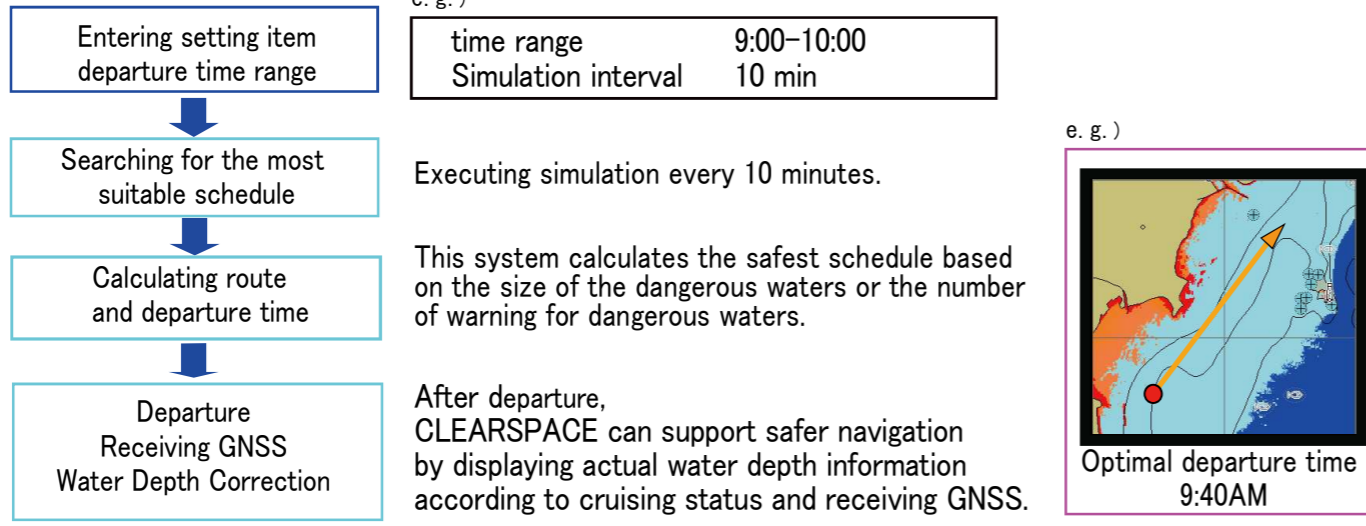CLEARSPACE can support navigation near the coast for large ship and coastal sailing vessels.
The risk of running aground can be avoided by referring to the optimal navigation time calculated from tidal changes in both Regular route and Non-regular route.

CS-TypeC
Together with both Type A and Type B functions, the function to search for the most suitable schedule supports safer navigation.
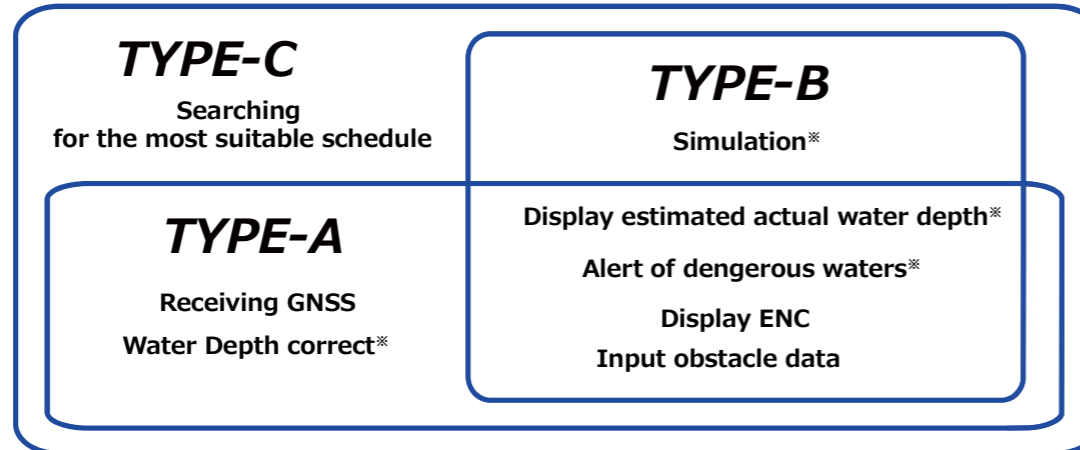
● Search optimal navigation time

The risk of stranding can be avoided in both Regular route and Non-regular route by being based on the most suitable schedule calculated from tidal changes. By setting the range of the navigation time, the departure time with the least amount of warning for dangerous waters can be determined.

e. g.)

