The Future of DX

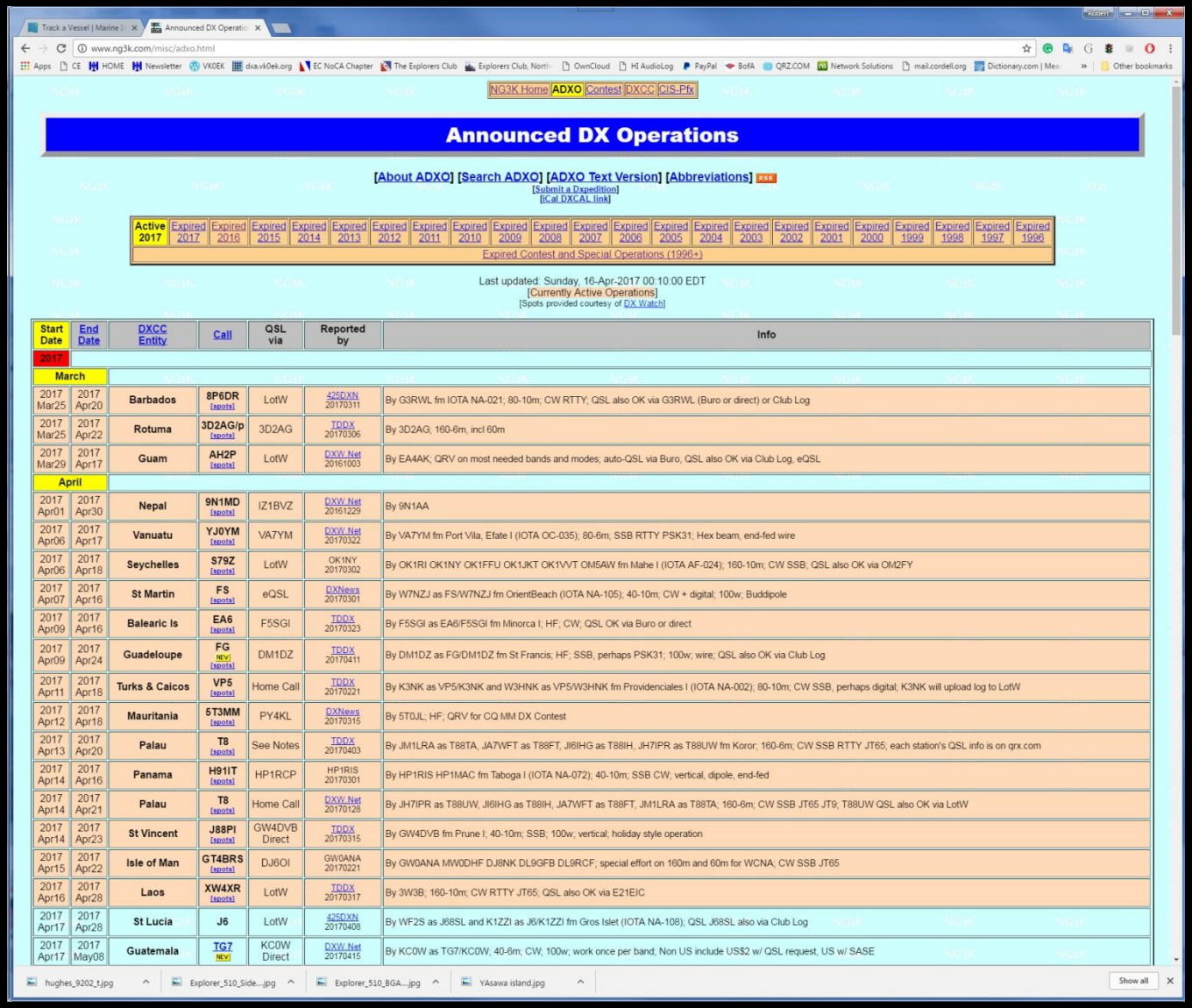
Robert W. Schmieder KK6EK

International DX Convention
Visalia, CA
23 April 2017

DX IS STILL A THING!

Entities…

DXpeditions…



www.ng3k.com/misc/adxo.html

NG3K Home | ADXO | Contest | DXCC | CIS-Pfx

Announced DX Operations

[About ADXO] [Search ADXO] [ADXO Text Version] [Abbreviations] RSS
[Submit a Dxpedition]
[iCal DXCAL link]

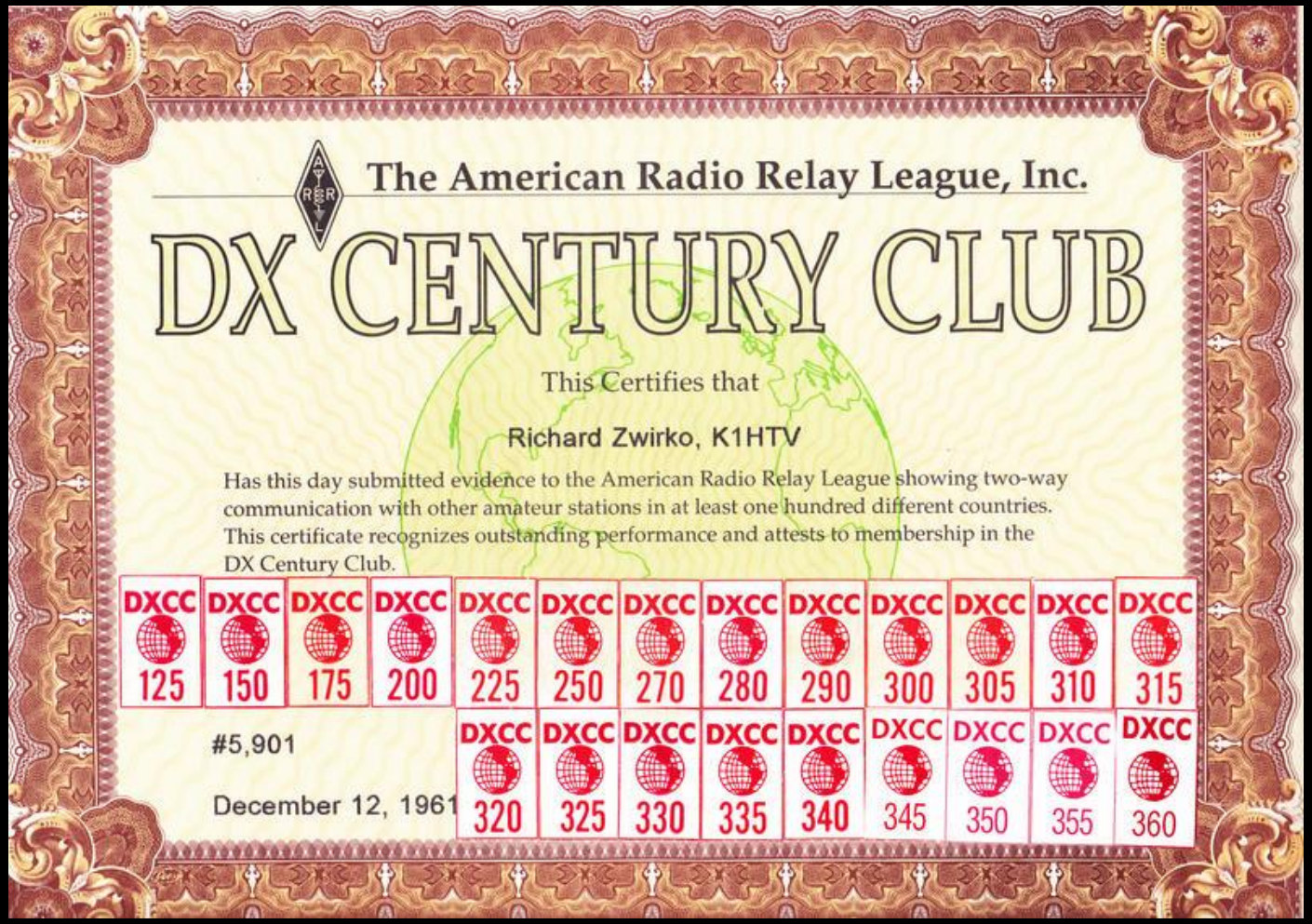
Active 2017 | Expired 2017 | Expired 2016 | Expired 2015 | Expired 2014 | Expired 2013 | Expired 2012 | Expired 2011 | Expired 2010 | Expired 2009 | Expired 2008 | Expired 2007 | Expired 2006 | Expired 2005 | Expired 2004 | Expired 2003 | Expired 2002 | Expired 2001 | Expired 2000 | Expired 1999 | Expired 1998 | Expired 1997 | Expired 1996

Expired Contest and Special Operations (1996+)

Last updated: Sunday, 16-Apr-2017 00:10:00 EDT
[Currently Active Operations]
[Spots provided courtesy of DX Watch]

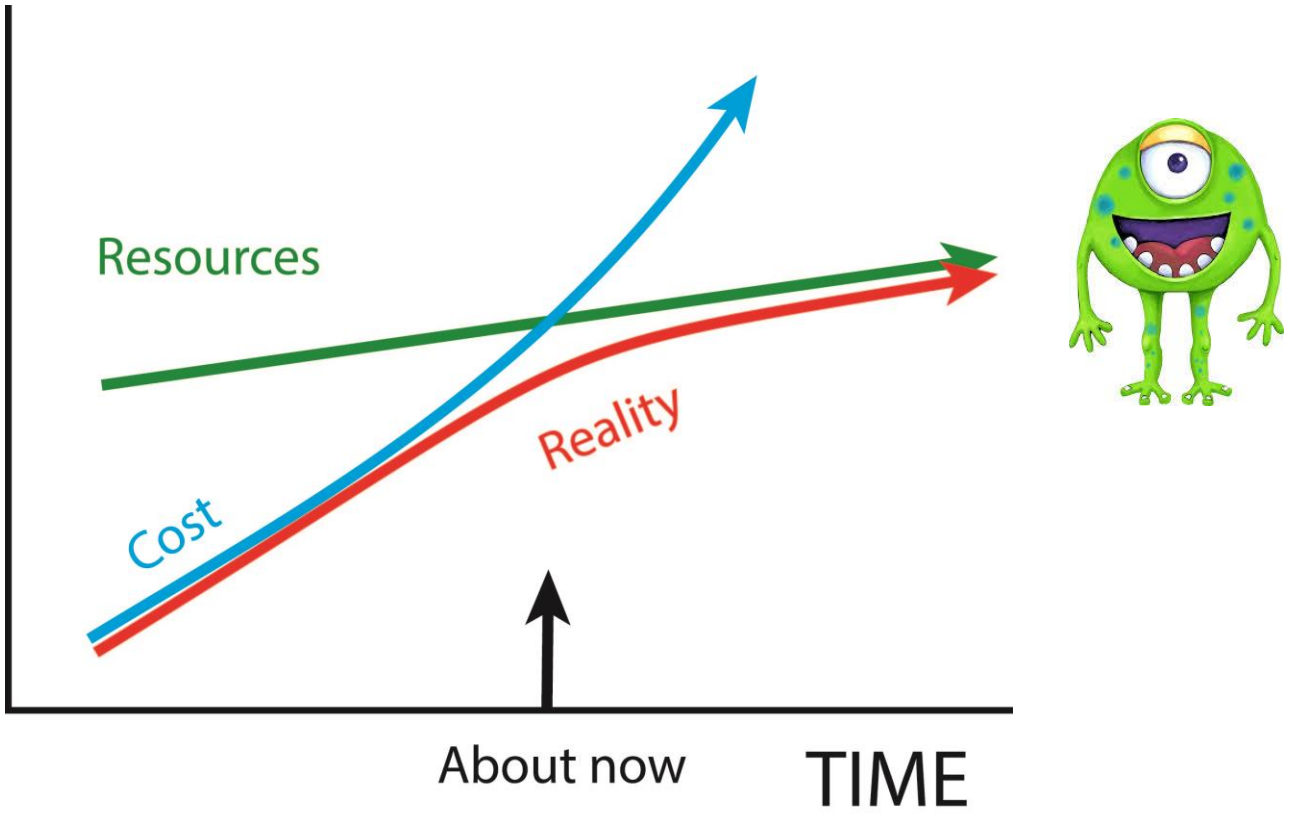
Start Date	End Date	DXCC Entity	Call	QSL via	Reported by	Info
2017						
March						
2017 Mar25	2017 Apr20	Barbados	8P6DR [spots]	LotW	425DXN 20170311	By G3RWL fm IOTA NA-021; 80-10m; CW RTTY; QSL also OK via G3RWL (Buro or direct) or Club Log
2017 Mar25	2017 Apr22	Rotuma	3D2AG/p [spots]	3D2AG	TDDX 20170306	By 3D2AG; 160-6m, incl 60m
2017 Mar29	2017 Apr17	Guam	AH2P [spots]	LotW	DXW.Net 20161003	By EA4AK; QRV on most needed bands and modes; auto-QSL via Buro, QSL also OK via Club Log, eQSL
April						
2017 Apr01	2017 Apr30	Nepal	9N1MD [spots]	IZ1BVZ	DXW.Net 20161229	By 9N1AA
2017 Apr06	2017 Apr17	Vanuatu	YJ0YM [spots]	VA7YM	DXW.Net 20170322	By VA7YM fm Port Vila, Efate I (IOTA OC-035); 80-6m; SSB RTTY PSK31; Hex beam, end-fed wire
2017 Apr06	2017 Apr18	Seychelles	S79Z [spots]	LotW	OK1NY 20170302	By OK1RI OK1NY OK1FFU OK1JKT OK1VVT OM5AW fm Mahe I (IOTA AF-024); 160-10m; CW SSB; QSL also OK via OM2FY
2017 Apr07	2017 Apr16	St Martin	FS [spots]	eQSL	DXNews 20170301	By W7NZJ as FS/W7NZJ fm OrientBeach (IOTA NA-105); 40-10m; CW + digital; 100w; Buddipole
2017 Apr09	2017 Apr16	Balearic Is	EA6 [spots]	F5SGI	TDDX 20170323	By F5SGI as EA6/F5SGI fm Minorca I; HF; CW; QSL OK via Buro or direct
2017 Apr09	2017 Apr24	Guadeloupe	FG NEW [spots]	DM1DZ	TDDX 20170411	By DM1DZ as FG/DM1DZ fm St Francis; HF; SSB, perhaps PSK31; 100w; wire; QSL also OK via Club Log
2017 Apr11	2017 Apr18	Turks & Caicos	VP5 [spots]	Home Call	TDDX 20170221	By K3NK as VP5/K3NK and W3HNK as VP5/W3HNK fm Providenciales I (IOTA NA-002); 80-10m; CW SSB, perhaps digital; K3NK will upload log to LotW
2017 Apr12	2017 Apr18	Mauritania	5T3MM [spots]	PY4KL	DXNews 20170315	By 5T0JL; HF; QRV for CQ MM DX Contest
2017 Apr13	2017 Apr20	Palau	T8 [spots]	See Notes	TDDX 20170403	By JM1LRA as T88TA, JA7WFT as T88FT, JI6IHG as T88IH, JH7IPR as T88UW fm Koror; 160-6m; CW SSB RTTY JT65; each station's QSL info is on qrx.com
2017 Apr14	2017 Apr16	Panama	H91IT [spots]	HP1RCP	HP1RIS 20170301	By HP1RIS HP1MAC fm Taboga I (IOTA NA-072); 40-10m; SSB CW; vertical, dipole, end-fed
2017 Apr14	2017 Apr21	Palau	T8 [spots]	Home Call	DXW.Net 20170128	By JH7IPR as T88UW, JI6IHG as T88IH, JA7WFT as T88FT, JM1LRA as T88TA; 160-6m; CW SSB JT65 JT9; T88UW QSL also OK via LotW
2017 Apr14	2017 Apr23	St Vincent	J88PI [spots]	GW4DVB Direct	TDDX 20170315	By GW4DVB fm Prune I; 40-10m; SSB; 100w; vertical; holiday style operation
2017 Apr15	2017 Apr22	Isle of Man	GT4BRS [spots]	DJ6OI	GW0ANA 20170221	By GW0ANA MW0DHF DJ8NK DL9GFB DL9RCF; special effort on 160m and 60m for WCNA; CW SSB JT65
2017 Apr16	2017 Apr28	Laos	XW4XR [spots]	LotW	TDDX 20170317	By 3W3B; 160-10m; CW RTTY JT65; QSL also OK via E21EIC
2017 Apr17	2017 Apr28	St Lucia	J6	LotW	425DXN 20170408	By WF2S as J68SL and K1ZZI as J6/K1ZZI fm Gros Islet (IOTA NA-108); QSL J68SL also via Club Log
2017 Apr17	2017 May08	Guatemala	TG7 NEW	KC0W Direct	DXW.Net 20170415	By KC0W as TG7/KC0W; 40-6m; CW; 100w; work once per band; Non US include US$2 w/ QSL request, US w/ SASE

DXers…


The American Radio Relay League, Inc.
DX CENTURY CLUB
This Certifies that
Richard Zwirko, K1HTV
Has this day submitted evidence to the American Radio Relay League showing two-way communication with other amateur stations in at least one hundred different countries. This certificate recognizes outstanding performance and attests to membership in the DX Century Club.
DXCC 125
DXCC 150
DXCC 175
DXCC 200
DXCC 225
DXCC 250
DXCC 270
DXCC 280
DXCC 290
DXCC 300
DXCC 305
DXCC 310
DXCC 315
DXCC 320
DXCC 325
DXCC 330
DXCC 335
DXCC 340
DXCC 345
DXCC 350
DXCC 355
DXCC 360
#5,901
December 12, 1961

But we're all aware that…

…there's a problem on the horizon



Cost of transportation has increased

Charge per person-day

1995	$250
2015	$500

The DX community has a limit…

The limit of DX resources	
Radio Foundations	$100k
Radio Clubs	$20k
Radio Sponsors	$100k
Grants	$20k
Individuals	$100k
QSLs	$100k
TOTAL Radio Community	$440k

Potential outside of DX Community	
Non-Radio Sponsors	$100k
Angels	$100k
Non-Radio Grants	$20k
Goal Sharing	$50k
TOTAL Potential	$270k

TOTAL (potential)
$710k

Options

- ❑ Fall back to 20th Century practice
- ❑ Continue unchanged
- ❑ Grow in size and budget
- ❑ Evolve technology
- ❑ Change program goals
- ❑ Separate into subActivities
- ❑ Lose interest in DX
- ☑ Introduce a new paradigm

My view of the evolution of DX

DX is Still a Thing!

Phase 0 DX IS!

Phase 1 Internet

Phase 2 Real-time

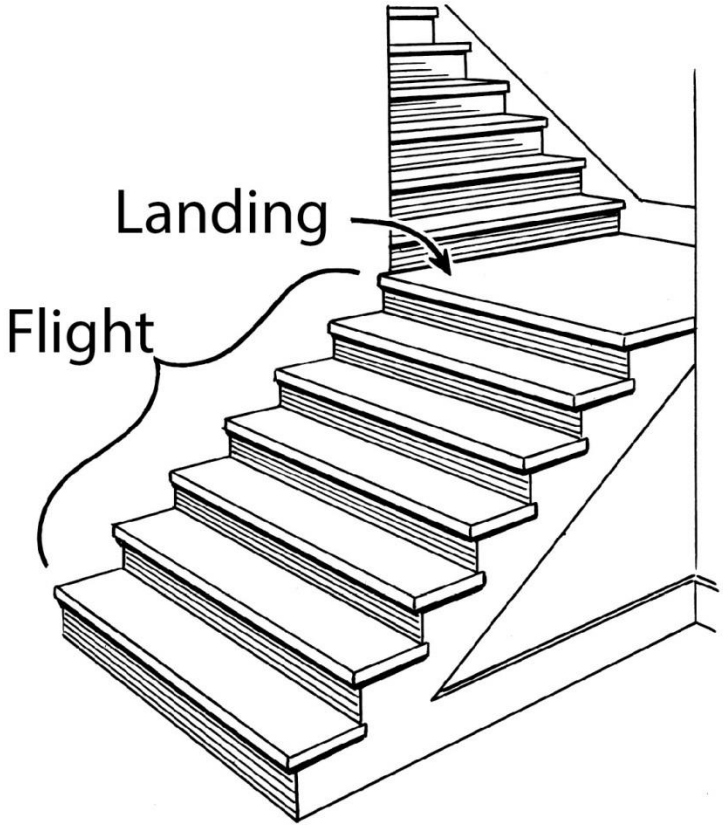
Phase 3 Social Media

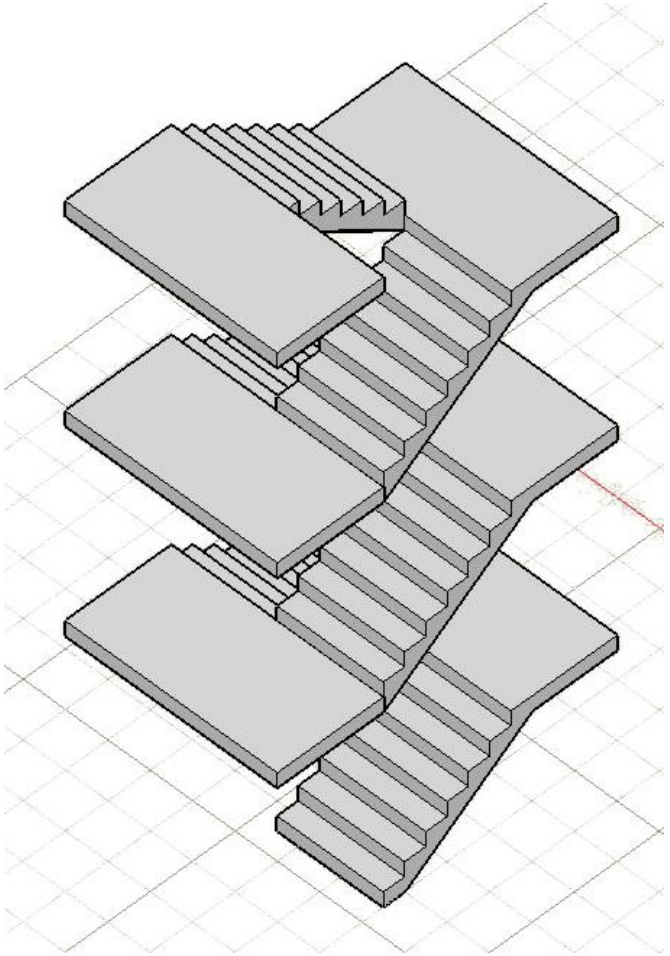
Phase 4 Systems

Phase 5 SET

Your Part in DX of the Future

DX has evolved like flights of stairs





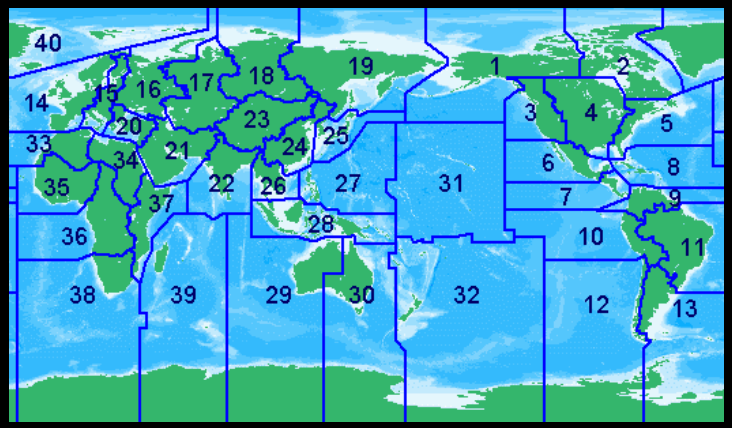
Each flight is followed by a landing, then another flight

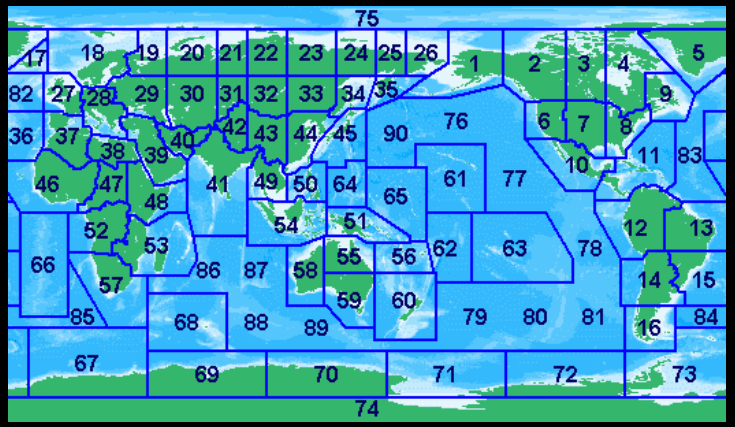
PHASE 0 1915-1995

DX IS!

