



Royal Netherlands Navy

# Summary of Results from the SCWG Questionnaire

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## Introduction

Following SCWG1 is Silver Spring, a questionnaire was produced to investigate how the data / product will be used by the mariner and what kinds of data are useful.

The questionnaire was made up of both open and multiple choice questions. Over 1400 responses were received.



## Demographic Information

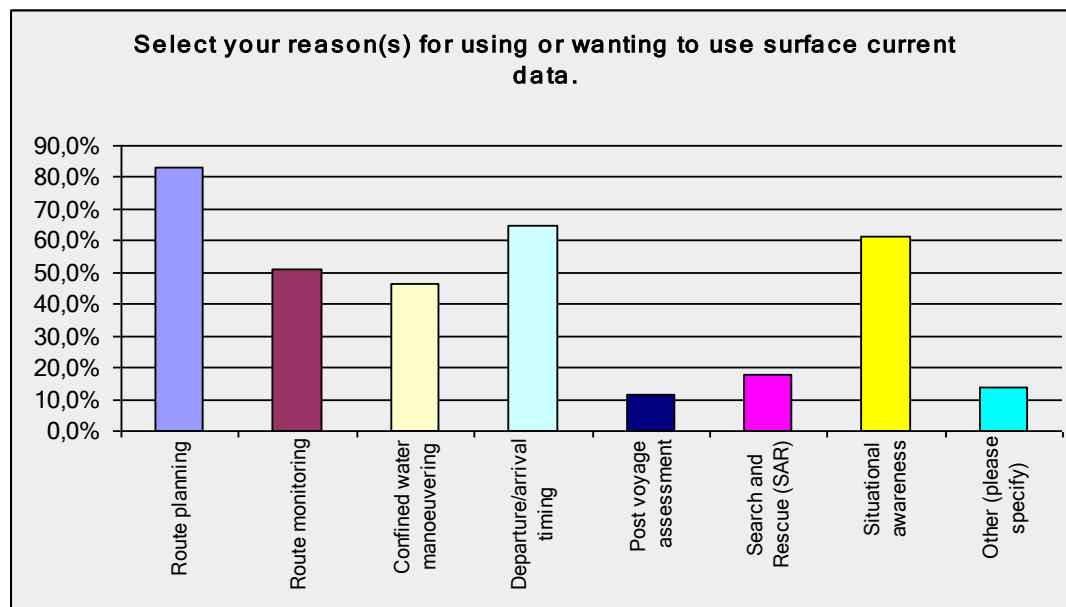
1401 respondents

57% of the respondents were non-professionals  
(of these most were recreational sailors and/or racers)

43% of the respondents were professionals. 70% described themselves as more experienced than average.



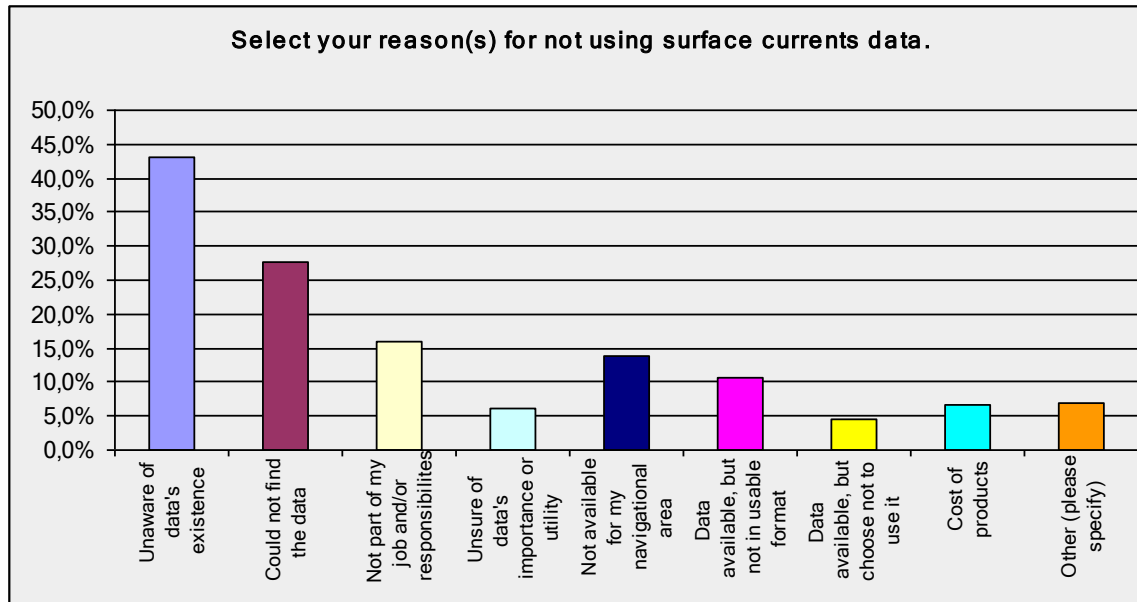
## Reasons for using or wanting to use surface current data



Responses to 'other' (14%) included racing, oceanographic research and engineering, diving, ship dynamics (drift, settlement and squat, under keel clearance) fishing and military planning.



