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***IN THIS ISSUE:***

2006 American Shortwave Conference Minutes of NASB Business Meeting Minutes of NASB Board Meeting 2007 American Shortwave Conference NASB at EDXC Conference Bhutan Broadcasting Service VT Communications Launches 26 MHz Service New VOA Tour Available Antennas for DRM New President of Continental Electronics Greece HFCC Conference
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**2006 American Shortwave Conference**

DRM and NASB Meetings

By Richard A. D'Angelo

*Reprinted by permission from the NASWA Journal*

**Day One**

Adventist World Radio ("AWR") played host to this year's annual meeting of the US DRM Group and the National Association of Shortwave Broadcasters at their headquarters location in Silver Springs, Maryland on May 11th and May 12th. This was the third annual meeting of the DRM group with about 50 people attending. The meeting was recorded for distribution through the Internet as a Podcast. Did anyone manage to hear it?

Adrian Peterson of AWR welcomed the group and introduced Greg Scott who provided a comprehensive history of the organizations shortwave broadcasting history including a discussion about Adrian's Radio Monitors International that was broadcast from Sri Lanka many years ago.

Mike Adams of the Far East Broadcasting Association and Jeff White of Radio Miami International jointly hosted the proceedings. Mike handled speaker introductions while Jeff handled the behind the scenes activities. Mike informally polled the room noting that this meeting was being attended by broadcasters, transmission providers, transmitter and antenna manufacturers, regulatory industry, receiver manufacturers, radio amateurs, and shortwave listeners.

## The Status of HF and DRM

Adil Mina, a Vice President at Continental Electronics with 40 years of industry experience, began the program. He mentioned that in the last four to five years over 90% of new shortwave transmitting equipment has been purchased by the Chinese (later he mentioned that China will be installing seven 500 KW transmitters in Cuba this year). However, recently other organizations have been doing the purchasing. A lot of recent interest has been generated by DRM and the opening of new markets. Everyone wants to know where are the cheap receivers? Adil showed a Sangean receiver that came off the production line just four weeks ago, which is marketed under the Roberts name. The first production run was 150 but Sangean is now beginning another run. The price was 299 Euros. The next batch of \$200.00 or less is expected to be available by August. He expects them to be available before the IBC conference in the summer.

Adil expects that in three years or less DRM receivers will be \$50.00 or less mainly because of the strong interest the Chinese have in manufacturing them. He noted a 100 KW Continental transmitter and a 500 KW Harris transmitter being copied in a Chinese factory using the Company pictures from the catalog. Plus he saw a Thompson exciter for DRM being copied for future production runs. He expects China's continuing interest in high frequency for communication around the country to help drive cheaper DRM receiver manufacturing.

Adil noted that there seems to be interest in three main areas. The first is an international interest in DRM as shortwave broadcasting moves into the digital world. The second seems to be the special tests in the 26 MHz range with line of sight coverage. Finally, there is a growing interest in commercial competition in high frequency broadcasting. Adil and Dr. Don Messer both believe that the Federal Communications Commission will enable broadcasting to the USA from within the USA. They indicated that five transmitters could cover the entire country. This was later clarified as not through 26 MHz transmitters but through long haul shortwave DRM transmissions.

Adil was very firm that "Shortwave is the only media that you can broadcast from one place to another under your control. Satellite systems can be shut off." There is a strong belief that digital shortwave has a bright future because of listening quality and the potential of the big savings from the reduction of energy usage. At a recent National Association of Broadcasters ("NAB") meeting in Las Vegas experiments were able to cover the entire city with a 30 watt transmitter on 26 MHz with excellent sound quality reported by listeners.

## Introduction of DRM in Region II (the Americas)

Don Messer, Chairman of the DRM Consortium Technical Committee, spoke about the introduction of DRM in the Americas. He firmly believes that within 2 years DRM broadcasts will be available either commercially or as public broadcasting or both with people using affordable receivers.

Don focused on some of the technical aspects of DRM broadcasting from a presentation he made in Las Vegas earlier this year. The ability to multicast 4 programs within a 10 kHz channel has been successfully tested in Mexico. DRM is very versatile with what broadcasters can do for frequency selection and target audiences.

Utilizing the underutilized shortwave broadcasting band at around 26 MHz was selected because a study of frequency usage showed this band to be under utilized. Various tests in this range have been successful leading the DRM folks to focus more of their time and energy on making 26 MHz a prime target for DRM shortwave broadcasting. The potential for 43 non-overlapping 10 kHz channels exist providing plenty of spectrum for high quality radio.

The Mexico City 26 MHz test utilized a 200 watt transmitter (the size of a vending machine) on the edge of town. Engineering analysis determined that 2-6 KW transmitters can cover all of Mexico City. Tests in Europe have provided similar results.

