



Italia  
2015

Youngsters On The Air

An aerial photograph of a rugged, mountainous island. The terrain is covered in green vegetation and brown, rocky patches. A small white cross is visible on a central peak. The island is surrounded by dark blue water with white, foamy waves crashing against the shore. In the top left corner, there is a small, flat, green area that appears to be a separate landmass or a very low-lying part of the island.

# D4C

CQ - 35  
ITU - 46  
AF - 86

The Ultimate Contest Place ...



# **The Dream**

## **Why Cape Verde ?**

**Because everyone of us  
have a Dream ...**

**The ultimate  
Contest Place ..**





# **The ultimate Contest Place**

## **Looking for the Holy Graal**

**“The possibility of operating from different QTHs that will raise one’s score is really a propagation matter ...”**

**“Exploring the ionospheric aspects of various locations to gain some more degree of advantage ...”**

Blazing Rotators Mar / Apr NCJ 2001  
PhD Bob Bown NM7M (SK)  
Low Band Expert



# The ultimate Contest Place

## Looking for the Holy Graal

“... let me put my nomination on the Table for the best DX contest location, the Cape Verde islands ...



“To me, selecting D4 for an operating location during a contest has merit because it is close to the major centers of Ham activity...”

Blazing Rotators Mar / Apr NCJ 2001  
PhD Bob Bown NM7M (SK)  
Low Band Expert

# **The ultimate Contest Place**

## **Looking for the Holy Graal**

**“Another advantage to Cape Verde Is. is that they are also ‘ionospherically correct’, due the fact these islands are at low latitude, where the F - region is robust and largely immune to the magnetic disturbances that the solar wind can trigger in the distant Polar Region**

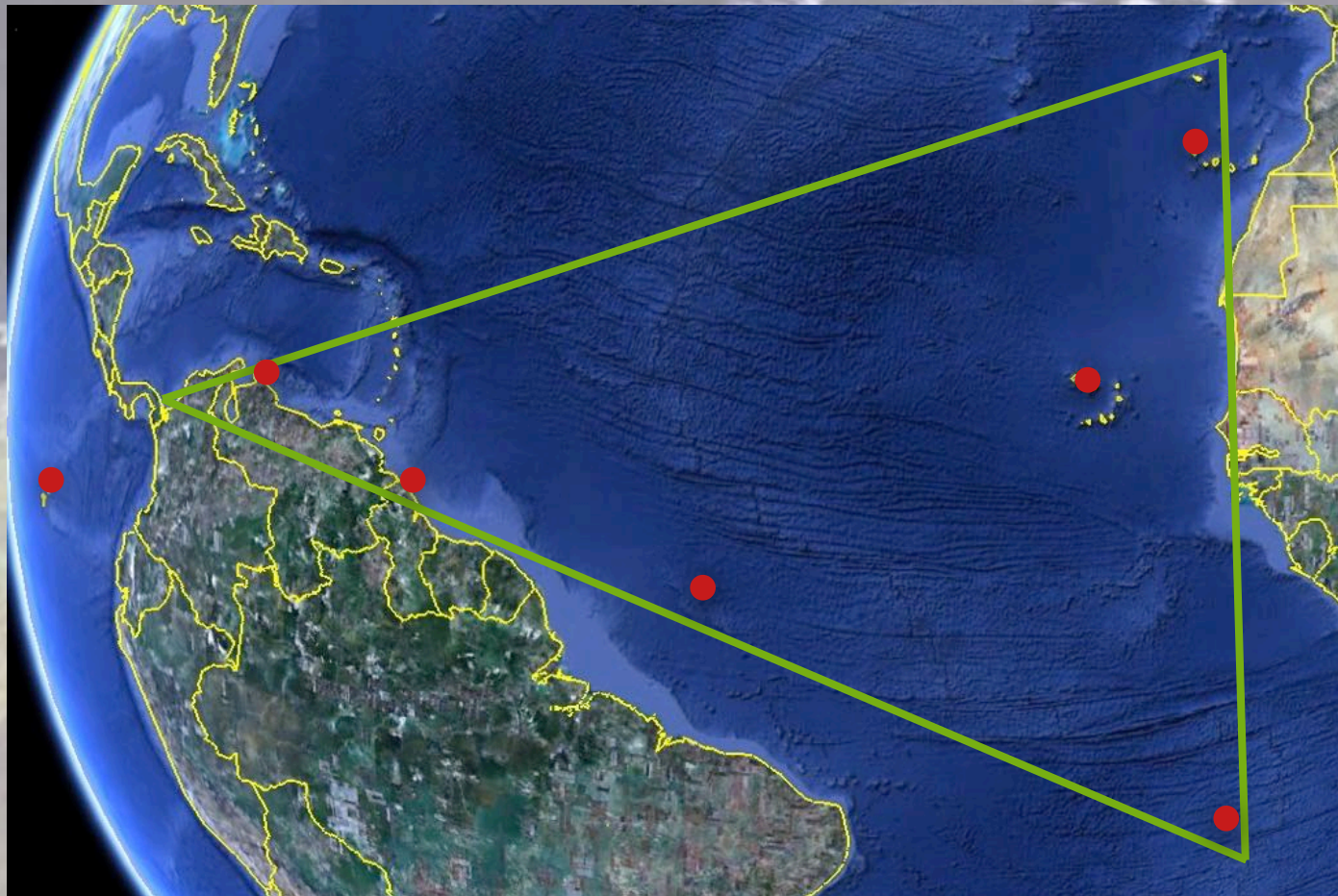


**Blazing Rotators Mar / Apr NCJ 2001  
PhD Bob Bown NM7M (SK)  
Low Band Expert**



# The ultimate Contest Place

## The Atlantic Triangle







# **The ultimate Contest Place**

## **General Rules of Thumb**

- **For All Bands use the 6000 Km rule**
- **For Low Bands minimum atmospheric noise @ 2Mhz location**
- **For Upper Bands high F2 value location**
- **CQWW Mostly 3 points QSO, rare Zone, rare Country**



# The ultimate Contest Place

## However ...

- The best QSO activity is in EU ,West Russia , North America
- For most points, be Outside EU and NA
- **Be in Africa / Asia / South America / Caribbean**
- **10m Band as strategic band**
- Use 1F2 / 2F2 mode in South / North Path

# The ultimate Contest Place

## The ultimate Thule

- **Northern South America** to North America Path
- **Africa** to Europe Path
- **A Low Latitude** QTH works West / East Path
- **P4, PJ, HK, YV, D4, EA8, CT3**
- **PY0, 6W, ZD8, TZ, 5T, S0, C5, J5, 9L, 3X**

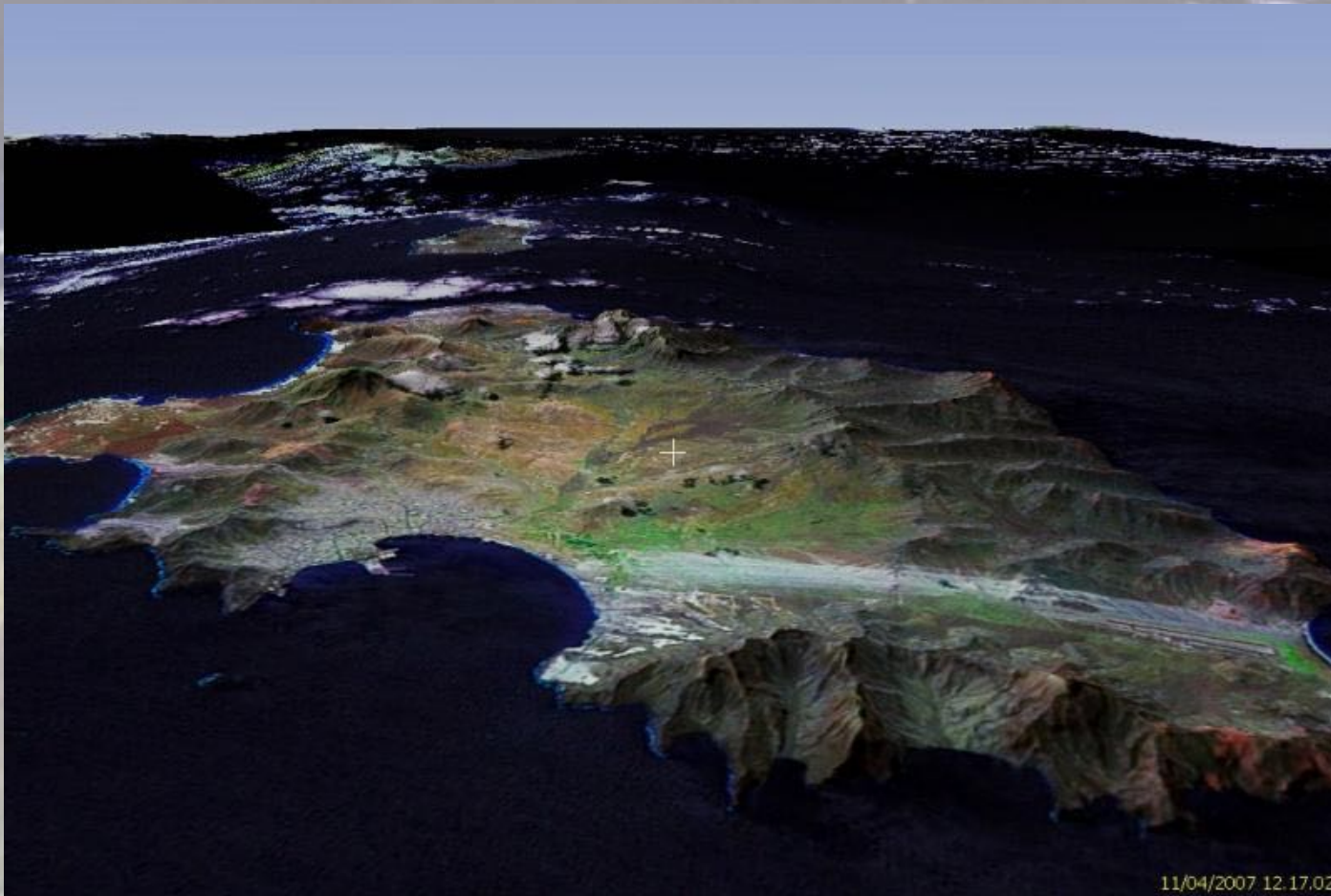


# The ultimate Contest Place Cape Verde is.



# The ultimate Contest Place

## Sao Vicente is.



11/04/2007 12:17:02

11/04/2007 12:23:38



# D4C

## Monte Verde





# **D4C Project**

## **Why ?**

- 1. New Challenge Adventure**
- 2. Summary of 30 years of experience**
- 3. New technical approach**
- 4. New Propagation knowledge**
- 5. New blood into the next Sunspot Cycle**

## **Is FUN !**



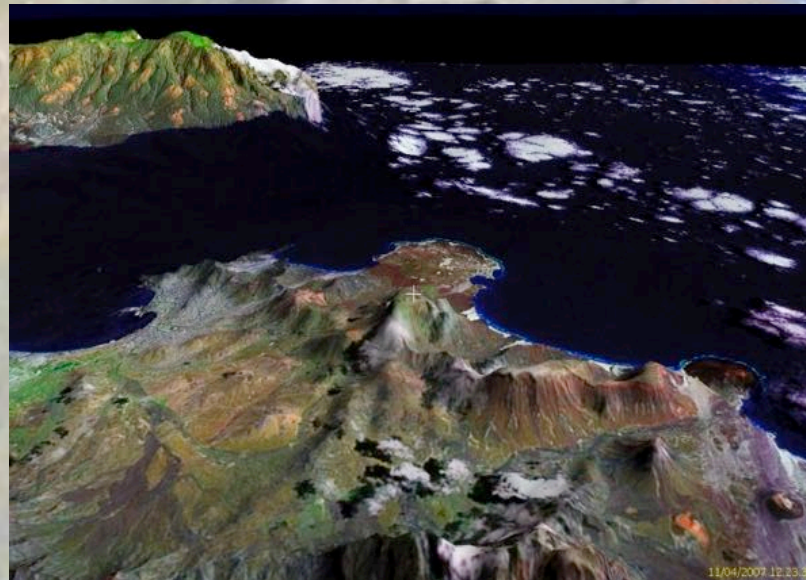
# D4C Project



# D4C Location

**The property is located on the top of Monteverde peak in the island of Sao Vicente one of the largest island in the Cape Verde archipelago.**

**The Property has more that 8000 m sq area located on the top of the Peak at 750 m above the sea level.**



11/04/2007 12:23:36

11/04/2007 12:23:36



# D4C Location

Flying to Sao Vicente island is not an easy task, with small airplane, and unreliable ticket availability, un need to carefully plan the trip ...



