

R2R QA Objectives

- Construct tools for programmatic assessment of data quality
 - Deployable
 - Provide Feedback to Operators & Science Users
 - Ensure sufficient metadata for data re-use
- Disseminate QA results
 - Dashboard
 - Alerts
 - Self-documented output explaining tests performed
 - Verbose output of QA test for specialist users
 - Pass QA results with data to NDCs

R2R QA Development Status

- Initial QA tools developed for several data types
- Consensus on Standardized Output file format
 - XML (self documenting)
 - Summary Plots
 - Day plots
- QA Dashboard design and initial implementation



R2R QA Dashboard Concept

- Color Indicators
 - GRAY – Files are of correct size, QA has not been performed
 - RED
 - Cannot perform QA
 - All QA test fail OR a dominant number of QA tests fail (TBD/data type)
 - YELLOW -
 - Tests indicate *some suspicious issues*
 - GREEN
 - Tests indicate *no suspicious issues*
- Different views for different use cases
 - Per Cruise
 - Per Ship
 - Per Instrument



QA Dashboard By Cruise



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RR0901

Title: *Diapycnal and Isopycnal Mixing Experiment in the Southern Ocean (DIMES)*

Vessel: Roger Revelle (33RR)

Raw Filesets: 11

Fileset

	Multibeam <i>Kongsberg EM-122</i>	RR0901	Roger Revelle	<input type="button" value="QA Summary"/>	<input type="button" value="File Manifest"/>
	Magnetics <i>Geometrics G-882</i>	RR0901	Roger Revelle	<input type="button" value="QA Summary"/>	<input type="button" value="File Manifest"/>
	<i>BGM-3</i>	RR0901	Roger Revelle	<input type="button" value="QA Summary"/>	<input type="button" value="File Manifest"/>
	Navigation	RR0901	Roger Revelle	<input type="button" value="QA Summary"/>	<input type="button" value="File Manifest"/>

QA Complete: No suspicious data



QA Dashboard by Ship



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QA Dashboard

Filesets for Roger Revelle

Raw Filesets: 322

Fileset

multibeam <i>Kongsberg EM120</i>	RR0901 Roger Revelle	QA Summary	QA Configuration	File Manifest
multibeam <i>Kongsberg EM120</i>	RR0903 Roger Revelle	QA Summary	QA Configuration	File Manifest
multibeam <i>Kongsberg EM122</i>	RR0907 Roger Revelle	QA Summary	QA Configuration	File Manifest
hdss <i>SIO HDSS</i>	RR0904 Roger Revelle	QA Summary	QA Configuration	File Manifest
multibeam <i>Kongsberg EM122</i>	RR1001 Roger Revelle	QA Summary	QA Configuration	File Manifest
multibeam <i>Kongsberg EM122</i>	RR1007 Roger Revelle	QA Summary	QA Configuration	File Manifest
multibeam <i>Kongsberg EM122</i>	RR1008 Roger Revelle	QA Summary	QA Configuration	File Manifest
expendableprobe <i>Sippican MK21</i>	RR1008 Roger Revelle	QA Summary	QA Configuration	File Manifest

QA Dashboard By Device



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QA Dashboard

Multibeam Filesets

Raw Filesets: 437

Fileset

	multibeam <i>Kongsberg EM120</i>	RR0903	Roger Revelle	QA Summary	QA Configuration	File Manifest
	<i>Kongsberg EM122</i>	RR0907	Roger Revelle	QA Summary	QA Configuration	File Manifest
	multibeam <i>Kongsberg EM120</i>	RR0901	Roger Revelle	QA Summary	QA Configuration	File Manifest
	multibeam <i>Kongsberg EM300</i>	TN230	Thomas G. Thompson	QA Summary	QA Configuration	File Manifest
	multibeam <i>Kongsberg EM122</i>	RR1001	Roger Revelle	QA Summary	QA Configuration	File Manifest
	multibeam <i>Kongsberg EM122</i>	RR1007	Roger Revelle	QA Summary	QA Configuration	File Manifest
	multibeam	RR1008	Roger Revelle	QA	QA	File

QA Complete: Some suspicious data

Link to QA Summary (QAC)



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RR0901 Multibeam QA Info

percent files all valid ping rate: 100.00
percent pings valid ship survey speed: 100.00
percent pings valid sonar navigation: 100.00
percent files all valid sonar draft: 100.00
percent files with data records: 99.83
num sound velocity profiles: 0
percent possible amp beams: 80.11
percent files with bathymetry: 83.33
has minimum metadata: true
percent files with amplitude: 83.33
percent files all valid swath width: 100.00
percent files with sidescan: 83.33
has surface sound velocity: 1
percent possible ss pixels: 62.52
percent files all valid time range: 100.00

[Get QA Info as XML](#)