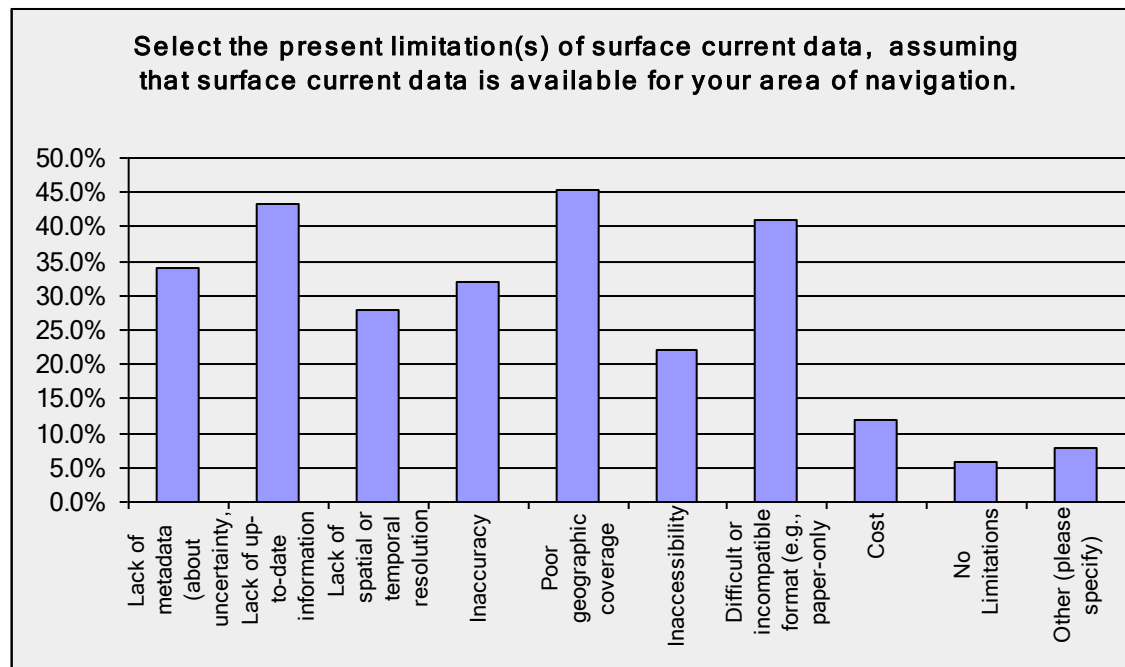
## Reasons for not using or wanting to use surface current data



Most respondents were users (75%) of surface current data. Of those who were not, data were not available in their area or was not in a usable format.



# The present limitations of surface current data



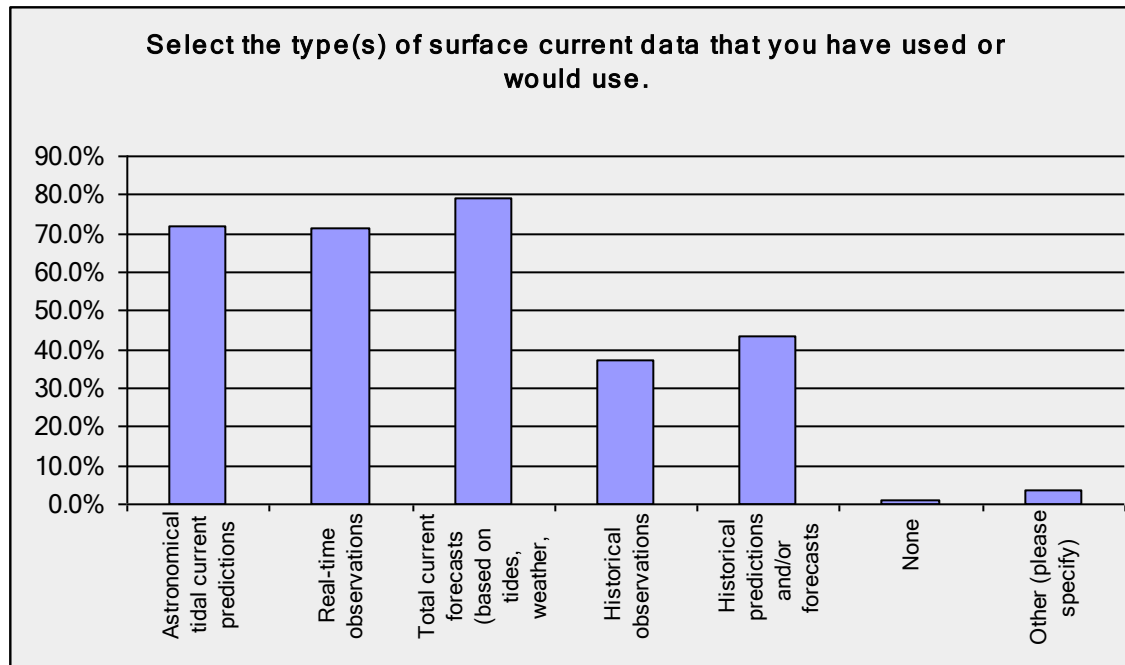


## Use of ENC, ECDIS or ECS

Most of respondents (64%) have used an ENC, ECDIS or ECS. Professional users (83%) have used more often ENC, ECDIS or ECS than non professional users.