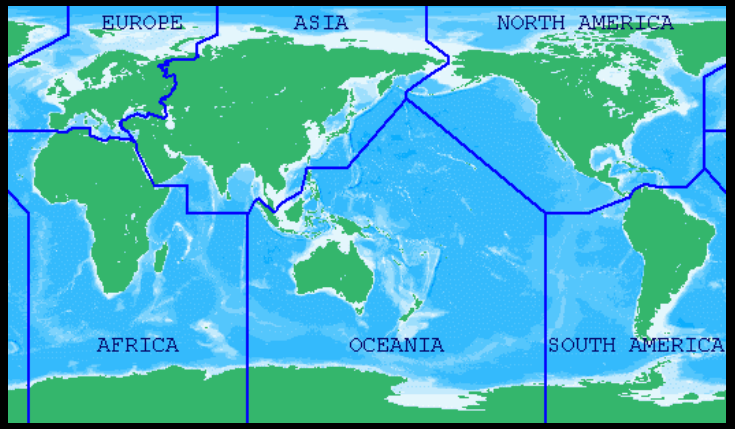
0

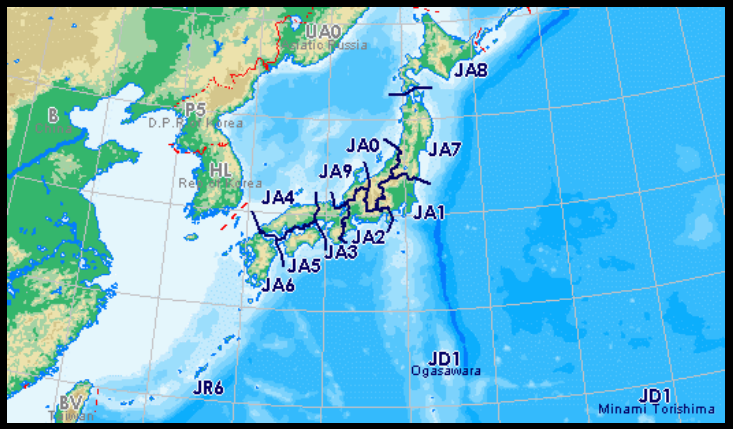
Dxing and DXpeditioning have matured

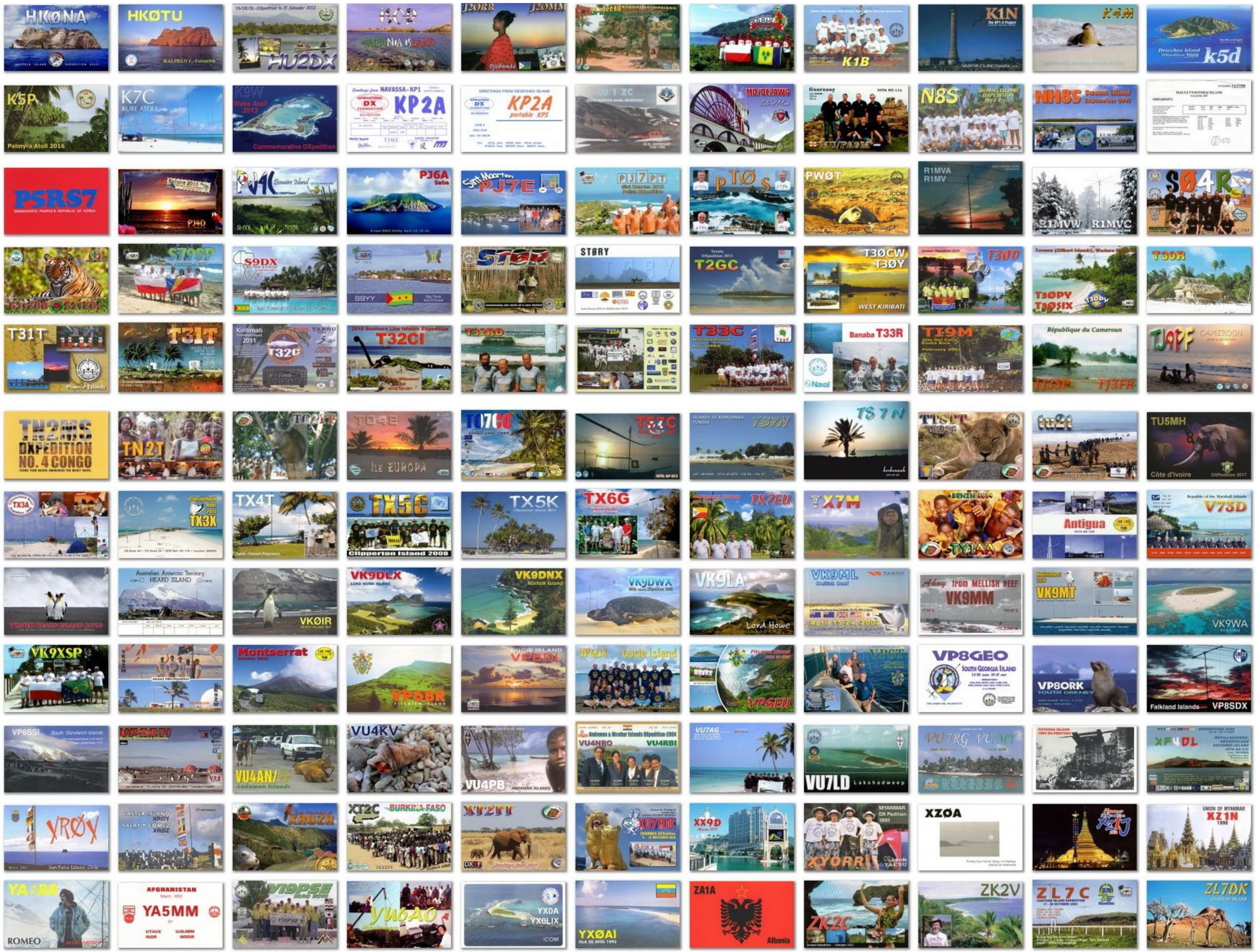




AR	BR	CR	DR	ER	FR	GR	HR	IR	JR	KR	LR	MR	NR	OR	PR	QR	RR
AQ	BQ	CQ	DQ	EQ	FQ	GQ	HQ	IQ	JQ	KQ	LQ	MQ	NQ	OQ	PQ	QQ	RQ
AP	BP	CP	DP	EP	FP	GP	HP	IP	JP	KP	LP	MP	NP	OP	PP	QP	RP
AO	BO	CO	DO	EO	FO	GO	HO	IO	JO	KO	LO	MO	NO	OO	PO	QO	RO
AN	BN	CN	DN	EN	FN	GN	HN	IN	JN	KN	LN	MN	NN	ON	PN	QN	RN
AM	BM	CM	DM	EM	FM	GM	HM	IM	JM	KM	LM	MM	NM	OM	PM	QM	RM
AL	BL	CL	DL	EL	FL	GL	HL	IL	JL	KL	LL	ML	NL	OL	PL	QL	RL
AK	BK	CK	DK	EK	FK	GK	HK	IK	JK	KK	LK	MK	NK	OK	PK	QK	RK
AJ	BJ	CJ	DJ	EJ	FJ	GJ	HJ	IJ	JJ	KJ	LJ	MJ	NJ	OJ	PJ	QJ	RJ
AI	BI	CI	DI	EI	FI	GI	HI	II	JI	KI	LI	MI	NI	OI	PI	QI	RI
AH	BH	CH	DH	EH	FH	GH	HH	IH	JH	KH	LH	MH	NH	OH	PH	QH	RH
AG	BG	CG	DG	EG	FG	GG	HG	IG	JG	KG	LG	MG	NG	OG	PG	QG	RG
AF	BF	CF	DF	EF	FF	GF	HF	IF	JF	KF	LF	MF	NF	OF	PF	QF	RF
AE	BE	CE	DE	EE	FE	GE	HE	IE	JE	KE	LE	ME	NE	OE	PE	QE	RE
AD	BD	CD	DD	ED	FD	GD	HD	ID	JD	KD	LD	MD	ND	OD	PD	QD	RD
AC	BC	CC	DC	EC	FC	GC	HC	IC	JC	KC	LC	MC	NC	OC	PC	QC	RC
AB	BB	CB	DB	EB	FB	GB	HB	IB	JB	KB	LB	MB	NB	OB	PB	QB	RB
AA	BA	CA	DA	EA	FA	GA	HA	IA	JA	KA	LA	MA	NA	OA	PA	QA	RA

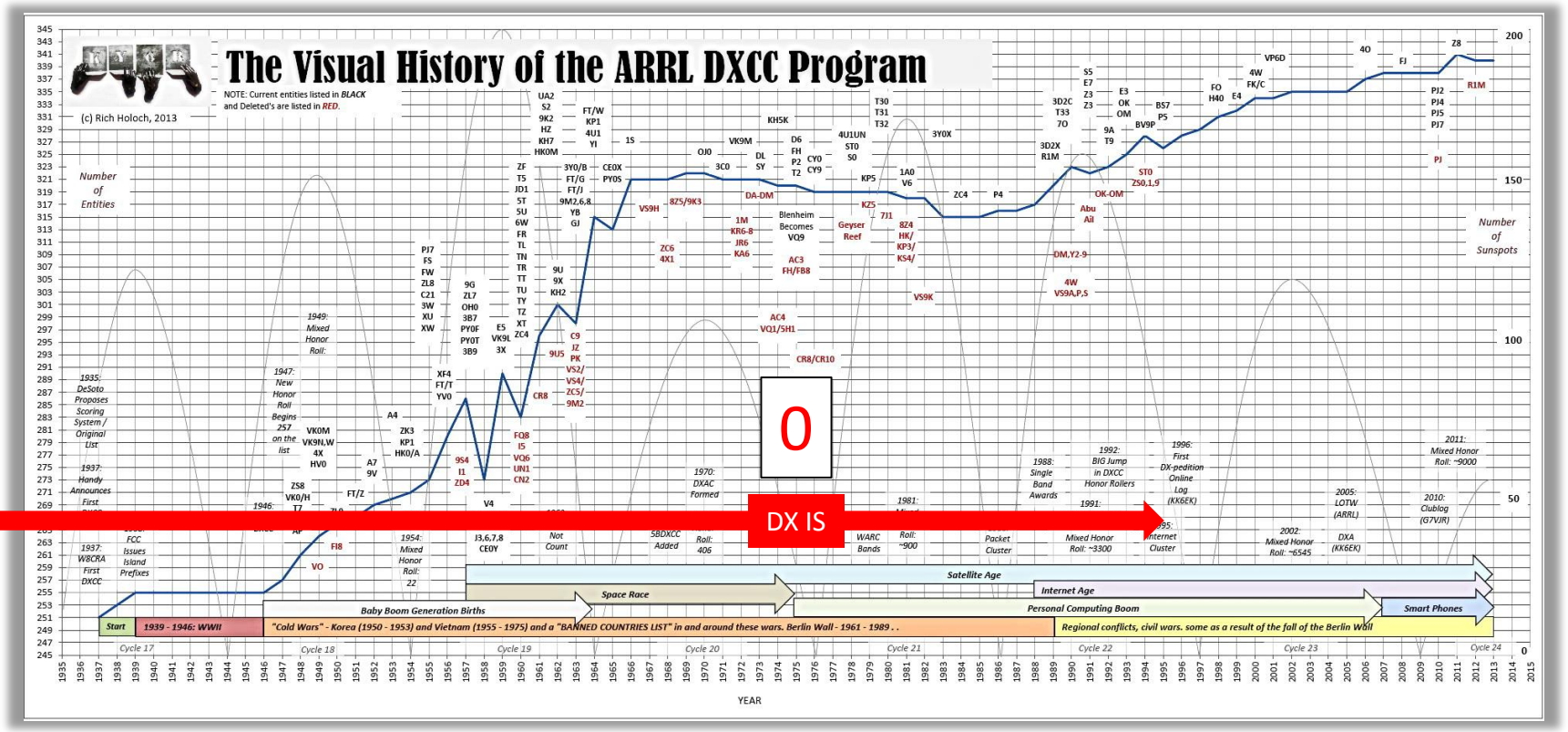






HKØNA
HKØTU
MALPELO I. Colombia
HU2DX
J2ØRR
J2ØMM
Djibouti
K1B
K1N
K4M
Desecheo Island DXpedition 2009
k5d
K5P
Palmyra Atoll 2016
K7C
KURE ATOLL
K9W
Wake Atoll 2013
Commemorative DXpedition
NAVASSA - KP1
KP2A
GREETINGS FROM DESECHEO ISLAND
KP2A
portable KP5
N8S
NH8S
P5RS7
DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA
PJ4C
PJ6A
Saba
Sint Maarten
PJ7E
PJ7PT
PTØS
PWØT
R1MVA
R1MV
R1MVW
R1MVC
S9DX
S9YY
STØRY
T2GC
T3ØCW
T3ØY
WEST KIRIBATI
T3ØD
T3ØPY
T3ØSIX
T3ØR
T31T
Phoenix Islands
T31T
T32C
T32CI
Banaba T33R
TI9M
République du Cameroun
TJ9PF
CAMEROUN
TN2MS
DXPEDITION
NO. 4 CONGO
TN2T
ILE EUROPA
TO7CC
TS7N
TU5MH
Côte d'Ivoire
DXPedition 2017
TX3A
TX3X
TX4T
TX5C
Clipperton Island 2008
TX5K
TX6G
TX7EU
TX7M
Antigua
V73D
Republic of the Marshall Islands
Australian Antarctic Territory
HEARD ISLAND
VKØIR
VK9DLX
LORD HOWE ISLAND
VK9DNX
Norfolk Island
VK9DWX
VK9LA
Lord Howe
VK9ML
Ahoy from MELLISH REEF
VK9MM
VK9MT
VK9WA
VK9XSP
Montserrat
Ducie Island
VP6DX
Ducie Island
VP6EU
VP8GEO
SOUTH GEORGIA ISLAND
VP8ORK
SOUTH ORKNEY
Falkland Islands
VP8SDX
VP8SSI
South Sandwich Islands
VU4KV
VU4AN
Andaman Islands
VU4PB
ANDAMAN ISLANDS
Andaman & Nicobar Islands DXpedition-2004
VU4NRO
VU4RBI
VU7AG
VU7LD
Lakshadweep
VU7RG
XF4DL
XRØY
San Felix Island, Chile
EASTER ISLAND
XRØZ
BURKINA FASO
XT2C
XX9D
MYANMAR
DX Pedition
1991
XYØRR
XZØA
UNION OF MYANMAR
XZ1N
1998
YA5MM
AFGHANISTAN
ROMEO
YXØA
YXØLIX
YXØAI
ISLA DE AVES 1992
ZA1A
Albania
ZK2C
ZK2V
ZL7C
CHATHAM ISLAND EXPEDITION
ZL7DK
CHATHAM ISLAND

The Phases of DX



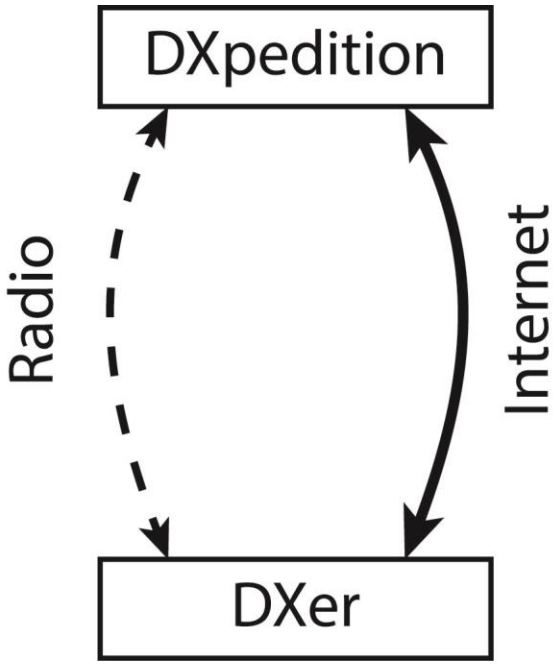
Graphic: Rich KY6R

PHASE 1 1995-2005

INTERNET

1

Introduction of the Internet

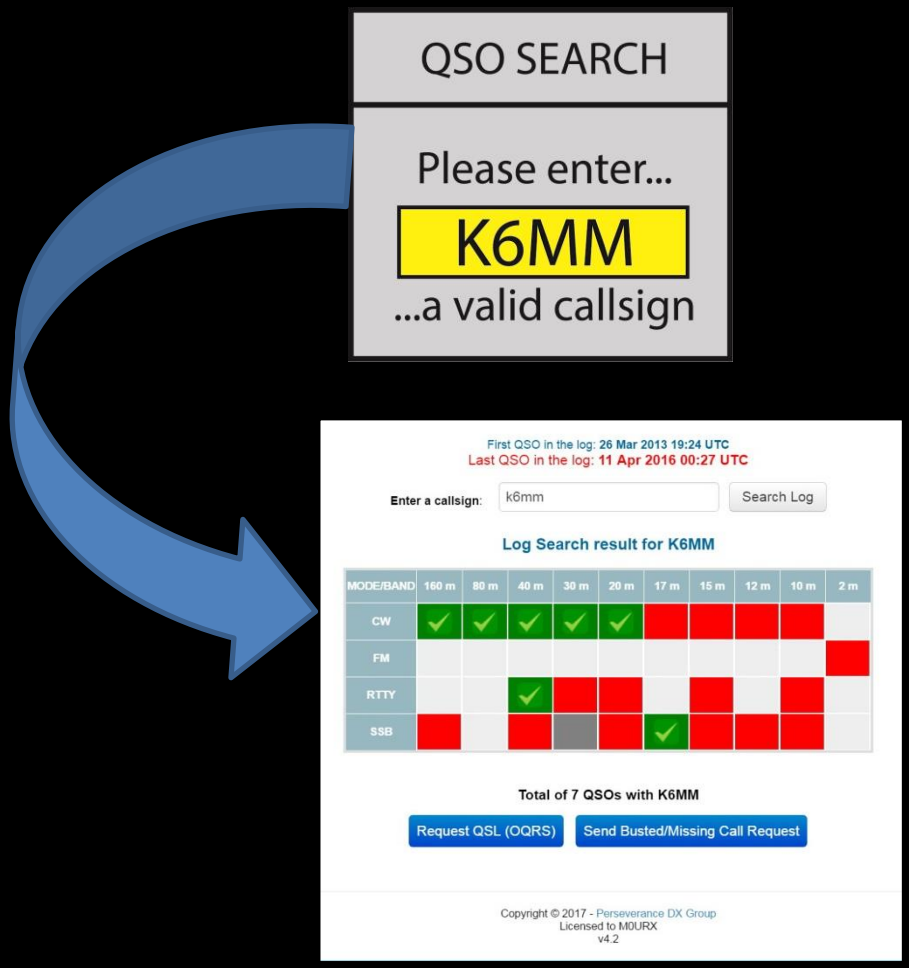


Applications

- ✓ Online log server
- ✓ Online logs
- ✓ News
- ✓ Automatic emails
- ✓ Pre-emptive QSLs
- ✓ Next-day QSLs

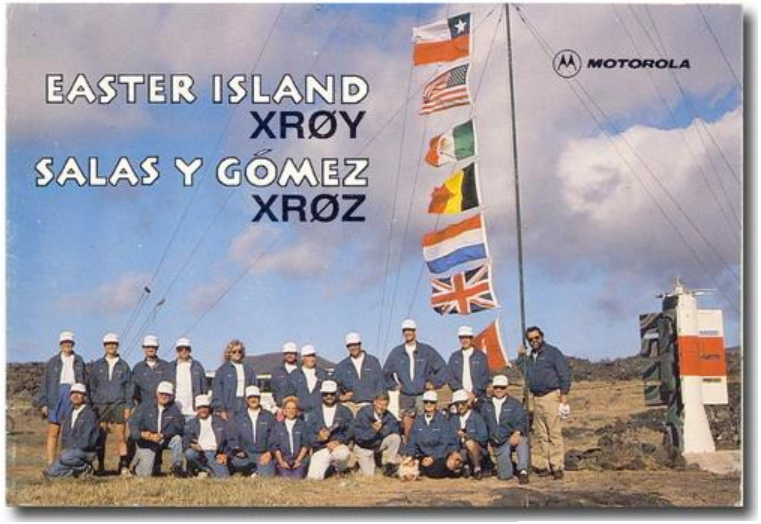
The First DXpedition Website

The Online Log Server

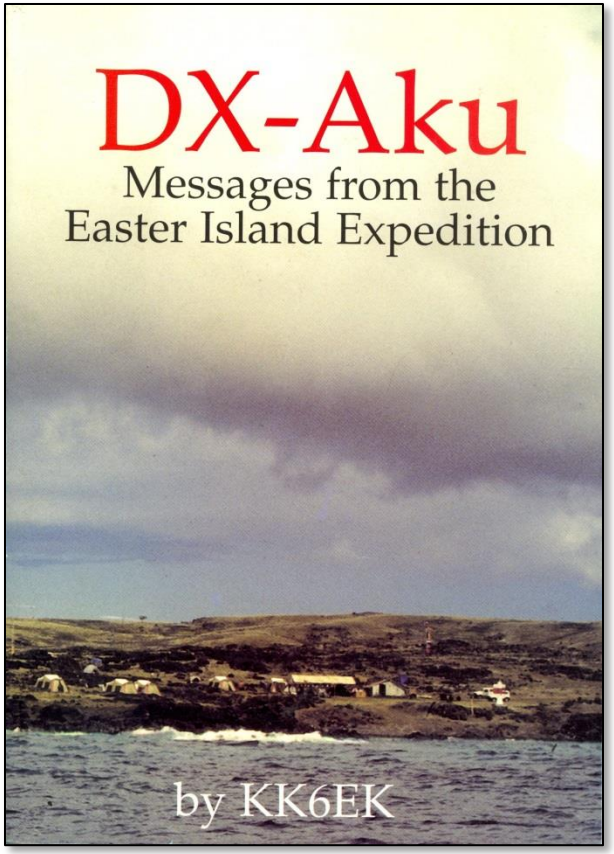


Robert Schmieder KK6EK

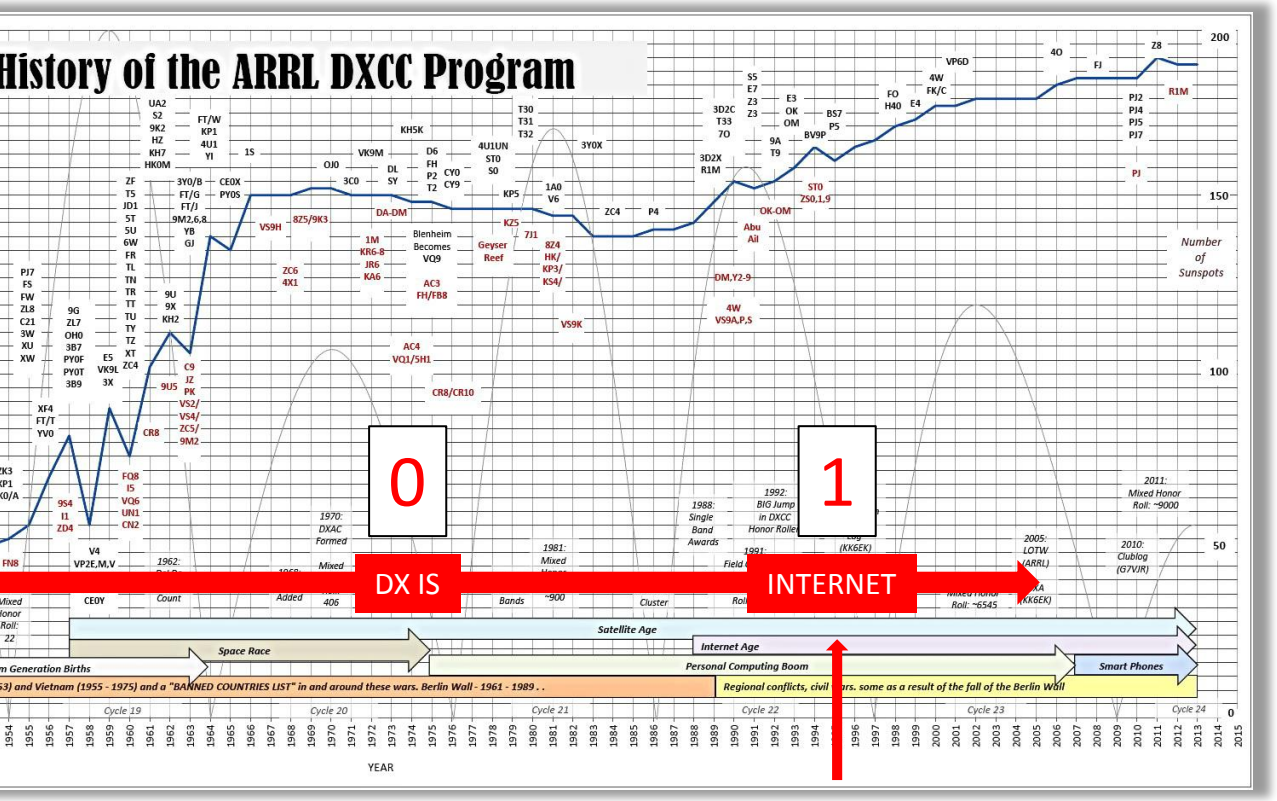
First use of the Internet on a DXpedition