Entering setting item departure time range

e. g.)

time range 9:00–10:00
Simulation interval 10 min

Searching for the most suitable schedule

Executing simulation every 10 minutes.

Calculating route and departure time

This system calculates the safest schedule based on the size of the dangerous waters or the number of warning for dangerous waters.

Departure Receiving GNSS Water Depth Correction

After departure, CLEARSPACE can support safer navigation by displaying actual water depth information according to cruising status and receiving GNSS.

e. g.)

Optimal departure time
9:40AM

Function List

Please choose the type according to your ship's equipments and applications.

TYPE-C
Searching for the most suitable schedule

TYPE-B
Simulation※

TYPE-A
Receiving GNSS
Water Depth correct※

Display estimated actual water depth※
Alert of dengerous waters※
Display ENC
Input obstacle data

Handling data
①digital bathymetric data, ②tidal harmonic constant data, ③electronic navigational chart(ENC)、④GNSS data(compatible with NMEA signal GGA format)
Note: The accuracy of the estimated bathymetry value depends on the digital bathymetry data and tidal harmonic constant data.

Hardware requirements

OS：Windows 10 64 bit
CPU：Core i7 2600K or higher
Memory: 8 GB or more
Hard disk: 50 GB or more free space
Peripheral equipment: CD-ROM, keyboard, mouse or trackball, etc.

Monitor
Resolution: 1400 × 1050 pixels or higher
Number of colors: True Color 32bits or more

＊Windows is a registered trademark of Microsoft Corporation.

Asterisk(※) is a patent(JP 2007–50759)

The function and performance of the products in this catalog are subject to change without notice.
The information in this catalog is current as of September 2020.
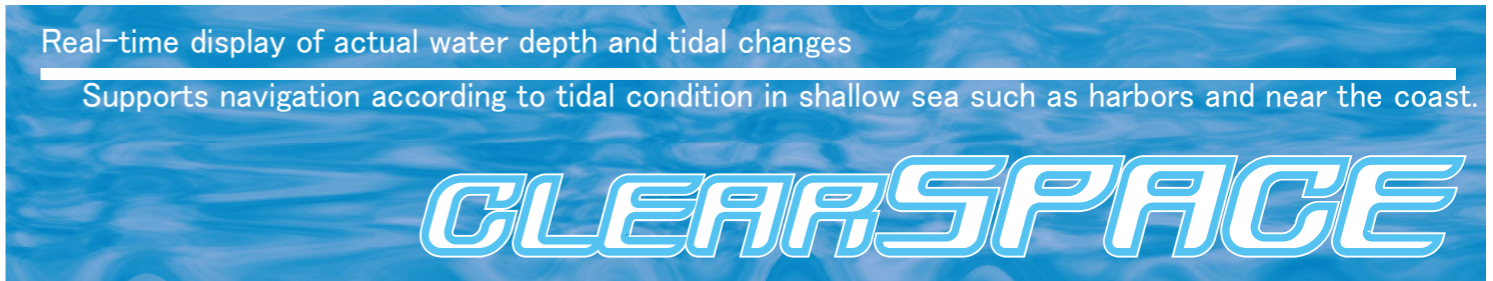
Real-time display of actual water depth and tidal changes
Supports navigation according to tidal condition in shallow sea such as harbors and near the coast.
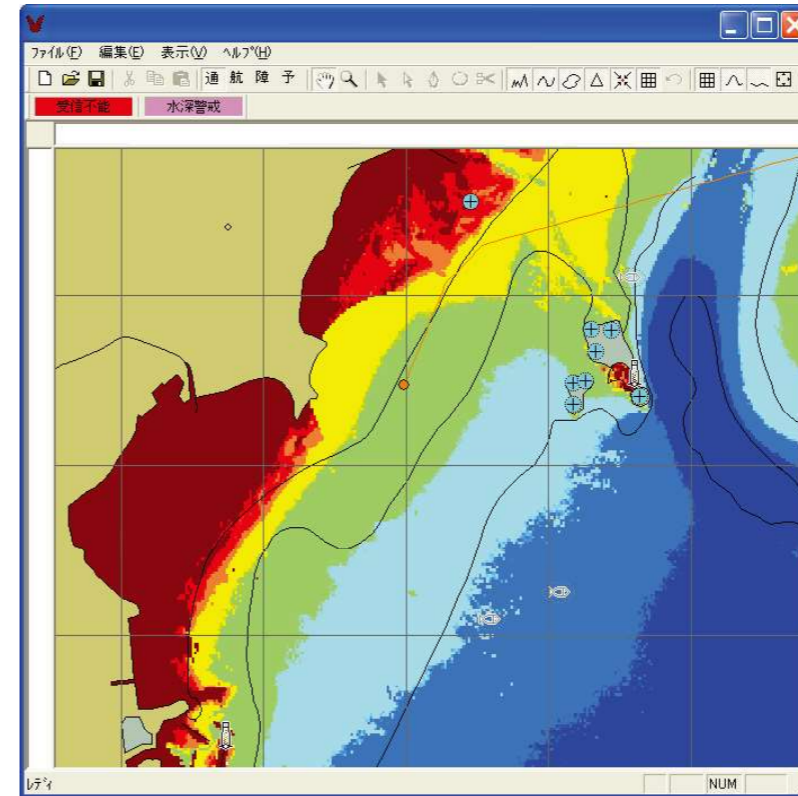
CLEARSPACE