# Current Types

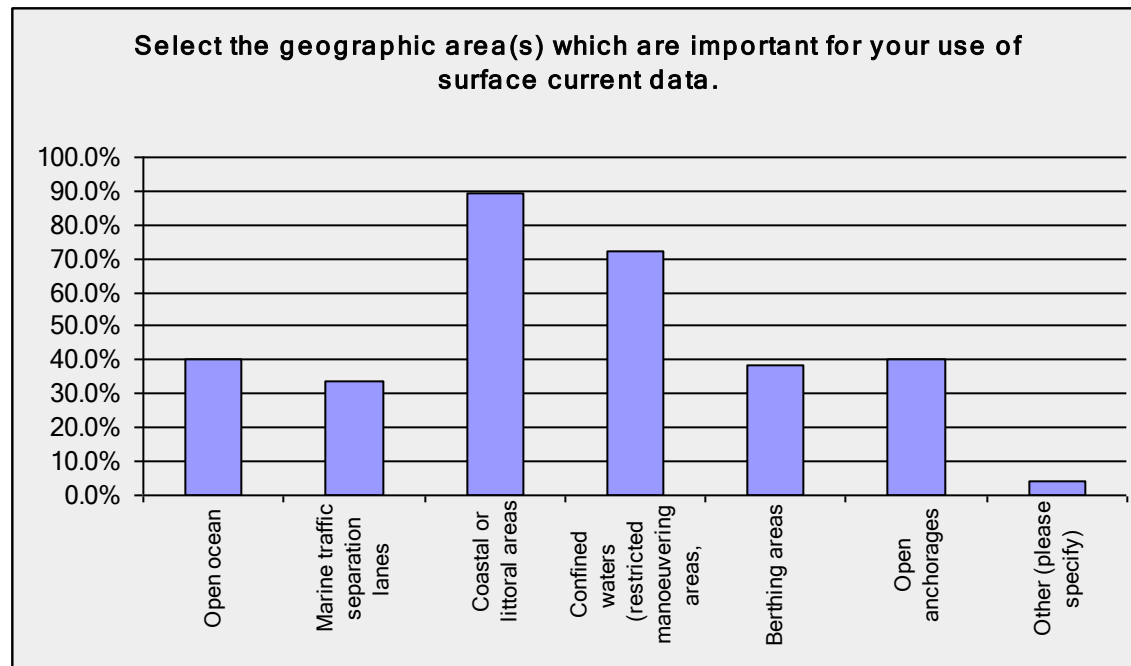


Those selecting 'other' usually used paper or digital information and were often unaware of the type of current data they were using.





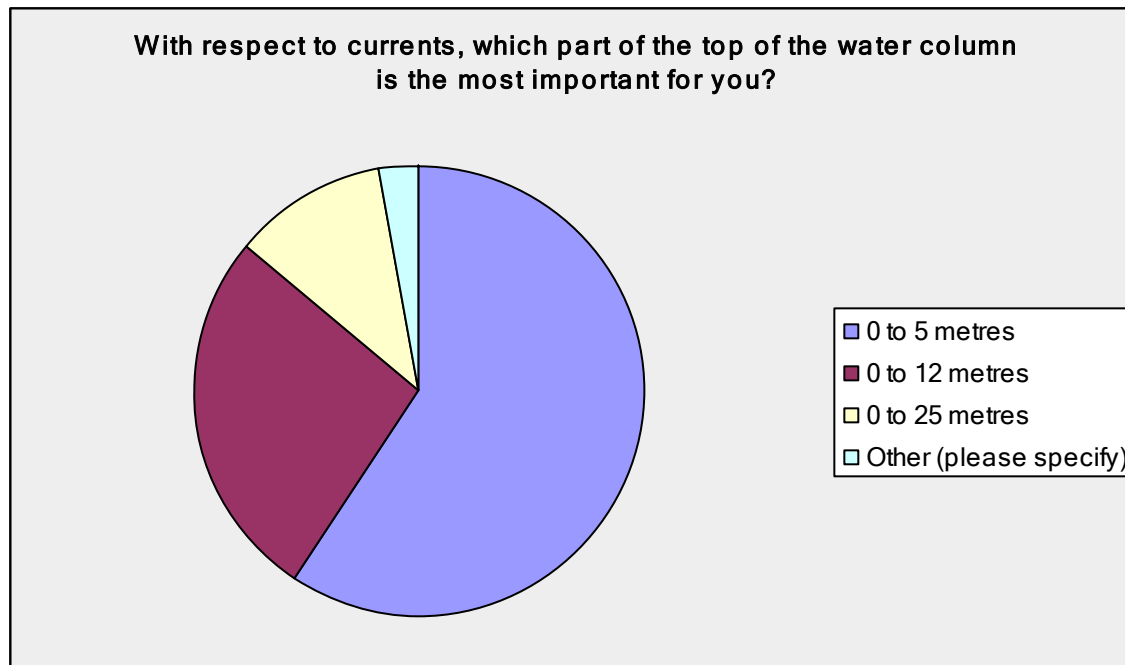
## Area of coverage



For those choosing 'other', tidal rivers, straits, smaller seas (e.g., Persian Gulf), polar regions were often mentioned.



