

Broadcast Technology Society Newsletter

The technologies to deliver information and entertainment over the air, cable, satellite and Internet to audiences worldwide, at home and on the go.

From the President



Dear BTS Members:

It's exciting to be appearing this month beneath our new, colorful Newsletter masthead. The addition of color marks the beginning of the Newsletter's transformation to what we hope will become a more attractive and informative publication for our members in the coming months. The highlight color we've chosen is intended to resemble the "aviation orange" used on radio towers. But, before you rush down to the Sherwin-Williams paint store with this Newsletter in hand as a color sample, be advised that we could not find a perfect match in the PANTONE®, color book, which the printing and graphics people use to

ensure exact color matches. So, we picked their 485 C as the closest. You'll also be seeing this new color on the Transactions cover, brighter and bolder than before, and on our web site.

Since our last Newsletter went to press, we completed the presentation of our Society and Publications Reviews during the TAB meeting series in San Antonio, Texas, in November. Charlie Einolf and April Nakamura joined me there for the Society Review, and Yiyan Wu also joined us for the Publications Review. In the Society Review, we emphasized our ongoing Strategic Planning efforts and noted that we were seeking an outside facilitator to work with us in strengthening BTS to meet the challenges of the evolving broadcast industry. Fortuitously, a veteran TAB volunteer who has guided other

organizations through similar exercises was in the room. We have followed up with him since then, and we look forward to his help this year.

In the Publications Review, we emphasized the turnaround in the quality of our Transactions since our last review five years ago, when we were criticized for inadequate peer review. Since then, we've grown from three Associate Editors to a current roster of twenty, augmented by IEEE Publications Office staff. More than 150 others volunteered their time and expertise to our peer review process last year. As of this writing, we've yet to receive the official comments back

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From the Editor

As you cannot have missed, we have added color in a first step to make the Newsletter more attractive and have moved the table of contents to the front page. Let me know what you think of the new look.

Although the addition of color makes it more attractive, content is what makes it useful. Over the past several issues I have been discussing efforts to add more useful articles with some limited success. This effort is continuing and with the help of the AdCom and our publica-

tions committee I hope to deliver on that promise although it is proving more difficult than I had anticipated. If you like to see your name in print and have something that you believe is of interest to our members let me hear from you. On the other hand if you don't have anything to contribute but know someone who does let me know about it and I will contact them.

Congratulations go out to our sister publication the IEEE Transactions
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From the Editor continued

on Broadcasting which is celebrating its 50th anniversary this year. Thanks to the Queens Borough (New York) Public Library and our society administrator April Nakamura we have located a copy of that first issue. The library was kind enough to fax April the first several pages and we are reprinting the table of contents and the title page to give you an idea what hot topics of the day were in March 1955 and who was leading the organization. From that issue it is noted that the vice-chairman of the administrative committee was Scott Helt in whose honor we present the annual award for the best transactions paper.

I also note that the papers in that first issue were all presented at the 4th Annual Broadcast Symposium held in Cleveland, OH in September of 1954. We are now preparing for the 55th Annual Symposium and paper abstracts are due by May 25, 2005 (see the call for papers in this issue for details).

Congratulations are also in order for Ed Williams on his retirement from PBS but thankfully not from the BTS - See more details inside.

In this issue we have once again, thanks to Dmitry Tkachenko, a good report from our chapter in St. Petersburg, Russia and Valentín Trainotti has provided a report from our chapter in Argentina. I know that we have a number of active chapters and a great way to help increase local participation and at the same

Newsletter Deadlines

The BTS Newsletter welcomes contributions from every member. Please forward materials you would like included to the editor at wmeintel@computer.org. Here are our deadlines for upcoming issues:

Issue	Due Date
Summer, 2005	April 20, 2005
Fall, 2005	July 20, 2005
Winter, 2005	October 20, 2005
Spring, 2006	January 20, 2006

time promote our society is to let others know about your activities. Send me an email with a short report and/or your upcoming meeting schedule and I will put it in the newsletter.

In our continuing effort to add more useful content this issue contains an article by Jerry Whitaker on PSIP and the Programming Metadata Communication Protocol (PMCP). Although we have not yet been too successful in our efforts to obtain articles concerning digital television outside the

United States Yiyang Wu has provided a link to a useful web site for such information. (<http://www.digitag.org>) - Check it out.

As always - let me hear from you - comments, suggestions and criticism are all welcome and once again I encourage you to share your knowledge and experiences with our readers by taking the time to submit a brief article.

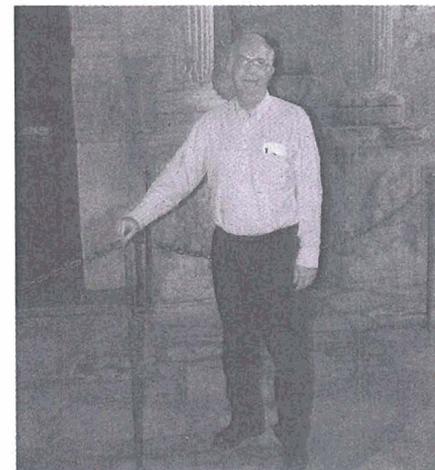
Bill Meintel
wmeintel@computer.org

From the President continued

from either the Society Review or the Publications Review. We'll let you know next time how we fared.

We're looking forward to seeing many of you at NAB next month. Our tutorial has moved from Saturday to Wednesday afternoon this year, to avoid conflicting with the SBE Ennes Workshop. Yiyang Wu will be presenting a portion of our Symposium tutorial on "Video and Audio Distribution via Wireless Broadband," I'll describe the various activities of the IEEE 802 standards committees, and Victor Tawil of MSTV will provide an update on the FCC's proposed rulemaking allowing unlicensed devices to operate in the TV broadcast bands. April Nakamura and Jerry Berman will be nearby at our membership booth.

We've also begun planning for another joint tutorial with SMPTE at IBC in September. Although still in the proposal stage, we hope to present real-world experiences in implementing HDTV, as related by an interna-



Tom at the Alamo

tional panel of experts. Stay tuned for further details as our plans gel.