Supporting navigation in near coast and inexperienced water area for coastal sailing vessels

CS-TypeA
When you navigate near dangerous waters, CLEARSPACE gives warning of stranding. Real-time display and depth compensation allow you to check your usual route more safety.

● Display estimated actual water depth※

CLEARSPACE can estimate current actual water depth from digital water depth data and tidal harmony constant data. Even more, CLEARSPACE can display graduated coloring interval of water depth according to ship constitution and situation, which is helpful for navigation in narrow waterways and ingress and egress.
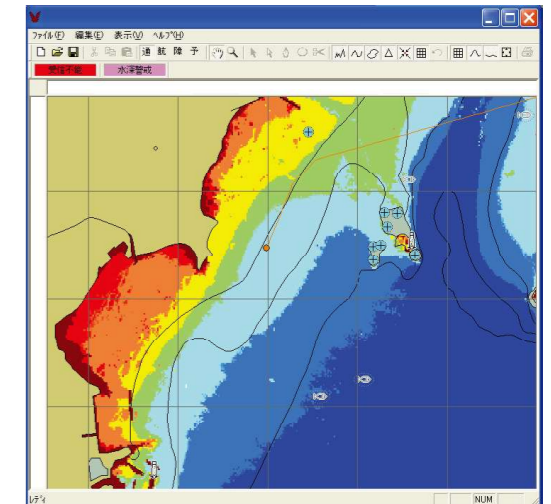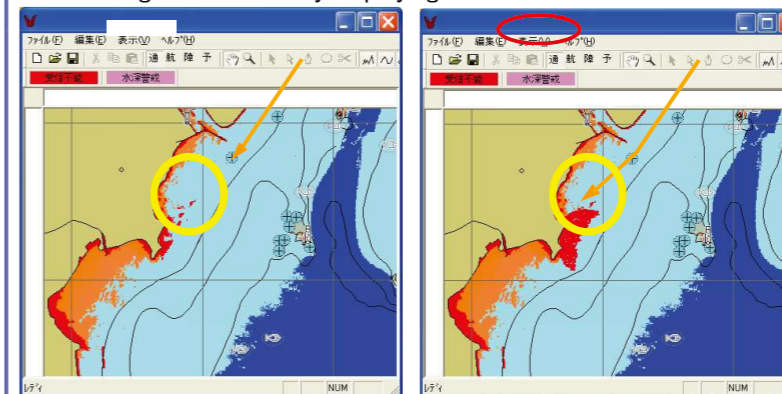

High tide time

Low tide time
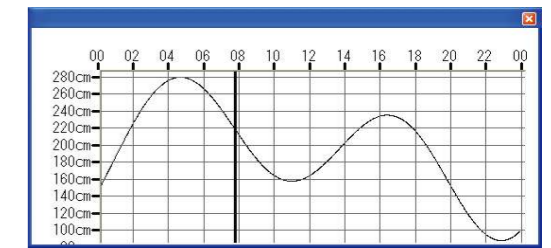
Show tidal changes in another window

● Alert of dangerous waters※

CLEARSPACE can receive GNSS and display the ship's current position. If you enter a dangerous waters after setting draft, monitoring clearance*1 and range of monitoring length, the system notices the dangerous waters by displaying and sound*2.