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Links to QA Summary Plots



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RR0901 Multibeam QA Info

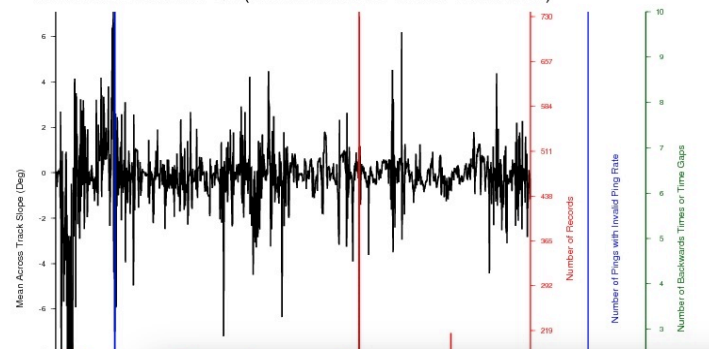
percent files without time gaps: 100.00
 has invalid datagrams: 1
 percent files all valid navigation: 100.00
 percent pings valid altitude: 96.15
 percent pings valid depth: 100.00
 percent possible bathy beams: 80.11
 percent files without bad times: 100.00
 across_track_slope: min = -2.53 deg max = 9.49 deg mean = 1.29
 total num files: 6
 percent pings valid sonar depth: 100.00

QA Plots

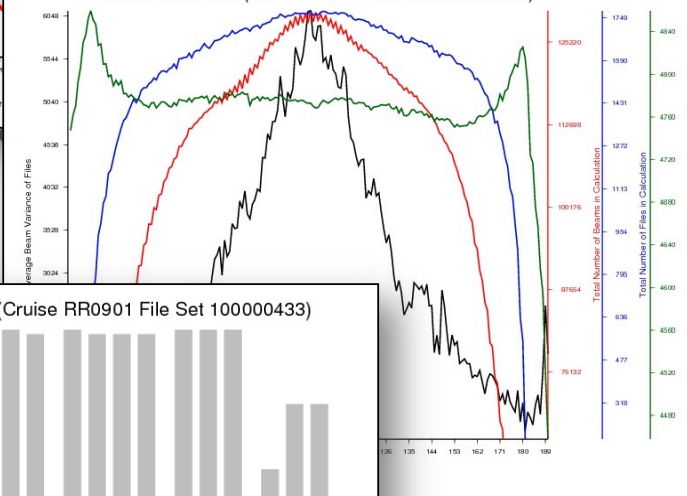
- [Multibeam Variance Plot](#)
- [Multibeam Percentages Plot](#)
- [Multibeam File Level QA Plot](#)

Get QA In

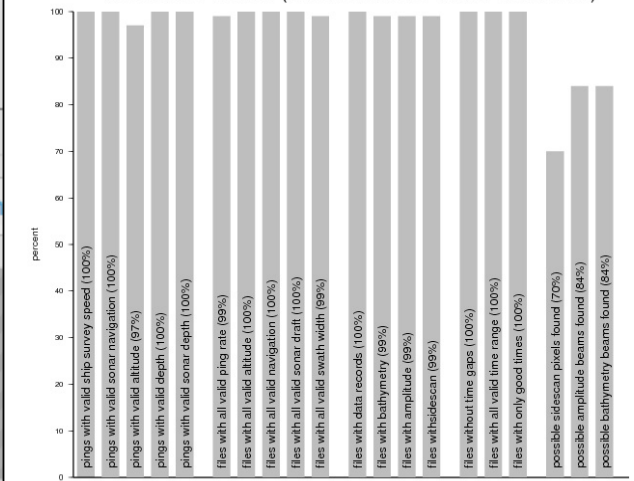
Multibeam File Level QA (Cruise RR0901 File Set 100000433)



Multibeam Variance (Cruise RR0901 File Set 100000433)



Multibeam Percents (Cruise RR0901 File Set 100000433)



QA Test Details: File Manifest



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QA Dashboard

Multibeam Filesets

Raw Filesets: 437

Fileset

 multibeam <i>Kongsberg EM120</i>	RR0903	Roger Revelle	QA Summary	QA Configuration	File Manifest
 multibeam			QA	QA	File

RR0903 multibeam File Manifest

1455_20090420_095538_Revelle.all 4062520 bytes
1457_20090420_105538_Revelle.all 4004470 bytes
1458_20090420_112538_Revelle.all 3956884 bytes
1459_20090420_115538_Revelle.all 3979700 bytes
1461_20090420_125538_Revelle.all 3583042 bytes
1490_20090421_032537_Revelle.all 2693854 bytes
1420_20090419_162539_Revelle.all 4046258 bytes

QA Test Details: QA Configuration

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QA Dashboard

Multibeam Filesets

Raw Filesets: 437

Fileset	
multibeam	RR0903 Roger Revelle

RR0903 multibeam QA Configuration

Across track slope
Across track slope Min: -0.5 deg Max: 0.5 deg
G if the mean across track slope is ≤ 0.5 and ≥ -0.5 ; else Y

Percent pings valid altitude
Altitude Min: 0 m Max: 12000 m
G if the percent of pings with valid altitude is ≥ 80 ; else Y

Percent possible amplitude beams
Amplitude beams
G if percentage of amplitude beams that exist are ≥ 80 the total possible; else Y

Percent possible bathymetry beams
Bathymetry beams
G if percentage of bathy beams that exist are ≥ 80 the total possible; else Y

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R2R QA Next Steps

- Ramp up to fleet-wide assessment for MB, Grav, Mag (> 2009)
- Feedback on Dashboard
- Develop/Deploy Alert Mechanism
- Ramp up QA code for other data types

