CW Skimmer: Quo Vadis contesting?

From the Users Perspective

Michael Höding, DL6MHW

Agenda

- What is CW Skimmer?
  - Steps to CW Skimming
  - Demo
  - Operation, results, first conclusion
- Politics, philosophy, science fiction
  - Technology management
  - What is contesting?
  - Rules
- SDR technical background → DH1TW

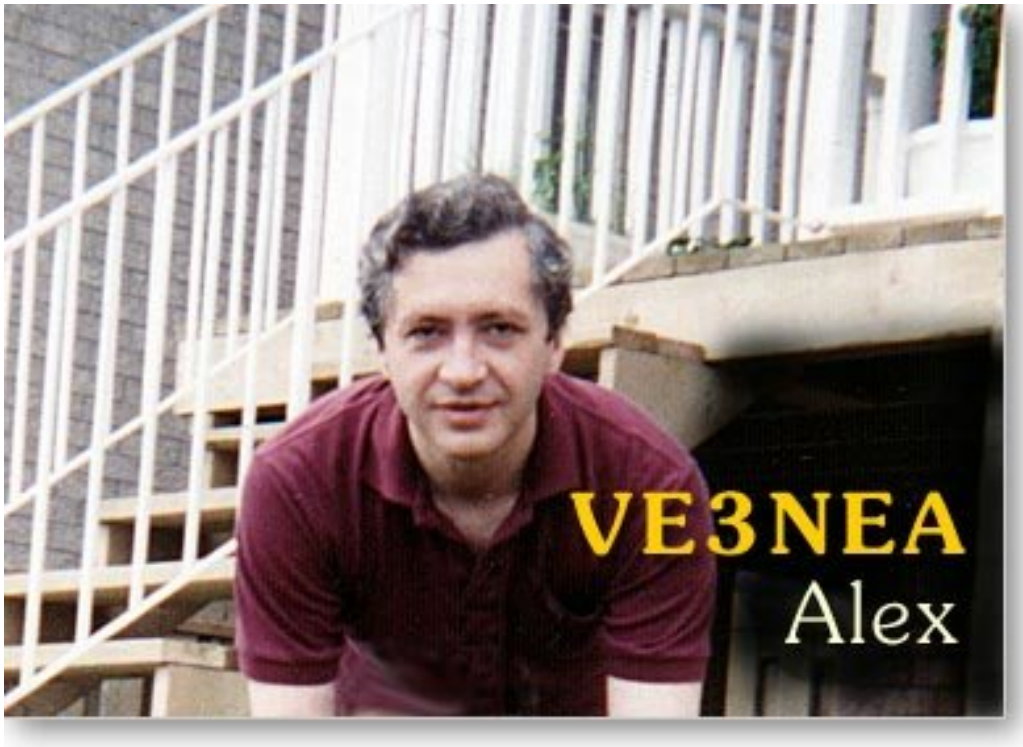
Motivation of this Talk

- Hot discussion, e.g. cq-contest
  - Flood of Email
- iPetition „Ban CW Skimmer“ signed by 500+ contesters, many well known calls
- Sometimes negative attitude
  … *The end of contesting*
- Often not well founded… just ideas and feelings

- Therefore „A more scientific approach“
  →background information, facts, data, different view points, less emotions

What is CW Skimmer?

- Software program by Alex Shovkoplyas, VE3NEA
- Wideband SDR software
- Built-in CW decoder
- some intelligence in callsign detection
- Simple telnet interface similiar to DX cluster



Developer of DX Atlas, Morse Runner, Rocky…

Situation, Steps to CW Skimmer

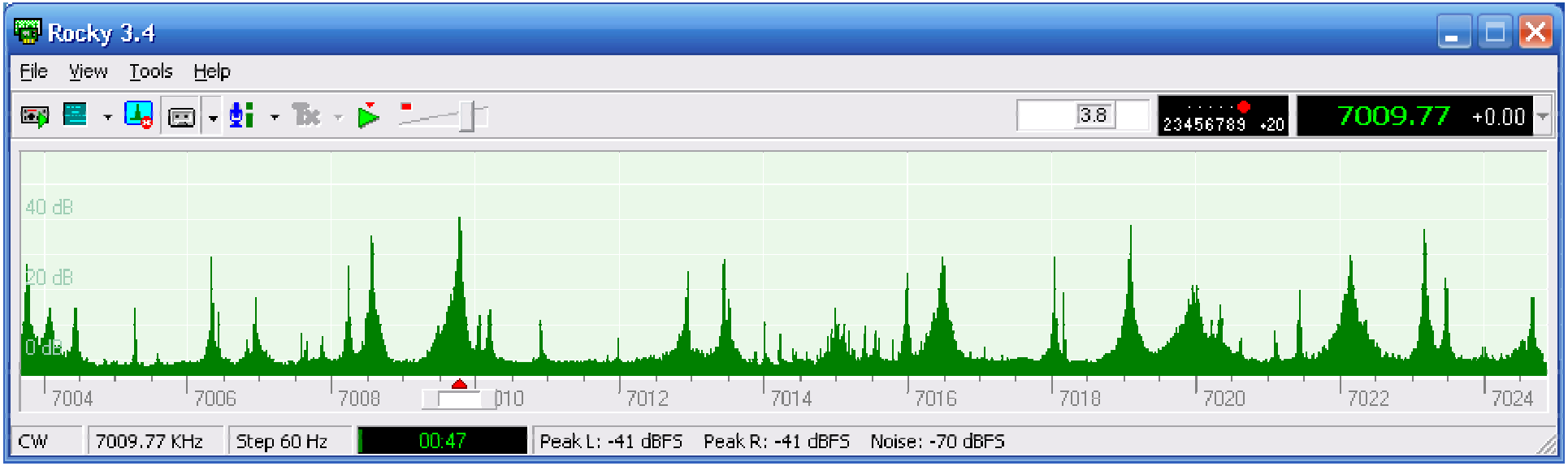
→Revolution or evolution? (see Karl Marx, Law of Tranformation→quantity into quality)

- CW Decoder
- Band scopes
  - Built-in some TRX
  - External
  - SDR-based, like Rocky (by VE3NEA)
- Contest loggers helping to find a matching callsign (super check partial)