Before entering
the dangerous waters

After entering
the dangerous waters

Entering the Stranded Zone

→

Display and Alert Dangerous Waters.

Visualization of Hazardous Areas.

→

Possible to avoid the risk of stranding in advance

If you set monitored range according to ship properties, you do not need to monitor CLEARSPACE all the time.

CLEARSPACE can alert in in plenty of time and distance to avoid danger.

You won't have to worry about running aground, even if you're preoccupied with ship congestion.

*1 Distance from bottom of the ship to sea bottom which is determined to be dangerous.
*2 Range of waterside direction which is monitored

● Display ENC

CLEARSPACE can easily display data such as ENC, coastline, contour and obstruction.
You can look water depth and ENC at the same time by this function.
This function is used to choose more safety route and navigation.
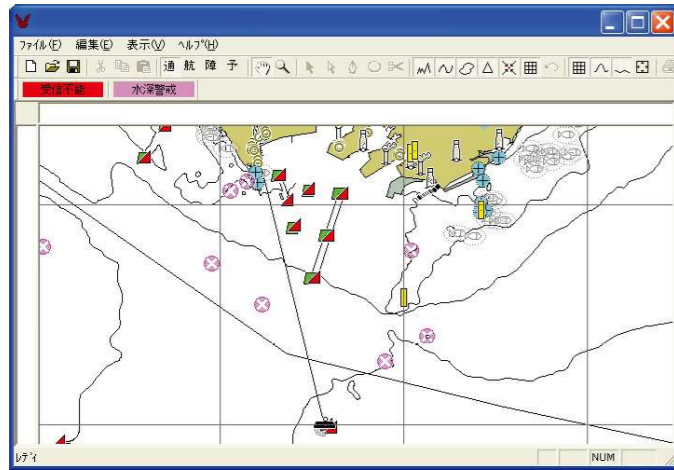
Display water depth more detail
by graduated coloring than contour.
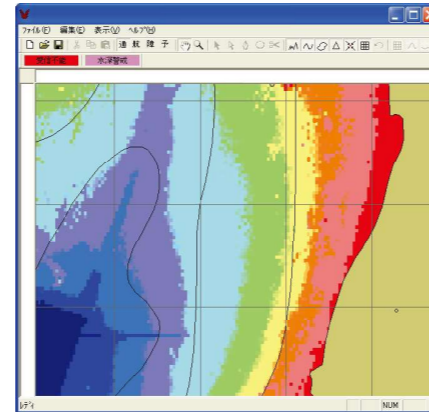
（example of display graduated coloring
by interval of 0.5 meters）

● Input obstacle data

You can enter own dangerous obstacle data other than ENC to applied position.
And also, you can check input data on the display for kind of obstacle, size and water depth etc.
（see Fig.1）

● Set Alert

If the around of obstacle are set to dangerous range of approaching, CLEARSPACE alerts
to take care for dangerous when the ship enters there.
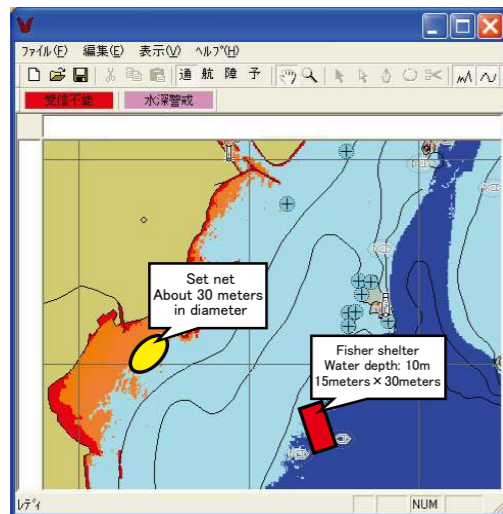This function is also possible to use to notice for approaching target point area etc. （see Fig.2）

Set net
About 30 meters
in diameter

Fisher shelter
Water depth: 10m
15meters×30meters

Fig.1 Displaying entered obstacle data

ocean
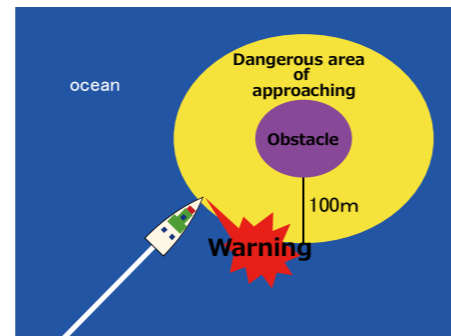
Dangerous area
of
approaching

Obstacle

100m

Warning

Fig.2 Setting 100m around the obstacle
as a dangerous range of approaching

If you are concerned about the deviation from the actual depth,
we recommend you to use the estimated depth correction function.

