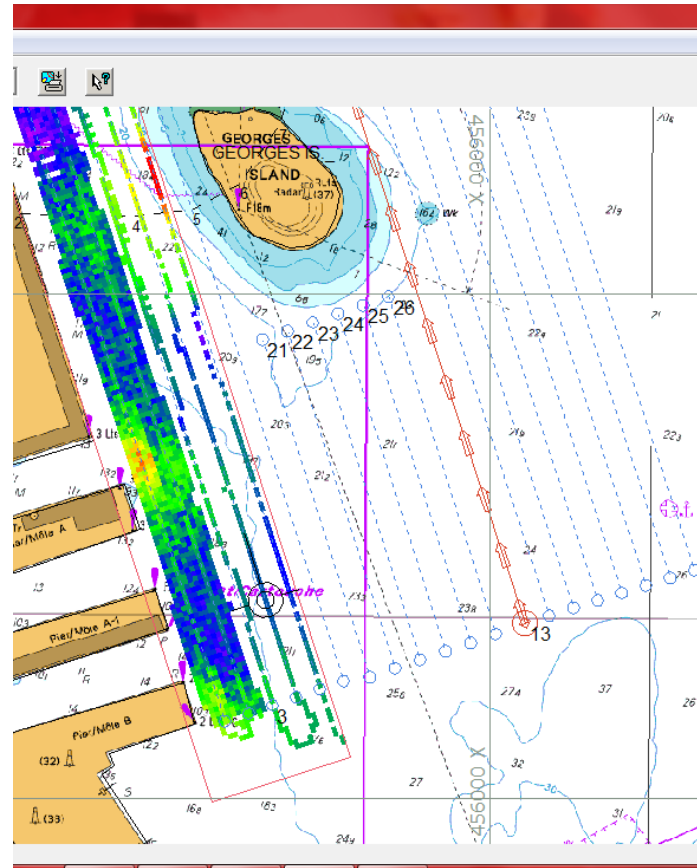
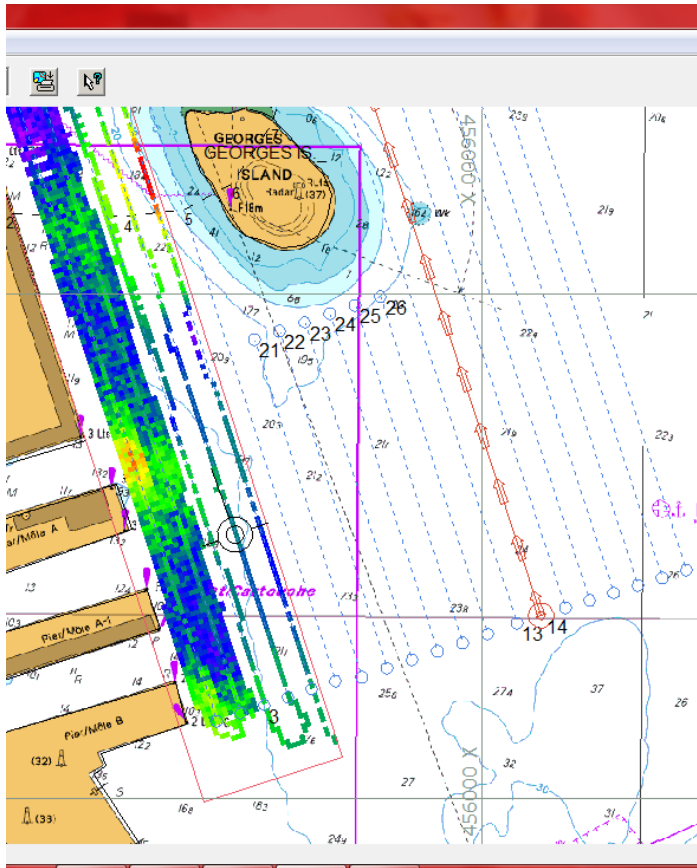
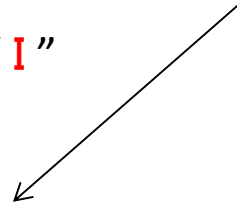
“↑”key

“↓”key

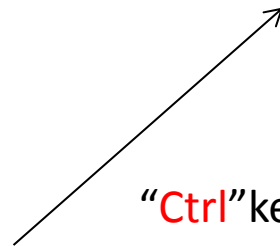


● Indication of screen(Increase and decrease of selected line)

“Ctrl”key + “I”

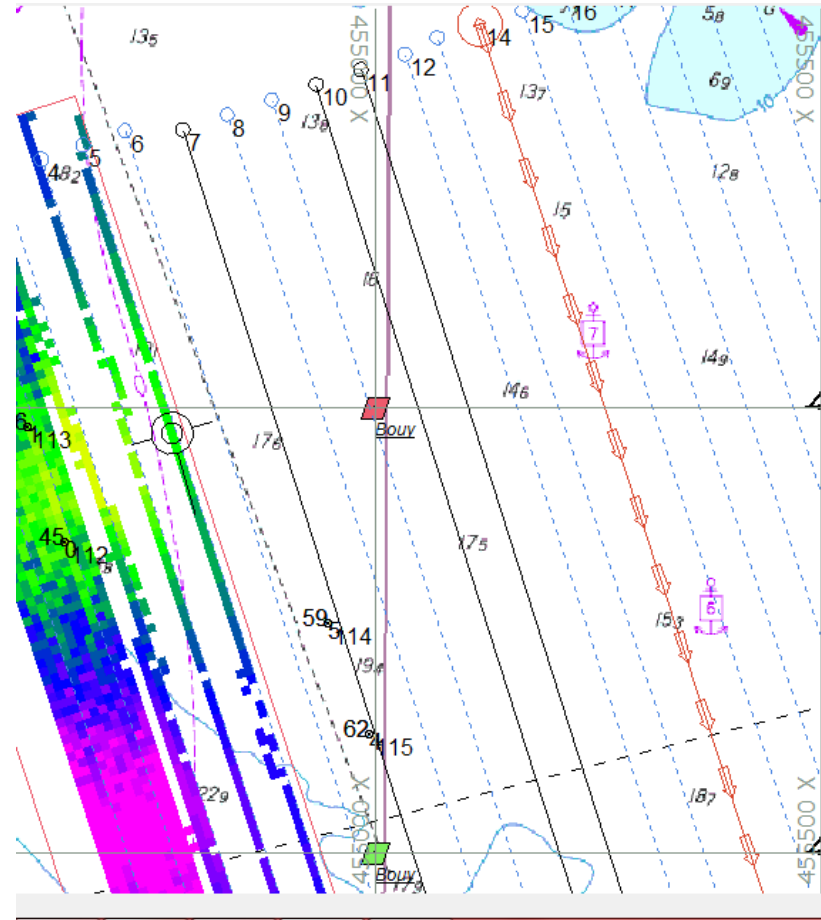
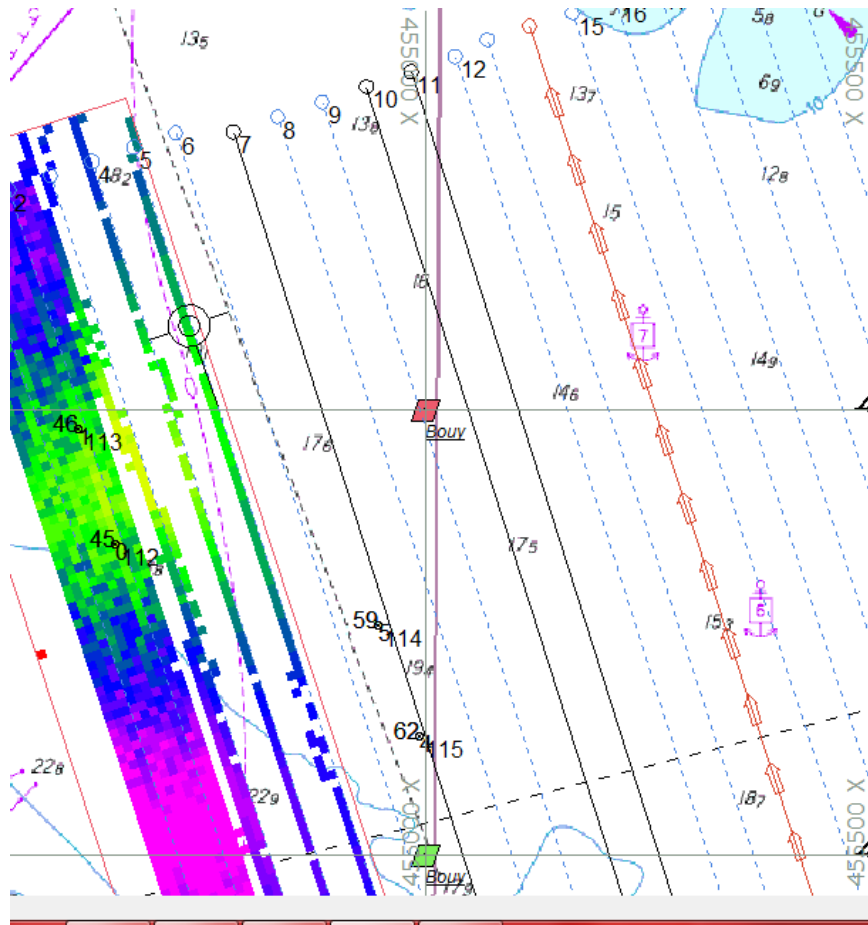


“Ctrl”key + “D”



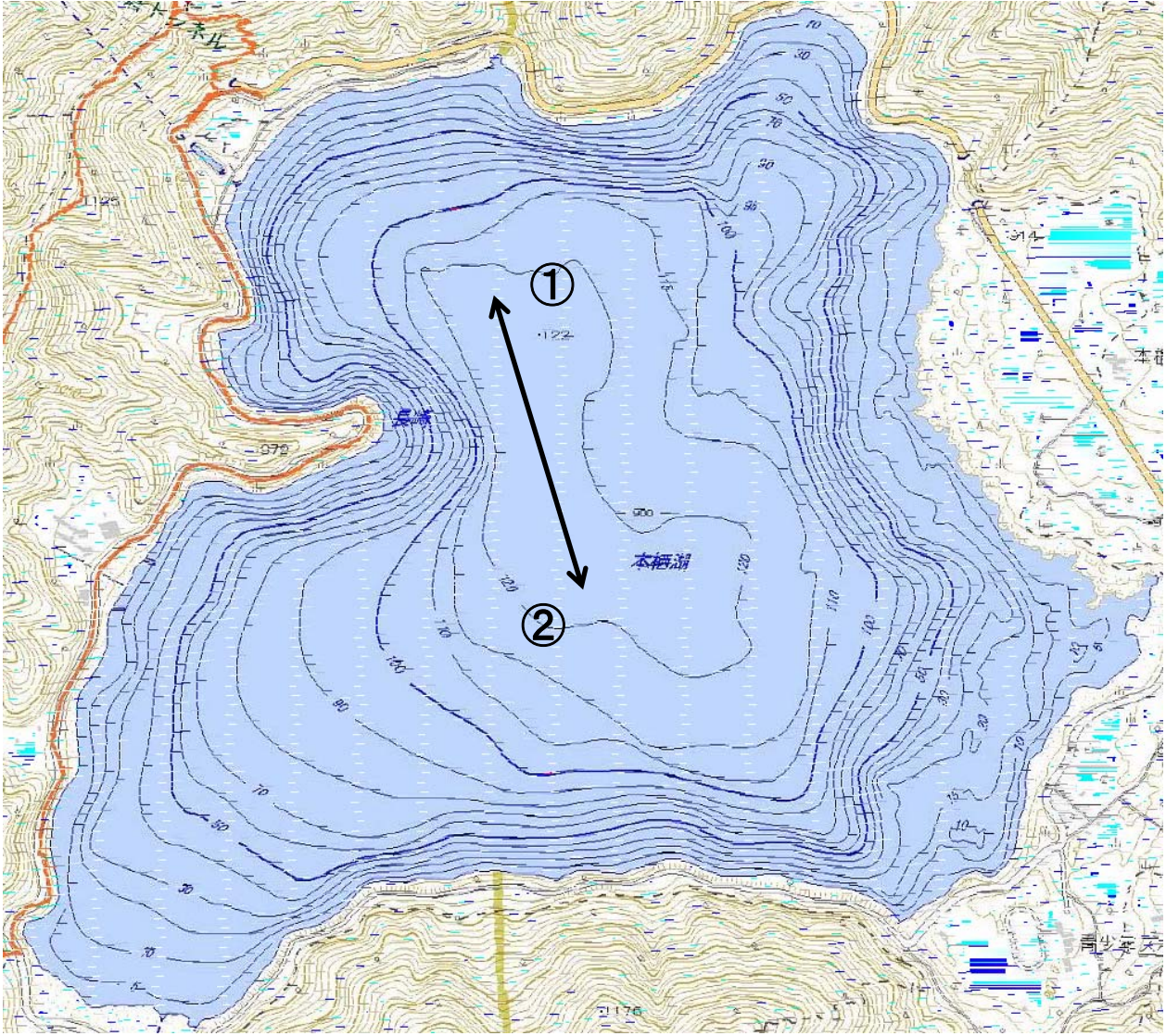
● Indication of screen(change direction)

“Ctrl”key + “W”



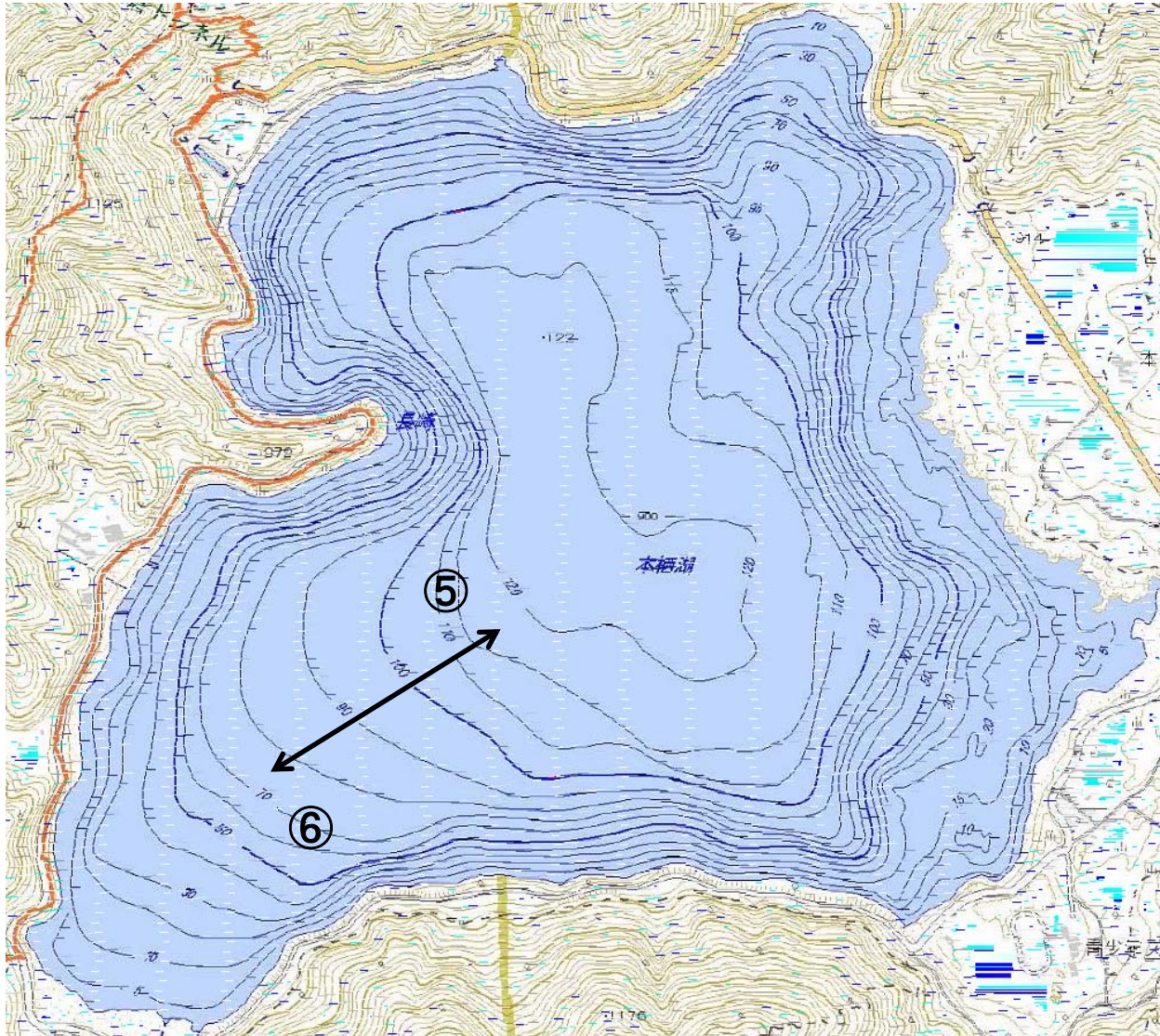
“Ctrl”key + “W”

Abut Patch test(Roll)



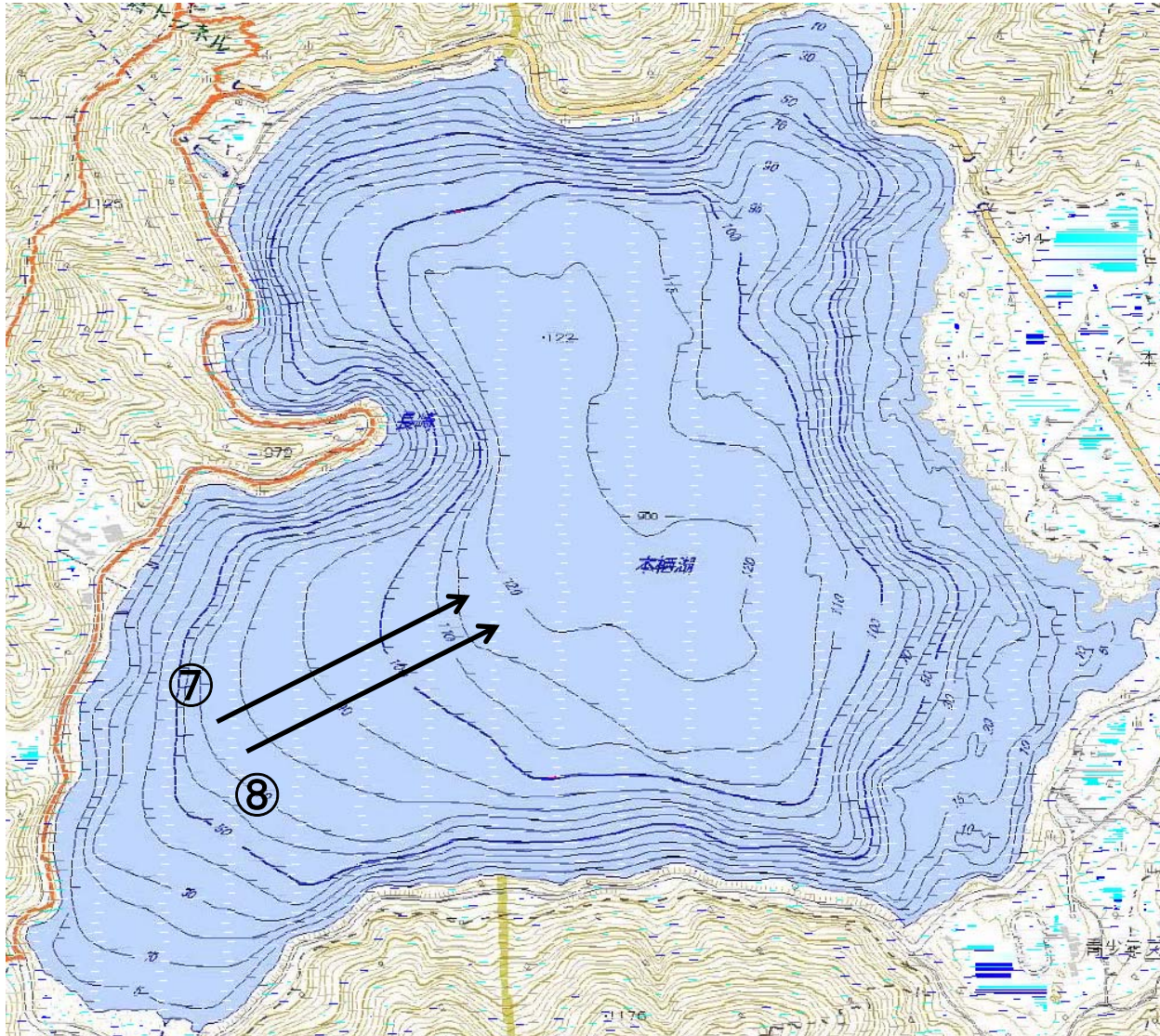
Same line
Flat bottom
Same speed with survey

About Patch test(Pitch)



Same line
Sloop bottom
Same speed with survey

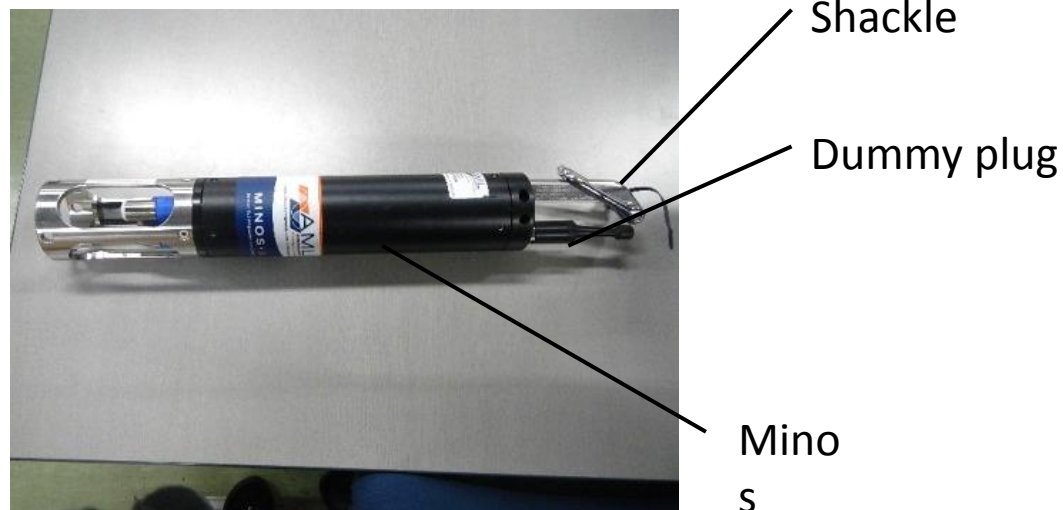
About Patch test(Yaw)



Two lines, Same direction
Sloop bottom
Same speed with survey

About Minos 1

1. Please try to get data at deepest area.
2. Rope connect with shackle of “Minos”.
3. Remove dummy plug(Black color), and connect shorting plug(Red color).
(Automatically POWER ON)
4. Please check LED indicator is Green lump(Solid) or not.
5. Continue to enter sensor part to water surface.
6. Please wait until LED indicator’s Green lump(Solid) change to Green lump(Flash).
7. Casting to water, and about speed please keep about 1m/s.
8. When you could check about arrived bottom , You can raise “Minos”.
9. Please remove water around shorting plug(Red color) .
10. Change to dummy plug(Black color).



Shorting plug₉₀

About Minos 2

About “Minos” battery

LED Indicator pattern meaning

Green color(Solid): POWER ON and battery has power more than 20%

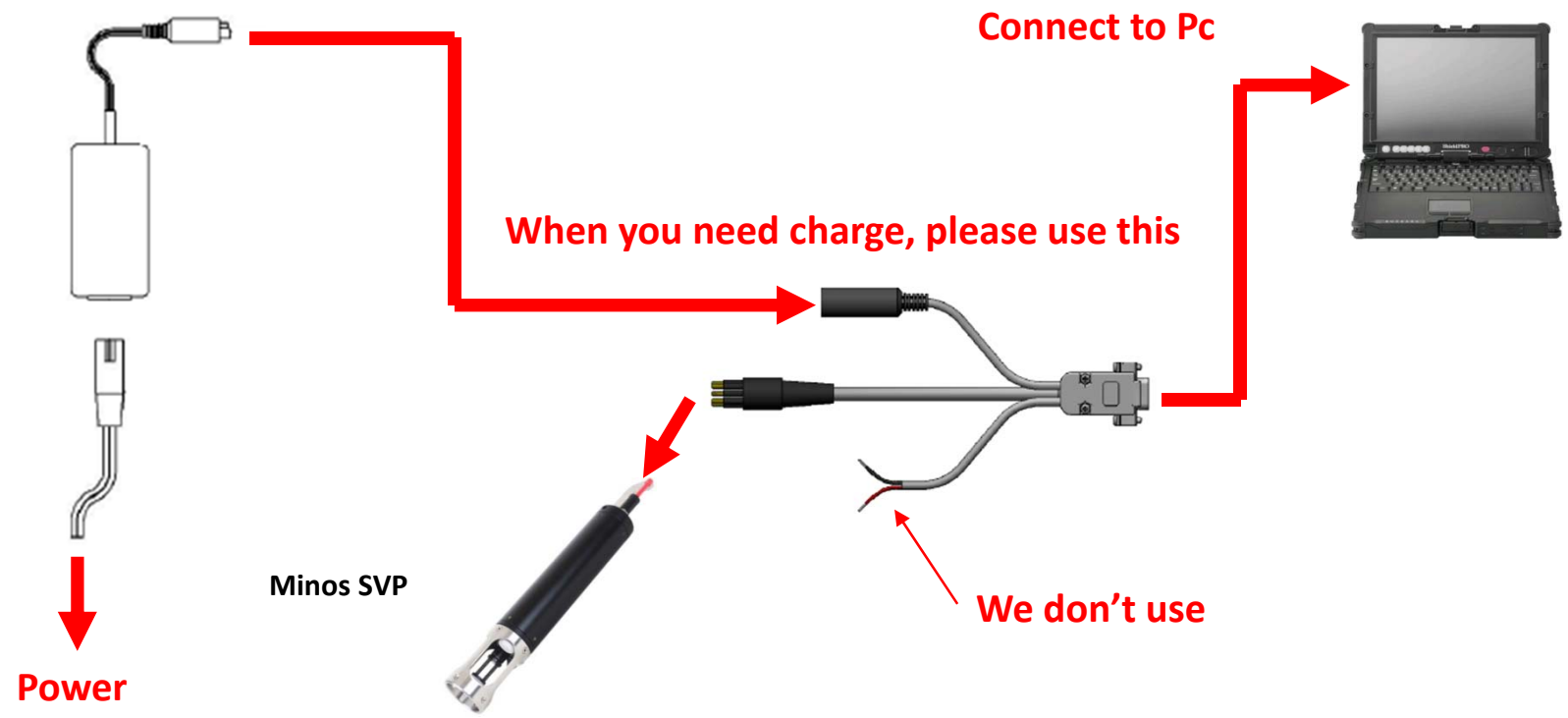
Green color(Flash):Recording data and battery has power more than 20%

Red color(Solid):POWER ON and battery has power less than 20%

Red color(Flash):Recording data and battery and battery has power less than 20%

About Minos 3

Connect to PC



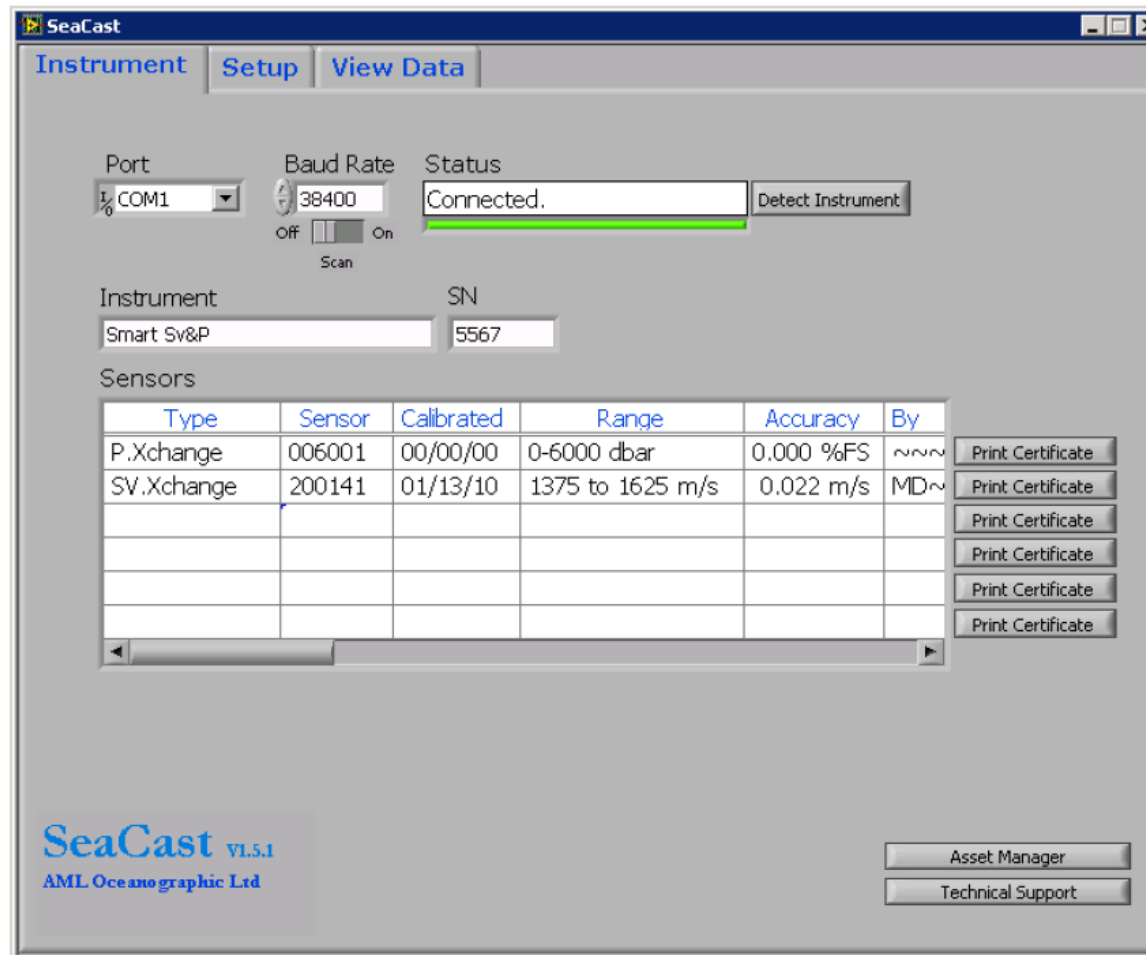
About Minos 4 Sensor connect

Click this icon

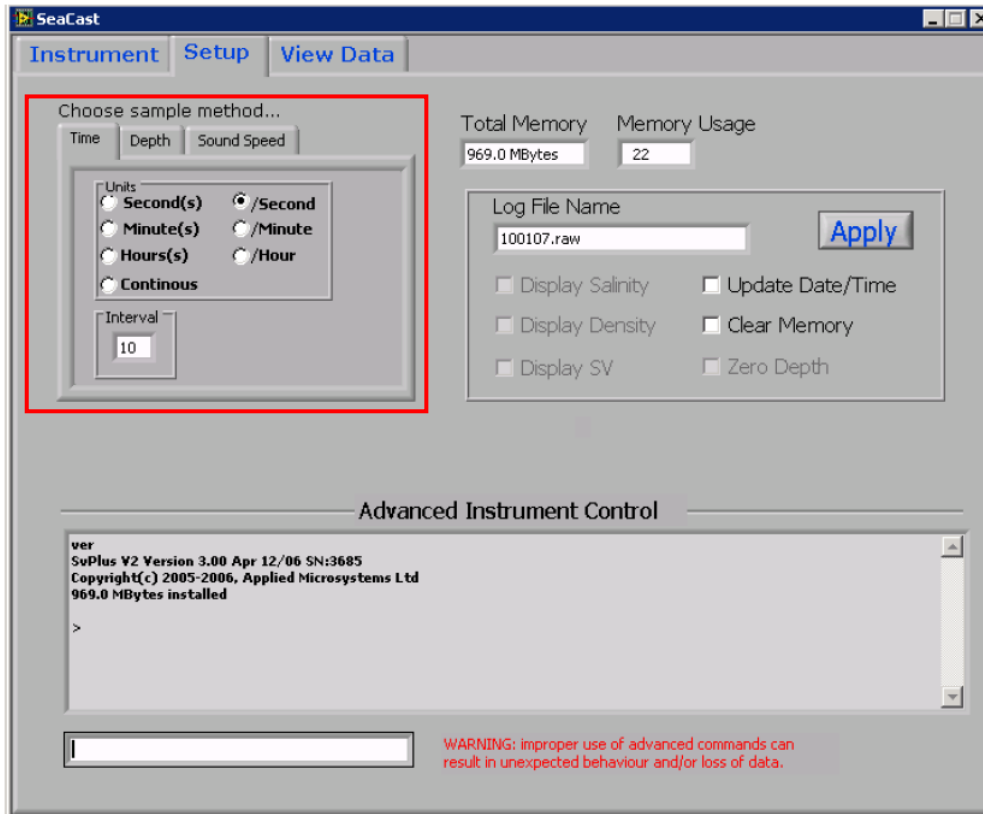


On desktop

When you choose "comport", automatically connect



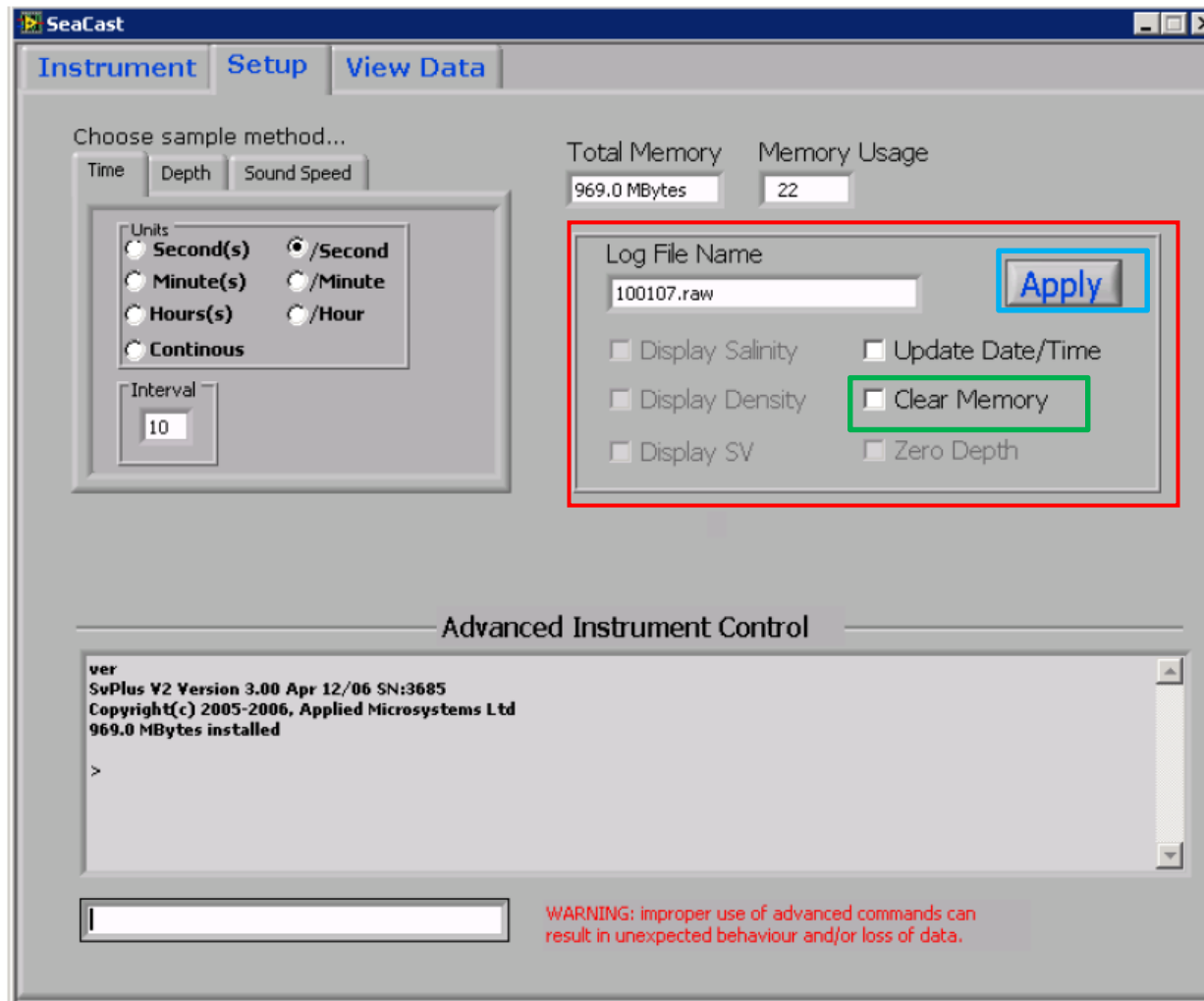
About Minos 5 Setup



You can choose method from "Time" or "Depth" or "Speed"



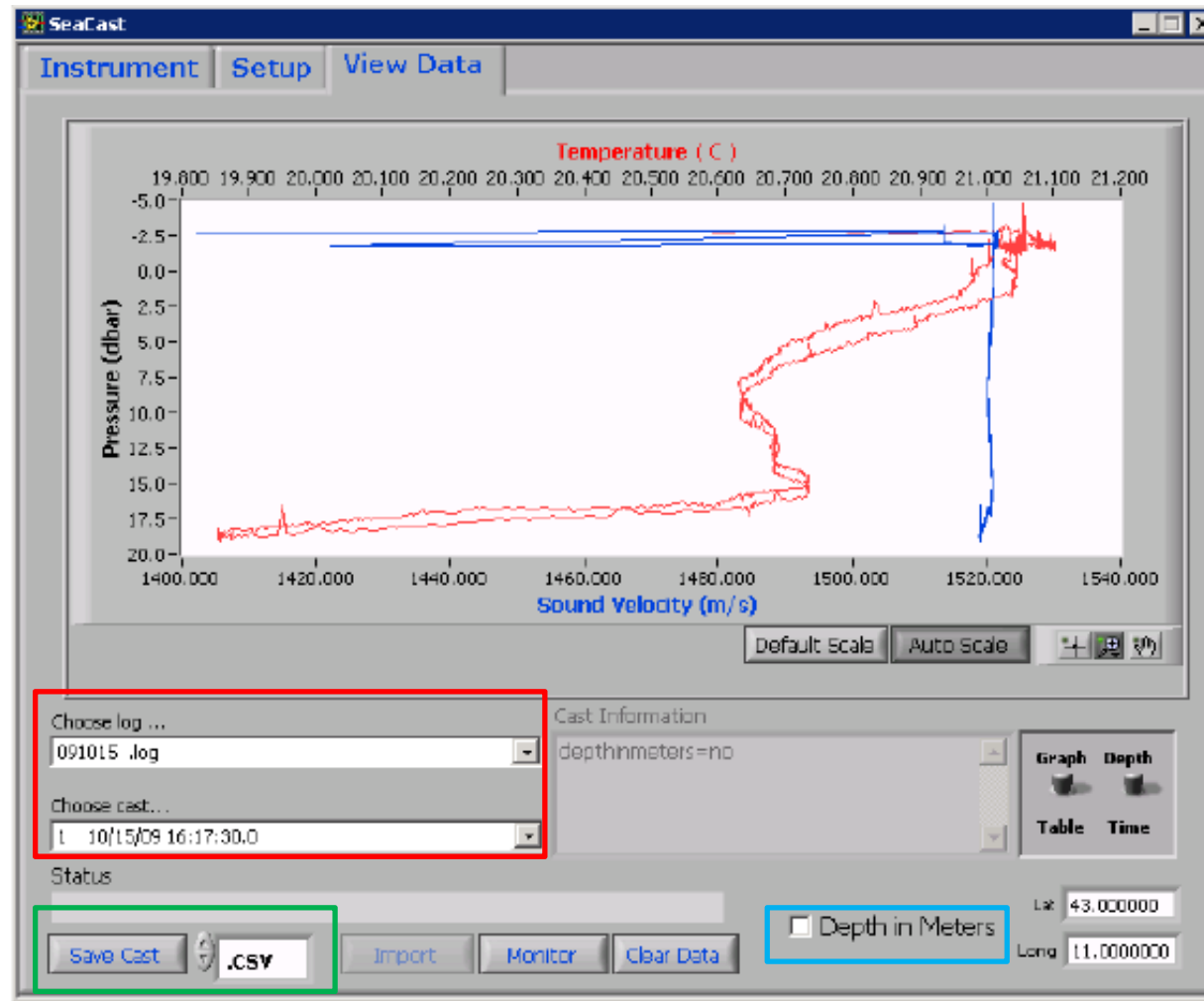
About Minos 6 Setup 2



Input file name, and after named click “Apply”

