Science Mission Requirements for Global Class Vessel(s)

FIC Meeting, 1 December 2017
Committee

• Greg Cutter
• Byron Blomquist
• Clare Reimers
• Jim Swift
• Anyone else?
Tasks – Establish/define science drivers

- Fleet Improvement Plan
- Evaluation of existing fleet – service life, scheduling, costs
- Existing and future large-individual program needs
- Agency needs and funding
Tasks – Data gathering

• Examine existing SMRs for Global and Ocean Classes - DONE
• Survey existing Global Class users and captains, engineers. Create survey document that provides consistent and usable information.
• Gather information on international Global fleet – size, endurance, berthing, deck/lab facilities, build and maintenance costs, etc. Examples: Discovery 2013 (UK), Investigator (Australia), Meteor (Germany), Pourquois Pas (France), Tan Kah Kee (China)
• Survey the community and open discussions like having Town Halls
Survey – How do we do it to get lots of useful responses?

• Traditional method:
  For the following questions, in addition to current needs, you should consider potential science missions that would require a Global Class Vessel in the next 30 years.
  1. What should be the endurance of a Global Class RV?
     - 45-50
     - 50-55
     - 55-60
     - 60-65 days
  2. What should be the Range of a Global Class RV?
     - 5-10k
     - 10k-15k
     - 15k-20k nautical miles

  BLAH, BLAH, YADA, YADA

• Or, try something different:

  “Consider the existing Global Class RVs (TT, Atlantis, Revelle, R. Brown) that are considered to be doing a great job, now consider what the field could be doing in 25 years from now (maybe provide a copy of their SMR),” then ask survey questions like does the deck space need to be larger/smaller; more/less lab space; # of berths; greater range, etc.
International Global Examples

Discovery (2013): 327’, 28 scientists

Investigator: 308’, 40 scientists
Pourquoi Pas: 351’, 40 scientists

Meteor: 320’, 30 scientists
Tan Kah Kee: 255’, 36 scientists
Tasks – draft strawperson SMR – the existing ones include:

A. Overview and science drivers
B. Size and cost
C. Accommodations and habitability
D. Operational characteristics – endurance, range, speed, sea keeping, etc. Green?
E. Over-the-side and weight handling systems – winches, A-frames, etc.
F. Science working areas
   Deck
   Labs
   Vans
   Storage
   Workboats, masts
Tasks – draft strawperson SMR (continued)

G. Science and ship systems
   - Navigation
   - Data networks
   - Communications – internal and external, particularly streaming
   - Underway data collection and sampling
   - Acoustic systems
   - Visiting science (PI) systems
   - Seismics
   - Overboard discharge

H. Construction, operation, and maintenance
## Revised Timeline

<table>
<thead>
<tr>
<th>Month</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>June 2017</td>
<td>Start process – define science drivers and gather data</td>
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<tr>
<td>December 2017</td>
<td>Survey past Global users, captains, engineers</td>
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<tr>
<td>February 2018</td>
<td>Open to community (Wiki, Dropbox, Google doc, forum?):</td>
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<tr>
<td>April 2018</td>
<td>Draft initial/strawperson SMR</td>
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<td>May 2018</td>
<td>Circulate SMR to FIC</td>
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<tr>
<td>June 2018</td>
<td>Circulate SMR to Council</td>
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<tr>
<td>July 2018</td>
<td>Compile all inputs and create “living” SMR, start marketing</td>
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