Easter Island
1995



The Phases of DX



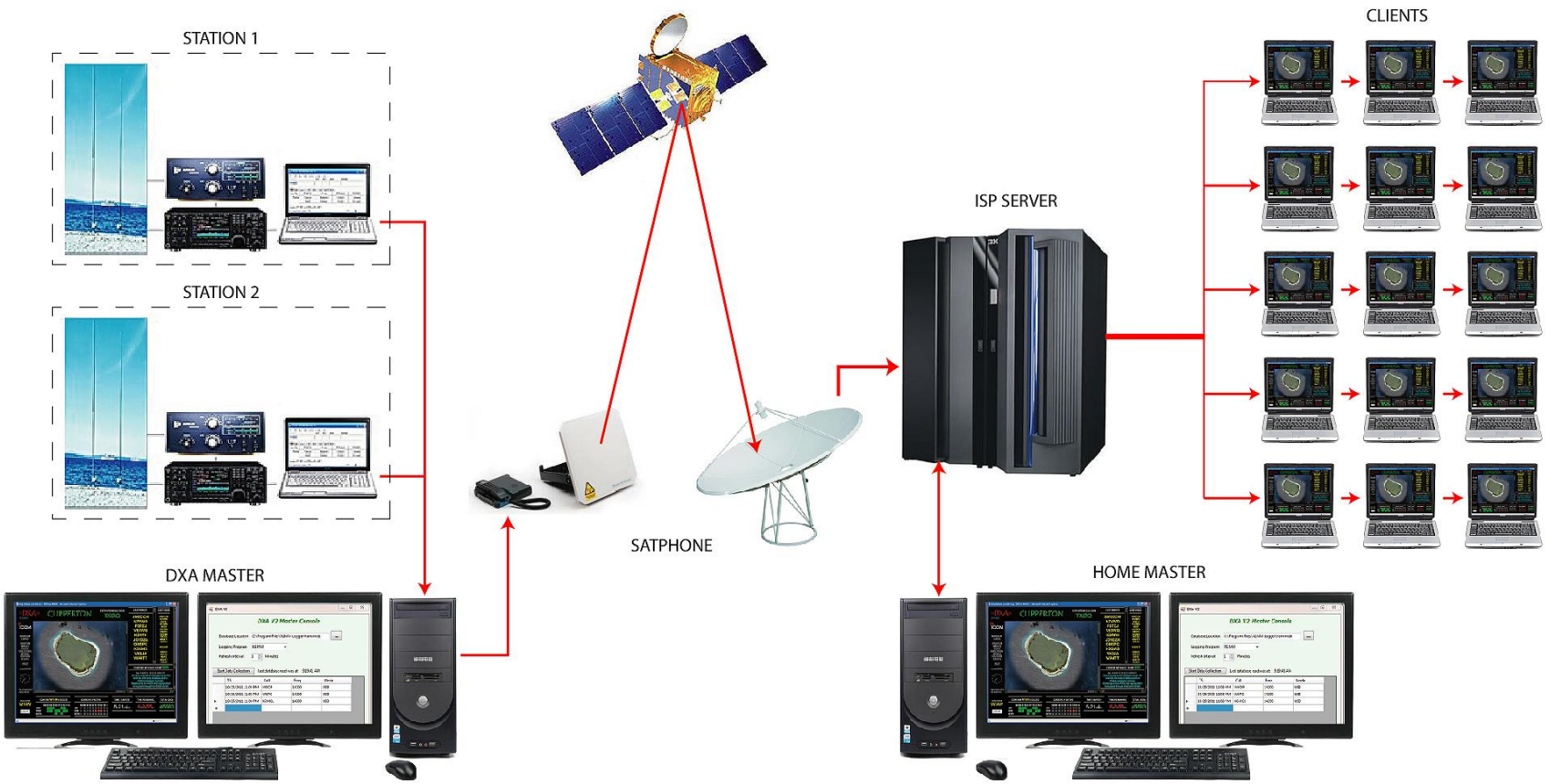
XRØY
1995

PHASE 2 2005-2015

REAL-TIME

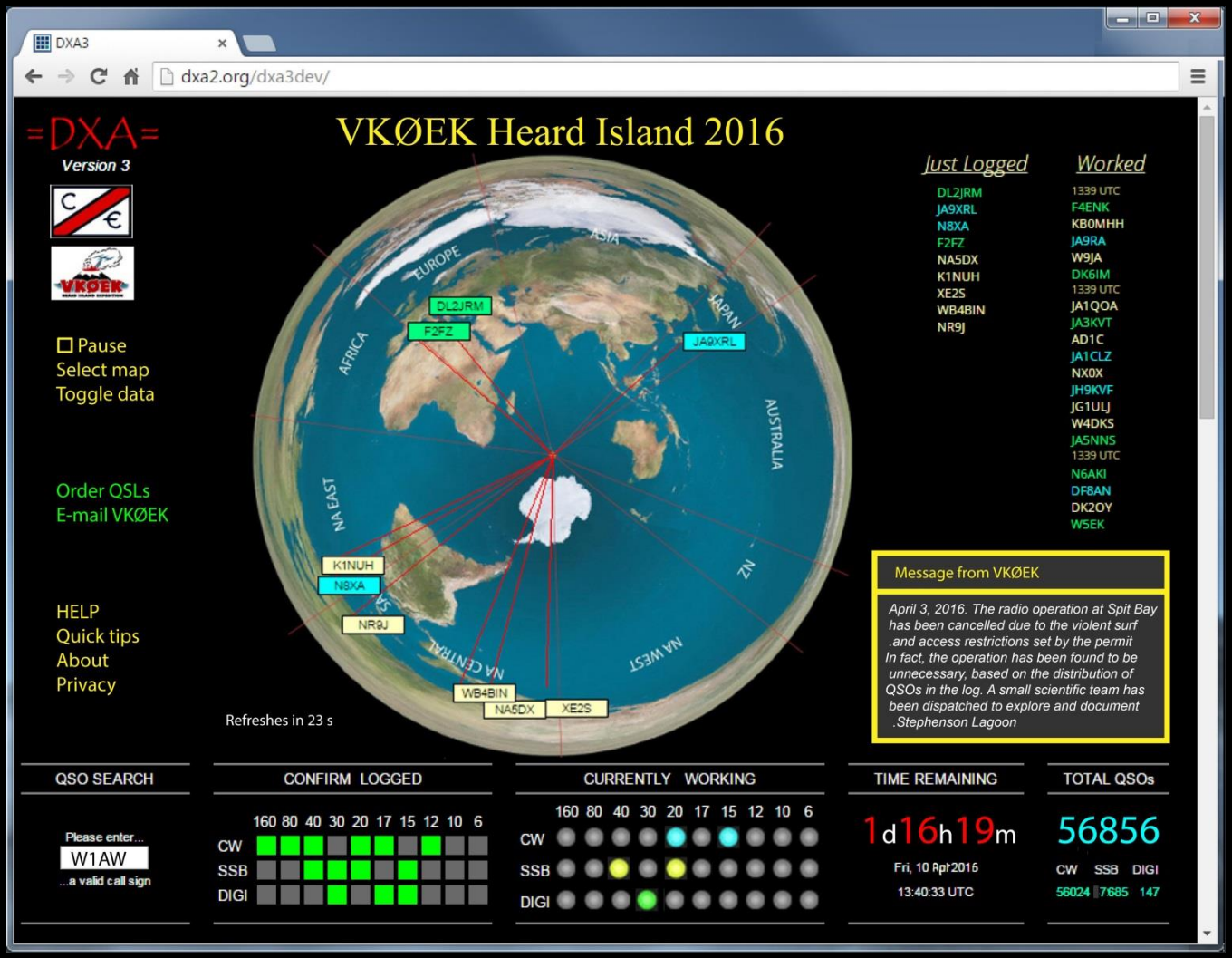
2

Real-time and graphics added to the Log Server



DXpedition DXA Satellite Internet DXers

DXA – The Real-time Graphic Log Interface



Robert Schmieder KK6EK

What Real-time Brings to the DXpedition

Advantages

- ✓ Immediate check of QSO in the log
- ✓ Reduced dups
- ✓ Elimination of pirates
- ✓ Operating aid (watching active band-modes, etc.)
- ✓ Pleasure in feeling part of the operation

Potential advantages

- ✓ Coupling to other applications
- ✓ Statistical displays
- ✓ Quality monitoring of the DX station
- ✓ DQRM reduction

Cost to Enable Real-time (DXA)

Rates

Terminal rental	$10/day
Air time	$7/MB

DXpedition

Rental 50 days	$500
Data upload	5 MB

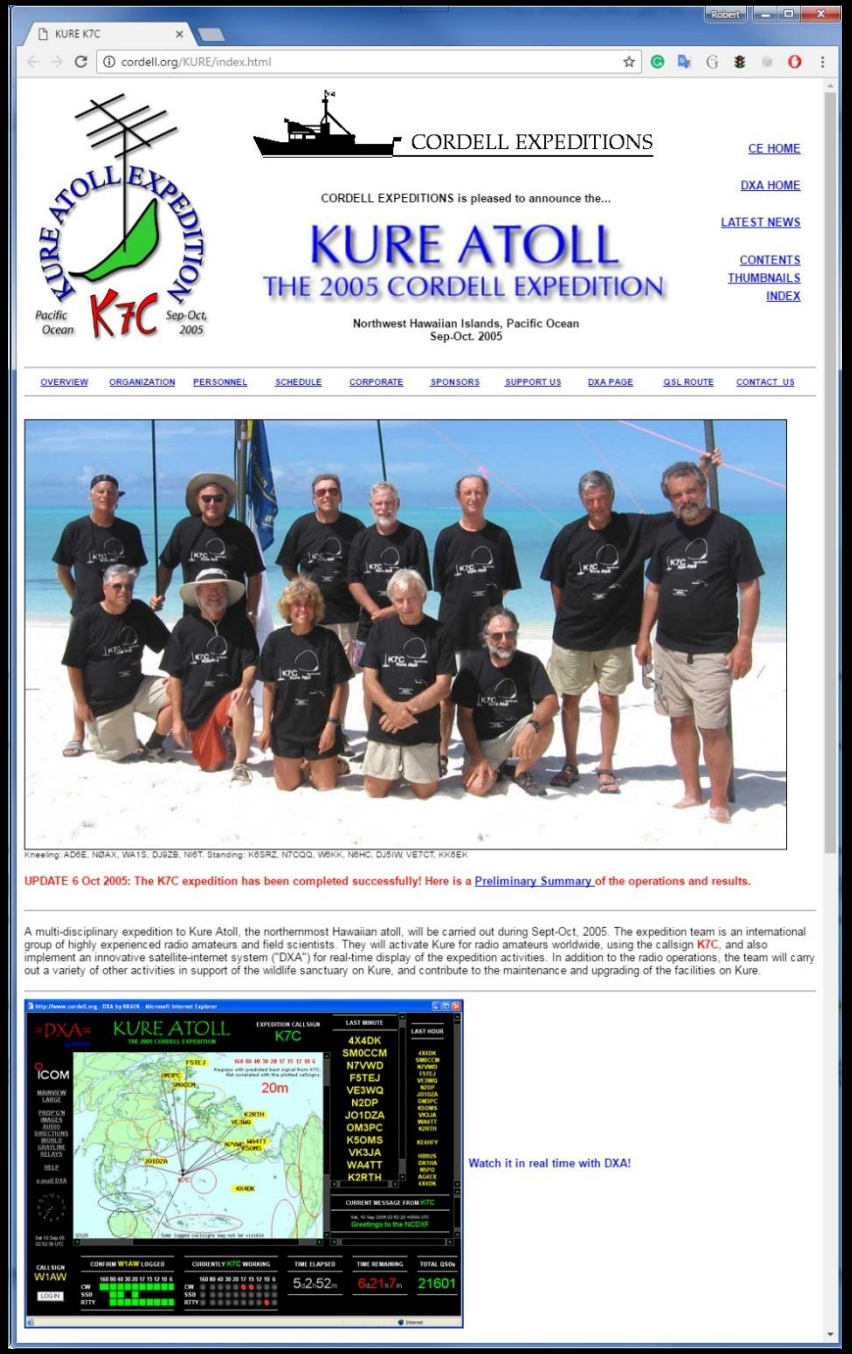
Total cost	$535

[0.1% of Mega-DXpedition budget]

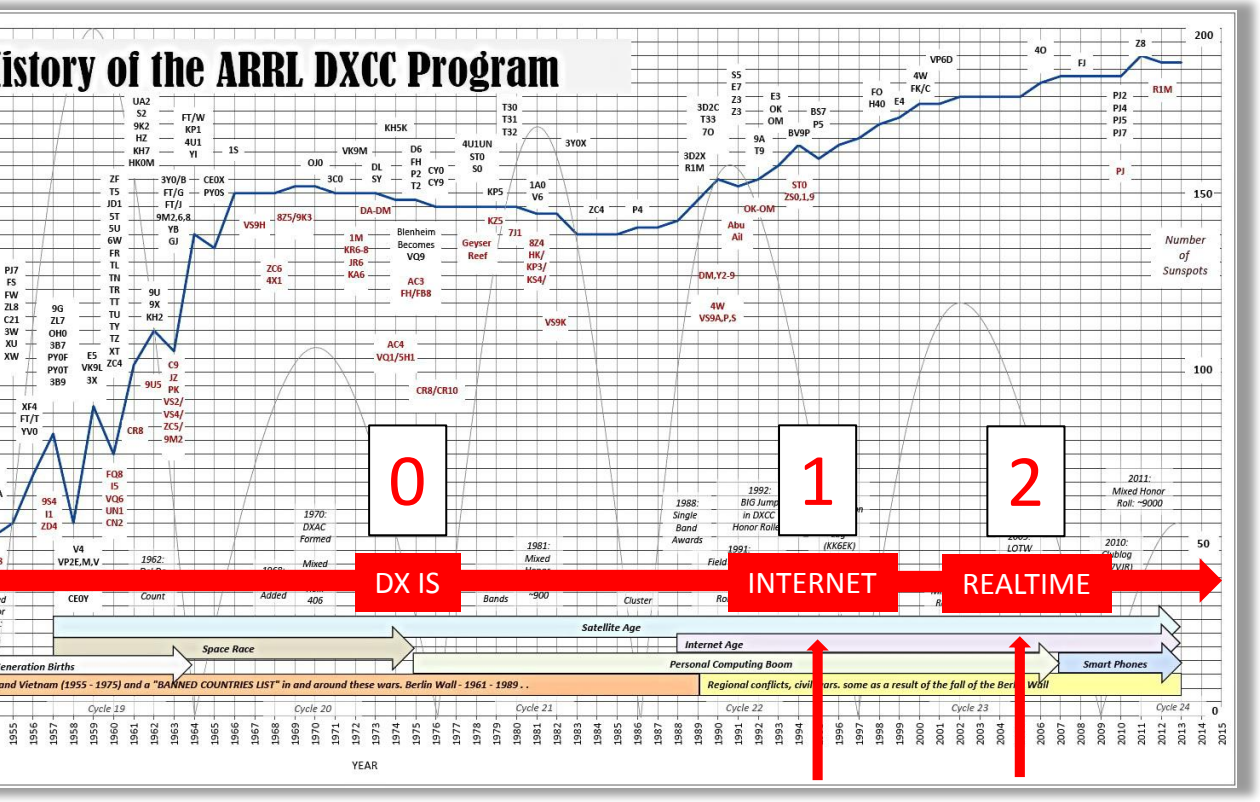
First Use of Real-time Internet

Kure Atoll
K7C 2005

The online log server:
DXA



The Phases of DX



XRØY
1995

K7C
2005

PHASE 3 2015-2025

SOCIAL MEDIA

3

The Explosion of Social Media

Functions Enabled Through Social Media

- ✓ DX websites
- ✓ Email
- ✓ Newsletters
- ✓ Magazine articles
- ✓ Blogs
- ✓ Help Desk
- ✓ AudioLog
- ✓ Dropbox
- ✓ Skype
- ✓ YouTube

