It's not just about finding frequencies.

It's about finding the RIGHT frequencies for that customer, and EWA excels every time.

The advocacy and regulatory issues are very important to our business, and, without EWA, we would have no voice.

EWA is a great GO-to team for your spectrum needs.

We would not be moving forward without EWA.

Nobody is speaking up for players like us in Washington except EWA.

EWA is much more than a frequency coordinator. The Alliance is our true voice in the industry and keeps us up to date with the changes at the FCC.



2020-2021 ANNUAL REPORT Since its founding in 1953, the Enterprise Wireless Alliance (EWA) has been an aggressive advocate at the Federal Communications Commission (FCC), seeking to maximize the efficient use of private land mobile spectrum resources, promote pragmatic operational and technical rules, and to minimize spectrum access barriers on behalf of America's business enterprises.

In addition to its advocacy initiatives, EWA provides spectrum access and licensing solutions, frequency coordination, license management, news updates, member-to-member communication capabilities, training, licensee-data research services, and a variety of other useful services.

MISSION

To assist business enterprise users, wireless sales and service providers, private-carrier operators, technology vendors, and equipment manufacturers in the deployment of wireless communications solutions that promote business productivity in the enterprise wireless space.

MEMBERSHIP



Wireless Sales & Service Provider

Manufacturer Vendor

Business Enterprise Private Carrier Operator





Icom America, JVCKENWOOD USA, L3Harris Technologies, and Motorola Solutions reimburse EWA customers for services and membership through their respective co-op programs.

EXCLUSIVELY FOR EWA MEMBERS

- Bi-weekly Regulatory Teleconferences
- Broadband/Private LTE network consulting services
- Connect online community
- Spectrum Intel licensing reports and sales lead generation
- · License Management
- License Bank
- 900 MHz Transition program
- Insider e-newsletter
- Critical news bulletins
- Wireless System Investment Model
- · Access to educational videos

SERVICES WITH PREFERRED MEMBER PRICING

- · Spectrum research, planning and acquisition
- License application preparation, verification and submittal
- STAs, waiver requests, construction notifications and renewals

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FROM THE PRESIDENT



MARK CROSBY President and CEO of the **Enterprise Wireless** Alliance

Dear Members.

What an incredible year 2020 was for all of us. Full of new challenges in the face of a pandemic that affected our collective business development strategies, service efforts, educational programs, and how business was conducted. EWA's member efforts and advocacy pursuits, however, did not waiver.

First and foremost, I am proud of EWA's employees, all of them who did not miss a beat when it came to providing frequency coordination, spectrum planning, application verification, and informational services. They went home to work, turned on their laptops, and continued to produce results for members and their customers. It may have taken a while to adapt to virtual meetings, but everyone seems to have adjusted well to this new communications paradigm. I believe virtual meetings will be around for a while.

On the advocacy front, EWA and the private land mobile industry witnessed some major victories this past year. After four years, the FCC agreed to transition the 900 MHz band from a narrowband technology to a narrowband and broadband technology platform. EWA is now actively engaged with Anterix in facilitating hundreds of incumbent licensee system transitions. We trust that the FCC will soon release its rules that will govern the licensing of broadband licenses on a countyby-county basis. The potential for EWA members to capture broadband/LTE opportunities in a licensed spectrum environment is huge.

Stunned perhaps is not the perfect word but let us just say that we were quite pleased that the FCC in December listened to EWA's recommendations regarding its proposed fee schedule and adopted every single EWA suggestion. The fee schedule is now fair and equitable, and the economic adjustments are meaningful.

But the advocacy highlight of the year was the termination of the T-Band Mandate, a plan that was doomed at its inception back in 2012. While EWA was a vocal critic of the mandate over the years with particular frustration directed at the T-Band application freeze, we were nevertheless pleased to support the public safety industry who led the fight to retain the band for mission critical interests. Their victory was ultimately our victory.

