Planning the Migration to Part 96
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Meet our Presenters

• **Ken Jackson**, Technical Account Director at Federated Wireless
  Ken has more than 25 years of experience developing technology and telecommunications solutions with over 15 years in wireless and 3 years in CBRS. Past companies include several technology start-ups along with AT&T, Sprint PCS, and Citrix.

• **Todd Gore**, VP of Sales at Federated Wireless
  Todd brings more than 15 years of experience in leading and building sales teams in the wireless and telecom industry with a specific focus on software sales to service providers. Before joining Federated Wireless, Todd was the regional vice president of sales for Telecom at Citrix Systems following the acquisition of ByteMobile in 2012.

• **Matt Mangriotis**, Director of Product Management at Cambium Networks, currently leading the Cambium Point-To-Multipoint (PMP) portfolio of products
  Matt has spent over 20 years in telecommunications, leading New Product Introduction for Motorola. Maintaining continuity through the inception of Cambium Networks, Matt launched the PMP 450 portfolio. Most recently, Matt has launched the cnMedusa™ Massive Multi-User MIMO technology, enabling Cambium customers to take advantage of CBRS.
Fixed Wireless Market Dynamics

• Protect from New Entrants
• Increase Market Share
• Enter New Markets
• Attract Investment
CBRS Part 96 and You

Business Case for CBRS

• Cost-effectively serve customers with higher transmit power limits
• Improve performance, customer satisfaction, retention, and Average Revenue Per Unit (ARPU) using up to 3x the current available bandwidth
• Strengthen competitive differentiation and expand service offerings
• Easily handle surges in connectivity demands
3 Steps for Migration

1. Pre-Migration (Immediately)
   - Understand Technical Landscape and Equipment Migration vs. Replacement
   - Understand other CBRS Operations Nearby
   - Get CPI Certified

2. Migration (Before October 17, 2020)
   - Activate SAS Subscription
   - Map out Migration Activities
   - Create Service Interruption Contingency Plan

3. Post-Migration
   - Confirm CBRS Network Operations
   - Update Service Plan and Pricing
Quiz Time

Answer in the Chat Window. First correct answer wins a $25 Visa giftcard!

CBRS includes which channels?

a. 3650 - 3700 MHz
b. 3600 - 3700 MHz
c. 3550 - 3700 MHz
d. 3700 - 3900 MHz
CBRS includes

a. 3650 - 3700 MHz

b. 3600 - 3700 MHz

c. 3550 - 3700 MHz

d. 3700 - 3900 MHz
Tips for Migration

1. Choose SAS and OEM providers wisely
   - Coastal Operations need robust ESC network
   - Operational Support Considerations
   - Proven OEM and SAS Integration Program
   - RF Planning / Spectrum Prediction Tools
   - 5G NR Upgrade Path / Roadmap

2. Start now with some service areas, get a process and proceed with migration in a timely fashion

3. Seek clarity and understand tools available from SAS and OEMs to understand how to simplify the process

4. Engage in forums / chat communities learning from others (RWA, Facebook WISP groups, My Federated)
Federated Wireless Offerings

- **Spectrum Controller**: Access to shared spectrum, at cloud-scale and 99.999% reliability
- **Spectrum Management**: Visual tools for planning, managing, analyzing
- **Nationwide ESC Network**: Securely protects Naval incumbents and allows access to lower 100MHz
- **Online Training**: WinnForum Accredited CPI Training and non-certificate programs
CBRS Sharing Paradigm – The Details

- **Navy Radar**
  - Protected from lower tier users.
  - Shipborne and land-based radars
  - Navy periodically uses 10 - 20 MHz in select locations – 19 ships
  - 17 in-band FSS stations
  - Part 90 user’s transition to CBRS

- **Commercial Fixed Satellite Service (FSS) Receive**
  - Grandfathered Fixed Part 90

- **PAL**
  - Use-or-share priority over GAA
  - Licensed via auction (4 max per)
  - 10 MHz blocks, up to 7 licenses
  - US County based – 10-year term

- **GAA**
  - Can use any spectrum not in use
  - Must yield to higher tier PAL and incumbent users
  - Available today until PAL Auction and 2021 implementation
CBRS Sharing Paradigm – The Details

### Incumbents
- Protected from lower tier users.
- Shipborne and land-based radars
- Navy periodically uses 10-20 MHz in select locations – 19 ships
- 17 in-band FSS stations
- Part 90 user’s transition to CBRS

### Priority Access License
- Use-or-share priority over GAA
- Licensed via auction (4 max per)
- 10 MHz blocks, up to 7 licenses
- US County based – 10-year term

### General Authorized Access
- Can use any spectrum not in use
- Must yield to higher tier PAL and incumbent users
- Available today until PAL Auction and 2021 implementation

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3550 MHz  3600  3650  3700 MHz

- Navy Radar
- Commercial Fixed Satellite Service (FSS) Receive
- Grandfathered Fixed Part 90
- PAL = 70 MHz
- GAA = 80 MHz
Why Federated?
Shared Spectrum is All We Do

• Telco-Grade Reliability
  – Telco-Grade 99.999% service availability
  – Nationwide triple redundant FCC approved ESC Network, allowing access to lower 100 MHz in all continental US coastal areas

• Partner Integration Program
  – 40+ Commercial OEMs integrated with FW SAS

• Unparalleled Support
  – 24 x 7 x 365 NOC
  – Knowledge Base / Community Forum for education and support

• CPI Training program developed with Federated SAS examples has certified more CPIs than any other CPI training

• We don’t use an info@email address for tech support
• We will never compete with you
Quiz Time!

Answer in the Chat Window. First correct answer wins a $25 Visa giftcard!

Which category(s) of CBSD is/are required to be installed by CPIs?

a. Category A devices
b. Category B devices
c. Category B devices and some Category A devices
d. None of the above
Which category(s) of CBSD is/are required to be installed by CPIs?

a. Category A devices  
b. Category B devices  
c. Category B devices and some Category A devices  
d. None of the above
CBRS Solution from

Cambium Networks™

- **Software Defined Radio** technology that evolves over time
  - Field-proven platform, tens of thousands have already made the transition!
  - **Seamlessly upgrade** existing 3.65 network to Part 96 (CBRS)
  - Alternative to complex and expensive LTE-based systems
  - Many options for scalability and performance, choose the right equipment for your network

- Cambium hosts the domain proxy to interface with Federated Wireless, and will support the end to end solution
Q&A
Contacts

• RWA – Rural Wireless Association
  https://ruralwireless.org/

• Federated Wireless
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Thank you!
Thank You

Look for the Part 96 Migration Roadmap in your inbox within 24 hours