…and many more

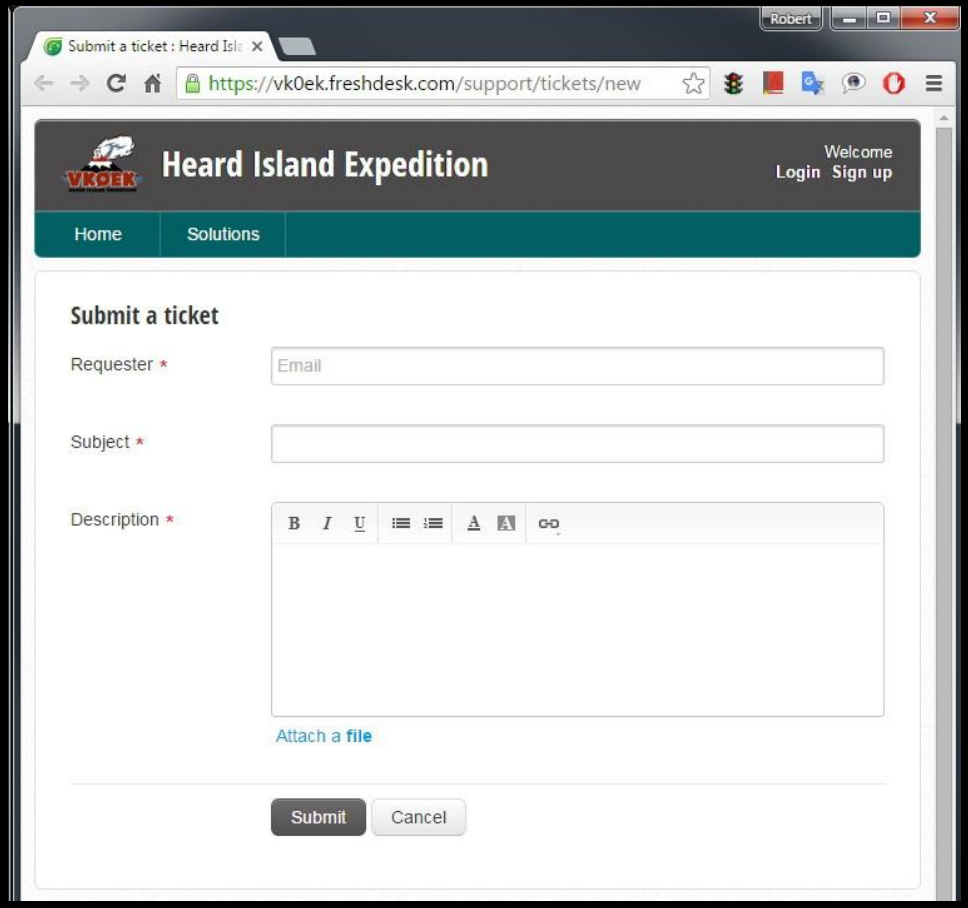
Example: Websites and Blogs

Heard Island
VKØEK 2016

https://vk0ek.org/

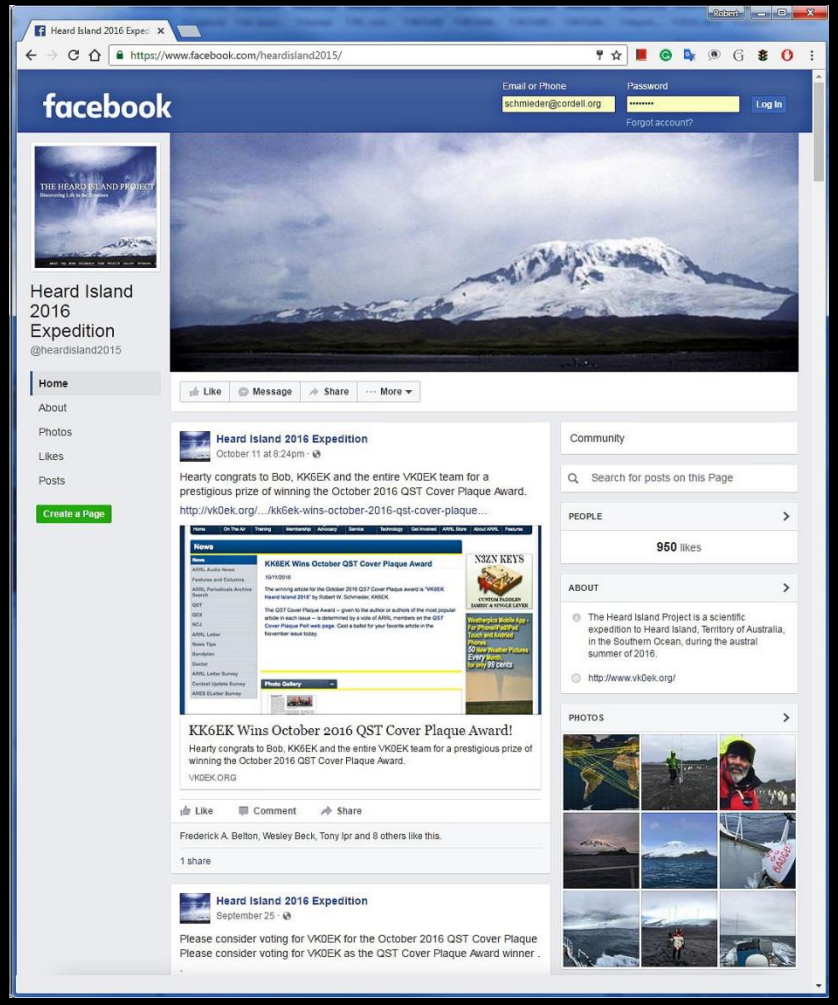
Example: Help Desk

Heard Island
VKØEK 2016

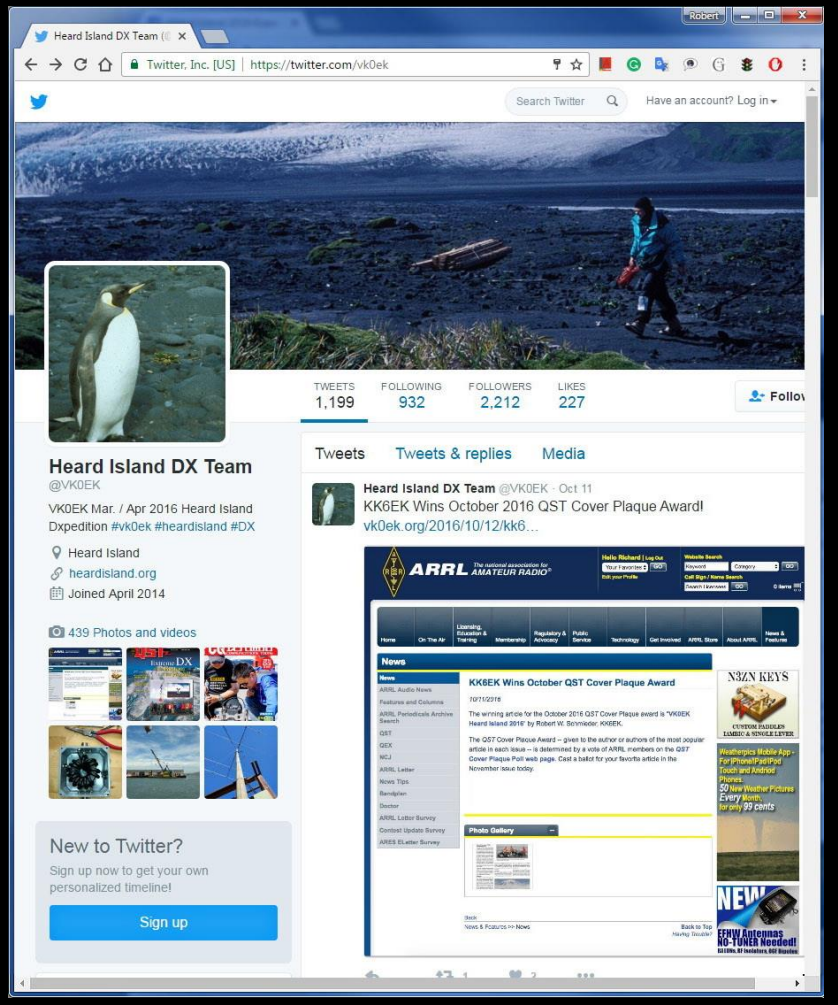


Rich Holoch KY6R

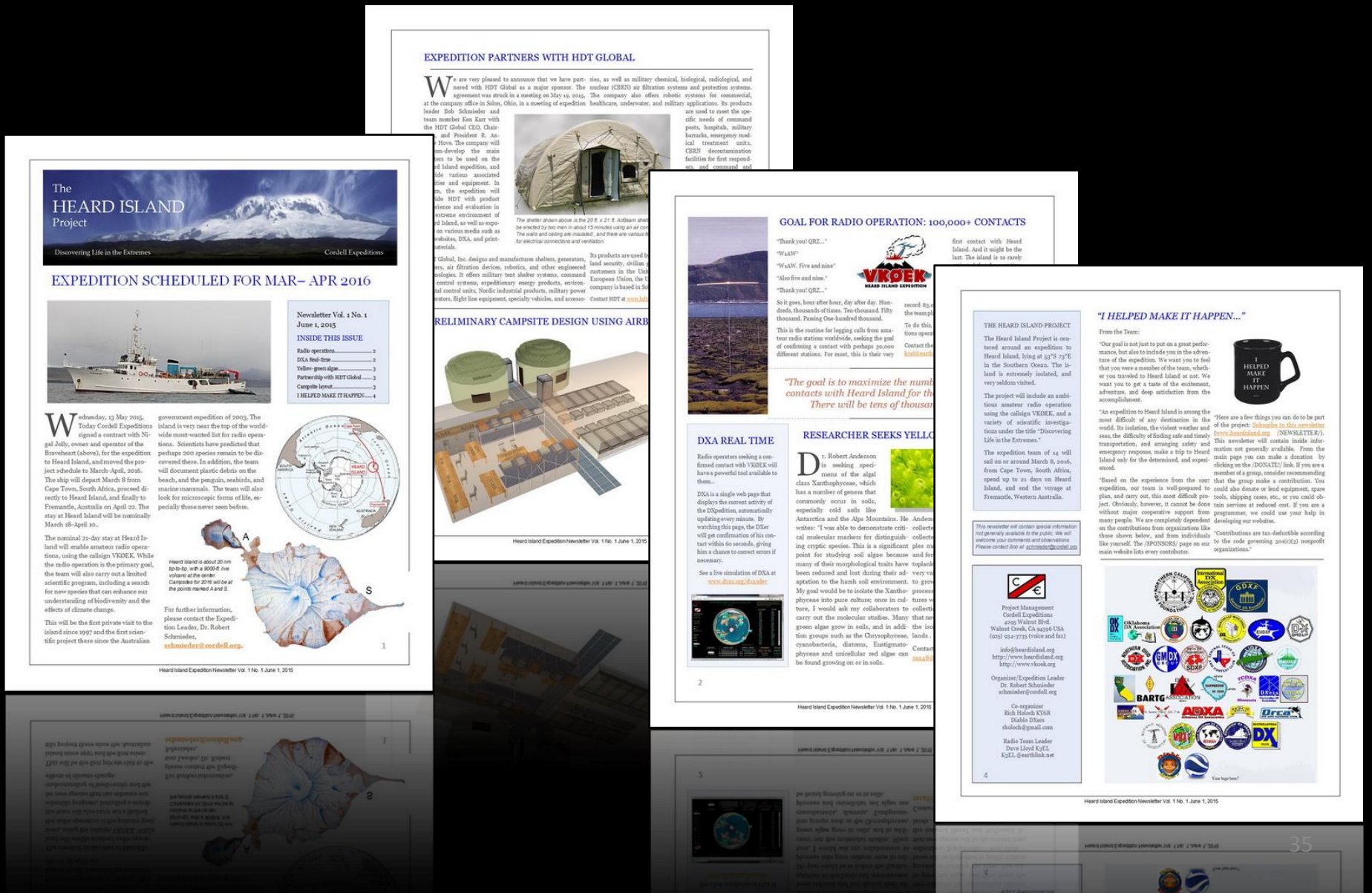
Facebook



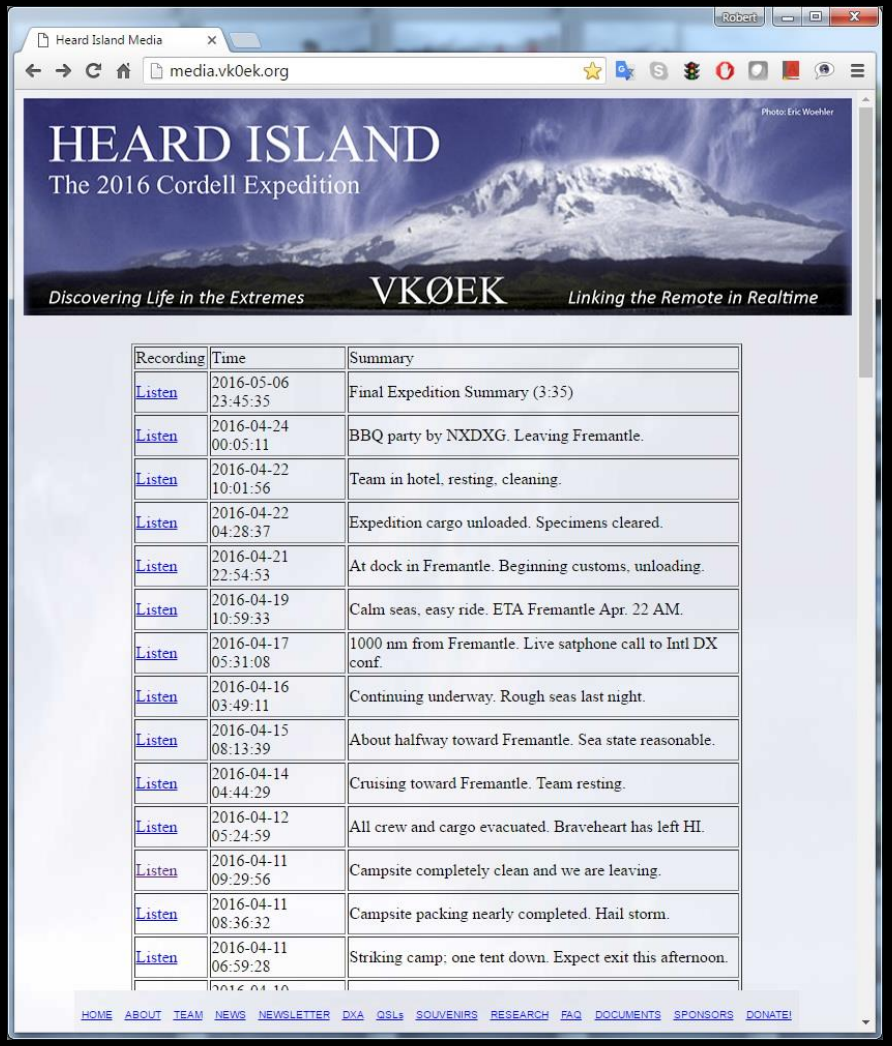
Twitter



Example: Newsletter



Example: AudioLog

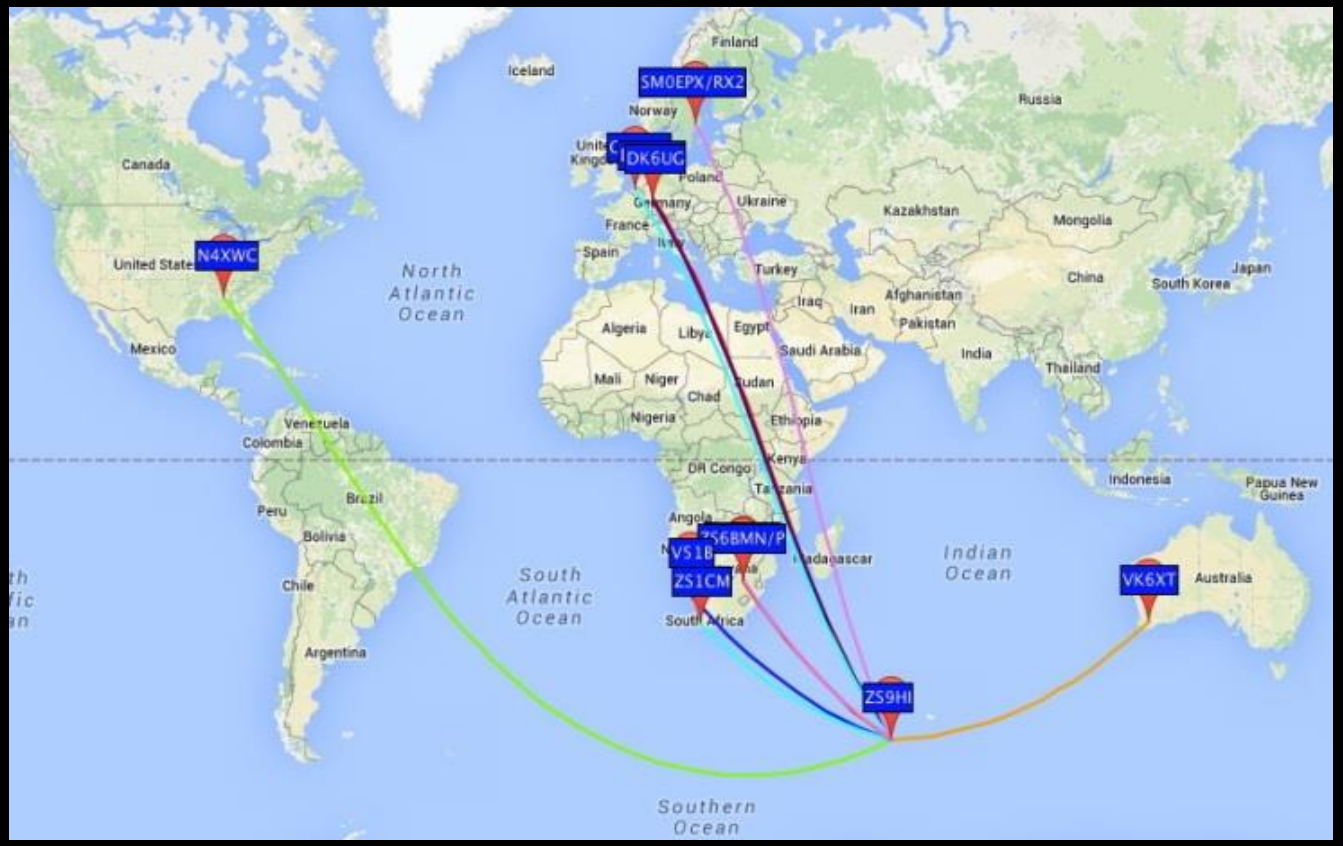


Recording	Time	Summary
Listen	2016-05-06 23:45:35	Final Expedition Summary (3:35)
Listen	2016-04-24 00:05:11	BBQ party by NXDXG. Leaving Fremantle.
Listen	2016-04-22 10:01:56	Team in hotel, resting, cleaning.
Listen	2016-04-22 04:28:37	Expedition cargo unloaded. Specimens cleared.
Listen	2016-04-21 22:54:53	At dock in Fremantle. Beginning customs, unloading.
Listen	2016-04-19 10:59:33	Calm seas, easy ride. ETA Fremantle Apr. 22 AM.
Listen	2016-04-17 05:31:08	1000 nm from Fremantle. Live satphone call to Intl DX conf.
Listen	2016-04-16 03:49:11	Continuing underway. Rough seas last night.
Listen	2016-04-15 08:13:39	About halfway toward Fremantle. Sea state reasonable.
Listen	2016-04-14 04:44:29	Cruising toward Fremantle. Team resting.
Listen	2016-04-12 05:24:59	All crew and cargo evacuated. Braveheart has left HI.
Listen	2016-04-11 09:29:56	Campsite completely clean and we are leaving.
Listen	2016-04-11 08:36:32	Campsite packing nearly completed. Hail storm.
Listen	2016-04-11 06:59:28	Striking camp; one tent down. Expect exit this afternoon.

HOME ABOUT TEAM NEWS NEWSLETTER DXA QSLs SOUVENIRS RESEARCH FAQ DOCUMENTS SPONSORS DONATE!

Mike Coffey KJ4Z

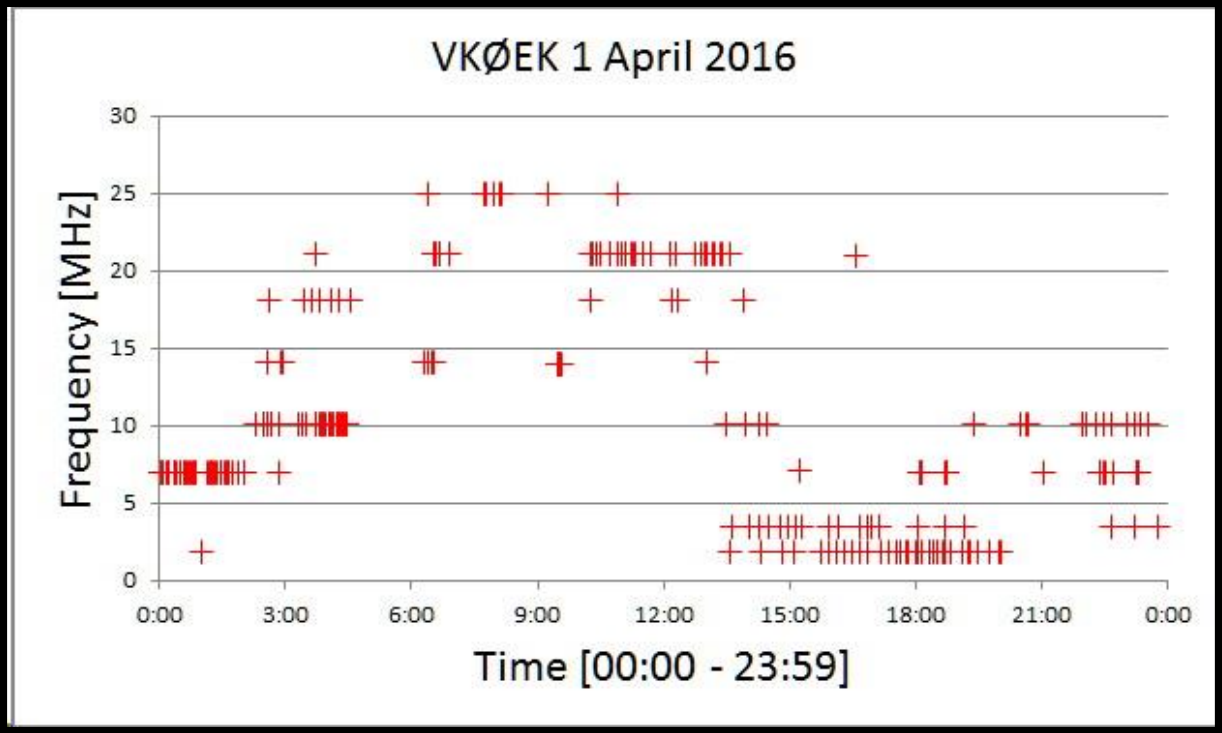
Example: Weak Signal Propagation Net (WSPR Net)



A group of amateur radio operators using very low power (QRP/QRPp) transmissions to measure radio propagation.

Adam Brown K2ARB

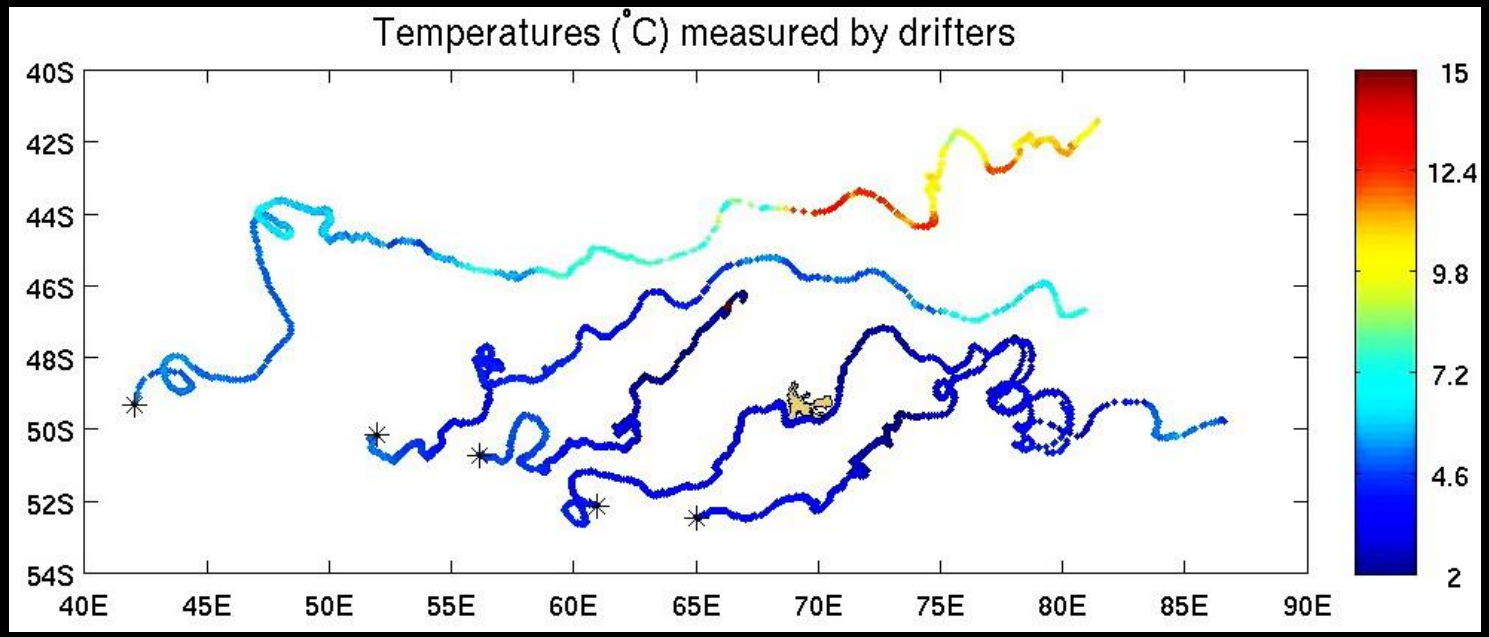
Example: Reverse Beacon Network (RBN)



A network of stations listening to the bands and reporting the stations they hear.

Adam Brown K2ARB

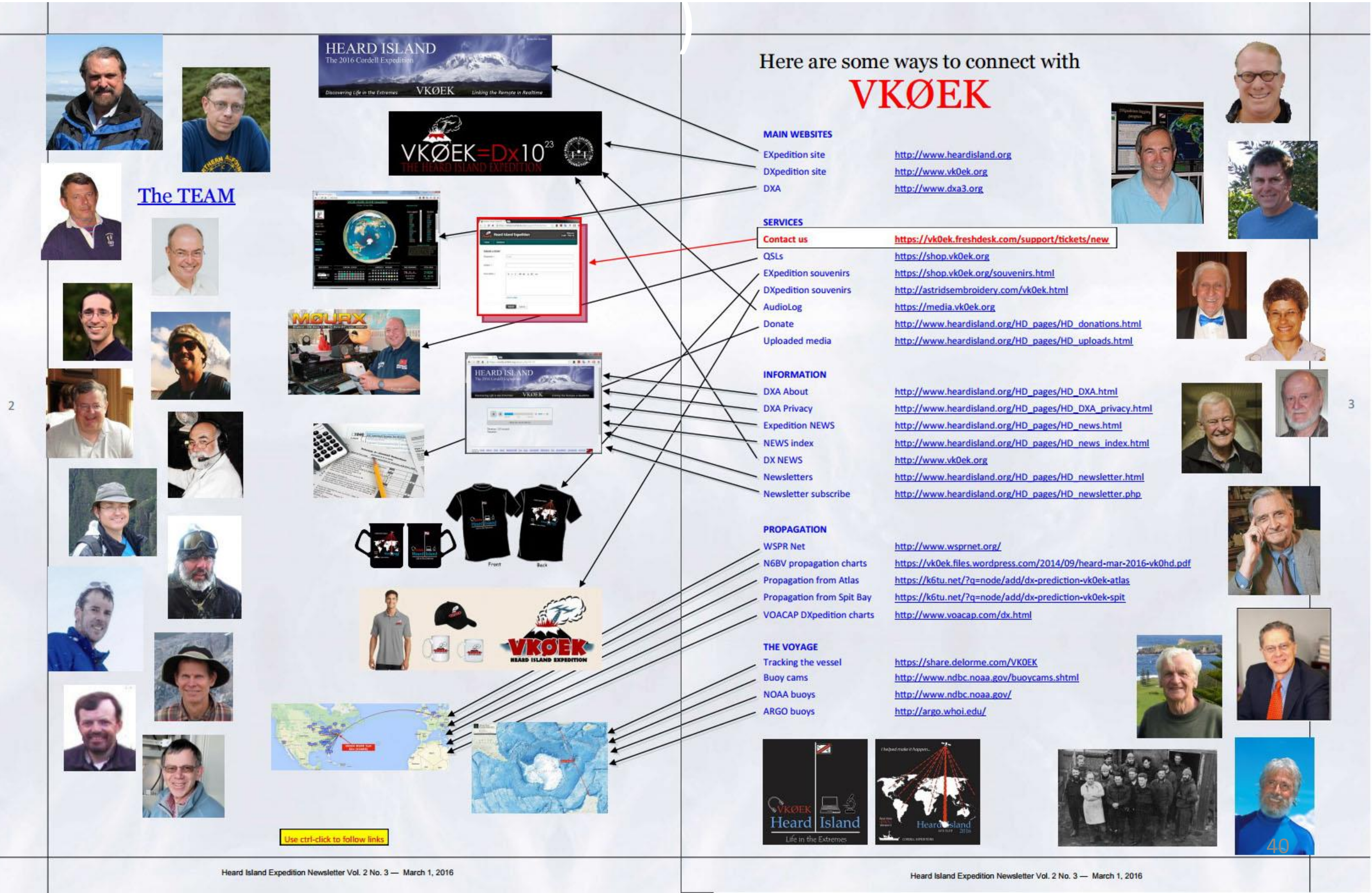
Example: Oceanic Drifters and Diving Buoys



A set of drifting and diving instruments provided by NOAA and WHOI that record and telemeter multiple oceanic parameters during many months of drifting after deployment. There are thousands of such instruments worldwide.