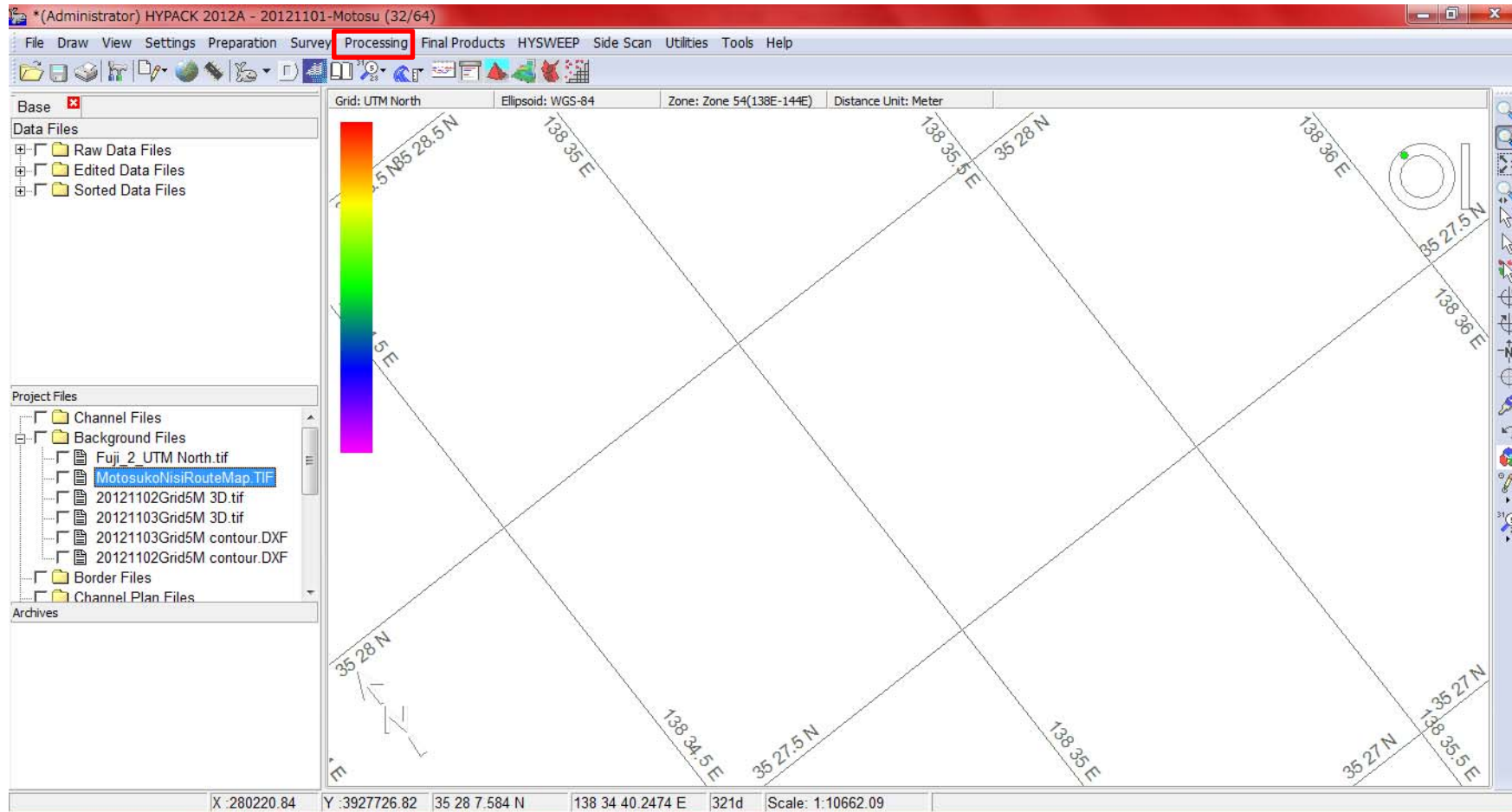
When you want to clear memory in Minos, choose and click “Apply”

About Minos 7



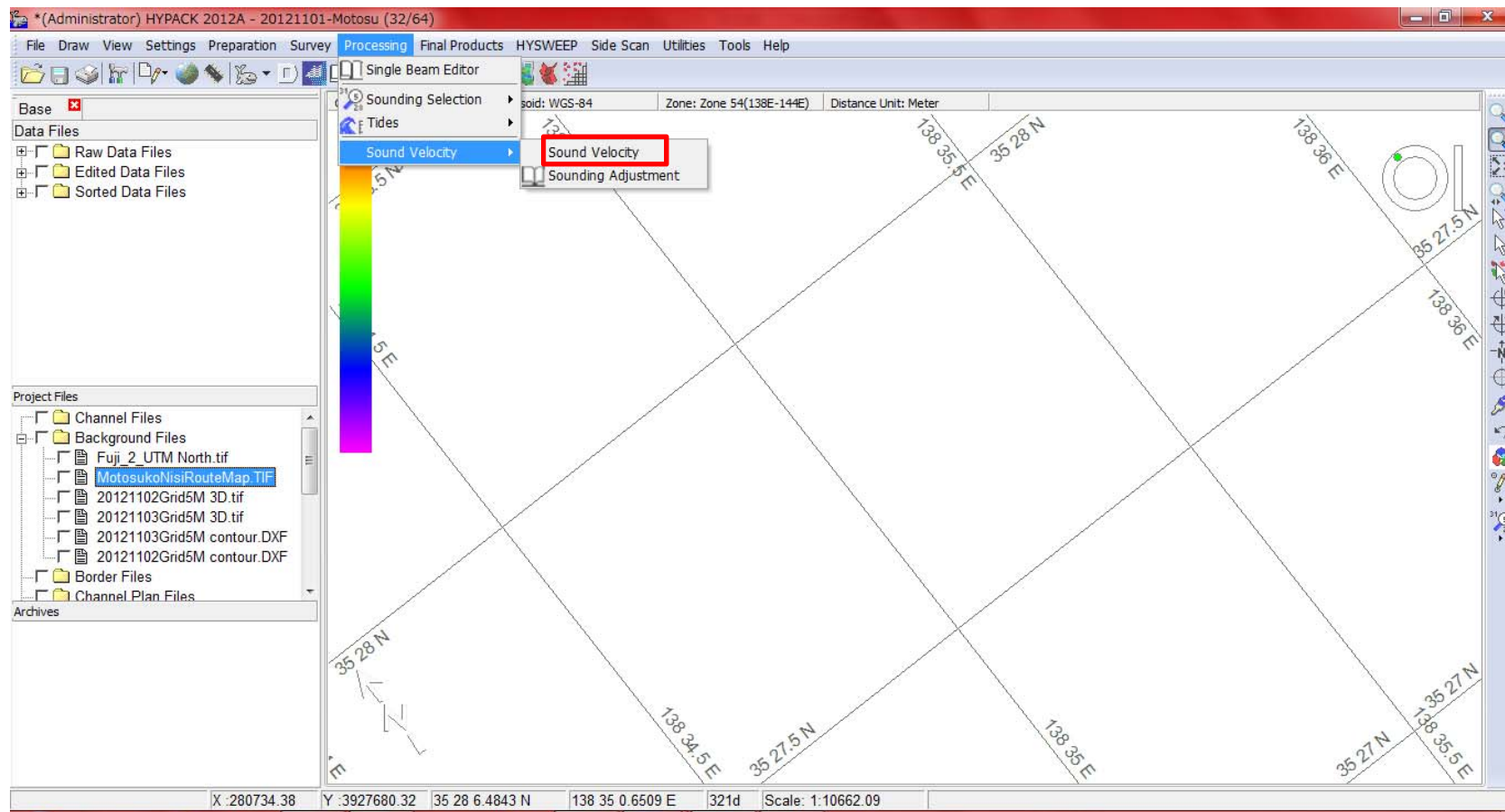
Choose "Log file" and "Cast"
Can change to depth
Click "Save Cast"

Data post processing (Sound velocity data 1)



Choose "Processing"

Data post processing (Sound velocity data 2)



Processing→Sound Velocity

Choose "Sound velocity"

Data post processing (Sound velocity data 3)

Sound Velocity

File Convert Help

Enter Depth in Meters and Velocity in M/Sec

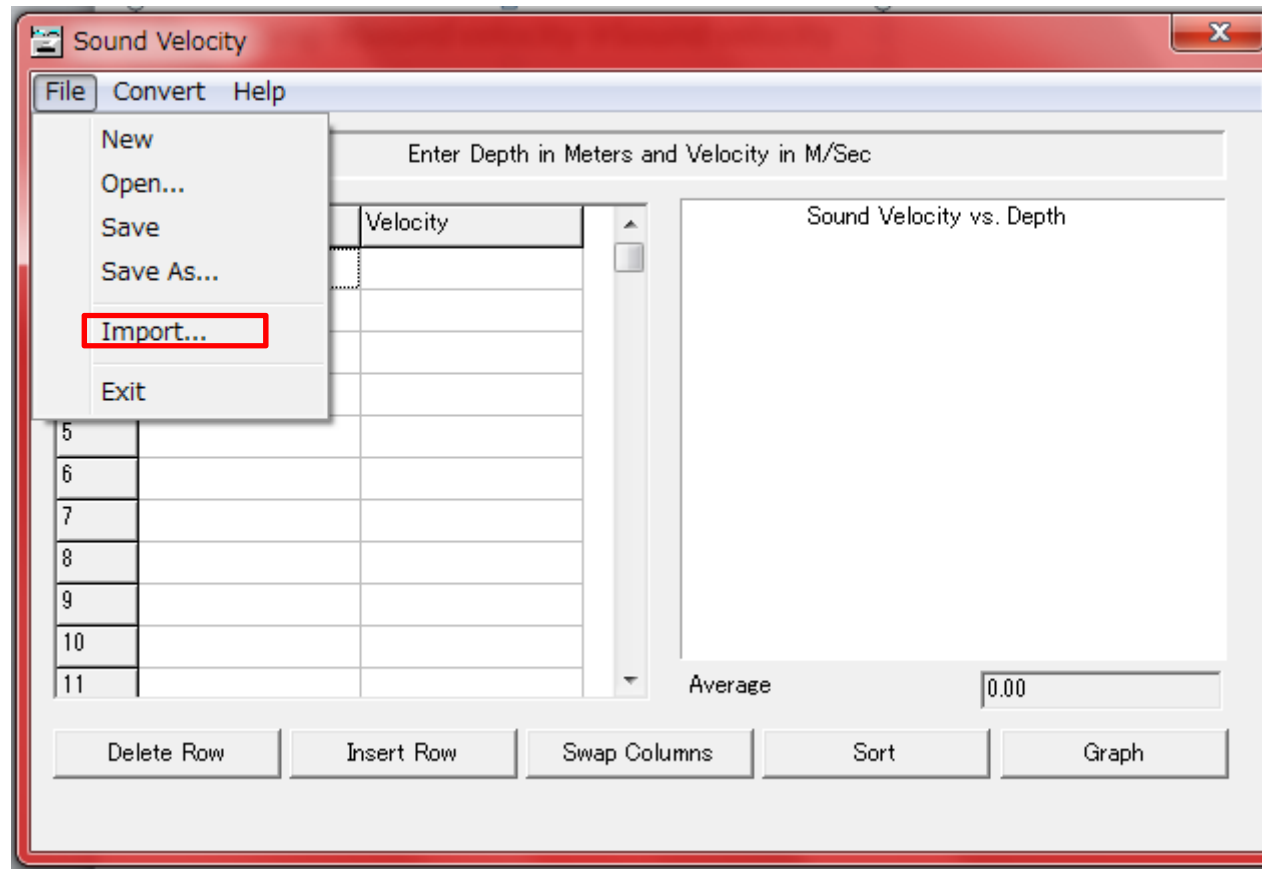
	End Depth	Velocity
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		

Sound Velocity vs. Depth

Average 0.00

Delete Row Insert Row Swap Columns Sort Graph

Data post processing (Sound velocity data 4)



File → Import

Import text file of sound velocity

Data post processing (Sound velocity data 5)

```
kOM5.txt - メモ帳
ファイル(E) 編集(E) 書式(O) 表示(V) ヘルプ(H)

[cast header]
InstrumentSN=08221
Date=04/18/12
Time=14:14:43.07
PressureOffset=0.32
UsePressureOffset=yes
Slot1Sensor1=SV-C.Xchange SV.X SN 201126 11/01/11
Slot3Sensor1=P-T.Xchange P.X SN 300185 08/05/11 T.X SN 400226 03/10/11

[Data]
04/18/12 14:14:43.14 1515.000 0000.06 18.919 007.82
04/18/12 14:14:43.18 1514.381 0000.28 17.701 007.82
04/18/12 14:14:43.38 1514.369 0000.30 17.696 007.80
04/18/12 14:14:43.58 1514.425 0000.28 17.698 007.82
04/18/12 14:14:43.78 1514.372 0000.28 17.708 007.82
04/18/12 14:14:43.98 1514.389 0000.27 17.703 007.82
04/18/12 14:14:44.17 1514.417 0000.32 17.704 007.80
04/18/12 14:14:44.37 1514.388 0000.34 17.710 007.82
04/18/12 14:14:44.57 1514.430 0000.30 17.705 007.82
04/18/12 14:14:44.77 1514.458 0000.28 17.710 007.82
```

We need **Sound velocity** and **depth value**

Data post processing (Sound velocity data 6)

Import - C:\HYPACK 2012\Projects\20120418-JRC_DEMO\S...

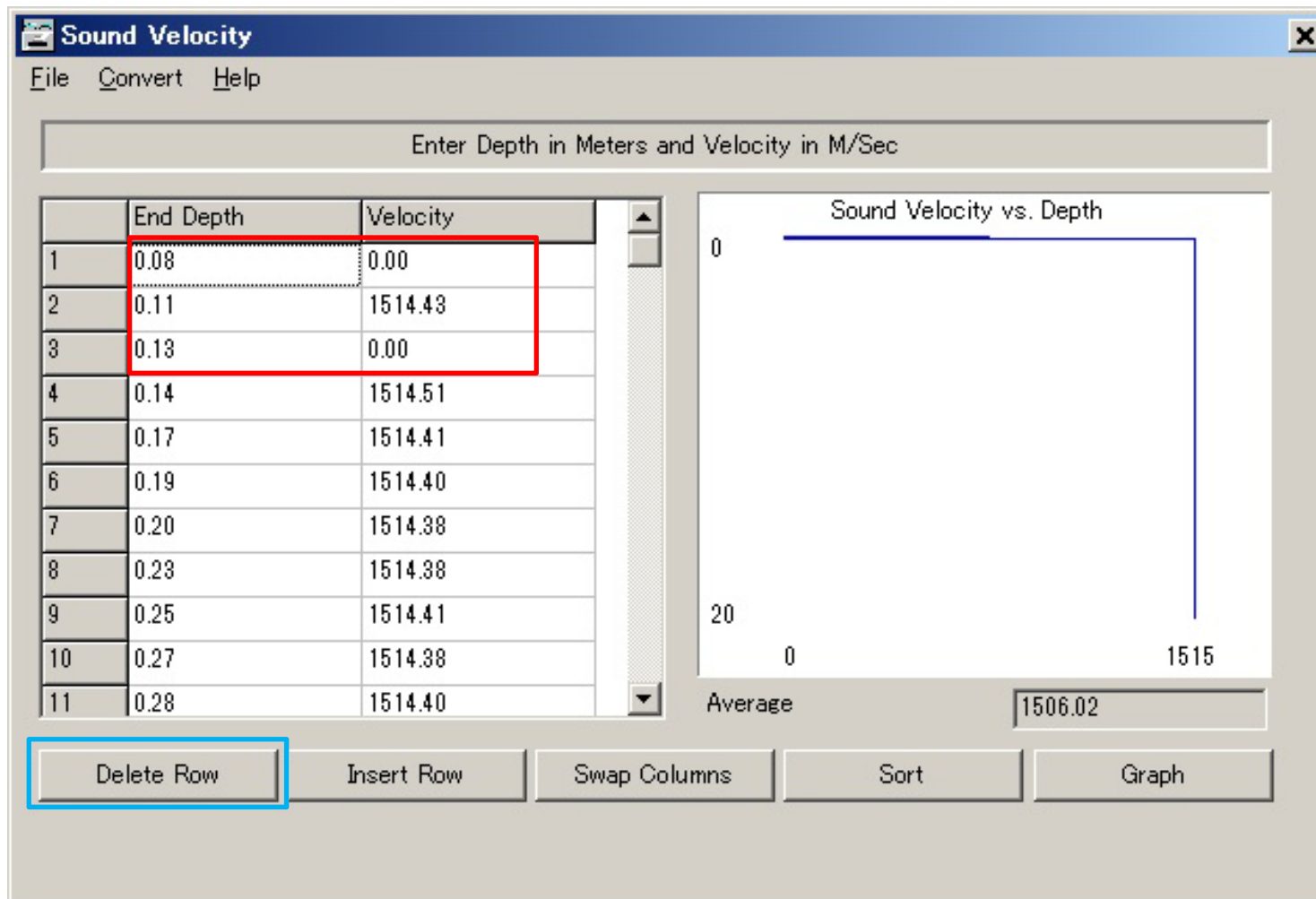
Field	Accept
04/18/12	<input type="checkbox"/>
14:14:43.38	<input type="checkbox"/>
1514.369	<input checked="" type="checkbox"/>
0000.30	<input checked="" type="checkbox"/>
17.696	<input type="checkbox"/>
007.80	<input type="checkbox"/>
	<input type="checkbox"/>
	<input type="checkbox"/>

Comma Separated Fields
 XBT
Salinity (PPT)

Buttons: Skip Record, Accept Record, Accept All, OK, Cancel

We input mark to sound velocity and depth value, (no need another information)
And "Accept Record"

Data post processing (Sound velocity data 7)

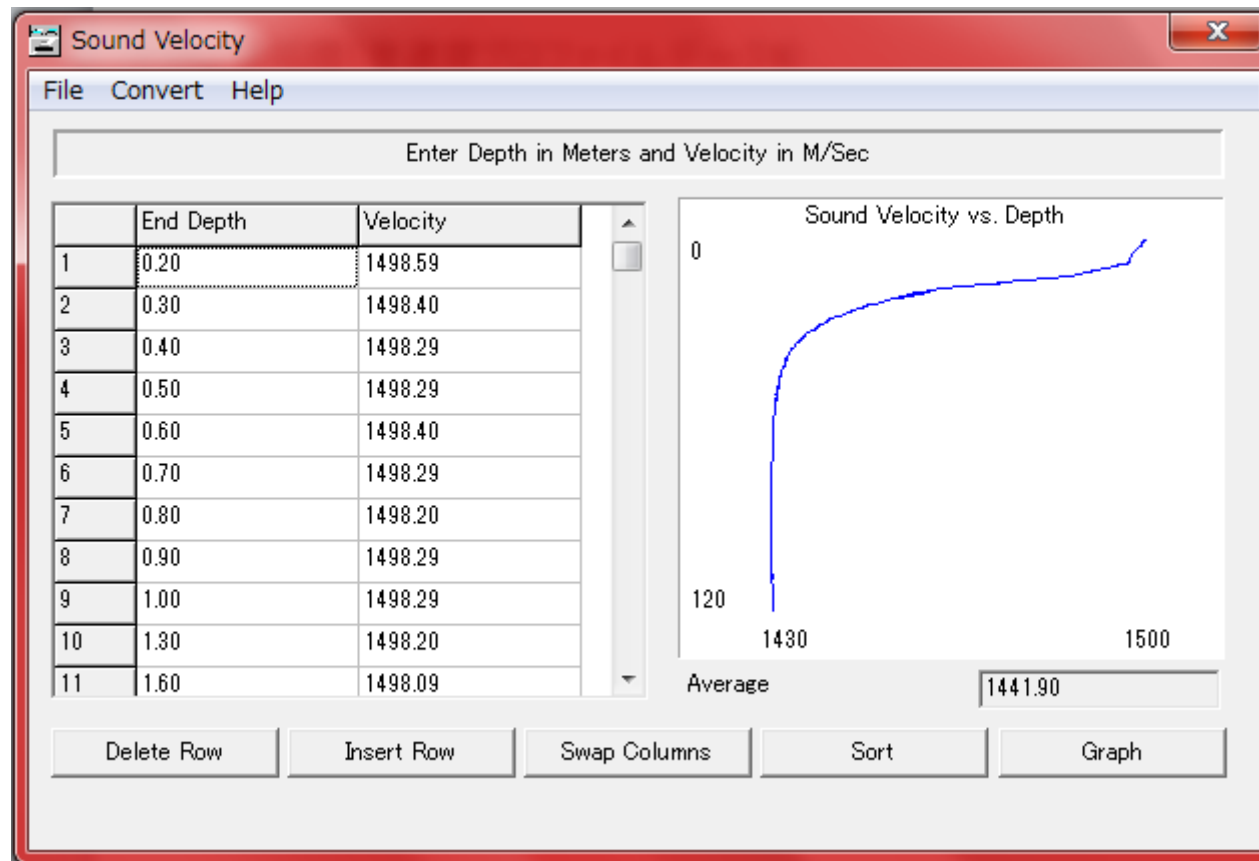


These value are not normal, so choose and click "Delete Row"

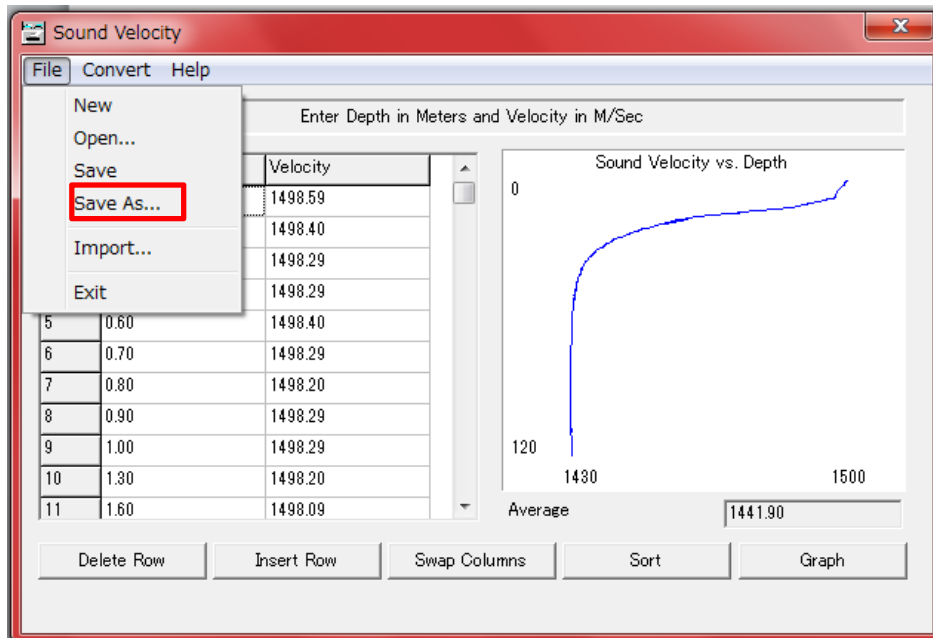
We need every 1m,so please sort by yourself.(This depend on data amount of depth)

Data post processing (Sound velocity data 8)

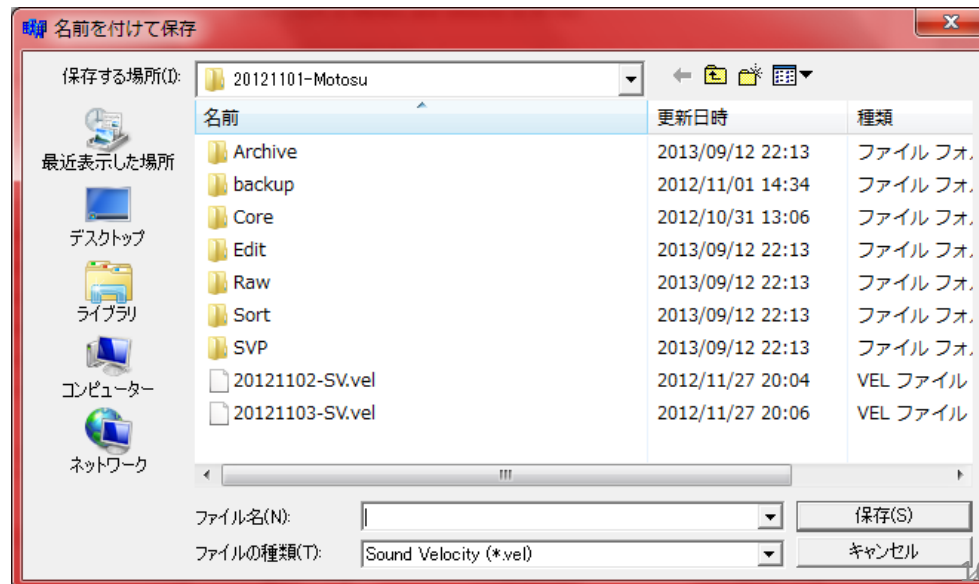
After remove abnormal value, You can see graph



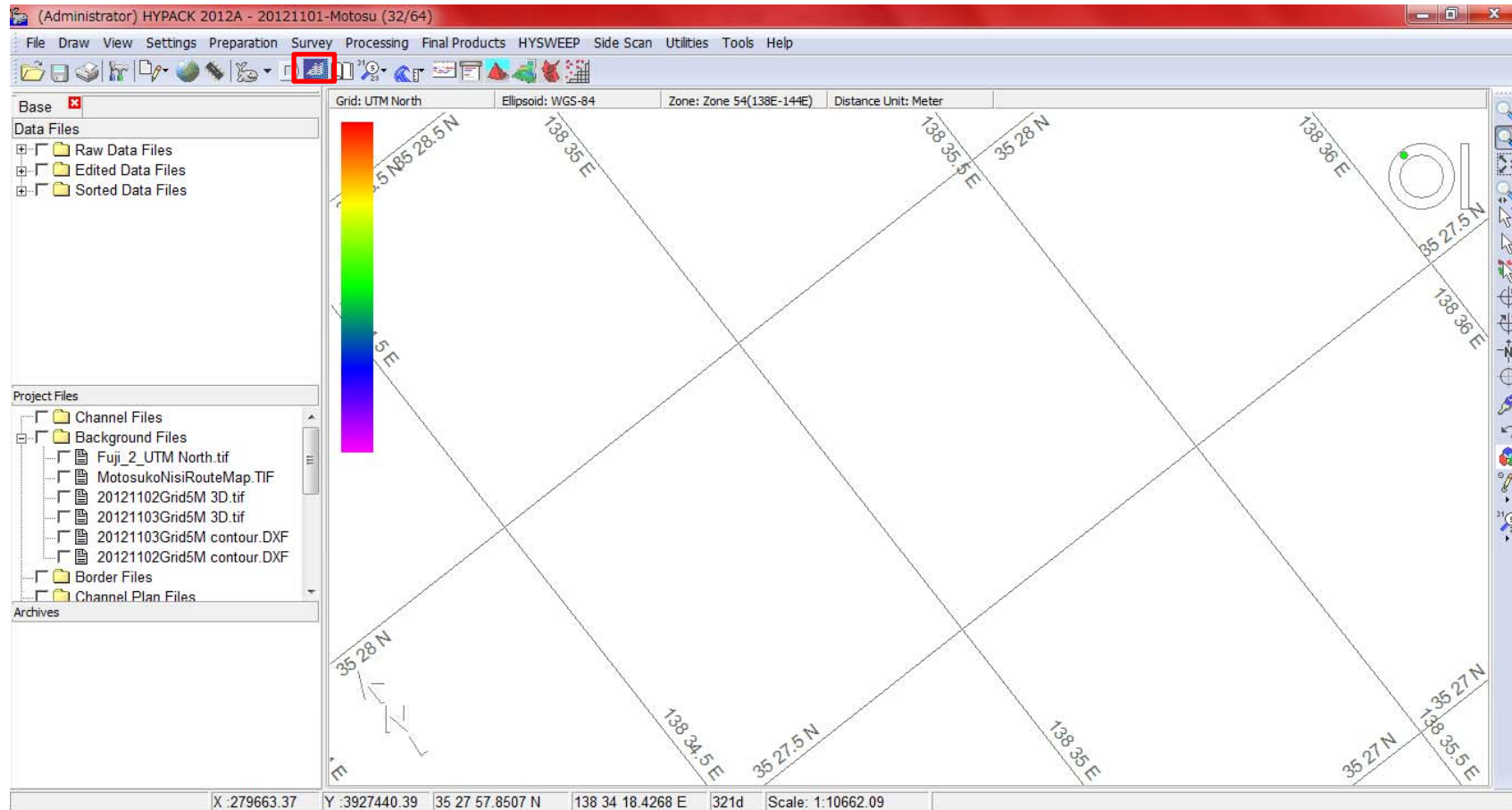
Data post processing (Sound velocity data 9)



Save as



Data post processing (MB MAX1)

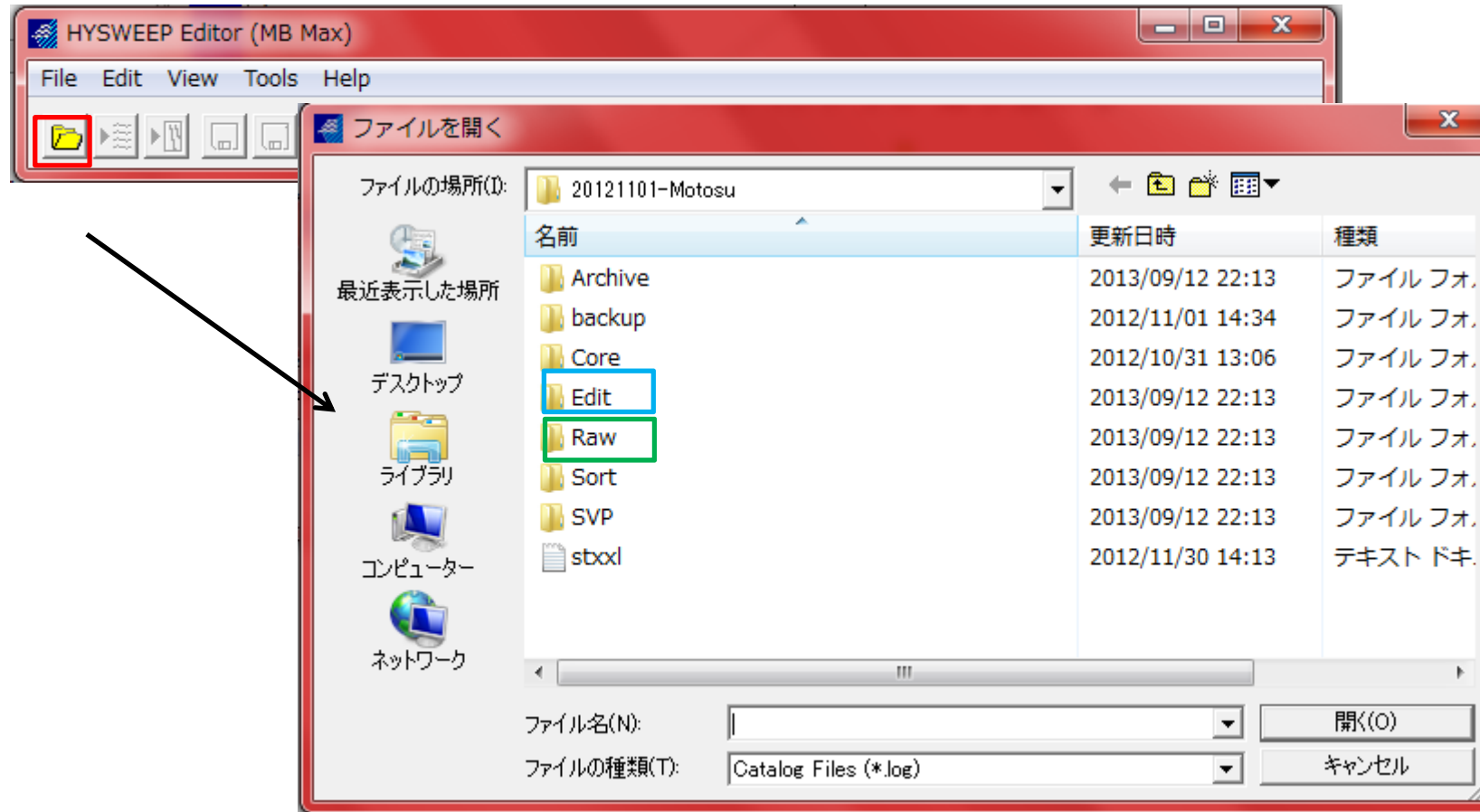


Choose this



Data post processing (MB MAX2)

After chose this  You can see this window



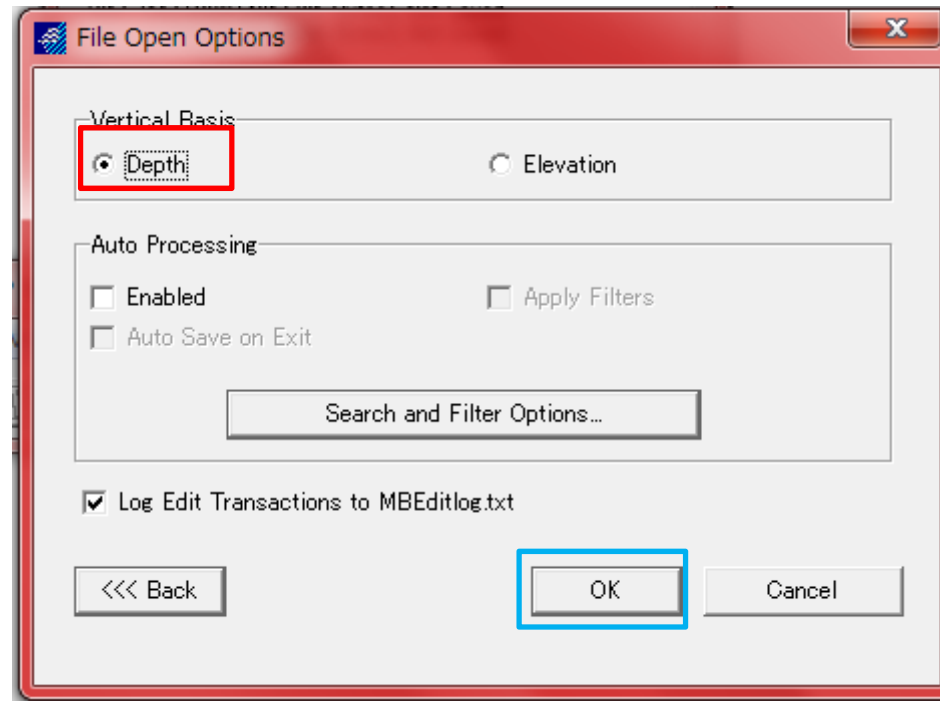
When you do post processing from beginning, you choose “Raw”
When you do post processing from middle, you choose “Edit”

Data post processing (MB MAX3)



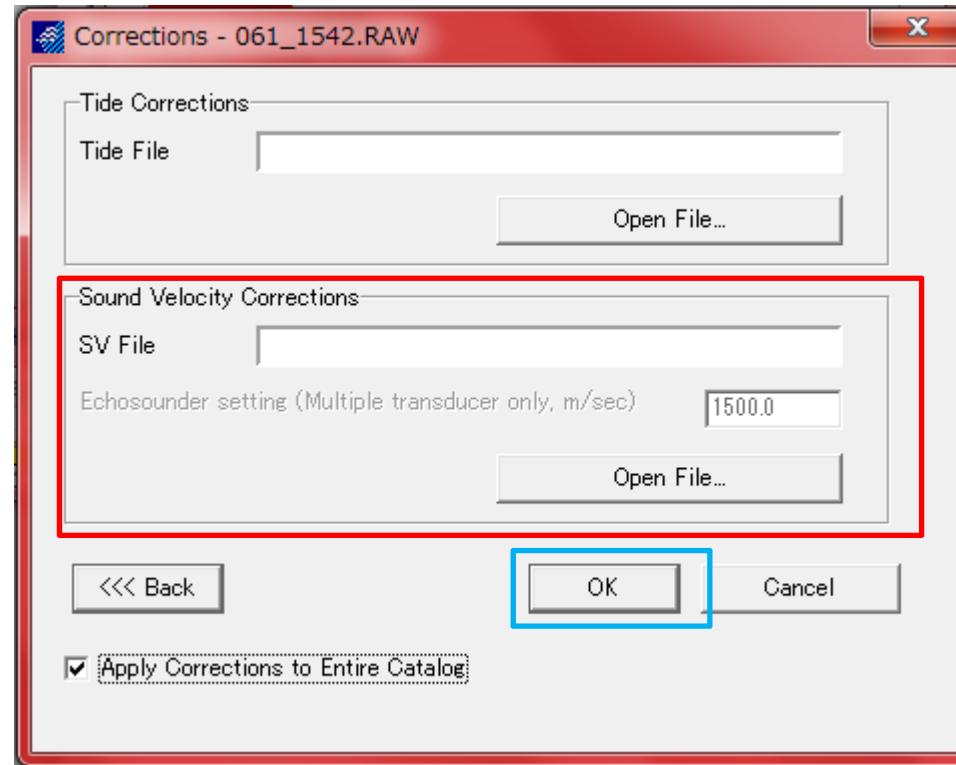
Choose file and click **“Select”**

Data post processing (MB MAX4)



Choose "Depth" and click "OK"

Data post processing (MB MAX5)



Choose "Sound Velocity file" and click "OK"

Data post processing (MB MAX6)

Read Parameters

Selections | Device Info | Survey Info | Presort | GPS Pre-Filter | Advanced

For each sonar system, select data (soundings and/or sidescan) and associated devices (navigation, heading, heave, pitch, roll).