Shortwave listener Ullis Fleming asked about the potential to jam DRM signals. Don responded that the key was the signal to noise ratio. Signals can be jammed but the potential to overcome is there with using higher power. Nevertheless, Don wouldn't go to DRM to overcome jamming but for its programming potential. Four speech programs can be broadcast into one area on a 10 kHz channel simultaneous providing tremendous opportunities for broadcasters to reach target audiences.

### Demonstrations

Ongoing demonstrations using the two Roberts DRM portable radios, without an external antenna, were conducted with mixed results. DRM is either "in" or "out" but not in between. These receivers are also capable of analog shortwave reception. The programs were transmitted by Radio Canada International in Sackville. There was a range of programming available for sampling throughout the day with our own Kim Elliott running the display. When DRM signals are "in" the quality is quite impressive.

### The Latest Prototype Receivers

John Sykes, Project Director Digital Radio for BBC World Service, spoke about receivers. He began with where things were 2 ½ years ago before getting up to the present. He addressed many technical aspects of receiver technology to determine how to maximize the signal to decode the broadcast information.

Sykes is a strong believer in radio although he acknowledged that BBC management is enamored with the Internet for program delivery. Although the ability to "time shift" listening exists with digital delivery, Sykes is convinced that radio has a long future in the marketplace. Ultimately, consumers will want radios that deliver program content without the need to understand the technology behind the scenes. He is convinced that there will be plenty of DRM radios on the market in 2006.

Currently, the BBC is carried by both Sirius and XM satellite radio companies so the urgent need for the BBC to go digital in the USA appears to be minimal at the moment. The two private companies spent billions to get their networks up and running. The BBC is able to use that platform and their combined marketing activities. Things could change but for the moment the BBC seems satisfied to use these two companies as a platform in the USA.

## The Starwaves Radio

Johannes von Weysenhoff, Technical Director of Starwaves GmbH in Germany, spoke briefly about and demonstrated the Starwaves DRM-DAB receiver. They had a receiver on display that retails for about 1,500 Euros in Germany. Johannes offered me a very good price if I purchased three or four thousand at one time. I told him I would get back to him after I talked to Mike Wolfson at the Company Store.

## DRM Receivers

Charlie Jacobson of HCJB Engineering presented a report by Andy Giefer of Radio Deutsche Welle providing comparisons of DRM receivers with different front ends in conjunction with the DReaM software on a PC. Also, he discussed some activities at Radio Deutsche Welle. DW currently transmits 66 hours a day to Europe using DRM so they are gathering substantial experience in broadcasting and monitoring DRM.

## DRM Demonstrations at Winter SWL Festival

Kim Elliott of the Voice of America and NASWA talked about the DRM demonstrations conducted at the Winter SWL Festival each year in Kulpville. He mentioned about our first, although brief, trans-Atlantic DRM reception last March and the uneven results from Bonaire and Sackville.

Mike Adams asked me to address the group about a listeners perspective where I focused on the need for adequate, reasonably priced equipment to be available if DRM listeners are to be developed. Mike mentioned holding special events QSLs and contests to help develop listener interest.

## The Future of U.S. International Broadcasting

Alan Heil, former VOA broadcaster, spoke about the Voice of America and the current state of affairs. Among Alan's topics was the reduction in English language broadcasts and the recent closing of the Kavala, Greece relay site. He talked about the proposals to reduce English even

further and the complete elimination of many other languages. VOA will rank 6th out of the G8 nations in English language broadcasting under these proposals.

Jamming is still taking place for most broadcasts to China but the VOA's English service reaches an estimated two million listeners without jamming. Alan referred to discontinuing the English service to China is the equivalent to jamming ourselves.

He made a strong case for continuing America's voice strong in the post 9-11 era. Today saving the VOA is one of Alan's major retirement activities. He distributed a fact sheet providing a "what to do" list for those opposing these changes at the VOA.

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## DRM Antennas

Gordon Sinclair of TCI International talked about long range, short range and local DRM shortwave broadcasting. His presentation featured pictures of antenna arrays to cover desired regions and target audiences. He discussed some of TCI's antenna experimentation in various locations around the world including the 26 MHz demonstration at the NAB gathering in Las Vegas with good results using just 30 watts. Another case was made for the FCC to allow domestic transmitters to transmit to a domestic audience in the 26 MHz shortwave band.

## Transmitters

Don Sprague of Continental Electronics spoke about implementing DRM on existing transmitters. Compatibility with existing equipment and flexibility concerning future uses of transmitters were important issues. The technical discussion about the DRM transmitter options was of interest to many of the broadcasters present although I glazed over a little. He talked about an experiment his company did at transmitters at Biblis.