Adam Brown K2ARB

Internet Connections for VKØEK



2

The TEAM

HEARD ISLAND
The 2016 Cordell Expedition
Discovering Life in the Extremes VKØEK Linking the Remote in Realtime

VKØEK=Dx10[23]

Use ctrl-click to follow links

Here are some ways to connect with
VKØEK

MAIN WEBSITES

EXpedition site	http://www.heardisland.org
DXpedition site	http://www.vk0ek.org
DXA	http://www.dxa3.org

SERVICES

Contact us	https://vk0ek.freshdesk.com/support/tickets/new
QSLs	https://shop.vk0ek.org
EXpedition souvenirs	https://shop.vk0ek.org/souvenirs.html
DXpedition souvenirs	http://astridsembroidery.com/vk0ek.html
AudioLog	https://media.vk0ek.org
Donate	http://www.heardisland.org/HD_pages/HD_donations.html
Uploaded media	http://www.heardisland.org/HD_pages/HD_uploads.html

INFORMATION

DXA About	http://www.heardisland.org/HD_pages/HD_DXA.html
DXA Privacy	http://www.heardisland.org/HD_pages/HD_DXA_privacy.html
Expedition NEWS	http://www.heardisland.org/HD_pages/HD_news.html
NEWS index	http://www.heardisland.org/HD_pages/HD_news_index.html
DX NEWS	http://www.vk0ek.org
Newsletters	http://www.heardisland.org/HD_pages/HD_newsletter.html
Newsletter subscribe	http://www.heardisland.org/HD_pages/HD_newsletter.php

PROPAGATION

WSPR Net	http://www.wsprnet.org/
N6BV propagation charts	https://vk0ek.files.wordpress.com/2014/09/heard-mar-2016-vk0hd.pdf
Propagation from Atlas	https://k6tu.net/?q=node/add/dx-prediction-vk0ek-atlas
Propagation from Spit Bay	https://k6tu.net/?q=node/add/dx-prediction-vk0ek-spit
VOACAP DXpedition charts	http://www.voacap.com/dx.html

THE VOYAGE

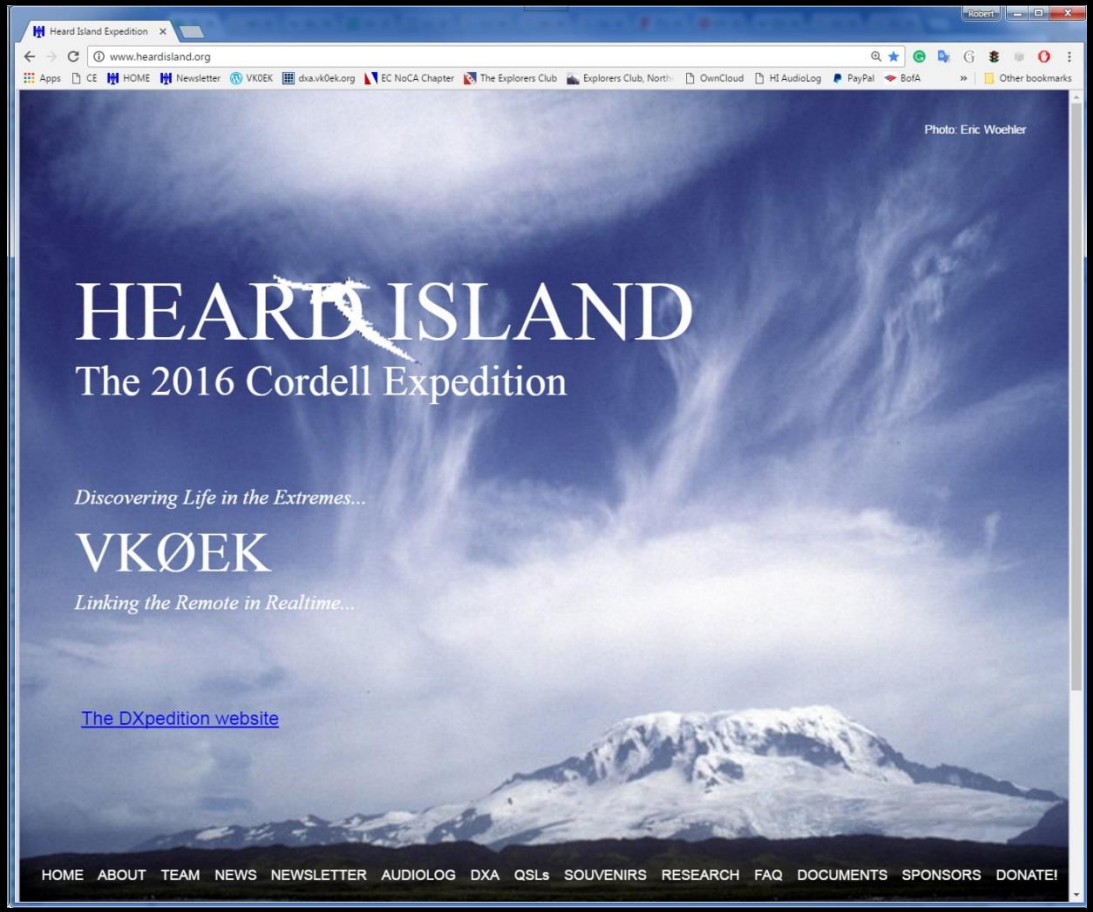
Tracking the vessel	https://share.delorme.com/VK0EK
Buoy cams	http://www.ndbc.noaa.gov/buoycams.shtml
NOAA buoys	http://www.ndbc.noaa.gov/
ARGO buoys	http://argo.whoi.edu/

3

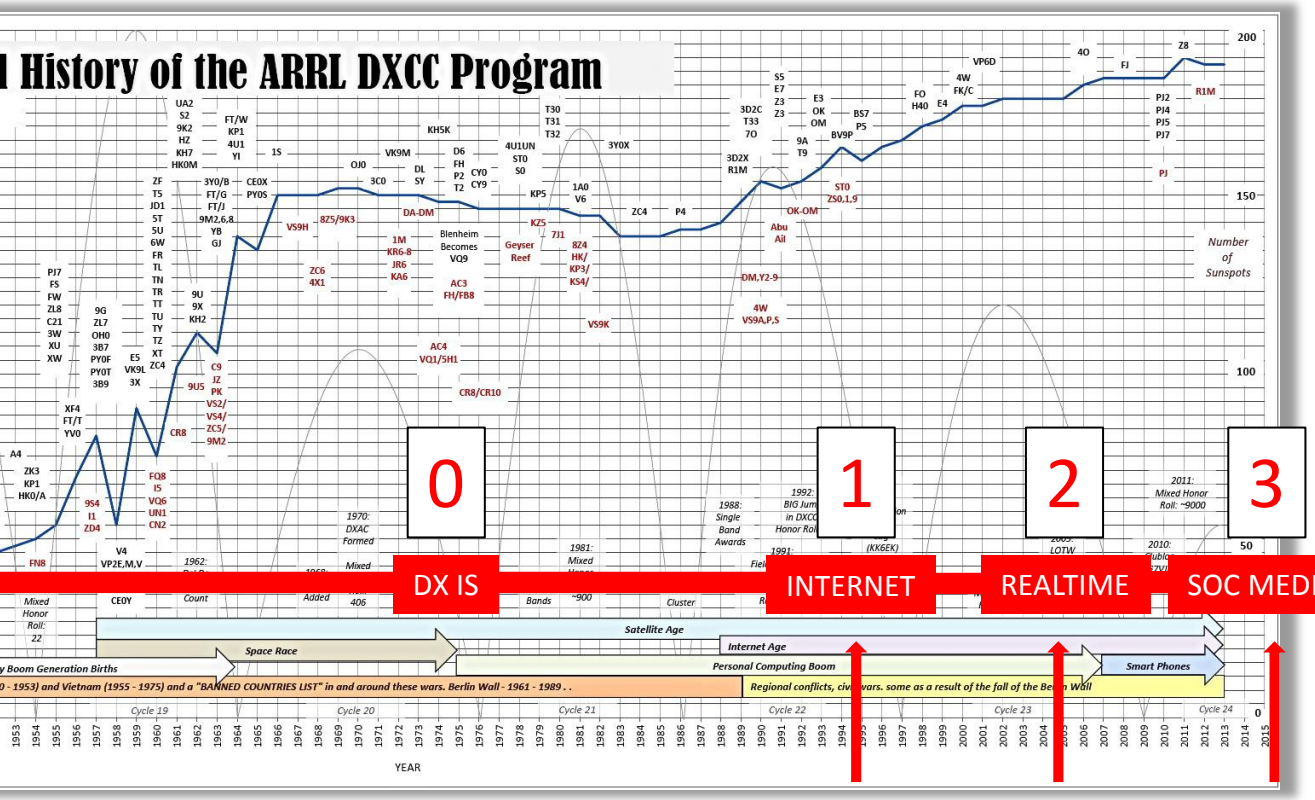
Advanced use of Social Media

Heard Island
VKØEK 2016

www.heardisland.org



The Phases of DX



PHASE 4 2025-2030

SYSTEMS

4

Systems Engineering

Definition

"A branch of engineering which concentrates on the design and application of the whole as distinct from the parts."

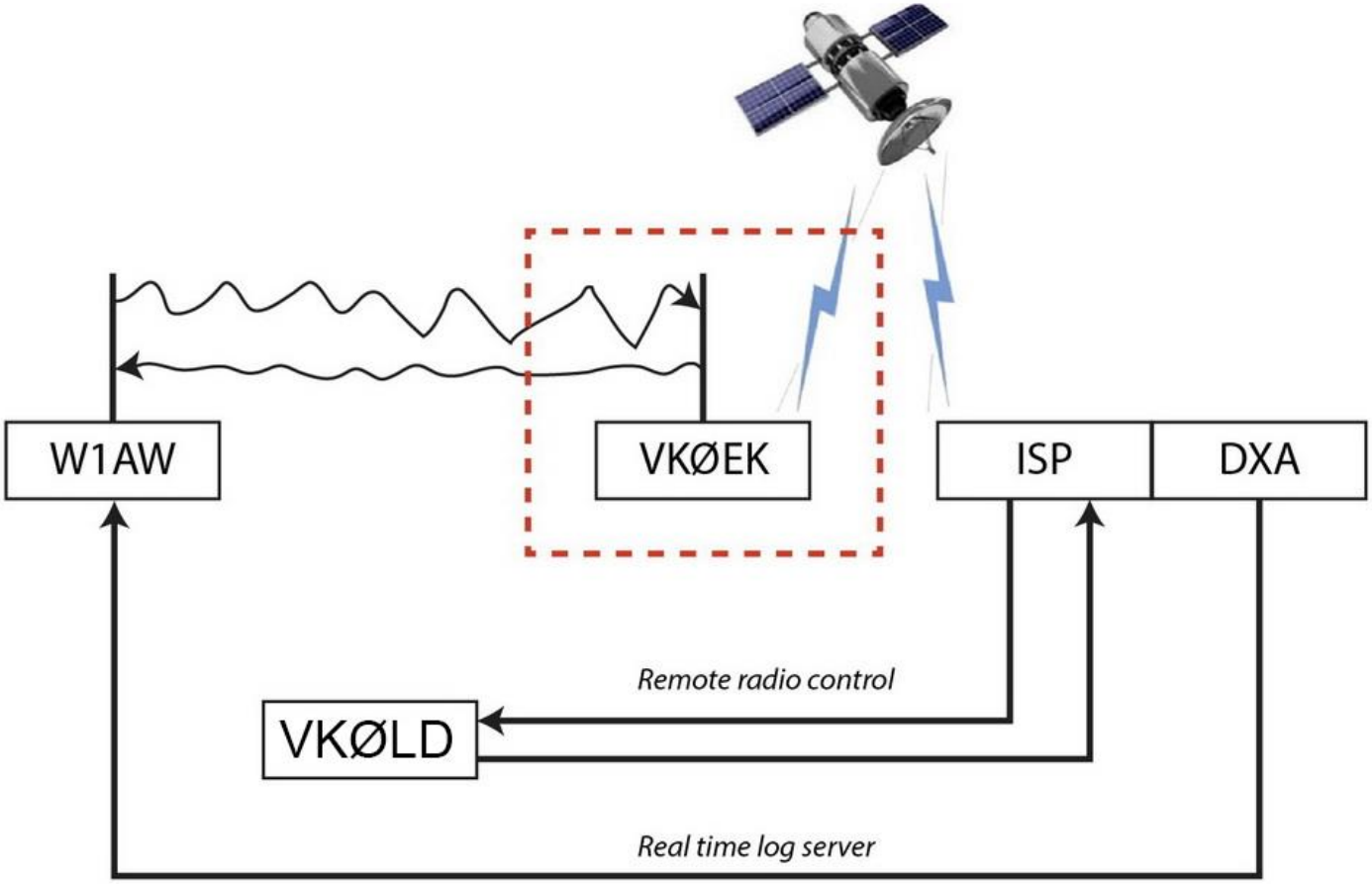
Parts

System

Components of DX Systems

- ✓ Remote operation
- ✓ Software-defined radio
- ✓ New modes (e.g. JT65)
- ✓ Adaptive signal processing
- ✓ Automatic (unattended) logging
- ✓ Integrated station operation
- ✓ Signal optimization
- ✓ Cooperative activities
- ✓ Evolution of program rules (e.g., DXCC)
- ✓ Event-wide optimization
- ✓ Coordination with other activities
- ✓ Active offsite team members
- ✓ QSL operation

Example: Remote operation



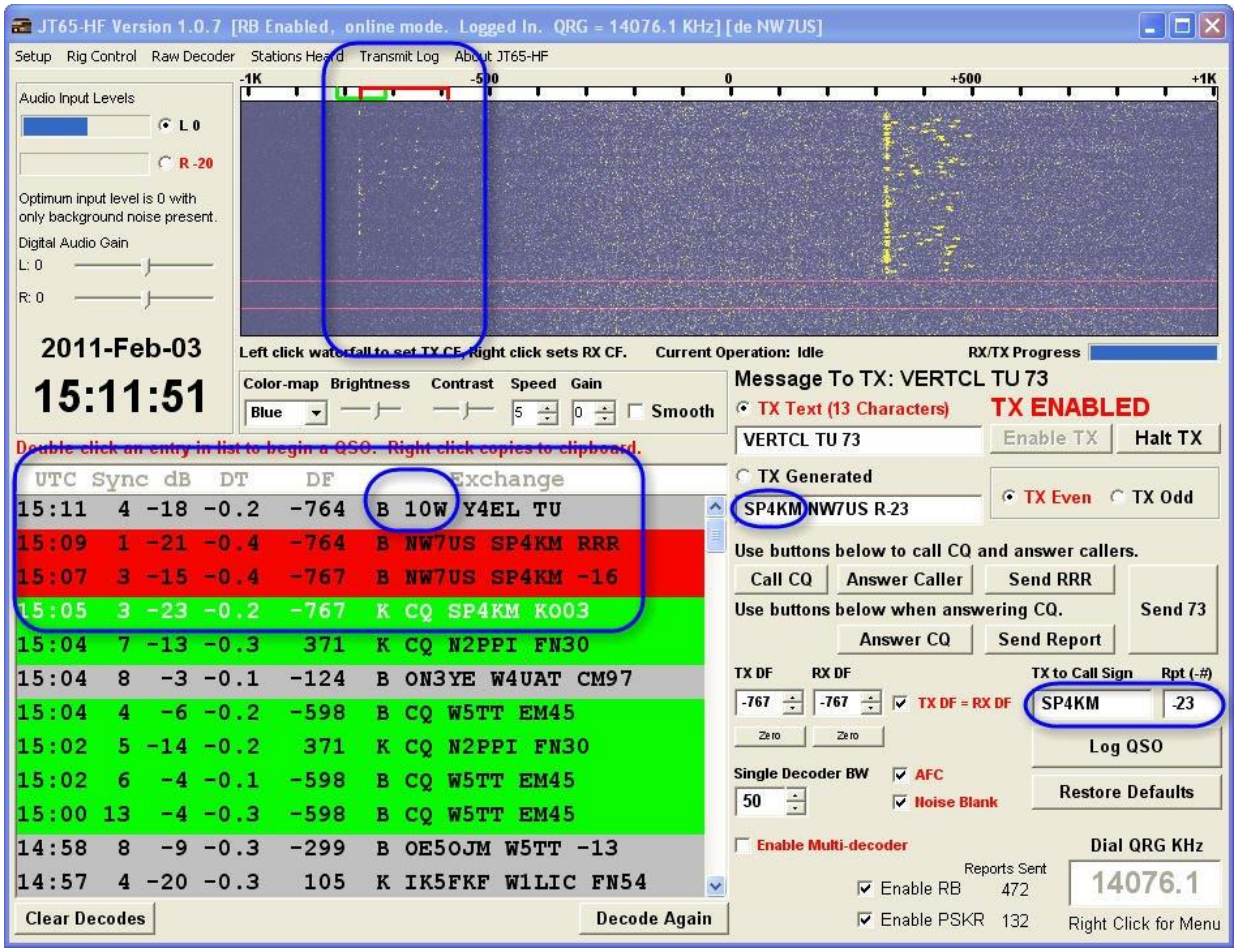
Mike Coffey KJ4Z

Example: Software-defined radio (SDR)

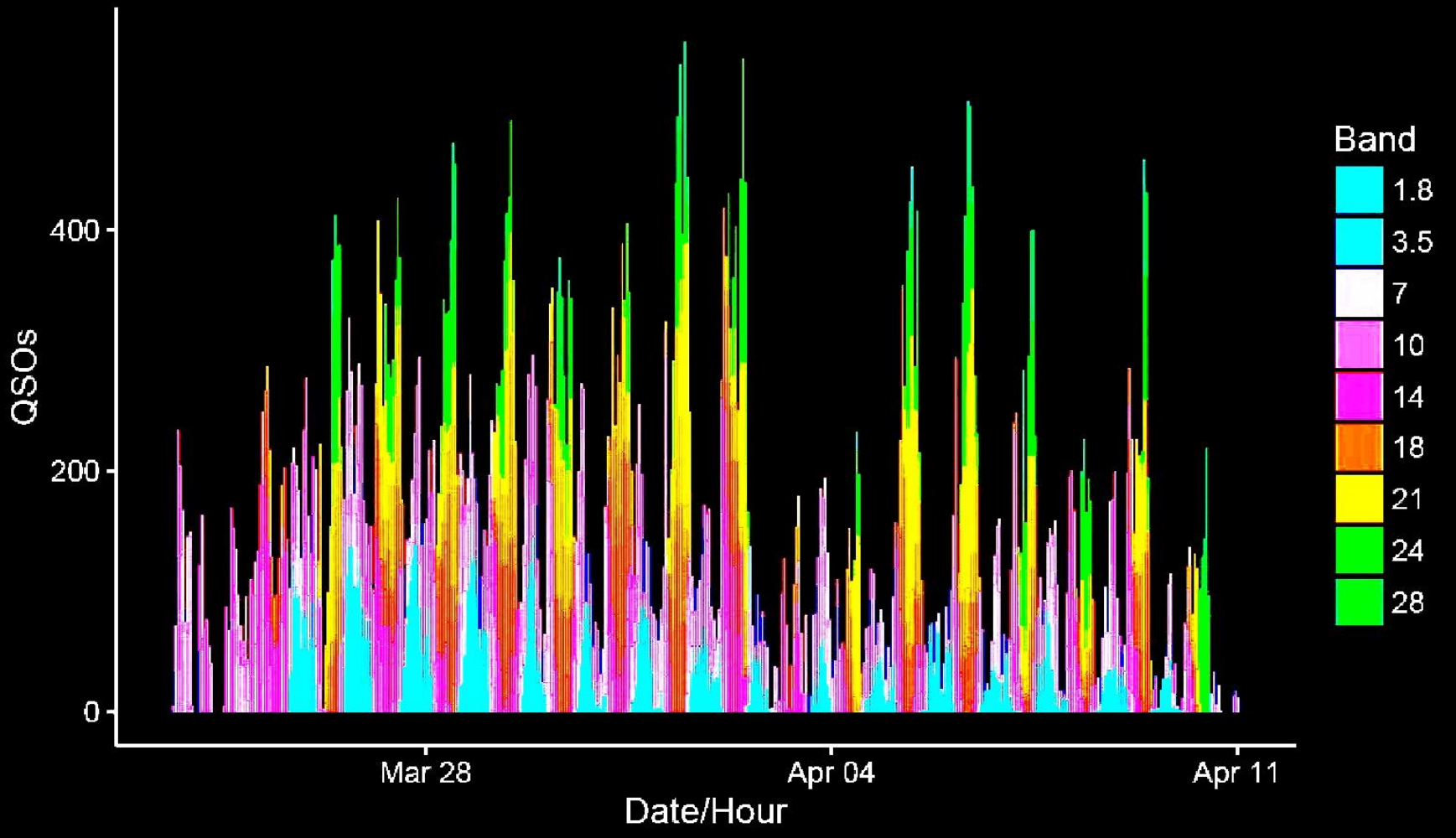
Example: Real-time auto-selection of best signal