Sonar
R2Sonic SONIC 2024 Load Sidescan (if available)

Navigation
Hypack Navigation

Heave
Applanix POS/MV Network

Pitch / Roll
Applanix POS/MV Network

Heading
Applanix POS/MV Network

Tide
None

<<< Back OK Cancel

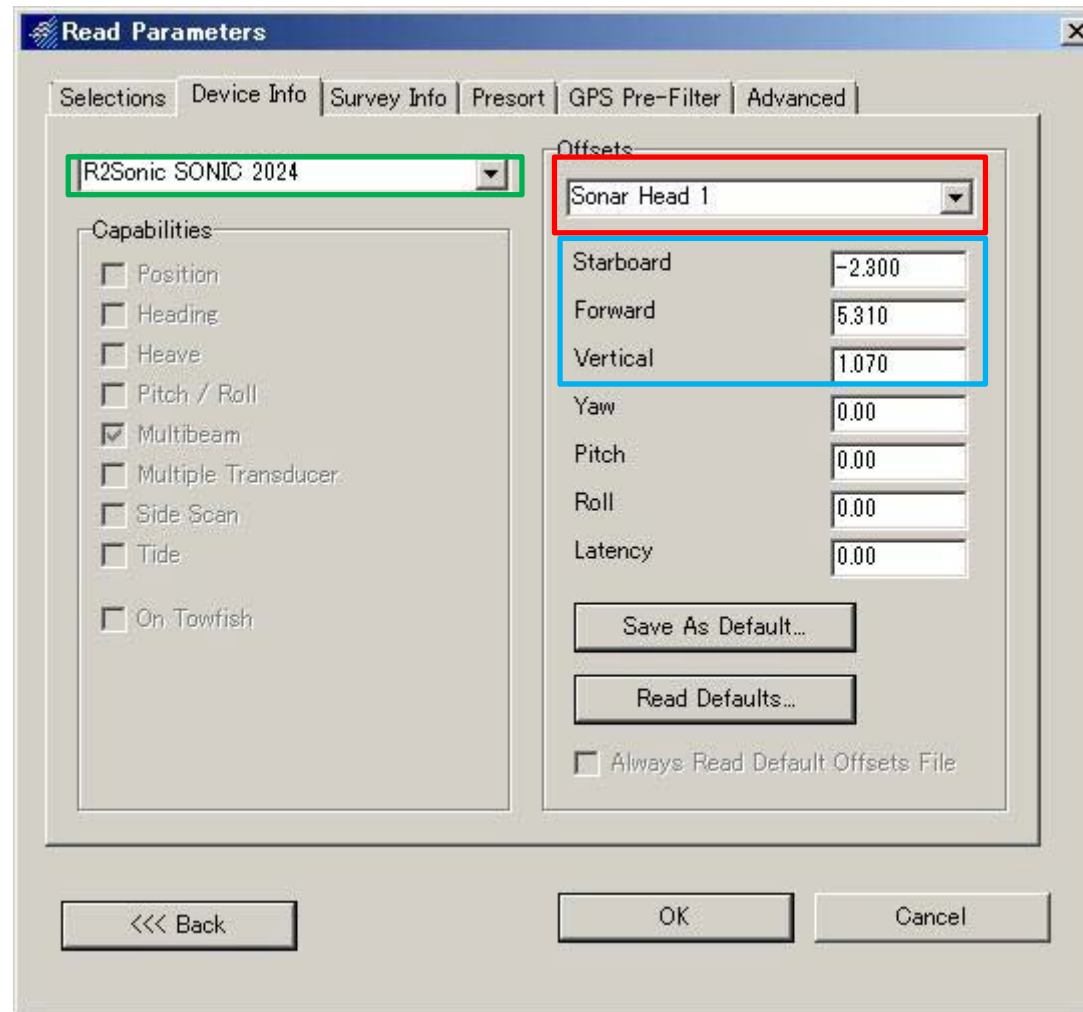
Please check about Sonar is “R2Sonic SONIC 2024”

Please check about Navigation is “Hypack Navigation”

Please check about Heave/Ptich/Roll/Heading is “Applanix POS/MV Network”

Please check about Tide is “None”

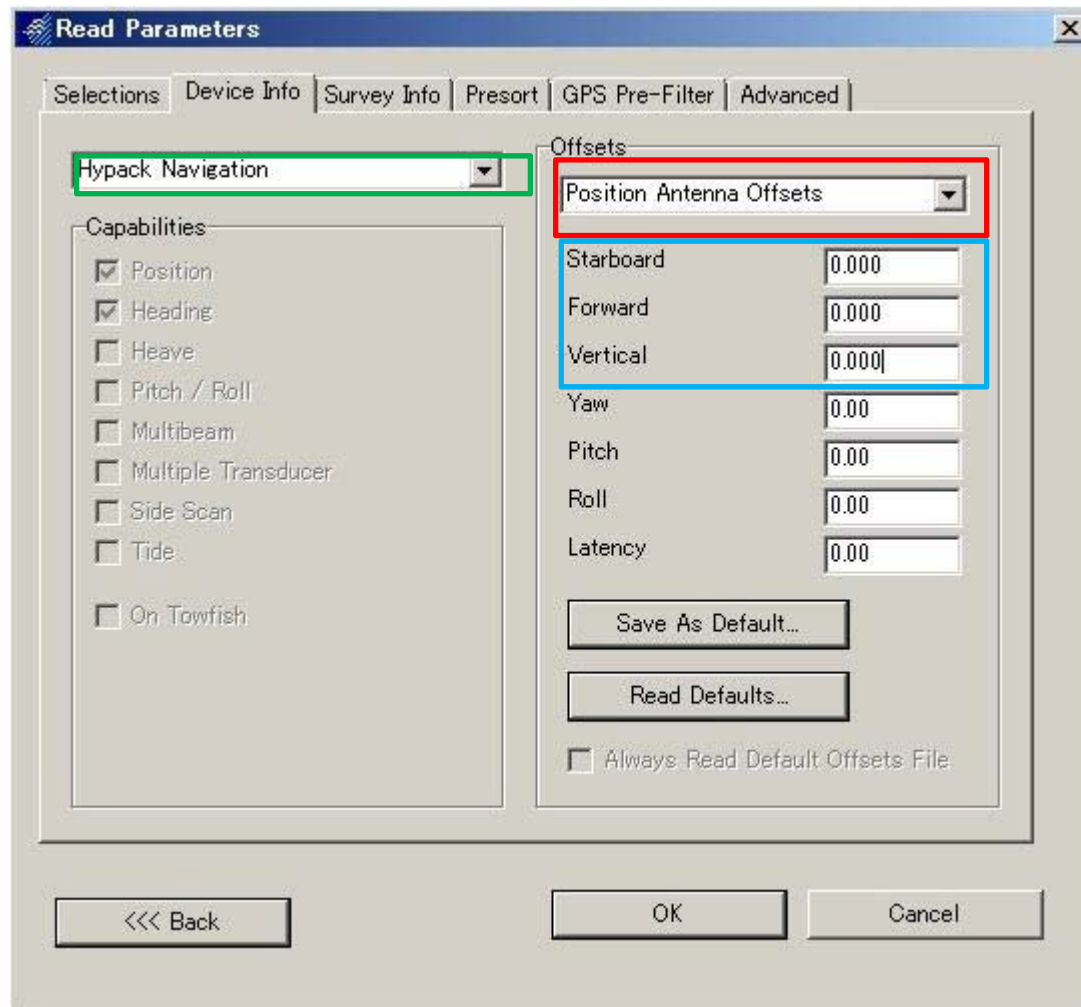
Data post processing (MB MAX7)



Choose "R2Sonic SONIC 2024", and please check Offsets is "Sonar Head 1" or not

Please check about value of Starboard/Forward/Vertical are same with Offsets or not

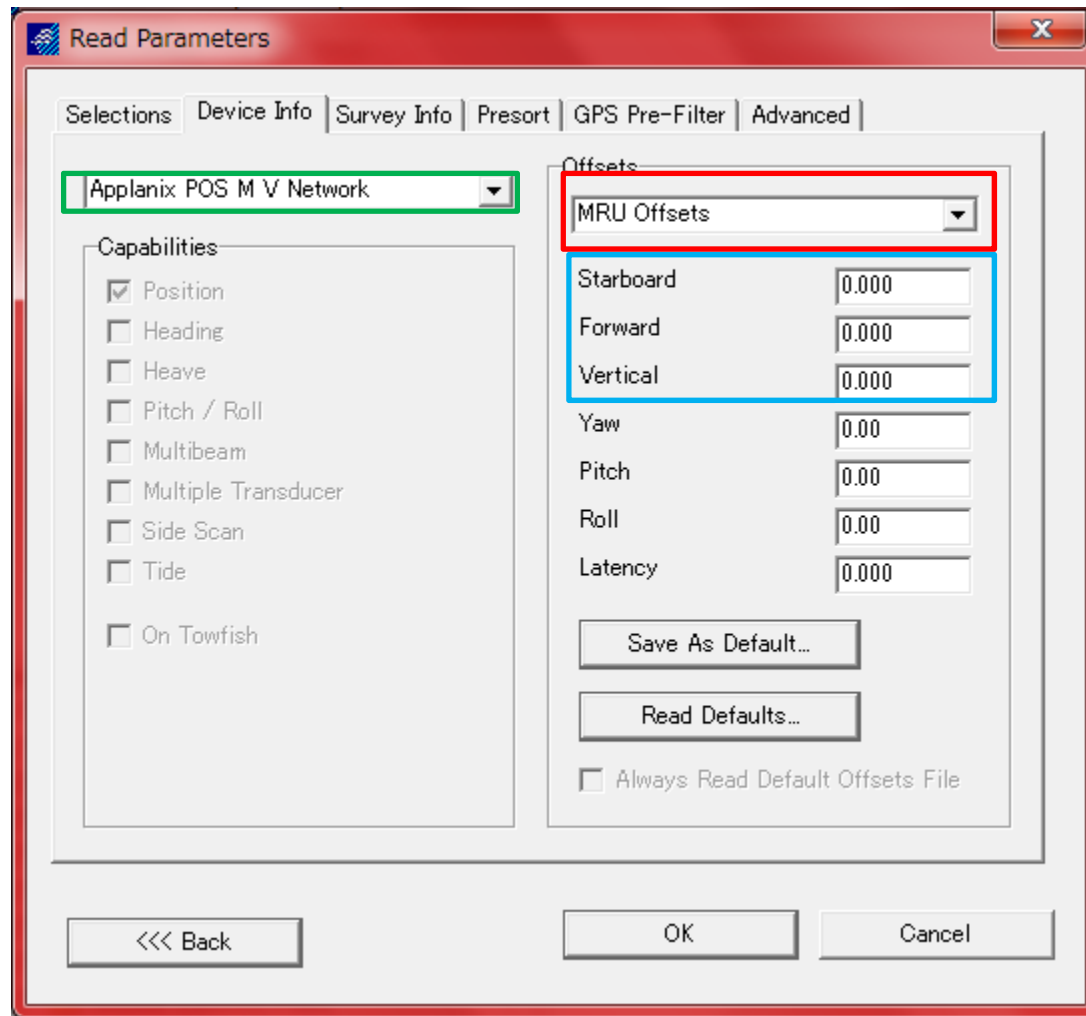
Data post processing (MB MAX 8)



Choose “Hypack Navigation”, and Please check about Offsets is “Position Antenna Offsets” or not

Please check about value of Starboard/Forward/Vertical are same with Offsets or not

Data post processing (MB MAX 9)



Choose “Applanix POS MV Network”, and Please check about Offsets is “MRU Offsets” or not
Please check about value of Starboard/Forward/Vertical are same with Offsets or not

Data post processing (MB MAX 10)

The screenshot shows the 'Read Parameters' dialog box with the 'Advanced' tab selected. The 'RTK GPS' section contains the following options:

- RTK Tide Method
- Average Tide Data to Remove Heave
 - Averaging Period (Seconds): 30
- Merge Tide Data with Heave

The 'MRU' section contains:

- Correct for Induced Heave
- Invert Pitch and Roll
- Remove Heave Drift
 - Averaging Period (Seconds): 12

The 'Sonar' section contains:

- Adjust SV Profile Each Ping Using SV at the Sonar Head
- Fixed Number of Beams: 0

The 'Ray Tracing' section contains:

- Use Line Select Method
- Use Arc Method
- Auto Select

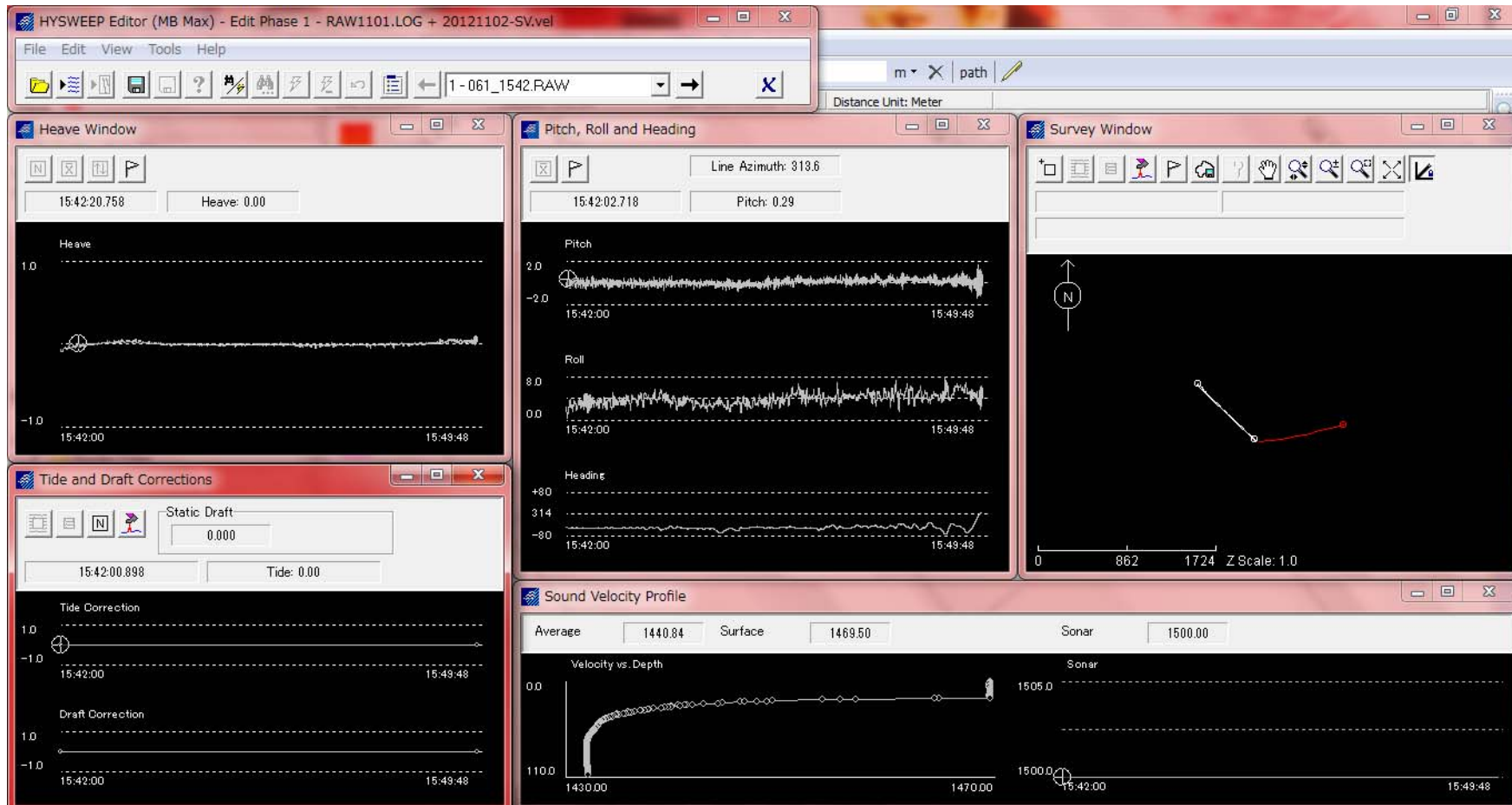
At the bottom, the '<<< Back' button is highlighted with a blue box, and the 'OK' and 'Cancel' buttons are also visible.

Input check mark to “Correct for Induced Heave”

Click “OK”

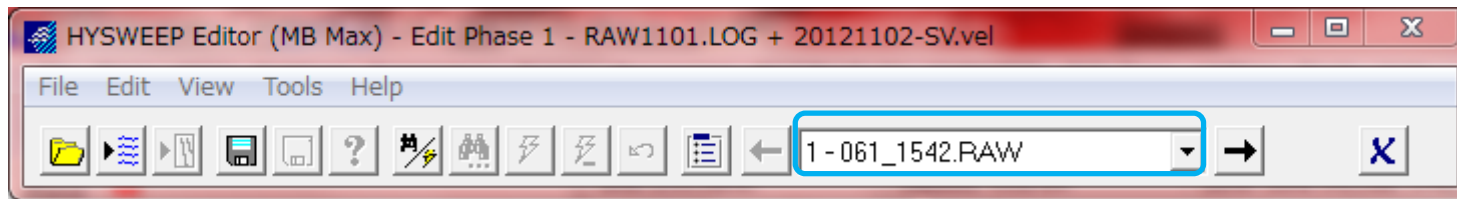
Data post processing (MB MAX 11)

After click “OK”, You can see these windows



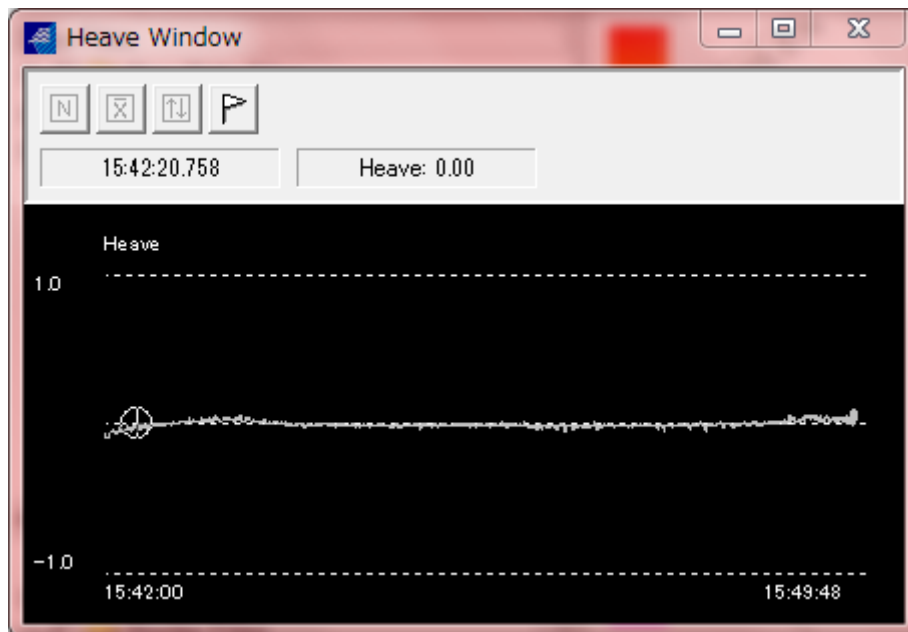
Data post processing (MB MAX 12)

Phase1 Menu

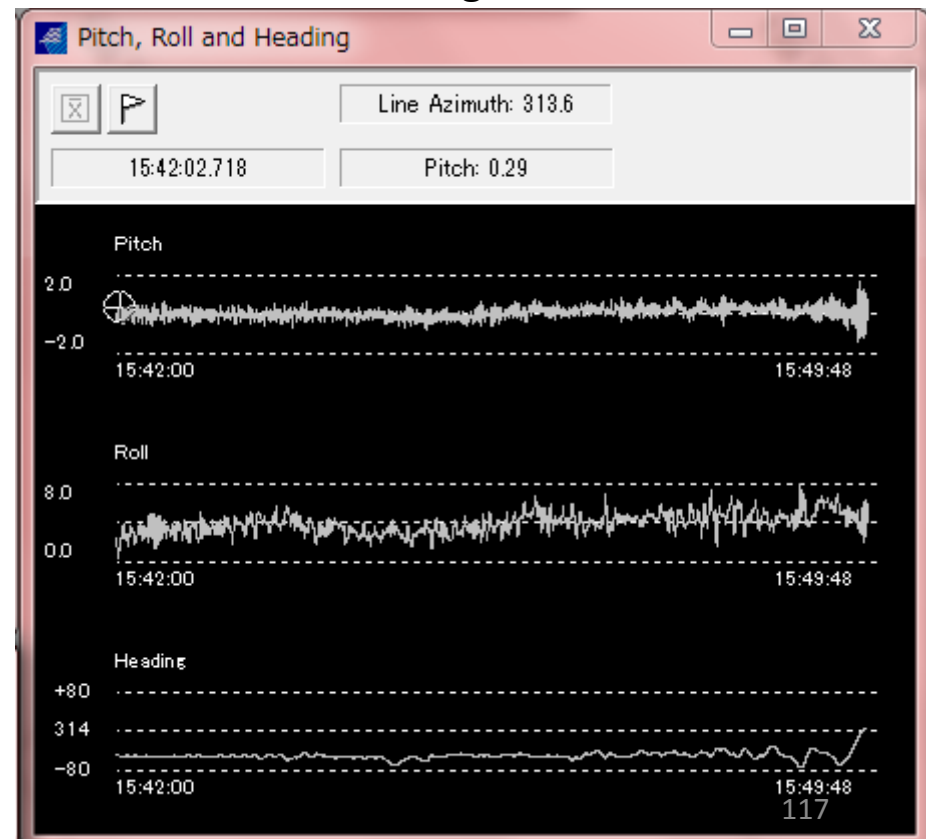


File name

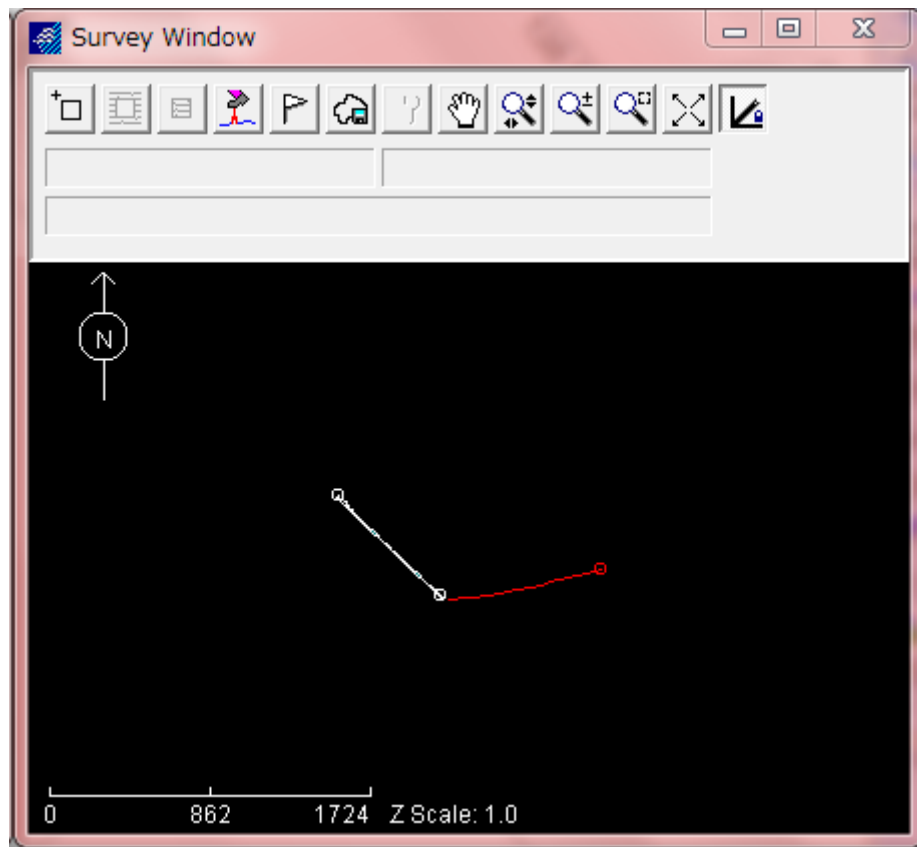
Heave Window



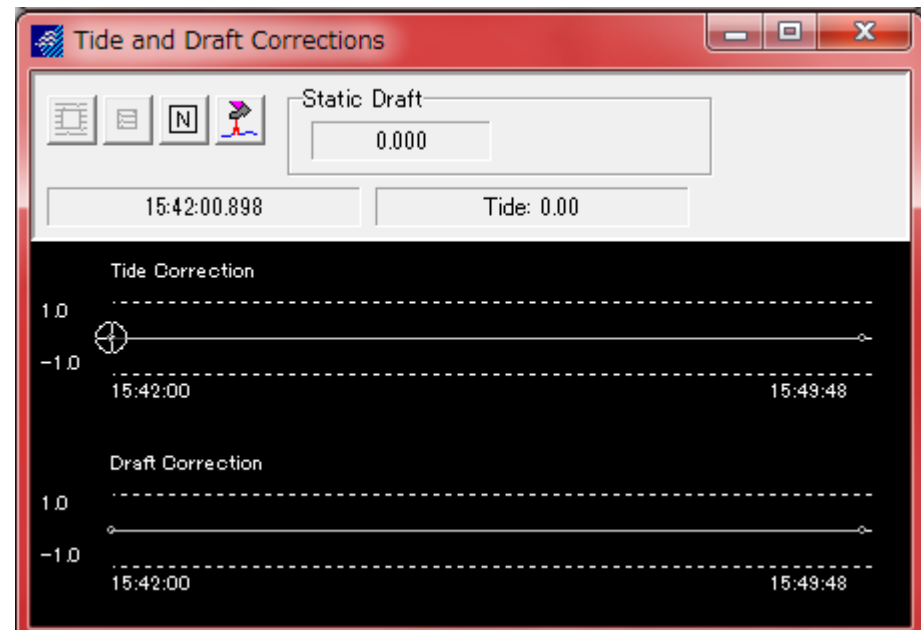
Pitch, Roll and Heading



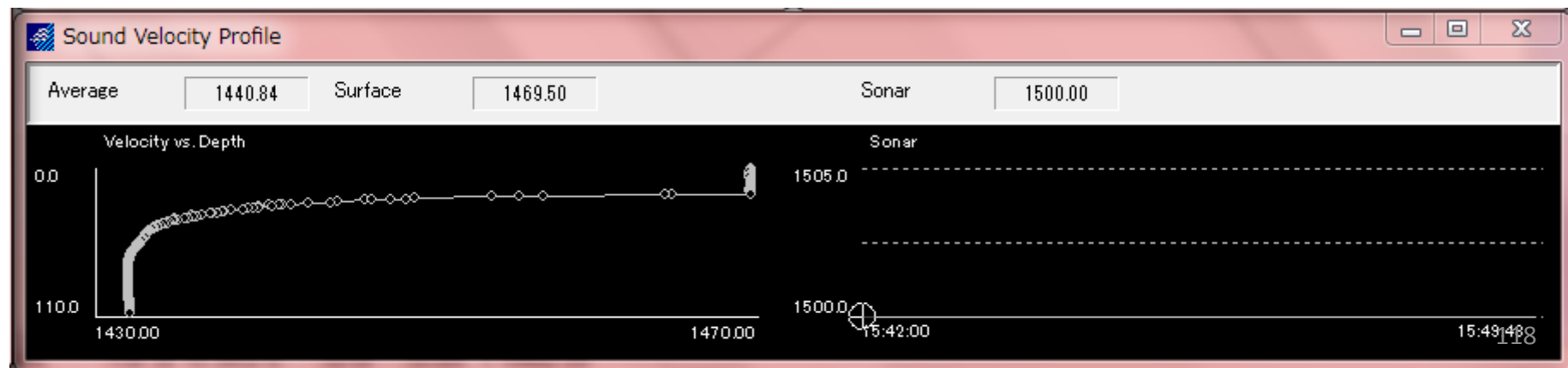
Data post processing (MB MAX 13) Survey Window



Tide and Draft Corrections

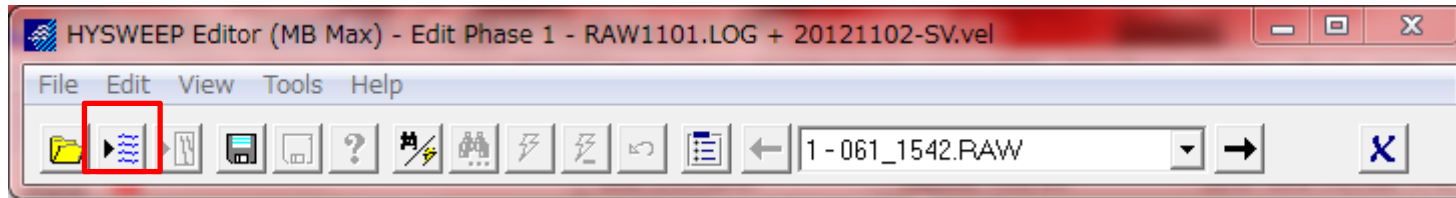


Sound Velocity Profile



Data post processing (MB MAX 14)

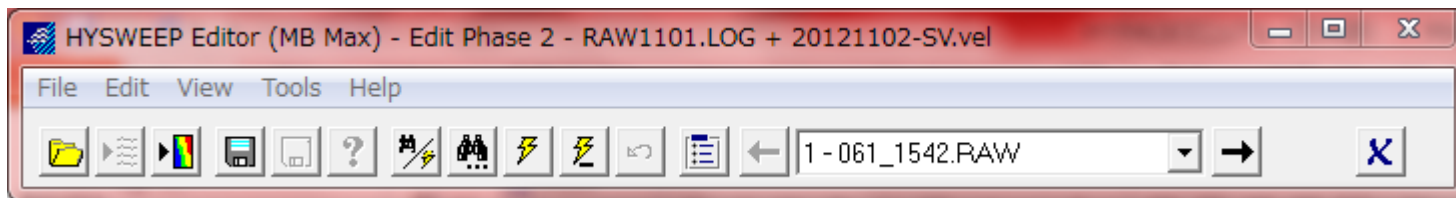
After checked Phase1, move to Phase2



Move to Phase2

After moved to Phase2,You can see these windows

Phase2 Menu

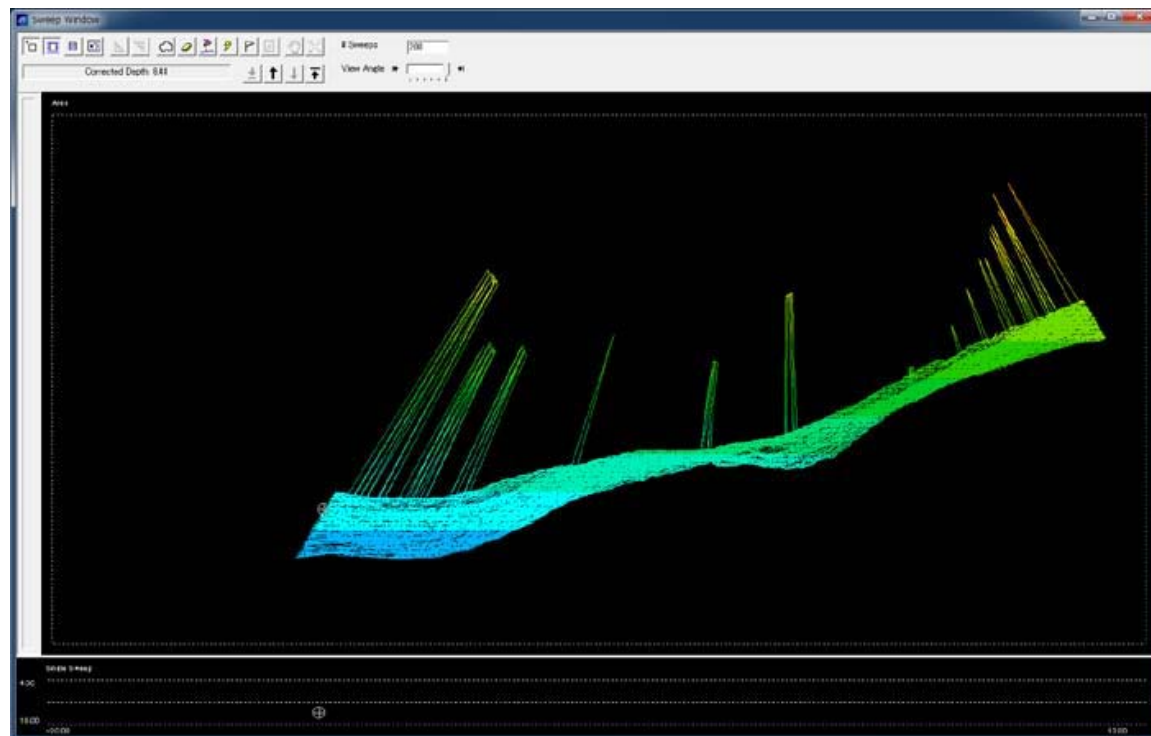


Data post processing (MB MAX 15)

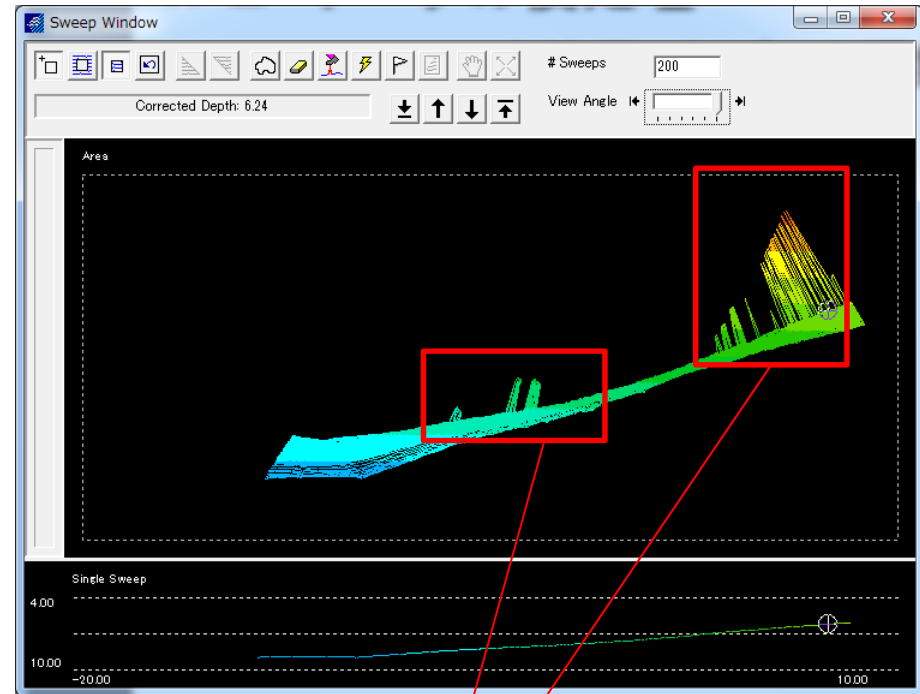
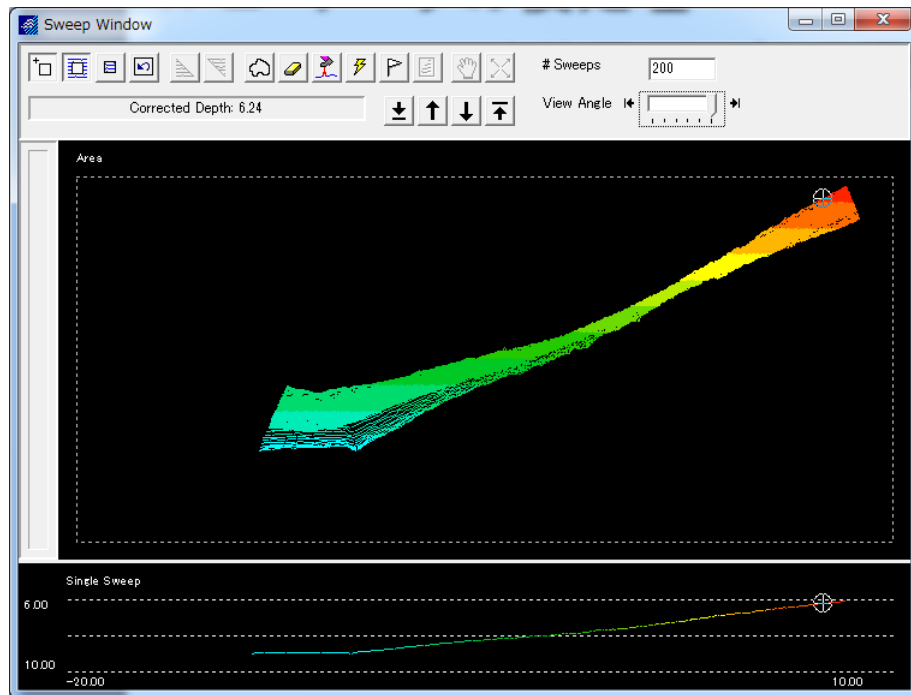
Sounding Info

Sounding Info	
Corrected Depth	63.03
Status	No Position
Line Number / Sweep	1 / 1
Beam	1
Quality	1
Time	15:42:00.400
Event	0
X	281799.64
Y	3926976.41
Slant Range	65.26
Offset	0.00
Beam Angle	0.00
Intensity	0
Heave	-0.07
Roll	2.32
Pitch	-0.06
Heading	263.08
Tide	0.00
Draft	0.00

Sweep Window

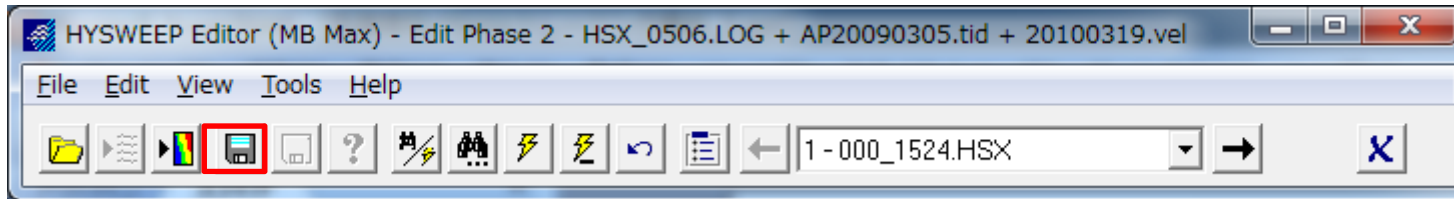


Data post processing (MB MAX 16)

