

The most desolate and remote IOTA on the globe: Bouvet Island, AN-002

January 2018 will mark the tenth anniversary of the last DX activation of Bouvet Island, AN-002 by ZS6GCM operating as 3Y0E. Presently, Club Log shows Bouvet as the #2 Most Wanted.

Bouvet Island is 54.33° south, 3.28° east. The IOTA Directory lists the island as one of the Norway-Antarctica group – AN-002. As a sub-Antarctic entity in the Atlantic Ocean, it is 2,700 miles from the southernmost tip of South America and 1,000 miles from Antarctica. The uninhabited island is 97% ice covered. Temperatures can range from -25°C to -65°C, with wind chill possibilities. Summer occurs in late January and early February. Temperatures then are typically between 0 and 4°C. Politically, Bouvet Island is a Norwegian dependency. It serves as a nature preserve with one operating weather station.

The 3Y0 IOTA history is interesting. Over the last half century, there have been six operations on the island. The earliest history on the island recorded by IOTA Ltd is Gus Browning, W4ECI (SK) in 1962. The most recent by Petrus, ZS6GCM, operating as 3Y0E in 2008. Dr Chuck Brady, N4BQW (SK) went to Bouvet Island in 2000. Others include 3Y5X (LA1EE & others) in 1990; 3Y1VC (LA1VC) 1979; 3Y5DQ (Thore, LA5DQ) 1978.

The team

Planning and administering a DXpedition to such a place requires seasoned and tested DXers. Therefore, it is no surprise that this undertaking, 3Y0Z, is headed up by Bob Allphin, K4UEE, Ralph Fedor, KOIR and Erling Johan Wiig, LA6VM, the same leadership as for the Peter 1 DXpedition of 2006. Ralph and Bob were on Navassa and Amsterdam Island as well as the HKONA, Maplele Island DXpedition in recent years.

This event will take place around the last week of January 2018 into mid-February.

The team will sail from King George Island for a 10 – 12 day voyage to Bouvet Island. The plan is to remain active and on the air on the island for between 14 to 16 days.

The team consists of 20 seasoned and experienced operators recruited from around the world. Twelve are from the USA, two from



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Asia, one from Canada and five from Europe. Additionally, there are five pilot stations and other support people, in areas of IT and web; fundraising; propagation prediction (Stu, K6TU) and, of course, the QSL manager (Bob, N200).

The operators are Nodir, EY8MM; Pista, HA5AO; Hal, JR4OZR; Ralph, KOIR; Bob, K4UEE; Craig, K9CT; Erling, LA6VM; Just, LA9DL; George, N4GRN; Arnie, N6HC; Jim, N9TK; Jeff, NM1Y; Michael, PA5M; Hawk, SM5AQD; Keith, VE7KW; Glenn, WOGJ; Gregg, W6IZT; Paul, W7IV; Hal, W8HC and Jerry, WB9Z.

Travel

Travelling from around the world, the group will come together in Santiago, Chile. They will then take a 3½ hour flight to Punta Arenas, followed by a flight across Drake Passage to King George Island. Finally, a week and a half boat ride to Bouvet Island. A vessel owned by Chilean firm Aerovias DAP, carrying two helicopters, will be used for the voyage. The helicopters will scout out the best radio station site, then transport equipment and supplies onto the island. DAP was the firm used for Peter 1 some years earlier. To reach the island, they will need to anchor off-shore. The operators will be lifted onto the island by helicopter.

Planning

This activity began in 2007, when team leadership first secured the operating licence and landing permit. Training took place the week of 9 September 2017 in Atlanta, GA. Topics included discussions of frequencies to use; splits and limits of split; DQRM practices; numbers of hours per shift; best folks for each band and mode; housekeeping duties; sleeping quarters; food supplies. They practiced with the EME equipment, ran the generators, took inventory and packed shipping containers. Additionally, they got to know each other, and for many, the new folk.

Propagation

Propagation prediction videos were created, based upon the work of Stu, K6TU for the eight HF bands plus 60m. The predictions were based upon US National Oceanographic and Atmospheric Administration sunspot estimates for January 2018 timeframes. These videos are currently operational on the 3Y0Z website under the Propagation bullet.

The operating site on the island will be on

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the NE side of the glacier at around 600ft. The Norwegian Polar Institute assisted the 3YOZ team in identifying three possible sites to build the camp and station.

Funding

This DXpedition is expected to be the costliest operation in the hobby's history. At the time of this writing, the estimates are around \$750,000. Around half of the cost, \$400K, is coming from the team themselves. Then, foundations sponsoring the hobby such as the Northern California DX Foundation and INDEXA have been generous. NCDXF, in fact, recently gave \$100,000 to the effort. Other groups have also made significant



Inside the partly filled container.

contributions, including smaller DX clubs such as the Southeastern DX Club in the USA, which, to date, has contributed \$5250. Over the last half decade, with the advent of new technology, DXpeditions have been able to partially 'reverse fund' their operations. Club Log and PayPal, in combination, when used to verify QSOs and order QSLs can provide a good source of funding and additional donations. The team expects to see a good return in this matter – please contribute. The team has souvenirs for sale on its website.