Only the optimum signal fed to output

Example: New modes JT65

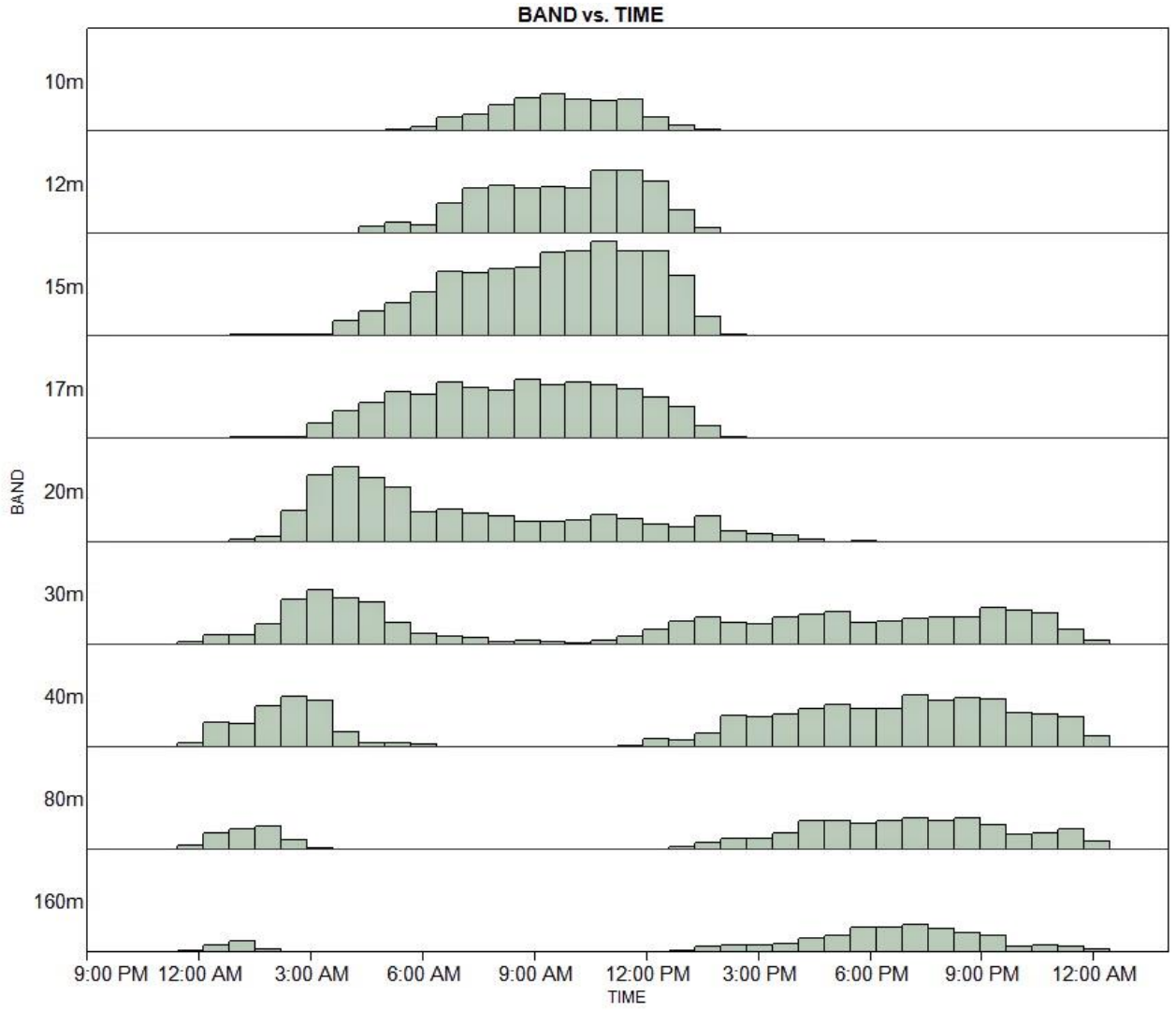


Example: Automatic compilation of signals



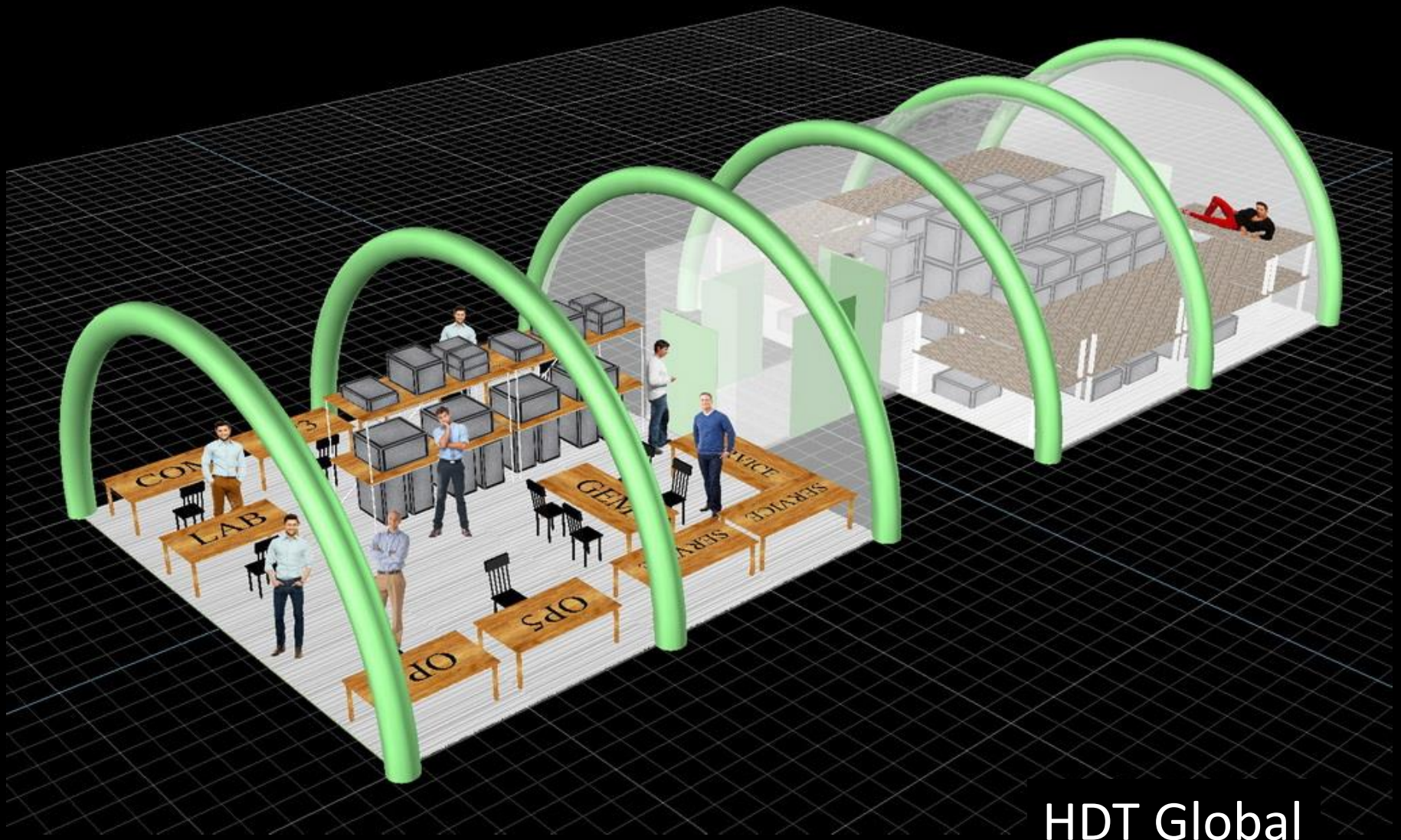
VKØEK 2016

Example: Automatic statistical analysis of signals

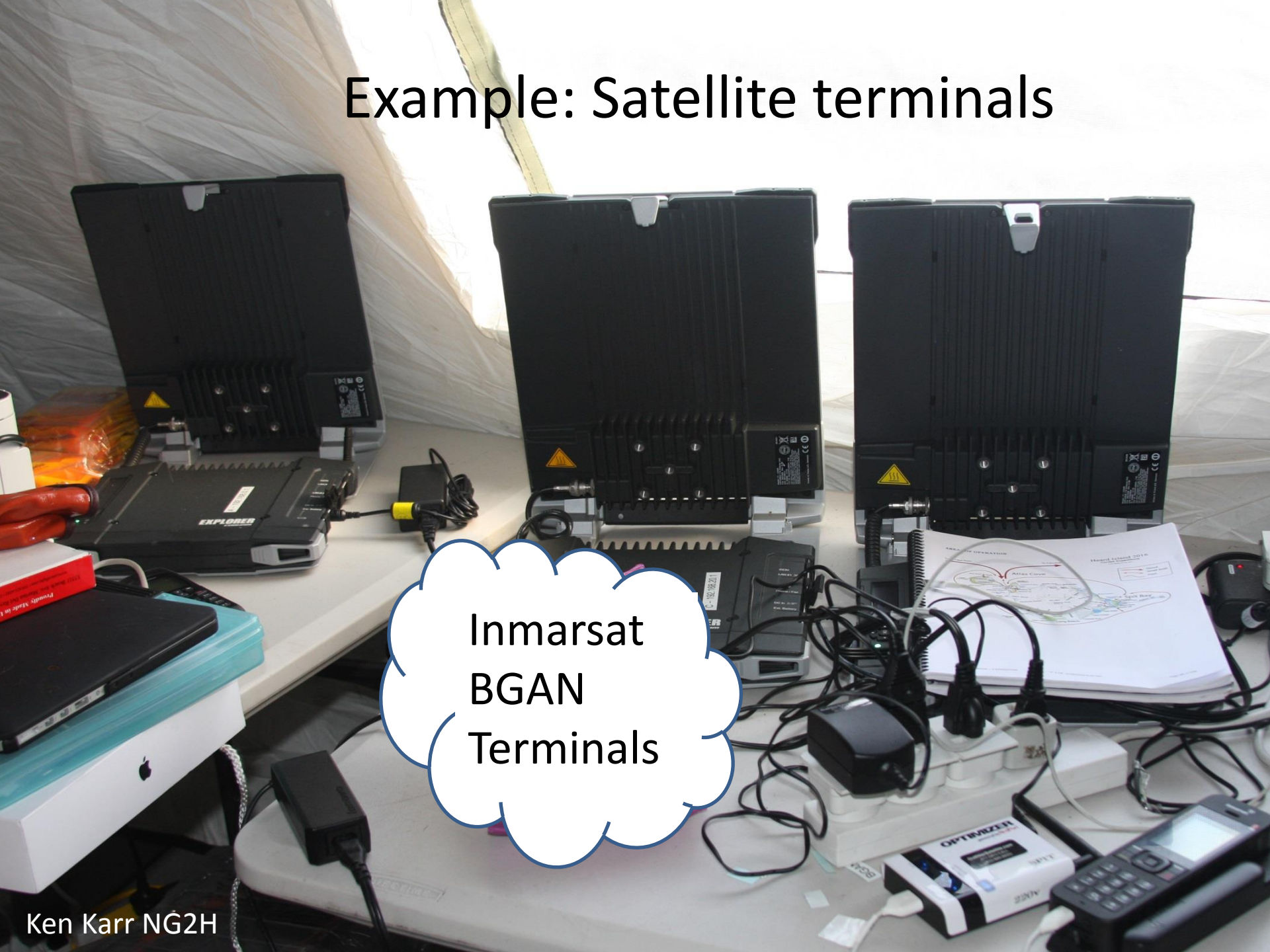


Example: Commercial sponsors

Example: The AIRBEAM Shelter



Example: Satellite terminals



Ken Karr NG2H

Example: Living facilities

Disc-O-Bed

Industries that can support DX

MANUFACTURING

Apparel
Chemical
Computer and Electronics
Electrical Equipment
Fabricated Metal
Food and Beverages
Furniture and Related
Machinery
Paper
Plastics and Rubber

DISTRIBUTION

Building Material and Garden Equipment
Clothing
Electronics and Appliances
Food and Beverages
Furniture and Furnishings
Gasoline and Fuel
Motion Picture and Sound Recording
Motor Vehicle and Parts
Sporting Goods, Hobbies, Books, and Music

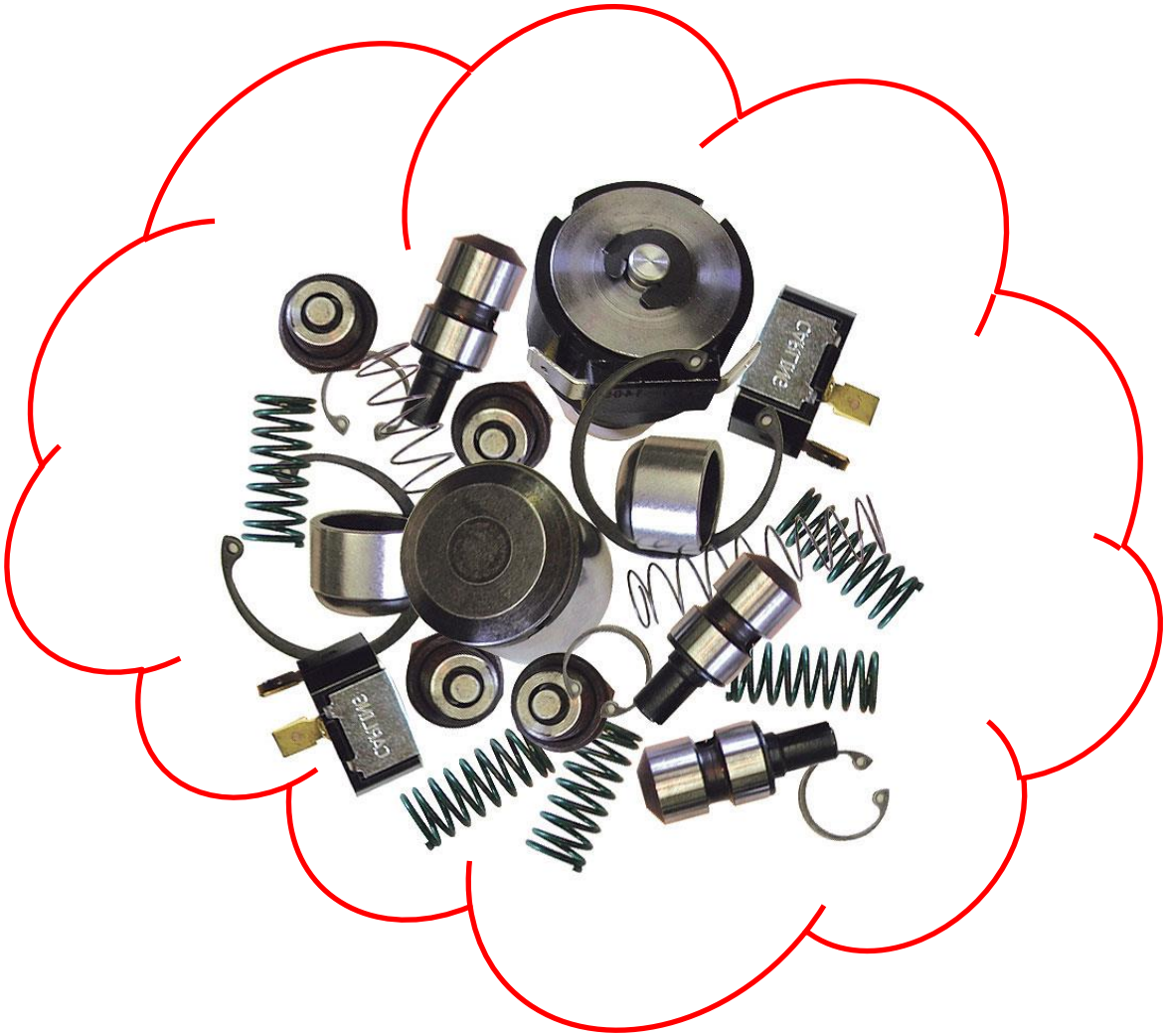
SERVICE

Accommodation
Air Transport
Broadcasting
Construction
Data Processing
Electronics supply
Finance
Food Services
Health Care
Insurance
Internet Publishing and Broadcasting
Personal and Laundry Services
Postal Service
Printing and Related
Publishing
Rental and Leasing
Scenic and Sightseeing Transportation
Telecommunications
Transit and Ground Transport
Warehousing
Warehousing and Storage

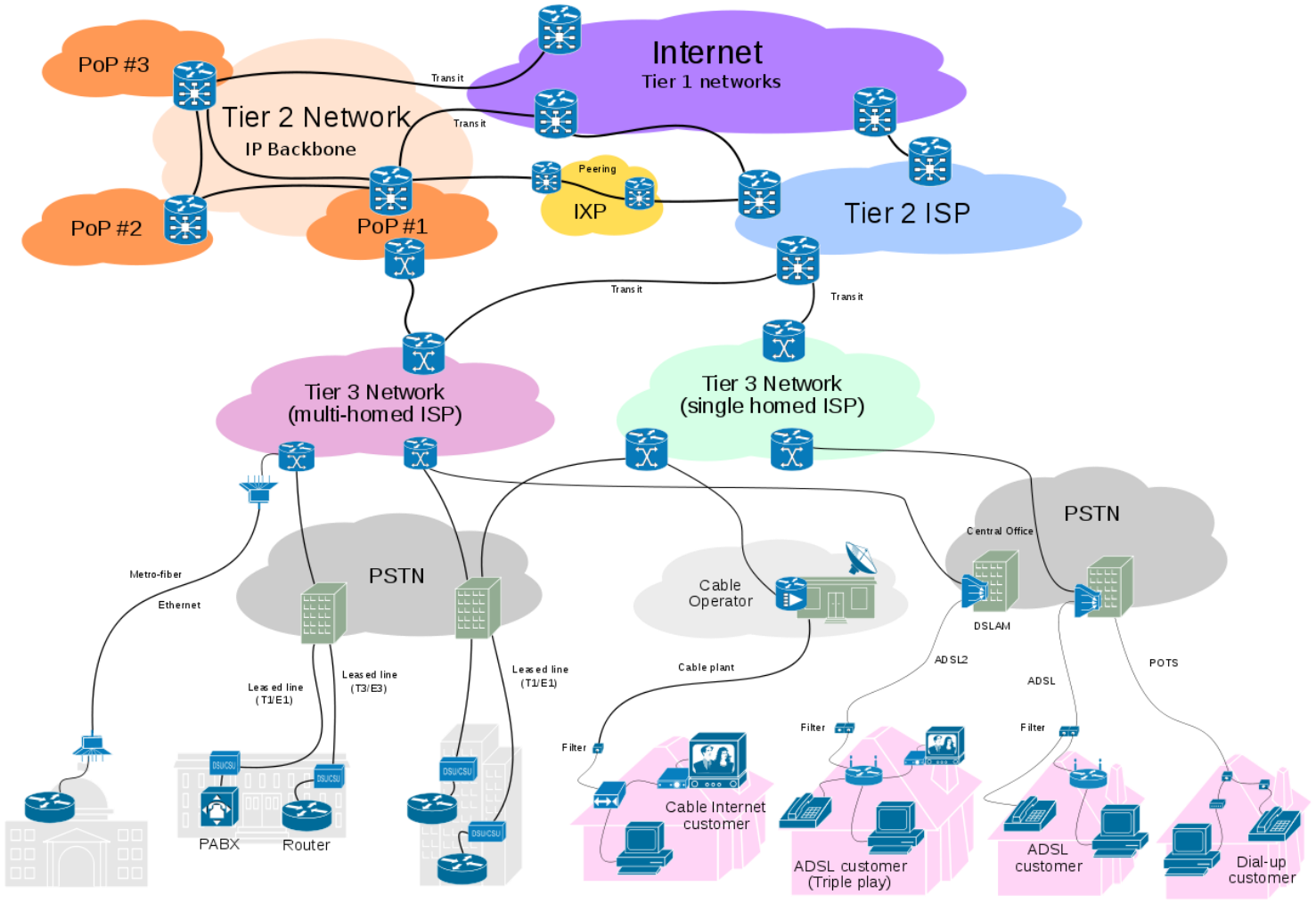
Procedural aspects of Systems Engineering

- ✓ Requirements definition
- ✓ Design
- ✓ Coordination
- ✓ Logistics
- ✓ Reliability
- ✓ Evaluation
- ✓ Risk management
- ✓ Testing
- ✓ Maintainability

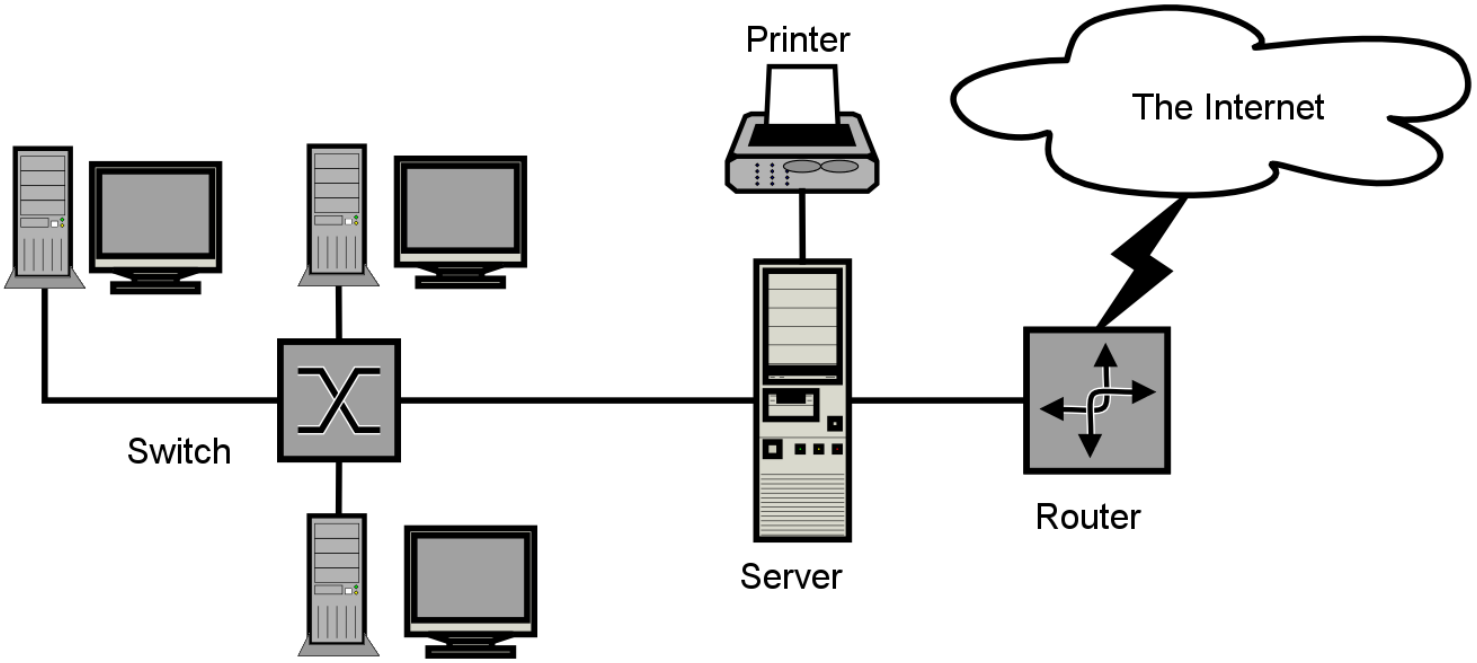
Any collection of parts can be a System



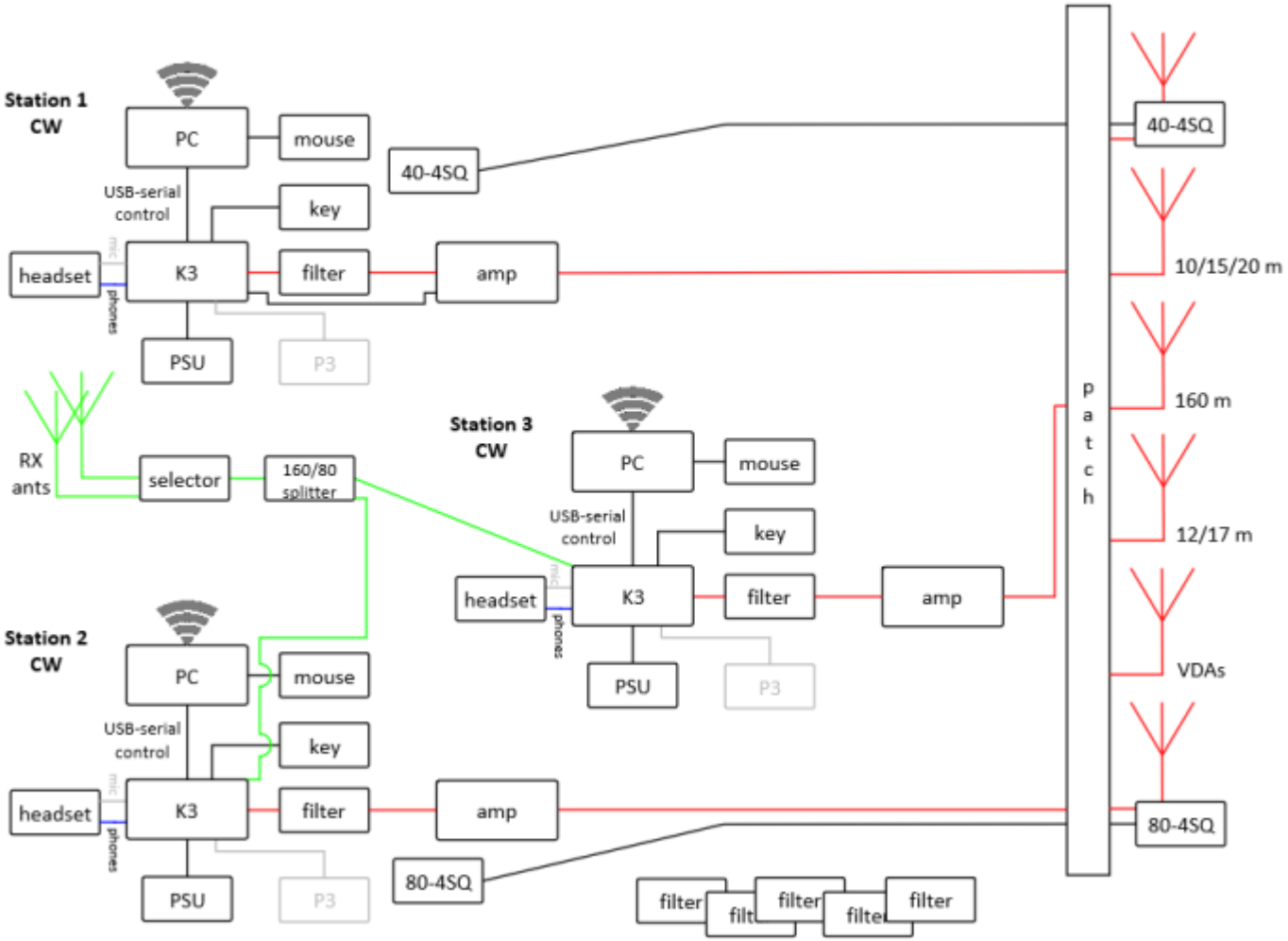
Systems Design is done with Graphs



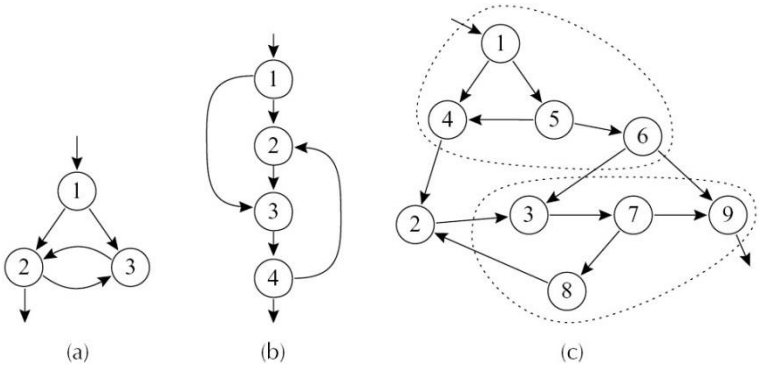
Example: Network Diagram

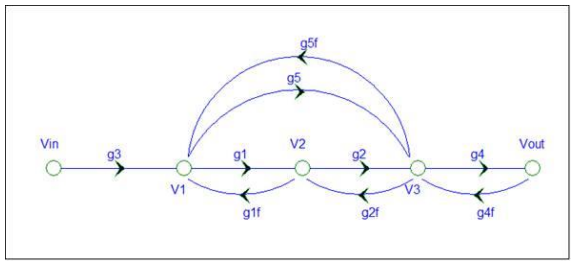


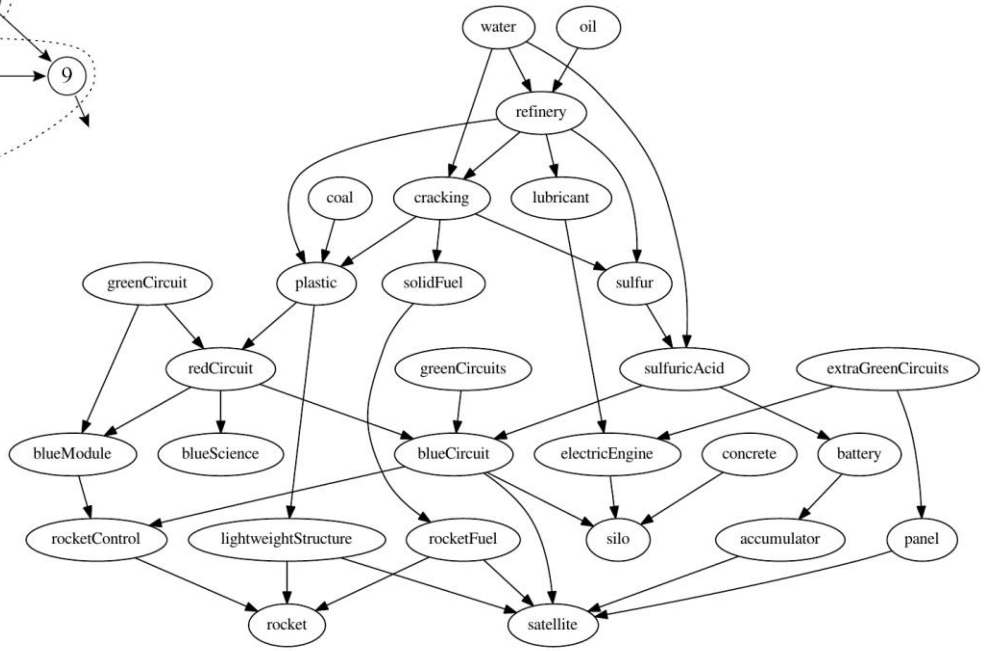
Heard Island CW Stations
(Example of a Network Diagram)



