

# Iceradar FICE-100



Find the best route through ice!

Observe ice conditions by radar

Hybrid ice radar

# Shipping in heavy conditions

Problem facing shipping in ice-infested waters:  
ability of a conventional marine radar to detect

- small floes of multiyear ice, dangerous glacial ice such as bergy bits (=pieces of icebergs showing 1 to 5 m above sea level)
- growlers (= pieces of icebergs showing less than 1 m above sea level)

In heavy sea conditions they may be lost in the sea clutter.

Detection on radar or visually can be as little as a half mile from a vessel, if at all -> High risk for hull damage due to collision with multi-year and glacial ice, even for ice strengthened vessels.

Fuel consumption is higher for vessels transiting heavy ice conditions

-> It is more efficient to avoid multi-year or thick first-year ice

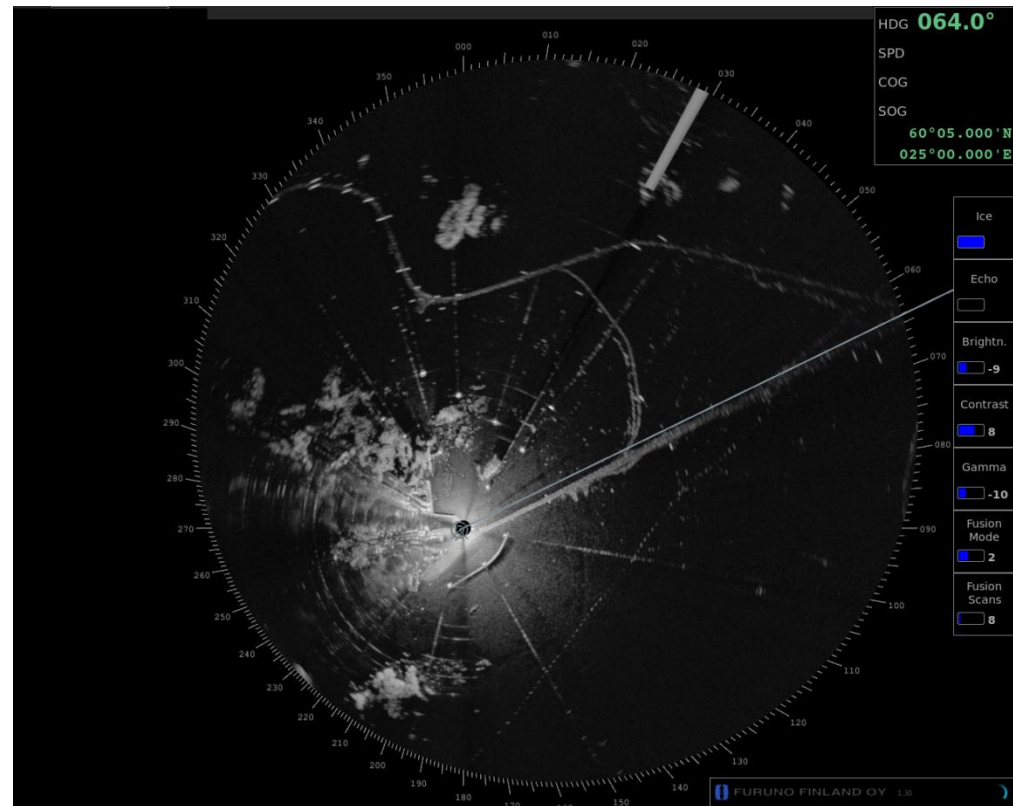
# Enhance the ice information

- Marine X-band radar combined with advanced digital processing produces high resolution images
- Allows the user to identify easier hazardous ice features and small icebergs