## Brainstorming

Mike Adams closed the day's program with a group discussion about implementing DRM in the US. Don Messer focused his comments on instituting DRM broadcasting in the US to a US based audience. Don concentrated his remarks on the use of 26 MHz, which was a regular theme of this meeting, to the NASB broadcasters. He indicated that National Public Radio ("NPR") expressed strong interest at the NAB meeting in Las Vegas in DRM. NPR has informally committed to doing 26 MHz tests in major metropolitan areas. Adil Mina talked extensively about the positive coverage DRM received at the NAB convention in Las Vegas. Like Messer, he sees a great future for 26 MHz and the possibility of testing for NPR provides an excellent opportunity to test DRM. He also talked about being approached by a commercial medium wave company about DRM testing. Apparently, the opportunities to test DRM in North America are growing rapidly. Brazil, Canada, Mexico and US medium wave tests are scheduled for the rest of 2006. Adil's a great salesman for his company and he was certainly doing his best to get the NASB thinking about doing some planning. Johannes von Weyssenhoff, who is part of the German DRM Forum, discussed how that group functions and compared it to the US DRM Group.

## Conclusions

I found myself "drafted" to be Chairman of a DX'ers/Listeners Liaison Committee. I'm not sure what's involved but as a regular attendee of these gatherings I sense I have now become involved. Don Messer was similarly drafted as the Chairman of the Regulatory Committee. There are other established committees and Chairs that are listed on the consortium's website. Adil Mina and Don Sprague volunteered to jointly become Chairman of DRM USA assuming Jeff White needs to step down based on NASB responsibilities. The next day Jeff was selected as the new president of the NASB.

A very special thank you goes out to Adrian Peterson and the fine folks at AWR that hosted the event and provided a satisfying luncheon buffet. I had the pleasure of lunching with George Jacobs (formerly of the Voice of America, a WRTH contributor, a legend in the broadcast field, and now a semi-retired radio consultant), a former Brooklyn boy like myself and Alan Heil (also, formerly of the Voice of America). The conference facilities were first class making the day quite enjoyable.

The day's activities were well worth attending as experts in the evolving DRM field shared their knowledge and experiences as this new technology emerges. However, not everything was all technical. Although receiver progress is slow in developing, it appears that the pace is picking up with many of the engineers predicting cheap portables coming in the next two years. In the meanwhile, early adopters will need to have a little bit of an experimentation mindset as the technology develops. However, not every moment was a techie adventure. At one point I heard George Jacobs ask Adrian Peterson, "How is the QSL card collection?" They continued talking about QSL collecting and which stations have been difficult and which one's have been responsive over the years. There is a little bit of radio hobbyist in all shortwave radio aficionados.

## Day Two

Day two started off with opening remarks by Doug Garlinger, NASB President, who was the moderator for the NASB meeting. Many of the same people that attended Day One activities were present again with many new faces so some of the material was duplicative.

The first speaker was Don Messer, NASB Consultant and Chairman of the DRM Technical Committee with a brief overall status of the US position on the 2007 World Administrative Radio Conference ("WRC07") and a brief update on DRM for those that were not present for the previous day's session. The themes of 26 MHz and "like an FM station" were prominent. He elaborated further on 30 days of 26 MHz testing in Mexico City last summer with successful results. DRM for local use has overtaken long haul shortwave transmissions that use sky wave propagation. More discussion was focused on getting FCC approval of domestic shortwave to enable the roll out of digital shortwave in North America.

Walt Ireland of the American Radio Relay League and Chairman of the US Working Party -GE ("WP-6E"), Vice Chair of Informal Working Group-4 ("IWG-4") and a retired Voice of America employee, reported on the results of recent IWG-4, ITU-R, WP-6E and SG-6

meetings. He talked about the WRC efforts of broadcasters to obtain greater use of the 4 to 10 MHz spectrum. He talked about the International Broadcasting Board's ("IBB") seeming lack of interest in high frequency broadcasting as priorities change. Therefore, IBB did not request additional spectrum in the HF bands. The overall US position isn't firm as all the spectrum users (NASB, ARRL, Department of Justice, emergency services, etc.) can not agree on allocation needs. Post 9/11 demands for high frequency spectrum have created some of the problems. Further remarks talked about broadband over power line efforts that have manufactures attempting to notch out interference in the amateur bands. Work is continuing internationally on this matter. If WRC decides to give broadcasters additional spectrum, Walt has no idea what the US position would be. During the question and answer session he mentioned he was very impressed with the development of DRM in the last twelve months. He also spoke of the users of DRM in the amateur world today.