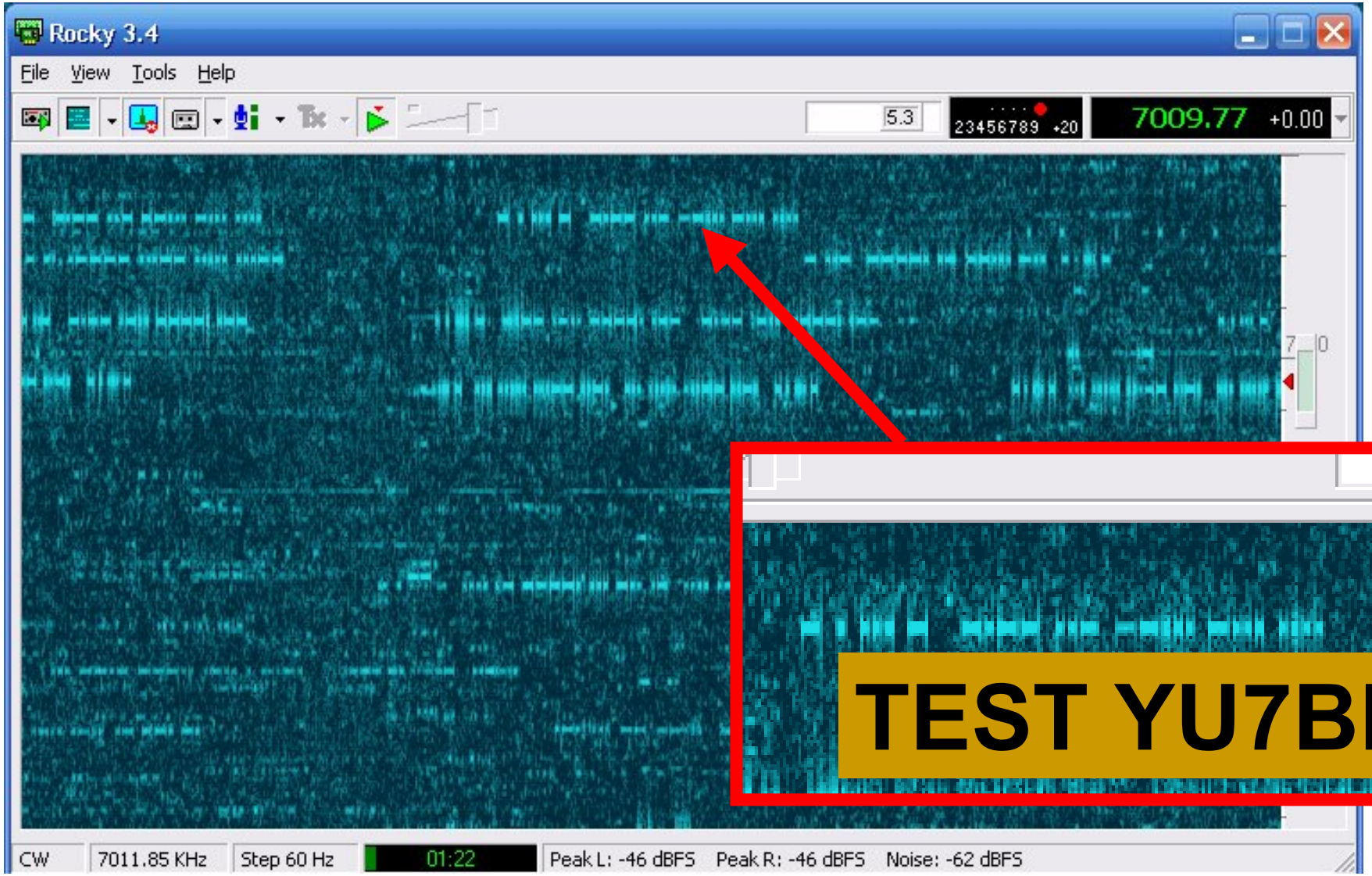
Step 1: Bandscope (Rocky)

- Useful to see the occupation of an band
  - Is there an opening on 10 m ?
  - Is activity on 80 m starting ?

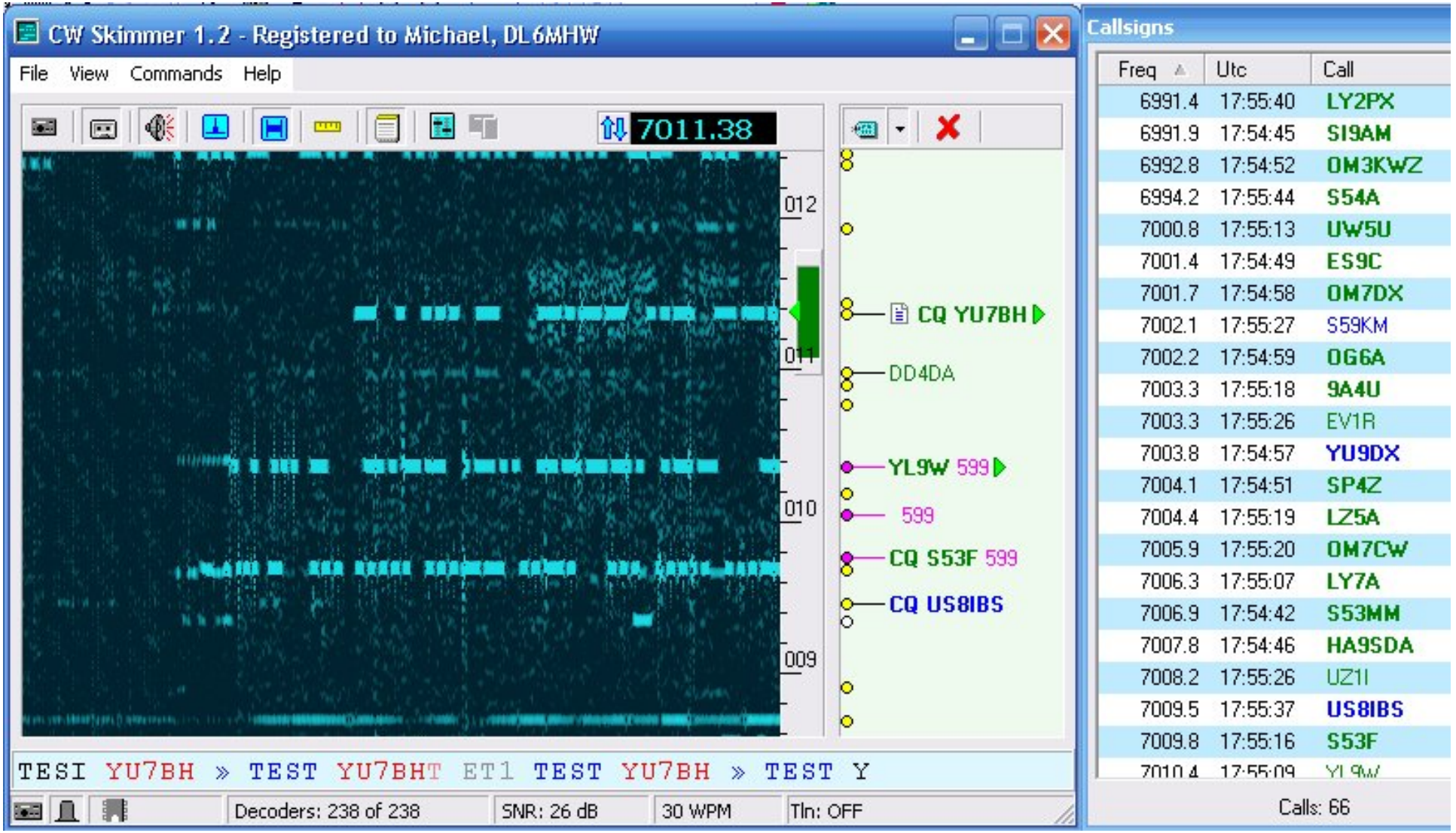
→ Life Demos with 15 minutes in wpx-cw-08-40m