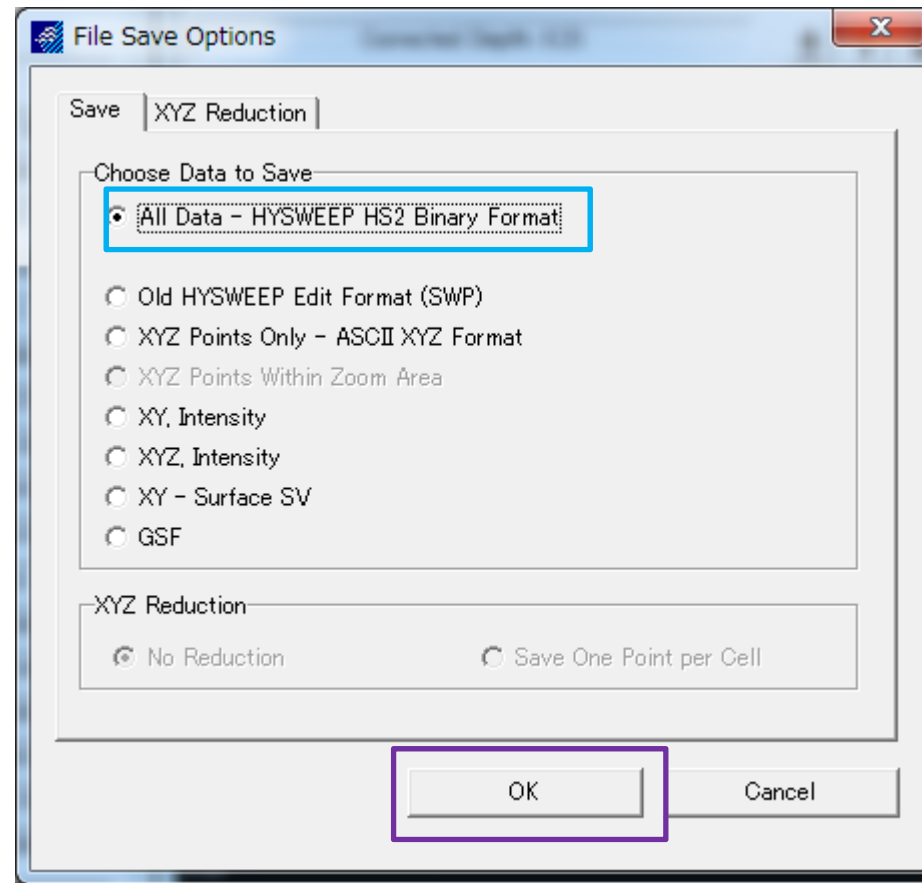


Remove noise

Data post processing (MB MAX 17)

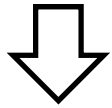


Choose floppy disk, and
choose “all data” and
click “OK”

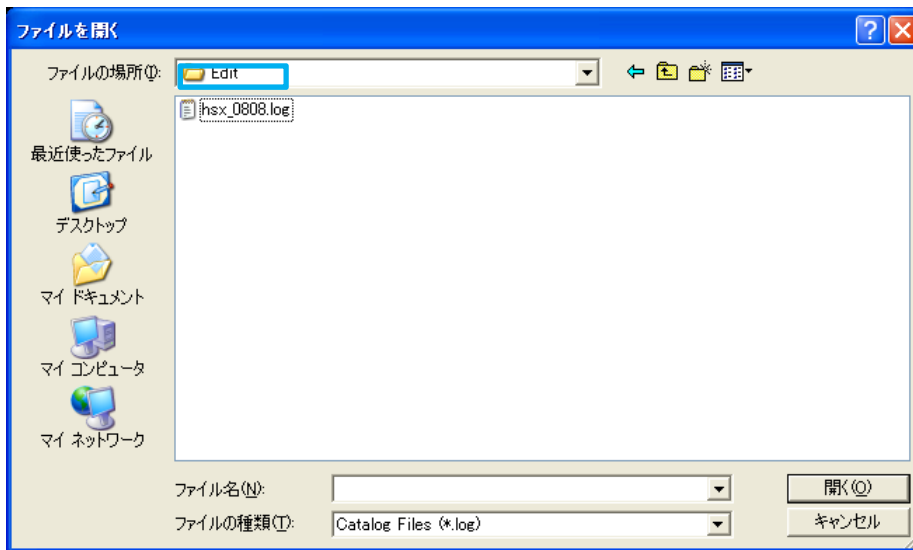
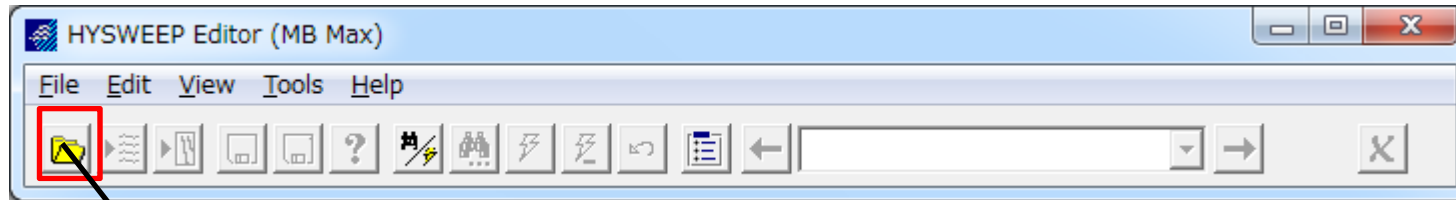


Data post processing (MB MAX 18) Roll Patch test

Restart MB MAX

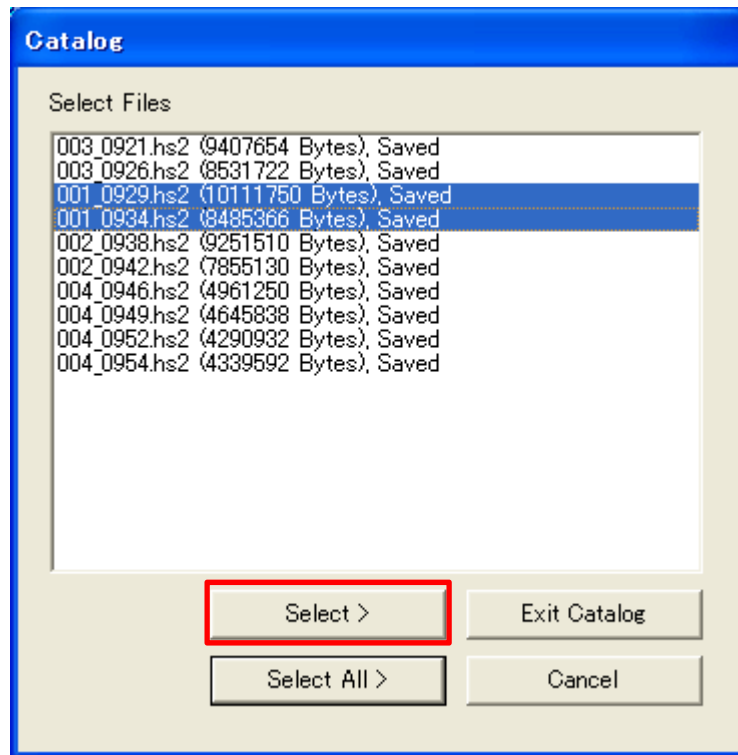


Open log file of for Patch test



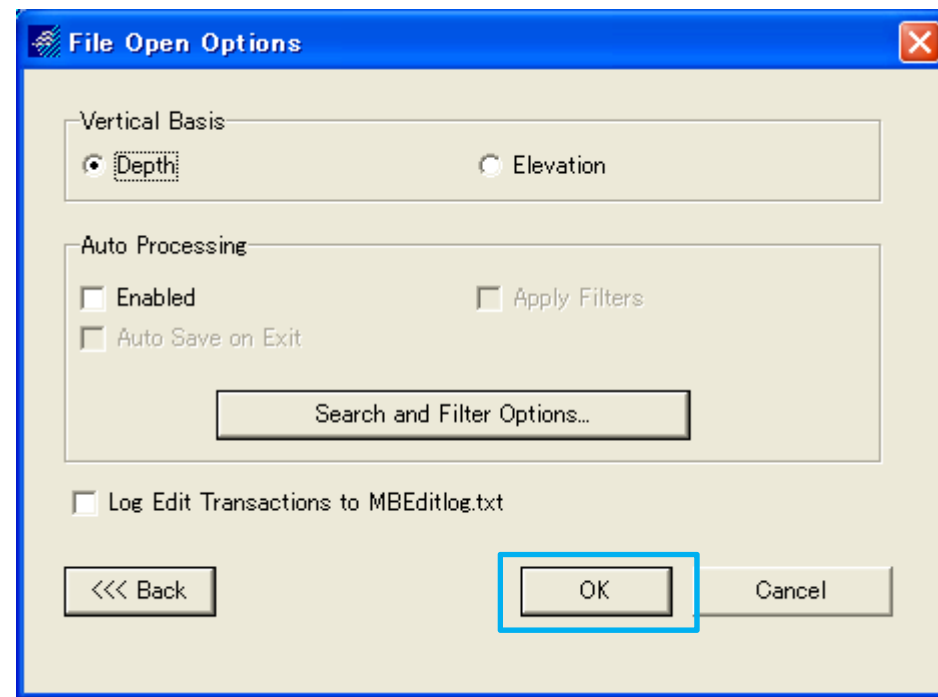
After removed noise data is saved in “Edit File”

Data post processing (MB MAX 19) Roll Patch test



Choose file and click **“Select”**

Click **“OK”**



Data post processing (MB MAX 20) Roll Patch test

Corrections - 001_0929.hs2

Tide Corrections

Tide File

Open File...

Sound Velocity Corrections

SV File

Echosounder setting (Multiple transducer only, m/sec)

Open File...

<<< Back **OK** Cancel

Apply Corrections to Entire Catalog

Please don't put file
Just click "OK"

Read Parameters

Selections | Device Info | Survey Info | Presort | GPS Pre-Filter | Advanced |

For each sonar system, select data (soundings and/or sidescan) and associated devices (navigation, heading, heave, pitch, roll).

Sonar
Reson Seabat 7125 Load Sidescan (if available)

Navigation
Hypack Navigation

Heave
Applanix POS/MV Network

Heading
Applanix POS/MV Network

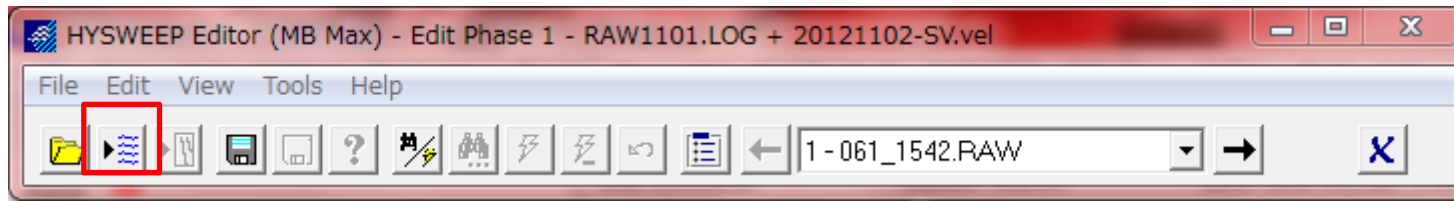
Pitch / Roll
Applanix POS/MV Network

Tide
None

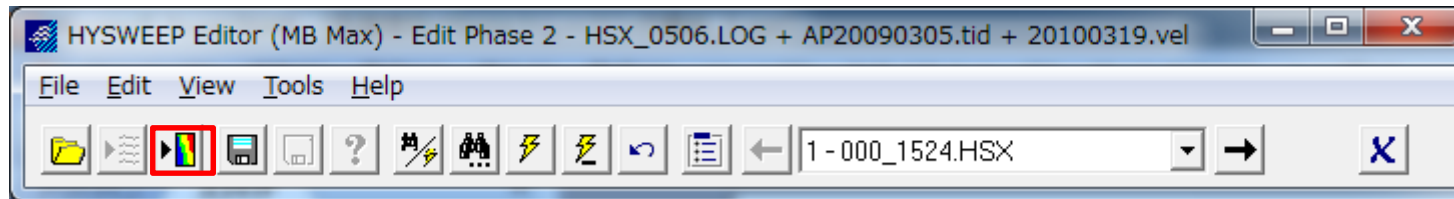
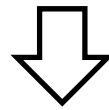
<<< Back **OK** Cancel

Click "OK"

Data post processing (MB MAX 21) Roll Patch test



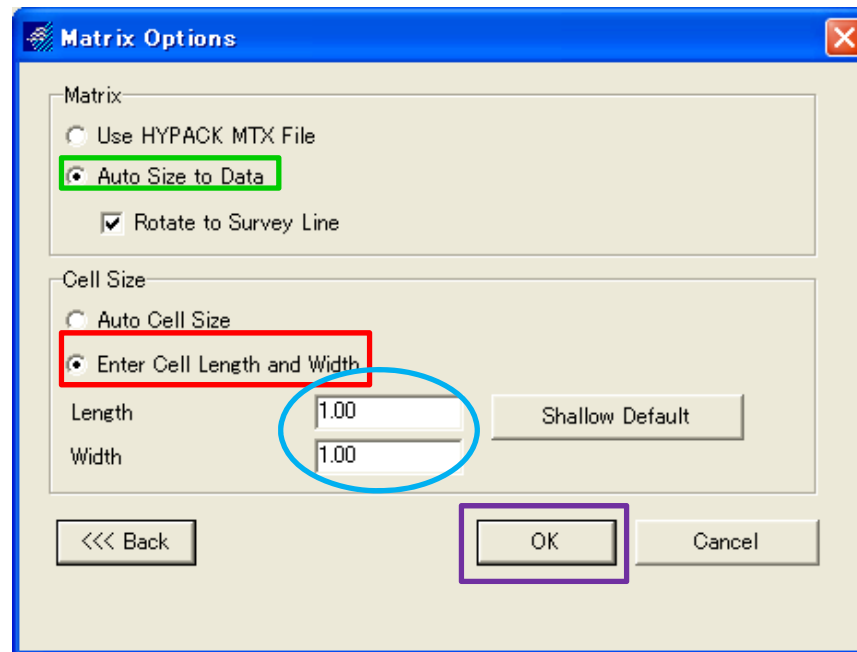
Move to Phase2



Move to Phase3

Check to "Auto Size Data"

Check to "Enter Cell Length and Width"

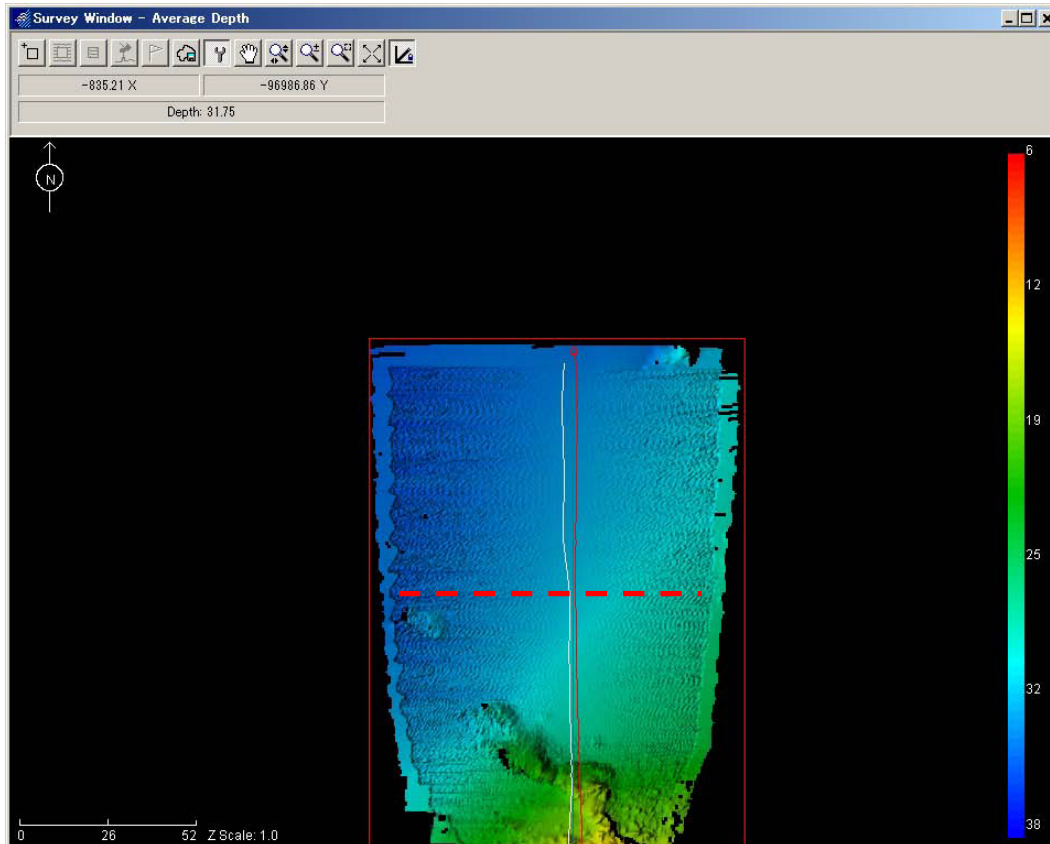



Input 1/10 of depth value by meter

Click "OK"

Data post processing (MB MAX 22) Roll Patch test

After click "OK", You can see this window

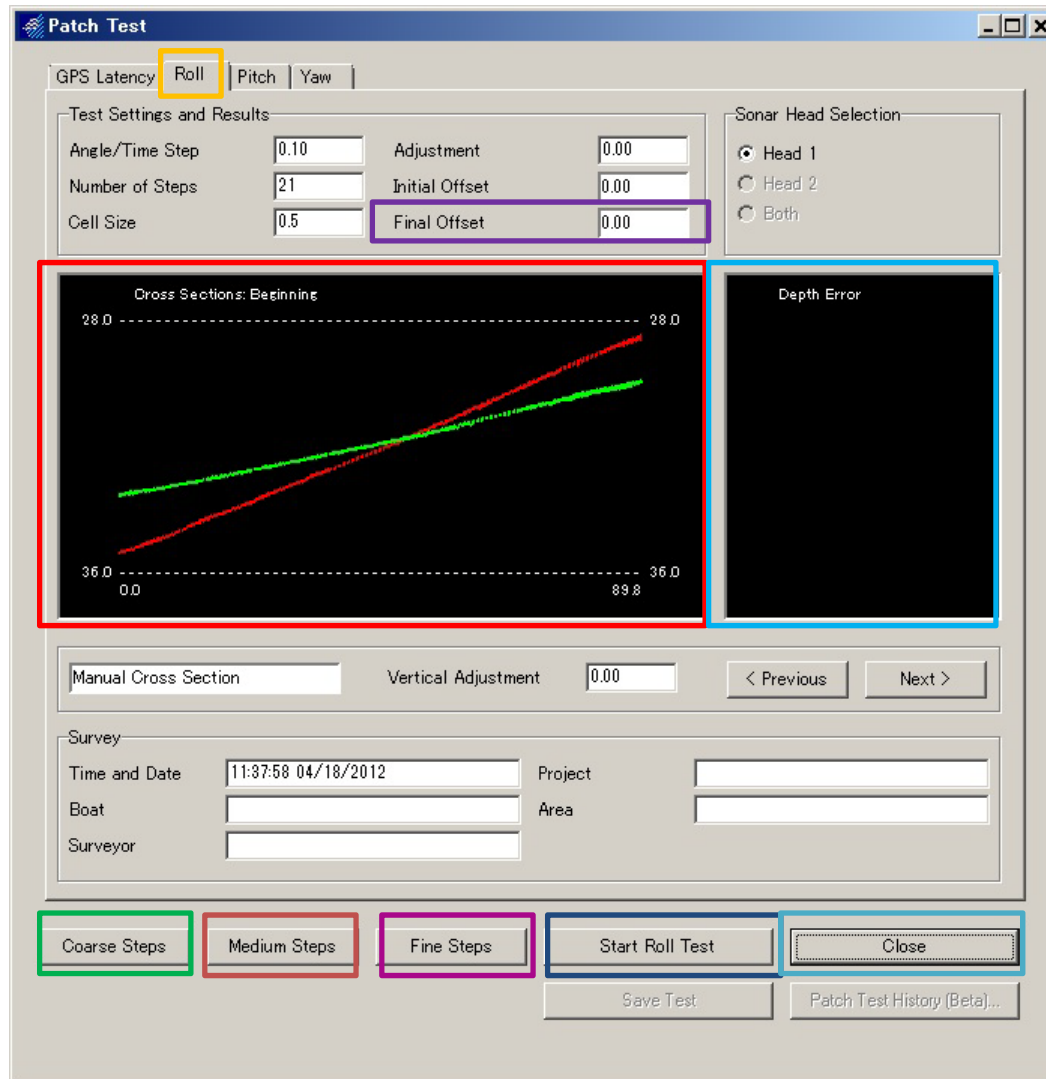


Choose this icon 

Then click & drag the cursor to draw a line as shown in picture (left)

Data post processing (MB MAX 23) Roll Patch test

You can see Patch test window



Cross section

Graph of result

Choose "Roll"

- 1, Click "Coarse Steps"
- 2, Click "Start Roll Test"
- 3, Click "Medium Steps"
- 4, Click "Start Roll Test"
- 5, Click "Fine Steps"
- 6, Click "Start Roll Test"
- 7, Please memo Final Offsets value
- 8, After wrote value, Click "Close"

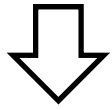
Data post processing (MB MAX 24) Roll Patch test

The screenshot shows the 'Patch Test' software interface. At the top, there are tabs for 'GPS Latency', 'Roll', 'Pitch', and 'Yaw'. Below these are two main sections: 'Test Settings and Results' and 'Sonar Head Selection'. The 'Test Settings and Results' section contains several input fields: 'Angle/Time Step' (0.10), 'Adjustment' (-1.00), 'Number of Steps' (21), 'Initial Offset' (0.00), 'Cell Size' (0.5), and 'Final Offset' (-1.00). The 'Sonar Head Selection' section has three radio buttons: 'Head 1' (selected), 'Head 2', and 'Both'. Below these are two graphs. The left graph, titled 'Cross Sections: Patch Test Result', shows a plot with a red line and a green line that are nearly overlapping, indicating a good fit. The right graph, titled 'Depth Error', shows a parabolic curve with a minimum value near zero, indicating that the depth measurements are consistent. Below the graphs are several control elements: a 'Manual Cross Section' field, a 'Vertical Adjustment' field (0.00), and navigation buttons '< Previous' and 'Next >'. At the bottom, there is a 'Survey' section with fields for 'Time and Date' (11:37:58 04/18/2012), 'Project', 'Boat', 'Area', and 'Surveyor'. Finally, there are several buttons at the very bottom: 'Coarse Steps', 'Medium Steps', 'Fine Steps', 'Start Roll Test', 'Close', 'Save Test', and 'Patch Test History (Beta)...'.

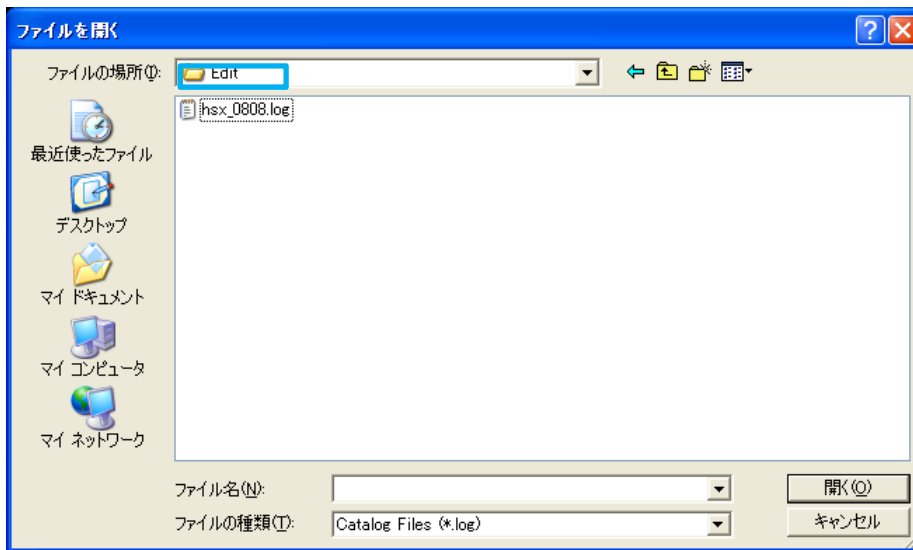
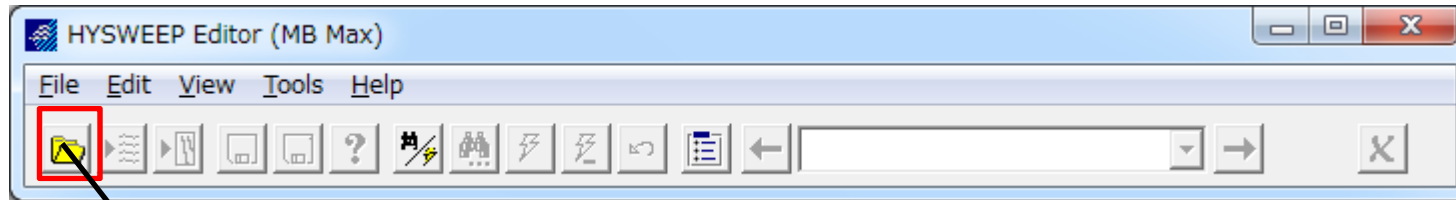
Please check about overlapping lines or not, Graph form is OK or not

Data post processing (MB MAX 25) Pitch Patch test

Restart MB MAX

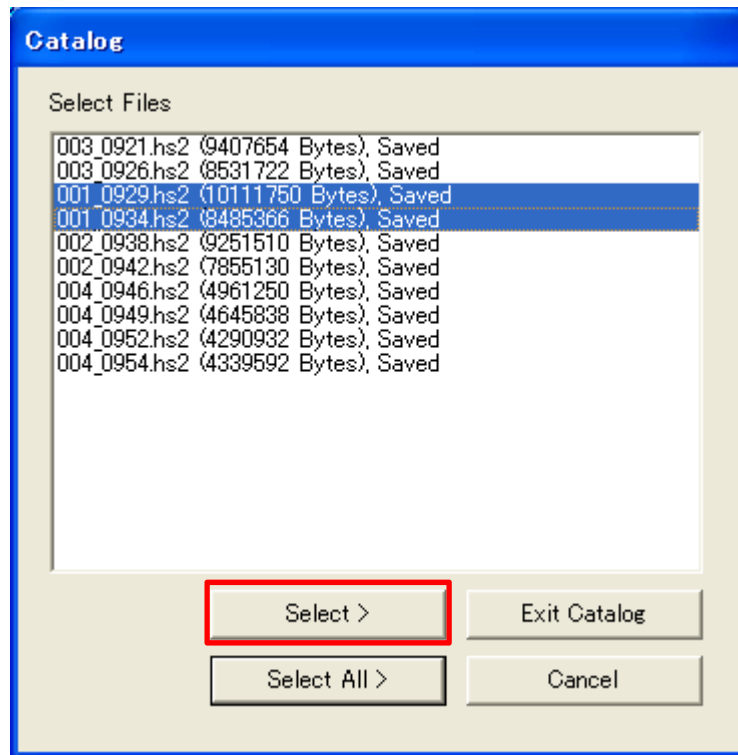


Open log file of for Patch test



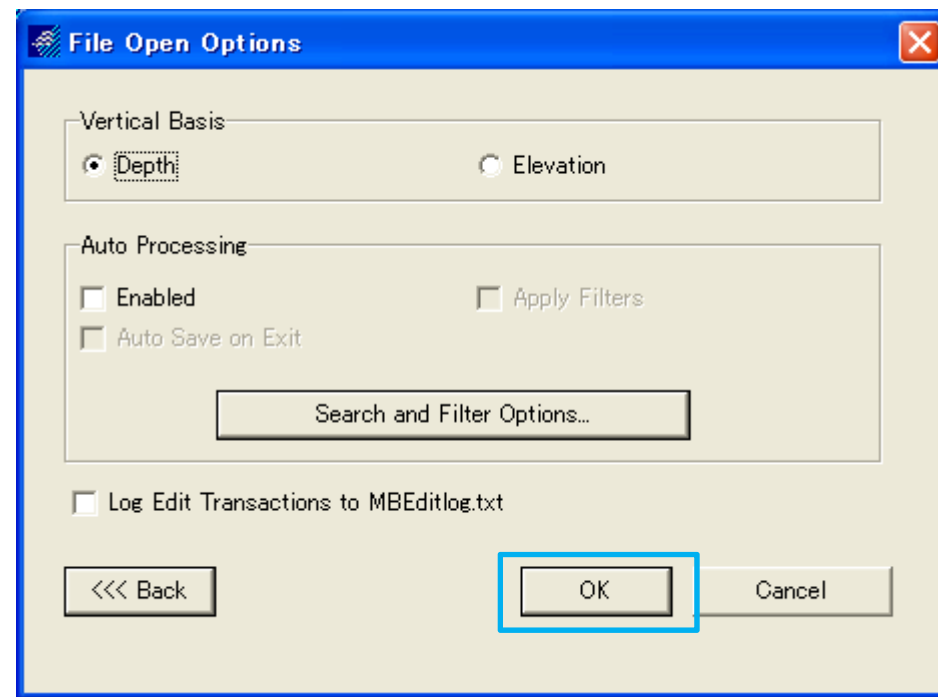
After removed noise data is saved in “Edit File”

Data post processing (MB MAX 26) Pitch Patch test



Choose file and click **“Select”**

Click **“OK”**



Data post processing (MB MAX 27) Pitch Patch test

Corrections - 001_0929.hs2

Tide Corrections

Tide File

Open File...

Sound Velocity Corrections

SV File

Echosounder setting (Multiple transducer only, m/sec)

Open File...

<<< Back **OK** Cancel

Apply Corrections to Entire Catalog

Please don't put file
Just click "OK"

Read Parameters

Selections | Device Info | Survey Info | Presort | GPS Pre-Filter | Advanced |

For each sonar system, select data (soundings and/or sidescan) and associated devices (navigation, heading, heave, pitch, roll).

Sonar
Reson Seabat 7125 Load Sidescan (if available)

Navigation
Hypack Navigation

Heave
Applanix POS/MV Network

Heading
Applanix POS/MV Network

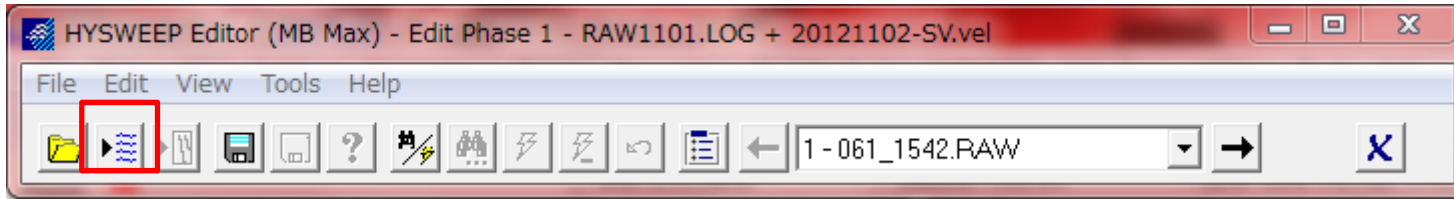
Pitch / Roll
Applanix POS/MV Network

Tide
None

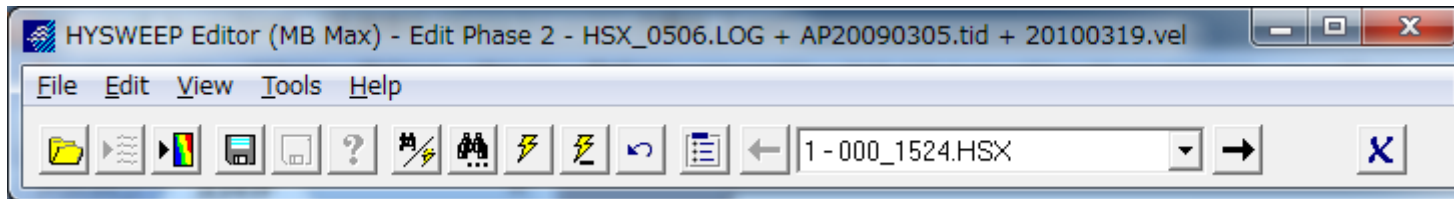
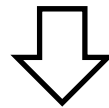
<<< Back **OK** Cancel

Click "OK"

Data post processing (MB MAX 28) Pitch Patch test

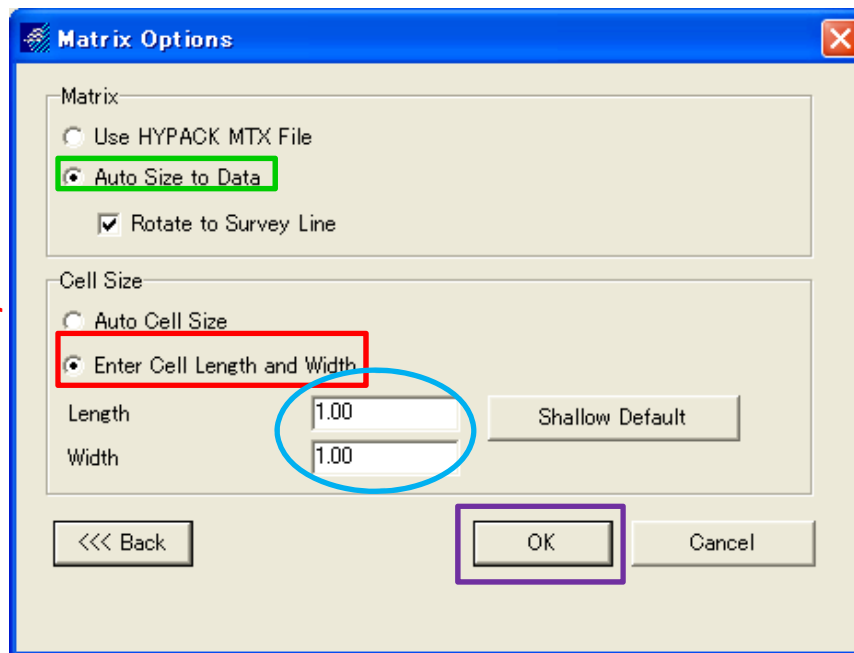


Move to Phase2



Check to "Auto Size Data"

Check to "Enter Cell Length and Width"



Input 1/10 of depth value by meter

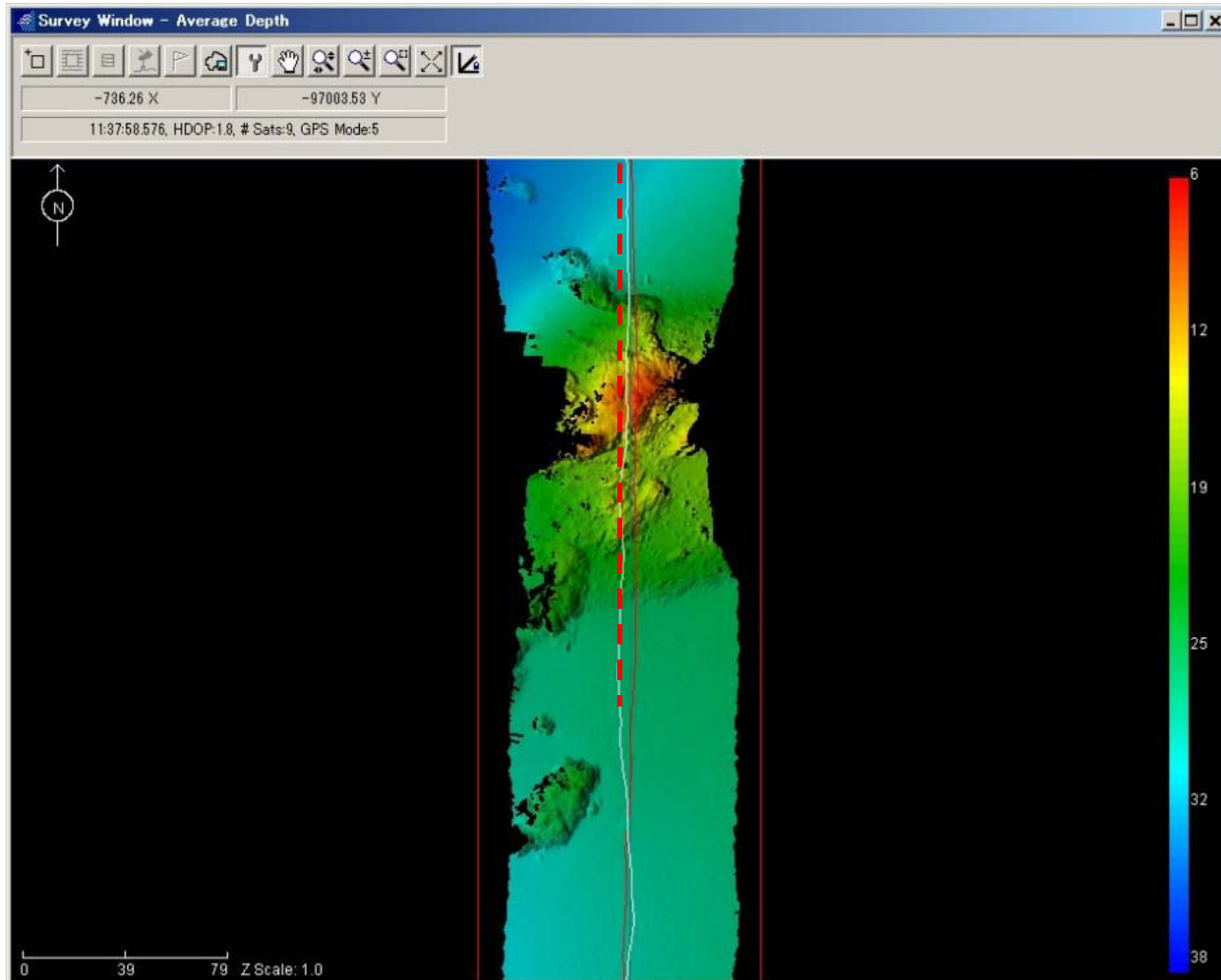
Click "OK"