# D4C Location

**We had a great opportunity to build from scratch all the station, we only had available 4 x 40m tower, an empty house .....**





# D4C Location

An empty Garage, and a empty sandy water tank ....



# D4C Location

But an amazing sunset overlook .....





# D4C Handling

Shipping over 5 tons of stuff overseas is an hard task !





# D4C Handling





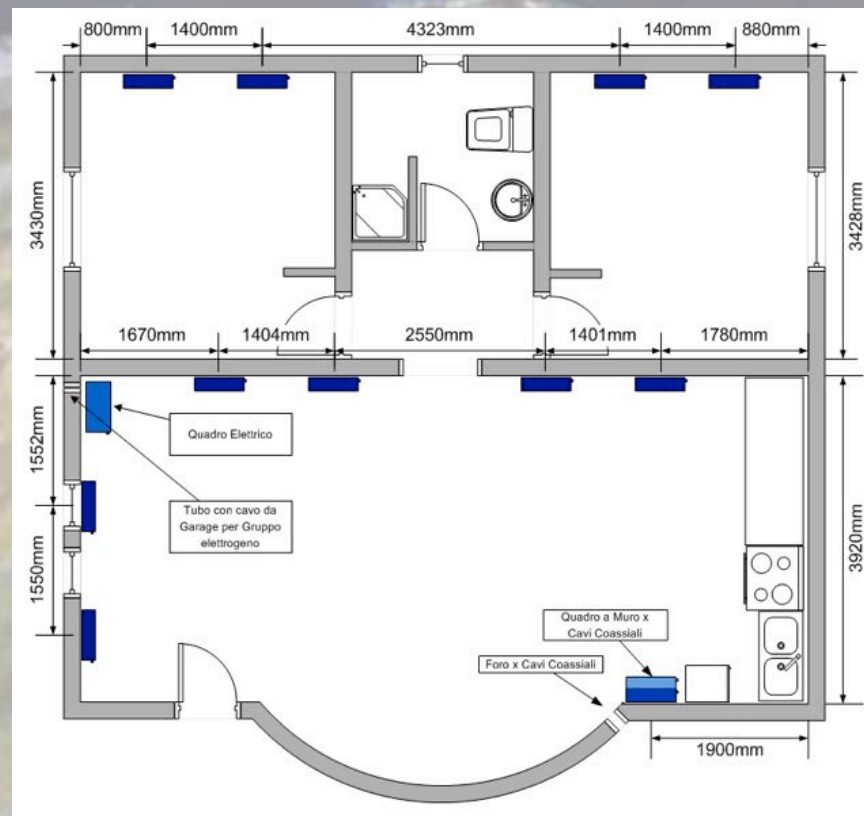
# D4C Handling



**Mindelo Harbor**

# D4C Shack

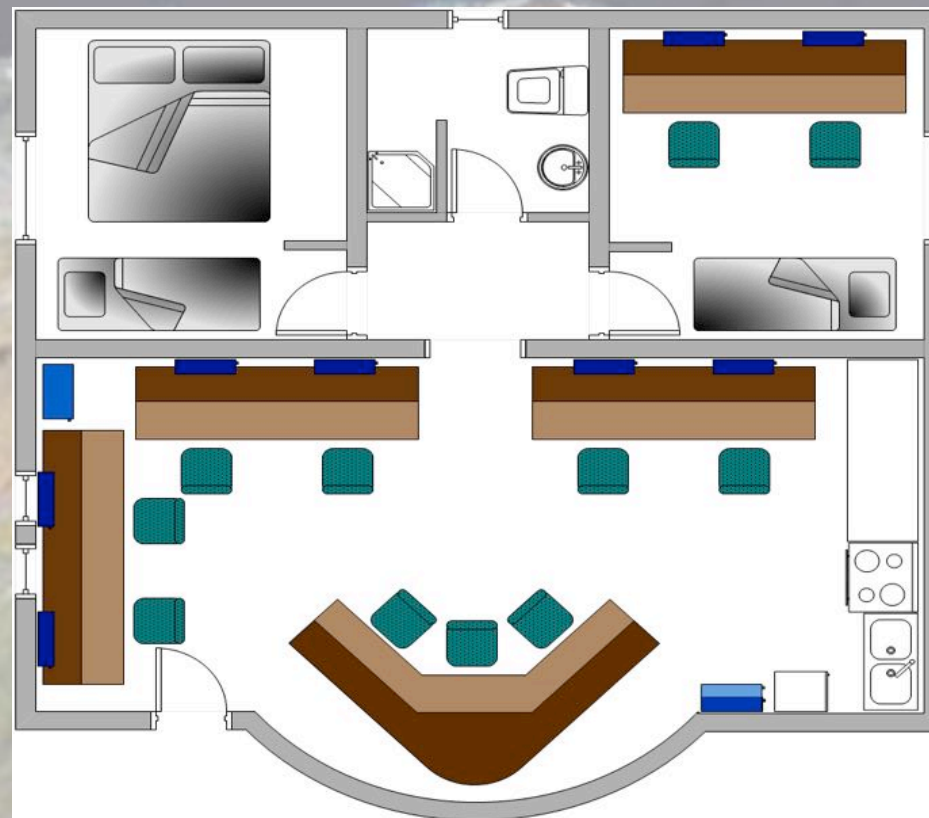
The house was a perfect choice for our plans, a multi operators environment with the flexibility to be configured from several SOSB to MM ...





# D4C Shack

**This is a simple layout of the shack, 3 tables for 6 operators + more tables for extended MM. Each table has it's own power supply, Ethernet connector, coax cables and control cables**





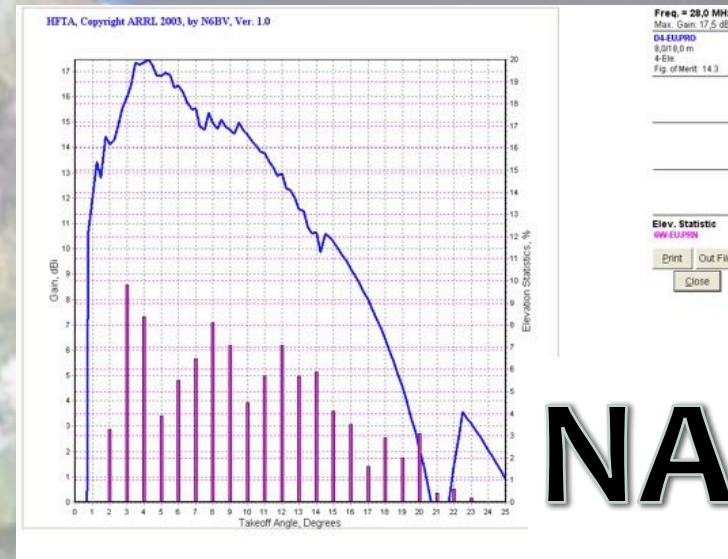
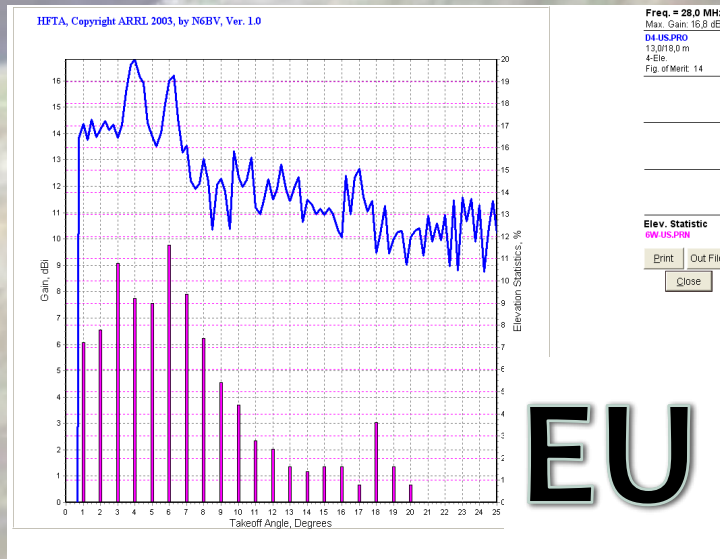
# D4C Shack





# D4C Antennas

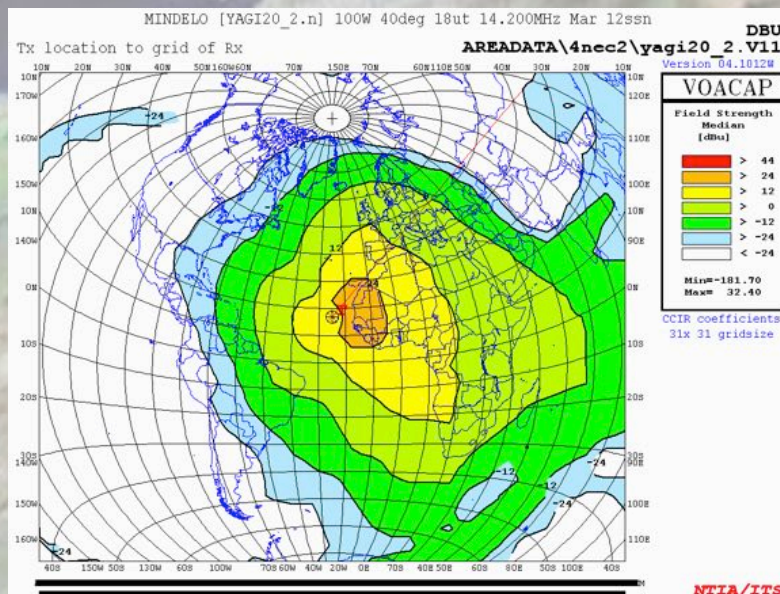
Be close to the major centers of Ham activity, need to evaluate carefully the antenna system, the main directions are EU and NA that cover the 90 % of the QSO's but we need to follow the propagation during the day and to pickup the short opening to the rare multiplier area ....



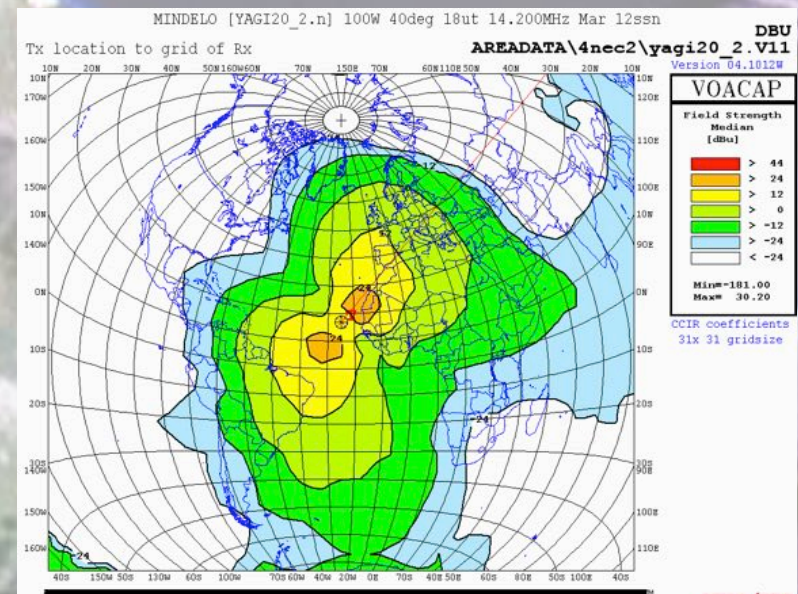


# D4C Antennas

On High Band we choice to have 4 fixed antenna beaming the 4 main direction, covering 360° with a short boom antenna, with the flexibility to transmit at the same time in 3 different direction and receiving on one the four available ...