As always, we welcome your comments and ideas by e-mail or by logging onto the BTS Virtual Community.

Tom Gurley
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IEEE Broadcast Technology Society Newsletter (ISSN 1067-490X) is published quarterly by the Broadcast Technology Society of the Institute of Electrical and Electronics Engineers, Inc. Headquarters address: 345 East 47th Street, New York, NY 10017-2394. Sent at a cost of \$1.00 per year to each member of the Broadcast Technology Society. Printed in USA. Periodicals postage paid at New York, NY and at additional mailing offices. Postmaster: Send address changes to: IEEE Broadcast Technology Society Newsletter, IEEE, 445 Hoes Lane, Piscataway, NJ 08855.

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IEEE History Center Project "Going Digital"

Going Digital is an on-line forum for collecting your stories and reminiscences and to help identify issues and turning points -- the highs and the lows -- inherent in the process of bringing ideas to fruition. The IEEE History Center requests your help to locate and contribute significant records, reports, and accounts which demonstrate the evolution of these specific areas of technology.

Under a grant from the Alfred P. Sloan Foundation, which is funding a series of similar initiatives around the globe, the IEEE History Center has assembled and posted material immediately available concerning two areas of recent technology. Pioneers in these areas are urged to submit personal recollections, documents, pointers to collections of documents, and comments on materials submitted

by others. The History Center will attempt to weave these materials into a historical narrative that will preserve the rich texture of the engineering enterprise. The project will build on the Sloan Foundation's ongoing support of the development of a model for the creation of Web sites to gather historical information, and the final report will contribute to that effort. At the same time, the final products - the Web pages themselves - will be able to join the previous efforts in creating a "Web ring" of the history of recent technology that will begin to attain critical mass. Our two areas of interest are Automatic Speech Synthesis and Recognition (ASSR) and Digital Audio Recording (DAR). If you are interested in participating, please visit: http://www.ieee.org/organizations/history_center/going_digital.html

Ed Williams Retires

Long time BTS member Ed Williams has retired from his position at the Public Broadcasting System (PBS). Ed tells us however that he will continue to be involved in the BTS where he serves as Technical Activities committee representative to the AdCom. We wish Ed the best on his retirement and are grateful that he will continue to be involved in our society. Over the years he has been one of our most active members making major contributions to the success of both our annual Symposium and the Transactions.

For those who may not know, Ed has 45 years of experience in broadcast engineering having worked at local stations, the PBS Network, NAB, and the Advanced Television Test Center. His major contributions to the industry include working on the development of the

first satellite TV network distribution system, captions for the deaf, stereo audio for TV, formal advanced television laboratory and field tests, the nationwide 40-city Harris/PBS DTV Express demonstration and seminar tour, implementation of DTV for public TV stations, and standards development. His professional affiliations include membership of the AFCCE, ATSC committees, IEEE, SBE, SCTE, and he is a fellow of SMPTE.

Although recently retired from PBS, he continues to be involved in many aspects of digital broadcast engineering, standards development, and technical seminars. The NAB also recently announced that Ed will serve as Editor-in-Chief for upcoming 10th Edition of the NAB Engineering Handbook.

Portal Created for IEEE Members

The IEEE has launched a new membership portal along with a members-only area called myIEEE. The public site explains the benefits of IEEE membership as well as the availability of additional membership opportunities, such as IEEE societies, affinity groups and the Standards Association. Members who login to the myIEEE area with their IEEE Web account will see personalized information, such as their grade, section affiliation and additional active memberships. A new feature called "Service Advisor" uses a member's technical interest profile to offer recommendations for IEEE membership offerings, conferences and publications. Visit: www.ieee.org/myieee to view this exciting new site.

BTS Members save \$300 at NAB2005

Members of BTS save \$300 off the cost of conference registration at the NAB2005 (16 - 21 April 2005). NAB has generously extended this discount to all active Members of the IEEE Broadcast Technology Society. In addition, when you register for the NAB Broadcast Engineering Conference, the NAB

Broadcast Management Conference, or the NAB MultiMedia World Conference you will get access to all three.

To register for NAB2005 and SAVE \$300, go to the BTS Homepage at: www.ieee.org/bts Broadcast Technology Society members should have received an email with the NAB2005 partner reg-

istration discount code. If you have not yet received your code, send an e-mail or fax to April Nakamura at: a.nakamura@ieee.org, or fax: +1 732 981 1769. The email or fax should contain your IEEE Member number, your full name, contact information and the phrase "Send BTS partner code for NAB".

IEEE Broadcast Technology Society AdCom Meeting

October 12, 2004

Hotel Washington, Washington DC USA

Attendees:

Best, Greg
Bouchard, Guy
Cozad, Kerry
Einolf, Charles
Friedel, Richard
Gurley, Thomas
Hayes, William
Layer, David

Meintel, William
Nakamura, April
Nass, Lanny
Shumate, Sid
Silliman, Thomas
Trainotti, Valentin
Wandel, Eric
Williams, Ed

Wu, Yiyang

Special Guests:

Kam, Moshe
IEEE Membership Project
Wyndrum, Ralph
VP, Technical Activities

1. Meeting Called to order 2:30 PM
 2. Introductions and welcome.
 - a. Mr. Gurley extended a special welcome to Ralph Wyndrum, Vice President of TAB, who has been visiting Society AdComs. He noted that Moshe Kam, Chair of the IEEE Membership Project, also would be joining the meeting.
 3. Mr. Gurley turned the floor over to Ralph Wyndrum for his presentation, summarized below:
 - a. Mr. Wyndrum said that, as the TAB VP, it is his job to ensure the health of the Societies and make sure they are contributing to IEEE as best they can and bring that philosophy to TAB. Mr. Wyndrum has visited a number of small, medium and large Societies. Societies are the heart and soul of TAB, the source for money and the source of technical content. They are in various degrees of array and disarray and he has been working with them to get them back on track. Many of the Societies are struggling for money. and it is affecting the Society's morale. AdComs' decisions to cut costs affect technical programs and volunteers. The time has come to cut back on the tax Societies pay to cover IEEE overhead. Mr. Wyndrum took this message to Art Winston and IEEE FinCom, which agreed to cut the 36% increase in indirect overhead back to the rate of inflation. The Executive Committee has recommended reducing the budget, but serious cutbacks will have to occur.
 - b. Publications
 - i. Publications provide \$30 Million/year for use by the IEEE. We now face competition from the web, open access & competitors (Reed, Elsevier). Mike Lightner and Mr. Wyndrum are in a strategic planning committee which will be developing strategic responses to these problems. With electronic publishing, the users are not realizing that a publication is from a specific Society.
 - ii. The British Government and US National Institutes of Health are saying that if they pay for any part of research, the results must be available for free.
- Models are being created to possibly address this
- c. Conferences
 - d. Conferences generate \$10 million/year. IEEE is attempting to identify exactly what is the impact of conferences to our membership, volunteers, and members.
 - i. There will be a weekend of conference strategy with representatives from Societies, Sections, N&A etc.
 - e. Distinguished Lecturer program
 - i. Sections and Regions have had trouble getting Distinguished Lecturers in locations where there are small audiences and difficulties in traveling to those locations.
 - ii. Mr. Wyndrum asked how close BTS feels to its Chapters?
 1. Mr. Gurley replied that, in the past few years, we have tried outreach to our chapters including the offer of money. Additionally, we have provided speakers for their events. We want to have more Chapters, and have helped a few new ones form, but have had a complaint that there is some hesitation from a Section.
 2. Mr. Wyndrum suggested that we form Joint Chapters – with COM, CE, etc. This may be a valuable way to increase membership and to get better opportunities to bring Distinguished Lecturers to our events.
 - f. Mr. Gurley asked about the status of the IEEE cost of membership project.
 - i. Mr. Gurley noted that the IEEE has been raising dues by the cost of living, and in BTS we find that people don't join because the cost of membership is too high, or have dropped Society memberships because the cost of IEEE membership has gone up and they need to keep the price level.
 - ii. Mr. Wyndrum replied that IEEE's cost seems to match that of comparable membership Societies.
 - iii. Moshe Kam noted that the problem may not be the cost, but that members do not see the value for the

- membership.
- 4. Society Overview Presentation: Tom Gurley made a PowerPoint presentation to overview the Society's strategic planning, and membership issues. (See Sidebar)
- 5. The AdCom next heard a presentation from IEEE Membership Development Committee Segment Initiative Chair : Moshe Kam
 - a. The IEEE Membership Project: Volunteer and Members see us as a Membership organization not just as conference organizers and publishers. The IEEE's success is related to the number of Members and income. In IEEE's traditional areas of strength, our market share is declining and we are not well organized to serve non-traditional members. Membership revenue is very significant and there are some very serious competitors from Academia and For-Profit Companies. Project organized in early 2004.
 - b. Address areas that are "underserved" by IEEE.
 - i. Healthcare, multimedia, broadcasting, entertainment, Pre-College Education, Information Tech.
 - ii. Determine what these groups may need from IEEE
 - c. The Membership Project: will change membership level titles
- 6. Review of Publications and Society Review
 - a. The AdCom was asked to read and provide feedback on many of the questions.
- 7. Previous Meeting Minutes were approved, and it was noted that all action items had been completed.
- 8. Awards and Nominations report:
 - a. Awards: All plaques and certificates are prepared to be given out at the luncheon.
 - b. Nominations & Elections:
 - i. R. Freidel, W. Meintel, and D. Tkachenko will run for a second term on the AdCom.
 - ii. Nominations for two other seats will be sought at the Symposium, and other candidates were suggested by the AdCom.
 - iii. President and Vice-President elections.
 - 1. Tom Gurley and Charles Einolf nominated by Sid Shumate. Motion by Lanny Nass, and Second by R. Freidel. Approved Unanimously.
- 9. Treasurer's Report
 - a. The AdCom received a report from Treasurer Lanny Nass. It appears that the Society has a net worth of about half a million dollars.
- 10. Standards Report
 - a. W. Hayes thanked G. Best for his recent Standards work and plans to do work for the RF committee.
 - b. W. Hayes and A. Nakamura held a teleconference with A. Ortiz of IEEE Standards Staff:
 - i. P206: We will reaffirm because it is still in use
 - ii. P??? : We will reaffirm because it is still current
 - iii. P746: Appears to be current and should be reaffirmed
 - iv. 1486: TV interlace for signals which have been compressed. This should be kept alive.
 - 1. W. Hayes will draft a paragraph to reaffirm the standard.
 - v. TV Camera Resolution Chart – W. Hayes will look this up and find out about it.
- c. W. Hayes has reviewed all of the above standards and will reaffirm them.
- d. IEEE 802 Committee:
 - i. IEEE 802.18, the Radio Regulatory Technical Advisory Group, is drafting comments on the FCC Notice of Proposed Rulemaking on use of unlicensed devices in the TV broadcast bands.
 - 1. The group needs more participation by broadcasters. T. Gurley has agreed to be the BTS liaison to that committee and another, 802.22, which is a committee chartered to develop a standard for wireless regional area networks operating on unused TV Channels.
 - 2. The work is being driven by wireless interests who want to build the chips and products. The only Broadcaster participating has been FOX, and we need to get more of them involved.
- 11. IBC Report
 - a. The IBC2004 drew approximately 41,000 attendees. Stand sales for 2005 are ahead of budget.
 - b. A joint tutorial with SMPTE took place. Greater coordination and advertising should take place in 2005.
 - c. In order for BTS to get onto the conference program each year, we need to get onto the conference program committee. W. Hayes volunteered, and T. Gurley needs to contact IBC and get that done.
 - d. The BTS needs to be taken seriously at the IBC.
- 12. USTTI Report
 - a. The AdCom gratefully received G. Berman's USTTI report, which was submitted before the meeting.
- 13. Logo
 - a. T. Gurley suggested that we contact logoworks for a possible logo option.
 - i. Moved by W. Hayes, and Seconded by G. Best, Approved Unanimously
- 14. Strategic Planning:
 - i. E. Wandel suggested that we hire a professional facilitator who can help us direct the meeting.
 - 1. What do we offer to our Society members?
 - 2. Computer Society offers courses
 - a. This is something that we could do to serve our membership and attract people.
 - 3. What do we offer to our membership?
 - a. Transaction, newsletter and what?
 - b. The perception is that we are the RF society.
 - c. Some applications papers in the Transactions or Newsletter would help greatly. We could consider paying an author.
- 15. MEETING ADJOURNED 10:33 PM

Technical meeting of St.Petersburg Chapter (Russia)

Dmitry Tkachenko

On November 17 a technical meeting of St.Petersburg BT/CE/COM Chapter was held at the MART Company in St.Petersburg. About 20 participants attended the meeting, both Chapter members and representatives of St.Petersburg industry, universities and broadcasters. These Chapter meetings at the MART company are held on regular basis due to support of the MART company management and especially due to enthusiastic support of Alexander Artamonov, Deputy Director of MART Company, who usually makes a lot of efforts in organizing these meetings.