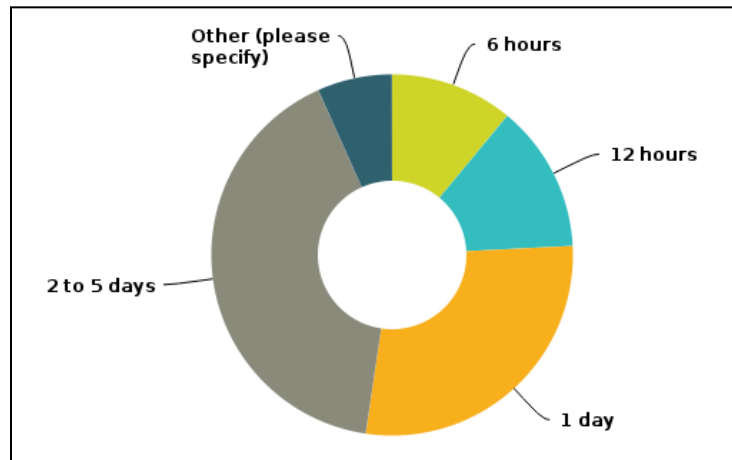
# Water Column



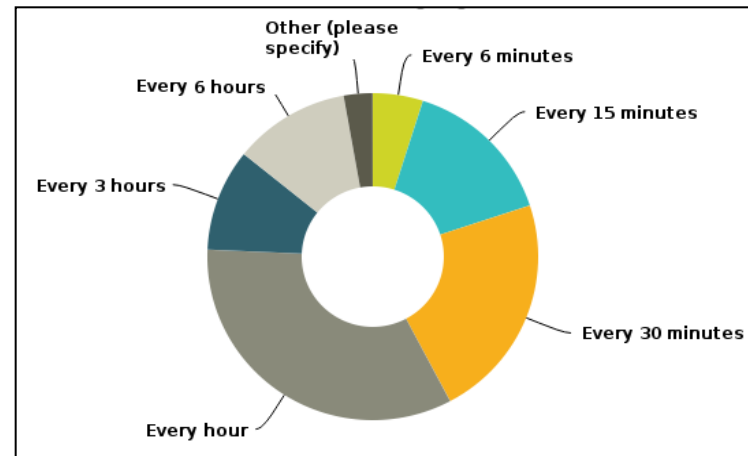
For choosing 'other' (2%), several respondents were interested in the top 500 m, or even the total water column.



# Timeliness



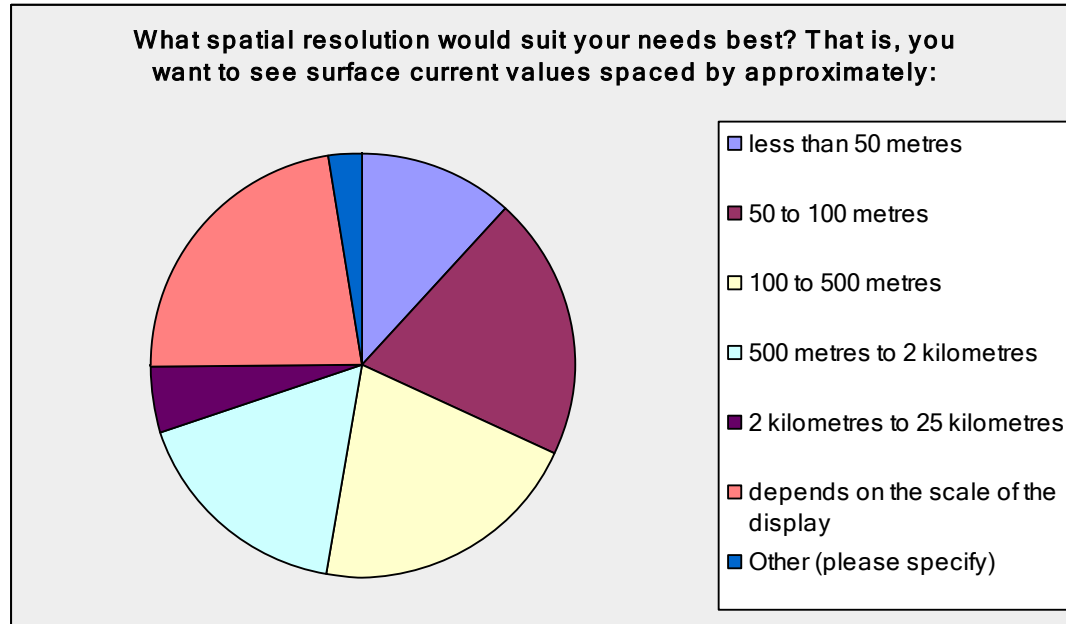
surface currents forecast horizon that best suits users needs