VOACAP Beaming EU + AS

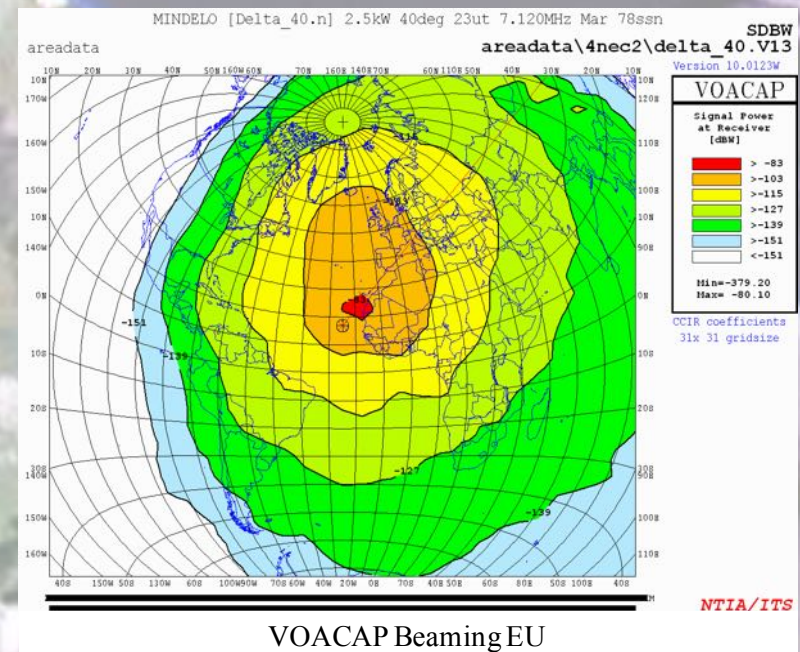
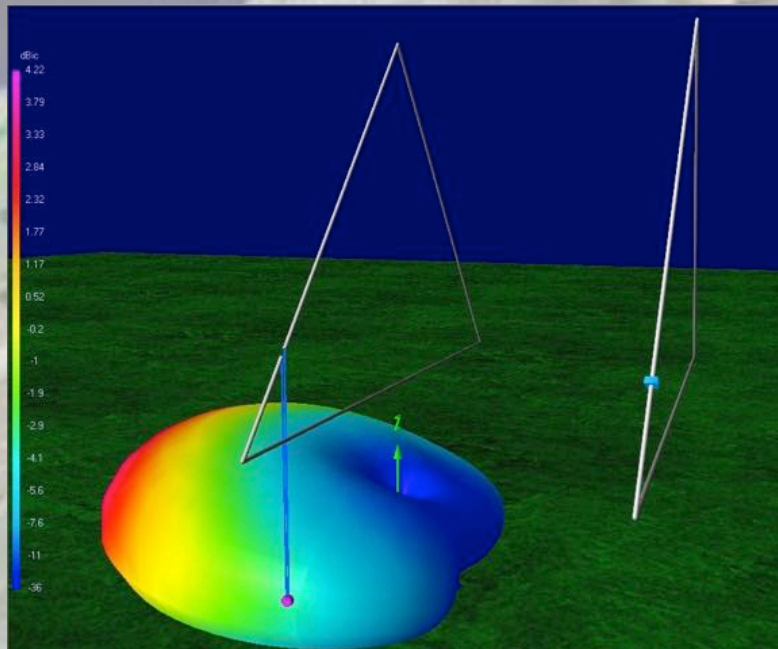


VOACAP Beaming SA + EU



# D4C Antennas

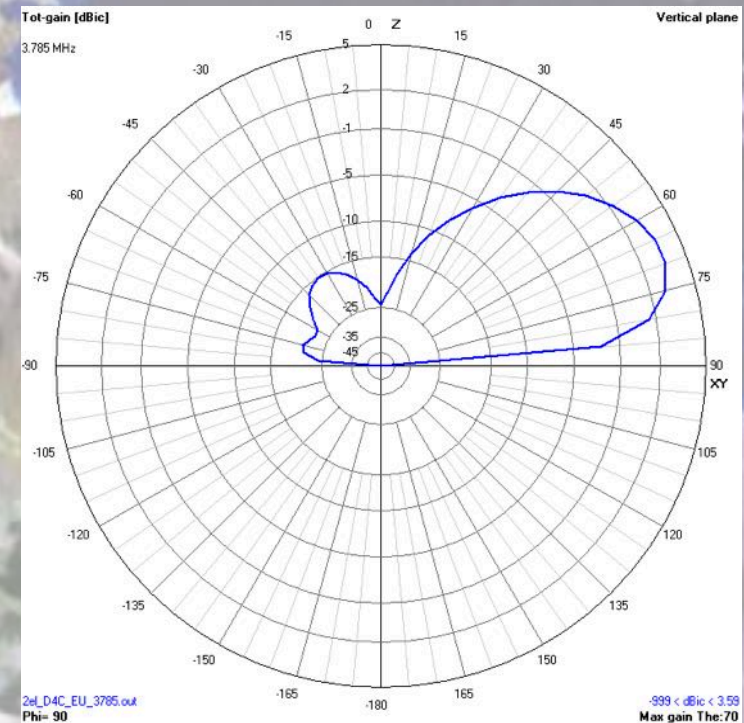
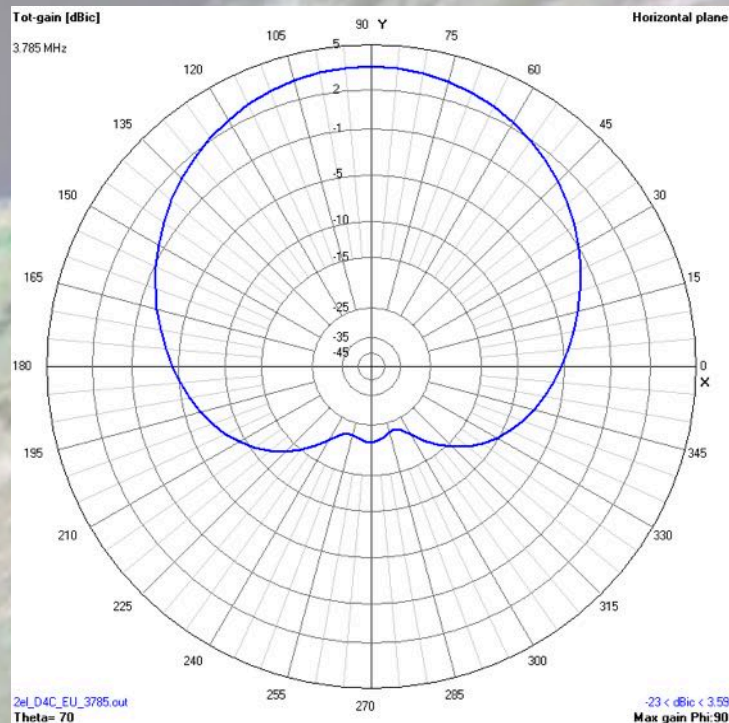
On 40m & 80m band we choice to have 3 element Inverted V beaming the 2 main direction, with the flexibility to transmit at the same time in 2 different direction and receiving on one the 2 available ...





# D4C Antennas

Low angle has been achieved with a Horizontal Polarization, we had tested several solutions, different polarization, and different mechanical solution, these are the results ..





# D4C Antennas

## Google Maps antenna overview



11/04/2007 12:23:38

# D4C Antennas

Five more towers has been erected to install the High Band antennas, one tower for 10m, 2 tower for 15m , 2 tower for 20m ..





# D4C Antennas

10m



# D4C Antennas

15m





# D4C Antennas

20m



# D4C Antennas

40m

80m





# D4C Antennas





# D4C Antennas





# D4C Antennas





# D4C Antennas





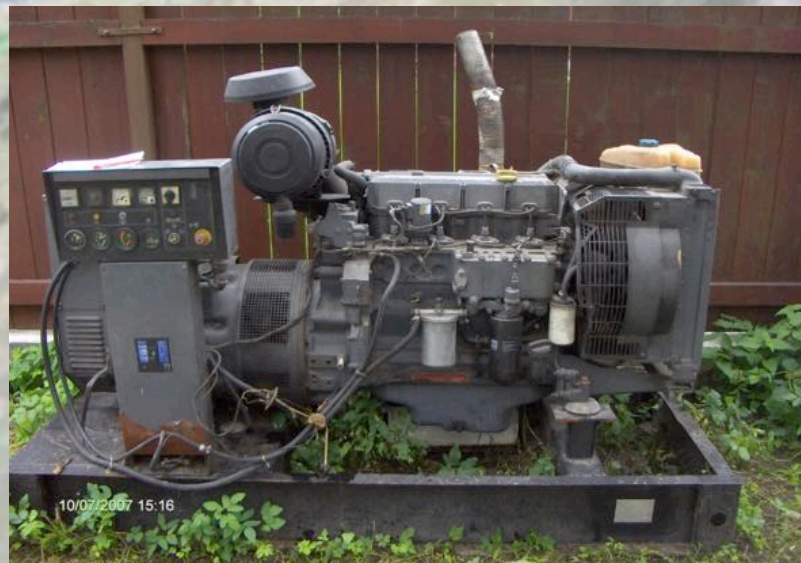
# D4C Antennas





# D4C Reliability

One of the main issues that we face down and need to be overcome is the Power Line availability, unfortunately the AC Power available in the Island is very expensive and is not reliable most of the time the AC line drop for several hours without any warranty that will be back ...





# D4C Reliability

Everything need to be carefully oversized, to avoid problems and failures, during the Contest and when the station is not used, the whether condition are pretty variable, MonteVerde in Portuguese is Green Mountain, the only place in the island were the grass grow ...





# D4C Maintenance

Monte Verde is an hard place, weather condition are pretty variable, and the station need a planned maintenance, inside and outside ...





# D4C Maintenance

Antenna failures, broken loop, are the main issues, in the years we had planned a carefully maintenance ...





# D4C Flexibility

**Flexibility means allow the station to be reconfigured for several different Category without cable rewiring.**



**The Station CORE :**

**The Antenna Matrix Rack**

**Share 6 antennas with 4 Station,  
switch automatically the  
antenna and the control switch  
of each antenna to each Station**