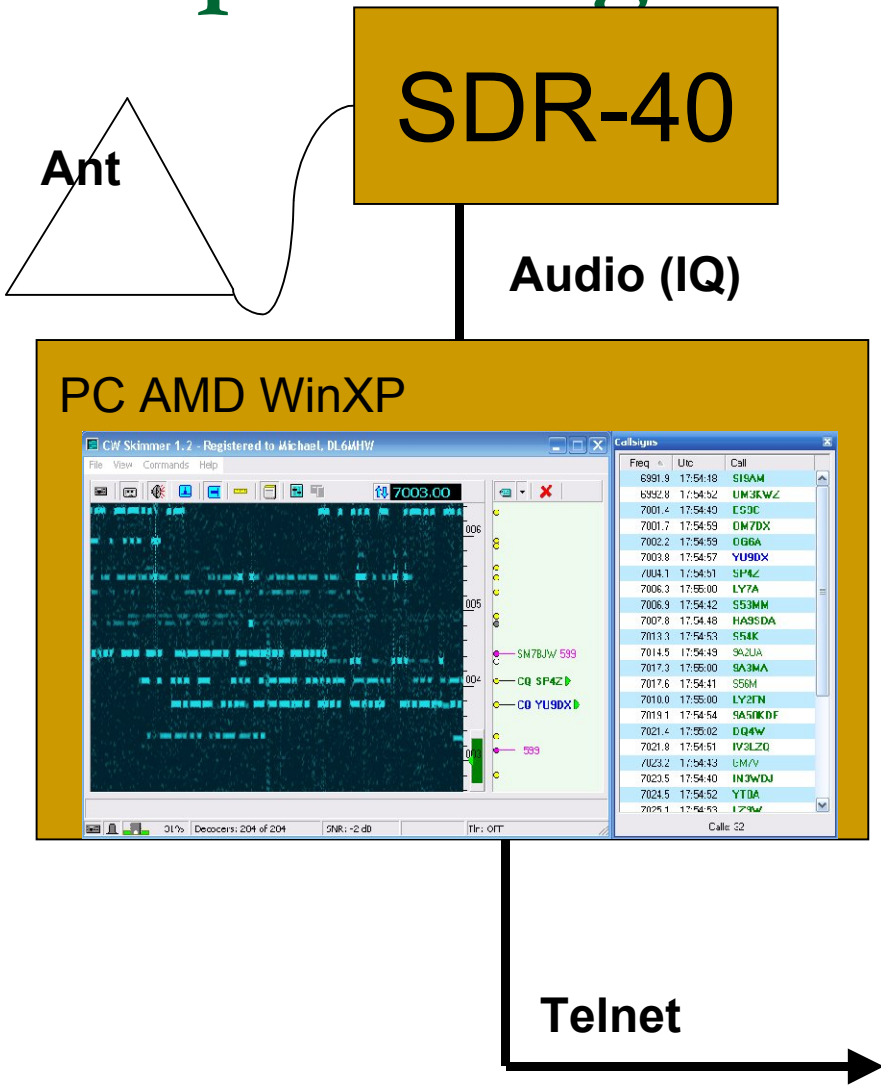
Step 2: Bandscope with Waterfall
→now read the code with your eyes!