Gary McAvin from WMLK gave a report about one of my favorite subjects, the Winter SWL Festival. WMLK represented the NASB at last year's FEST. He called it a very productive event and with individuals seeking knowledge and information. The Scanner Scrum, Uncle Skip Arey and Tom Swisher and their activities were discussed. He talked about the importance of keeping listeners involved in the process because politics does come into play (WMLK and WRMI have lost frequencies). He requested other NASB members to attend because of the value of the meeting. Keep the shortwave listeners involved because they provide valuable technical feedback. Solomon Meyer talked about listener equipment set ups at the Winter SWL Festival and mentioned that receiver manufacturers should coordinate something, especially in DRM, to reach this group.

Stephen Hegarty, Deputy Research Director of Intermedia, spoke about comparative trends in shortwave ownership and listening in eastern Europe, east and southeast Asia, the Middle East and Africa. Shortwave radio ownership is on the decline worldwide because of more local choices except in Africa. Shortwave does provide a niche with heaviest users tending to be well educated men. Specifics were offered about Bosnia, China, Kuwait, and Nigeria. Throughout sub-Saharan Africa radio remains the most widely accessible and heavily used medium. It is very much a mass medium and is used most often for news, music and religious programs. Bosnia reflects people turning to the Internet to sample radio programming. Adil Mina questioned the China statistics because his travels in China relate different facts reflecting the wide use of shortwave in the provinces. Hegarty defended his research as representative of urban and rural populations. Don Messer questioned the rural representation based on his prior VOA experience with similar research studies where shortwave tends to be more heavily used. Kim Elliott felt the research was based on a good sampling based on his prior research experiences. Other transmitter manufacturers suggested there has to be a bigger rural market based on their transmitter sales to China for domestic usage. It was a lively exchange of opinions and facts. Hegarty was asked a question by Mike Adams about North American shortwave listenership. He indicated Radio France was interested in data recently but none existed. He talked about the time might be right to conduct such a survey. Mike asked for the NASB to be considered in the process.

Steve Claterbaugh of Comet North America, talked about what his company can do for broadcasters with repairs or equipment maintenance.

John White of the US division of Thompson Broadcast and Multimedia (formerly Thales) talked about Thompson's latest DRM activities and recent organizational changes at his company. He noted that many of his company's transmitters installed around the world were capable of being modified for DRM use.

John Sykes, Project Director Digital Radio for the BBC World Service, returned to discuss what the BBC is doing with DRM. He gave a brief overview of Thursday's presentation for those that were not present for that session. He talked about DRM use in low population areas where dense networks don't make much sense or city-wide with FM like service on 26 MHz. John included mobile audio samples recorded by Peter Senger of Deutsche Welle while driving from Germany to Belgium.

Tom Lucey of the FCC International Bureau offered some comments about the June frequency coordination meeting in Hilversum, Holland. The next HFCC will be in Greece in August so he requested proposed schedules from NASB members by June 29th.

The brief public session in the afternoon featured an informal question and answer session with some IBB representatives. This was followed by Adrian Peterson, AWR International Relations and NASWA Editor, who presented "Wandering the World with a Radio." Over the years, Adrian has been a monitor for many broadcasters while stationed overseas (VOA, BBC, DW, FEBA Seychelles, and Radio Australia). Adrian has in his possession a 1902 radio card of Marconi believed to be the oldest known radio card.

That was the last "open" presentation of the meeting. The NASB Business Meeting began at 1:30 PM. During that session, Jeff White was selected to be the new NASB president. The two-day combined meeting of the US DRM Consortium and the NASB was a wonderful opportunity to hear what was going on in the shortwave world from North American broadcasters and, equipment manufacturers.

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## **Minutes of NASB Business Meeting - May 12, 2006**

The meeting began at approximately 1:45 p.m Eastern Time.

Attendance:

Mike Adams – FEBC

Ed Bailey - NASB Attorney

Charles Caudill – KNLS

Kim Elliott – IBB

Doug Garlinger - held proxy for WYFR

Charles Jacobson - representing associate member HCJB

Benn Kobb

Ludo Maes - representing associate member TDP

Gary McAvin – WMLK

Elder Jacob O. Meyer – WMLK

Solomon Meyer – WMLK

Adrian Peterson – AWR

Jeff White - WRMI (also held proxy for LeSEA Broadcasting)

Thais White – WRMI

A quorum of the membership was present.

Doug Garlinger conducted the meeting. He explained that he had the proxy for WYFR, and that Jeff White had the proxy for LeSEA Broadcasting.

Jeff distributed the minutes from last year's NASB business meeting and the Treasurer's report from Dan Elyea. Elder Jacob O. Meyer made a motion to approve the minutes from last year. Charles Caudill seconded the motion which was approved unanimously.

Elder Meyer made a motion to approve the Treasurer's Report. Mike Adams seconded the motion, and it passed unanimously.

Elder Meyer made a motion to give special recognition to Dan Elyea for his hard work as Secretary-Treasurer. Charles seconded the motion, and it passed unanimously.