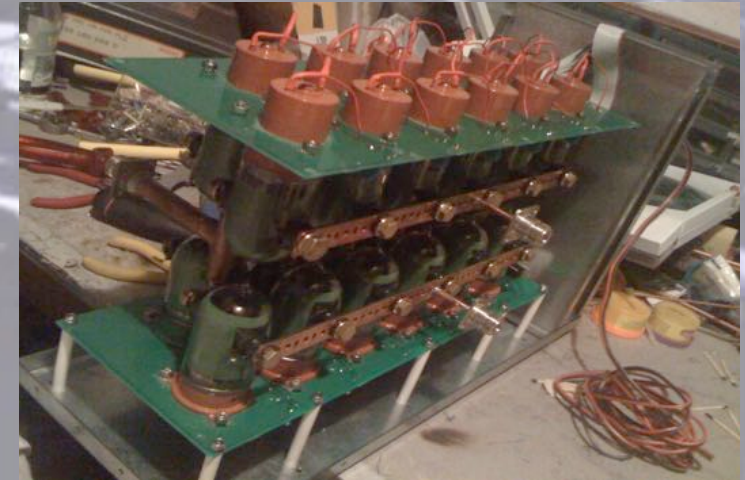
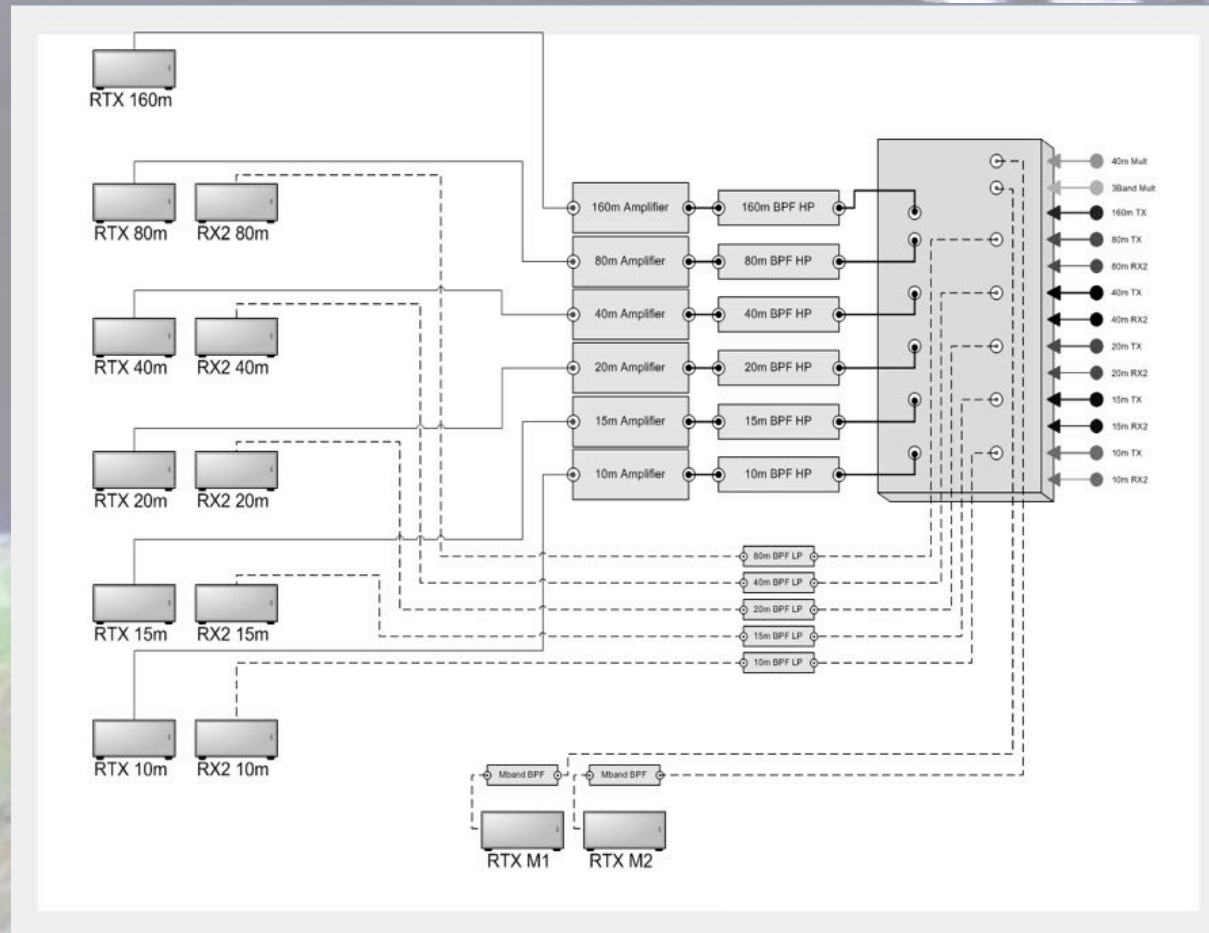
# D4C Flexibility

The Rack has been builded from scratch, with hard metallic work, and electronic stuff ....





# D4C Flexibility



**Vacuum Relay 6x4 Matrix Antenna Switch**

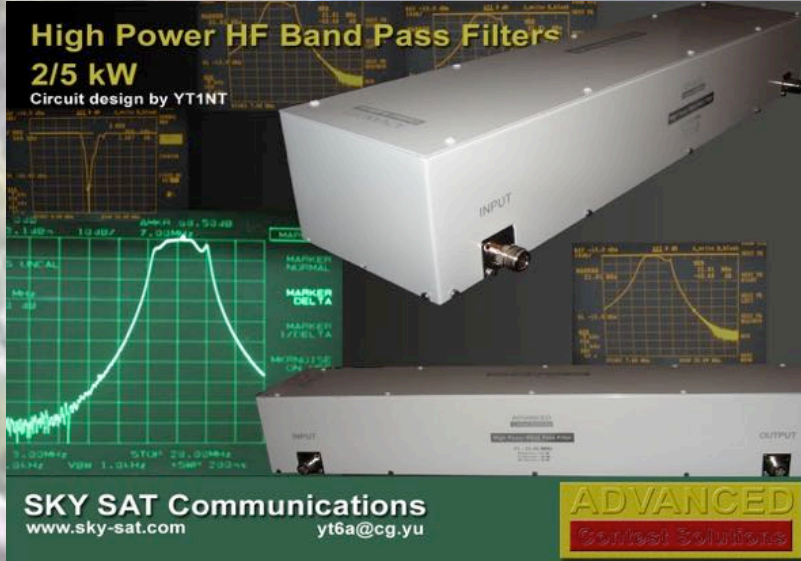

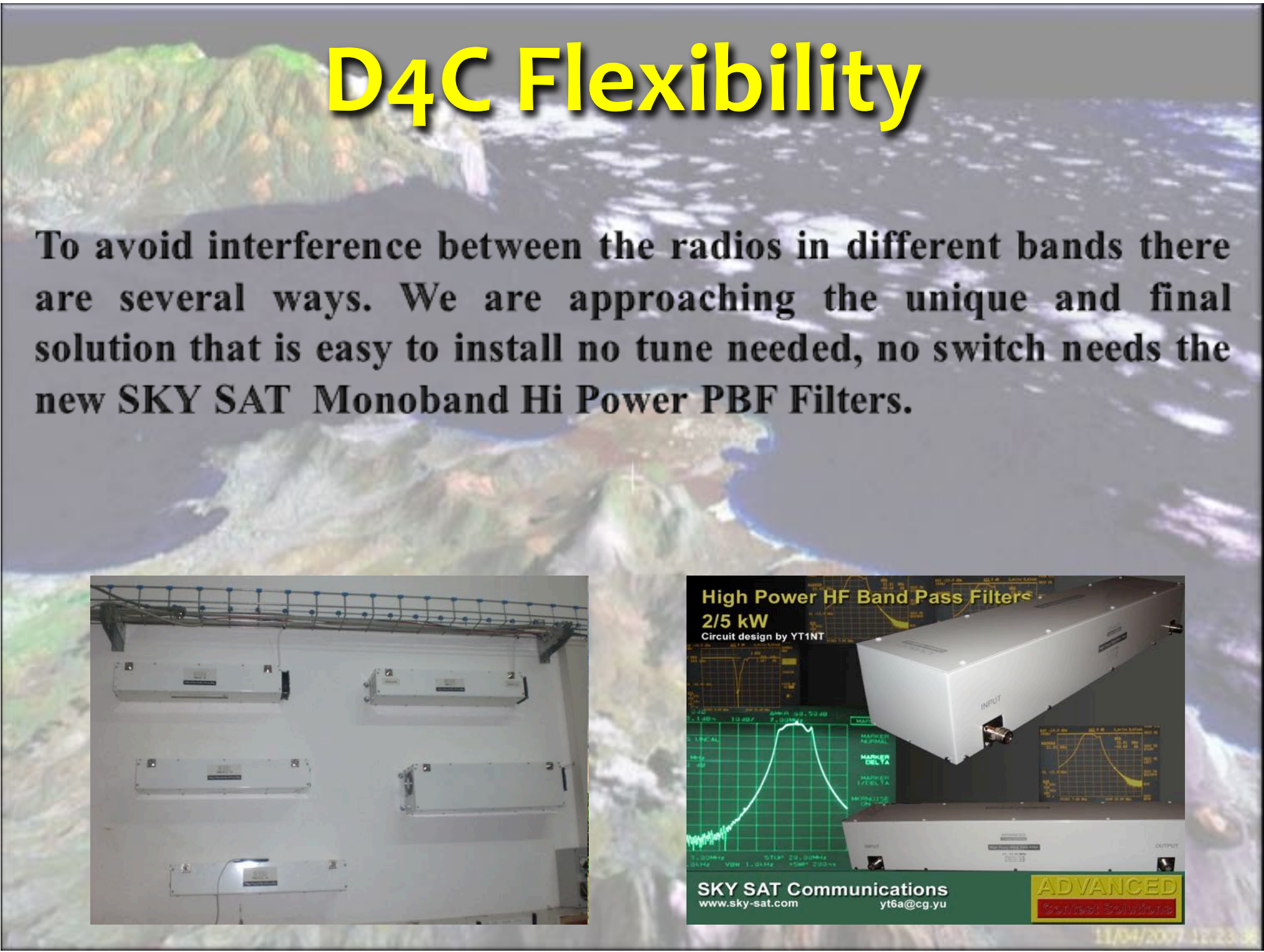


**BCC Beverage Sharing Box**



# D4C Flexibility

To avoid interference between the radios in different bands there are several ways. We are approaching the unique and final solution that is easy to install no tune needed, no switch needs the new SKY SAT Monoband Hi Power PBF Filters.



**High Power HF Band Pass Filters**  
2/5 kW  
Circuit design by YT1NT

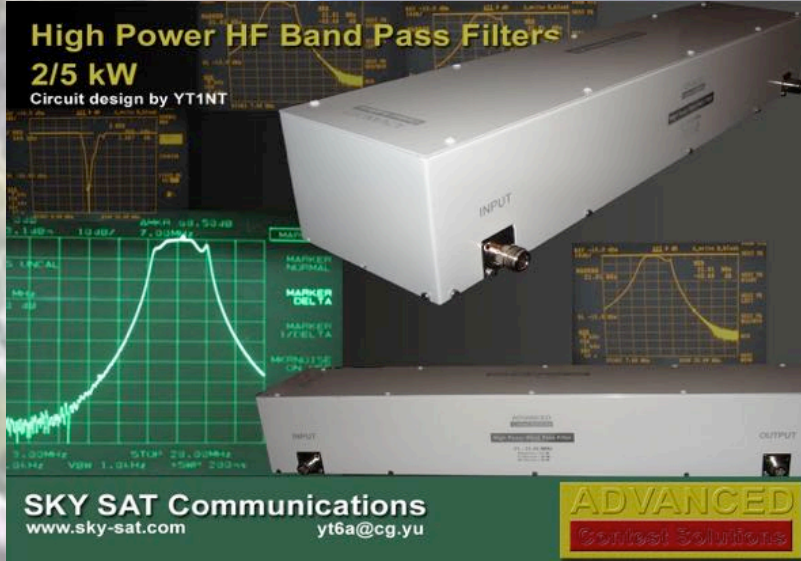

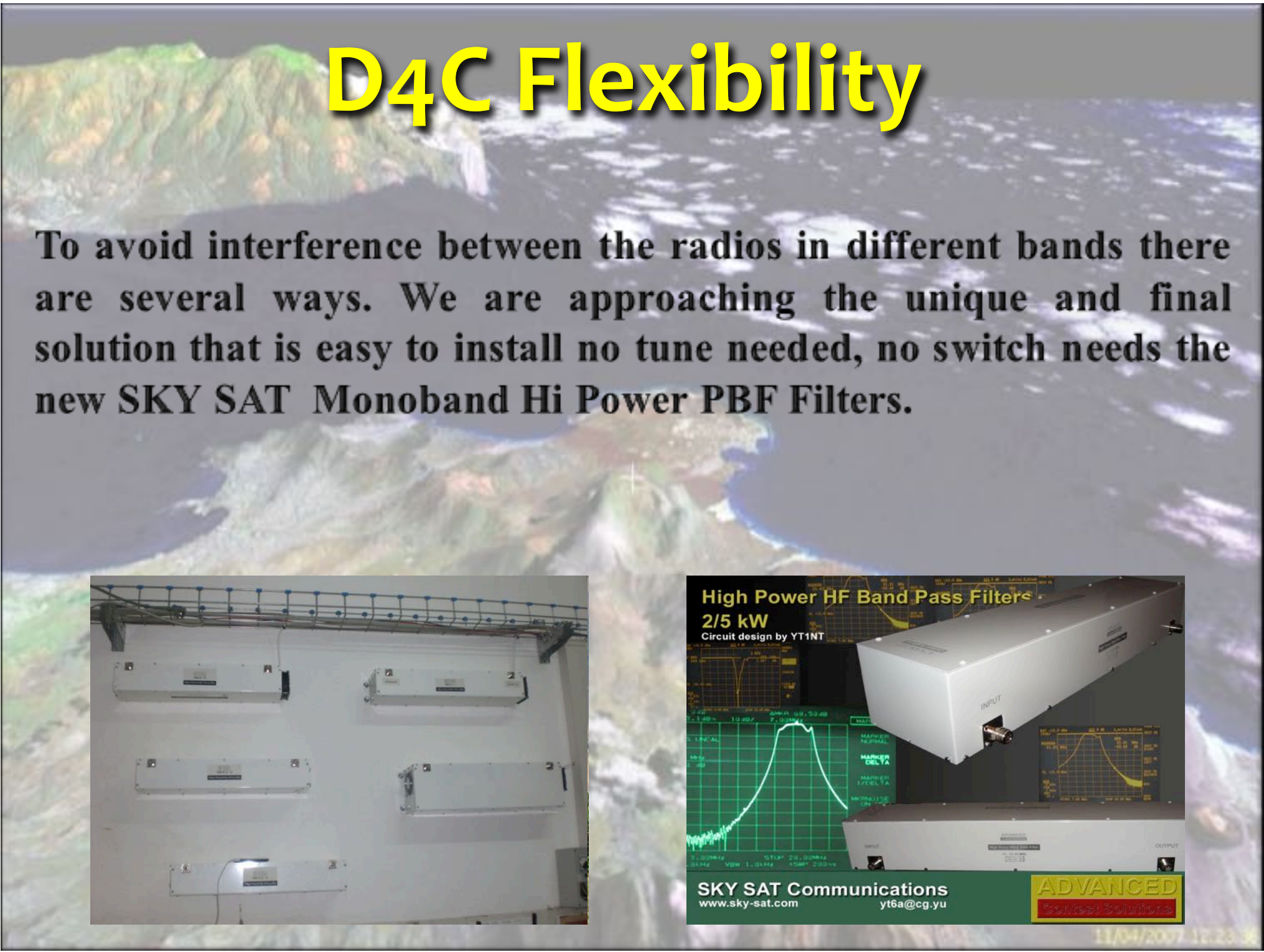
**SKY SAT Communications**  
www.sky-sat.com  
yt6a@cg.yu

**ADVANCED**  
Circuit Solutions

11/04/2007 12:23:36

# D4C Flexibility

To avoid interference between the radios in different bands there are several ways. We are approaching the unique and final solution that is easy to install no tune needed, no switch needs the new SKY SAT Monoband Hi Power PBF Filters.

