PRSS
SINGLE TRANSPONDER
2/06/18
Opening Remarks

Julio Cardiel
Director, Engineering & Operations
Topics

- Introductions
- Squawk Channel
- New Squawk SCPC
- TimeLine to Single Transponder
- Transponder 1, 3, 5 Assignments
- Next Steps to Combined Carrier
- Day of Transition
- Legacy and Combined Carrier Receiver Definition
- Escalation Support
- QA
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‡Vice President of Distribution
Squawk Channel

- Stations will continue to be able to access Squawk through the following options.
  - Stations that are using the legacy SR2000pro receivers to access Squawk will not be affected by the transition. Squawk will remain as Stream 22 (Transponder 3) and will continue to be decoded by the SR2000.
    - Exception: 2/13/18 at 13:59:30 - 14:02:00 for 2:30min
  - Stations can now receive Squawk from a dedicated carrier on Transponder 1 (Frequency 1432.4, Symbol Rate 263) and can continue to use their SR2000 units.
  - Stations can now subscribe to Squawk via the ContentDepot Portal which allows them to receive the Squawk channel on their SFX 4104 receiver.

- In the near future, stations should begin preparations to transitioning away from Stream 22 (Transponder 3). On April 30th, 2018 PRSS will begin preparations and reminder notifications about our plans to cease Squawk on Stream 22 (Transponder 3). The Squawk on Transponder 3 will be removed in order to continue with transponder consolidation and bandwidth efficiencies.
New Squawk
SCPC Transponder 1
Receiver Definitions - RF

<table>
<thead>
<tr>
<th>Carrier A</th>
<th>Carrier B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description:</strong> PRSS Audio Subsystem</td>
<td>PRSS Audio Subsystem</td>
</tr>
<tr>
<td><strong>Frequency:</strong> 1432.400000 MHz</td>
<td>1432.400000 MHz</td>
</tr>
<tr>
<td><strong>Symbol Rate:</strong> 263.000 ks/s</td>
<td>263.000 ks/s</td>
</tr>
<tr>
<td><strong>Viterbi Rate:</strong> 3/4</td>
<td>3/4</td>
</tr>
<tr>
<td><strong>NCC PID:</strong> 4150 (1036)</td>
<td>4150 (1036)</td>
</tr>
<tr>
<td><strong>Modulation Type:</strong> QPSK</td>
<td>QPSK</td>
</tr>
<tr>
<td><strong>Enable 22kHz Tone:</strong> Disabled</td>
<td>Disabled</td>
</tr>
<tr>
<td><strong>Polarization:</strong> Horizontal (18V)</td>
<td>Horizontal (18V)</td>
</tr>
</tbody>
</table>

To determine if this receiver is supplying voltage to the LNB to select polarization, click on the DVB Carrier text near the top of the page, and then click on the LNB Attributes icon.

Carrier Settings
- Frequency to 1432.4 MHz
- Symbol Rate 263.0 ks/s
- Viterbi Rate ¾
- NCC PID 4150
- Modulation Type QPSK
New Squawk
SCPC Transponder 1
Receiver Definitions - Audio

Audio Settings
• Multicast Address 229.0.0.43
• Port Number 10043
• Data Rate 64000 bps
Timeline to Single Transponder

Incremental steps to complete Single Transponder transition

- Combined Carrier (Alpha Q1, 2017)
- Combined Carrier (Beta Q2, 2017)
- Combined Carrier Files Only release to all Member Stations (Q3, 2017)
  - (Completed on Nov 6, 2017)
- Enable Streams in (Q1 2018),
  - (Scheduled for Feb 13th)

Limited station beta testing of combined carrier

Begin dual operations (legacy/new carriers)

Q1/17
- PRSS testing of combined carrier

Q2/17
- Build combined carrier on XPDR 1

Q3/17
- Combined Carrier Files Only release to all Member Stations
  - (Completed on Nov 6, 2017)

Q4/17
- Enable Streams in (Q1 2018),
  - (Scheduled for Feb 13th)

2018
- Transition to XPDR 1
- Combined Carrier
- Live Streams

J

content depot
Current Files and Streams
Transponder Assignments

Legacy Streams on Transponder 3
(13.5Mhz, DVB-S, QPSK, ¾ FEC, 20 Roll-Off)

Files on Transponder 5
(5.9Mhz, DVB-S, QPSK, ¾ FEC, 20 Roll-Off)
Combined Carrier

Combining Live Streams and Files onto one single carrier on Transponder 1
(10 Mhz, DVB-S2, QPSK, 5/6 FEC, 10% Roll Off)
Next Steps for Stream Delivery from Combined Carrier