the forecast interval that best suits users needs



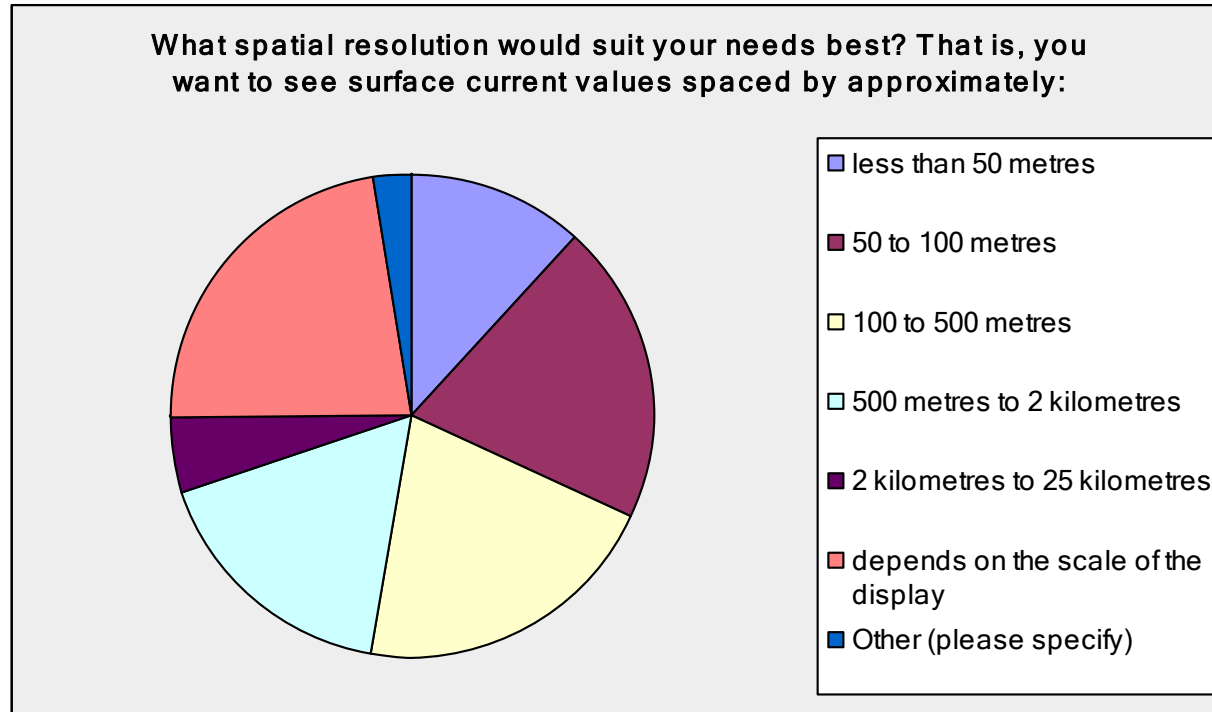
# Spatial resolution



For 'other', respondents wrote that it depends on the size/type of the area. Coastal and confined area would need higher resolution than the open ocean.



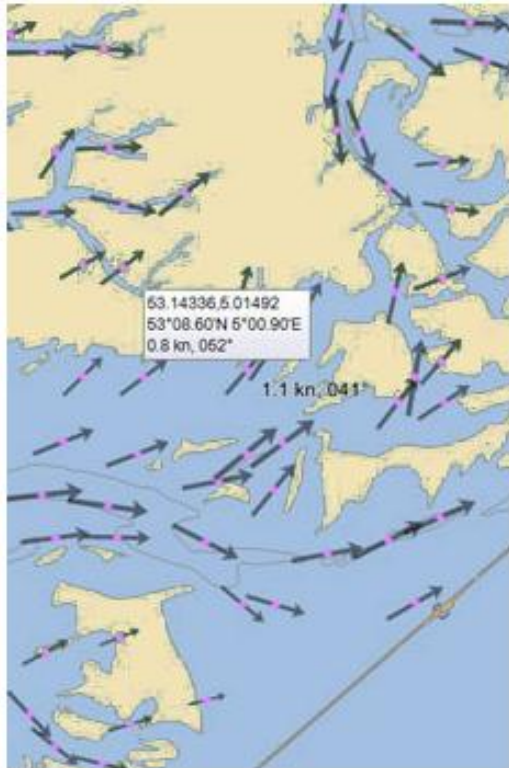
## Minimum speed



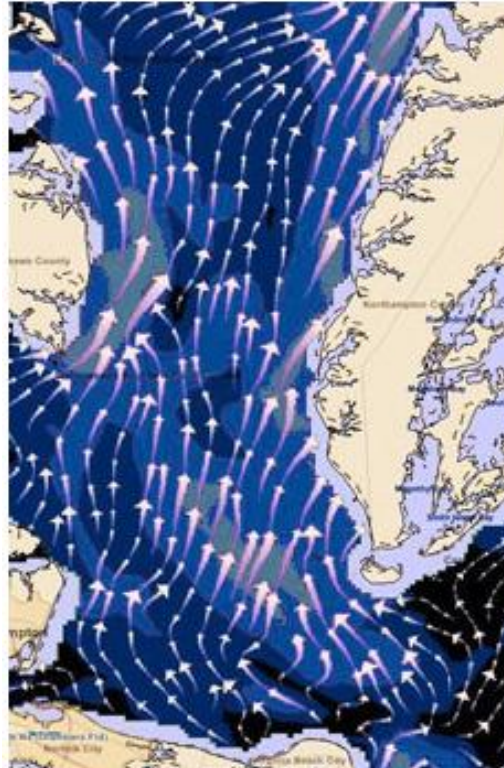
For 'other', respondents wrote that it depends on the size of region.