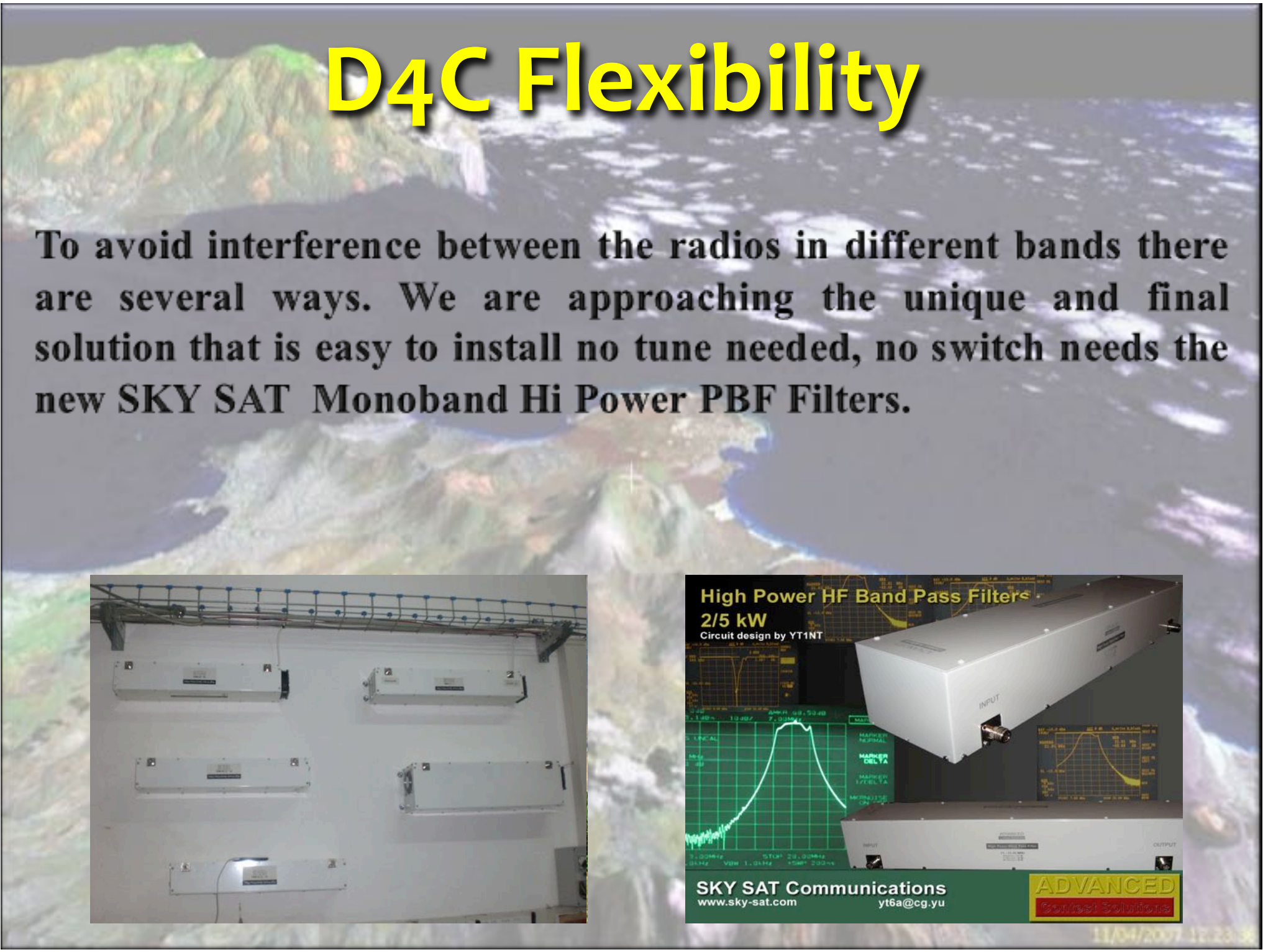
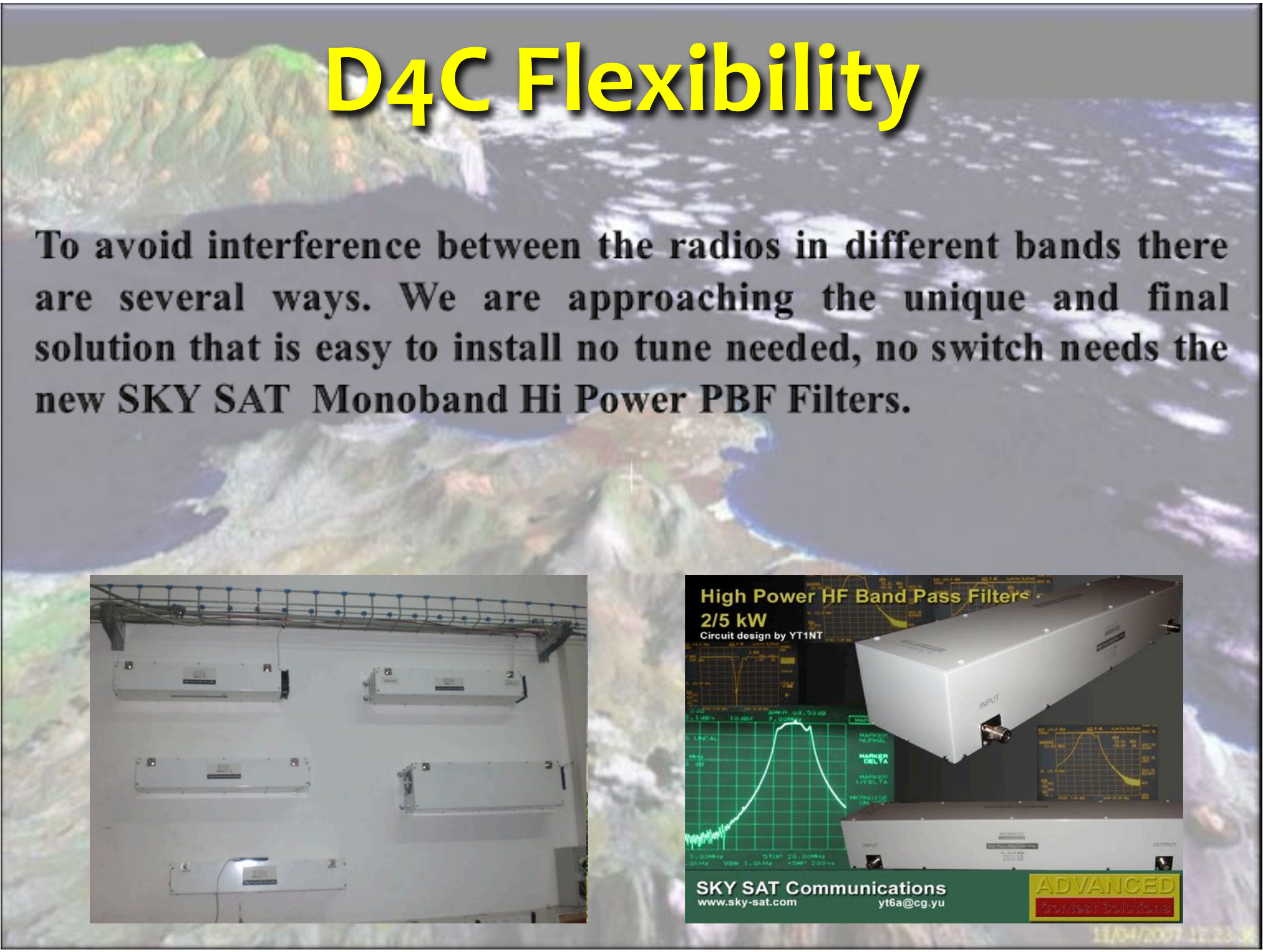


**High Power HF Band Pass Filters**  
2/5 kW  
Circuit design by YT1NT

**SKY SAT Communications**  
www.sky-sat.com  
yt6a@cg.yu

**ADVANCED**  
Control Solutions

11/04/2007 12:23:36





# D4C Flexibility

The Main idea is to have a easy way to select the TX antennas and RX antennas independently, selecting to match 1, 2 or 3 antennas at same time in TX and receiving on one of the four available. Due matching limitation no 4 antennas simultaneously is provided.





# D4C Flexibility

**All the antenna system switch and control Split power box are automatically controlled from a set of Smart Interfaces .**



**The Station will be flexible to be configured from an SOSB – SO2R – MS – M2 – MM in a matter of few minutes of software configuration, no more cable mess, and last minute setup ....**



# D4C Flexibility

What we expect to supply to the operator is an easy environment, without hassle, Our Keyboard antenna switch is the preferred tool from most operators ..