In the middle of last year, a friend and industry colleague asked me why was it that EWA seemed to be gaining frequency coordination market share during such a difficult year? The answer was easy. EWA's members are the wireless communication leaders in their towns and municipalities. Over the years you have fostered the critical relationships with the businesses and public safety agencies in your market areas. Your communities rely upon you in good times and during difficult times, and you rely on EWA for your spectrum and licensing needs. Thanks to our members who are local leaders, we have prospered in a difficult time.

As always, it is a pleasure to serve you.

Tool & Ces by

Mark Crosby President and CEO March 1, 2021

FROM THE CHAIR OF THE BOARD

Friends.

As the newly elected Chairman of the Enterprise Wireless Alliance, I would first like to thank David Reeves for his guidance and leadership over the past three years. He leaves some big shoes to fill, and I look forward to his counsel as I start my tenure as Chairman of this great organization.

Clearly, 2020 has been a year without precedent. The coronavirus pandemic has caused unique challenges in productivity affecting both the Public Safety and Business/Industrial industries. But there is a silver lining. Although FCC licensing activity for Business/Industrial is down over 20 percent, EWA and its members continued to be productive, performing nearly at the same level as the previous year. Those results demonstrate that members of the Alliance are the communications leaders in the industry and in their respective communities.

Even as the pandemic has slowed our productivity, technology continues to bring change to private wireless communications. The land mobile radio convergence with broadband technologies like LTE, 5G, and the Citizens Broadband Radio Service (CBRS), are causing business owners to invest in internal resources to meet new demands. These technologies are changing and expanding demand for spectrum. With this, private and shared communications systems are becoming intertwined, increasing spectrum needs as well. As Chairman, I look forward to working with Mark Crosby, the Executive Committee, and the Board of Directors to explore new opportunities for EWA to support these new demands for spectrum and to develop the necessary technical expertise in the workforce.

With the coming of a much-anticipated vaccine against the coronavirus, our industry, like much of the world, will soon be on a path to growth and productivity. I wish all of you a speedy return to that path and a prosperous 2021.

Geno Viviano Chairman of the Board

March 1, 2021

GENO VIVIANO Chairman of the Board of the Enterprise Wireless Alliance

2020-2021 BOARD OF DIRECTORS

OFFICERS & EXECUTIVE COMMITTEE



Geno Viviano Chair of the Board



Jenna Riess Vice Chair of the Board



William Landis Treasurer



Mark Crosby President



Frank Anderson



Bart Fisher



Daryl Jackson



David Reeves



Perry Vincent

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CONFERENCE PLANNING Eric Hill Chair

MEMBERSHIP AND SERVICES **DEVELOPMENT**

Chair, Vacant

INFORMATION TECHNOLOGY David Reeves Chair

LEADERSHIP Rocky Eramo Chair

EWA-JOSEPH B. VESTAL ENDOWED SCHOLARSHIP Mark Crosby Chair

SPECTRUM EQUITY, INC. Mark Crosby President

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REGULATORY COUNSEL

Elizabeth R. Sachs, Esq.

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During 2020, critical advocacy initiatives included protecting incumbent spectrum rights and pursuing spectrum access opportunities for members.

INTERFERENCE FROM DIGITAL **TELEVISION STATIONS**

In August, EWA endorsed efforts taken by the Land Mobile Communications Council (LMCC) requesting that the FCC actively engage in the resolution of instances of harmful interference to private land mobile radio (PLMR) incumbents operating in the 450-512 MHz band from newly commissioned digital television (DTV) stations. The interference affects PLMR incumbents across the country, is costing hundreds of thousands of dollars in lost revenue, affects business productivity, and is risking the safety of employees and the public in certain instances.

The response from the FCC and the broadcasters has been inconsistent, warranting a more proactive response from the PLMR industry. In some cases of the interference documented by the LMCC, FCC rules clearly stipulate that the television broadcaster is responsible for any harmful interference and must take remedial action. However, in other cases, the rules are not as clear about how to resolve the interference as the 30-plus-year-old separation requirements are inadequate for today's spectral environment.