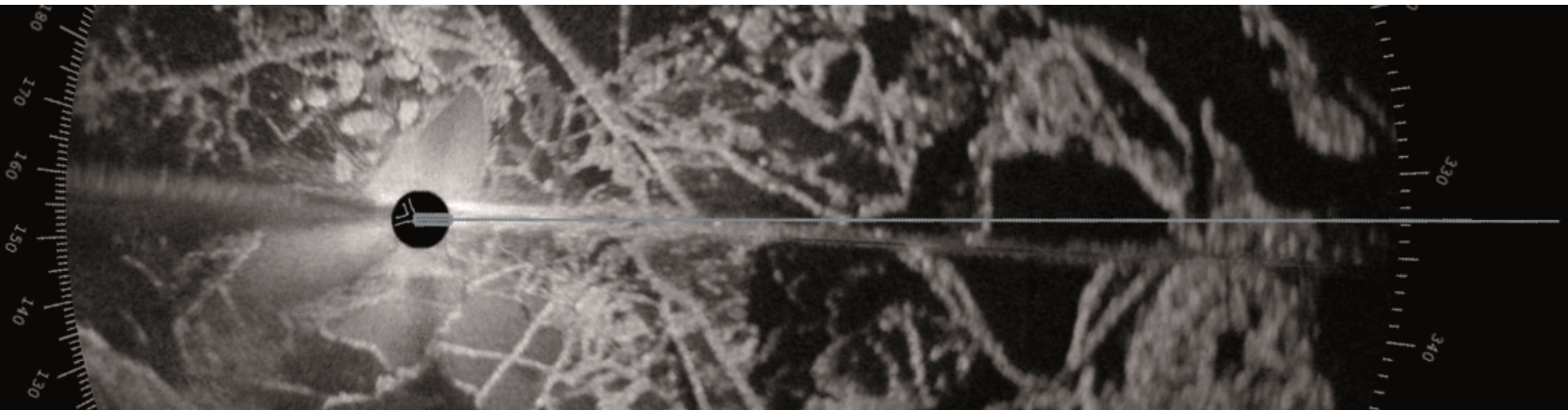
# Enhance the ice information

- An ordinary FAR radar removes sea clutter and it works as an anti-collision device.
- An ice radar is a passive listener that can process many antenna rotations.
- The result is a stable image that includes the fine details found in the radar echos.



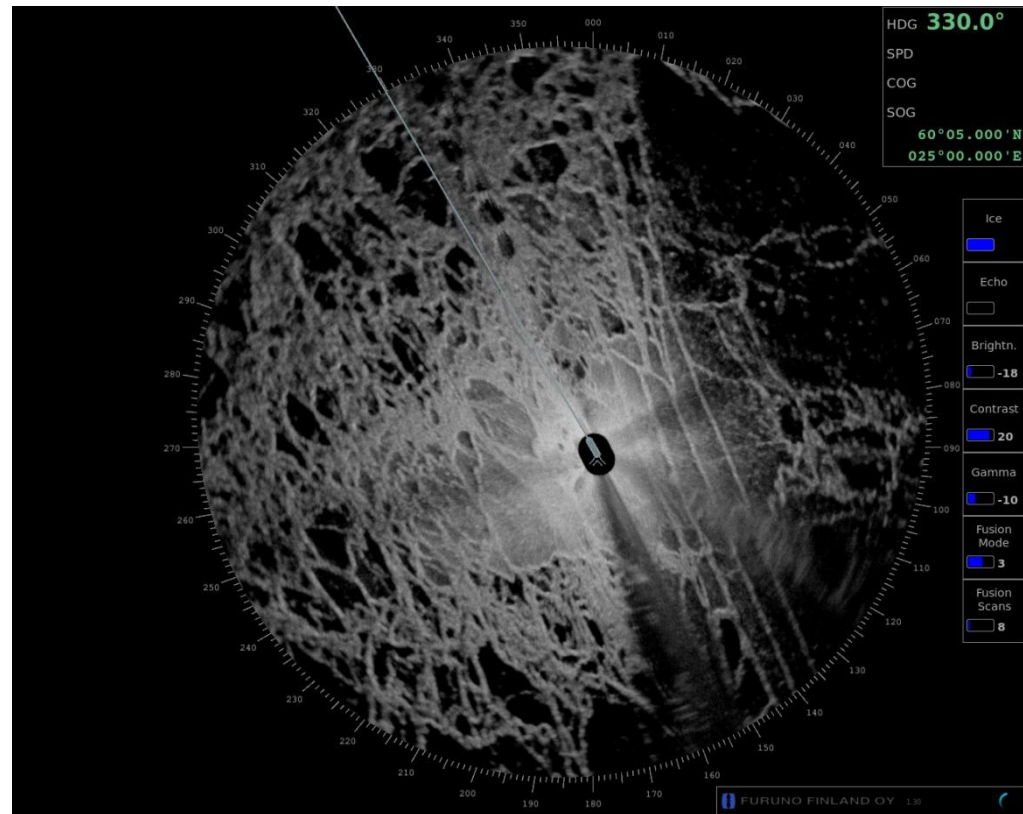
# Ice radar displays the ice conditions

- The FICE-100 removes the image noise and the fine structures of the ice will become more visible.
- Hybrid ice radar captures the raw radar signal from the ARPA processor. The result is a stable image that includes the fine details found in the radar echos.
- It is a supplementary system for the specific task of observing ice conditions by radar.