## Graphical representation & visualization (1)



speed and directions



flow pattern

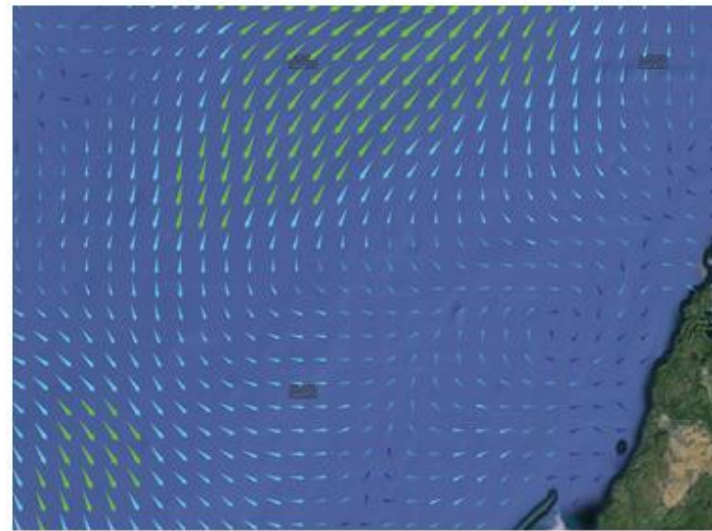
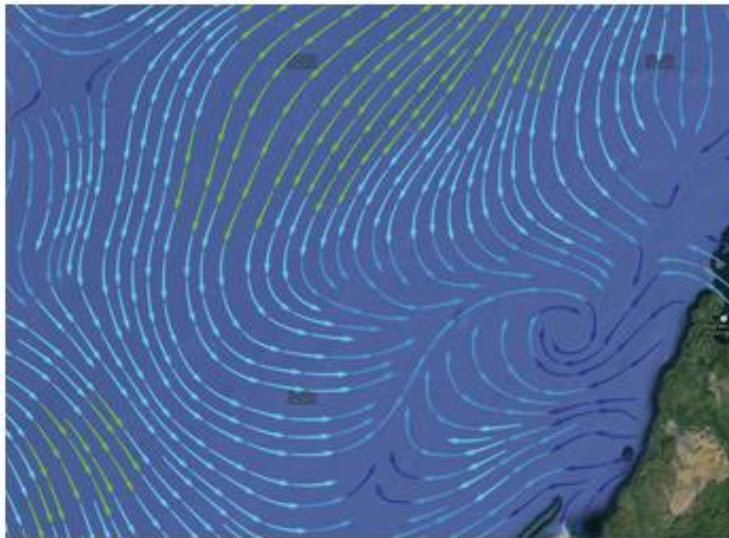
Which type(s) of current information would you prefer to see displayed, other than vectors”?

Maximum speed and speed at a selectable-time were the most popular.

Respondents also preferred that speed data (max and at a time) be available on a mouse-over.



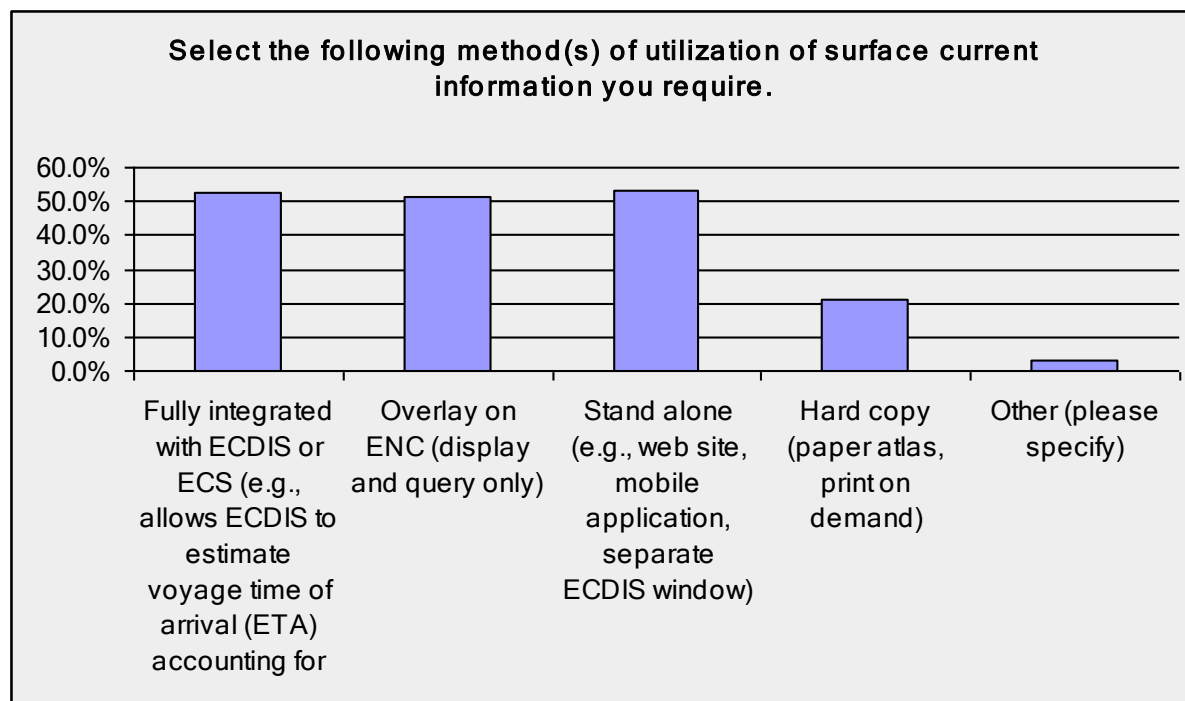
## Graphical representation & visualization (2)