In November, the LMCC provided the FCC with an updated listing of issues and recommended solutions, including moving the offending TV stations to different channels, allowing affected PLMR stations access to available UHF remote pickup broadcast channels, and allowing DTV stations to operate at reduced power while still meeting the "must carry" standards that allows their programming to be carried on local cable systems.

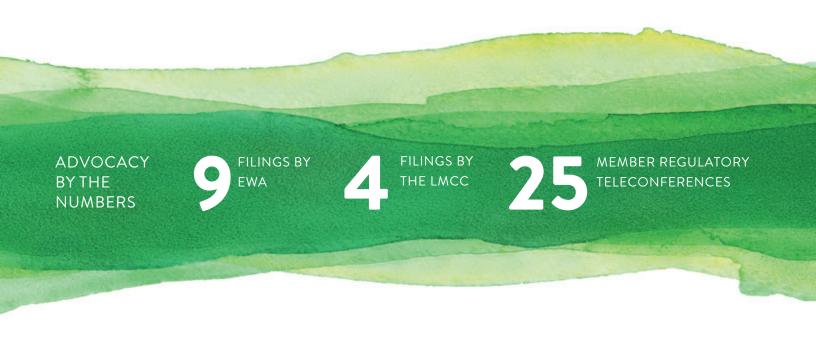
T-BAND MANDATE REPEALED

On December 27, legislation was enacted that repealed Section 6103 of the Middle Class Tax Relief and Job Creation Act of 2012 which had directed the Commission to reallocate T-Band spectrum "used by public safety eligibles," commence an auction process by February 22, 2021, and relocate public safety systems no later than two years after completion of the auction. One day after the T-Band Mandate was repealed, EWA requested the FCC to terminate the eight-year-old application freeze on T-Band spectrum, and to do so in a way that allows incumbent licensees the opportunity to implement system upgrades and expansions that had been prohibited during the application freeze.

On January 19, the FCC issued a Public Notice announcing that the application freeze was being terminated for Part 22 (Public Mobile Services) and Part 90 (Private Land Mobile Radio) services, providing incumbents a 90-day window to amend their T-Band licenses. This decision was consistent with EWA's recommendations.

MAKING SENSE OF FCC FILING FEES

EWA responded to the FCC's proposed "streamlining" of application filing fees that would have had a meaningful economic impact on private wireless licensees. EWA noted in its comments that by reducing the number of fee categories, it appears that site-based PLMR licensees will be subsidizing microwave and other services whose fees are proposed to be reduced and asked the FCC for a clear explanation of its policy rationale for the approach. EWA asked for fee reductions on waivers, participation auction fees, and requested that there should be no fees instituted for routine construction notifications and application amendments. FCC responded favorably to the entirety of EWA's recommendations. The new fees will be introduced later in 2021.



4.9 GHZ ACCESS

After allowing Public Safety exclusive use of this 50 MHz of spectrum (4940-4990 MHz) for almost two decades and concluding that the band was underutilized, the FCC adopted a Sixth Report and Order (R&O) and Seventh Further Notice of Proposed Rulemaking (FNPRM). The R&O adopted a plan to turn management of this spectrum over to the states and to broaden access beyond public safety. EWA supports the proposal, with FCC oversight.

In comments on the FNPRM, EWA asserted that the potential of the 4.9 GHz band has not been realized and that the proposal creates possibilities that do not exist today for EWA members and others in need of mid-band broadband spectrum. The proposed plan offers states an opportunity to derive revenue by leasing this valuable asset to a variety of entities. EWA believes that FCC oversight of this plan would ensure states fairly and effectively manage access to the spectrum.

