• Program established 1 January 2010
• Current contract extended through 2019 Dec
• FBB allowance up to 100 platforms
  • Presently 80 (31 vessels, 49 OOI Moorings)
• Rate has been steady at $0.70/MB
• Monthly FBB pool size w/Fx Phase in:
  • Presently 150 GB with 10 Fx System online
• Unused balance carries-forward month to month within annual period

• If user pool exceeds allowance, use rate continues at $0.70/MB

• Port Office processes invoices for distribution to users / vessels
Upcoming Vessel Layups

• Revelle MidLife – April 2019
• Atlantis Midlife – April 2020

• Layups will suspend communication connections and no charges will be incurred this is being negotiated for next contract
• Securing Fx system for 1 year = $51,000
• Other UNOLS vessel to report if layup coming up for drydock or other reason.
RVTEC October 2018 - Fx

- Commissioned Fx units (10) include:
  - Revelle
  - Palmer
  - Atlantic Explorer
  - Sikuliaq
  - Armstrong
  - Oceanus
  - Gould
  - Thompson
  - Sproul
  - Savannah

- Systems are available for Installation
  - Install Fx systems to lower FBB Pool data use
  - Antennas arranged via WHOI Sat comm
  - Project Manager: Pam Clark pclark@whoi.edu

PRESENT Fx CONTRACT:

- Service Plan is a $4,250 flat monthly rate for unlimited data using a Ka-Band (Gx) with automatic L-Band (FBB) backup.
PRESENT Fx service data rates

- 2 Mbps/1 Mbps MIR (Max Information Rate)
- 512 Kbps/256 Kbps CIR (Committed information Rate)
  - Max throughput of an FBB-500 will not exceed 432Kbps
  - 6000 mb = 1 month KA cost
  - 1 day at full data flow = $26k
  - 37324 Mb

- Example of recent high FBB users:
  - September: Hugh Sharp 151,135.32 MB $105,094.72

- Aspects of Installation:
  - Antenna location
  - Commissioning process with World Link/Inmarsat
  - Network Service Device (NSD) Installation & Function within the shipboard network
Enhanced Speed Options

• When need arises Fx systems can be put on short term higher speed sat link.
  – Notification Requirement: 7 day notice
  – Minimum timeframe: 7 days

• Pricing depends on selected speed requirements
  – Can be budgeted ahead of science project

• Example – Increase to 6,144 Kbps down 3,072 Kbps up = $35,100.00 = $8190 / 7 days
Recent test on Armstrong using data rate of 8 / 4, 2 / 1, CIR plan above, yielded positive results. Live video conferencing was tested on 12 Oct. Tests continuing this week.

---

### Enhanced Speed Options

<table>
<thead>
<tr>
<th>Subscriber Plan</th>
<th>MIR FWD (down) kbps</th>
<th>MIR RTN (up) kbps</th>
<th>CIR FWD (down) kbps</th>
<th>CIR RTN (up) kbps</th>
<th>Monthly Recurring Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>FX-100 4096/2048 MIR 512/256CIR (1)</td>
<td>4,096</td>
<td>2,048</td>
<td>512</td>
<td>256</td>
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<tr>
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<tr>
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<tr>
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<td>4,096</td>
<td>6,144</td>
<td>3,072</td>
<td>$35,100.00</td>
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</tbody>
</table>

**NOTES:**

2. Pricing is for short term subscription of a minimum of 7 days.
3. This plan is subject to capacity approval by Inmarsat prior to provisioning for every individual Service Order.
Antenna locations
RVTEC October 2018 – FBB

2018 FBB Usage

Monthly Data Pool = 150 GB
Monthly Use Average = 137.16 GB

Vessels Use = 1.17 TB
OOI Moorings = 61.75 GB

<table>
<thead>
<tr>
<th>Jan 18</th>
<th>Feb 18</th>
<th>Mar 18</th>
<th>Apr 18</th>
<th>May 18</th>
<th>Jun 18</th>
<th>Jul 18</th>
<th>Aug 18</th>
<th>Sep 18</th>
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<tbody>
<tr>
<td>89.76</td>
<td>65.96</td>
<td>136.79</td>
<td>119.19</td>
<td>144.68</td>
<td>119.06</td>
<td>82.67</td>
<td>177.94</td>
<td>298.44</td>
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</table>
2018 FBB Usage:
Minus HUGH SHARP - Aug/Sept

- Monthly Data Pool = 150 GB
- Monthly Use Average = 112 GB
- Vessels Use = 946.94 GB
- OOI Mooring Usage = 61.75 GB
Future Plans

• Solicitation for comms program management due 29 October 2018
• WHOI submitting proposal for continued program management

Goals

• Maintain present OOI FBB connectivity
• Implement Fx systems on high data users – Global Class and others
• Discontinue use of stand-alone FBB systems once Fx online
• Ability to enhance data rates for short term projects – i.e. telepresence
• Improve over-all internet experience for crew / science users
• Ability to implement newer technologies with contract amendment