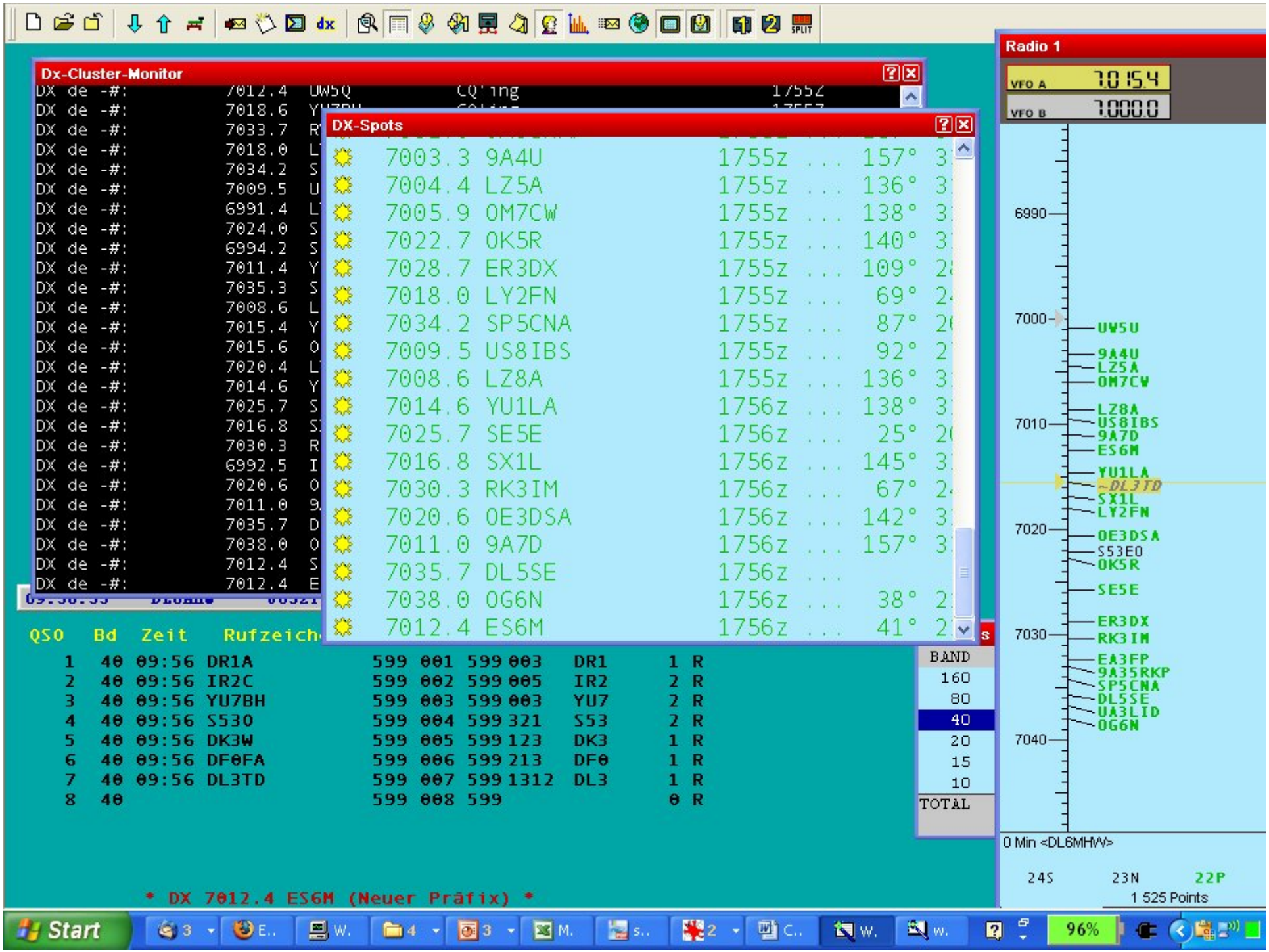
Step 3: CW Skimmer



Step 4: Integration



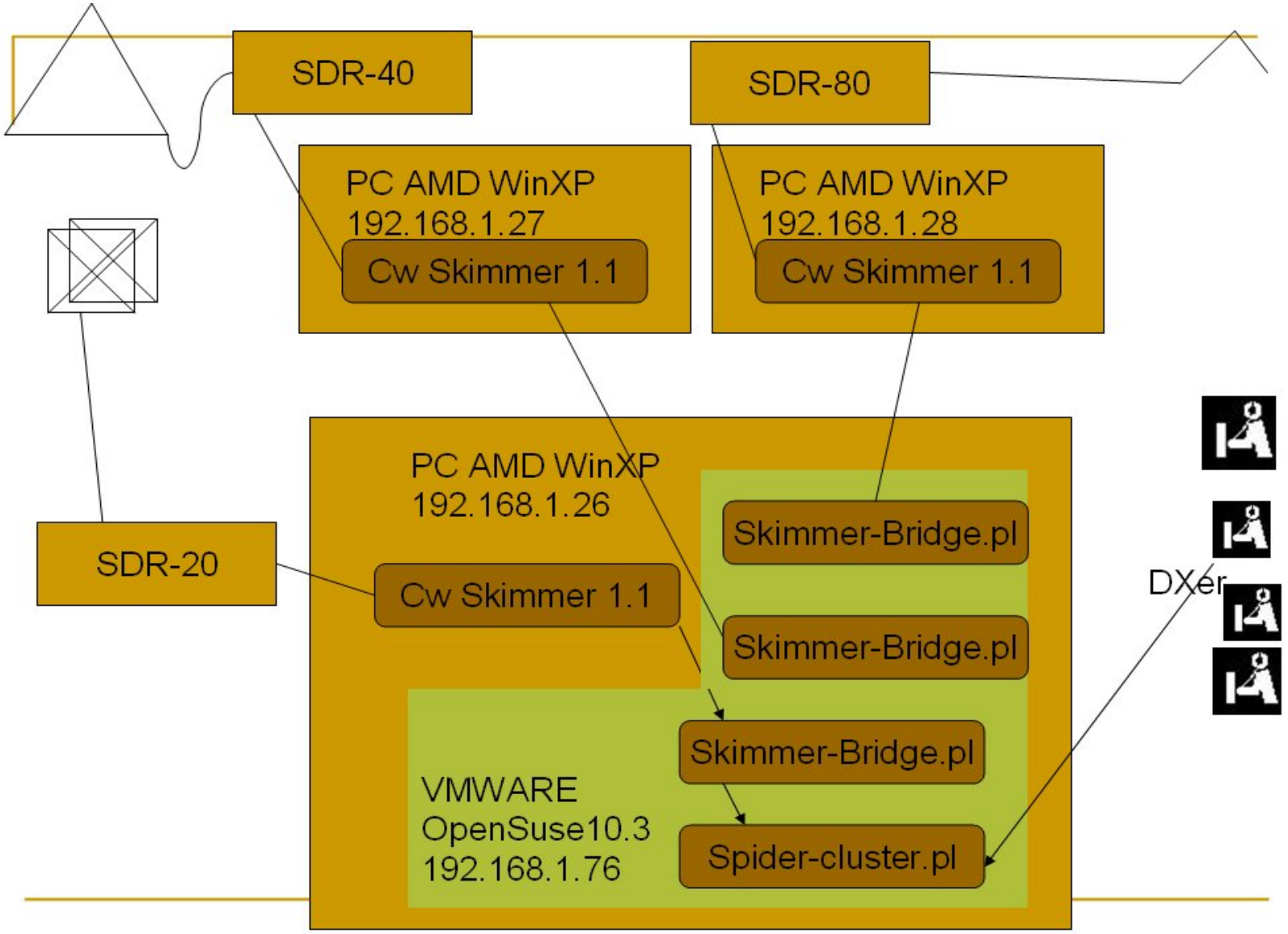
- Feed spots (CQs) from CW Skimmer into your Contest Logger
→Bandmap