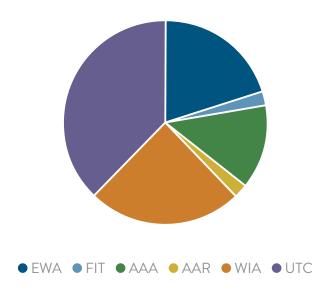
900 MHZ

In May of 2020, the FCC adopted rules that realigned the 900 MHz band to accommodate narrowband and broadband technologies. In 2014, EWA, with Anterix (formerly pdvWireless), proposed these rule changes to provide broadband wireless opportunities for Business/Industrial, private carriers, and critical infrastructure entities.

By adopting the rules, the FCC recognizes that business enterprises and critical infrastructure entities are a fundamental component of our country's wireless ecosystem and, like the mission critical and consumer sectors, deserve access to spectrum capable of providing broadband solutions unique to their industrial tasks. The FCC has yet to issue a Public Notice to permit applicants to apply for broadband licenses.

800 MHZ

The FCC is expected to announce that it will remove the 800 MHz application freeze in the Mexican Border Region (MBR), except in the El Paso, Texas area. In addition to lifting the freeze, the FCC will specify procedures and filing dates for applications for eighty 800 MHz Expansion Band/Guard Band (EB/GB) channels from Business/Industrial, Specialized Mobile Radio (SMR), and public safety applicants. EWA filed an exparte with the FCC requesting that the application freeze terminate for EB/GB spectrum given that rebanding is complete.



2020 PART 90 FILINGS BY FAC

In 2020, advocacy initiatives such as the concern over unlicensed devices operating in the 6 GHz band and the decision to make the 4.9 GHz band more inclusive generated a greater number of filings by trade associations representing Part 90 users.



ACTIVE IN THE INDUSTRY

EWA is an active member of the Land Mobile Communications Council (LMCC), a nonprofit association of organizations that represents the wireless communications interests of public safety, critical infrastructure, business, industrial, transportation, private and common carriers, and manufacturers of wireless communications equipment. Mark Crosby serves on the LMCC Board of Directors as Secretary/Treasurer.

EWA is the leader in frequency coordination and license preparation services for the Business/Industrial Land Transportation (Business/ Industrial) sector which includes private carrier operators and wireless sales and service entities. In 2020, EWA's market share increased to nearly 50% of all Business/Industrial frequency coordination certifications and to more than one out of eight public safety applications for frequency coordination.

SUPPORTING SECURE COMMUNICATIONS AT ALLEGIANT STADIUM

EWA successfully accommodated the radio spectrum needs of the Las Vegas Stadium Authority (LVSA) to create a robust private wireless communications system to support the security, maintenance, and other requirements at Allegiant Stadium. The stadium is the new home of the Las Vegas Raiders of the National Football League (NFL) and will host the Las Vegas Bowl, concerts, and other events.

Due to the heavy utilization of spectrum in the Las Vegas market area, EWA had limited options but located potentially available spectrum in the 800 MHz Guard Band, which was released throughout much of the rest of the nation in 2019. However, because Las Vegas falls within the "buffer zone" of the Mexican Border Region that was established to ensure a smooth 800 MHz rebanding process, these channels were unavailable without a request for a waiver of FCC rules. At EWA's recommendation, LVSA filed a formal waiver request which received support from the NFL. Upon grant, LVSA could build and test the private wireless communications that will support the safety and security of up to 65,000 NFL fans and stadium employees. The application is pending at the FCC.

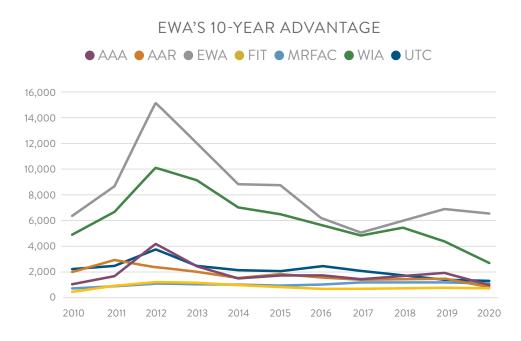
MAXIMIZING SPECTRUM ACCESS

EWA monitors the FCC's "termination pending" public notices to assist licensees who may have overlooked their construction requirements. In late 2020, EWA observed that a substantial number of 800 MHz Expansion and Guard Band (EB/GB) licenses were on the termination list in several major urban areas where 800 MHz channels are at a premium. With the understanding that the systems were probably never operable after a year, EWA contacted several members in need of additional spectrum capacity noting that channels

would soon be coming available, and several took advantage of the opportunity. Applications were certified and submitted to the FCC in a matter of days. The result — spectrum that may have been licensed on a speculative basis ended up in the hands of legitimate operators.