Jeff White gave a special welcome to two NASB associate members who were attending the annual meeting for the first time -- Andrey Nekrasov and his colleague from Beth Shalom Center Radio, and Ludo Maes of TDP -- as well as to observer Gerald Theoret of CBC/Radio Canada International.

Doug explained the current vacancies on the board of directors caused by the resignations of Dennis Dempsey and Paul Hunter. He also explained that the Board as a nominating committee was recommending that Charles Caudill of KNLS be elected to a second three-year term on the Board, and that Jeff White of WRMI be elected to a three-year term on the Board. The Board also recommended Adrian Peterson of Adventist World Radio to fill the remaining year of Paul Hunter's Board term, and Glen Tapley of WEWN to fill the remaining year of Dennis Dempsey's Board term. Doug invited other nominations from the floor, but there were none. Elder Meyer made a motion to close the nominations, which was seconded by Mike Adams, and passed unanimously. Elder Meyer moved to approve the slate of candidates nominated by the Board as described above. Charles Caudill seconded the motion, and it was approved unanimously.

Doug Garlinger praised the efforts of Don Messer and Ed Bailey regarding proposed HF broadcast band expansion, and the defense of our use of out-of-band frequencies. Ed Bailey reflected on the accomplishments of the NASB since its founding, and its potential for the future.

Mike Adams commented that the extra funds spent during the past year on projects such as IWG-4 participation were money that was strategically very well-spent, and he noted that we still have sufficient reserves in the bank.

Elder Meyer suggested sending a letter of thanks to AWR for their hosting of this annual meeting and their hospitality.

There was a brief discussion about NASB's participation in HFCC conferences -- the benefits of participation, what the NASB representative at the conferences needs to know and do, etc.

A brief discussion followed about next year's annual meeting venue. Jeff reported that a semi-official inquiry had been made to the IBB to see if it would be possible to meet at its building in Washington.

The discussion then turned again to NASB participation in HFCC conferences. Doug pointed out that we had worked hard to gain the right to participate in these conferences as part of the FCC delegation and to become members of the HFCC. Jeff mentioned that besides the technical participation in the form of frequency coordination and collision resolutions -- especially for our members who do not have their own representatives at the meetings -- there is also a very important political and public relations aspect to our participation in the HFCC conferences. Ed Bailey agreed, and said that our visibility at the HFCC conferences leads to credibility and influence. Jeff said that he believes we have gained a great deal of credibility within the HFCC since we began attending the conferences regularly in 2001 in Montreal.

Jeff called on NASB members and associate members to send their newsletters and news releases to him or Dan Elyea regularly, so we can include some of this information in the NASB Newsletter.

Charlie Jacobson of HCJB offered their Engineering Center in Elkhart, Indiana as a venue for a future annual meeting of NASB and USA DRM. They have facilities to accommodate around 45 people, with a multipurpose room, multimedia equipment, etc. Jeff suggested that if the IBB option does not work out for next year, the NASB should contact Charlie regarding this offer.

Elder Meyer made a motion for the group to express its appreciation for Doug's tenure on the Board and as President. Mike Adams seconded the motion, which passed unanimously.

Doug indicated that he is willing to continue to maintain the NASB website..

Mike Adams made a motion to adjourn. Elder Meyer seconded this motion, which passed unanimously.

The meeting lasted just over 40 minutes.

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## **Minutes of NASB Board Meeting**

The meeting took place following the NASB Business Meeting, at approximately 3:00 P.M. EDST on May 12, 2006.

Present were Mike Adams, Charles Caudill, Elder Jacob O. Meyer, Adrian Peterson and Jeff White.

The first item on the agenda was the election of officers. Jeff White was elected President, to replace Doug Garlinger who did not run for re-election to the Board. Mike Adams was re-elected Vice President. Dan Elyea was re-elected Secretary-Treasurer.

Dan was not present but had expressed his willingness to continue as Secretary-Treasurer. Thais White of WRMI was elected Assistant Secretary-Treasurer, a position which Jeff White had previously held.

Following elections, the Board discussed the possible locations for next year's annual meeting. It was decided that we would wait until September 1, 2006 at latest to see if it might be possible to meet at the IBB in Washington. If the IBB says no, or does not communicate a decision by September 1, the Board decided it would then ask Charlie Jacobson of HCJB's Engineering Center in Elkhart, Indiana if the Engineering Center might still be available as a meeting location. Charlie had offered his location for a future annual meeting of NASB at the business meeting earlier on May 12.

Discussion then turned to who the NASB should send as its official representative at the next HFCC Conference in Greece to be held August 28-September 1, 2006. It was decided that Jeff White would send an e-mail to all NASB member stations to see who might be willing to attend the HFCC Conference on behalf of NASB under the current policy guideline of paying one-half of all expenses for one person up to a maximum of approximately \$1200. Then the Board will make a final decision.