Dx-Cluster-Monitor
DX de -#: 7012.4 UW5Q CQ'ing 17552
DX de -#: 7018.6
DX de -#: 7033.7
DX de -#: 7018.0
DX de -#: 7034.2
DX de -#: 7009.5
DX de -#: 6991.4
DX de -#: 7024.0
DX de -#: 6994.2
DX de -#: 7011.4
DX de -#: 7035.3
DX de -#: 7008.6
DX de -#: 7015.4
DX de -#: 7015.6
DX de -#: 7020.4
DX de -#: 7014.6
DX de -#: 7025.7
DX de -#: 7016.8
DX de -#: 7030.3
DX de -#: 6992.5
DX de -#: 7020.6
DX de -#: 7011.0
DX de -#: 7035.7
DX de -#: 7038.0
DX de -#: 7012.4
DX de -#: 7012.4
DX-Spots
7003.3 9A4U 1755z ... 157°
7004.4 LZ5A 1755z ... 136°
7005.9 OM7CW 1755z ... 138°
7022.7 OK5R 1755z ... 140°
7028.7 ER3DX 1755z ... 109°
7018.0 LY2FN 1755z ... 69°
7034.2 SP5CNA 1755z ... 87°
7009.5 US8IBS 1755z ... 92°
7008.6 LZ8A 1755z ... 136°
7014.6 YU1LA 1756z ... 138°
7025.7 SE5E 1756z ... 25°
7016.8 SX1L 1756z ... 145°
7030.3 RK3IM 1756z ... 67°
7020.6 OE3DSA 1756z ... 142°
7011.0 9A7D 1756z ... 157°
7035.7 DL5SE 1756z ...
7038.0 OG6N 1756z ... 38°
7012.4 ES6M 1756z ... 41°
QSO Bd Zeit Rufzeich
1 40 09:56 DR1A 599 001 599 003 DR1 1 R
2 40 09:56 IR2C 599 002 599 005 IR2 2 R
3 40 09:56 YU7BH 599 003 599 003 YU7 2 R
4 40 09:56 S530 599 004 599 321 S53 2 R
5 40 09:56 DK3W 599 005 599 123 DK3 1 R
6 40 09:56 DF0FA 599 006 599 213 DF0 1 R
7 40 09:56 DL3TD 599 007 599 1312 DL3 1 R
8 40 599 008 599 0 R
* DX 7012.4 ES6M (Neuer Präfix) *
BAND
160
80
40
20
15
10
TOTAL
Radio 1
VFO A 7015.4
VFO B 7000.0
6990
7000
7010
7020
7030
7040
UW5U
9A4U
LZ5A
OM7CW
LZ8A
US8IBS
9A7D
ES6M
YU1LA
~DL3TD
SX1L
LY2FN
OE3DSA
S53EO
OK5R
SE5E
ER3DX
RK3IM
EA3FP
9A35RKP
SP5CNA
DL5SE
UA3LID
OG6N
0 Min <DL6MHW>
24S 23N 22P
1 525 Points
Start
96%