IMPLEMENTING T-BAND'S RETURN

It took nine plus years and an act of Congress, but the termination of the T-Band Mandate — the repurposing of the 470-512 MHz band — was a welcome victory for both public safety and business/industrial interests. Recognizing that there was substantial pent-up demand to update T-Band communications systems, the FCC agreed with EWA and provided an incumbent only application window so that system coverage and capacity constraints under an application freeze could now be accommodated.



While only spectrum efficient technologies will receive licensing approval, a policy supported by EWA, proof of the need to update systems came in the form of nearly 300 applications submitted to be registered in an application queue on February 18 from both public safety and business/industrial incumbent licensees. Next steps include review of the applications by the frequency advisory committees to avoid instances of channel mutual exclusivity and eventual FCC submittal on March 21. How the FCC may accommodate new T-Band applicants is yet to be determined, but EWA will remain active in these discussions.

SPECTRUM BYTHE **NUMBERS**

46%

13%

VOLUME OF PUBLIC SAFETY APPLICATIONS PROCESSED BY EWA

STRATEGIC ALLIANCE WITH TELEVATE

The Enterprise Wireless Alliance and Televate LLC have formed a strategic alliance to provide technical consulting services to EWA members with specific emphasis on broadband and private LTE network availability, capabilities, and opportunities. On the alliance, EWA President Mark Crosby noted, "We have a responsibility to assist our members, whether business enterprises or wireless communication system providers, of the capabilities and benefits that are available today and that will become available tomorrow through nextgeneration broadband systems. Through this collaboration with Televate, with their substantial knowledge of this space, we may provide a trusted level of guidance to EWA's membership."

Services available through this strategic alliance include:

- · Broadband wireless system development
- Implementation consulting services
- · Project management services
- · Educational opportunities

EWA CONNECT

This online community, available exclusively to EWA members, provides a forum to share information and expertise, to seek technical assistance, or simply to stay informed of industry news and events. The community launched in 2020 with two discussion groups: an Open Forum where members discuss a variety of industry issues and the FCC Licensing group, created for discussion of radio spectrum, FCC rules, licensing, and frequency coordination matters.



900 MH7 TRANSITION

In May, the FCC adopted rules that realign the 900 MHz band to provide broadband wireless opportunities for Business/Industrial and private carriers while maintaining spectrum capacity for narrowband operations. Under its 900 MHz Incumbent System Transition Services Agreement, EWA facilitates incumbent transition activities. EWA is presently involved in over 150 transactions. As part of the agreement, Anterix offers EWA members a financial incentive to complete these transitions in accordance with contractual deadlines.

LICENSE BANK

This new service provides secure online access to official FCC license records. EWA developed the service for organizations that have been issued a substantial number of FCC authorizations that require immediate review and access from multiple internal employees. License details are updated daily to ensure reliable informational records.

LICENSE MANAGEMENT

EWA now manages in excess of 25,000 FCC licenses on behalf of business enterprises and the customers of wireless sales and service organizations. Services include monitoring license records for FCC-rule compliance, construction notifications, and renewals.

JEFFREY BOADI RECEIVES **EWA-JOSEPH B. VESTAL SCHOLARSHIP**

Jeffrey Boadi, a student at Old Dominion University (ODU), has received the EWA-Joseph B. Vestal Endowed Scholarship, which awards financial aid to a full-time student at ODU enrolled in Electrical Engineering Technology or Information Systems Management who intends to pursue a professional career in wireless applications or telecommunications.