Data post processing (MB MAX 29) Pitch Patch test

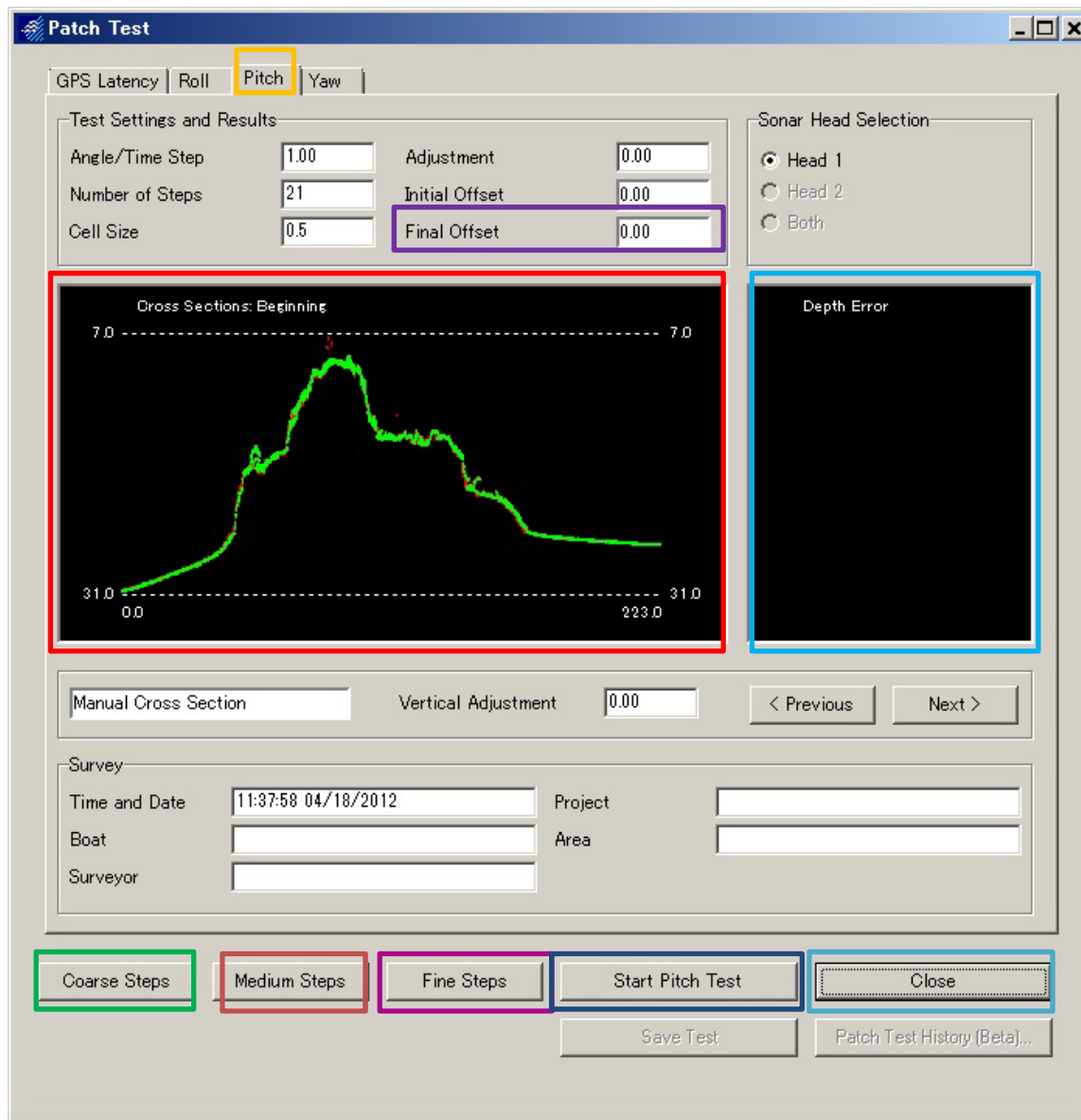
After click “OK”, You can see this window

Choose this icon 

Then you can draw like red line



Data post processing (MB MAX 30) Pitch Patch test



Cross section

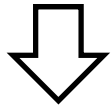
Graph of result

Choose "Pitch"

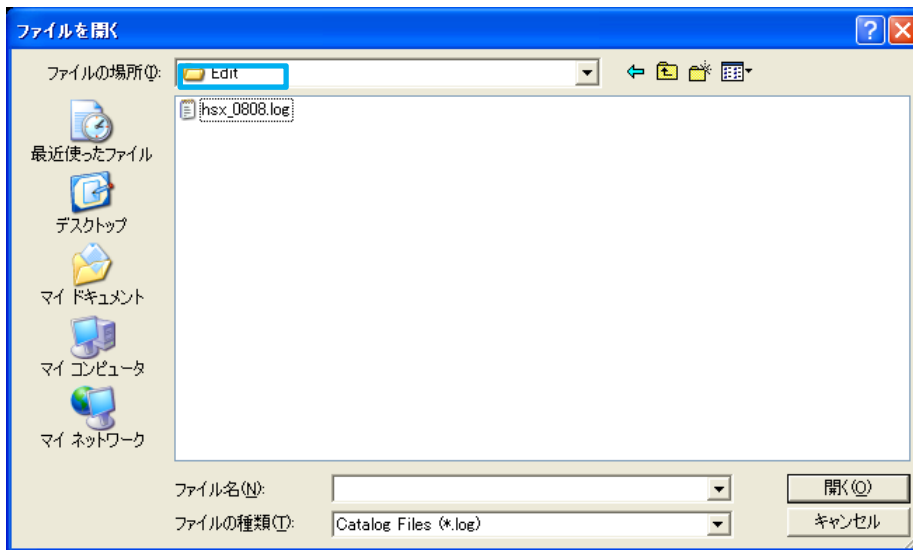
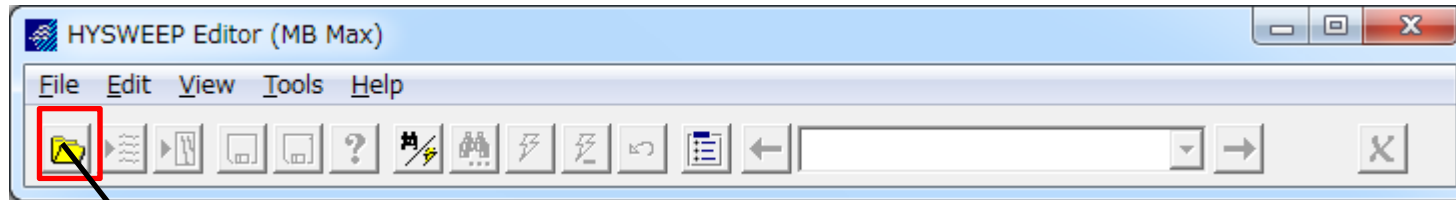
- 1, Click "Coarse Steps"
- 2, Click "Start Pitch Test"
- 3, Click "Medium Steps"
- 4, Click "Start Pitch Test"
- 5, Click "Fine Steps"
- 6, Click "Start Pitch Test"
- 7, Please memo Final Offsets value
- 8, After wrote value, Click "Close"

Data post processing (MB MAX 31) Yaw Patch test

Restart MB MAX

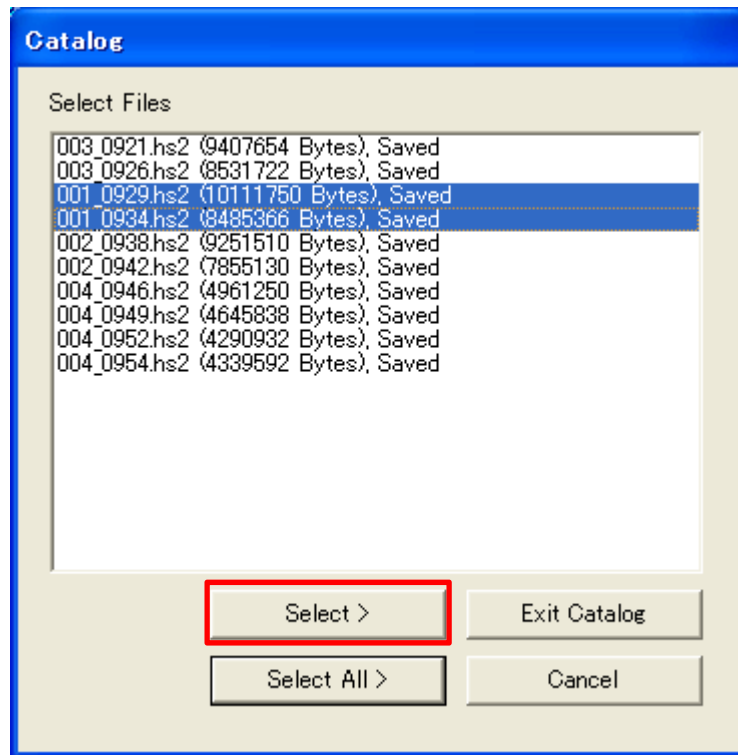


Open log file of for Patch test



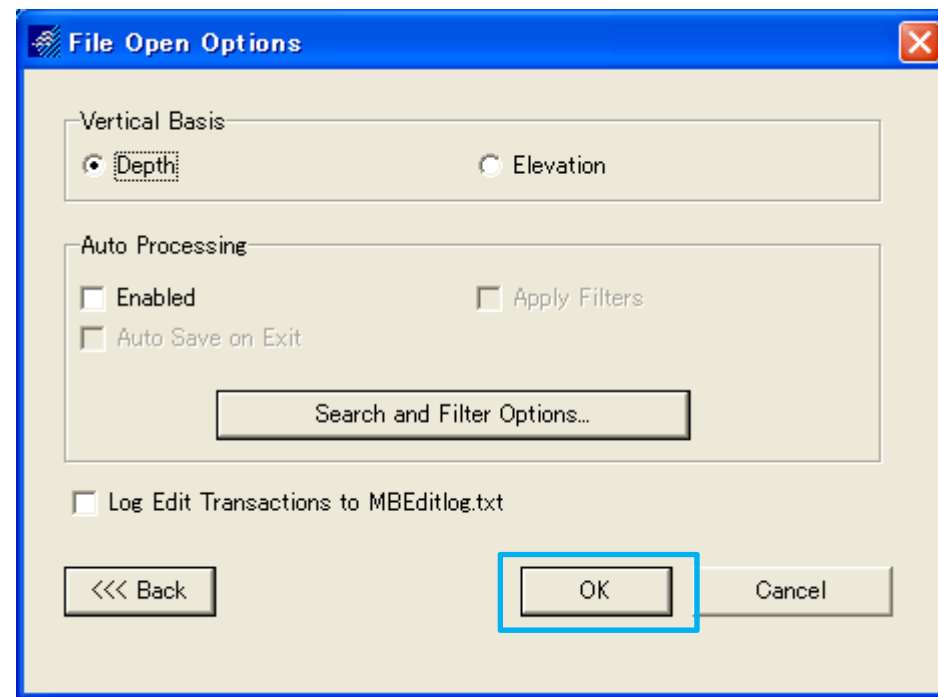
After removed noise data is saved in “Edit File”

Data post processing (MB MAX 32) Yaw Patch test



Choose file and click **Select**

Click **OK**



Data post processing (MB MAX 33) Yaw Patch test

Corrections - 001_0929.hs2

Tide Corrections

Tide File

Open File...

Sound Velocity Corrections

SV File

Echosounder setting (Multiple transducer only, m/sec)

Open File...

<<< Back **OK** Cancel

Apply Corrections to Entire Catalog

Please don't put file
Just click "OK"

Read Parameters

Selections | Device Info | Survey Info | Presort | GPS Pre-Filter | Advanced |

For each sonar system, select data (soundings and/or sidescan) and associated devices (navigation, heading, heave, pitch, roll).

Sonar
Reson Seabat 7125 Load Sidescan (if available)

Navigation
Hypack Navigation

Heave
Applanix POS/MV Network

Heading
Applanix POS/MV Network

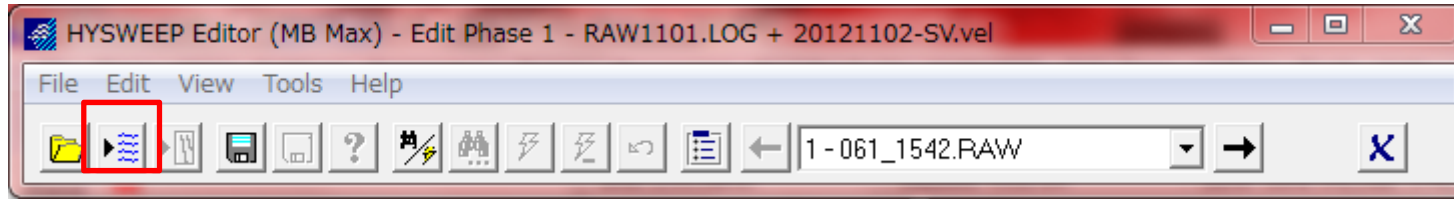
Pitch / Roll
Applanix POS/MV Network

Tide
None

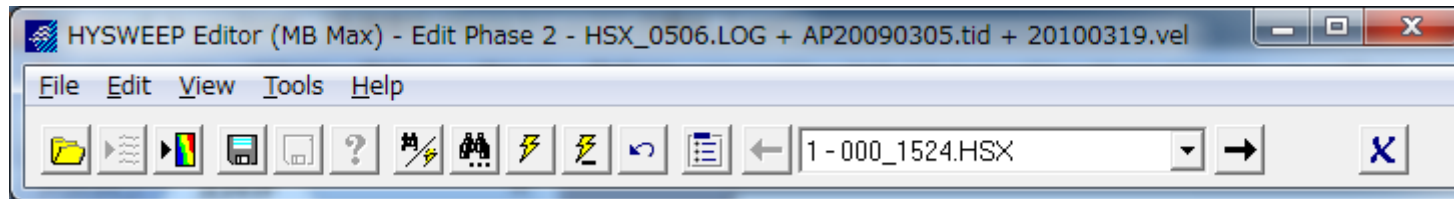
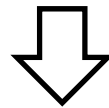
<<< Back **OK** Cancel

Click "OK"

Data post processing (MB MAX 34) Yaw Patch test

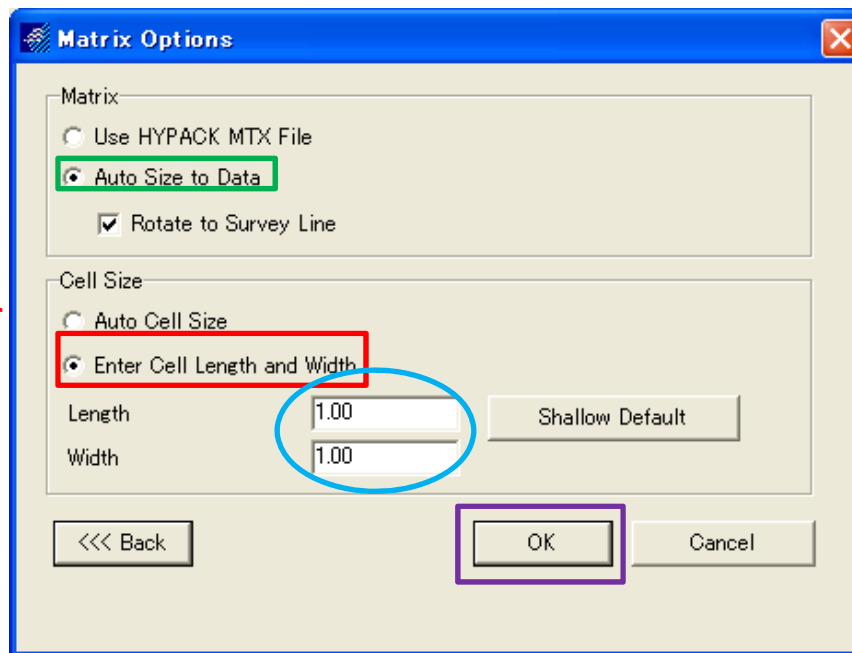


Move to Phase2



Check to "Auto Size Data"

Check to "Enter Cell Length and Width"



Input 1/10 of depth value by meter

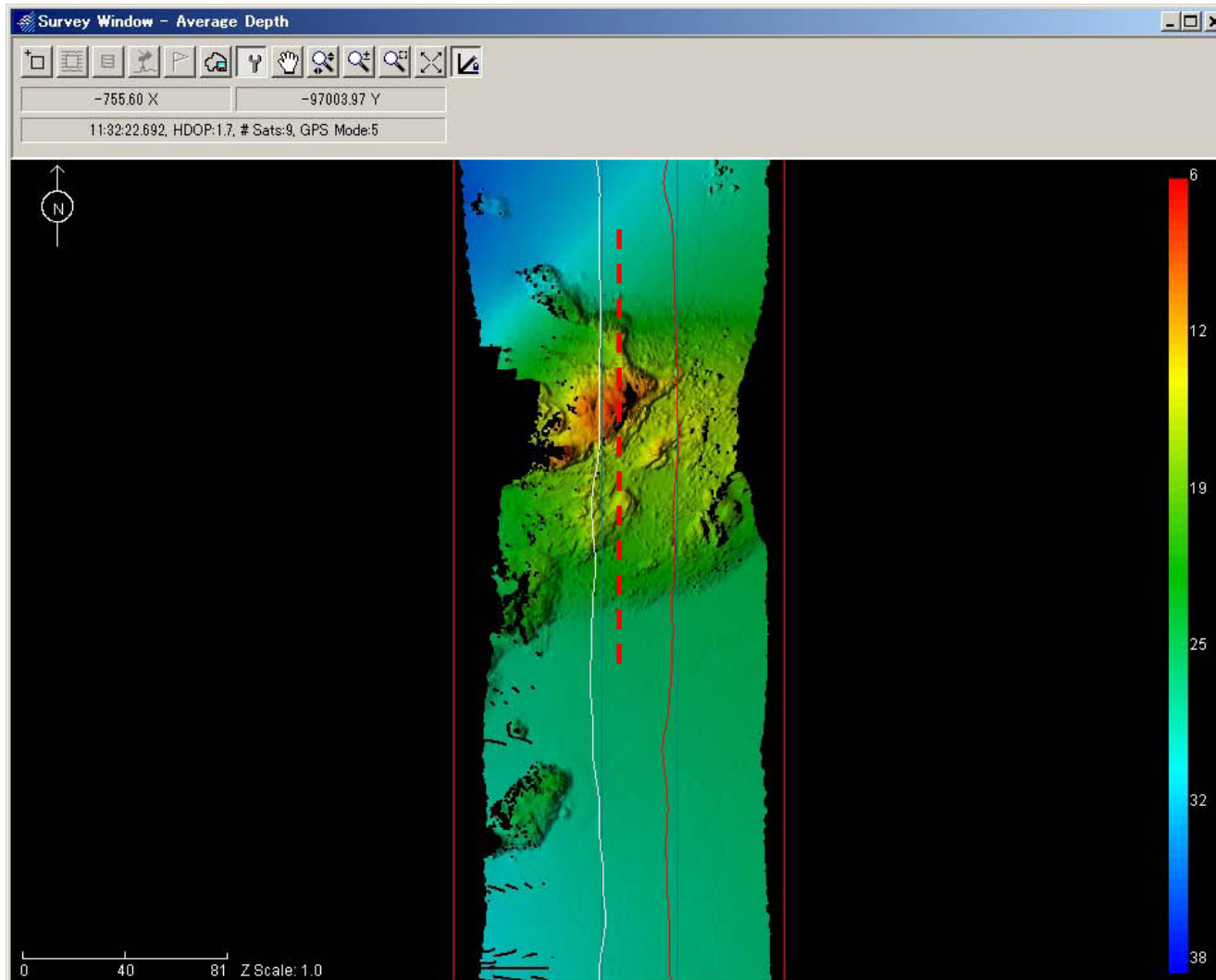
Click "OK"

Data post processing (MB MAX 35) Yaw Patch test

After click “OK”, You can see this window

Choose this icon 

Then you can draw like red line



Data post processing (MB MAX 36) Yaw Patch test



Cross section

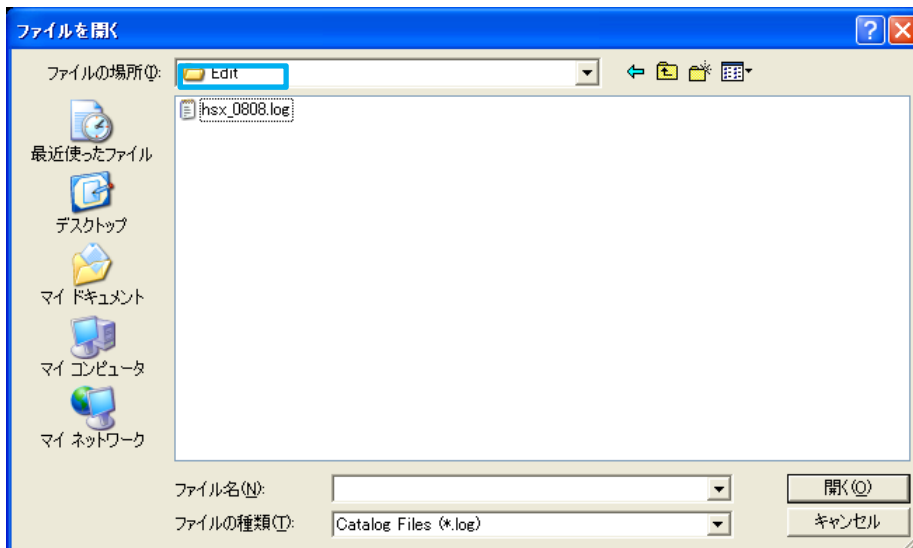
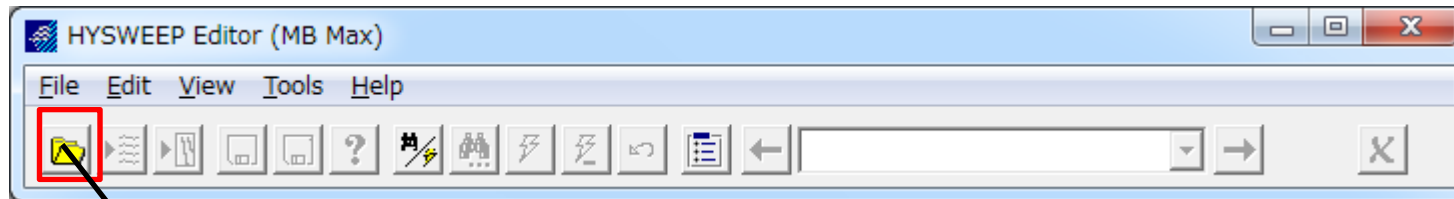
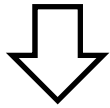
Graph of result

Choose "Yaw"

- 1, Click "Coarse Steps"
- 2, Click "Start Yaw Test"
- 3, Click "Medium Steps"
- 4, Click "Start Yaw Test"
- 5, Click "Fine Steps"
- 6, Click "Start Yaw Test"
- 7, Please memo Final Offsets value
- 8, After wrote value, Click "Close"

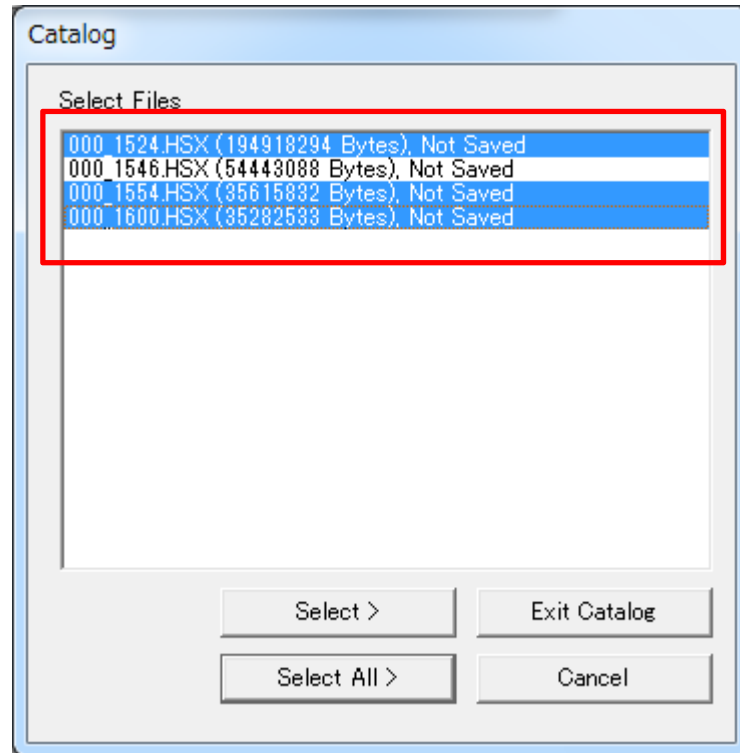
Data post processing (MB MAX 37)

Restart MB MAX



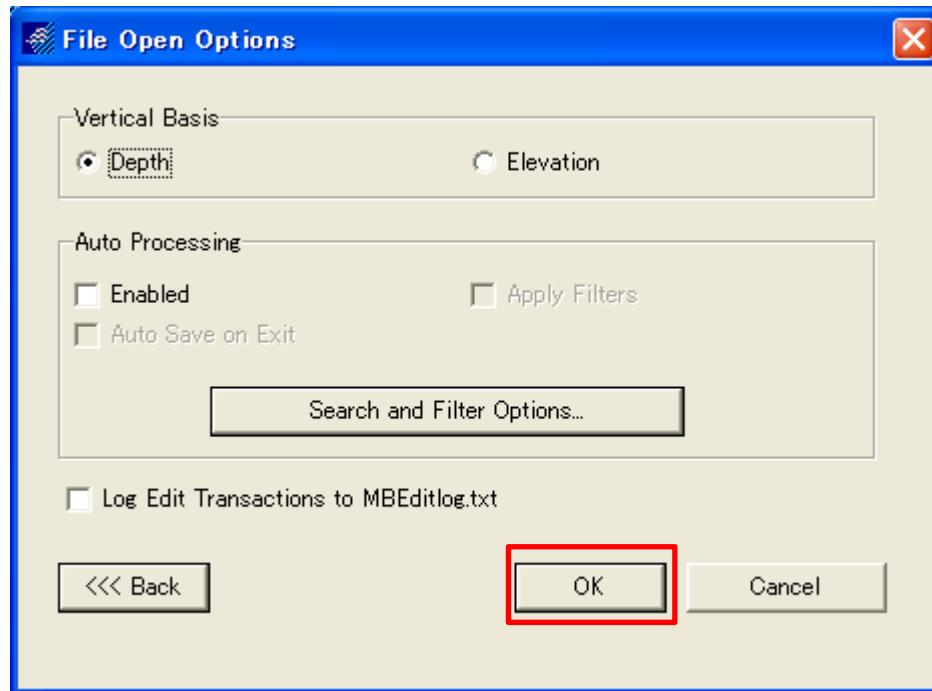
Open `hsx_※※※(←this is date).log`

Data post processing (MB MAX 38)



Choose all Files

Data post processing (MB MAX 39)



Click "OK"

Data post processing (MB MAX 40)

Corrections - 001_0929.hs2

Tide Corrections

Tide File

Open File...

Sound Velocity Corrections

SV File

Echosounder setting (Multiple transducer only, m/sec)

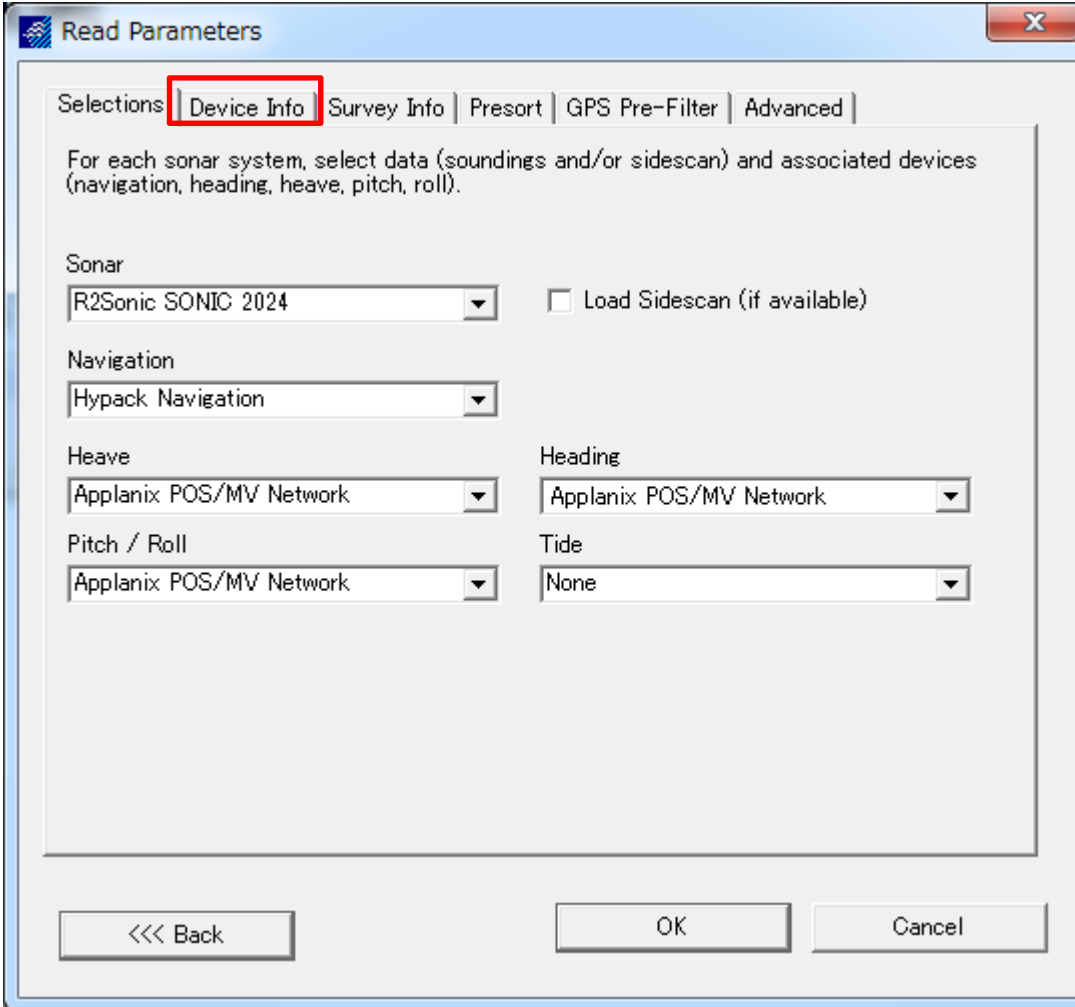
Open File...

<<< Back **OK** Cancel

Apply Corrections to Entire Catalog

Please don't put file
Just click "OK"

Data post processing (MB MAX 41)



Read Parameters

Selections | **Device Info** | Survey Info | Presort | GPS Pre-Filter | Advanced

For each sonar system, select data (soundings and/or sidescan) and associated devices (navigation, heading, heave, pitch, roll).

Sonar
R2Sonic SONIC 2024 Load Sidescan (if available)

Navigation
Hypack Navigation

Heave
Applanix POS/MV Network

Heading
Applanix POS/MV Network

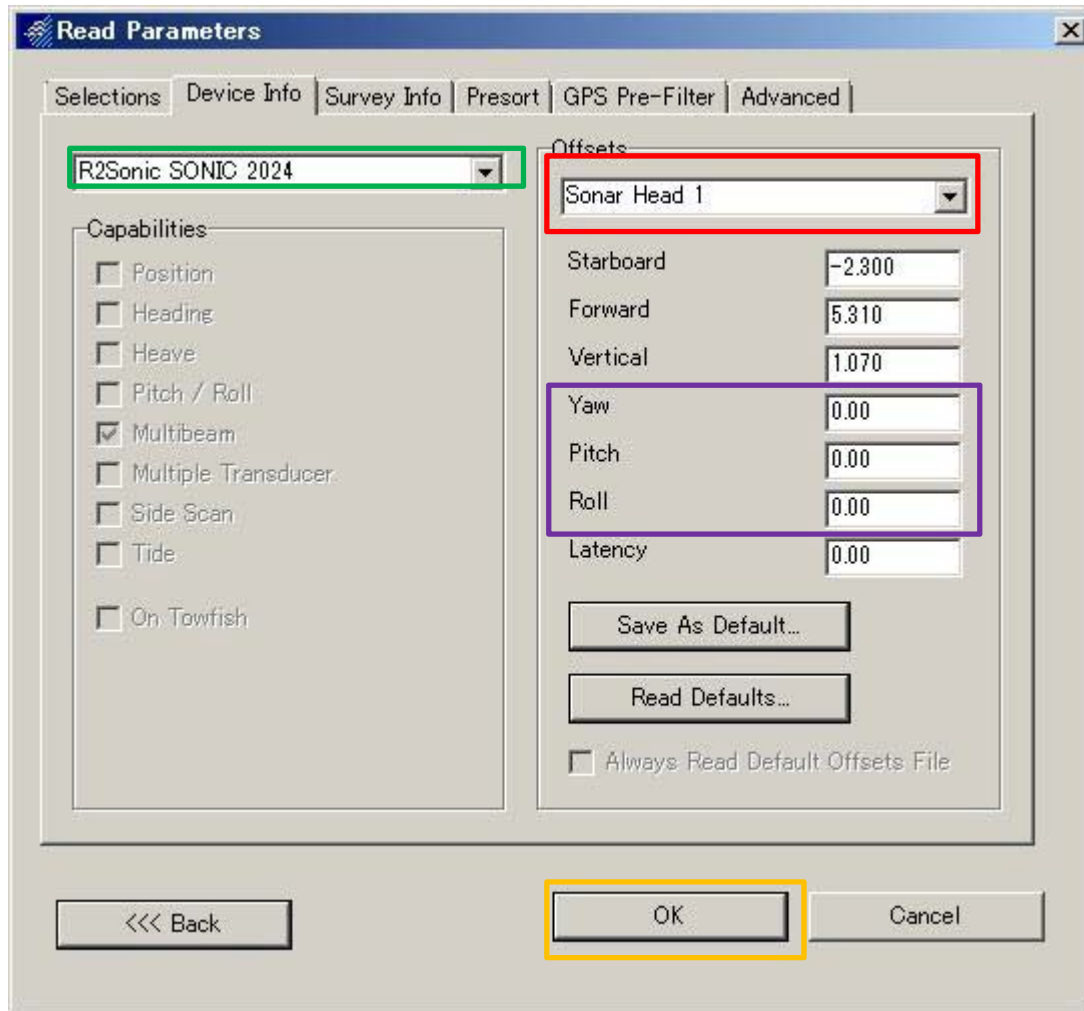
Pitch / Roll
Applanix POS/MV Network

Tide
None

<<< Back OK Cancel

Click "Device Info"

Data post processing (MB MAX 42)

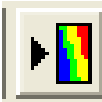


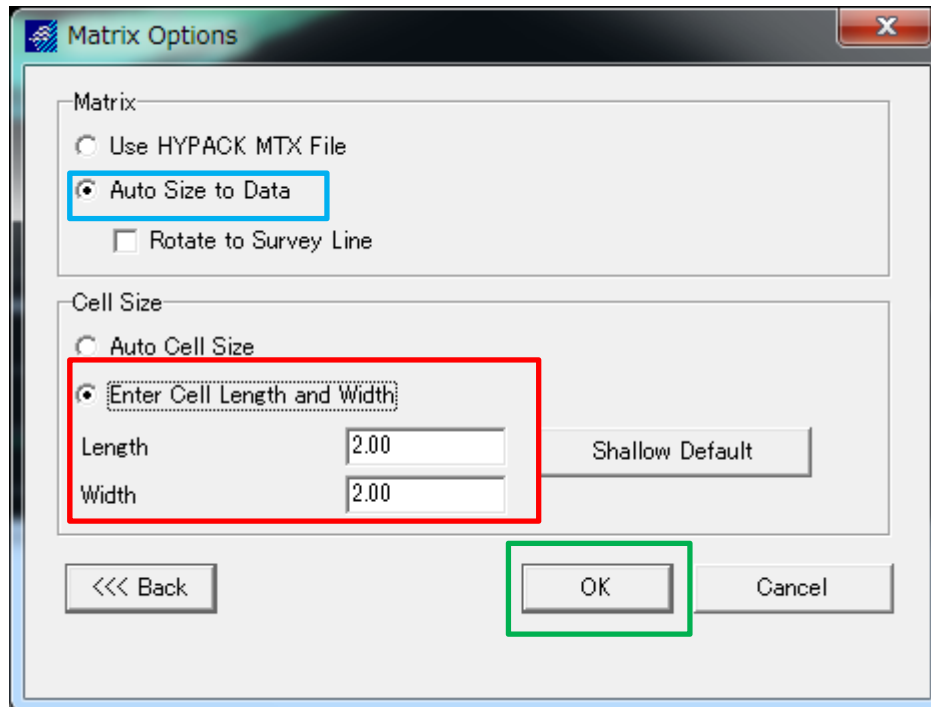
Choose “R2Sonic SONIC 2024”, and please check Offsets is “Sonar Head 1” or not

Input Patch test value

Click “OK”

Make grid file (MB MAX 43)

Choose this 

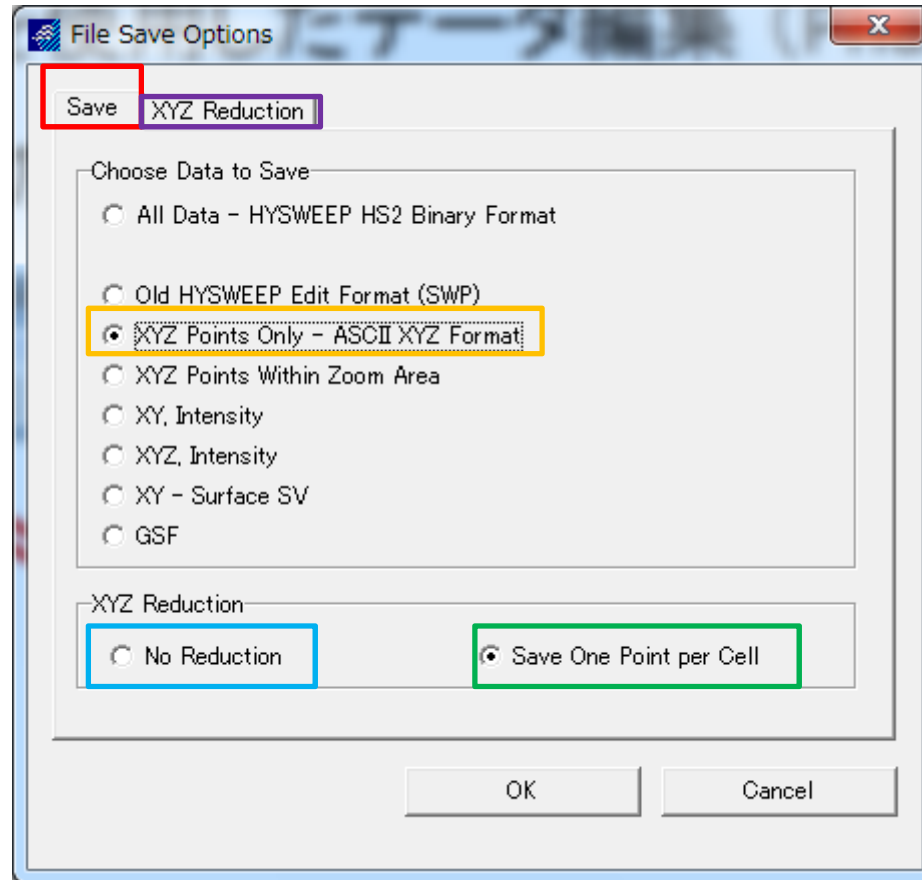


Choose "Auto Size to Data"

Choose "Enter Cell Length and Width" and input depth value of 1/10 by meter

Click "OK"

Make grid file (MB MAX 44)



Choose “XYZ Points Only – ASC II XYZ Format”

Choose “No Reduction”(Save to Edit folder)