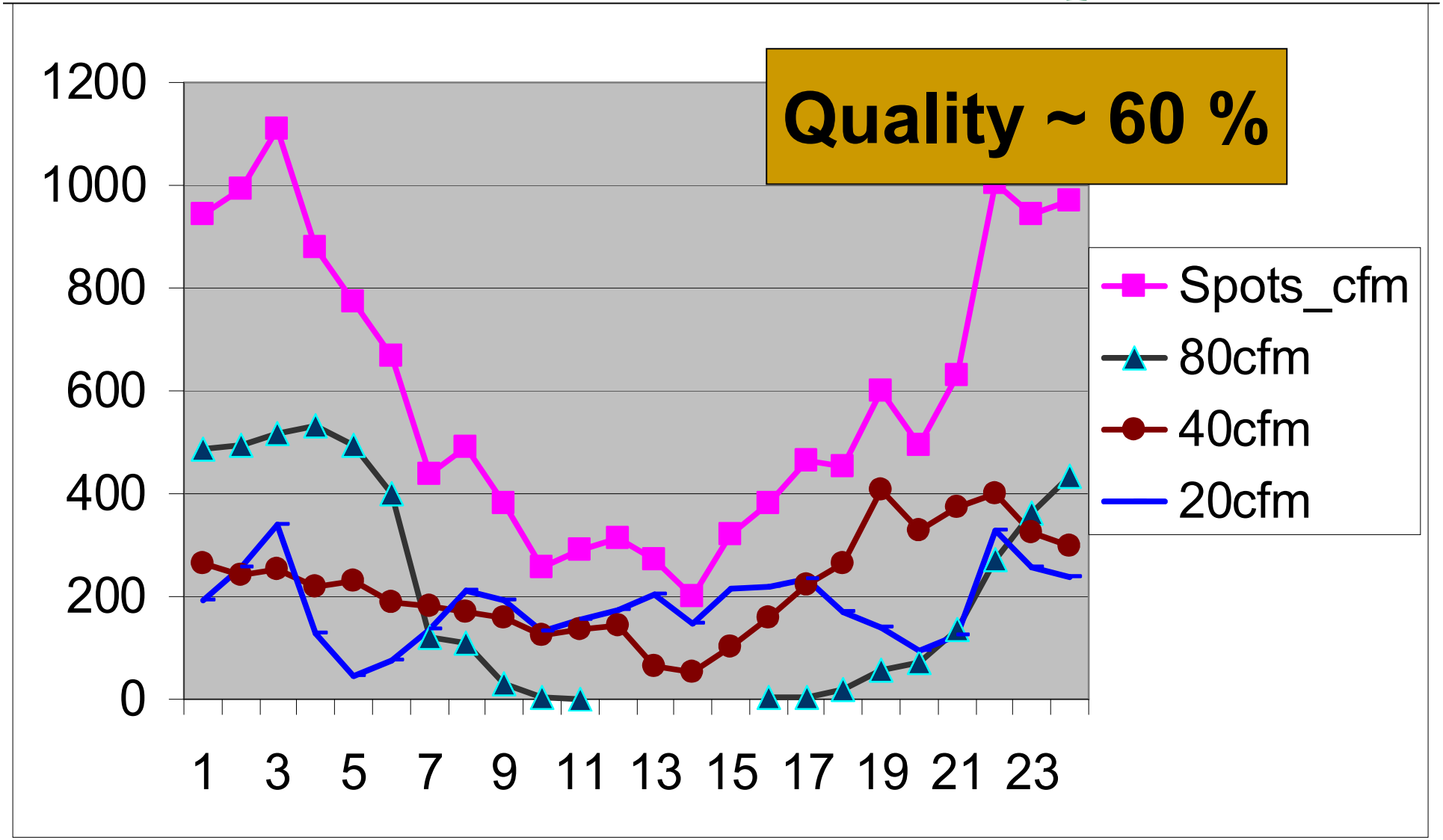
Experiments and data

- Contests:
  - RRDXC, BCC-Party, WPX-CW, Fieldday
- SDR-RX: FUNKAMATEUR (160,80,20), Softrock (40)
- WPX: ~ 50000 skimmer spots
- WPX: full time CW Skimmer with public access →DR1A, DJ1OJ, DH0GHU,DL8MBS
- Detailed analysis in BCC-Circular

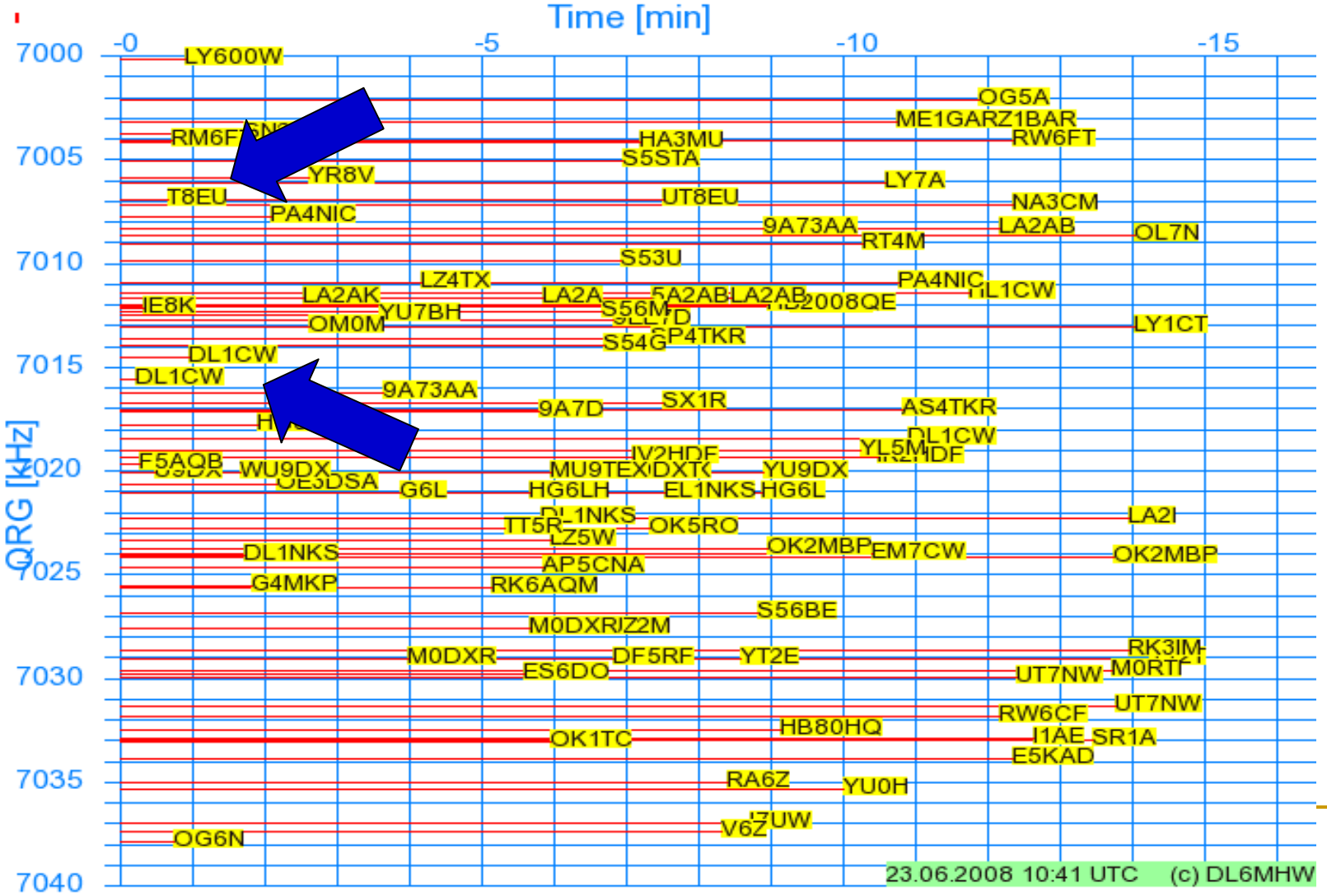
Experiments and Data (2) setup



Experiments and data (3)
WPX 08: confirmed skimmer spots



Experiments and data (4) managing flood of skimmer spots



Experiments and data (5)
callsign validation 1.1 → 1.2

Skimmer11	Minimal	Normal	Aggressive	Paranoid
	3U9DX(1)			
5Z9W(1)	5Z9W(1)			
9A35RKP(1)	9A35RKP(1)	9A35RKP(1)	9A35RKP(1)	9A35RKP(1)
9A3MA(5)	9A3MA(8)			
9A4U(3)	9A4U(4)			
9A50KDE(1)	9A50KDE(5)			
9A5D(3)	9A5D(3)			
9A5DE(1)	9A5DE(1)			
9A60A(2)	9A60A(18)			
9A60MA(1)				
	9A6TJA(1)			
9A7D(1)	9A7D(1)			
	9A7N(1)			
9EA4U(1)				
9S7D(1)				