Mr. Boadi is a dedicated student who works to support his education. His career goal is to improve the reliability of communications networks in college and

university settings. His pragmatic approach to his education and his focus on wireless networks drew interest from the scholarship selection committee.

JOSEPH B. VESTAL, 1933-2020

Joseph B. Vestal, a former officer, Executive Committee member, and member of the EWA Board of Directors, died July 14, 2020. His accomplishments included the founding of FleetTalk Management Services after a long and influential management career with Motorola. In recognition of Mr. Vestal's entrepreneurial contributions to the wireless industry, EWA established in 2011 the EWA-Joseph B. Vestal Endowed Scholarship at Old Dominion University, his alma mater. Providing such support to students was one of his passions, and every year he led the selection process.



EWA-JOSEPH B. VESTAL SCHOLARSHIP RECIPIENTS

2020 Jeffrey Boadi 2017 Jacob Wilson

2019 Amanda Palmer 2015 Jerel Miles

2018 Jeremy Sklute 2014 Jakwan Johnson

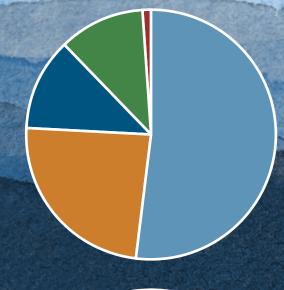
2013 Chris Bowles 2017 Akeyvianna Rembert



WIRELESS LEADERSHIP SUMMIT GOES VIRTUAL

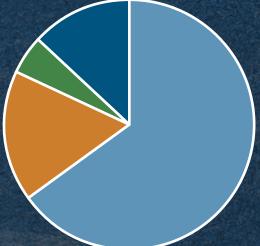
EWA held its annual conference for leaders in the private wireless industry, the Wireless Leadership Summit, as a virtual event in 2020. This transition allowed EWA to bring its members a strong slate of speakers, including FCC Deputy Chief of the Wireless Telecommunications Bureau Ira Keltz, NYU Professor Theodore "Ted" Rappaport, and Google's Preston Marshall. Topics for the 2020 Summit included cybersecurity, the transition to 6G, 900 MHz opportunities, and CBRS.

FINANCES



SOURCES OF REVENUE

- O Spectrum Solutions 52%
- Research and Application Preparation 24%
- O Education and Management Services 12%
- O Membership and Membership Services 11%
- **○** Spectrum Equity, Inc. 1%



USES OF REVENUE

- O Staff and Benefits 65%
- Operations 17%
- O IT Infrastructure 5%
- O Consolidated Operating Surplus 13%

The Enterprise Wireless Alliance engages the accounting firm of Dembo Jones, North Bethesda, Maryland, to conduct an annual audit of its financial activities. The percentages listed do not include non-operational activities. Audited financial statements may be obtained by contacting EWA's Accounting Department at 800-482-8282 or by email at info@enterprisewireless.org.

SENIOR LEADERSHIP



Mark Crosby President and CEO



Robin Cohen Senior Vice President Strategic Initiatives



Ila Dudley Associate Vice President Strategic Initiatives



Eric Hill Senior Vice President Corporate Operations

STAFF



Andrew Burkholder Manager, Spectrum Strategies



Andrea Cumpston Executive Director, Member Programs



Cyndi DeVecchis Manager, Spectrum



Kyle Entz



Karen Fouchie Accounting Manager



Cecilia Hayes



Karen Holmes Manager, Spectrum



Raghu Kanchi Senior Software



Amanda Miller Manager, Spectrum Solutions



Denisse Montenegro Director, Spectrum



Bill Mulholland Executive Director, Finance



Carol Pullis



Ranferi Rabiela Senior Software



Bette Rinehart Director, Spectrum



Matt Tylenda



Judy Wilson



Dan Winkler



Donna Yudkin