Respondents overwhelmingly chose streamlines (87%) visualization over gridded data (13%) visualization



## Methods of utilization of surface current data (1)



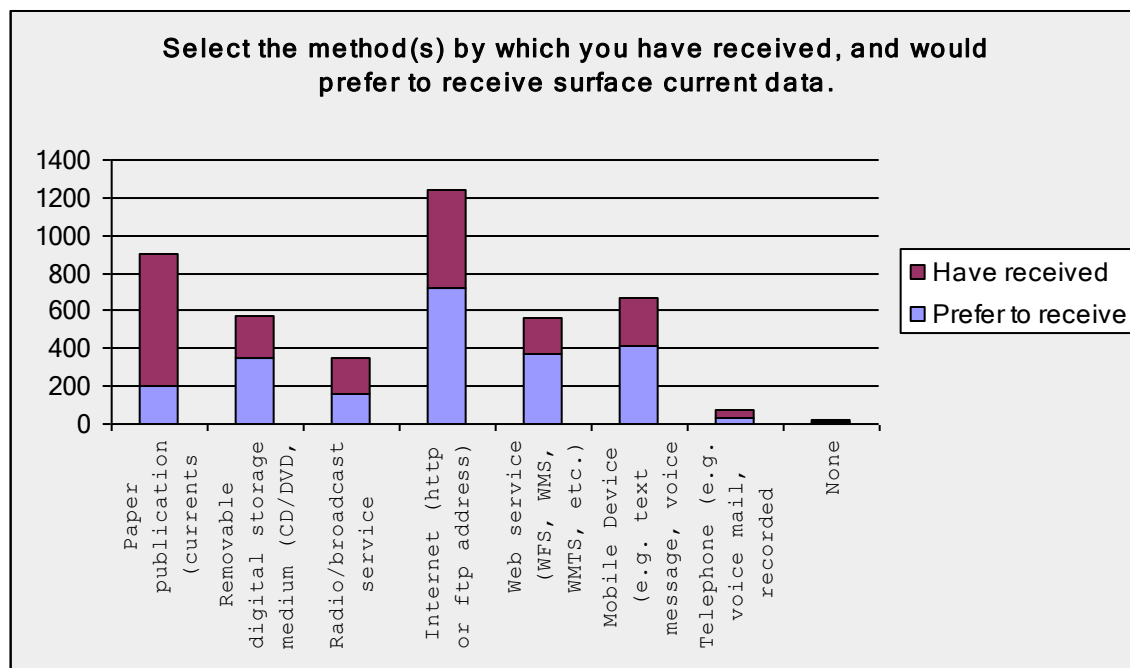
For non professional users stand alone web-based display method (63%) was more popular than the methods ENC (53%) and ECDIS (43%).

For professional users the ECDIS method (65%) was more popular than the methods ENC (46%) and stand alone web-based display (33%).





## Methods of utilization of surface current data (2)

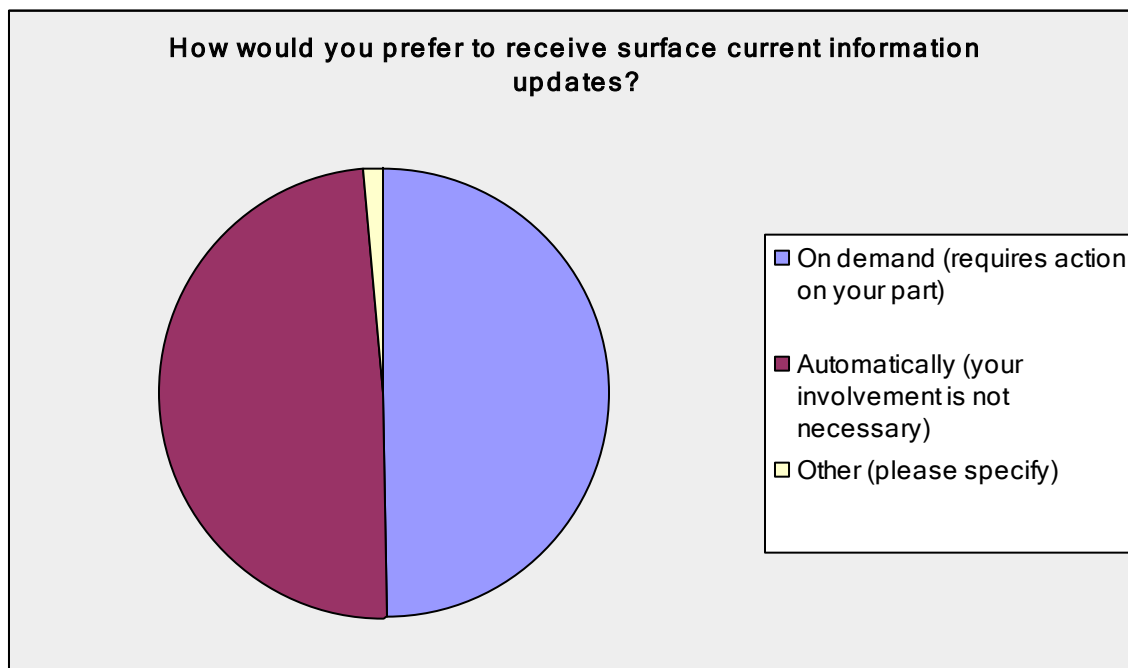


How to receive surface current data. Internet, web service, and mobile devices were all about equally preferred (~81%), although storage media (71%) was not far behind. To receive data updates respondents chose on-demand (51%) and automatically (48%) almost equally.