- 241 Skimmer 1.1
- 251 Minimal
- 172 Calls normal
- 166 Aggressive
- 115 Paranoid

Start with CW Skimmer

- CW Skimmer (30 days free, then 70 $)
- RX, e.g. FUNKAMATEUR-SDR
  - →DH1TW
- Computer
  - With stereo line-in
  - Fast processor (Dual Core is useful)
- SO2R: 2nd Radio IF with CW Skimmer

- You need some time for experiments

Operation and Score

- S&P or CQ on main band
- Skimmer on 2nd radio or skimmers on the next bands find spots or fill the bandmap
- Flip bands, work skimmer spots
- Easy mults (no DX → not spotted→missed)
  - Useful in WPX
- Strong improvement of score for lazy part time OP
- Small improvement for skilled full time SO2R OP →but often 3 % make the difference

First conclusions & experiences

- ***CW Skimmer is useful***
- First steps are really simple
- You need time to learn
- It is developing
  - More quality spots - less skimmer spam
- Similar assisted but more spots
- Local spots!

Agenda

- About CW Skimmer (with Demo)
  - Steps to CW Skimming
  - Operation, results and conclusion
  - Set up
- Politics, philosophy, science fiction
  - Technology management
  - What is contesting?
  - Rules

20 minutes?

Technology in Contesting

- Useful technology will be used
- Technology is **not evil** by itself
- Technological progress is irreversible
  - If VE3NEA stops skimmer development others will do next steps (open source SDR, Linux)
- Contesting is a technological sport
  - Maximum application of technology
    →Remember: „Formula 1 Approach“

Technology in contesting (looking back)

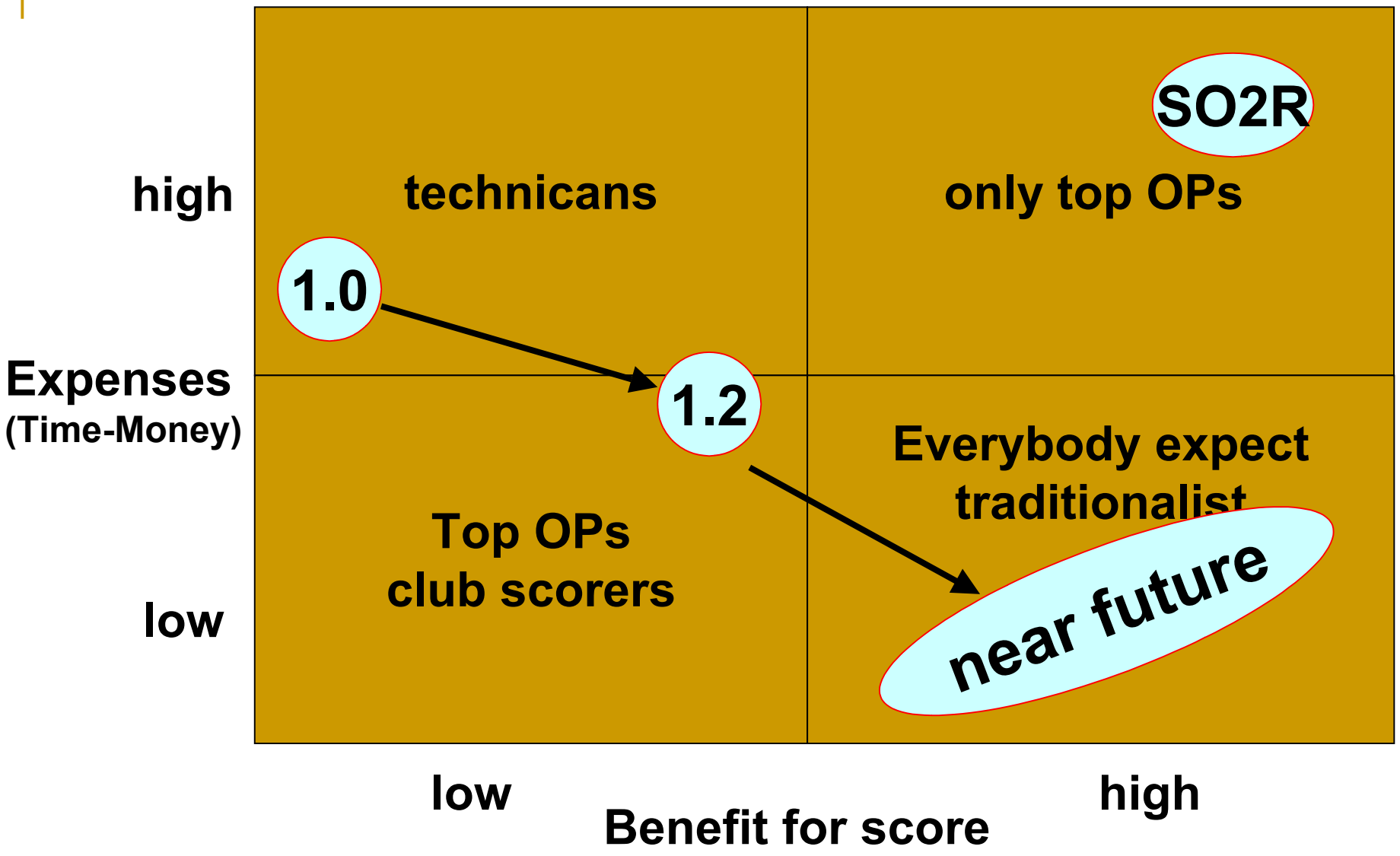
CW is an Art … CW4EVER
This is just Button Pressing

Tech	score impr.	relaxation
CW with memory key	5 %	20 %
CW keying with computer	5 %	30 %
Computer logging	5 %	20 %
Packet Cluster	20 %	20 %
Automatic switch Band/Ant.	5 %	20 %
Computer rotated beams	?	?
CW Skimmer	20 %	20 %

5..30 %

Who is in the contest?
What are the goals?