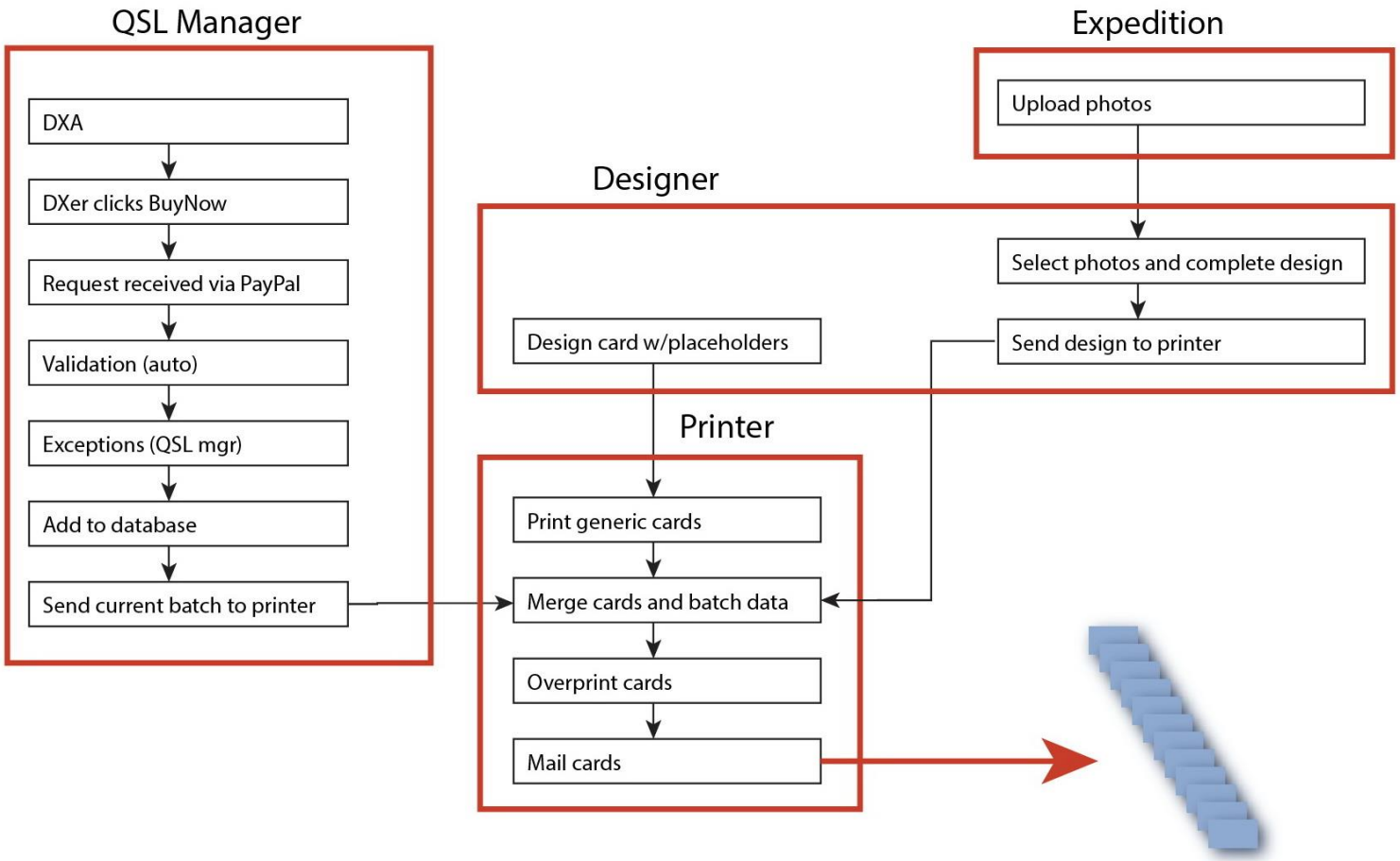
Example: Flowgraphs



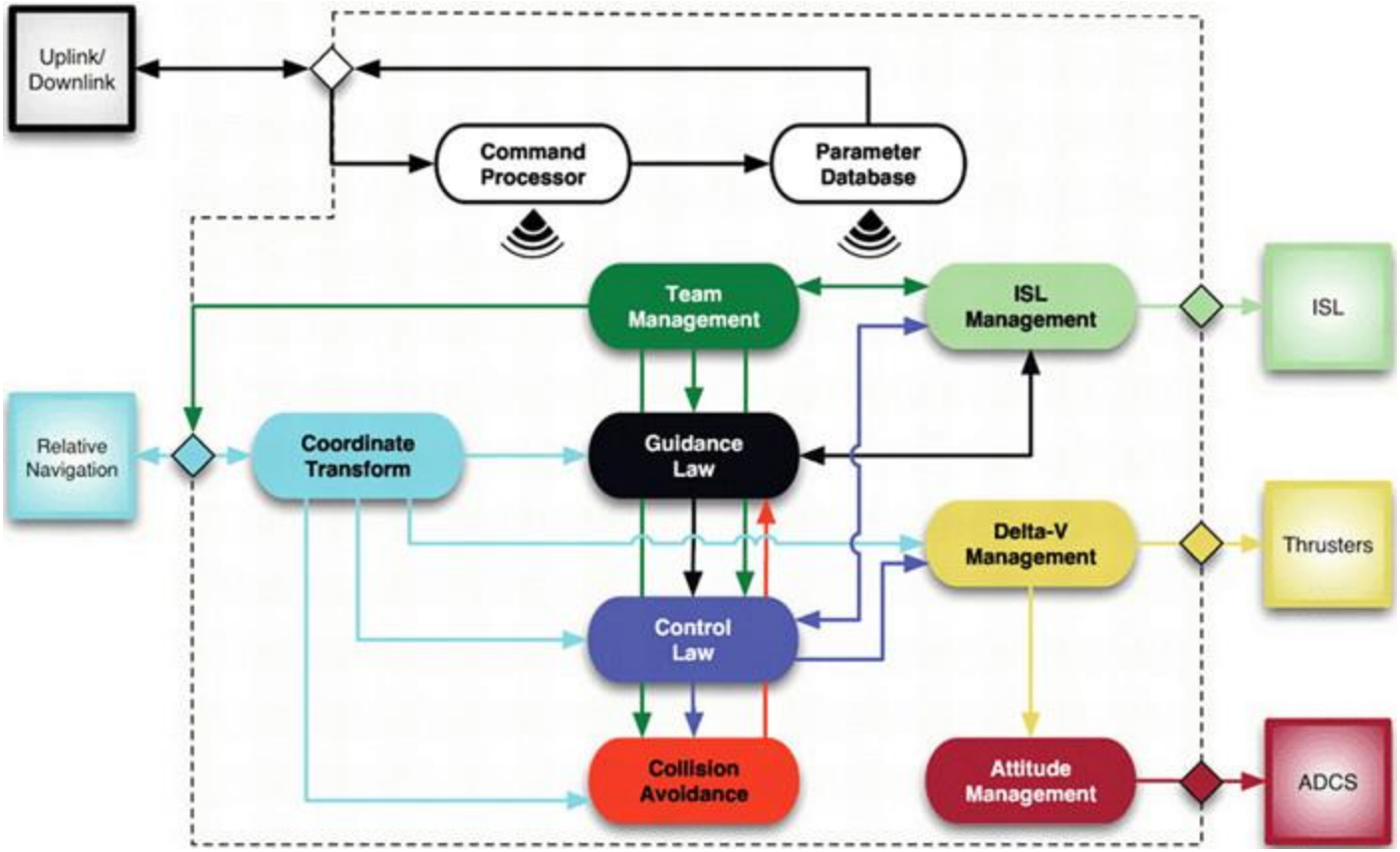




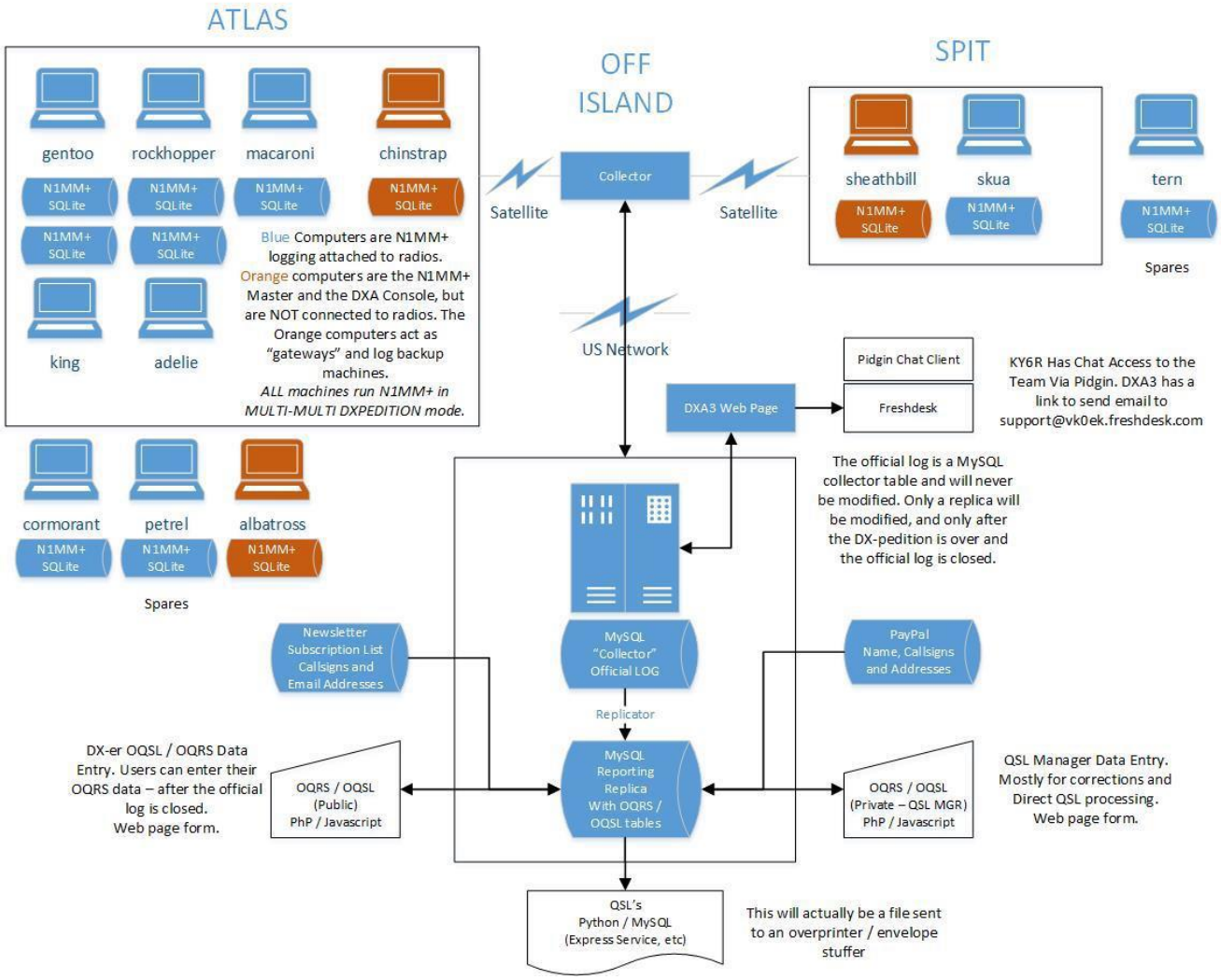
QSL Processing Procedure
(Example of a Flowgraph)



Example: Architectural Interconnect Diagram



DX Station Connection Diagram
(Example of an Architectural Interconnect Diagram)



DX as a System

SYSTEM = {Part 1, Part 2}

Part 1 = DXer

Part 2 = DXpedition

SYSTEM = {DXer, DXpedition} ≡ DX

“DX” *defines* a System

DX =

DXer

Person
Operator
Spouse
Family
Interrupters
Equipment
Radio
Amplifier
Antenna
Power
Logging
Program
Goals
Rules
Monitoring
Procedures
Operating
Optimization
Limits

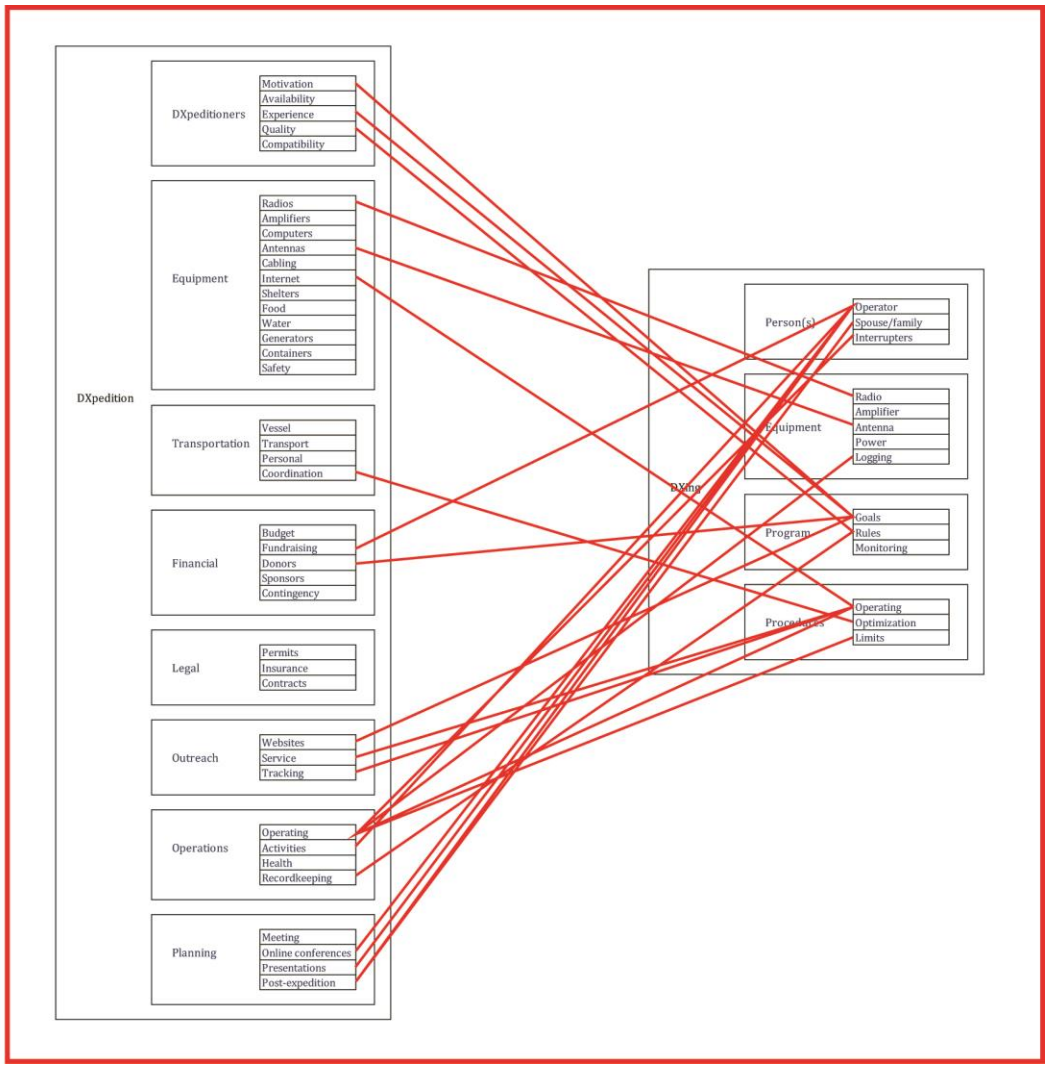
DXpedition

DXpeditioners
Motivation
Availability
Experience
Quality
Compatibility
Equipment
Radios
Amplifiers
Computers
Antennas
Cabling
Internet
Shelters
Food
Water
Generators
Containers
Safety
Transportation
Vessel
Transport
Personal

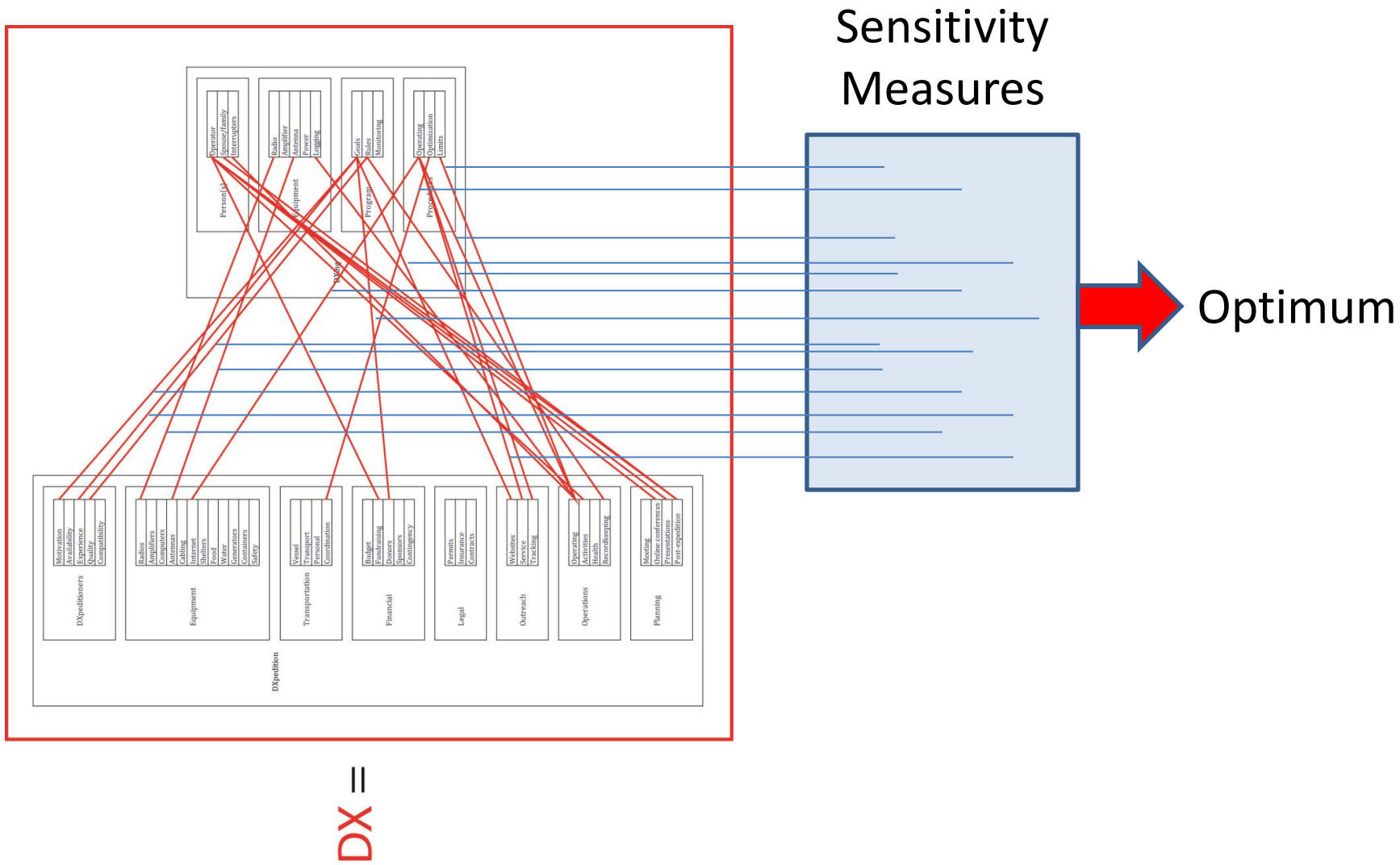
Coordination
Financial
Budget
Fundraising
Donors
Sponsors
Contingency
Legal
Permits
Insurance
Contracts
Outreach
Websites
Service
Tracking
Operations
Operating
Other activities
Health
Recordkeeping
Planning
Meeting
Online conferences
Presentations
Post-expedition

DX as a Connectivity Diagram

DX =



Optimizing the Connectivity Diagram



Who will do the Systems Engineering?