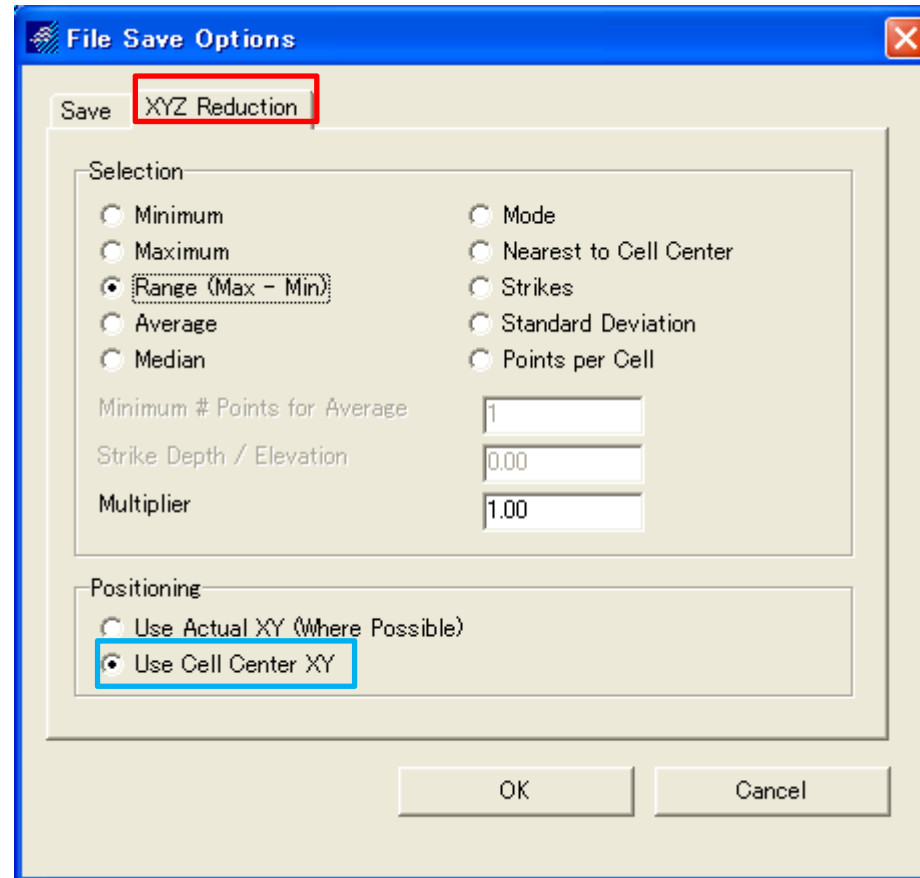
Choose “Save One Point per Cell”(Save to Sort folder)

Before click “OK”,Please check “XYZ Reduction”

Make grid file (MB MAX 45)

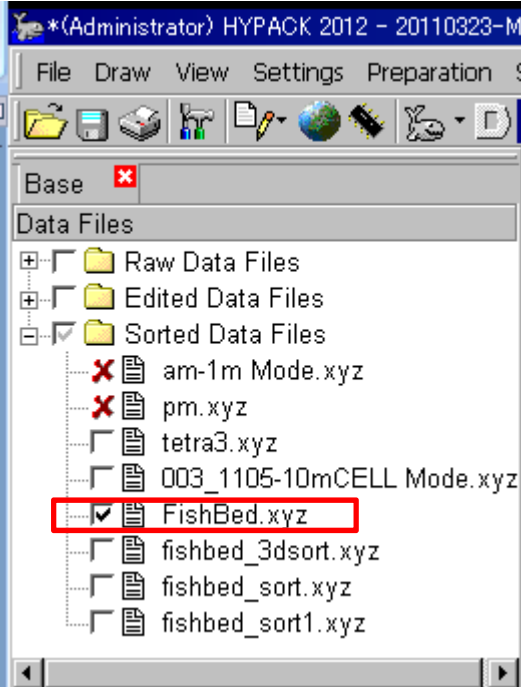
This window is when you choose “One Point Per Cell”

Popular selection is Mode/Minimum/Mux



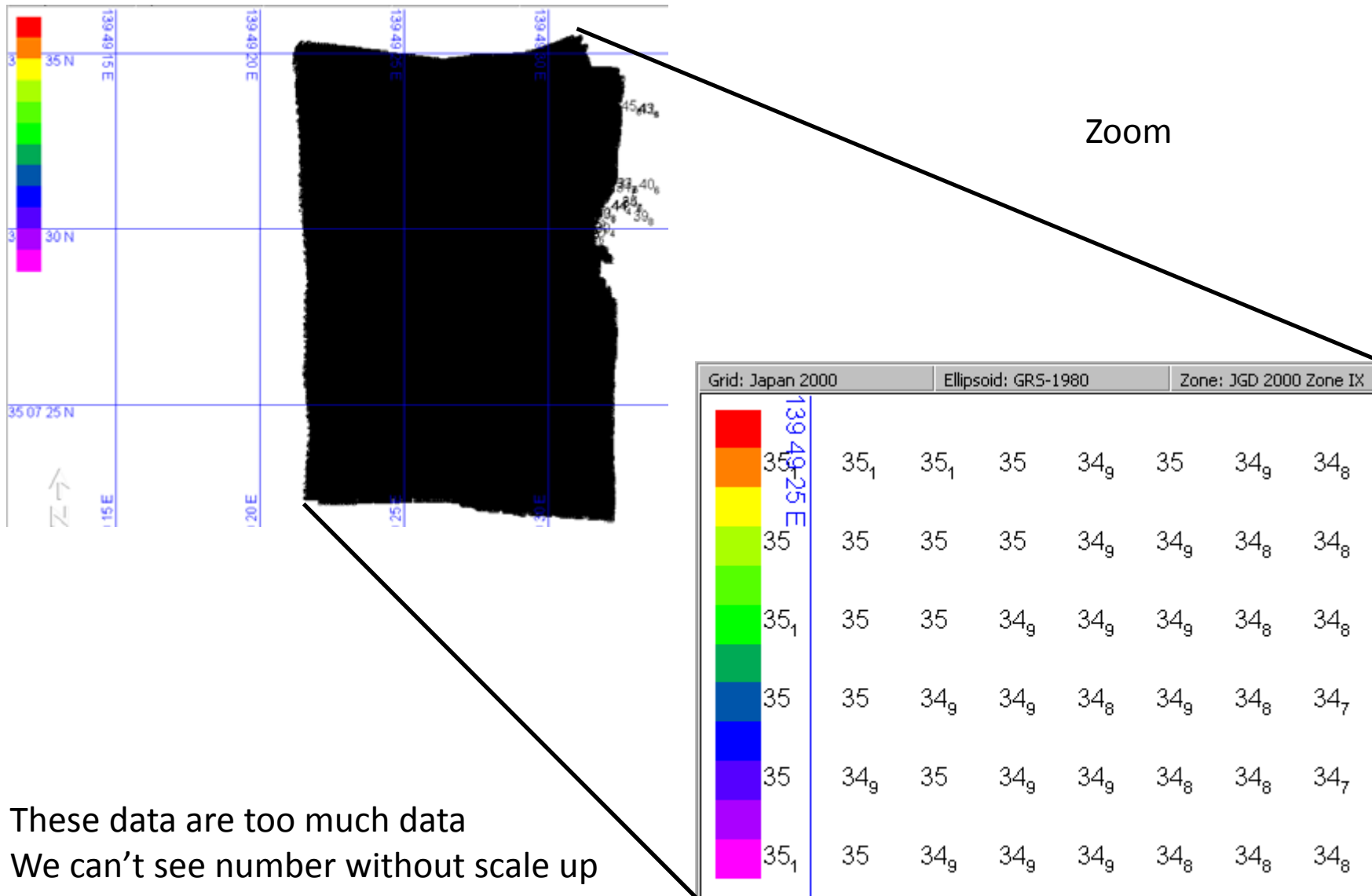
Choose “Use Cell Center XY”

Bathymetric map 1



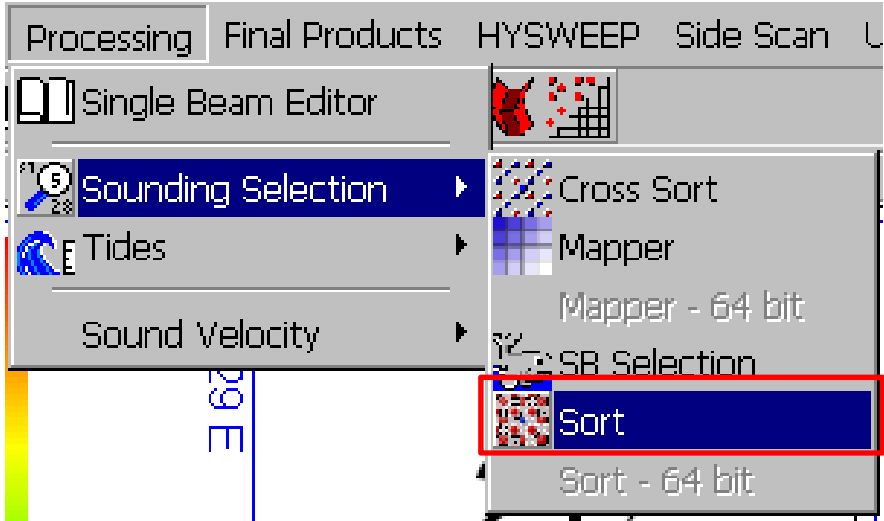
Choose "XYZ's file"

Bathymetric map 2



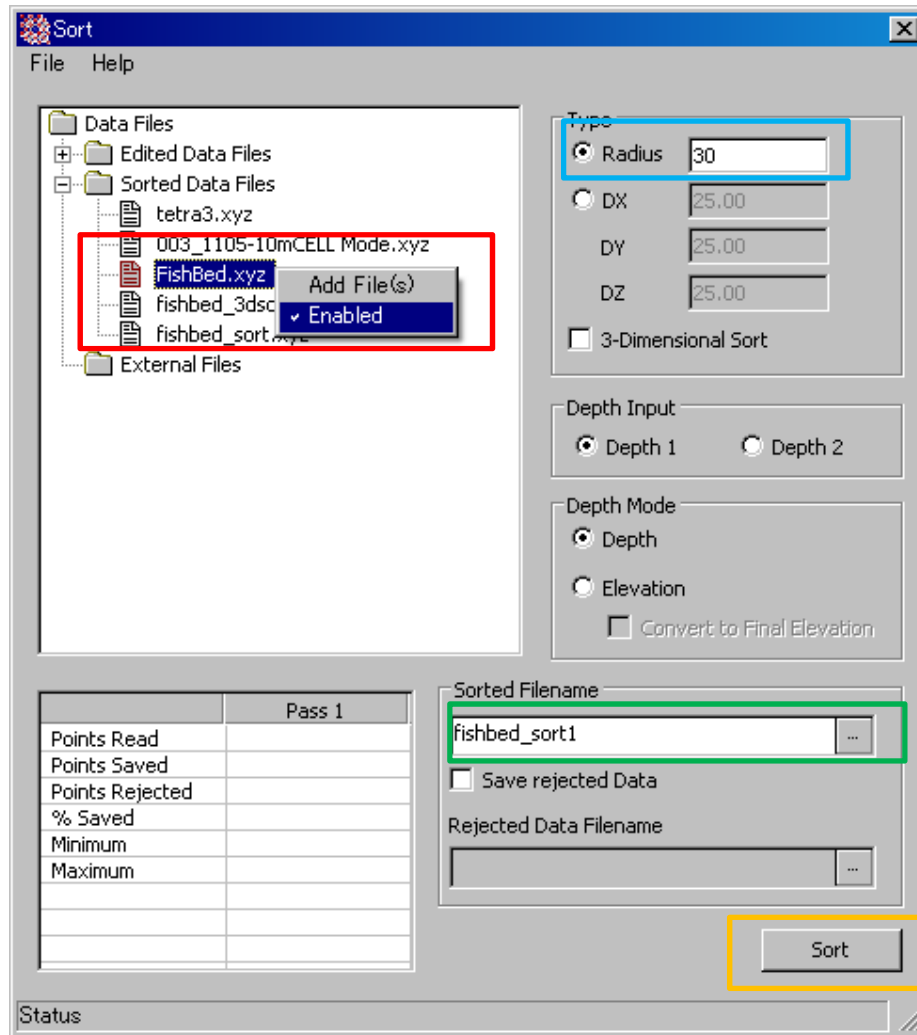
These data are too much data
 We can't see number without scale up
 So we need thinning up

Bathymetric map 3



Choose "Sort"

Bathymetric map 4



Choose file, and right click and click “Enabled”

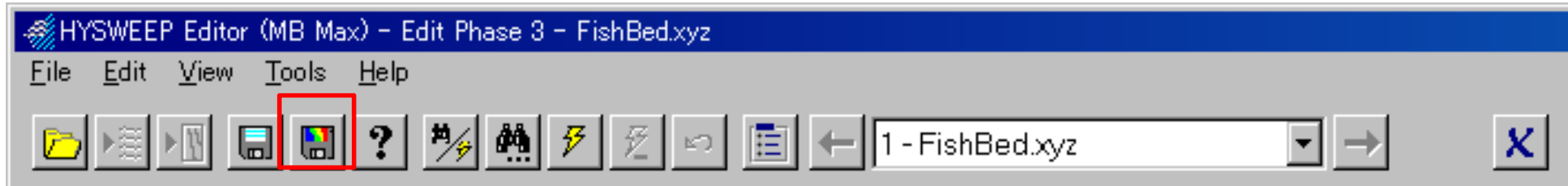
Decide of Sort’s radius

Please make name for after sort’s file

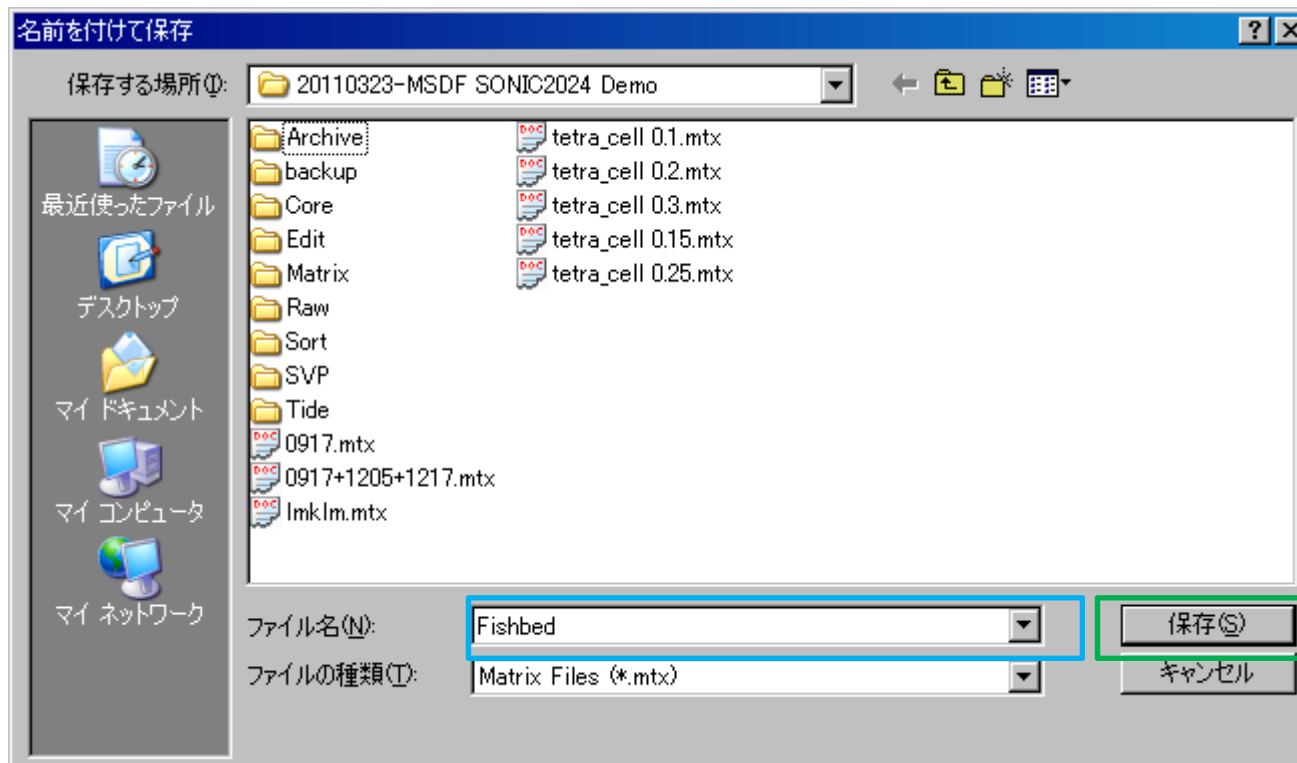
Click “Sort”

How to make Matrix data 1

Choose file for make Matrix data by HS2 or XYZ file , and move to Phase3



Click

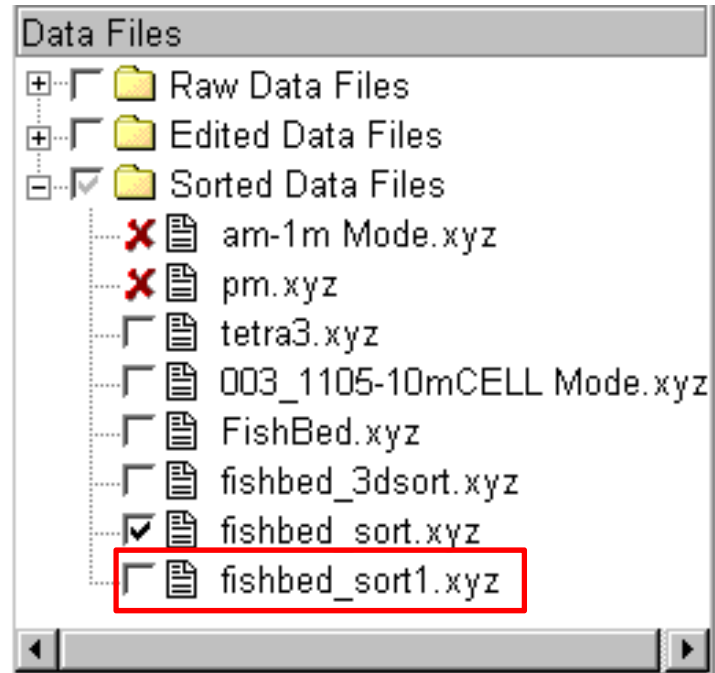


Make name

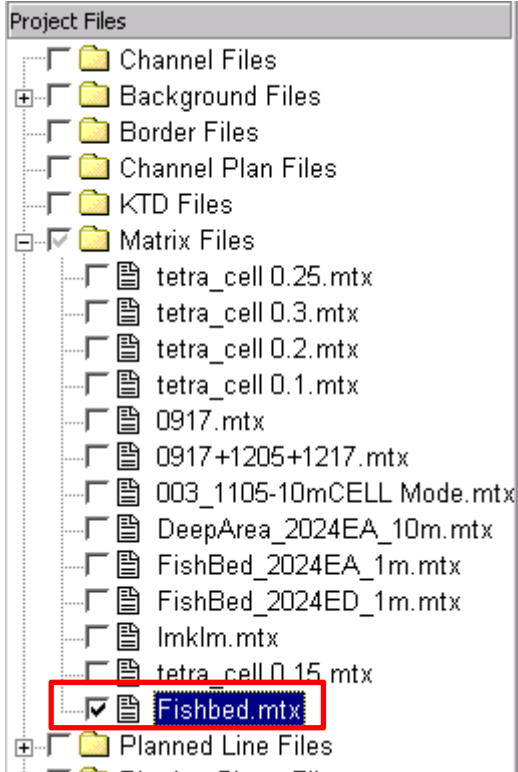
Click (S)

Bathymetric map 5

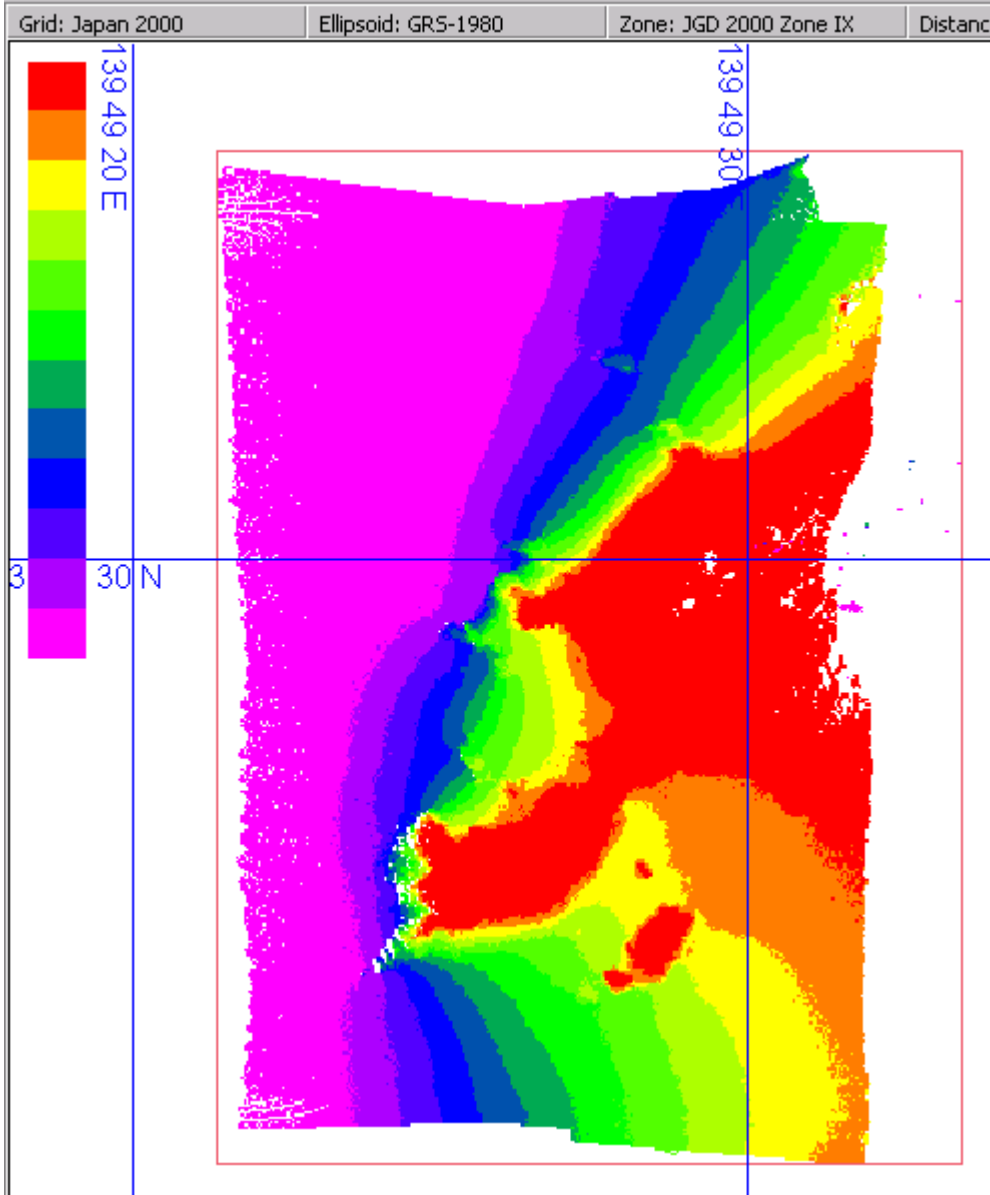
After clicked “Sort”, You can see sort file in Data Files



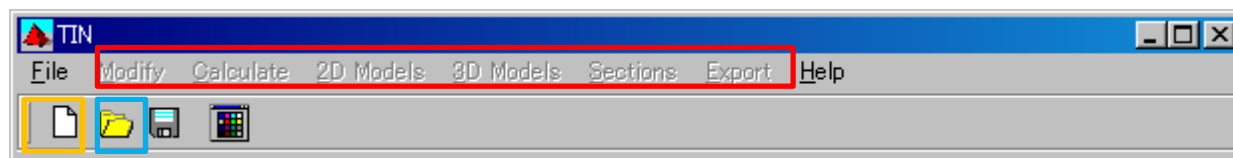
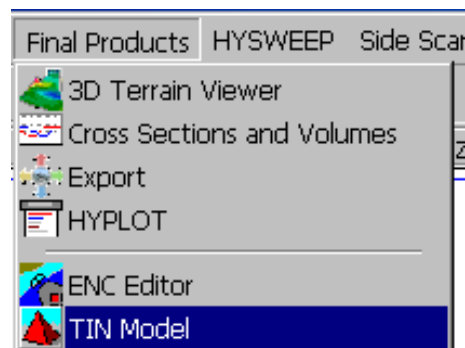
How to make Matrix data 2



You can see Matrix file in Project Files



How to make TIN Model 1

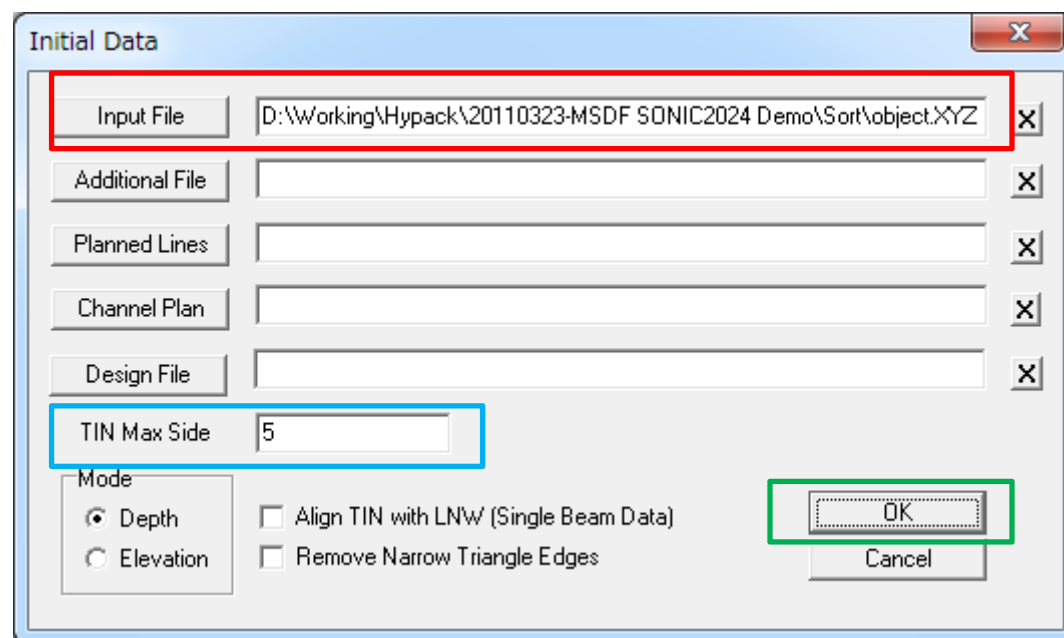


When you didn't choose file, You can not click these

Make new TIN Model

Open TIN Model file

How to make TIN Model 2

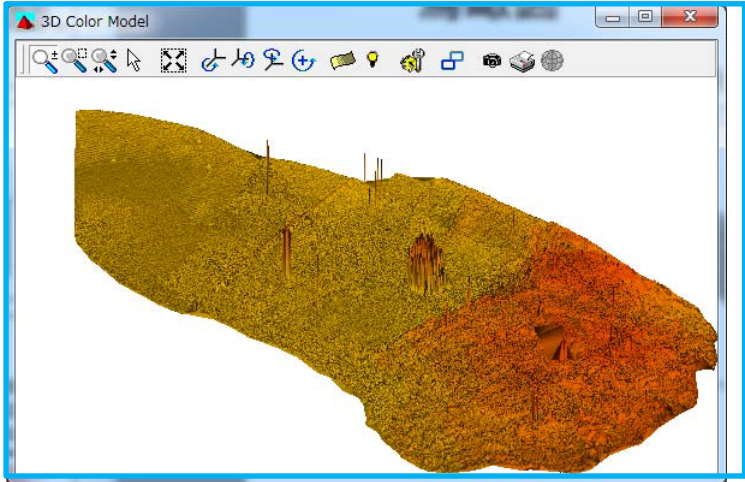
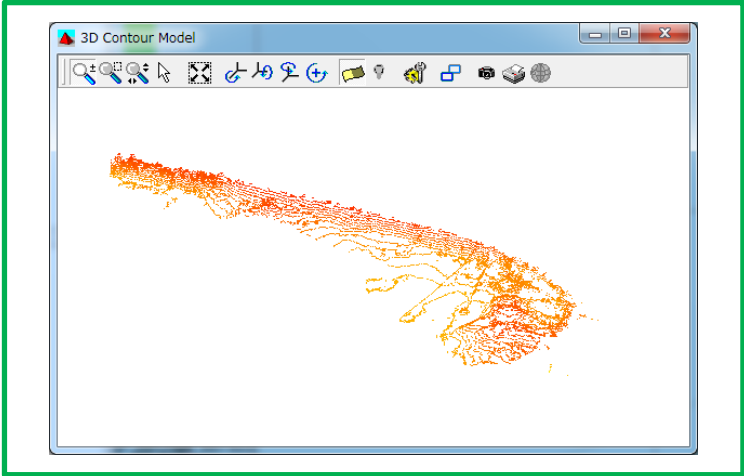
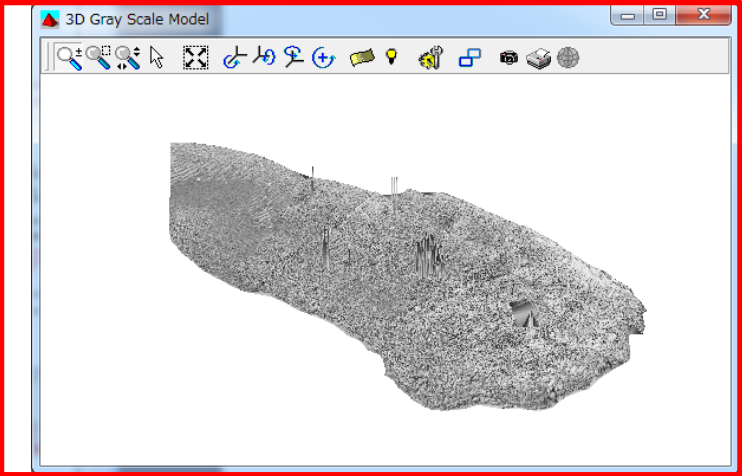
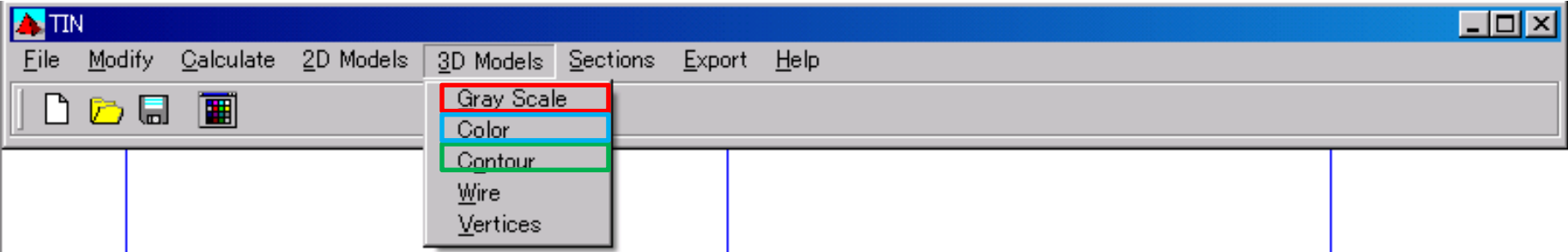


Input grid file

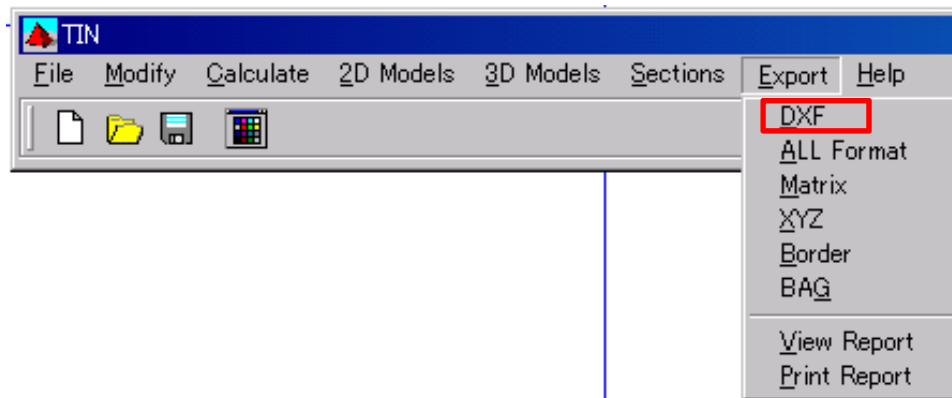
Please input about 5 times of grid size

Click "OK"

How to make TIN Model 3



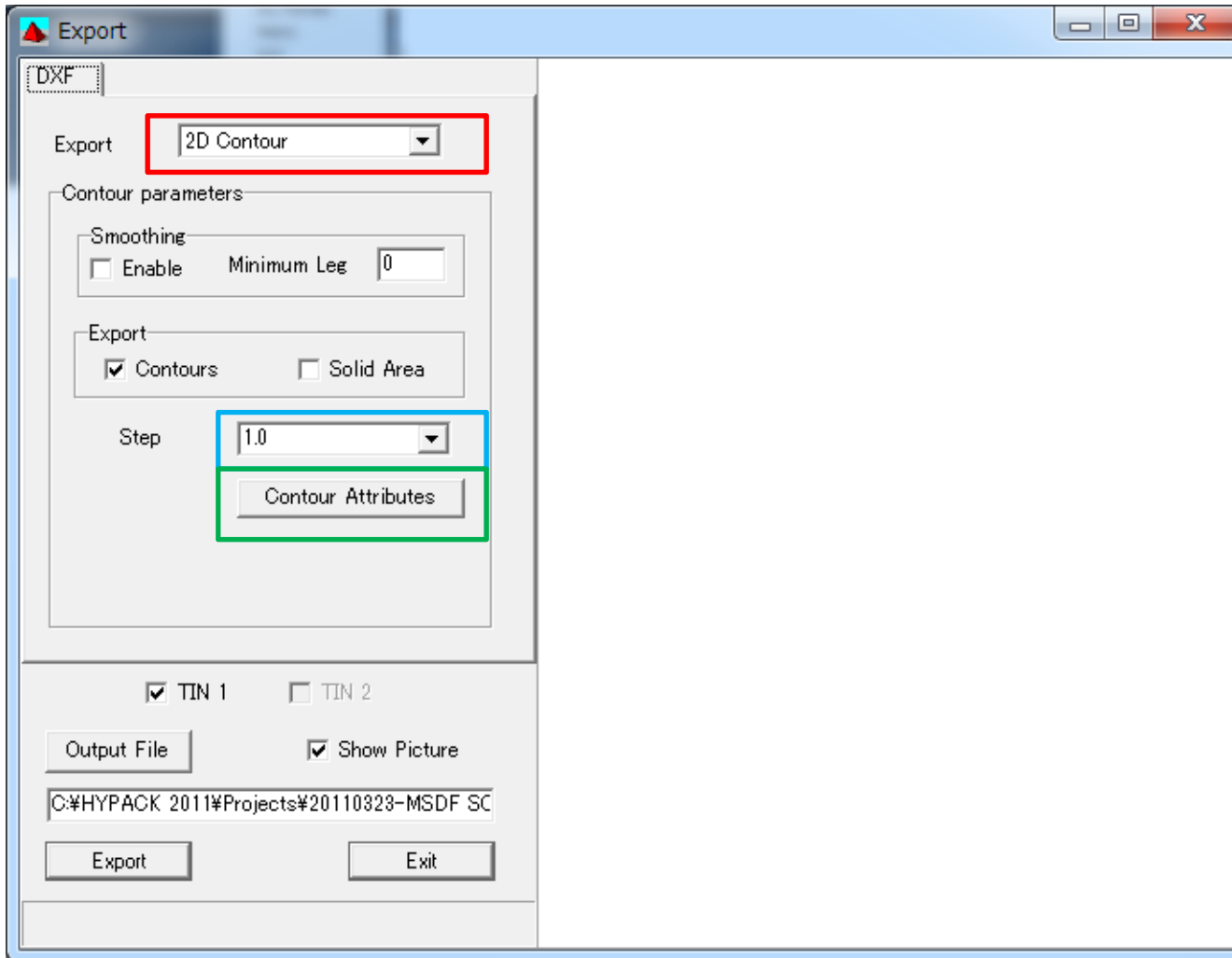
How to make TIN Model 4 (Depth counter diagram)



Export→DXF

Click "DXF"

How to make TIN Model 5 (Depth counter diagram)

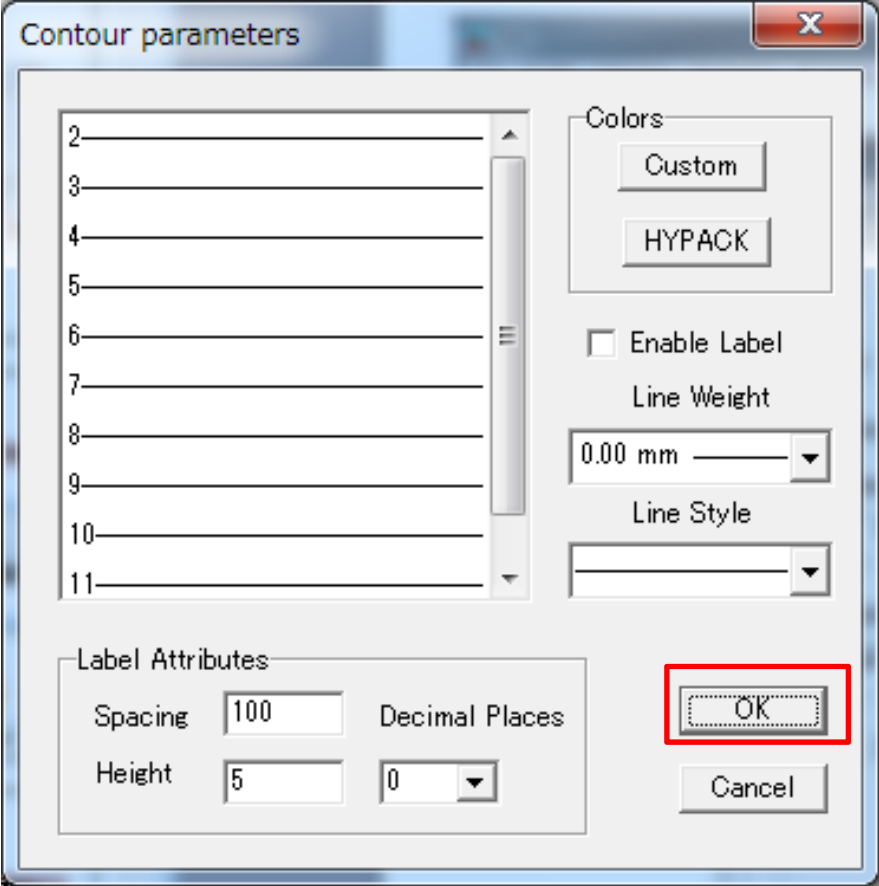


Choose "2D Counter"