The General Director of MART Company Saveliy Zhitomirsky opened the meeting. He welcomed the participants and highlighted the importance of digital technologies usage in new developments especially in the field of digital TV and Radio Broadcasting.

Alexander Artamonov, Deputy Director of MART Company, described general outlines of current activities of

Russian industry in the field of Digital TV and Radio Broadcasting taking into account the adoption of DVB-T standard in Russia. He also paid special attention to DRM standard, which is used for Digital Radio Broadcasting.

Professor Konstantin Glasman, the Head of Department at St.Petersburg TV and Cinema University, delivered a detailed survey of 2 recent conferences that he visited in September 2004. The first conference was ISCE2004 that is a traditional conference of IEEE Consumer Electronics Society. In 2004 this conference was held in Reading, UK. Professor Glasman has made preliminary arrangements to hold ISCE2006 conference in St.Petersburg, and he is currently working on organizing this conference.

Another conference described by Professor Glasman was IBC2004 conference, which is traditionally held in Amsterdam together with the trade show. He mentioned 2 technical discussions that attracted his attention at IBC. The first one was the discussion

on European way on transition to HDTV. According to report of Professor Glasman, EBU Project Group B/TQE (Television Quality Evolution) proposes that Europe should use the standard with 720 lines and progressive scan as an intermediate step in the way to higher resolution HDTV (i.e., 1080 lines with progressive scan) while a considerable number of broadcasters and manufacturers deploying HDTV now in other countries normally prefer HDTV with 1080 lines and interlaced scan. The standard with 1080 lines is compatible with current cinema production and there is sufficient choice of available equipment for this standard.

The advantage of progressive scan is better delivery of quick motion pictures (like sports) and it is also more comfortable for those consumers who already get used to quality of computer displays with progressive scan. On the other hand, wide adoption of HDTV standard with 720 lines and progressive scan in Europe may require more expensive equipment because it may be different from equipment that is used in other countries. That is why it is possible that EBU may propose some kind of a trade-off solution.

One more interesting issue discussed at IBC was introduction of DVB-H standard, which is intended for delivery of TV programs to handheld devices such as mobile phones, personal devices, etc. DVB-H system is based on DVB-T system as the physical layer. DVB-H receivers are active only approximately during 10 percents of time when they acquire the information from the broadcast stream. It allows prolonging the service time for batteries of handheld devices. Another option of DVB-H standard is improved performance in high noise conditions that may take place in many usage scenarios for mobile devices.

Some companies like Nokia already demonstrated DVB-H devices at IBC.

Brain Teaser

Answers to questions in the last issue

- 1.) A car travels at a speed of 50 miles per hour over a certain distance, and then returns over the same distance at a speed of 40 miles per hour. What is the average speed for the total trip? *44.44mph. Let we distance traveled be 60 miles each way. Then, the trip out = 60/50 = 1.2hrs, and the return trip = 60/40 = 1.5hrs. Therefore, the 120 mile trip = 120/2.7 = 44.44 mph.*
- 2.) Divide 30 by and add 10. What is the answer? *70*
- 1.) How many 2 cent stamps are there in 3 dozen? *36*
- 2.) Solve for ?

7	4	8
3	9	7
6	5	10
?	8	4

Multiply the first 2 numbers in each row and subtract 20. Therefore 8X=20+4, 8X=24 X=3

New Teaser

- 1.) A man's sons are all blue-eyed except for two, all brown-eyed except for two, and all gray-eyed except for two. How many sons does he have?
- 2.) A house painter paints numbers on all of the houses in a new development starting with the number 1 and ending with 100. How many times does he paint the number 9 in the process?
- 3.) Where can you find a triangle with 3 right angles?

Answers and/or contributions can be emailed to elness@cbs.com

St.Petersburg telecommunication operators are interested to consider future opportunities for introduction of DVB-H services and MART Company is going to produce DVB-H modulators in 2005. Nevertheless the weak point of DVB-H is that it is not quite clear if consumers will be interested in this kind of service and are willing to pay for such service.

Konstantin Kraskovskiy, the Chief Designer of Consumer Electronics Devices at Kozitskiy Plant spoke about new developments of his company in the field of TV sets and set top boxes capable to receive Digital TV programs. Kozitskiy Plant was one of major manufacturers of TV sets in the former Soviet Union with manufacturing of millions units per year. Now, the company output is

decreased due to competition from foreign manufacturers that sell their TV sets in the Russian market. Due to introduction of Digital TV broadcasting in Russia, Kozitskiy Plant developed new types of hybrid consumer devices that can receive both digital and analog TV programs. Current models use hardware MPEG-2 decoders, but future models will include downloadable software decoders (e.g., MPEG-4), downloadable operating systems (e.g., based on Linux) and downloadable user menus. The download of software from broadcast stream will allow upgrading the consumer devices by the broadcaster or by the cable operator.

Finally, Dmitry Tkachenko, the Chapter Chair recalled to participants

that IEEE 2005 Renewal Campaign is in progress now and asked all members to renew their memberships in time. He also asked the participants to consider submission of papers to the IEEE Transactions of Broadcasting. It is still a problem for Russian authors, because considerable part of experienced Russian engineers and scientists cannot write well in English, but we should start publish our results in international journals.