Regarding the ongoing IWG-4 process, the Board decided that it would wait for any indication that might be forthcoming from Don Messer and/or Ed Bailey as to our need to attend future meetings.

The Board discussed the possibility of resuming "Voice of the NASB" DRM shortwave broadcasts for a frequency season after the anticipated new DRM receivers come out this summer. It was decided that we would wait until September 1, 2006 to see if the new radios have really become available on the European market. If so, we would consider transmitting NASB DRM programs for the B06 season (beginning late October) probably beamed to Europe, which will initially be the largest market for DRM receivers. Quotes may be sought for DRM transmissions through VT Merlin, T-Systems, Austria and other providers.

Finally, Jeff White mentioned that he would like to propose finishing the NASB publicity campaign which began during his first presidency a few years ago. We have already taken the NASB exhibit and brochures to the largest shortwave listener/DX gatherings in North America and Latin America, but we never attended the largest such gathering in Europe -- the European DX Council Conference -- because the EDXC did not have a meeting that year. This year, the EDXC Conference is scheduled for October 19-22 in St. Petersburg, Russia. Board members expressed interest in having an NASB presence at this meeting, and Jeff White was asked to prepare a revised proposal and budget for this participation which will be reviewed by the Board. Mike Adams would be willing to go to St Petersburg to help represent NASB if it fits his schedule in October. As Mike lives in the UK, flight costs would be less than coming from the USA. Normal London-St Pete cost is \$300-400. Charles Caudill indicated they have a follow up office in St Pete and their people there might be able to help as well.

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## **2007 NASB Annual Meeting to be held in Elkhart, Indiana**

NASB has accepted an offer from associate member HCJB to host next year's annual meeting at its Engineering Center in Elkhart, Indiana on Friday, May 11, 2007. HCJB will also host the USA DRM Group's 2007 annual meeting on Thursday, May 10 in the same location.

Elkhart is located in northern Indiana, about a half hour's drive from South Bend airport. It is also possible to fly into Chicago, which is about three hours away by car or bus, or 45 minutes by short commuter flights.

This is the first time in NASB's history that the annual meeting will be held outside of the Washington, DC area. This year's meeting was hosted by Adventist World Radio at its world headquarters in Silver Spring, Maryland -- a Washington suburb. At the opening of this year's meeting, AWR officials expressed their hope that other NASB members and associate members would offer to host future annual meetings.

HCJB has built many of its own transmitters -- including 500 kilowatt HF units -- at the Engineering Center, which were later put into service at the station's location in Ecuador. The Elkhart Engineering Center has also been in the forefront of research and development on things such as DRM -- Digital Radio Mondiale.

More details about the 2007 annual meeting will be announced in the near future.

## **NASB to Participate in European DX Council Conference**

As part of NASB's worldwide publicity campaign, the Association will have a display at the 2006 European DX Council (EDXC) Conference in St. Petersburg, Russia October 19-22. The display will feature photos, brochures and souvenirs from member stations and some associate members as well.

Three NASB representatives will attend the EDXC Conference. Mike Adams of Far East Broadcasting Company, who is NASB's Vice President, plans to give conference attendees an introduction to the NASB. Adrian Peterson of Adventist World Radio, who is a member of our Board of Directors, is preparing a presentation about "The World's Oldest Radio Cards" for the meeting. And a representative of the St. Petersburg listener follow-up office of NASB member World Christian Broadcasting, which operates KNLS in Alaska, is also planning to attend the conference.

The EDXC is the umbrella organization for shortwave listener and DX clubs throughout Europe. This is the first time in the EDXC's history that its annual conference has been held in Russia. NASB is participating in this conference to introduce the Association and its members to shortwave listeners, DX club leaders and publication editors from around Europe. In previous years, the NASB has had similar exhibits at the Shortwave Listeners Winter Fest in Pennsylvania and the Mexican National DX Meeting in Mexico.

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## **Bhutan Broadcasting Service Enhances National Shortwave Coverage**

*Article reprinted from Thomson Broadcast & Multimedia Radio News Spring 2006*

Bhutan Broadcasting Service (BBS) recently awarded Thomson for the supply and installation of new shortwave transmitting equipment to modernize its Sangaygang Station and improve the nationwide service.

Scope of delivery includes the DRM ready Thomson 100 kW shortwave transmitter TSW 2100D, Thomson Skywave 2000 DRM frontend equipment Stratus (DRM Modulator/RF Exciter) and Cirrus (DRM Encoder/Multiplexer), a new quadrant antenna HQ 1/0.3, 5/6 MHz, 300 ohm as well as station auxiliaries.