- The top OPs (top skills + top station)
  - Eager to win!
- The normal contester (e.g. DL6MHW)
  - Good score, e.g. for BCC
  - Operation contest style
  - Wins sometimes some category
- DXers
  - Work DX
- Technician
  - Test station and technology


high
Expenses
(Time-Money)
low
technicans
SO2R
only top OPs
1.0
1.2
Top OPs
club scorers
Everybody expect
traditionalist
near future
low
high
Benefit for score

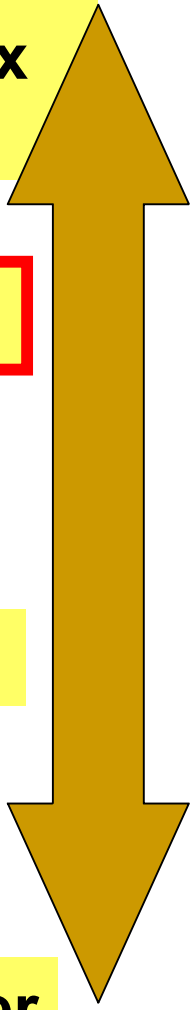
CW Skimmer: contra (less emotional)

- Technology substitutes excellence in operation
- Again technological arms raise (like SO2R)
- More time waste for technology causes less time for contesting

- Next step to an robot operator

rules & categories

- Wide spectrum of opinions
- DARC DXHF
  - No seperate assisted Category → No problem with CW Skimmer
- CQ WPX
  - K5ZD: Call for Ideas
- CQ WW ?
  - What means assisted?
- New Category?
  →Single Op unlimited



Allow local CW Skimmer: Just another box in the shack

assisted

Multi OP

strictly No Skimmer

It will be assisted (I think)

- **No ban** because you can not withdraw technology
- **No general use** because
  - CW Skimmer does something that one operator can not do
  - Operation patterns similar to assisted
- Fits somehow into **assisted**:
  - Similar benefit like cluster
  - Similar Op patterns

Rules & rumours

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CQWW Nearing Final Action On Skimmer; Signs Still Point To Assisted Category Ruling

By Jamie Dupree NS3T radio-sport.net
Posted June 23, 2008

The head of the CQ WorldWide DX Contest Committee has told radio-sport.net that a final decision on new rules dealing with the controversial CW Skimmer program should be public in July.

"The CQWWCC has not yet decided on a final statement regarding Skimmer," said Bob Cox K3EST, who added that he expected a resolution "in about three weeks."

Conclusion

- Interesting technology – some fun
- CW Skimmer brings SDR to contesting
- Easy to test →but not in a serious SO entry
- VE3NEA develops excellent ideas → open for improvements

- CW Skimmer will be used because it is useful
- “If you outlaw skimmers, then only outlaws will have skimmers”

Science Fiction

- Contest robots (but why?)

- Interaction CW Skimmer ←→ contest logger
- Reverse beacon projects
  - www.dxwatch.com
  - other aggregations
- Skimmer cluster network
  - Prove local skimmer spots with global spots

TNX
and FINALLY

DON'T PANIC

TNX for support, fruitful and sometimes controverse discussions

DG0ZB, DH1TW, DH0GHU, DJ1OJ DJ0ZY,DL2RD,DL3TD, DL6FBL,
DL8WPX, DL8MBS, K1DG, K5ZD, N4ZR … and many others

What is contesting? Who should win the competition?

- Operation skills… YES!
- Application of technology… YES!

- Much time …Yes
- Money … (yes)

- Most contesters are restricted

→Special class for father with two children and tvi problems with the neighbour?

TNX for support, fruitful and sometimes controverse discussions

- VE3NEA for his great software programs
- DG0ZB, DH1TW, DH0GHU, DJ1OJ DJ0ZY,DL2RD,DL3TD, DL6FBL, DL8WPX, DL8MBS, K1DG, K5ZD, N4ZR … and many others

CW Skimmer: Emotions (petition against CW Skimmer)

- Please help us stop CW Skimmer from our beautifull hobby!!!
- This technology does not advance the art of radio
- I am strongly against such robots trying to take us away from our sport.
- It could destroy the hobby
- we have to stop this now, or it will wast cw contesting as we no it !
- CW Skimmer makes contest to button pressing contest

http://www.ipetitions.com/petition/skimmer

- DL8MBS: Skimmer will develop into a widespread valuable tool. But as much as engines for sailboats may be valuable tools, they are not used in sailboat-races. Hopefully this petition brings at least some understanding to what extent contesting is also a skill-competition besides a station building competition.

- The evaluation of the technology, as well as the integrity of the adjudication process, is of paramount importance to the Contest Branch. To make sure the results are generated properly, we require that all Single Operator stations using Skimmer make that statement in the Soapbox field in their Cabrillo header. For example, "Skimmer was used." is sufficient. Do not put such a statement in the subject or body of the email log submission - it will not be read. If the log checkers do not know that Skimmer was used, an incorrect conclusion as to entry class (e.g. Single Operator or Multi-Operator) may be reached, or a log could be subject to review by the ARRL Awards Committee, which could result in penalties up to and including disqualification.
- ***This accommodation of Skimmer technology for the 2008 IARU HF Championship does not imply in any way the permanent acceptance of Skimmer's use in Single-Operator category operation in ARRL Contests.*** The technology will be evaluated and long-term rulings on how it may be used in this contest will be made in the 2009 rules or before.
- Since there is no Single-Operator Assisted category, anyone using external assistance through packet or the internet should enter as a Multi-Operator entry, and, as in the past, the entry may be re-categorized or disqualified if assistance is not declared.

Some more features

- Support CAT, Radio
  - Bandmap
- I/Q Balancer
- Logging software control skimmer
- Build in call validation

Status

- Similar to DX Cluster (assisted) but
  - More spots (5…100 Times)
  - Local spots (good)
  - Not proved by an intelligent OP (bad)
  - Easy multipliers spotted, e.g. DK6WL in WPX (good)
  - Some corrupted spots … but improving