

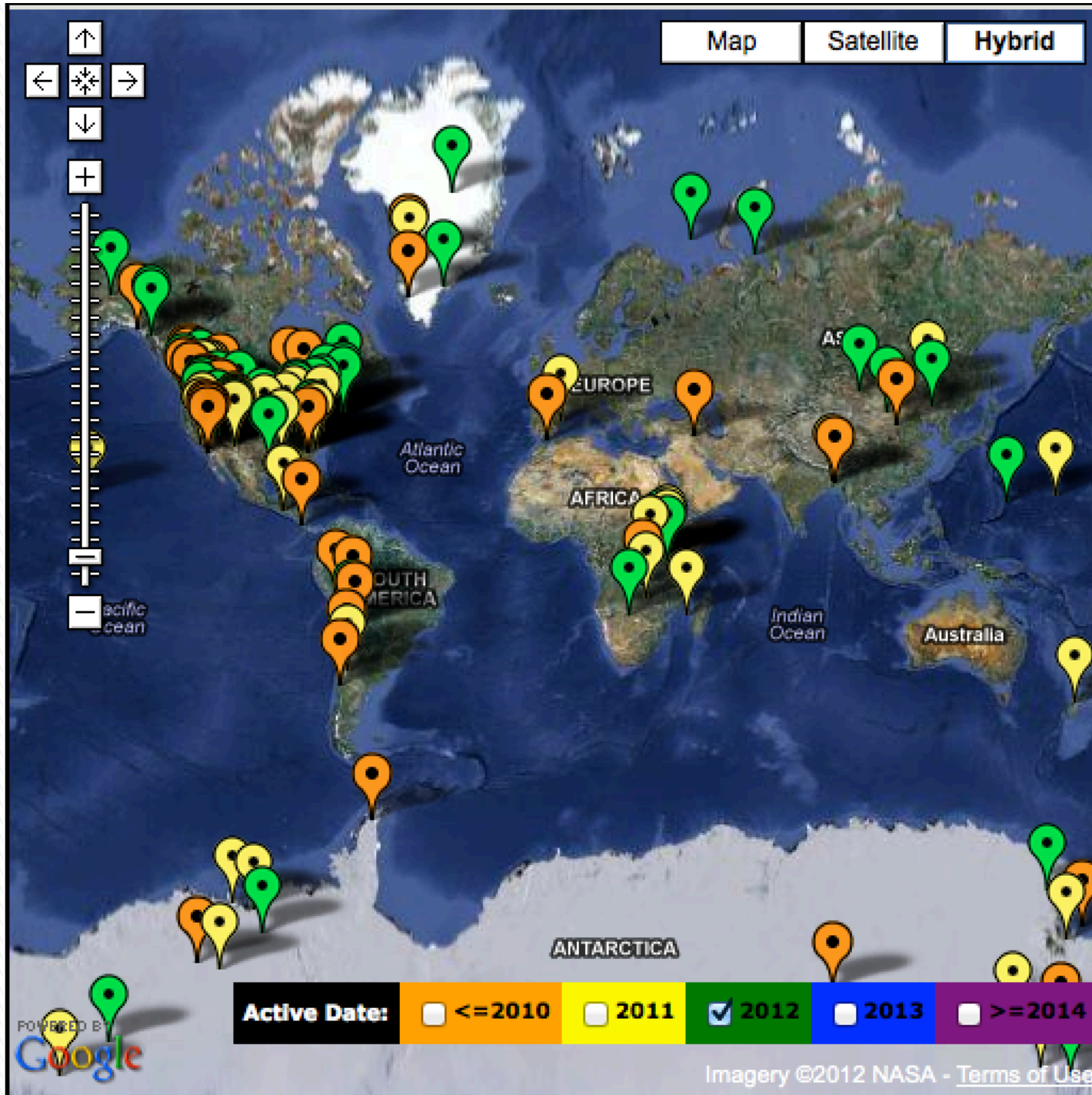
IRIS PASSCAL & PIC GLISN Network operations

Antelope Users Group Meeting 23 Oct 2012

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PASSCAL information

1. How many stations: 70-80 temporary networks, ~1500 stations/year
2. Operating budget and staffing: 3.5+ FTE; funding from NSF grant thru New Mexico Tech
3. Current hardware platforms: All staff currently use Apple computers, workhorses are Linux (Fedora) servers (very recently changed over from Solaris)



PASSCAL information (cont)

4a. Datalogger/sensor types:

RT130s (862), Q330s (504) , RT125As (2599)

STS-2, Guralp 3T, Trillium 120 and 240 (841 BB)

Also 40Ts, Trillium 40s & compacts (378 IP/1366 SP)

Episensors (41), various HF (>4Hz)

4b. Mechanisms for bringing in data:

>90% of data are from standalone stations.