BBS will be broadcasting on the frequencies 5035 kHz, 6035 kHz and 7500 kHz. The existing 50 kW shortwave transmitter, installed and taken into operation at Sangaygang by Thomson in 1988, is still being used. The Sangaygang Station is located 2660 m above sea level, close to the capital city Thimphu.

With an area of 47,000 square miles and a population estimated at around 750,000 inhabitants, more than 90% of Bhutan's population is living in rural areas. The terrain is mostly mountainous, making a widespread FM coverage very cost-intensive. A total of nine FM stations are located around the urban areas. Thus shortwave is clearly the most important media for nationwide coverage. BBS broadcasts in Zhongka and Nepali, the 2 main local languages.

Thomson won this project against international competition, whereby a main decision factor was the excellent after sales service offered by Thomson since 1988 and the trust put in the company's proven digital DRM expertise.

The new equipment is scheduled to go on air beginning of 2007.

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## **VT Communications Launches Pioneering DRM 26MHz Service in London**

PRESS RELEASE

Tuesday 30<sup>th</sup> May 2005

VT Communications continues to push the boundaries of digital radio broadcasting by launching its dual-channel Digital Radio Mondiale (DRM) transmission service from Crystal Palace in South East London into Greater London. Partnering with Deutsche Welle and UBC Classic Gold VT Communications can now provide two discrete broadcast services over a single 20KHz transmission band centred at 25.7 MHz. This is the first time the double channel mode of DRM has been used for extensive field trials and further enhances VT Communications digital offering.

The 26 MHz band is designated as an international broadcast band, but is underused and could also be used to provide local “FM” type coverage. Demand for both FM (88-108 MHz) and DAB (band III) spectrum in the UK is very high, and DRM could offer broadcasters access to additional spectrum in addition revitalizing existing MF and LF frequencies with enhanced audio quality.

The ability of the 26 MHz band to provide local and digital radio coverage adds to VT Communications existing regional and international DRM capability. In 1999 VT Communications started regular “ITU compliant” DRM tests from the Rampisham transmitter site in Dorset UK, to Europe. In 2003 a new high power MF transmitter was added to the portfolio, which now transmits the BBC World Service in digital quality to the Benelux countries. In March 2006, VT Communications announced a significant investment in a new high power HF transmitter at its Woofferton (Shropshire, UK) transmitter site. This will be operational by mid 2006.

VT Communications are also investing in a new broadcast centre designed to distribute audio in a totally digital format from studio to listener, including distribution of DRM. This will eliminate audio degradation caused by repeated conversion between analogue and digital, a surprisingly common problem with digital transmissions. The broadcast centre will also be able to format & distribute audio via a number of different routes, including archiving, podcasting, content repurposing and audio on demand. The 26 MHz service in London will showcase the broadcast centre technology, as data channels, Electronic programme guides (EPG) and a 3<sup>rd</sup> audio service are all scheduled for test during the course of 2006.

“VT Communications ongoing investment in DRM 26MHz and HF capability is part of our new Global Media Network” says Bryan Coombes, General Manager Broadcast at VT Communications. “This underlines our commitment to provide a digital service to satisfy all of our customers’ broadcasting requirements, from local through to truly international coverage”.

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## **New VOA Studio Tour Available**

Joe O'Connell, Director of the Office of Public Affairs at the Voice of America, writes:

"We recently opened a new VOA Public Tour, and I wanted to send you the following information about it. It's possible to make reservations online at [www.voatour.com](http://www.voatour.com) or by phone at (202) 203-4960. We hope that your colleagues and members of the Association will stop in and take the tour when in Washington."

The tour information is as follows:  
Experience Washington's Newest Live Studio Tour  
See News Happen LIVE at the VOA Studio Tour  
Visit us 3 blocks from the Capitol

*It's 2 minutes to air time. The guest is running 5 minutes late. (And did we tell you the broadcast is completely in Chinese?)*

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## **Antennas for DRM**

*Summary of presentation by Gordon Sinclair of TCI International at the American Shortwave Conference 2006*

Shortwave broadcasting in DRM (Digital Radio Mondiale) format can take place between 2 and 26 MHz, providing local, regional, national or global coverage. Antennas for regional, national or global coverage can be located far from the intended audience area on relatively inexpensive land. An antenna for local coverage using 26 MHz must be located within line of sight of the audience area, like FM and TV. These local transmissions would use low power (100 to 1000 watts).

For long range shortwave coverage (thousands of kilometers), transmitters of 50 to 500 kilowatts are used in a frequency range of 6 to 21 MHz. This requires antennas with directional patterns and low take-off angles. Typical antennas used include a dipole array (with towers 120 meters tall) and a high-gain log periodic (with towers 70 meters tall). An example of long range coverage using DRM would be a transmit site of Mexico City with a 500-kilowatt transmitter using a 4/4/0.5 dipole array antenna to cover all of the West Coast of the United States (a range of 3800 kilometers). This would produce a signal strength of 55 to 65 dBu (560-1780 uV/m).