- ✓ Young computer nerds
- ✓ Tech-savvy amateurs
- ✓ Professional developers
- ✓ Senior advisors

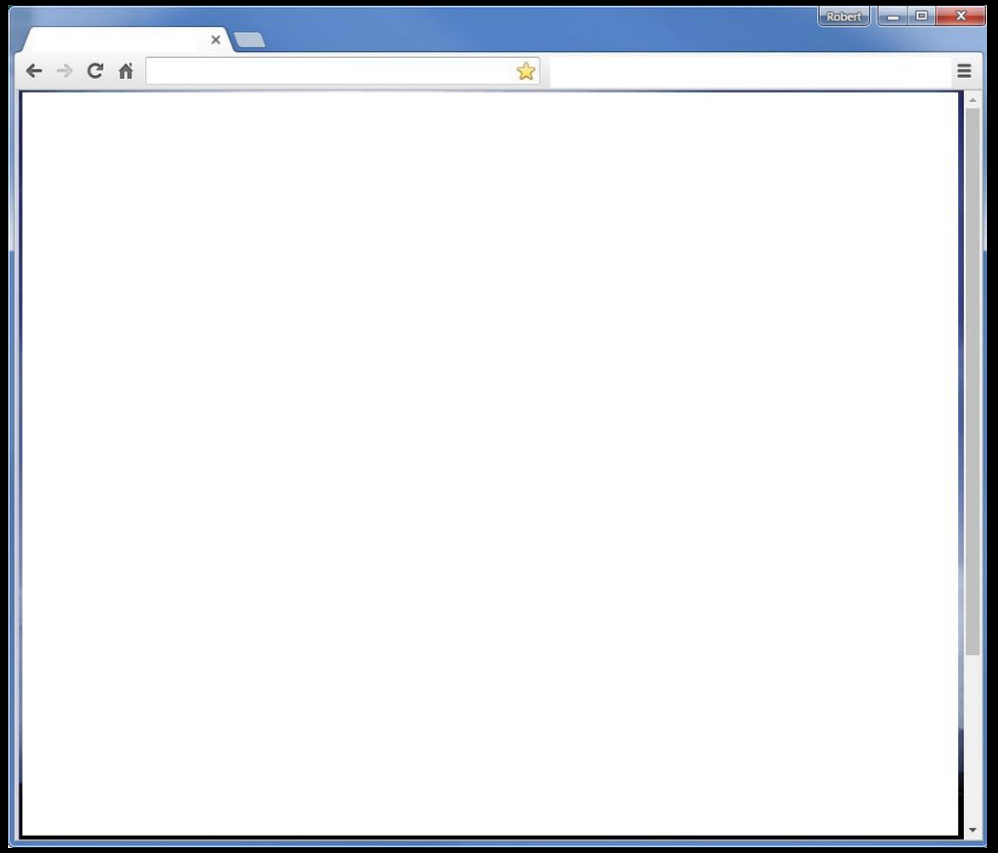
Systems Engineering will be both

Necessary and Sufficient

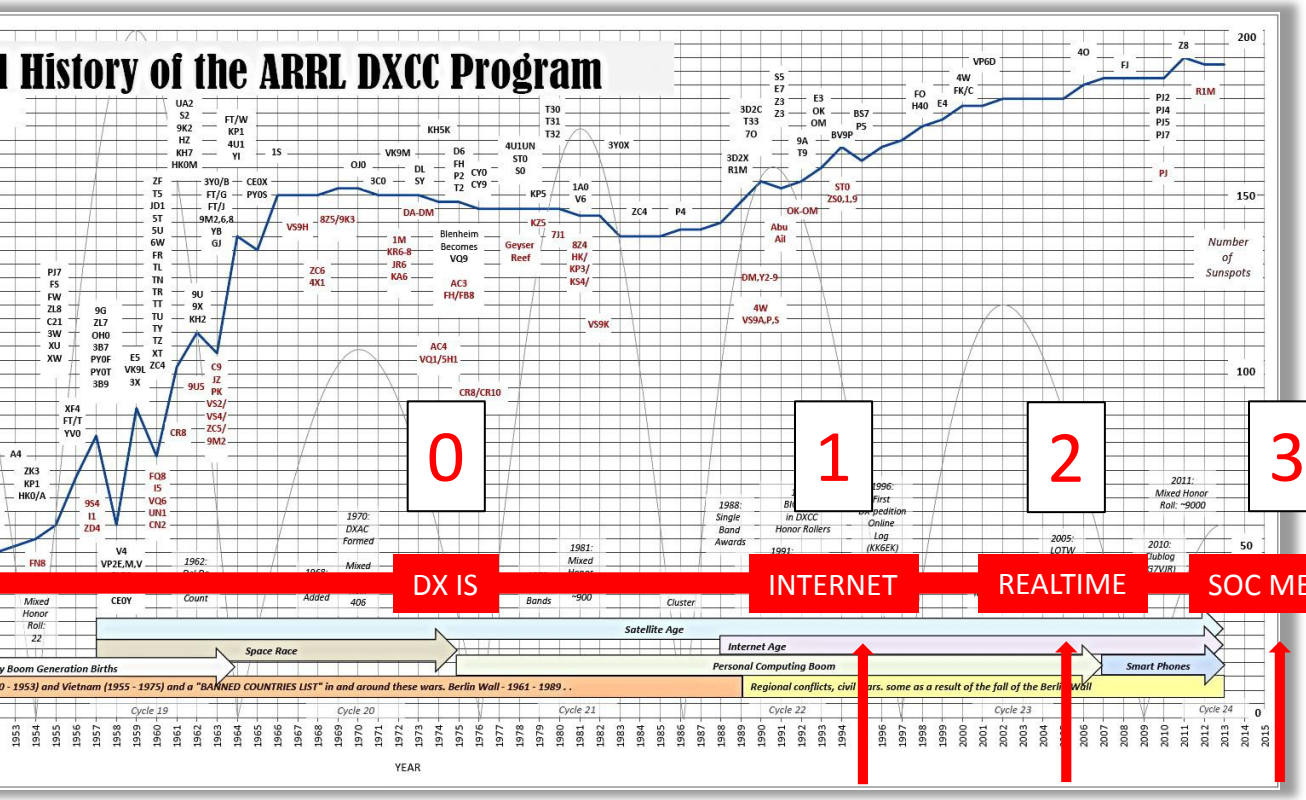
…until the next Phase!

Extensive Use of Systems Engineering

Who?
When?
What?
How?



The Phases of DX



0 DX IS

1 INTERNET

2 REALTIME

3 SOC MEDIA

4 SYSTEMS

XRØY 1995

K7C 2005

VKØEK 2015

??? 2025

PHASE 5 2030+

SOCIETY, EARTH, TECHNOLOGY

5

The BIG Question

What will DX be in 25 years?

- ✓ Relevance to social concerns
- ✓ Integration with other programs
- ✓ Promoting causes or activities

Analogous activities

- ✓ Space program
- ✓ Sports events
- ✓ Auto races

The Devaluation of Distance

Distance as an issue is devalued:

$$DX \rightarrow X$$

The future of DXing and DXpeditions

$$X = \left\{ \begin{array}{c} \text{Society (S)} \\ \text{Earth (E)} \\ \text{Technology (T)} \end{array} \right\}$$

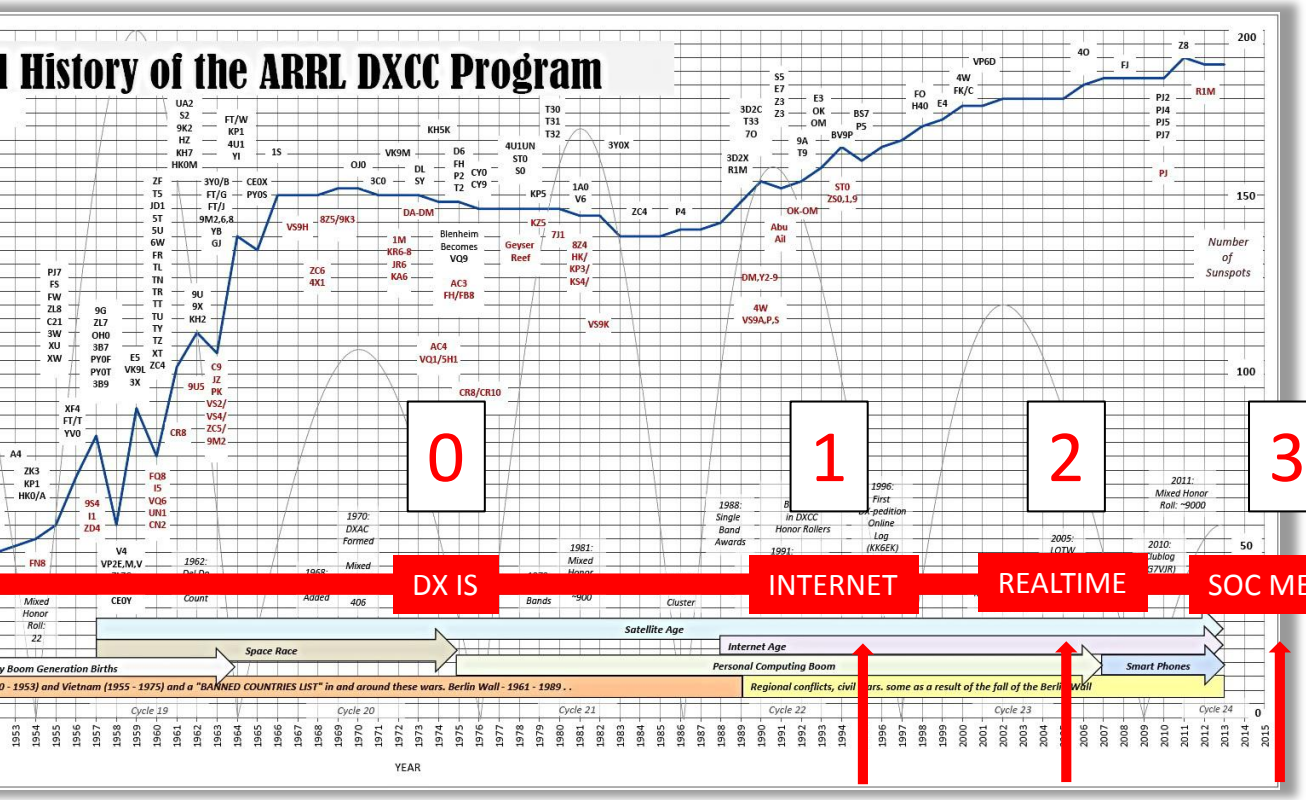
$$X \equiv \{S,E,T\} \equiv SET$$

What to think about

Combining DX with promoting causes

- ✓ Administration of justice
- ✓ Climate change
- ✓ Disadvantaged persons
- ✓ Energy supply
- ✓ Health care
- ✓ Natural resources
- ✓ Pandemics
- ✓ Poverty and malnutrition
- ✓ Preservation of history
- ✓ Racial issues
- ✓ Scientific research
- ✓ Stability of government
- ✓ Wildlife protection
- ✓ World peace

The Phases of DX



0 DX IS

1 INTERNET

2 REALTIME

3 SOC MEDIA

4 SYSTEMS

5 SET

XRØY 1995

K7C 2005

VKØEK 2015

??? 2025

??? 2030

YOUR PART IN THE FUTURE OF DX

The (New) Principle and Definition of DX

The (20th Century) Fundamental Principle:

~~The DXpedition is a performance for the DXers~~

The (21st Century) Reality:

What DXers want: Callsigns in the log
What DXpeditioners want: Callsigns in the log

DXers and DXpeditioners want the same thing!

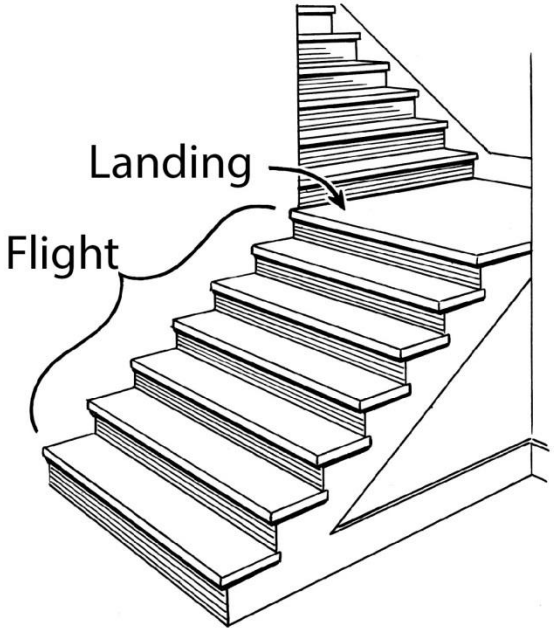
→ The (21st Century) Fundamental Principle:

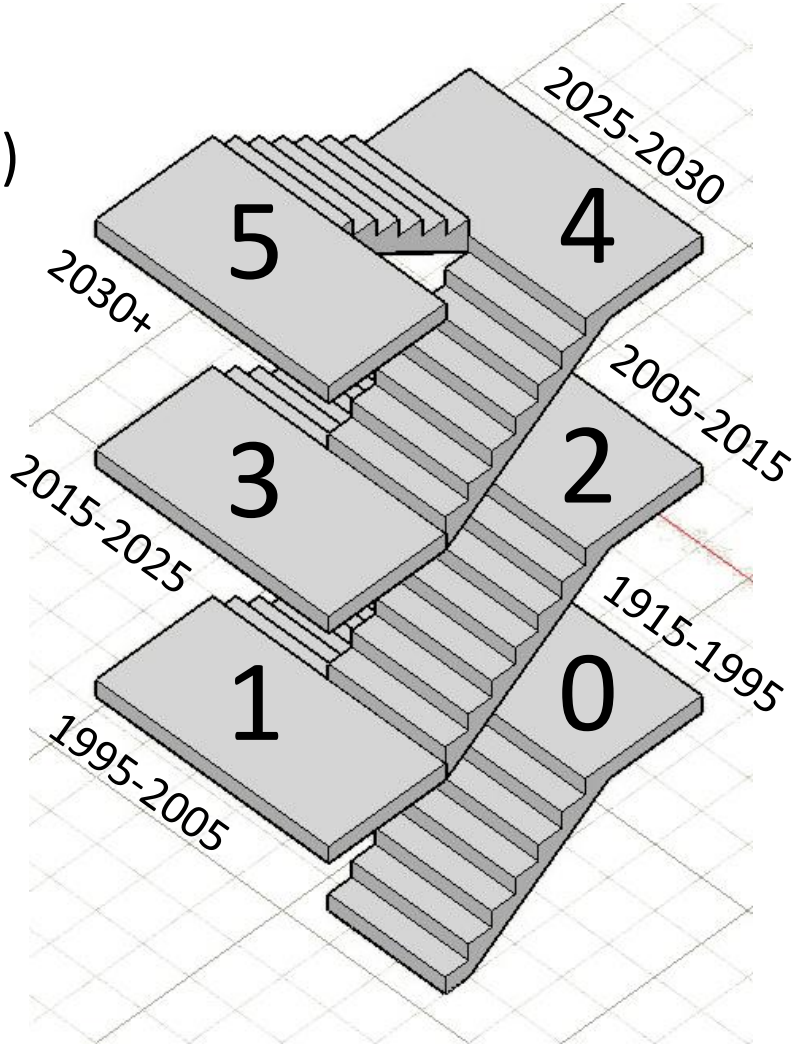
DX is a cooperative activity involving a single team:
DX = DXpedition + DXer

Staircase Diagram of DX

Flight ≡ The Components of DX
(Radios, QSLs, Satellites, etc.)

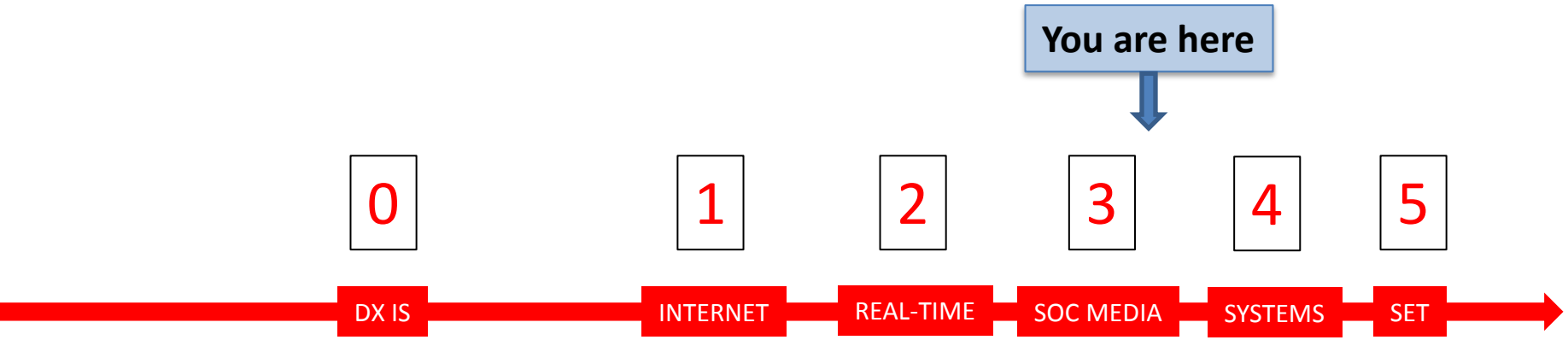
Landing ≡ DX Phase Transition
(e.g., Real-time → Systems)





Summary of the Phases of DX

Phase 0	1915-1995	DX IS!
Phase 1	1995-2005	Internet
Phase 2	2005-2015	Real-time
Phase 3	2015-2025	Social Media
Phase 4	2025-2030	Systems
Phase 5	2030+	Society,Earth,Technology (SET)



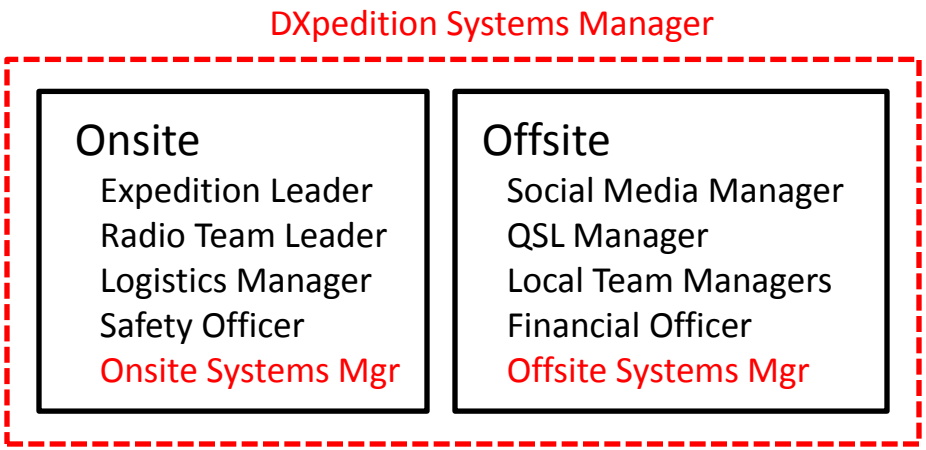
The Big Choice for DX persons

- ❑ Stay in the 20th Century
- ❑ Find a rich person and be happy
- ❑ Complain and criticize
- ❑ Drop out
- ❑ Embrace technology
- ❑ Think Internet, Real-time, Systems

A few recommendations…

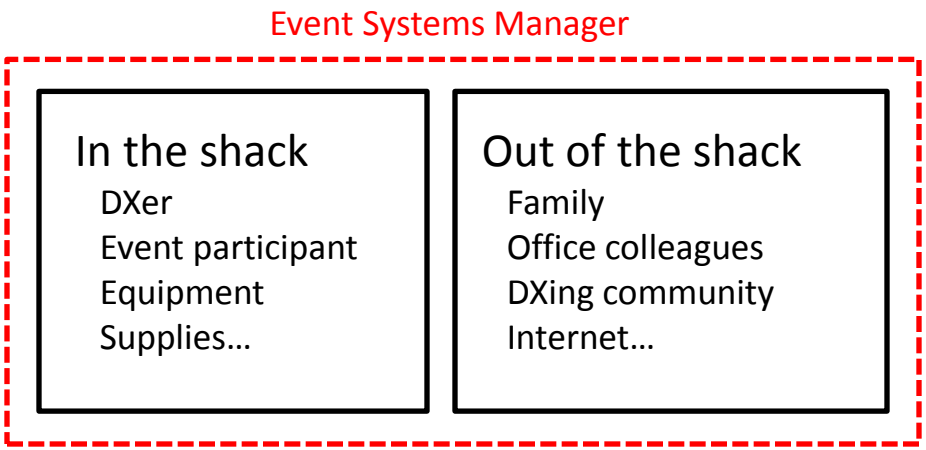
What DXpeditioners should do

→ *Designate a Systems Manager for the DXpedition*



What DXers should do

→ *Create your own Systems Manager for the Event*



What the DX Special Interests should do

- DX clubs, organizations, foundations

  Define policies that apply to DX Systems

- Magazines (DX Magazine, QST, etc.)

  Solicit articles on DX Systems

- Companies

  Incorporate DX Systems advantages in your products

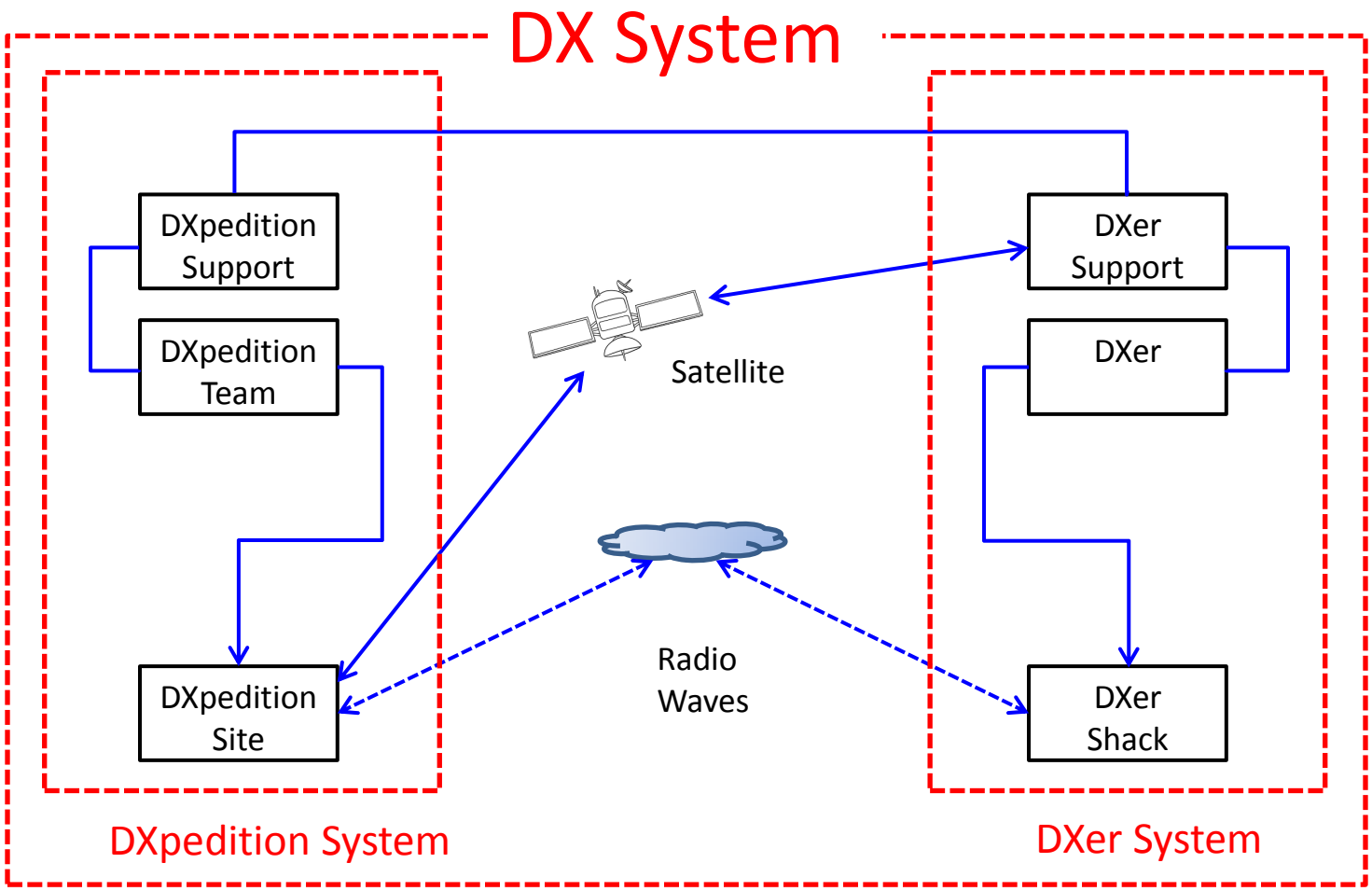
- Entrepreneurs

  Development of *Real-time DX systems*
  Software tools for designing DX Systems
  Services to DX based on DX Systems

Commercial Opportunities!

What Everyone should do

→ *"Think Systems!"*



What Everyone should do

→ *Get ready to "Think SET!"*

SOCIETY

EARTH

TECHNOLOGY

The Future of DX

SOCIETY EARTH TECHNOLOGY