

IEEE Broadcast Technology

The technologies to deliver information and entertainment to audiences worldwide, at home and on the go

Digital-only radio broadcasting, next-gen TV, cybersecurity, VR--all part of the 2018 BTS Symposium

Complete coverage begins on p. 5

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President's Message

Bill Hayes, BTS President



Greetings BTS members.

I am writing my last message as the president of the Broadcast Technology Society and I have to say that it is difficult to summarize what the experience has been for me personally. One of the unique things that I found out at the BTS Fall Broadcast Symposium is that I am the only person to have been president of the BTS twice. I considered being selected president for the first time as a great honor. Being selected a second time is an unfathomable honor. Over

these years I have seen our Society expand its vision and become a driving force and leader in the technologies of broadcasting and one-to-many distribution. All of these changes are thanks to the dedication and participation of the BTS staff working at IEEE headquarters, the volunteers that make up the BTS AdCom and committees, and of course the members around the world that submit papers, attend conferences and make up the community that is BTS. As president of the BTS, I learned long ago that my role was to support the people doing the work, help clear a path for them and then get out of their way.

When I was initially approached about becoming president of the Society, I was not at all certain it was a good idea. I remember in the conversation expressing to several AdCom members who I respected, I wasn't sure that I was the right person or what the BTS needed. It was my friend and mentor, the late Jules Cohen, who looked at me and said "Bill, you are exactly what the BTS needs." I was speechless! Jules was a brilliant man and I remember thinking how ridiculous it would be for me to argue with him about this. When one of the smartest people you know says you can do it, put aside your doubts and insecurities and do it. For me it was one of the best decisions I ever made.

There are of course things that I am personally proud of over my terms as president. My first year as president, the elected AdCom was an all-male group, with about 25 percent of the membership from somewhere other than the United States. Today, the non-U. S. AdCom membership is 40 percent, and equally important, two of the members are women. I consider that a start, but I know that we can do better. The BTS is a global society with more members outside of the United States than inside, and our AdCom and Society leadership need to reflect that.

One of the challenges I am looking forward to as my term as president ends is my role as chair of the Nominations and Appointments committee. I plan to actively recruit candidates for the AdCom and other leadership positions within the BTS from those areas and communities that are not fully represented. I recently had the opportunity to attend a "Women in Technology" luncheon while attending a conference in Los Angeles. Speaker Rachael Payne was addressing questions about the challenges that she has faced as a woman in a senior role in a male-dominated industry. While she shared stories about incidents that were unfair and unjust, her message wasn't bitter or negative. One of the things she encouraged the audience to consider when thinking about being more inclusive is to look at your own network of connections. If your network of connections disproportionately

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Cover: Frederick, Maryland's WWFD has been now operating full-time in a digital-only mode since July 16, 2018, and is the only U.S. broadcast-band medium wave station to do so. The project to take the 57-year-old station to digital-only operation was described in a presentation at the October BTS Symposium. A complete article about the makeover is scheduled to appear in the first-quarter 2019 edition of **Broadcast Technology**.

From The Editor

The fall symposium, ATSC 3.0 again, industry news, and More

By James E. O'Neal, Editor-in-Chief,
BTS Life Member



As I write this, the annual (number 68 now) Broadcast Technology Society's fall broadcast Symposium has just ended and I'm still sorting out the massive amount of industry information that was conveyed during its three-day run. If you missed the event, you missed out on a lot of very useful state-of-the-art technical information and news, as well as some really excellent post-session

networking opportunities and one-on-one discussions with the numerous equipment manufacturers represented there.

One of the things that struck me was the absence of presentations this year directly dealing with the U.S. television broadcast spectrum repacking operation. One of the sponsors did have a very visible reminder about the repack at their table, and one of the presentations mentioned a combiner/filter product that has applications in the initiative, but that was about it. So I'm assuming that despite all of the fears, worries, and complaints about what many called an unrealistic timetable, the repack is moving fairly smoothly at this point and there's really nothing new to report at a conference such as ours.

Now I did hear of some success stories ("we've finished our buildout") during the Symposium's evening receptions and luncheons. I always like to hear good news and would really welcome getting a story for publication in these pages about stations that have already landed in the new channel world and how the trip went. Such stories are definitely news-worthy and I think we all would like to read about others who have gotten over this very big hump and can now take a deep breath and start thinking about new projects, including the move to IP infrastructures and implementation of the ATSC 3.0 standard (which was something of a hot topic at the Symposium). Actually, 3.0 and its implications (UHD, HDR, WCG, and the like) accounted for about half of the thirty-something presentations that were part of the program.

The Tuesday "opening day" presentations began with a look at "consumer trends in radio and TV" offered by the Consumer Technology Association's Brian Markwalter. In this he revealed a number of statistics gleaned from industry surveys about U.S. consumer purchasing trends. One of the top items (number three after smart phones and laptop/tables) were big-screen LCD TVs, with now about 40 million 4K/UHD big screen sets being purchased yearly, and by 2020, these 4K/UHD models will account for about 75 percent of all units sold. Markwalter also affirmed that in the United States, there's still a place for

over-the-air-delivered television content, citing the estimated 2018 sales of OTA antennas will amount to a healthy 8,363,000 units, and should rise to 9,265,000 antennas by 2021.

In his presentation, Markwalter also noted another statistic—something that I think most of us have suspected for a long time—the time interval between purchases of big screen sets is fairly long, now about eight years. In the Q&A period following his presentation, I couldn't help but ask when were we going to start seeing ATSC 3.0-capable sets in U.S. stores, and reiterating what I've already said in a previous editorial about purchase of a 1.0 model today taking a consumer out of the 3.0 market for several years. He really didn't have a ready answer as to when the ATSC 3.0 sets might be shipping, but intimated that this might not happen until more broadcasters were transmitting in 3.0.