Regional shortwave coverage using DRM would be for distances of 100 to 1500 kilometers using 10 to 100 kilowatt transmitters on frequencies between 2 and 18 MHz. This requires antennas using either directional or omnidirectional patterns and high take-off angles. Typical antennas for this type of broadcasting would include a broadband dipole (25 meters tall) and a short range log-periodic (40 meters tall). A theoretical example of regional coverage would be a transmit site of Syracuse, New York using a 50-kilowatt transmitter and an omnidirectional HF

antenna [not permitted at this time by FCC rules]. This would cover New England, New York, New Jersey and the Mid-Atlantic states (0 to 600 kilometers) with a signal strength of 50 to 55 dBu (320-560 uV/m).

26 MHz local coverage with DRM provides line of sight coverage, similar to FM. The transmitter power is 100 to 1000 watts, covering a radius of 50 to 75 kilometers. The antenna for this type of local DRM broadcasting must suppress the skywave coverage to avoid interfering with distant stations.

Field tests were conducted in the San Francisco area in December of 2005, and they verified the coverage of a TCI skywave suppressing antenna. The antenna location was Milpitas, California. The antenna elevation was 100 meters above sea level using 150 watts on 26 MHz. Signal strength was measured at 23 locations.

At the recent NAB Convention in Las Vegas, a 26 MHz demonstration was conducted at a site 20 kilometers from the Las Vegas Convention Center using a Transradio exciter, a 30-watt CEC amplifier and a TCI skywave suppressing antenna. This provided excellent signal strength at the Convention Center and local hotels.

A propagation analysis using VOACAP has been performed to compare the TCI skywave suppression antenna with a standard vertical dipole. Conclusions drawn from this analysis are that Sporadic E propagation could cause some interfering signals at times of high sunspot numbers in the winter. The skywave suppression type of antenna will not propagate sufficient signal to cause interference. Standard dipole or yagi antennas will cause signals to propagate at higher levels which may cause interference. A transmitter power of 300 watts appears to be the optimum level to ensure interference is not a problem, even using the skywave suppression type of antenna.

Examples of opportunities for DRM in the United States include:

- a) using the 26 MHz band, doubling the number of available FM-like signals in a city.
- b) covering the entire U.S. with a small number of HF stations at a tiny fraction of the cost of a satellite service or multiple FM/AM stations. This could be done from within the U.S. if the FCC authorizes domestic shortwave broadcasting, or from outside the U.S.

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## **Robert "Tony" Grimes Named New President of Continental Electronics**

*We have received the following news release from Adil Mina of NASB associate member Continental Electronics.*

DALLAS, TX — (June 14, 2006) — Robert A. "Tony" Grimes has been named president of Continental Electronics, a world leader in providing commercial, defense, government and scientific industries with the most reliable high power RF products on the market. Grimes is responsible for all day-to-day operations. Grimes brings to Continental Electronics a proven background in business management and program planning for wireless products.

Grimes' background includes more than 20 years of engineering design, marketing and sales, organizational development and presidential leadership, making him the ideal candidate to further develop Continental Electronics' role in the ever-growing digital marketplace. He comes to Continental Electronics after serving as president of TRAK Microwave Corporation and on the board of directors for Radyne Corporation. He also served as manager of international projects for Harris Corp.

"Continental Electronics has an incredible history of innovation with a strong worldwide reputation. With the digital revolution sweeping into U.S. and international markets for broadcasting and scientific applications, we have tremendous opportunities to expand our leadership role in cutting edge technologies such as HD Radio and HF/DRM systems," he said. "Continental is a good company with good people making good solid products, and I am proud to be at the helm. My main objective is to take this company to the next level as we continue our excellence in customer service."

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## **HFCC B06 Conference to be held in Athens, Greece**

The B06 High Frequency Coordinating Conference (HFCC) will take place in suburban Athens, Greece August 28-September 1, 2006. The host for the conference is ERT Hellenic Radio and Television, which operates the overseas service Voice of Greece. Shortwave frequency planners from around the world will take part in this meeting, which is designed to coordinate shortwave frequency usage and eliminate potential interference before it happens.

As usual, the NASB will participate as part of the FCC delegation. NASB recently became a member of the HFCC. The new NASB President, Jeff White, will attend the meeting. Early information is that member stations KTWR-Guam and KNLS-Alaska will also have representatives in the FCC delegation. Some other NASB members and associate members also attend as part of other delegations to the conference.

More details will soon be available on the HFCC website ([www.hfcc.org](http://www.hfcc.org)), and will be published in the next editions of the NASB Newsletter.

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