Interval of depth counter

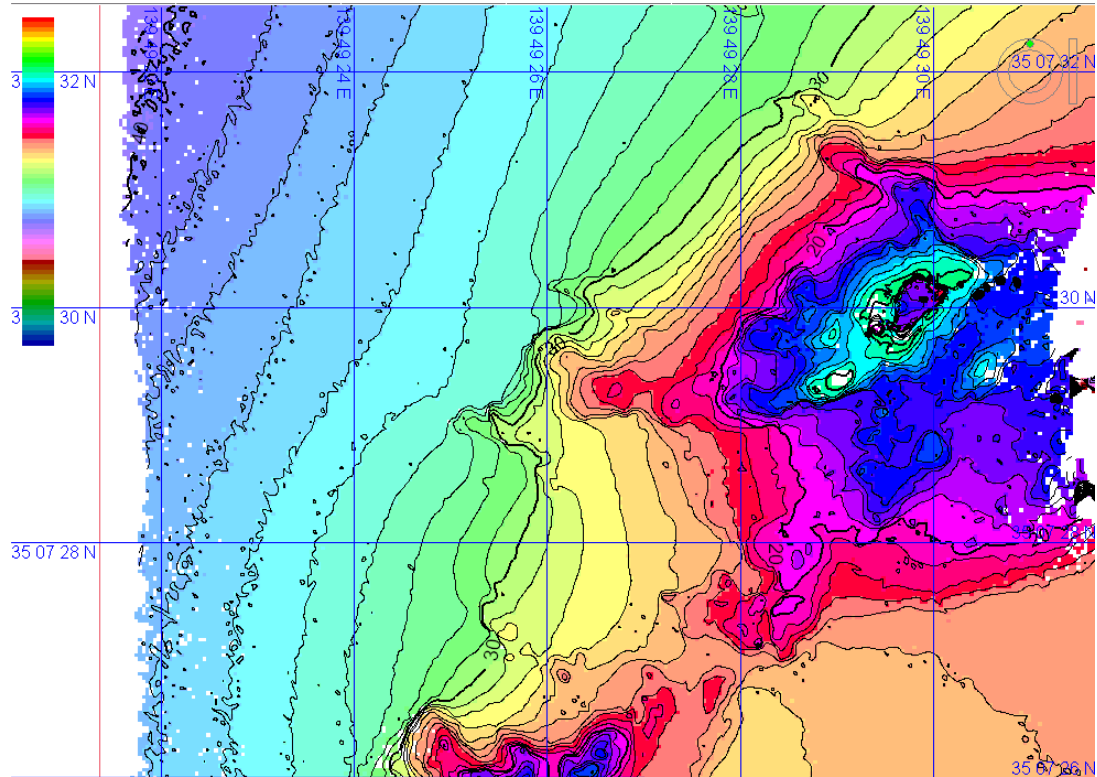
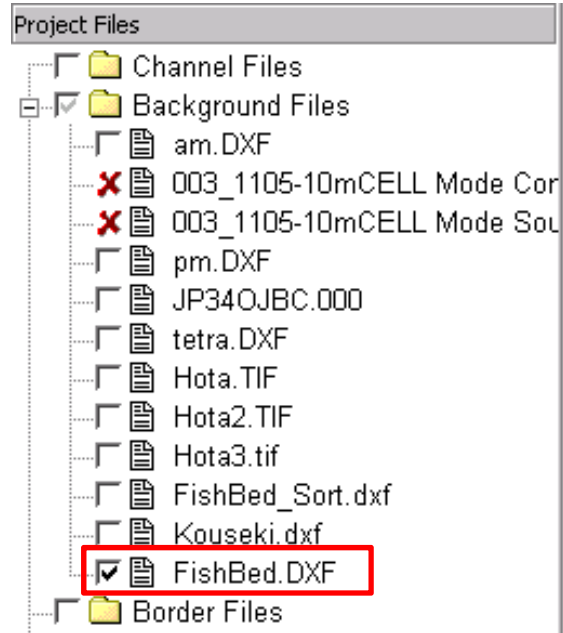
Click "Counter Attributes"

How to make TIN Model 6 (Depth counter diagram)



After setting Click "OK"

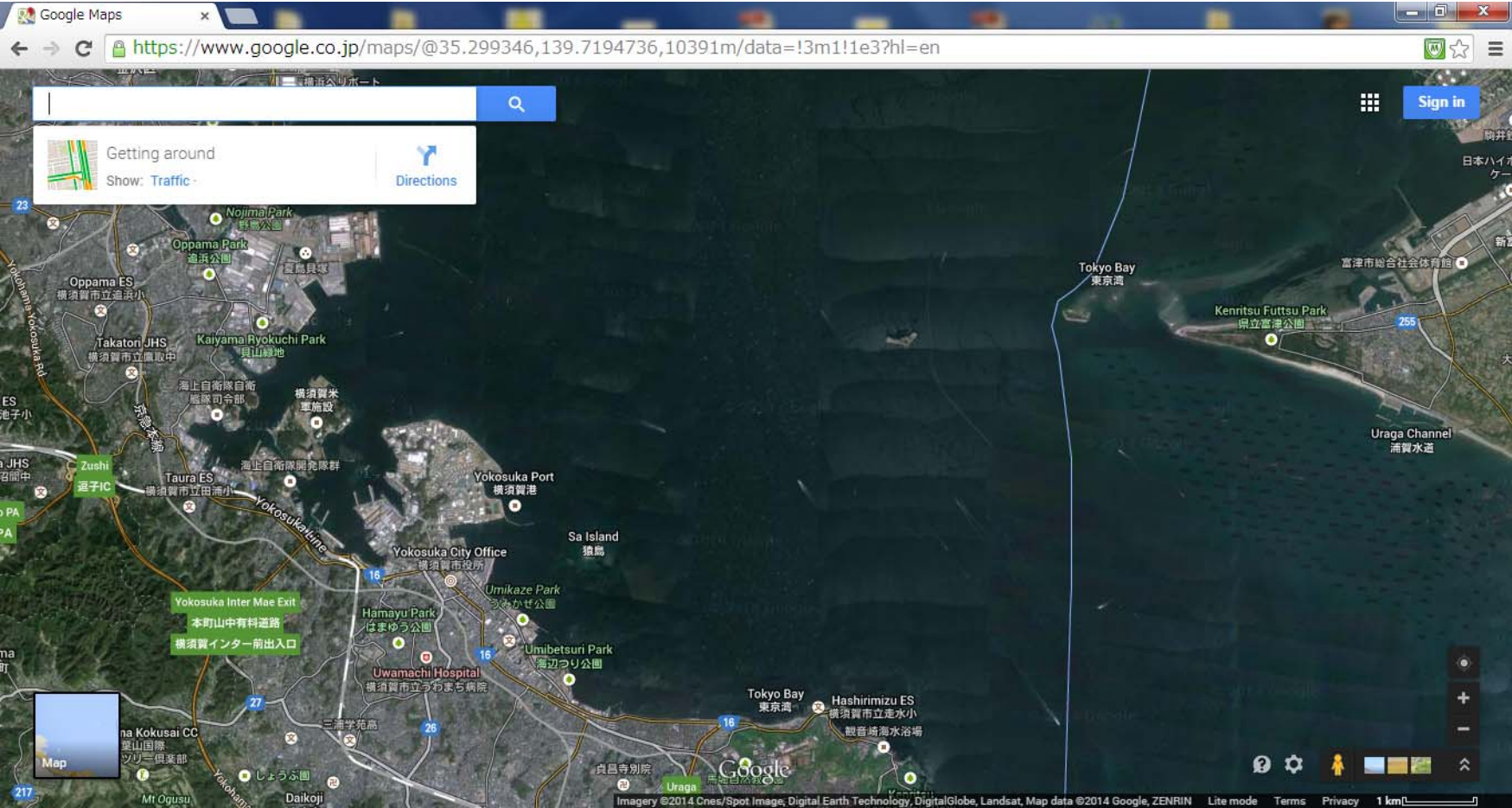
How to make TIN Model 7 (Depth counter diagram)



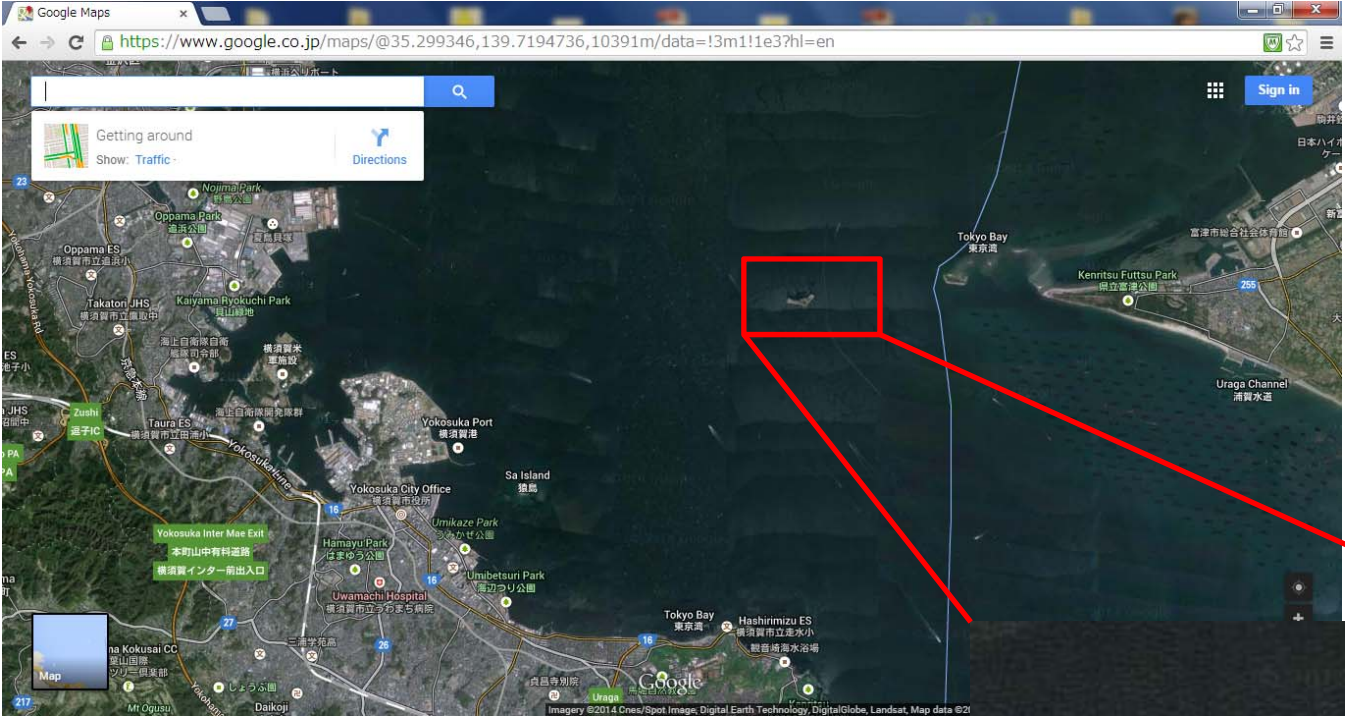
After click "OK", You can see DXF file in Project Files

Google map1

First, Please search photo on Google map
And do “Prt Sc”, and save by use “TIF file”
From next slide,we choose 3 points



Google map2 Point 1



Scale up



Please decide first mark on map

Google map3 Point 1



Right click on mark

And then You can see “What’s here?”
So please click this

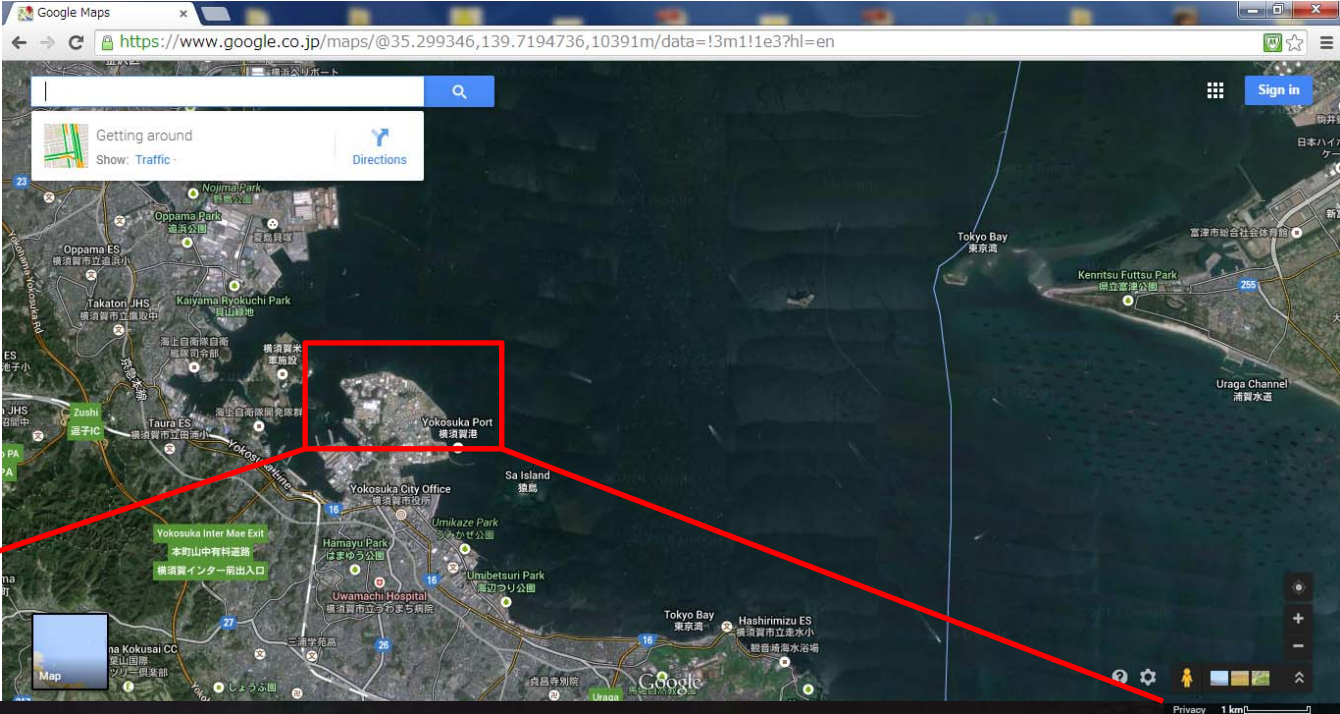
Google map4 Point 1



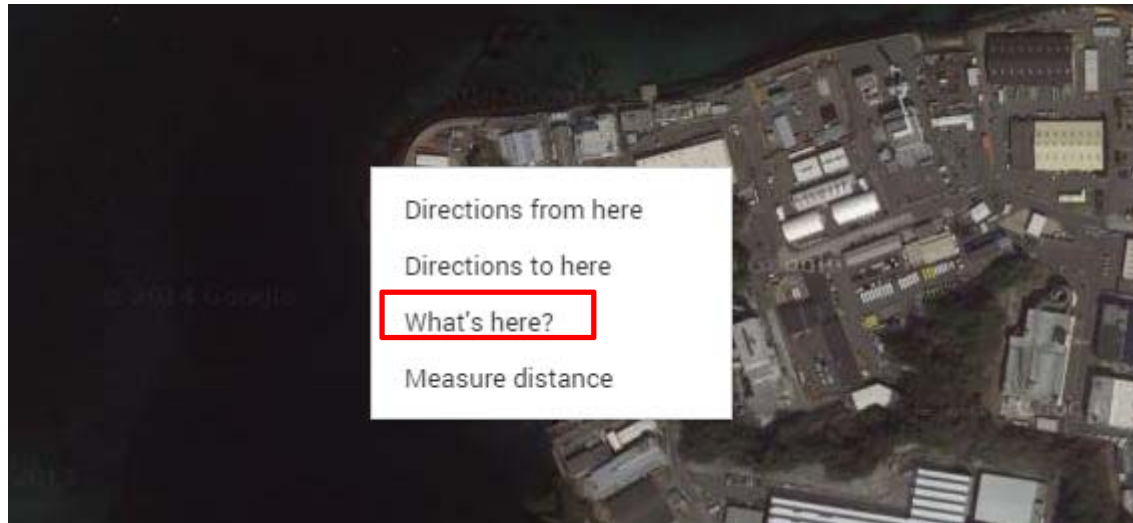
You can see longitude and latitude on Google map
So please memo these information
This time is "35.311937 , 139.739408"

Google map5 Point 2

Scale up



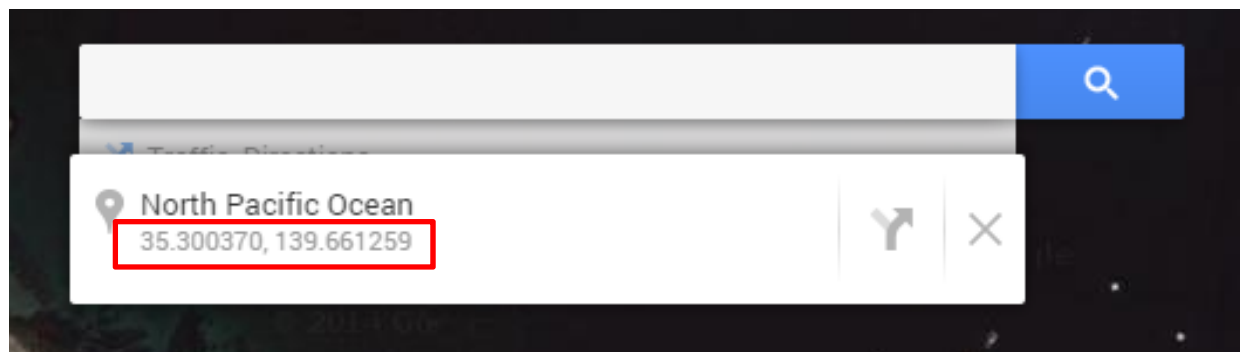
Google map6 Point 2



Right click on mark

And then You can see “What’s here?”
So please click this

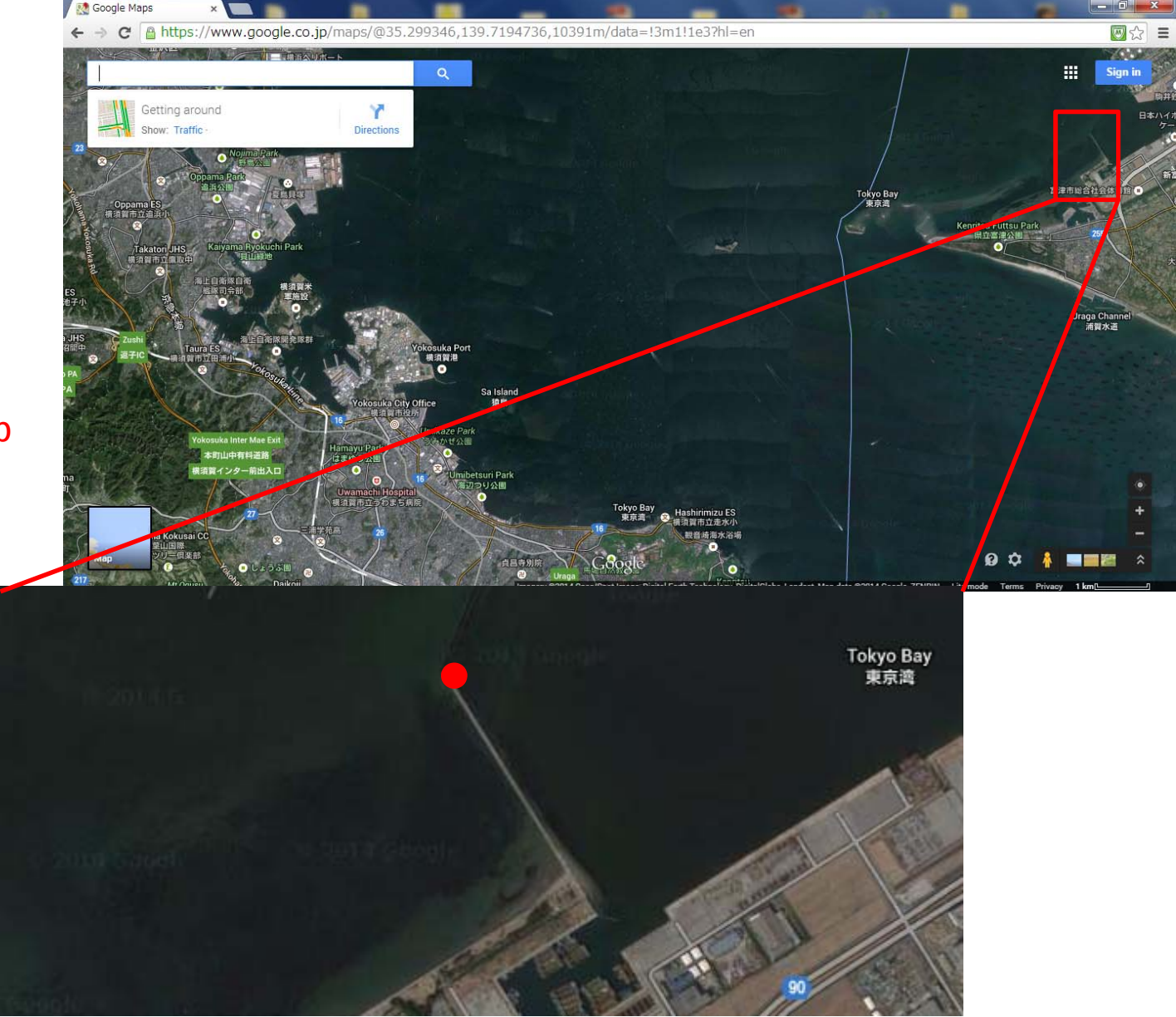
Google map7 Point 2



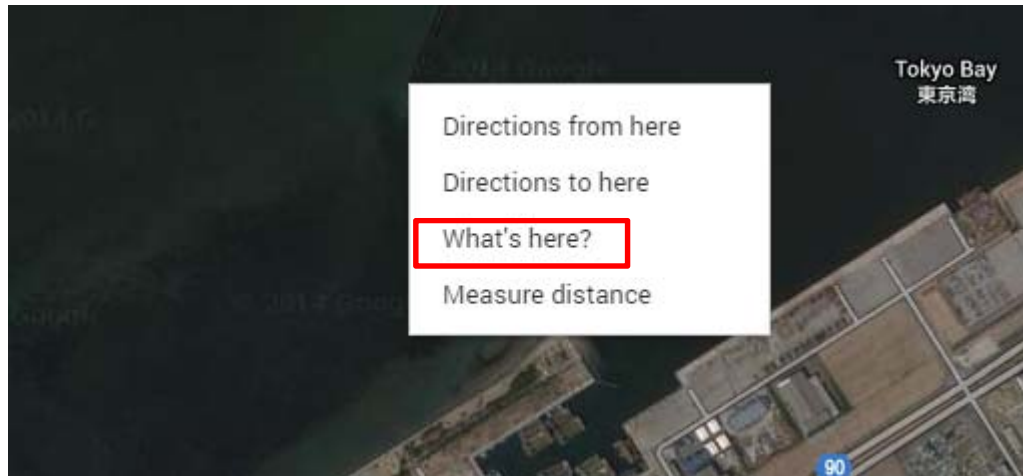
You can see longitude and latitude on Google map
So please memo these information
This time is “35.300370 , 139.661259”

Google map8 Point 3

Scale up



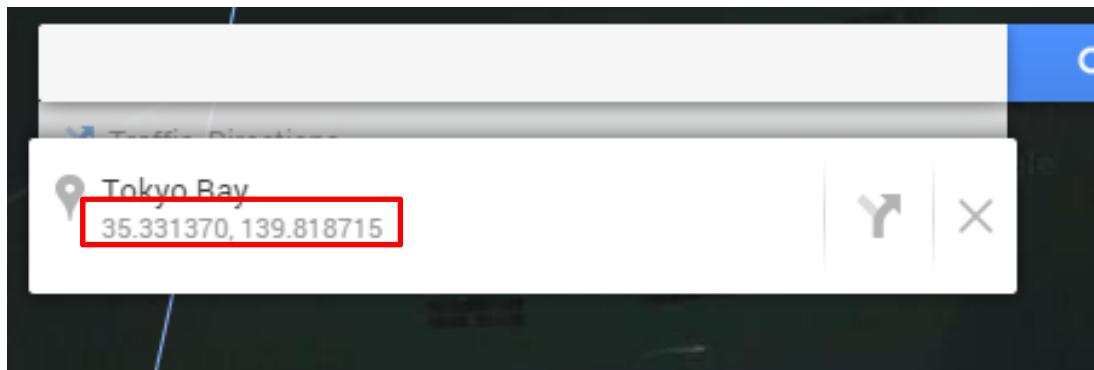
Google map9 Point 3



Right click on mark

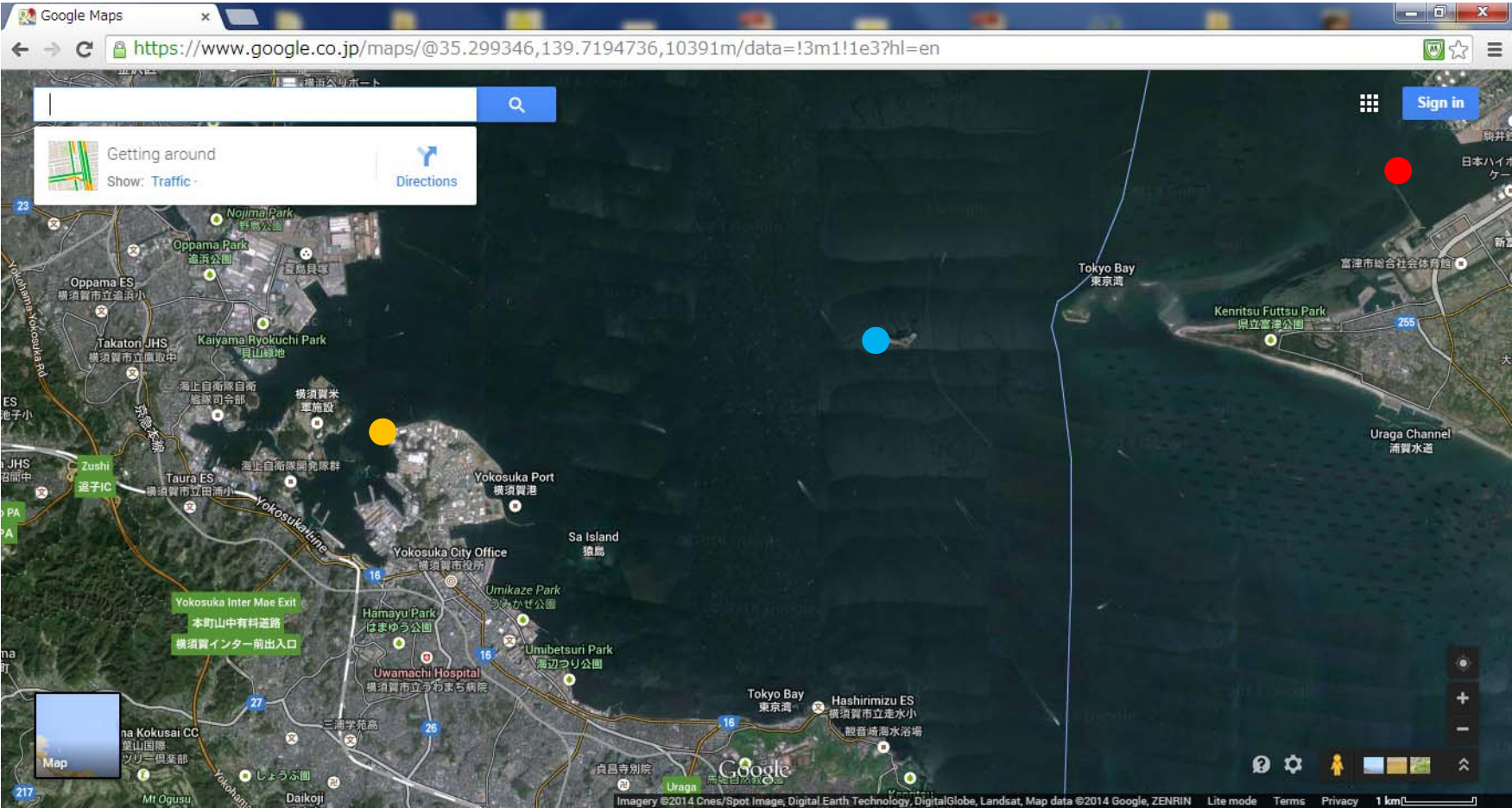
And then You can see “What’s here?”
So please click this

Google map10 Point 3

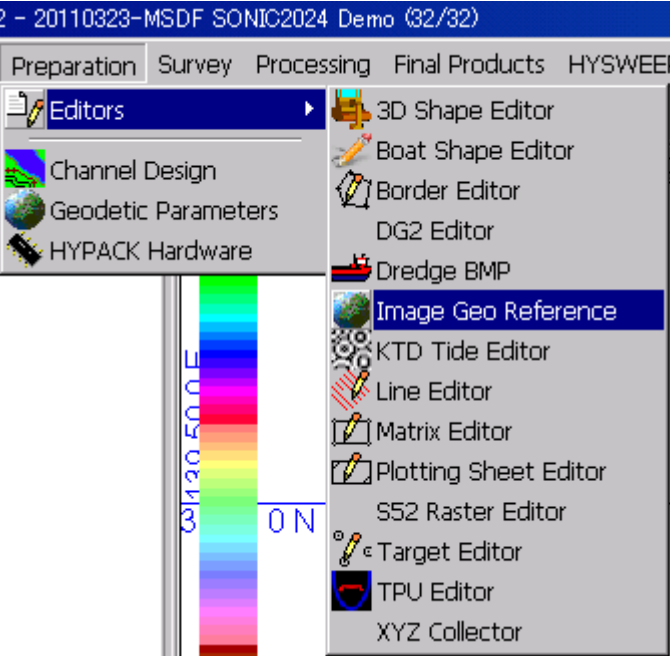


You can see longitude and latitude on Google map
So please memo these information
This time is "35.331370 , 139.818715"

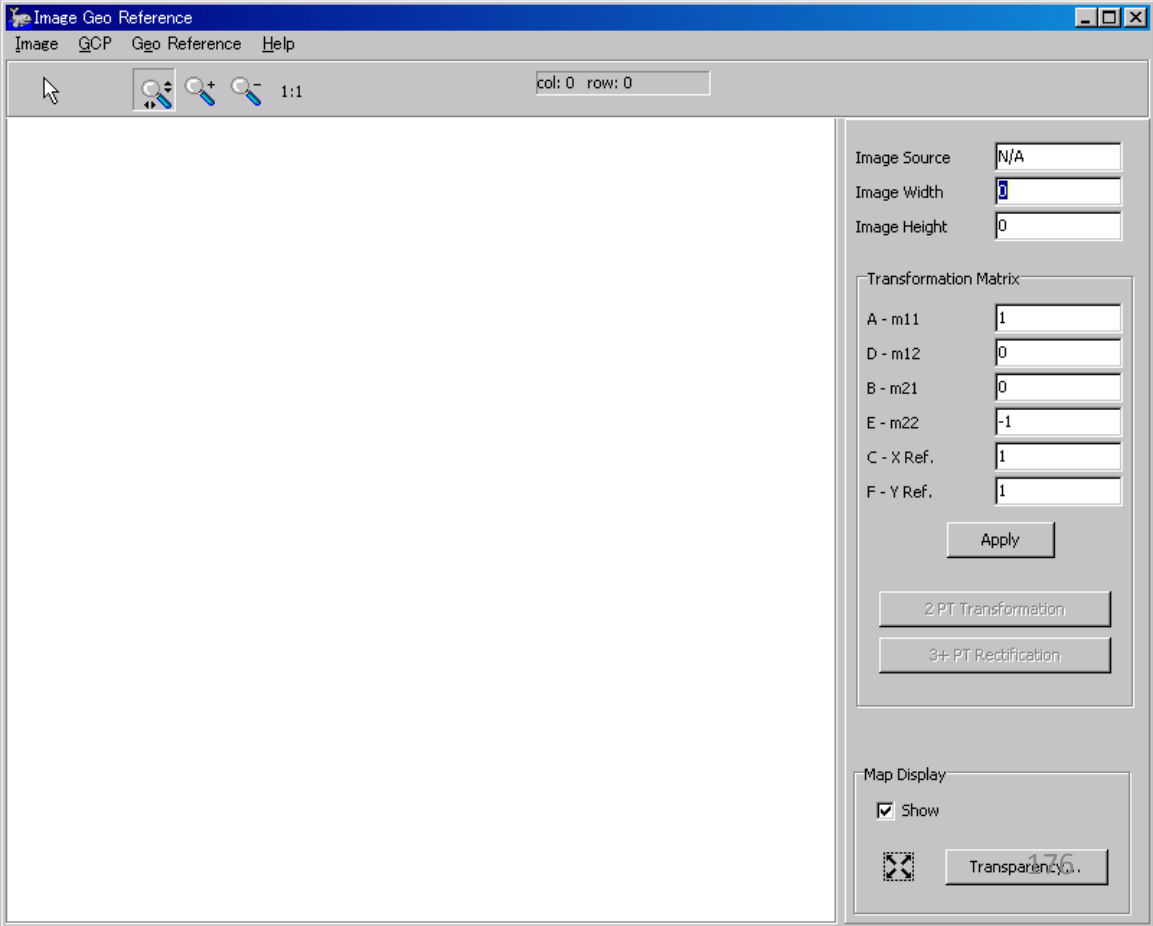
Google map11



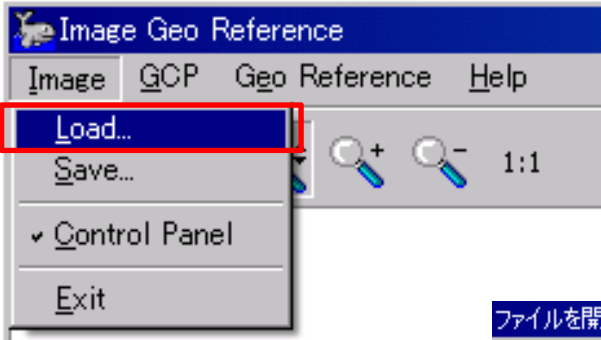
Google map12



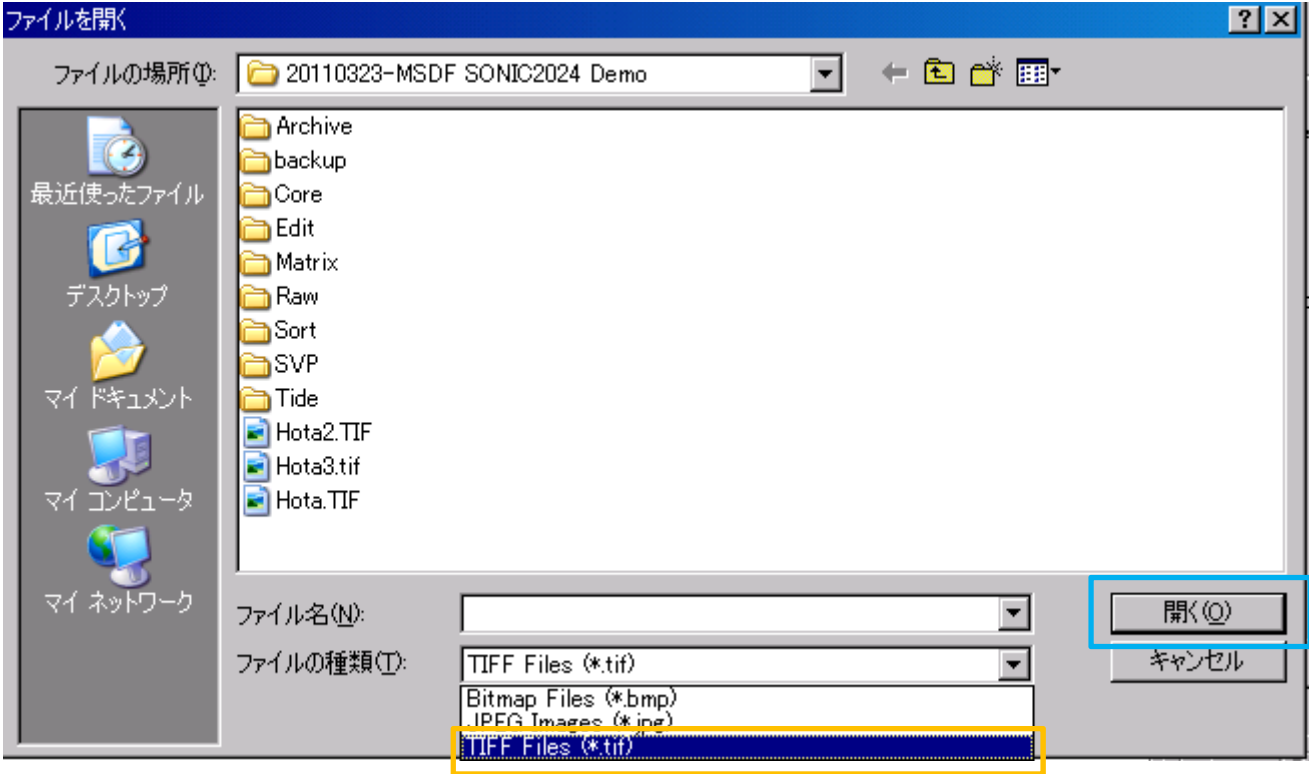
Preparation→Editors→Image Geo Reference



Google map13



Image→Load

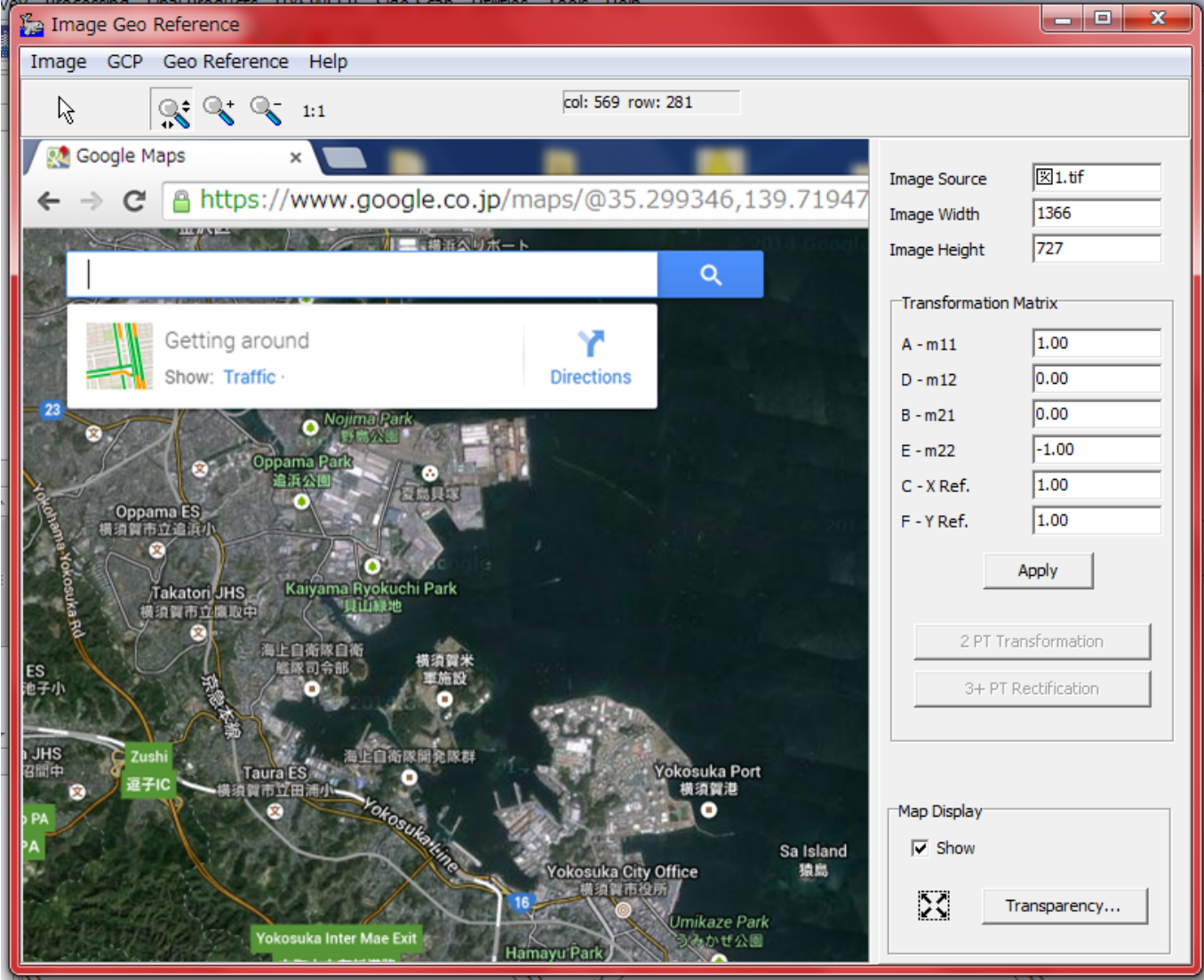


Choose "Tif file"