In listening to another presentation near the end of the conference—this one from Dave Folsom, who's a consultant to Pearl TV and is deeply involved in the Phoenix Model Market Project (described in an article elsewhere in this issue of **BT**)—I learned that it's not just the TV receiver manufacturers who haven't gotten 3.0 ready for prime time yet, there are also difficulties on the "supply" or transmission equipment side. Folsom cited problems with keeping track of numerous software/firmware versions, noting that when an improvement or other revision was made upstream, incompatibility issues then ripple down through the chain all the way to the receiver, causing things to grind to a halt until additional revisions are implemented. (I believe that this issue was also raised earlier in connection with the on-going 3.0 implementation at WRAL-TV.) He also flagged continuing incompatibility issues between units for encoding, packaging, and encapsulating coming from different manufacturers, as well as varying levels of support for Dolby AC-4 audio, and the lack of chips available for this audio flavor.

As I've said before, a lot of very talented people have put in a tremendous amount of work in putting together the ATSC 3.0 standard and I'm very enthusiastic about its adoption, but from listening to this, I can't help but wonder what the outcome is really going to be. On the one hand, we have a consumer market that's big on UHD and also is beginning to move a bit more into off-air TV reception. On the other, I see continuing problems with getting a full-fledged signal on the air and in finding TV sets that can receive it. Not good. I also see almost a total lack of industry promotion of ATSC 3.0, or consumer education as to what it will bring to television. And I don't think that any of the retailers are telling purchasers of the big screen UHD/HDR/WCG sets now going into homes that the only way they are going to see these really wonderful picture enhancements is from streaming services or UHD

Blu-ray players. There could well be repercussion later on when 3.0 OTA does become available in their markets and they discover that their new “next-gen” TV needs an external converter box or dongle to take advantage of it.

We Need To Hear From You

Moving on to another matter, early on, I mentioned a desire to publish some repack “good news” stories. I would also like to run more radio-related stories, as it seems that the majority of articles contributed are television-centric. There were some really excellent presentations on cutting-edge radio technologies at the Symposium. Perhaps someone will consider writing about them for publication here.

Along these lines, I’ve noted before that we get a vanishingly small amount of news regarding BTS Chapter activities—none were received between the last issue and this one. Also, the Chapter news write-ups seem to come from the same group of individuals. I can’t believe that other Chapters don’t have any organized activities, or individuals who would take time to report on them. Please help me inform our membership about what you’ve been doing.

In this category too, falls a dearth of news about members of our industry. I mention this in particular in connection with an obituary that appears in this issue of **BT**. Long time IEEE and BTS member Tom Osenkowsky passed away last year. I had known that he had been in bad health for some time, but only learned of his death in a conversation during the IBC Show in September. I regret that so much time passed between his passing and acknowledgment within these pages, but no one reported it.

It’s like the signs you’re seeing more and more in mass transit terminals and elsewhere: “If You See Something, Say

Something!” If you hear news—good or sad—about anyone in our well-connected industry, please let us here at **Broadcast Technology** know about it. Don’t assume that someone else will do it. As in the case of Tom, such reporting didn’t happen.

That said, I want to move back to the Symposium where our long-time president, Bill Hayes, received a physical memento acknowledging his exceptional leadership of our Society, as well as a lot of kudos and kind words. I would like to add my thanks and praise to that of others. Bill’s leadership has moved our organization forward and much the better for it. Being the president of any group such as ours comes with a lot of responsibilities and obligations, and is really a full-time job unto itself. We all know that Bill has a full-time job in running the engineering component of Iowa Public Television, so I really don’t know when he sleeps! I’m sure he’s looking forward to stepping out of this dual persona, but we are certainly going to miss him. Looking ahead, I want to welcome Ralph Hogan to the driver’s seat as he takes the reins in January. Ralph has been our vice president and is certainly no stranger. I look forward to working with him.

Lastly, I want to go on record in thanking all of those who help make this year’s Symposium happen. It will go down as one of the more memorable in recent years, with a large number of top-drawer presentations, excellent organization, and a very healthy attendance.

James O’Neal
Editor

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From The President

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looks like you, then you don’t know that you don’t know. People different from ourselves present ideas and concepts that we would never think of, and open our eyes to possibilities beyond what we think is possible.

I have worked in broadcasting my entire career. Radio and television services were very important to me when I was growing up. My family moved quite frequently, and as a result I didn’t have a lot of friends and I didn’t make friends easily. Early on I used to passively listen to or watch the broadcasts, but just before my teen years I started reaching out to the voices I heard on the radio—talking to the announcers that worked at the stations I listened to, mostly the late night and overnight talent, as I was a night owl. I talked to people who were enjoying what they did and were touching the lives of thousands, hundreds of thousands, or even millions of people every day. Sometimes it was the pure entertainment of playing the songs they wanted to hear and sometimes it was sharing the news they needed to hear. But whatever it was, I saw the potential to become part of this incredibly powerful and

meaningful service. While I have made mistakes along the way, I have never regretted the choice I made to be part of the broadcasting industry or this Society.

In closing, I want to thank all of the people who I have had the opportunity to work with as president of the BTS, and who I will continue to work with as my role within the leadership of the Society changes. I want to thank the numerous people I have met all over the world who through our interactions and conversations have shown me that we are so much more alike than we are different. This has helped me in so many ways as I have had opportunity to lead this great organization. I thank all of the university students that I have spent time with at the BMSB and YP workshops. You demonstrate that there is a future in “broadcast” technology, even if it doesn’t look like the broadcasting that I started in. I also want to thank the many AdCom members, BTS leadership, and BTS staff for all their support and encouragement through the years. Most of all I want to thank the BTS membership simply for being members of this Society. Serving members is what all of this is about.