● Correction of the estimated actual water depth※

CLEARSPACE is possible to receive water depth obtained from the echo sounder.
The estimated actual water depth can be compensated by measuring water depth.

● Saving

CLEARSPACE can save file the data such as setting of graduated color display and positions of obstacles.
You can load the display setting to suit the situation without having to configure again.
You can save file with the name such as each port or each ship, etc.
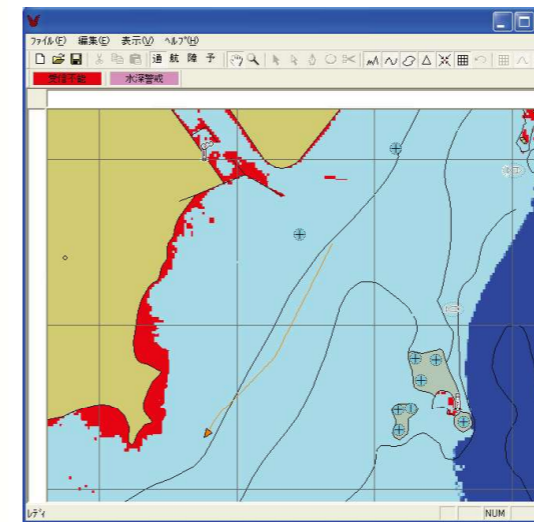
Supporting safety operating departure and entering for large ship,
such as pilot and tag boat, and prevent running aground
of navigation for coastal trading vessels, and monitor ships entering port.

CS-TypeB

You can choose more safety route by grasp dangerous water
in scheduled route in advance by simulation.
It is possible to manage all safety in shipping company
by simulating navigation of target ship from land.

● Simulation※

By setting departure time, changing point and speed, You can simulate from departure point to the arrival point.
And also can grasp aground dangerous waters by display graduated coloring of estimated actual water depth
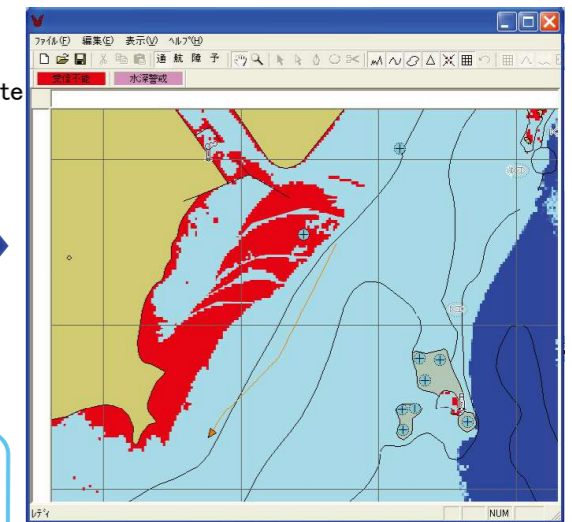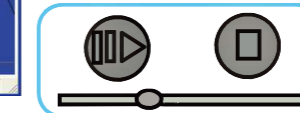according to setting time.

You can check
dangerous water again
by simulation of ship route
and tidal changed.

play/stop button
and
scroll bar

Setting route schedule

Overlap dangerous waters
and all route schedule, and display it.

Function

● Display estimated actual water depth

● Display ENC

● Alert of dangerous waters

● Input obstacle data

● Management of Nagigation From Pilot and Tag boat etc.

It is easy to simulate navigation only by setting target ship.
From this simulation, you can grasp dangerous waters where the work is actually done,
and helps to ensure your safety.
If you bring the laptop PC in ship, you can reference estimated actual water depth at current time
by simulating at real time without receiving GNSS.

CLEARSPACE installed in the laptop PC can manage
the arrival of large vessels, etc. from land or other vessels.
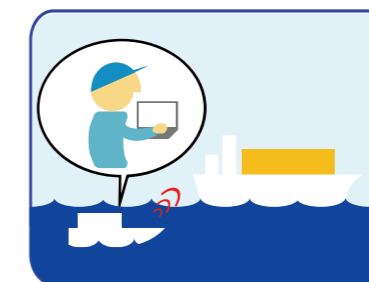
CLEARSPACE on the ship
can also manage navigation.