After the meeting all participants were invited to the dinner that was organized by the Chapter due to financial support of the IEEE Broadcast Technology Society. A friendly discussion on technical and professional issues took place during the dinner.

Report from Argentina BTS Chapter

The Argentina BTS Chapter met on 11 November 2004 at 6 PM. Ing. Luis A. Dorado gave a presentation on "LF and MF Short Antenna Performance" The meeting was attended by 6 colleagues.

The chapter also reports that during October, November and December

Digital AM transmissions were carried out by LS4 Radio Continental 590 KHz 100 Kw, and LR6 Radio Mitre 790 KHz 50 Kw, Buenos Aires Argentina with the support of Harris Corporation and The Argentine Representative Coasin S.A. It was further reported that very good results were obtained and cover-

age was found to very good.

At the 10 March 2005 meeting, Mr Guillermo Chialvo and Pedro Maccarone Technical Chief Engineers of both AM Radio Stations will explain this new experience with the IBOC system and provide our colleagues the details of these successful results.

The International Scientific Conference "The 110th Anniversary of Radio Invention"

Saint Petersburg, Russia, 18 – 21 May 2005

The IEEE Russia Northwest Section together with other Russian organizations is going to hold the International Scientific Conference "110 Anniversary of Radio Invention" (St.Petersburg, 18 - 21 May 2005). A number of well-known IEEE volunteers are members of International Advisory Committee for this conference including 2004 IEEE President Dr. Arthur Winston and some IEEE Past Presidents.

The conference is devoted to the 110th anniversary of A.S.Popov's public demonstration in 1895 of wireless transferring and receiving of radio signals that helped to lay the foundation for modern communications and radio engineering. The conference will be held at the St Petersburg State Elec-

trotechnical University "LETI", where A.S.Popov was a professor and the first elected director.

The conference program includes visiting the A.S. Popov Memorial Museum in LETI, the Central Museum of Communication named after A. S.Popov, as well as other memorial places in St Petersburg and Kronstadt, connected with activities of A.S. Popov and his colleagues – pioneers of radio communication.

During the conference a solemn unveiling of the memorial plaque commemorating A.S. Popov historical contribution into the development of wireless communication is planned in the LETI. We hope it will be established by IEEE History Center accord-

ing to the IEEE Milestones program.

Conference will include history sessions and scientific sessions. The range of history problems to be discussed will cover the history of origin and development of electrical engineering, electronics, radio engineering, communication, computing. For the scientific sessions papers may be submitted by IEEE members on any technical topic related to the fields of Chapters available within the IEEE Russia Northwest Section (e.g., Broadcast Technology, Communications, Consumer Electronics, etc.)

The Conference will be held in St. Petersburg - Russia North cultural capital, the city of beautiful palaces, museums, broad prospects, more than 60

rivers and canals, 600 bridges and fine white nights. Conference Social program includes St. Petersburg sightseeing tour, visits to the Hermitage Museum, a

Ballet Theatre, Suburbs (Peterhof)

Information about the conference is available at <http://www.eltech.ru/english/news/110Anniversary.htm>

For participation in the conference please contact Organizing Committee Chair - Professor Alexander Mikerov at a.mikerov@ieee.org

PSIP Requirements and How PMCP Can Help

By Jerry Whitaker, VP of Standards Development, Advanced Television Systems Committee, Inc.

Now that the Federal Communications Commission (FCC) has incorporated ATSC Standard A/65B, "Program and System Information Protocol for Broadcast and Cable," into its rules, stations have made great strides in complying with the provisions of A/65B. This is good for broadcasters and good for consumers.

Since the first version of the PSIP Standard was published in 1997, compliance reflected good engineering practice on the part of television stations, since the Standard offers benefits for both viewers and broadcasters. PSIP is—in fact—critical to proper operation of the DTV system.

For the viewer, PSIP permits suitably equipped receivers to build an on-screen grid of channels and program information for all DTV services. In addition, the viewer can seamlessly surf from NTSC to HDTV to SDTV. For broadcasters, PSIP maintains local brand identification through the "major channel number." PSIP identifies both the DTV channel and the associated NTSC channel and enables DTV receivers to associate the two. In addition, PSIP tells the receiver whether multiple program channels are being broadcast and, if so, how to find them. Furthermore, it identifies whether the programs are closed captioned and conveys available v-chip information, among other things.

The FCC mandatory PSIP requirements include the following:

- Master Guide Table, which must have valid linkages to other appropriate tables.
- System Time Table, which must contain time accurate to within one second when sent (each second).

- Virtual Channel Table, which must at least contain the NTSC channel number for each 'major' channel entry, and which the FCC said they expect to contain accurate TSID, service type, modulation mode, source ID, and Service Location Descriptor.
- At least the first four Event Information Tables (EIT), which must contain the Caption Service Descriptor (when DTV closed captions are present), and the Content Advisory Descriptor (when broadcasters provide such advisories). Note that the FCC stated they expect broadcasters to send correct program titles to inform consumers about which programs are planned to be broadcast.

Enter PMCP

The Programming Metadata Communication Protocol (PMCP) is a newly published ATSC Standard that promises to greatly simplify the process of generating highly-accurate PSIP data. A/76 was developed by the ATSC Specialist Group on Metadata Communications, T3/S1, under the leadership of Graham Jones of NAB.

Because PSIP and other DTV metadata is originated or processed by several separate systems and related equipment, up to now there have been difficulties in communicating the appropriate metadata to the PSIP generator. Implementing PMCP will help ensure that the transmitted PSIP information is complete and correct, with minimum manual intervention by the broadcaster.

PMCP is based primarily on XML (extensible markup language). It

enables broadcasters and manufacturers to more easily interconnect systems that process PSIP and other DTV metadata. This includes, but is not limited to:

- Traffic
- Program management
- Listing service
- Automation
- MPEG encoder
- PSIP generator

PMCP is also extensible for other types of metadata, and can convey private information within the current data structure.

With the XML schema being both human and machine readable, PMCP implementation becomes a more simplified process by specifying exactly which elements are allowed in messages, their relationships, individual attributes, and data types.