Click "(O)"

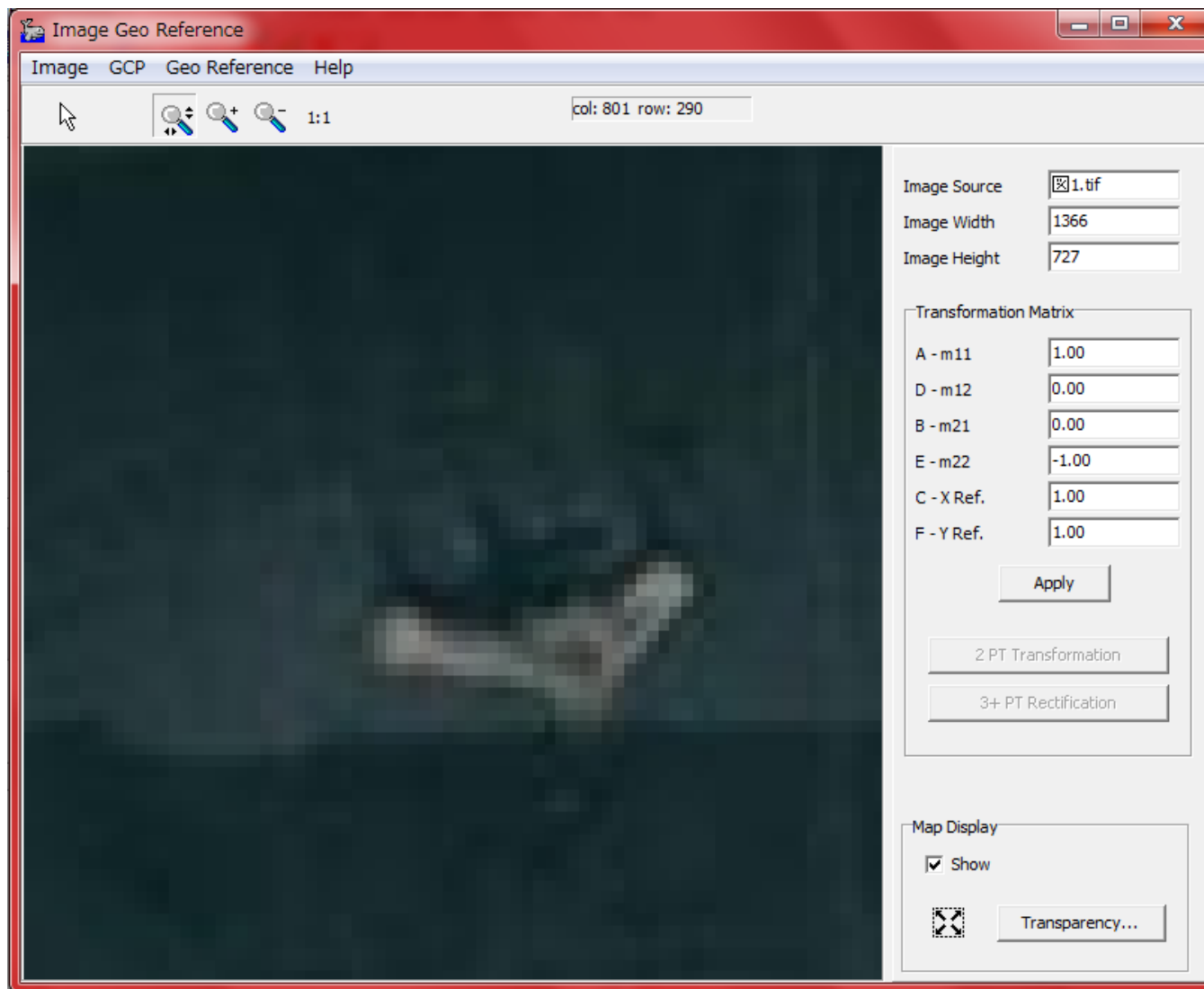
Google map14

You can see TIF image in software




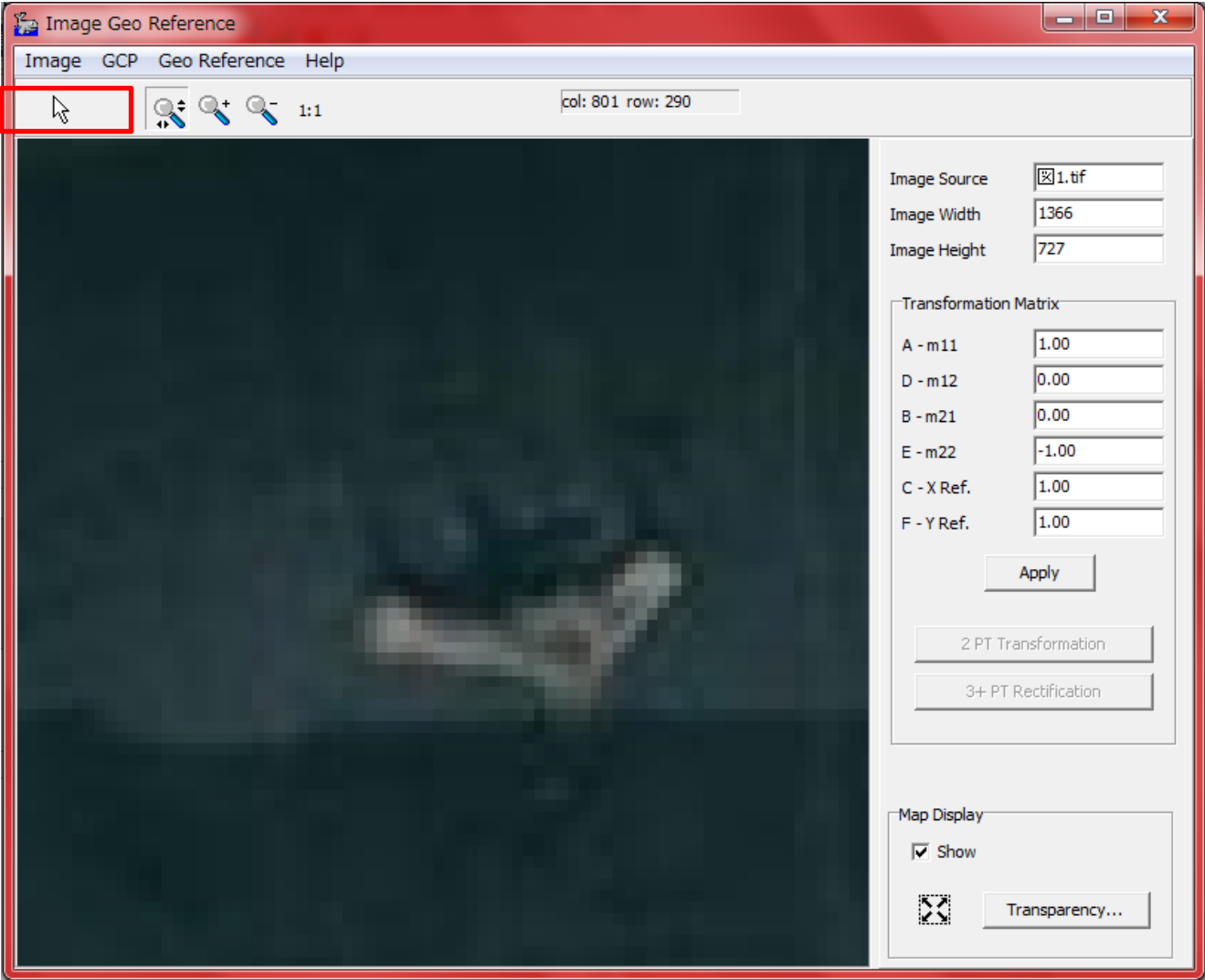
Google map15 Point 1

Scale up Point 1



Google map16 Point 1

Choose this  And double click on mark



Google map17 Point 1

Ground Control Point

Image X: 800
Image Y: 304
World X: 0.000
World Y: 0.000

Units:
 Projected XY
 Local Lat/Lon
 WGS84 Lat/Lon

OK Cancel

Input longitude and latitude to World X, World Y

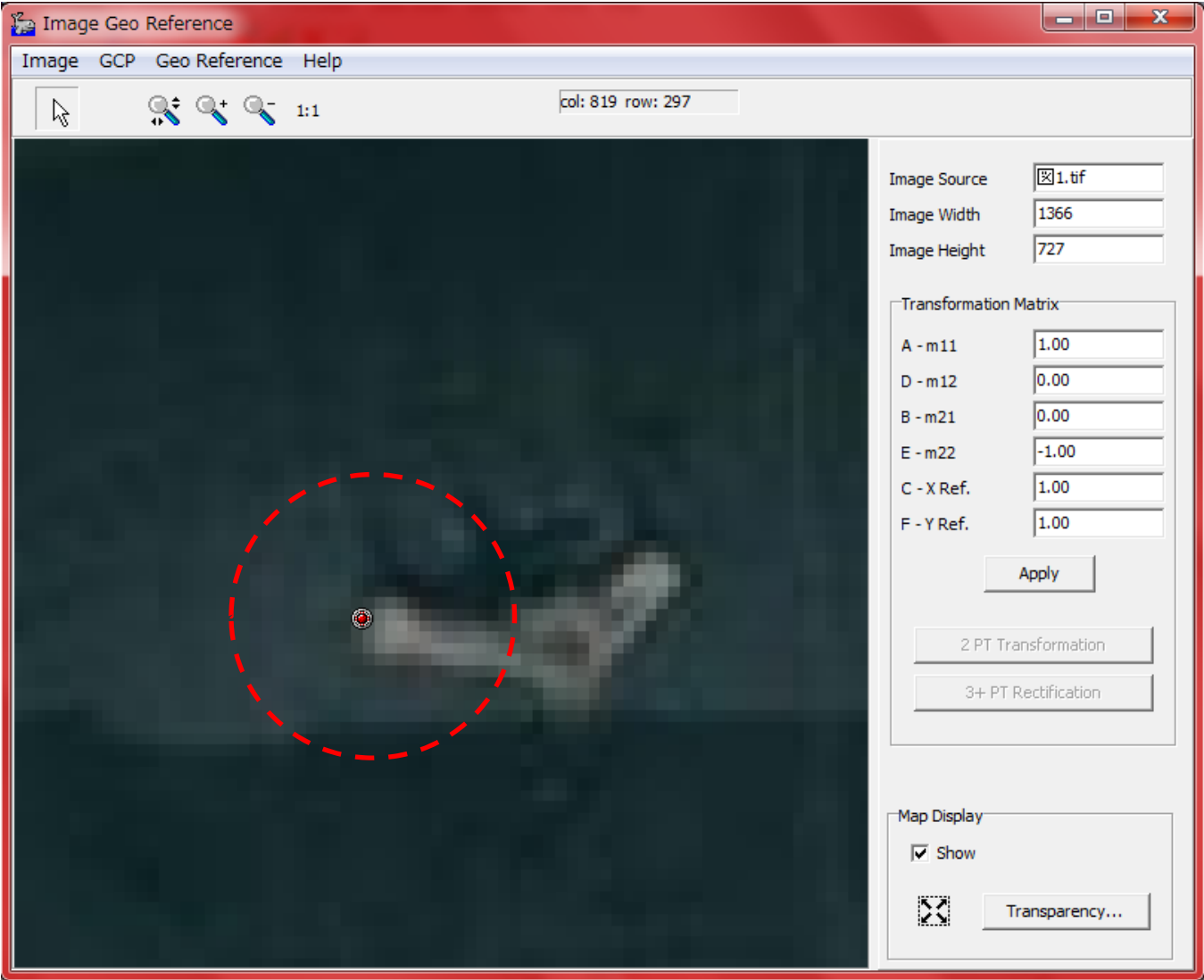
Please choose " WGS84 LAT/Lon

World X:35.311937N

World Y:139.739408E

Click "OK"

Google map18 Point 1

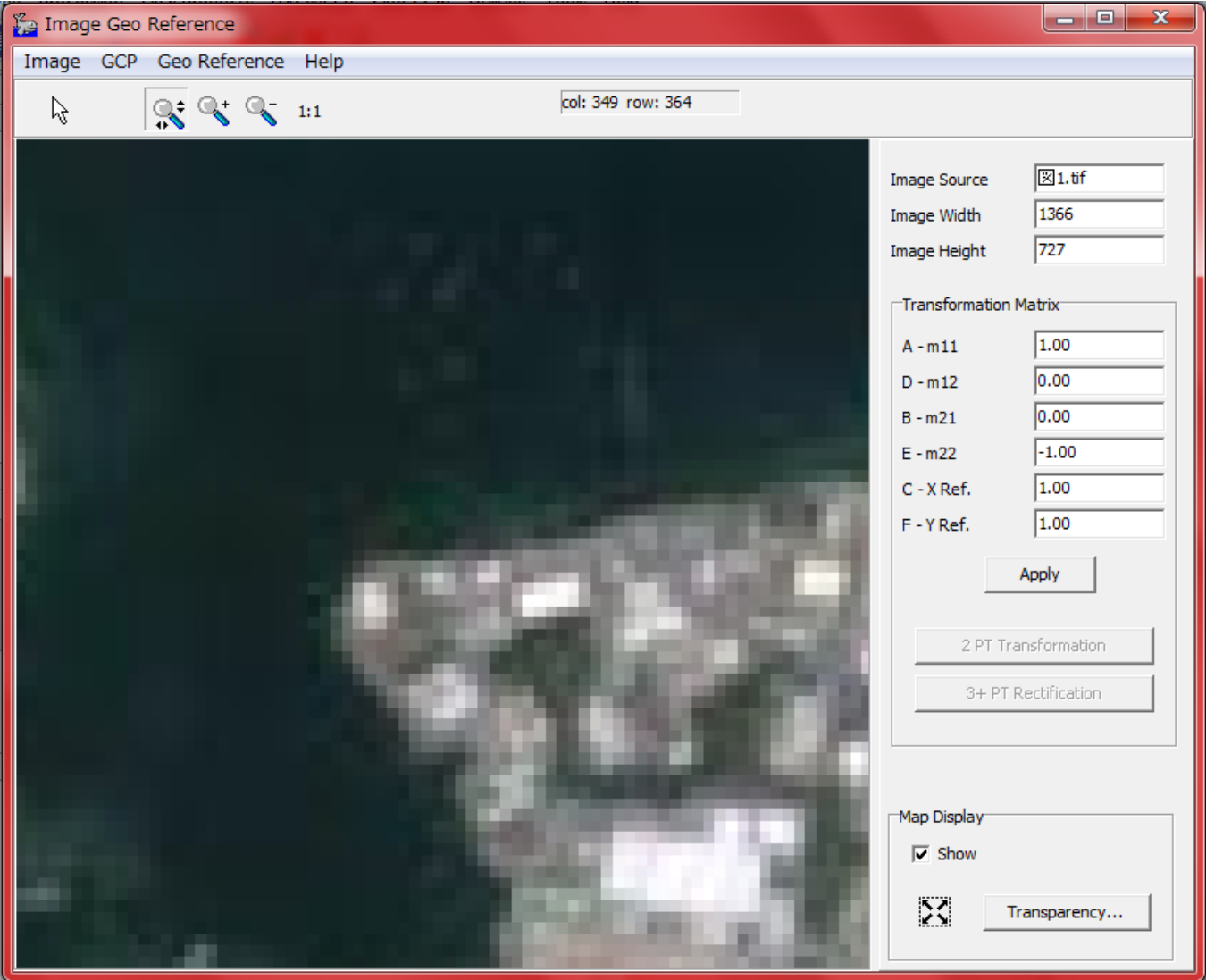


You can see this red point after double click

If you missed point, you can recover by right click

Google map19 Point 2

Scale up Point 2



Google map20 Point 2

Ground Control Point

Image X: 800
Image Y: 304
World X: 0.000
World Y: 0.000

Units:
 Projected XY
 Local Lat/Lon
 WGS84 Lat/Lon

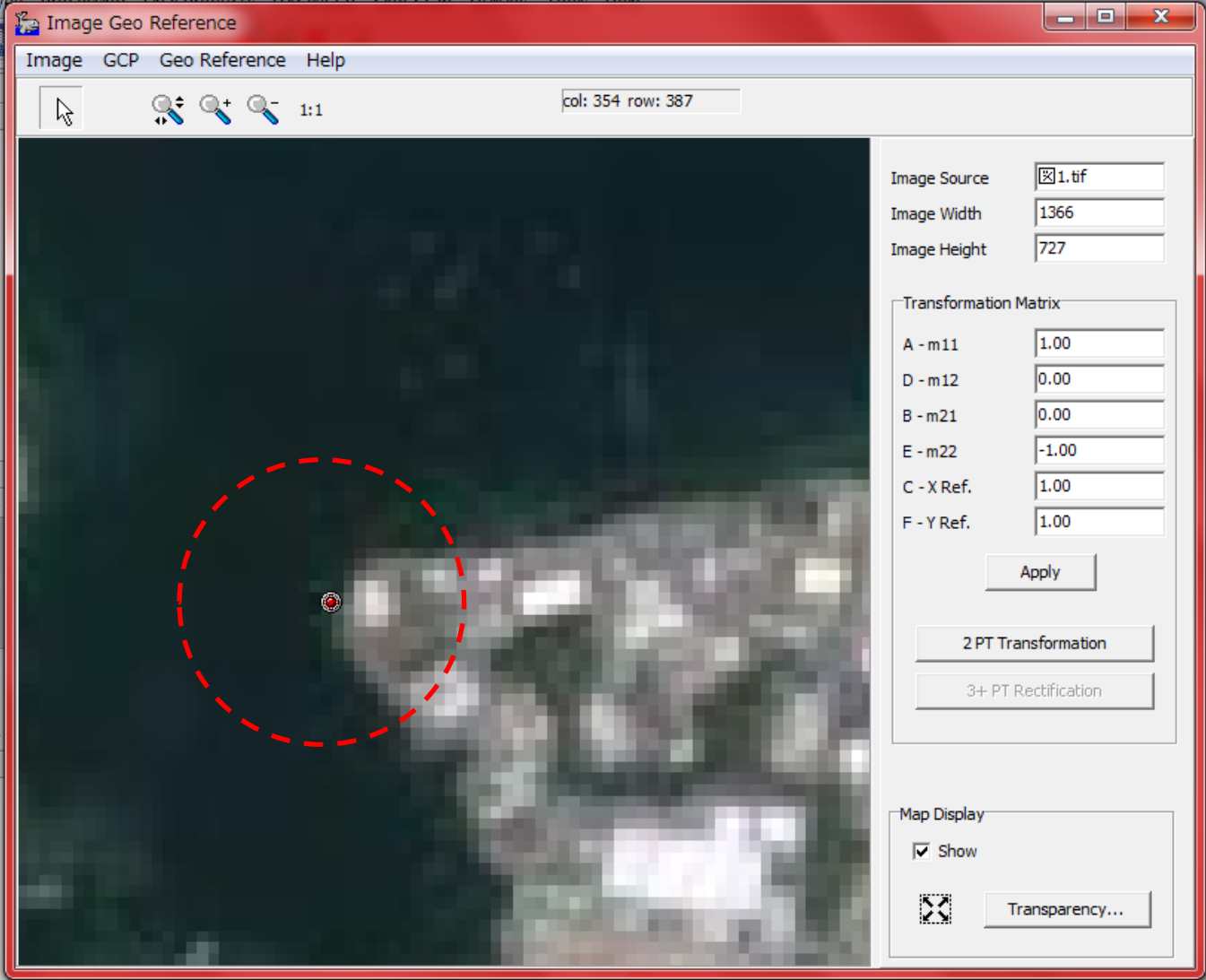
OK Cancel

Input longitude and latitude to World X, World Y
Please choose " WGS84 LAT/Lon

World X:35.300370N
World Y:139.661259E

Click "OK"

Google map21 Point 2

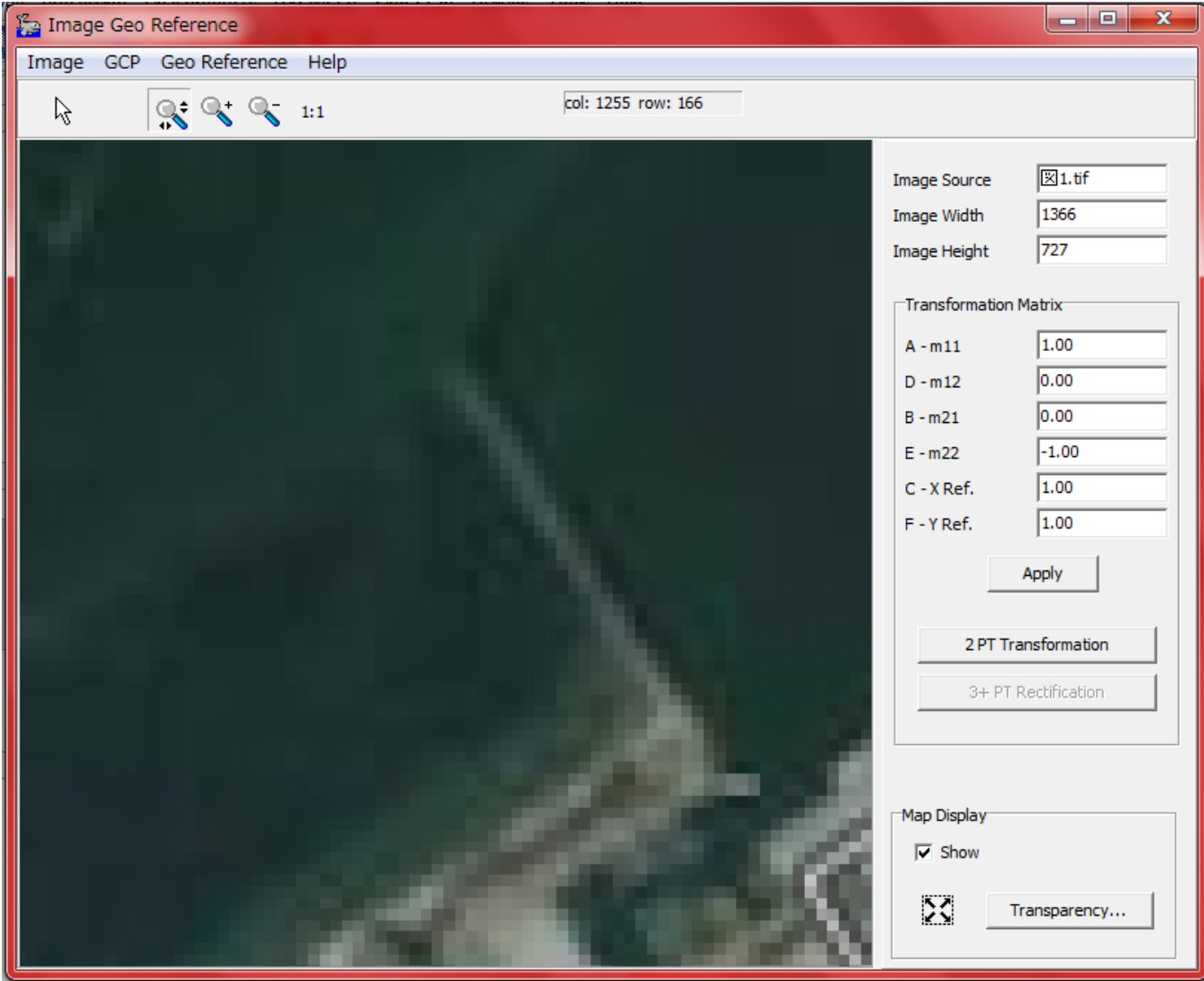


You can see this red point after double click

If you missed point, you can recover by right click

Google map22 Point 3

Scale up Point 3



Google map23 Point 3

Ground Control Point

Image X: 800
Image Y: 304
World X: 0.000
World Y: 0.000

Units:
 Projected XY
 Local Lat/Lon
 WGS84 Lat/Lon

OK Cancel

Input longitude and latitude to World X, World Y

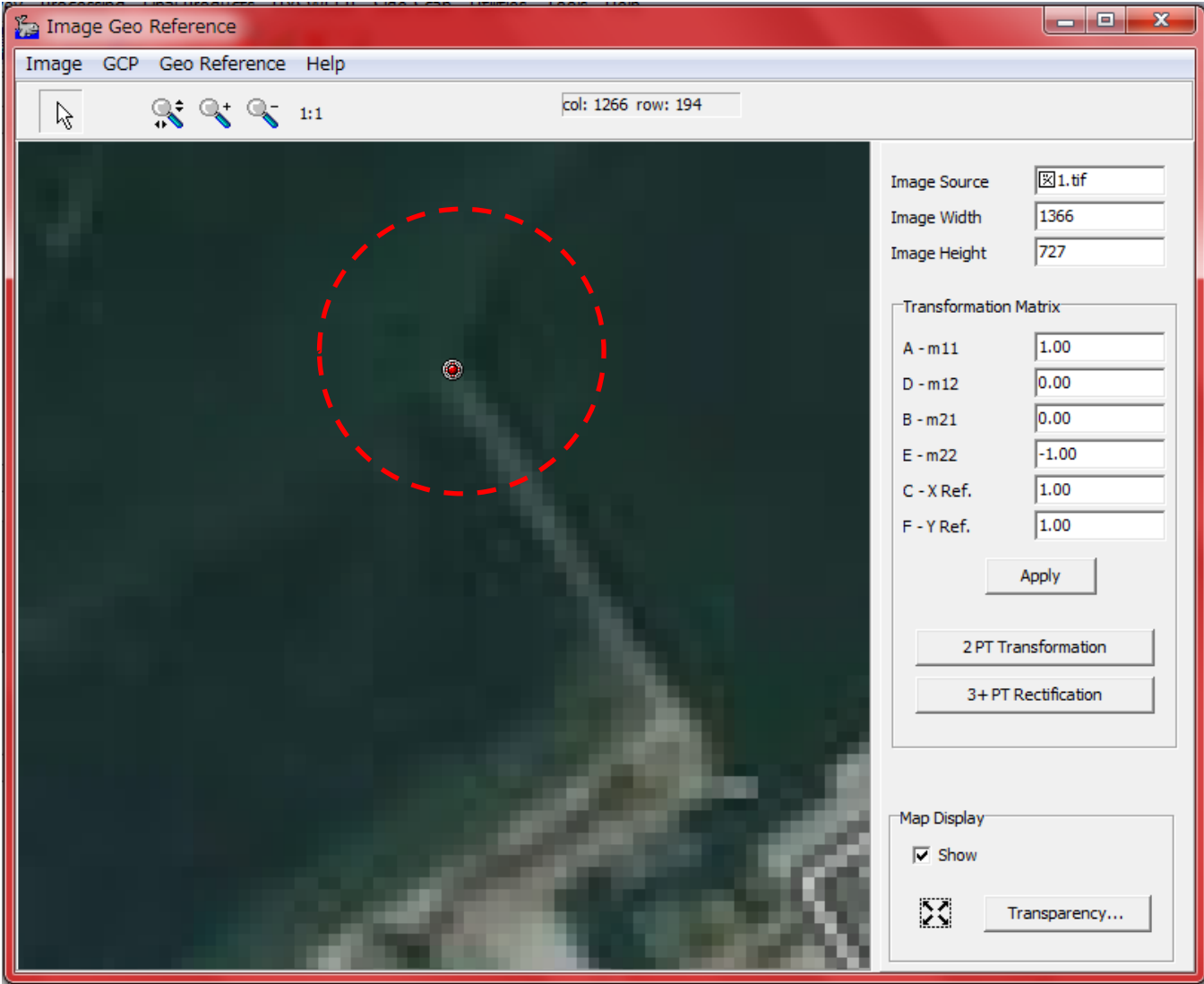
Please choose “ WGS84 LAT/Lon

World X:35.331370N

World Y:139.818715E

Click “OK”

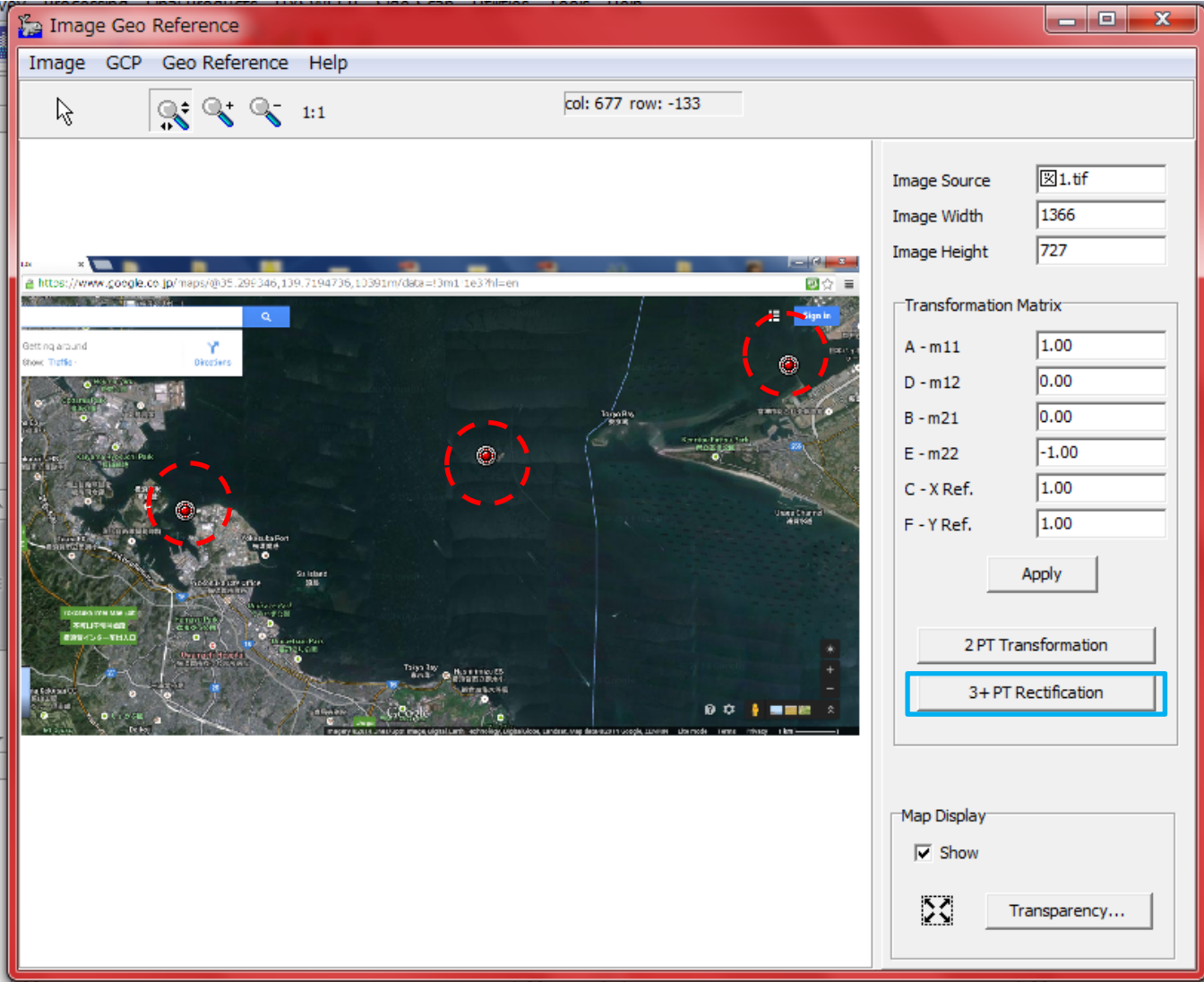
Google map24 Point 3



You can see this red point after double click

If you missed point, you can recover by right click

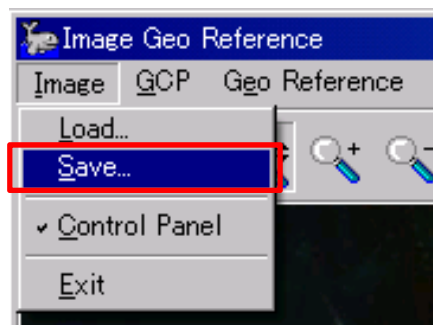
Google map25



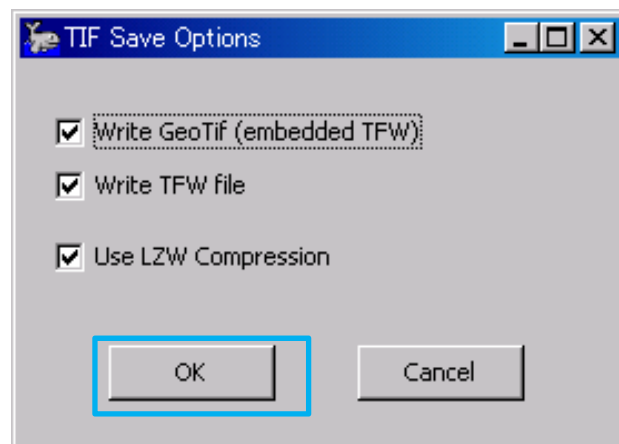
Please check about can see 3 points

After check click “3 +PT Rectification”

Google map26

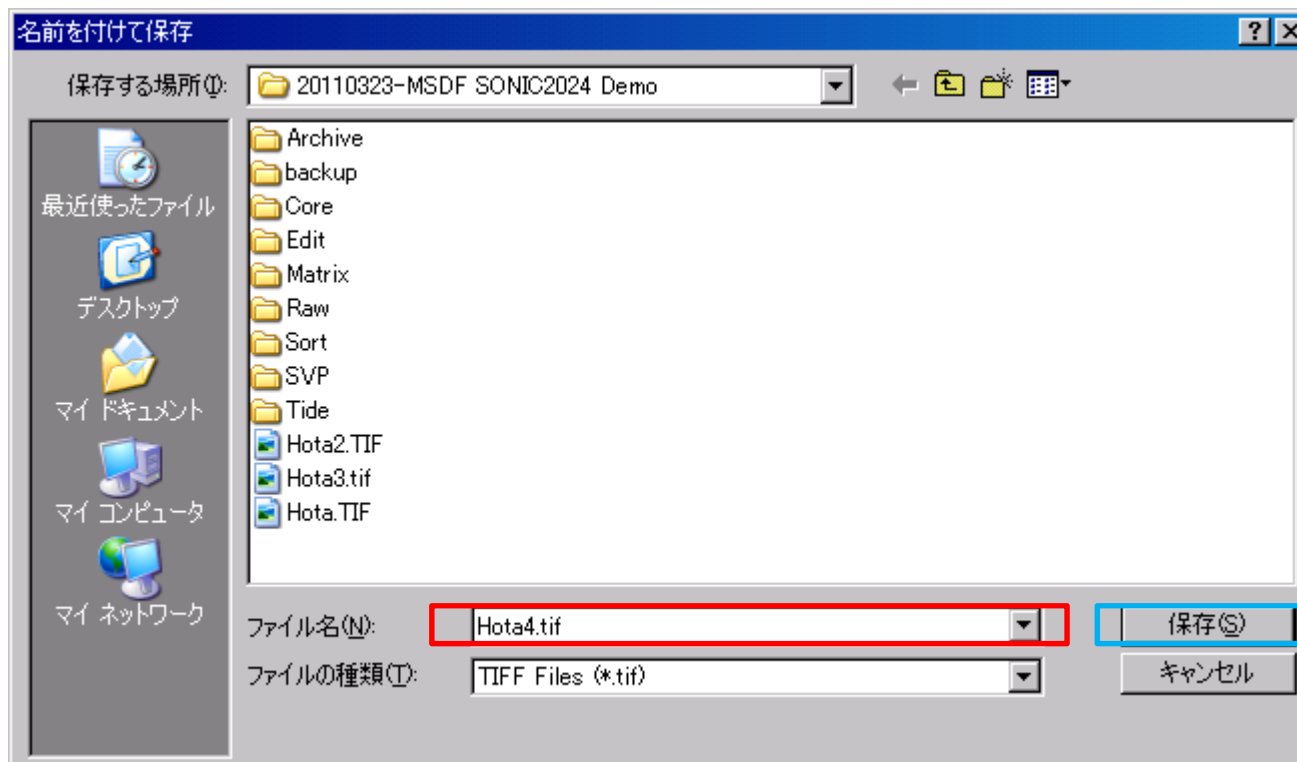


Chose "Save"



Click "OK"

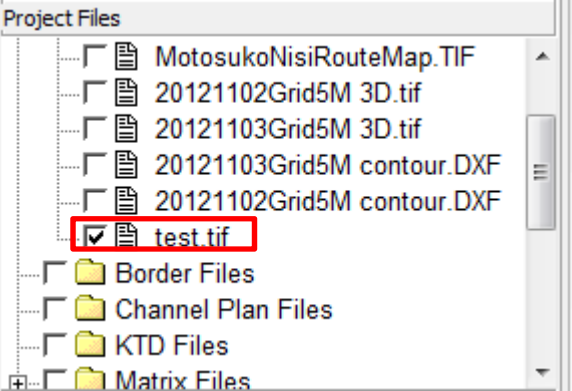
Google map27



Make name

Click (S)

Google map28



You can see tif file in Project Files