# Increase safety

- Visualizes ice structures. Discovers the optimum route to go through ice.
- Shows the track in bad visibility.
- Usable ice detection up to 4 NM.
- Improves stability of the ice picture compared to the radar.



# Use less power

- Vessels can find the clean ice and old channels done by icebreakers and other vessels.
- The vessel uses much less power and saves fuel and time!

Enhanced functionalities: FICE-100 is an alternative to IR camera.

FICE-100 can also display official ENC chart material.  
Chart can be overlaid with ice radar picture.

# Requirements

- The Ice Radar has a 5m analog cable that fits the FAR radars RPU slave1 socket
- For proper operation the Ice Radar needs:
  - heading
  - position
  - speed
- Monitor is not included. You may use available monitors for installation.

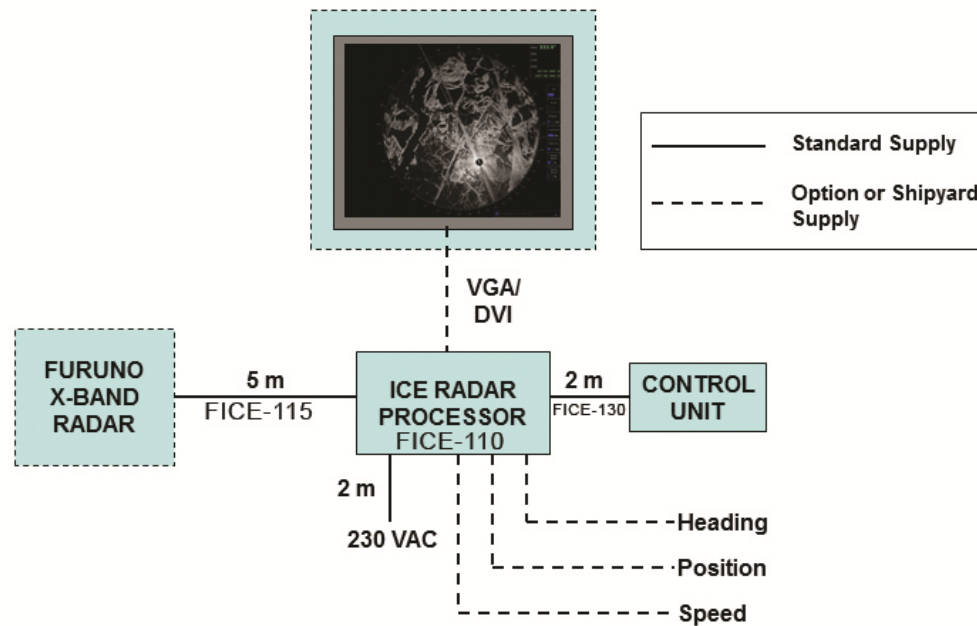




# Conclusion

- The Ice Radar is an additional tool by which you can visualize details that are difficult to see on the navigational radar display.
- It does not interfere in any way with normal operations on the navigation radar. The Ice Radar is just a passive listener.

# Interconnection diagram



# Technical Specifications

## SPECIFICATIONS

### • General

Ice radar processor - marine rack computer  
Power supply 100 - 230 VAC  
Trackball control unit  
High resolution high bandwidth digitizer  
Ice radar display outputs DVI and VGA

### • Input signals

Radar signals  
- radar video and trigger  
- azimuth and heading line signals  
- standard cable length is 5 meters  
  
Heading, position and speed

## EQUIPMENT LIST

### Standard

1. FICE-110 Ice radar processor
2. FICE-115 5 m Ice radar cable
3. FICE-130 2 m Control unit cable
4. Standard spare parts and installation materials

### Option

1. Ice radar display w. cable (Specify when ordering)