Outfitting

The major equipment, including transceivers and amplifiers are loaned by manufacturers. Flex Radio Systems is providing Flex 6500 and 6700 SDR transceivers and Maestros. ACOM Amplifiers is providing their new 1500W amplifiers. DX Engineering designed some antennas and provided materials and ancillary, but essential peripherals including coax. Disc-O-Bed donated cot systems for sleeping arrangements. Equipment is being wrapped and packed into water resistant cases at the Atlanta Georgia staging area for transport abroad, assisted by the SEDXC.

Those HF beams that performed well on Amsterdam Island (FT5ZM) will also be used on Bouvet. They intend to locate them on a

line NE to SW. This will keep the antennas from beaming into each other when aimed at Europe, Japan, and North America. Verticals for 160, 80, 60, 40 and 30m will be located to minimise interaction.

See www.bouvetdx.org for frequency details as the DXpedition begins. The team will make decisions about splits based upon their operating preferences, but will honour limited splits of 10kHz for CW and 20kHz for SSB. They will also operate RTTY and EME on 6 and 2m. There will be 12 HF stations and two EME stations operating during their peak times, sunset to midnight.

The team will be doing log uploads to Club Log every two to five minutes, satellites permitting, thus allowing for verification of the QSOs. QSL card requests can then be done via Club Log, or direct to N200. The logs will be uploaded to Logbook of the World within 6 months of their going QRT.

Thanks to Bob Allphin, K4UEE for his assistance with and proof reading of this article.

Dr Jeff Cantor, K1ZN, is an avid IOTA chaser and DXer. He is the author of *Adventures in DXing*. K1ZN is a Director of the IOTA Programme. He is also the Treasurer of the Southeastern DX Club, Atlanta Georgia USA. YL Ruth provided major editorial inputs.

RF Interference (RFI) from VDSL (continued from page 48)

signals of levels lower than the received VDSL RFI level. For each 10dB increase in this VDSL level above the background noise level, over 80% of signals present are obscured. At some locations, only a few percent of the signals present (the strongest ones) can be received in the impacted bands, the rest are masked by the noise from VDSL.

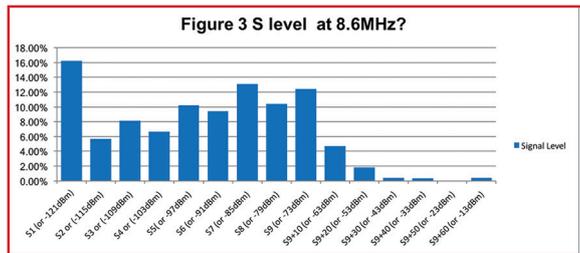
To persuade Openreach to take necessary action we need Ofcom to recognise the scale of the Harmful Interference. Ofcom will only act against actual Harmful Interference (degraded, obstructed or repeatedly interrupted communication signals). One way to show actual harm is to set up two receivers near to each other, one suffering from VDSL RFI and the other not. Then automatically log signals received at both and compare to find which are not received because of Harmful Interference – 'Here and There' testing.

universally notching 10.1 to 10.15MHz with guard-bands and by increasing the D1 to U1 guard-band to always protect 3.7 to 3.8MHz emergency frequencies.

- Selectively notch amateur bands in downstream (particularly 14MHz band) at affected premises.
- Reroute the overhead cables so they are further from the antennas when necessary.
- Provide FTTP instead of FTTC at problem locations.

So what are the next steps?

The RSGB will conduct more 'drive-by surveys' to measure the variation in VDSL RFI from a



moving vehicle and encourage members to do 'Here and There' testing to demonstrate Harmful Interference. Ofcom will hopefully visit some of the survey sites to witness the problems. Then we must campaign for Openreach to take action.

More information can be found on the EMCC pages of the website <http://rsgb.org/main/files/2017/08/2017-RFI-Update-RSGB-Convention.pdf>

What can Openreach do to reduce RFI?

- Improve Line Balance where necessary – a mechanism is in place to request line balance on nearby lines. Request a form from the EMC Committee.
- Clean-up self-installs – difficult when a neighbouring property is the cause.
- Remove upstream band interference by

TABLE 1: RFI step sizes per VDSL band, comparing overhead with underground connections.

	>6dB Overhead	>12dB Overhead	>6dB Underground	>12dB Underground
Up 2	53%	27%	35%	16%
Up 1	45%	20%	33%	15%
Down 3	43%	19%	32%	13%
Down 2	42%	21%	33%	12%
Down 1	31%	14%	26%	12%