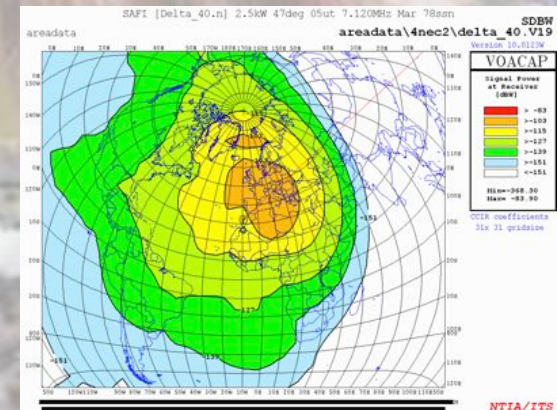
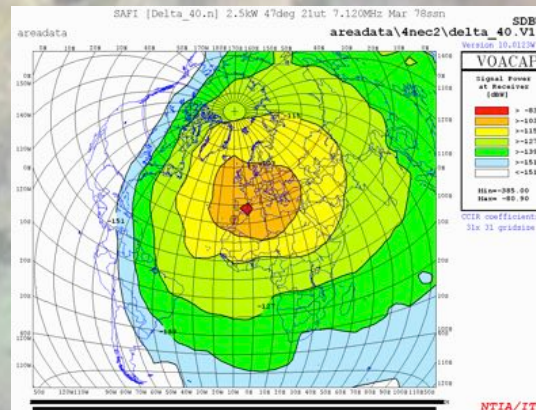
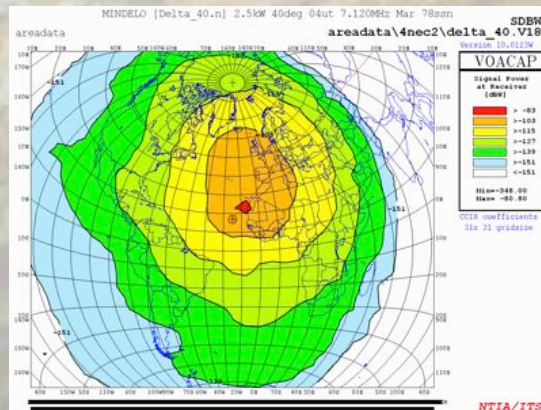
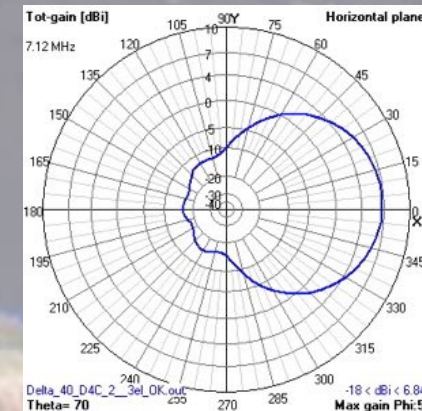
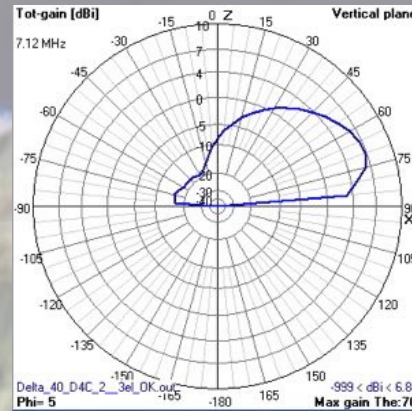
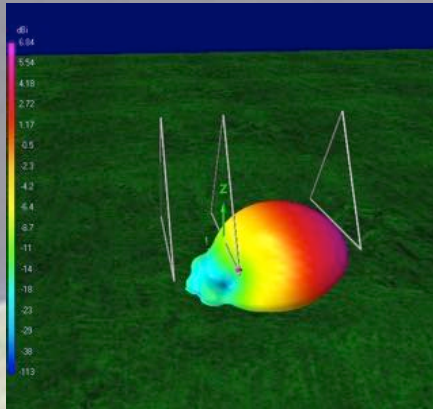


No big Coax Cable switch, only a simply configurable slide switch to select all the 12 different antenna configuration, all band selectable ...



# D4C Plans

4NEC2 NEC based antenna modeler and optimizer, with VOACAP integration, allow the most real terrain simulation, and irradiation prediction ...

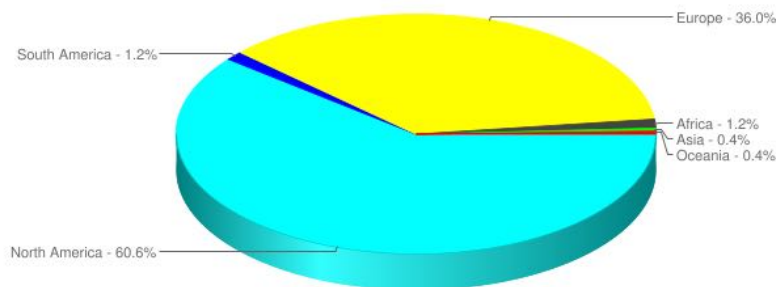




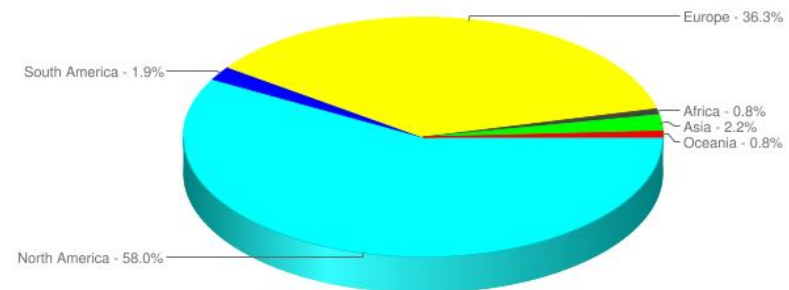
# D4C Plans

Statistical analyze allow to understand better year by year the areas to improve, even antenna, operators, hardware or software ...

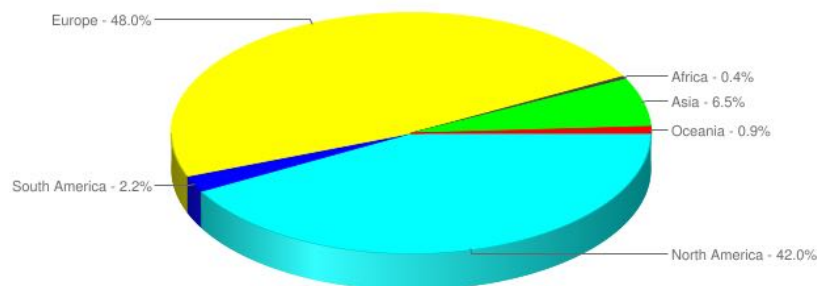
2011 CQ-WPX-SSB D4C - Continents - 80 m (564 Qs)



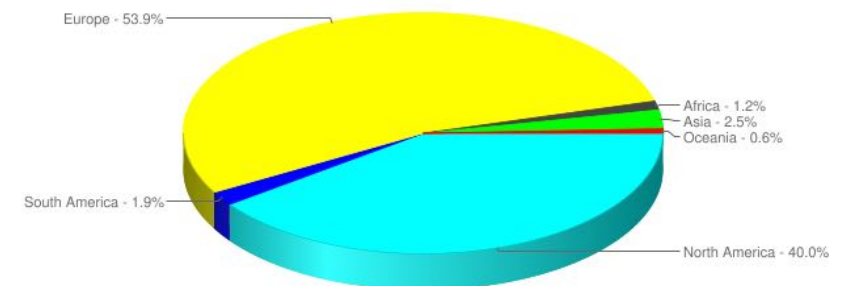
2011 CQ-WPX-SSB D4C - Continents - 40 m (1283 Qs)