For non professional users on demand data update was more popular (60%) than automatically data updates (37%). For professional users automatically data updates (65%) was more popular than on demand data updates (33%).



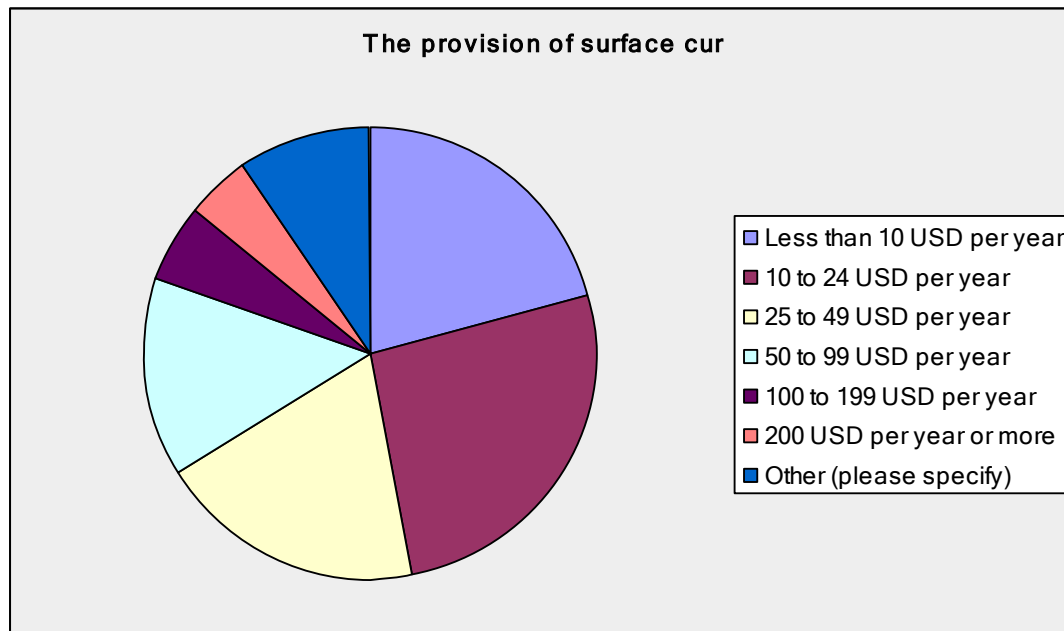
## Methods of utilization of surface current data (3)



For those choosing stand alone web-based display as method of utilization of surface current information on demand data updates (57%) was more popular than automatically updates (41%).



# Costs



Many comments were generated: a common one was that the service should be free (tax dollars create it so \$0.00), while others remarked that the cost was not an issue since it would be borne by their employer. Another common response was that the service should be free to recreational users.

Most respondents of non professional users chose 10 to 24 USD per year to spend on daily updates. Most respondents of professional users chose less than 10 USD per year to spend on daily updates.



## Additional comments

- 1) The display should be user configurable to suit their requirements
- 2) Several expressed interest in integrating current data with tidal (elevation) data
- 3) How would standards apply to existing vendors



## Comments on Survey

- Most enjoyed taking, and thought it would be helpful
- The wording of question 15 was unclear
- The figures in question 17 should have used the same data



## Summary of Results (1)

### Uses

Routeplanning and manoeuvring were the two most important uses of surface current data.

The main reason for not using surface current data:

- unaware of the data's existence
- couldn't find the data



## Summary of Results (2)

Locations and currents types  
Coastal and confined waters

For specifics on the current data itself, users choose:

- total current forecast
- 2 to 5 days (the maximum period for the forecast horizon)
- every hour (for the forecast interval)
- 0.5 knot (for the minimum surface current speed)
- top 5 metres



## Summary of Results (3)

### Display preferences

Flexibility

Display dependent resolution

For speed → display showing numerical information

For flow pattern → speed depicted by arrow size, shape and background

Users overwhelmingly chose current streamline visualization over simple gridded data visualization





## Summary of Results (4)

### Communications

ECDIS, ENC and web-based display were more popular than method hard copy

For mode of reception, internet, web service, and mobile devices were all about equally preferred. To receive data updates respondents chose on-demand and automatically almost equally

### Costs

For the question on what one would be willing to pay for daily updates, most respondents chose 10 to 24 USD per year



## Discussion topics

- 1) Do we have to develop a standard for all users (i.e., professional and recreational), or only for professional users?
- 2) What are the advantages and disadvantages of displaying current vectors at grid points compared to current vectors along streamlines?
- 3) The main reasons for not using surface current data is that users are unaware of data existence or that they couldn't find the data. Do we need a world wide data centre for surface currents?
- 4) Surface currents are averages of the upperwater layers, which are more significance to shipping. At which level of the top of the water column do we have to calculate the surface currents? Recreational sailors are interested in the top 5 metres of the water column, but bulkcarriers are interested in the top 25 metres of the water column.