PMCP references and is complementary to existing ATSC Standards. It supports the ISO Standard V-ISAN for unique identification of program content and carries all the information needed in one message structure for:

- Virtual channels
- PSIP events
- Programs
- System Time Table
- Regional Ratings Table
- Private Information

For More Information

ATSC documents A/76, "Programming Metadata Communication Protocol," and A/65B, "Program and System Information Protocol for Broadcast and Cable," are available for download on the ATSC Web site at: <http://www.atsc.org/standards.html>. More information on FCC regulations and guidelines are available on the FCC website at: <http://www.fcc.gov>.

All ATSC Standards, Recommended Practices, Implementation Subcommittee Findings, and related informational documents are available at no charge from ATSC.



Broadcast Technology Society



Attend the IEEE Broadcast Technology Society Tutorial:

“Video and Audio Distribution via Wireless Broadband”

**at the
NAB2005 Broadcast Engineering Conference
April 20, 2005
2:00 – 5:00 pm
LVCC N110**

Wireless Broadband is the latest example of the ongoing convergence of electronic entertainment and information technologies, rapidly changing the media landscape and providing both challenges and opportunities for traditional broadcasters. This tutorial will focus on current and emerging standards that can be used for real-time distribution of audio and video content.

Topics will include:

- Basic concepts of the broadband wireless systems
- Definitions of Bluetooth, Wi-Fi, WiMax, and WiMedia, and explanation of their relationship with the IEEE 802 family of wireless standards
- Future developments and emerging technologies, including MIMO and UWB
- Real-time video and audio over IP-based networks, or packet based multimedia networks, and their pros and cons
- Related standards/protocols and development
- Review of broadband wireless technology and standards development in Europe and Japan
- Discussion of other competing and emerging broadband technologies (wireline or wireless)
- Practical network implementation considerations
- FCC Proposed Rulemaking on License-Exempt Operation in the TV Broadcast Bands

Plus: Live demonstration of real-time video streaming and DTV/HDTV over Wi-Fi

Session Chair:

Tom Gurley

IEEE Broadcast Technology Society President, and Liaison to the IEEE 802.18 Radio Regulatory Technical Advisory Group and 802.22 Working Group on Wireless Regional Area Networks.

Presenters:

Dr. Yiyang Wu

Principal Research Scientist with the Communications Research Centre, and Adjunct Professor at Carleton University, Ottawa, Canada.

Victor Tawil

Senior Vice President, Association for Maximum Service Television

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The 55th Annual IEEE Broadcast Symposium

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12-14 October 2005

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Topics may include:

- Digital and analog radio and TV systems, including *terrestrial, cable, satellite, and Internet*
- Transmission, propagation, reception of broadcast signals
- AM, FM and TV antenna systems, measurements
- RF radiation standards, testing
- Other new developments in broadcasting system engineering

Send 250 word abstract, by e-mail, no later than 25 May 2005 to:

a.nakamura@ieee.org

Please include with your abstract: name, job title, company, address, telephone, fax, and e-mail.

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IEEE

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IEEE BTS AdCom Meeting Minutes Sidebar

Overview of BTS Strategic Planning and Membership Development Activities as presented to the BTS AdCom on 13 October, 2004 and to the TAB Society Review Committee on 17 November, 2004.

1) BTS Strategy

BTS is pursuing a two-fold strategy to maintain its relevance in the face of a sea change in the broadcasting industry:

- a) "Fully embrace" our field of interest
Three years ago, we re-examined our official field-of-interest statement with respect to the content in our publications and symposium. We realized that the FOI is sufficiently broad to encompass the entire chain from content creation to delivery, but that we had not been fully embracing that broad field in our content and activities, having fallen into a narrower rut.
- b) Affirm that "broadcasting" means "point-to-multipoint" The number one problem with using the word "broadcasting" in any description of what our society does is the question of what broadcasting means. Once upon a time, the answer was easy – it meant over-the-air radio and television. To many, it still does – and that is part of our image problem. In order to attract more content and membership from the cable, satellite, and Internet communities, it is important to emphasize that we are concerned with all of these forms of point-to-multipoint communication.

2) Strategic Planning

The BTS AdCom devoted considerable time to strategic planning discussion at both the October 2003 and January 2004 meetings. At the October meeting, we began to focus on how to embrace more of our field of interest:

- a) Broaden AdCom
- b) Represent whole field of interest
- c) Broaden international representation
- d) Broaden membership
- e) Engineers with a broader experience base & non-traditional broadcasters
- d) Explore boundaries
- e) Other organizations; e.g., SBE
- h) Other IEEE societies

In January, discussion covered the following points:

- i) Membership Base & Area of Interest
- j) Employment in broadcast engineering is declining.
- k) Over-the-air (OTA) broadcasting is a mature business.
- l) Point-to-multipoint distribution of content includes OTA, cable, satellite, and Internet.
- m) Beyond our traditional OTA turf, other organizations

encroach.

- n) To grow membership, expand to baseband
- o) Perception of BTS
- p) BTS is the RF Society.
- q) IEEE is too R&D oriented.
- r) Broadcasters need more practical material.

3) Possible response

- a) Stretch our boundaries.
- b) Consider an outside facilitator to help guide strategic planning discussion.
- c) Membership Development
- d) Membership in BTS peaked at nearly 3400 in the mid 1990s. This may have been due, in part, to the intense interest in digital television development at that time. Since then, BTS membership has steadily declined, dropping below 2000 this year. We have undertaken several activities to assess why members are leaving and to recruit new members:
- e) Booths at Industry Conferences: NAB, IBC, BroadcastAsia, CSTB
- f) Member survey (IEEE All-Society Research Project – 2003)
- g) Past-member survey – 2004
- h) Prospective member survey – NAB 2004
- i) More research needed, especially internationally

4) What We've Learned

- a) Better opportunities needed in education, networking, and local chapter activities
- b) Most lost members no longer employed in broadcasting
- c) Cost of membership too high
- d) Content too technical, academic, and irrelevant to everyday work