2011 CQ-WPX-SSB D4C - Continents - 15 m (4025 Qs)



2011 CQ-WPX-SSB D4C - Continents - 10 m (3253 Qs)



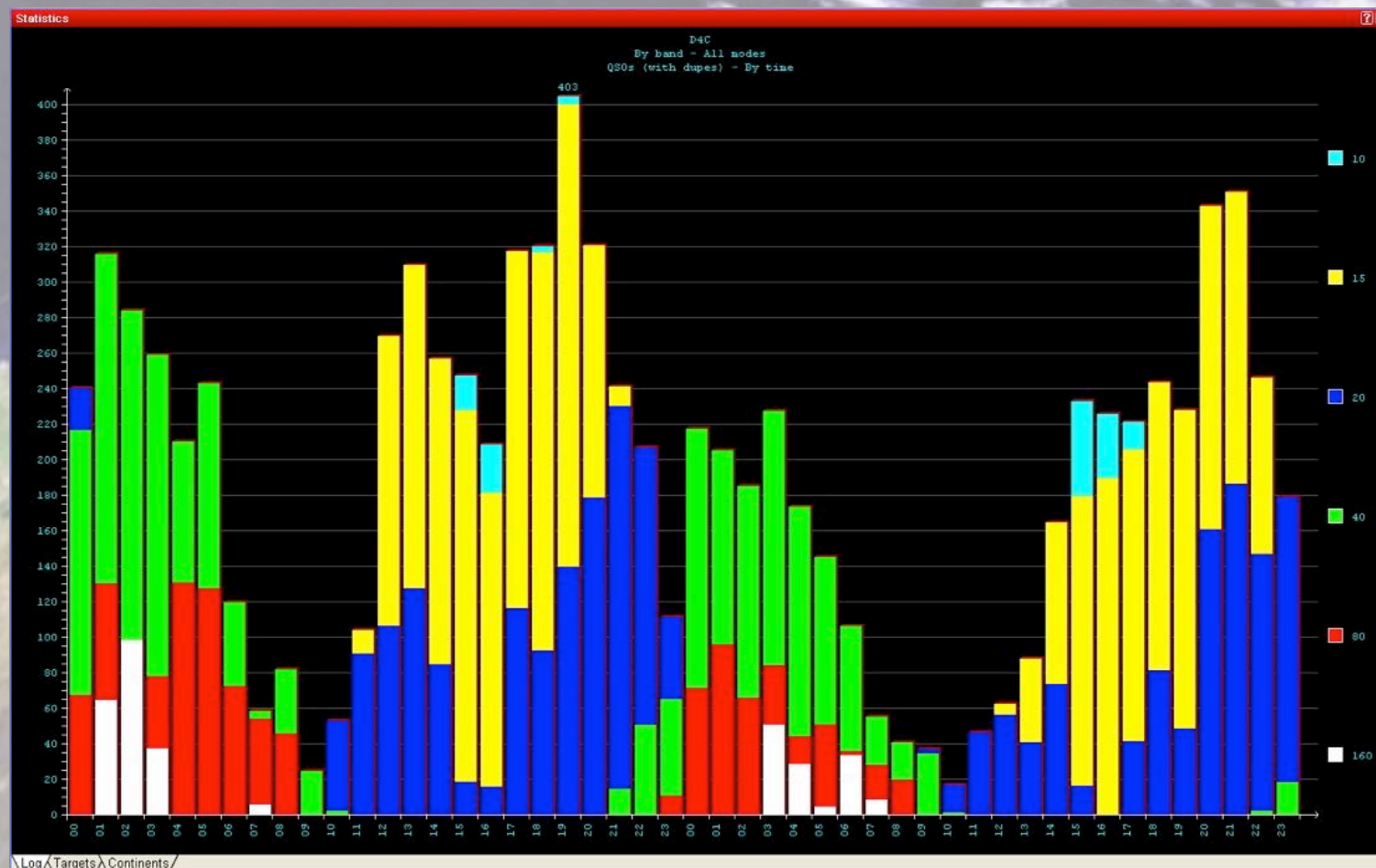


# FOT CQ Zone Matrix Propagation



# D4C Plans

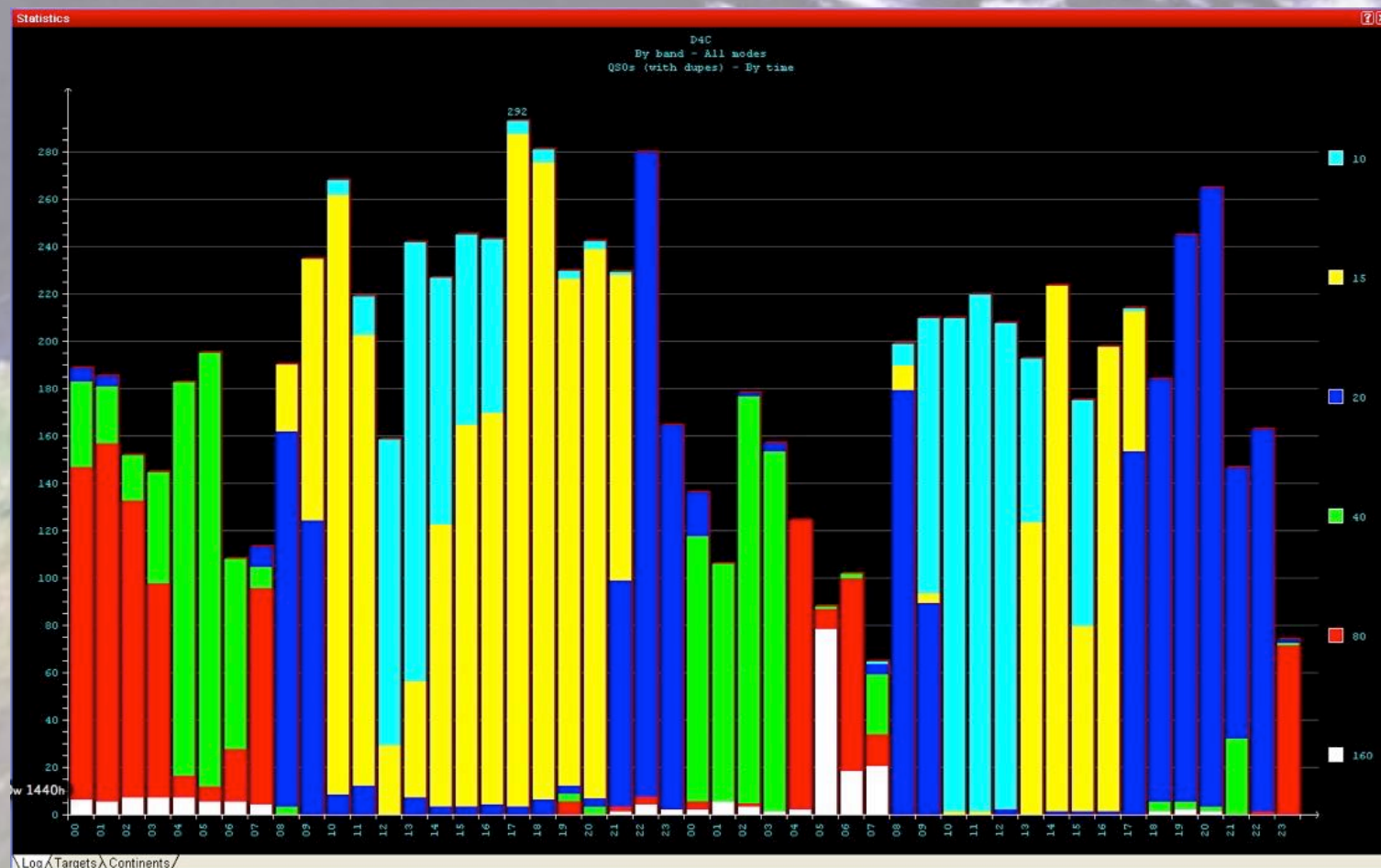
## ARRL 2010 M2 Rate





# D4C Plans

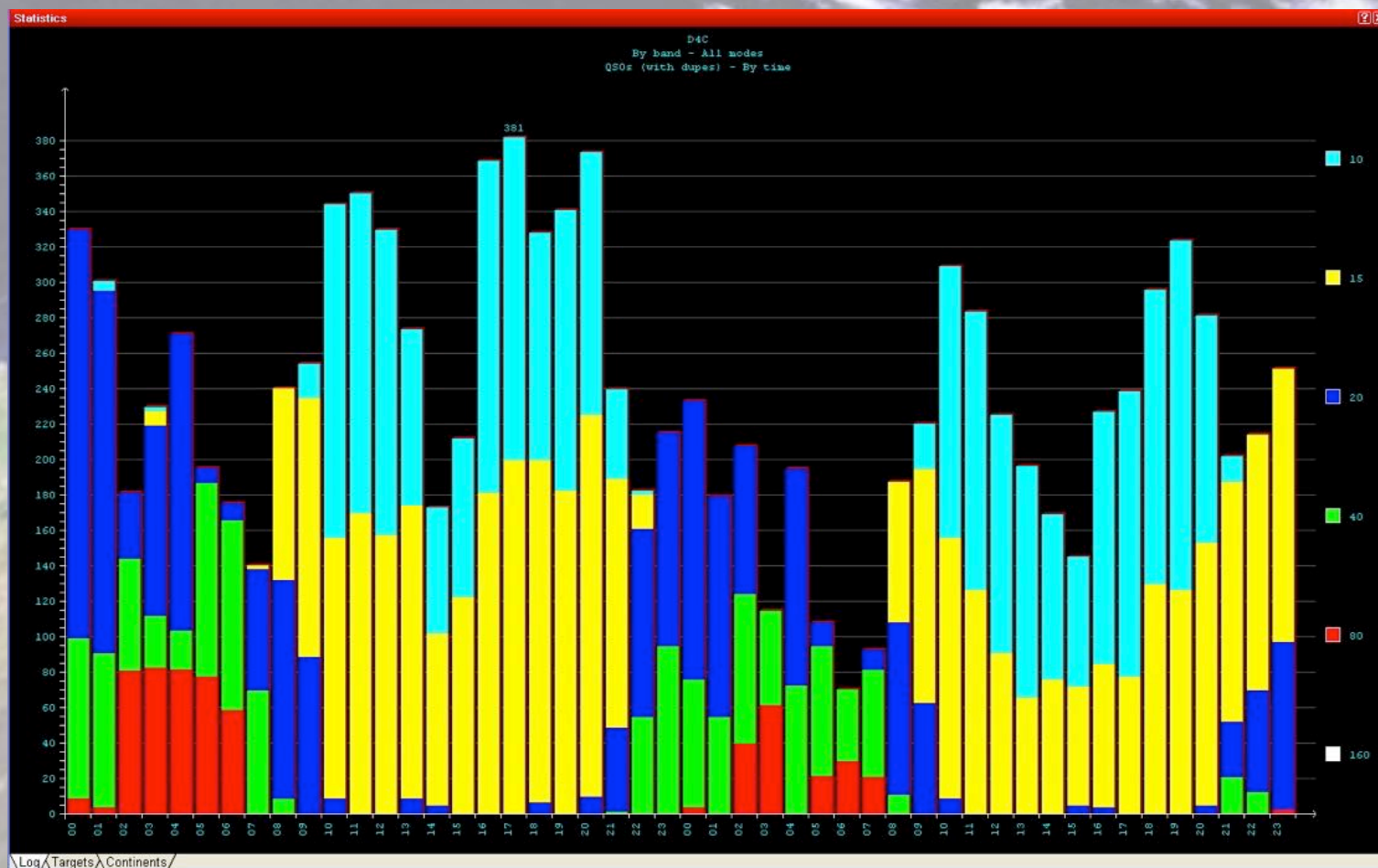
## CQWW 2010 MS Rate





# D4C Plans

## WPX SSB 2011 M2 Rate





# D4C CQWW SSB 2012





# D4C CQWPX SSB 2013



**Last Fix !**





# D4C CQWPX SSB 2013



**Spare Generator !**





# D4C CQW PX SSB 2013



**Tired after 48 Hours !**





# **D4C CQWPIX SSB 2013**

**13.419 QSO 1919 Pfx**

**97,812,044 Points**

**All Time Score**

**Previous All Time Score**

**EB8AH**

**11.714 QSO 1784 Pfx**

**76,018,024 Points**



# D4C CQWPX SSB 2013



*The Radio Amateur's Journal*

*Takes pleasure in awarding this Certificate of Merit to*

**D4C**

**Ops: I4UFH IZ4DPV CT1ESV HB9DUR**

*In Recognition of the achievement of winning the*

**2013 World Wide WPX Contest SSB**

*for the*

**Multi-Operator  
Multi-Transmitter**

*division for*

**#1 in Cape Verde  
#1 in Africa  
#1 in World**

*A Total score of **89,969,238** points was computed on the basis of the number of stations worked and call sign prefixes contacted. In witness of this achievement, we hereby affix our signatures on this day.*



CQ WPX Contest Director



Editor, CQ



# D4C CQWW SSB 2013





# D4C CQWW SSB 2013

I



D4C



# D4C CQWW SSB 2013



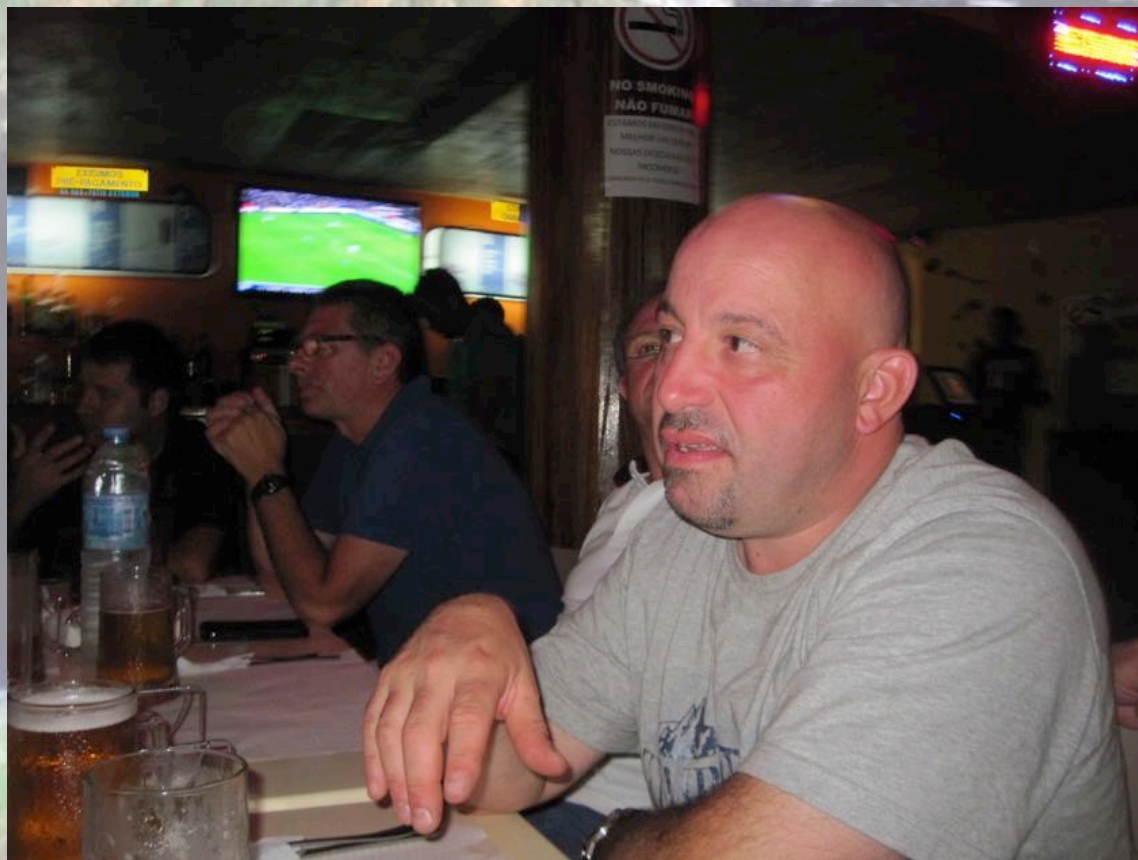
**Warming UP !**



11/09/2013 12:28:38



# D4C CQWW SSB 2013



**Joining Operators !**



11/09/2007 12:23:38



# **D4C CQWW SSB 2013**

**Installing Antennas !**

**80m 2 element  
DELTA LOOP  
with 16 m boom  
on a top of  
a 36m tower**





# D4C CQWW SSB 2013



**The Hidden Sponsors !**





# D4C CQWW SSB 2013



**The New Generation !**



11/09/2013 12:23:38



# D4C CQWW SSB 2013



**Secret Weapons !**



# D4C CQWW SSB 2013



**Station Ready !**



11/09/2007 12:23:38



# D4C CQWW SSB 2013



**Contest is Started !**



# D4C CQWW 2013



**RUN & Partner**



11/04/2013 12:23:38



# D4C CQWW 2013



**The Game is Over**



11/04/2007 12:23:38



# D4C CQWW 2013



**Ready for the next one !**



# D4C CQWW SSB 2013



28.10.2013 16.06

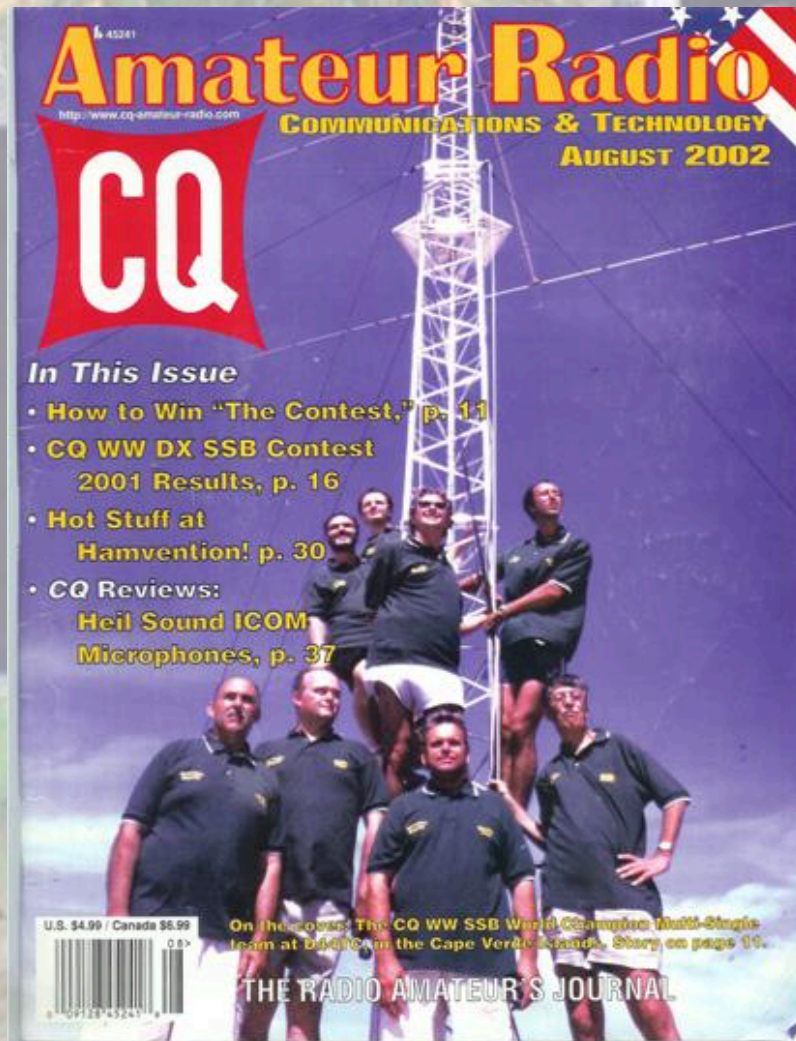


# D4C CQWW CW 2013





# CQ Magazine COVER



2001 M/S



2013 M/M



# D4C ARRL 10m SO SSB 2013



*"As far as the final score it was really unexpected, considering the conditions. My target was to reach 4,000 QSOs but on Saturday evening I had already 2,824 QSOs in the log and so I tried to keep the rate! Thanks to the setup and the conditions I reached the record on Sunday evening thanks to the many American stations from the West Coast with signals above the S9 +25 dB!"*