- Performing downlink receiver definition changes to all Interconnected Station receivers on Tuesday, February 13th, at 1:59 PM ET
- Definition changes will force receivers to retune to acquire Stream traffic from XPDR 1
- No anticipated impact, expectation is to provide a seamless transition
- Requesting immediate notification if impact is detected
- Stations must validate correct tuning from Receivers
## Day of Transition

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:50 pm ET</td>
<td>PRSS messages the system that we are about to begin the process</td>
</tr>
<tr>
<td>1:59:05 pm ET</td>
<td>PRSS updates the Net Managers for new Combined Carrier. L-Band 1 Carrier is changed to the following: Freq: 1427.1</td>
</tr>
<tr>
<td>1:59:15 pm ET</td>
<td>PRSS verifies its receivers in DC and at BuNOC have updated L-Band 1 properly</td>
</tr>
<tr>
<td>1:59:30 pm ET</td>
<td>If all looks good, PRSS drops legacy streams carrier from Transponder 3. All receivers will then revert to new Combined Carrier and should be L-Band 1, locked to Carrier A.</td>
</tr>
<tr>
<td>1:59:35 pm ET</td>
<td>PRSS to verify audio on 24/7 streams</td>
</tr>
<tr>
<td>1:59:55 pm ET</td>
<td>Assuming no operation abort, PRSS begins preparing for Top of the Hour tuning</td>
</tr>
<tr>
<td>2:04 pm ET</td>
<td>If all continues to go well, PRSS will send communications to the system confirming we are continuing.</td>
</tr>
<tr>
<td>2:20 pm ET</td>
<td>PRSS manually pushes test files via CD host to /Archive</td>
</tr>
<tr>
<td>2:25 pm ET</td>
<td>PRSS confirms receipt of test files at the Washington and back-up NOC</td>
</tr>
<tr>
<td>2:30 pm ET</td>
<td>PRSS re-verifies power levels for all carriers</td>
</tr>
<tr>
<td>2:40 pm ET</td>
<td>PRSS re-verifies all streams and services</td>
</tr>
</tbody>
</table>
# Legacy Carrier Transponder 3 Receiver Definitions

## L BAND 1

<table>
<thead>
<tr>
<th>Carrier A</th>
<th>Carrier B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong>: PRSS Stream Delivery</td>
<td>PRSS Stream Delivery</td>
</tr>
<tr>
<td><strong>Frequency</strong>: 1391.700000 MHz</td>
<td>1391.700000 MHz</td>
</tr>
<tr>
<td><strong>Symbol Rate</strong>: 11250.000 ks/s</td>
<td>11250.000 ks/s</td>
</tr>
<tr>
<td><strong>Modulation Standard</strong>: DVB-S</td>
<td>DVB-S</td>
</tr>
<tr>
<td><strong>Viterbi/Code Rate</strong>: AUTO</td>
<td>AUTO</td>
</tr>
<tr>
<td><strong>Alpha Factor</strong>: N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>NCC PID</strong>: 4154 (103A)</td>
<td>4154 (103A)</td>
</tr>
<tr>
<td><strong>Enable 22kHz Tone</strong>: Disabled</td>
<td>Disabled</td>
</tr>
<tr>
<td><strong>Polarization</strong>: Horizontal (18V)</td>
<td>Horizontal (18V)</td>
</tr>
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Locked to Carrier A  
Preferred Carrier is Carrier A

To determine if this receiver is supplying voltage to the LNB to select polarization, click on the DVB Carrier text near the top of the page, and then click on the LNB Attributes icon.
# Combined Carrier Transponder 1 Receiver Definitions

## L BAND 1

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<tbody>
<tr>
<td><strong>Description:</strong> PRSS Stream Delivery</td>
<td>PRSS Stream Delivery</td>
</tr>
<tr>
<td><strong>Frequency:</strong> 1427.100000 MHz</td>
<td><strong>Frequency:</strong> 1391.700000 MHz</td>
</tr>
<tr>
<td><strong>Symbol Rate:</strong> 9090.000 ks/s</td>
<td><strong>Symbol Rate:</strong> 11250.000 ks/s</td>
</tr>
<tr>
<td><strong>Modulation Standard:</strong> DVB-S2</td>
<td><strong>Modulation Standard:</strong> DVB-S</td>
</tr>
<tr>
<td><strong>Viterbi/Code Rate:</strong> AUTO</td>
<td><strong>Viterbi/Code Rate:</strong> AUTO</td>
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Locked to Carrier A

Preferred Carrier is Carrier A

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Escalation Support

☞ PRSS Help Desk
☞ 800.971.7677
☞ prsshelp@npr.org

☞ Network Support Center
☞ 202-513-2650
Q & A

Stations can submit questions regarding this webinar to Erich Shea, eshea@npr.org