5) What We're Doing

- a) Revamp, Expand Newsletter to include:
- b) Tutorials
- c) Practical, applications-oriented articles
- d) Worldwide reports
- e) Expand Symposium
- f) Tutorials on non-traditional topics; e.g., IP multicasting, wireless broadband
- g) Evening Workshop at 2004 Symposium
- h) Increase support of chapter development and activities
- i) Enhance virtual community
- j) Offer more tutorials – NAB, IBC, CSTB
- k) Foster affiliate relationships with AFCCE, SBE, SCTE, and IBC partners
- l) Raise profile of BTS in other societies and organizations
- m) Continue assessment of member needs

6) International Broadcasting Convention

The IBC is of key strategic importance to BTS, so discussion of strategic planning would be incomplete without consideration of its role. Held each September at RAI in Amsterdam, IBC bills itself as "The World of Content Creation, Management, Delivery."

a) Key statistics:

- i) > 40, 000 attendees / 120 countries (up 12% from 2003)
- ii) 36, 000 sq. ft. exhibition / 1,000 stands
- iii) 5-day technical conference
- iv) BTS has 11% ownership stake, worth over \$300K a year

b) IBC Partners

The IBC is owned "by the industry for the industry." The six partners are all not-for-profit industry organizations. The profits from IBC are returned to the partners for the benefit of their members and the industry at large. The partners are:

- i) IEEE-BTS
- ii) IEE (Institution of Electrical Engineers)
- iii) IABM (International Association of Broadcasting Manufacturers)
- iv) RTS (Royal Television Society)
- v) SCTE (Society of Cable Telecommunication Engineers, UK organization unaffiliated with US

organization of the same name)

- vi) SMPTE (Society of Motion Picture and Television Engineers)

- c) BTS has identified each of our IBC partners as an affiliate organization for membership purposes, and we are attempting to establish cross-promotion opportunities and joint activities.

d) IBC Involvement

BTS is actively involved with IBC at several levels:

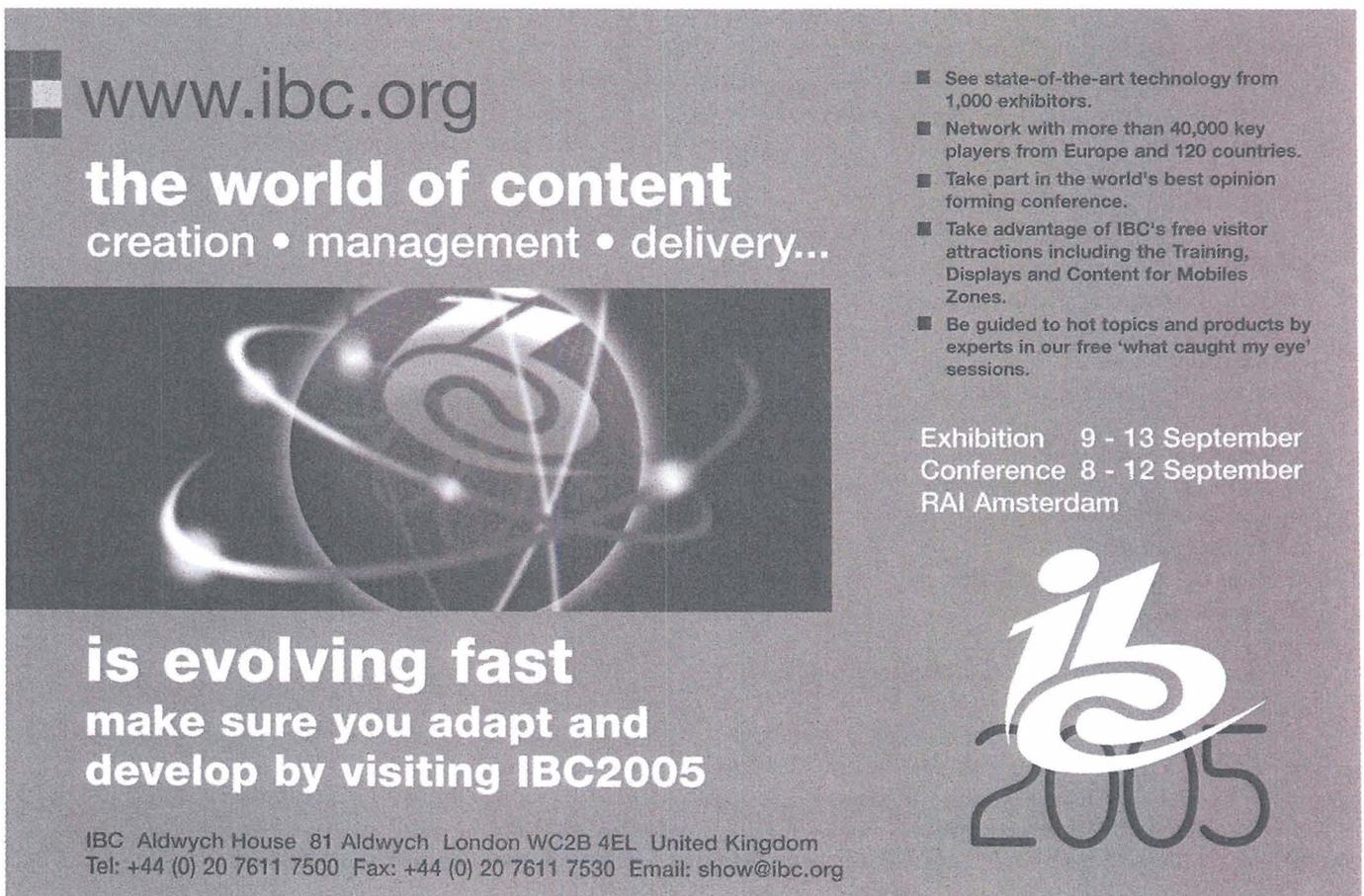
- i) Partnership Board
- ii) IBC Council – Broadly based advisory group
- iii) "Partnership Village" membership stand
- iv) Joint Tutorial with SMPTE at IBC2004
- v) Evening Reception with SMPTE at IBC2004

e) IBC 2004

Various speakers from around the world assessed the state of the industry and its direction from their perspective. They covered the three aspects of broadcasting:

- (1) Creation
- (2) Management (or Aggregation)
- (3) Delivery (or Distribution)

- f) The BTS AdCom, in upcoming strategic planning, will consider the suggestions about the future of broadcasting provided by directional groups at the IBC.



www.ibc.org
the world of content
creation • management • delivery...