*"Thanks to all the stations that have called me. A special thanks goes to a silent key who two months ago helped me to fix the generator for D4C! Without his help, the team contest CQ WW SSB and CW including ARRL 10 Meter would not have been possible."*

Max's record is now the second world record from the D4C station. In 2011 the MOHP record was set from that station. Looking at Figure 4 you can see that their 10 meter antenna configuration and QTH is really amazing!



Figure 4 — The D4C 10 meter antennas (Photo — IZ4DPV)

## Records are just beyond the doors !



# D4C WPX SSB SOSB 10m 2014



## Single-Operator Single Band

It was a photo finish in the 10 meter category, with IZ4DPV at D4C edging out previous record holder PX5E (PP5JR, op), setting a new record in the process. Bob, KQ2M/1, shattered the USA 10 meter record, while KZ5MM (W5PR, op) also exceeded the old mark. Bob now holds three of the USA single band records. Could he be looking to take back the all band record he held for a number of years? Although conditions did not favor the low bands this

## CONTINENTAL RECORD HOLDERS

### AFRICA

1.8	CN2R('07)	1,613,955	399
3.5	CN2R('06)	11,849,076	894
7.0	CN2R('05)	14,724,696	931
14	CN2R('08)	15,778,840	1199
21	CN2R('11)	20,704,164	1443
28	D4C('14)	17,885,556	1404
AB	CN2R('13)	30,683,396	1443

**Records are just beyond the doors !**



# D4C Sponsor WRTC2014 Tent





# D4C 2015 ?



**Several new Stuff are on the Road ...**



# D4C 2015 ?



**Several new Stuff are on the Road ...**



# D4C 2015 ?



**Working with several Sponsor Company  
To be ready for the next Spring Contest Season**



# D4C WPX SSB 2015





# D4C WPX SSB 2015





# D4C WPX SSB 2015





# D4C WPX SSB 2015



11/04/2007 12:23:08



# D4C WPX SSB 2015







**D4C WPX SSB 2015**

**All Time Score WPX M2 Broken**

**13360 QSO – 1958 Prefix**

**93.444.960 Points**



# D4C Members



IK2NCJ Luca



I4YSS Vic



YL2KL Girst



I4UFH Fabio



CT1ESV Tony



HB9DUR Andrea



# D4C Results

YEAR	CONTEST	SCORE	RESULT	ENTRY	NOTE
2007	CQWW DX CW	23.954.832	3rd World	M2	1st Activity from Monteverde
2008	ARRL DX CW	239.598	2nd World 1st Africa	SO15 HP	
2008	CQWW 160 SSB	222.600	2nd World 1st Africa	SO LP	
2008	CQWW WPX RTTY	6.523.509	4th World	SOAB HP	
2008	CQWW WPX CW	12.694.731	1st World	SOAB HP	
2008	IARU HF	2.975.632	1st World	SOAB LP SSB	NEW WORLD RECORD
2008	WAE DX CW	3.202.904	2nd World 1st Africa	MS	NEW AFRICAN RECORD
2008	SARTG WW RTTY	2.658.170	1st World	SOAB HP	
2008	CQWW DX CW	31.955.086	1st World	M2	NEW WORLD RECORD
2009	CQWW WPX RTTY	5.352.382	2nd World 1st Africa	SOAB HP	NEW AFRICAN RECORD
2009	ARRL DX CW	3.858.426	1st World	SOAB HP A	NEW WORLD RECORD
2009	CQWW WPX SSB	32.202.182	2nd World	MS	0.2% less point from winner
2009	CQWW DX SSB	3.000.096	1st World	SO20 HP	NEW AFRICAN RECORD
2010	ARRL DX SSB	8.372.304	1st World	M2	NEW AFRICAN RECORD
2010	CQWW 160 SSB	724.427	1st World	SO LP	
2010	SARTG WW RTTY	880.005	2nd World	SO 20 LP	
2010	WAE DX CW	1.935.338	1st World	SOAB LP	
2010	CQWW DX SSB	22.812.320	1st World	MS	



# D4C Results

YEAR	CONTEST	SCORE	RESULT	ENTRY	NOTE
2010	CQWW DX CW	21.531.924	2nd World 1st Africa	MS	NEW AFRICAN RECORD
2011	CQWW WPX RTTY	4.340.853	1st World	SO20 HP	NEW WORLD RECORD
2011	CQWW WPX RTTY	5.165.056	1st World	SO15 HP	NEW WORLD RECORD
2011	ARRL DX CW	439.137	1st World	SO15 HP	
2011	ARRL DX CW	418.959	1st World	SO20 HP	NEW WORLD RECORD
2011	CQWW 160 SSB	522.060	3rd World	SO HP	
2011	CQWW WPX SSB	62.380.227	3rd World	M/2	
2011	ARRL 10 METER	4.351.000	1st World	MO	NEW WORLD RECORD
2011	CQWW DX SSB	25.783.320	2nd World 1st Africa	MS	
2011	CQWW DX CW	26.644.810	1st World	MS	NEW WORLD RECORD
2012	WAE CW	2.383.950	1st World	SOAB LP	NEW WORLD RECORD
2012	CQWW WPX SSB	6.534.990	1st World rookie	SO20	3rd world overall
2012	CQWW WPX SSB	17.356.864	1st World	SO15	as D44AC
2012	CQWW DX SSB	25.318.656	1st World	MS	
2012	CQWW DX CW	61.328.260	1st World	M/M	



# D4C Results





# D4C Results





# D4C The Country





# D4C The Country





# **D4C Open Door**

**We are looking for operators  
for the next Contest Seasons**

**CQWW - CQWPX – ARRL**

**The next years will be the  
right ones to get the  
All Time Scores !!**



# D4C Open Door

**But forget Caribbean facilities,  
as Sauna, Water Pool and  
Finest Restaurant ..**





# D4C Open Door

Only Hard Work in the middle  
of the Ocean  
on a top of a Mountain ...





# **D4C Open Door**

**With a lot of FUN !!!**



**For more information contact [i4ufh@d4c.cc](mailto:i4ufh@d4c.cc)**



An aerial photograph of a rugged coastline. The land is covered in green vegetation and brownish soil, with steep cliffs overlooking a dark blue bay. The sky is filled with white clouds. The text is overlaid on the top half of the image.

**D4C CQWW 2015**

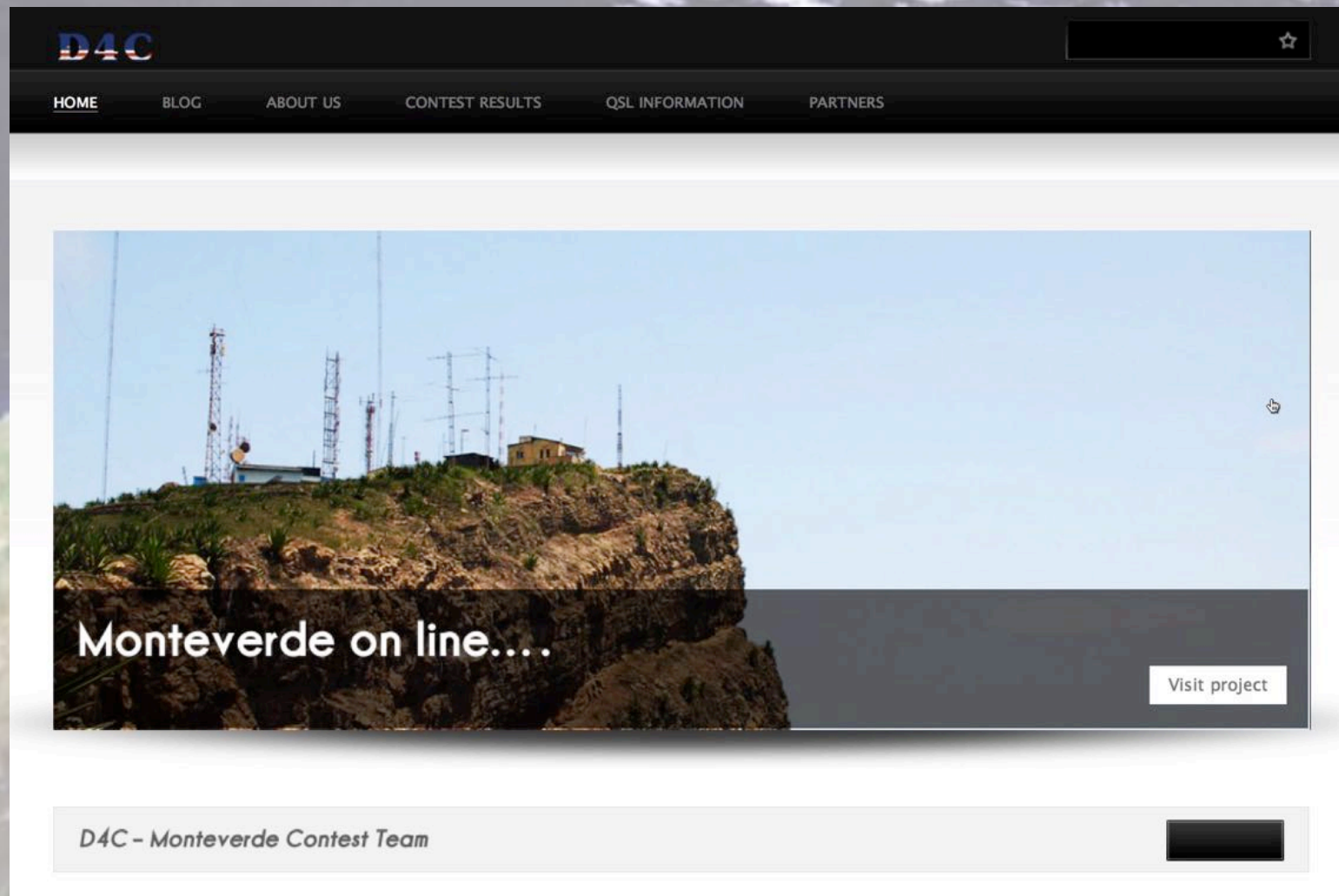
**CQWW MM record is still there !!**

**See you in the next Contest !**



# D4C Website

## www.d4c.cc





An aerial photograph of a rugged coastline. In the upper left, a steep, green mountain rises from the water's edge. The ocean is dark blue with white-capped waves breaking against the shore. The lower half of the image shows a complex, hilly landscape with various shades of green, brown, and grey, indicating different vegetation and terrain. The overall scene is dramatic and scenic.

# D4C

**Thank's to Everyone  
Enjoy Contesting**

**AND  
Call US**

**QSO are never enough for getting the Records!**