- See state-of-the-art technology from 1,000 exhibitors.
- Network with more than 40,000 key players from Europe and 120 countries.
- Take part in the world's best opinion forming conference.
- Take advantage of IBC's free visitor attractions including the Training, Displays and Content for Mobiles Zones.
- Be guided to hot topics and products by experts in our free 'what caught my eye' sessions.

Exhibition 9 - 13 September
Conference 8 - 12 September
RAI Amsterdam

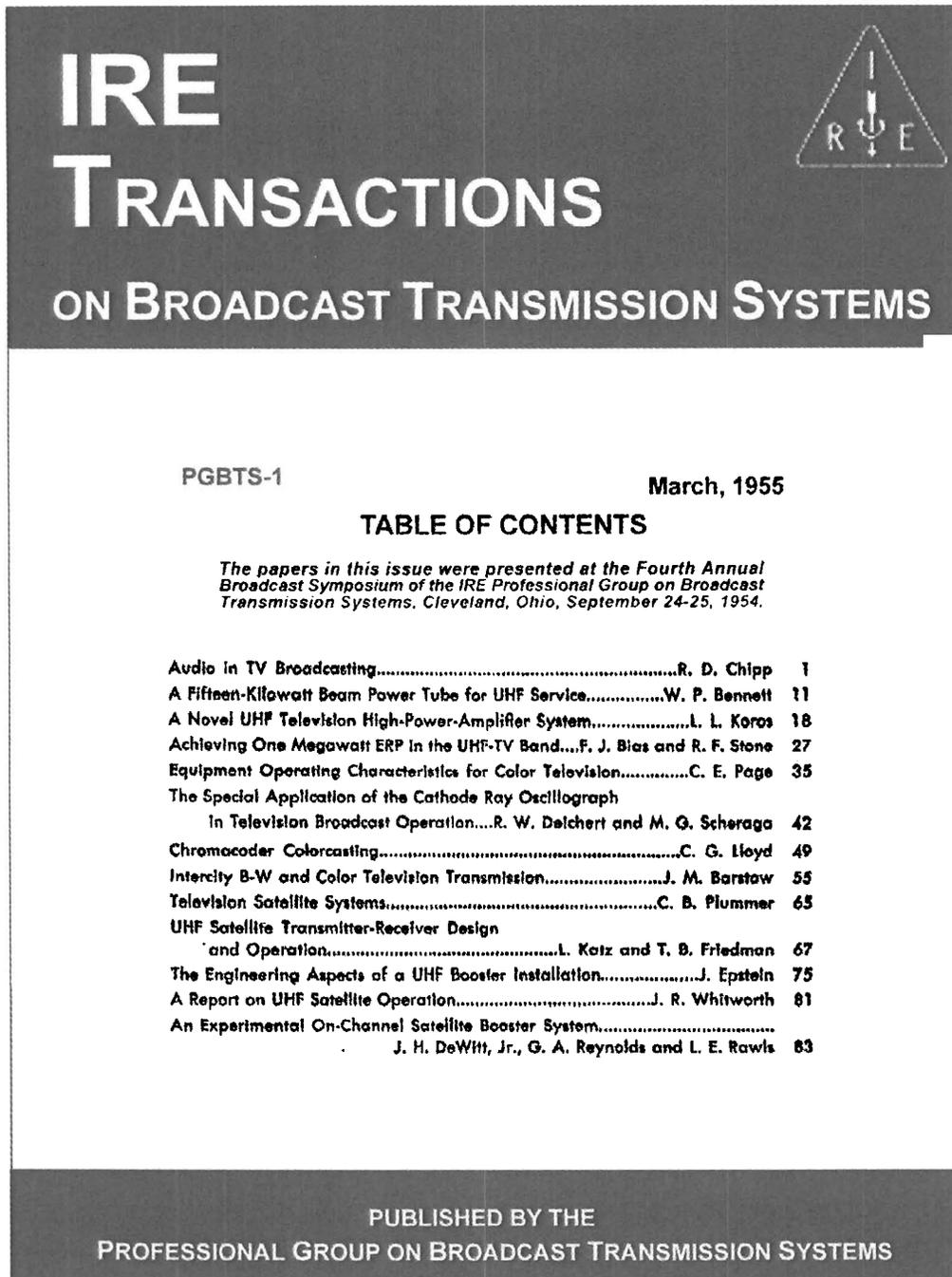
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The 50th Anniversary of the IEEE Transactions on Broadcasting!

The original cover and title page of the IRE Transactions on Broadcast Transmission Systems images provided by The Queens Borough Public Library



This is a touched up image of the cover from the first issue of the IRE Transactions on Broadcast Transmission Systems. Published in March 1955, the interceding 50 years have brought many changes to the Transactions, not the least being the name change to the IEEE Transactions on Broadcasting.

IRE PROFESSIONAL GROUP ON BROADCAST TRANSMISSION SYSTEMS

The Professional Group on Broadcast Transmission Systems is an organization, within the framework of the IRE, of members with principal professional interest in Broadcast Transmission Systems. All members of the IRE are eligible for membership in the Group and will receive all Group publications upon payment of prescribed assessments.

Annual Assessment: \$2.00

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Published by the Institute of Radio Engineers, Inc., for the Professional Group on Broadcast Transmission Systems at 1 East 79th Street, New York 21, New York. Responsibility for the contents rests upon the authors, and not upon the Institute, the Group, or its members. Individual copies available for sale to IRE-PGBTS members at \$2.50; to IRE members at \$3.75; and to non-members at \$7.50.

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Here we show the title page from the first issue of the IRE Transactions on Broadcast Transmission Systems. This identifies the Administrative Committee in March 1955. Note Scott Helt was a member of the AdCom – he is now immortalized in the Society as the namesake of the IEEE BTS Best Transactions Paper Award.

IEEE Broadcast Technology Society Organization

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