PASSCAL information (cont)

5. Failover procedures: Backups of data while in-house,

6. Regular network operations meetings? No. In-person training is highly encouraged either before an experiment or preferably when the first data are collected.

7. Principle telemetry: Currently equipment test stations are using Q330s with cell modems. The only active PA/FA project transmitting in real-time is utilizing RT130s with cell modems. Using Antelope, these data are received by a server at the host institution and then passed along to the DMC.



PASSCAL information (cont)

8. Network obligations: PASSCAL's primary objective is to archive - products come from the IRIS DMC.

9. Real-time/reviewable products: none

10. Internal/external catalogs: none



PASSCAL information (cont)

11. Local archive features: We do not keep long-term archives of data at PASSCAL, only a MySQL database and the Antelope database tables. Once confirmed as received by the DMC, all waveforms are deleted.

12. Other products, on-going work, short-term needs and challenges: Our main product is archiving/archiver support. Our short-term needs and challenges are related to making the archiving steps as painless and quick as possible. Our QC system called Netra is the backbone of this effort and utilizes Antelope.



Netra

A Linux QC* server thru which all data (PA and FA) from PASSCAL experiments pass

Standardized conventions for file names and generally station-channel-day volumes of data

A series of repeatable checks on data files, the dataless, and the wfdisc table

Seeking to minimize duplication and overlap in data sent to the DMC

Always comparing a complete dataless with all data (past and current) for each project



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Experiments:

Search:

DMC Code	End	Name	Status	State	Owner	Running	Closed	DL Good
1D.2010	2011	Whillans/UCSC - 201035	CLOSED MAY 2 2012	idle	eliana	off	open	good
2C.2010	2011	Whillans Ice Stream (201056)	ready to close	idle	mouse	off	open	good
4A.2008	2009	Whillans Ice Sheet (200872)	Jake's 2nd attempt	idle	mouse	off	open	bad
4A.2010	2011	New_Zealand_RAMP	closed	idle	george	off	open	good
5A.2010	2012	Basin Range	new dl	idle	eliana	off	open	bad
5C.2009	2011	Yakutah Glacier -200920	confirmed and closing 5/29 -E	idle	eliana	off	open	good
9B.2008	2008	Kilauea Seismo Acoustic		idle	george	off	open	good
9B.2010	2010	Kilauea Seismo-acoustic		idle	george	off	open	good
AB.2002	2010	TEST	this is the status	idle	flow	off	open	good
ER.2009	2013	Mount Erebus Volcano Observatory Seismic	done until next season	idle	mouse	off	open	good
X2.2009	2010	SAHKE (Wellington Transect)		idle	george	off	open	good
X4.2010	2012	Gumbo_ NOPIC	New data	idle	george	off	open	good
X6.2007	2009	PUNA		idle	eliana	off	open	bad
XA.2008	2009	COLZA/OSU (200729)	New DL	idle	mouse	off	open	good
XB.2009	2013	Picasso_BB (200904)	new DL	idle	eliana	running	open	good
XC.2006	2010	HLP		idle	george	off	open	good
XC.2011	2011	Pacaya		idle	eliana	off	open	good
XD.2011	2012	Salton Trough Passive (200940)	New service run data	idle	kanderson	running	open	good
XE.2009	2011	Galapagos_SNAG	done - ready to close	idle	kanderson	running	open	good
XF.2009	2011	Yahtse (200905)	CLOSED 06/12 -Eliana	idle	mouse	off	open	bad
XG.2009	2011	AOA (Array of Arrays)	service7	idle	george	running	open	good
XH.2008	2010	Argentinean slab/Sierra Pampeanas	expecting one more service	idle	eliana	off	open	good
XH.2012	2013	Kilauea Array (201157)	New service run data	idle	mouse	running	open	bad
XL.2011	2013	SPREE	filling gaps	idle	kanderson	running	open	good
XJ.2010	2010	Kilauea		idle	george	off	open	good
XJ.2012	2012	Fuego Volcano VLP and Tilt Experiment	close Feb 10 2012	idle	eliana	off	open	good
XK.2011	2011	Fairmont		idle	george	off	open	good
XK.2012	2014	Early Rifting (201107)		idle	george	running	open	bad
XL.2008	2011	Columbia Glacier IPY	Finish archiving, ready to close June 7	idle	eliana	off	open	good
XM.2011	2011	Alaska Peninsula BB (201150)	ready to close	idle	mouse	off	open	good
XN.2010	2010	COLZA/OSU (200729)	new dl	idle	mouse	off	open	good
XN.2011	2013	Field camp 2011 (201146)	doing checks on new data sent	idle	kanderson	running	open	good
XO.2010	2010	Whatana-Wanganui Passive Seismology Exp	Confirmed & closing May 29 -E	idle	eliana	off	open	good

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XH.2012 - 2013 is **running**

[Statistics](#)

Modify Experiment:

Name:
End year:
FA:
Run:
User:
Status:
Check mseed:
Check dseed:
Send:
Send partial days:
Confirm:
Closed:

Current Dataless: [XH.2012.262.XH.12.kilarray.20121620800.dataless](#)

Sent:
First ck:
Seed2db:
Dbv calibs:
Dbv calib not dynamic:
Dbv chan id:
Dbv chan wf sens:
Dbv joins:
Dbv orient:
Dbv samplerate:
Dbv sens inst:
Dbv stns:
Dbv wfdendtime:
Dbv wf future:

Dataless History:

[Old V:01 XH.2012.111.XH.12.kilarray.20121080800.dataless](#)
[Old V:02 XH.12.KSA.20121171607.dataless](#)
[Old V:03 XH.2012.165.XH.12.kilarray.20121620800.dataless](#)
[Current V:04 XH.2012.262.XH.12.kilarray.20121620800.dataless](#)

Upload a new Dataless:

MiniSEED files:

	Ready To Send	Ready To Confirm	Bad	Quarantined	Total
Count	4803	0	0	0	12499
Size	25.8 GB	0 bytes	0 bytes	0 bytes	72.6 GB

Tasks:

Experiment	Task	State	Run Time	Errors	User
XH.2012 - Kilauea Array (201157)	DL Recheck for XH.2012.262.XH.12.kilarray.20121620800.dataless.	Oct. 22, 2012, 8:36 a.m.	0:00:41	0	flow
XH.2012 - Kilauea Array (201157)	Mseed Recheck: ms_in_dl: 8331/12499, QualityD: 4803/4803, ms2db: 4803/4803.	Oct. 22, 2012, 8:35 a.m.	0:54:03	4168	flow
XH.2012 - Kilauea Array (201157)	NEW MiniSEED files: Added 4803 of 4803 MiniSEED files with 0 errors.	Oct. 22, 2012, 7:37 a.m.	0:14:08	57	mouse
XH.2012 - Kilauea Array (201157)	Added 0 MSfiles and 3 DLfiles from received	Sept. 19, 2012, 2:23 a.m.	12:58:39	2	flow
XH.2012 - Kilauea Array (201157)	Deleting confirmed files. Keeping last day files. Deleted 3578 files.	July 22, 2012, 9:05 p.m.	0:01:43	0	mouse
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 96 of 96 MiniSEED files.	July 20, 2012, 1:38 p.m.	0:00:07	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 0 of 96 MiniSEED files.	July 20, 2012, 10:17 a.m.	0:00:10	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 0 of 96 MiniSEED files.	July 19, 2012, 5:41 p.m.	0:00:06	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 0 of 96 MiniSEED files.	July 19, 2012, 2:57 p.m.	0:00:05	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 0 of 96 MiniSEED files.	July 19, 2012, 2:56 p.m.	0:00:09	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 0 of 96 MiniSEED files.	July 19, 2012, 10:55 a.m.	0:00:07	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 3531 of 3627 MiniSEED files.	July 19, 2012, 7:46 a.m.	0:02:15	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 0 of 3627 MiniSEED files.	July 18, 2012, 7:53 a.m.	0:01:19	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 15 of 3642 MiniSEED files.	July 17, 2012, 5:42 p.m.	0:01:18	0	flow
XH.2012 - Kilauea Array (201157)	Sending data to DMC. 1 dataless sent & 3642 miniseed files sent.	July 17, 2012, 4:02 p.m.	8:00:26	0	flow
XH.2012 - Kilauea Array (201157)	DL Recheck for XH.2012.165.XH.12.kilarray.20121620800.dataless.	June 15, 2012, 9:05 a.m.	0:00:34	0	flow
XH.2012 - Kilauea Array (201157)	Mseed Recheck: ms_in_dl: 3706/7696, QualityD: 1221/1221, ms2db: 1221/1221.	June 15, 2012, 9:05 a.m.	0:26:45	3990	flow
XH.2012 - Kilauea Array (201157)	Adding new DatalessSEED: XH.2012.165.XH.12.kilarray.20121620800.dataless, success.	June 15, 2012, 8:37 a.m.	0:00:03	0	eliana
XH.2012 - Kilauea Array (201157)	NEW MiniSEED files: Added 1221 of 1221 MiniSEED files with 0 errors.	June 15, 2012, 8:35 a.m.	0:05:59	18	eliana
XH.2012 - Kilauea Array (201157)	DL Recheck for XH.12.KSA.20121171607.dataless.	June 14, 2012, 4:58 p.m.	0:00:57	0	flow
XH.2012 - Kilauea Array (201157)	Mseed Recheck: ms_in_dl: 158/2421, QualityD: 2421/2421, ms2db: 2421/2421.	June 14, 2012, 4:57 p.m.	0:38:34	2263	flow
XH.2012 - Kilauea Array (201157)	NEW MiniSEED files: Added 2421 of 2421 MiniSEED files with 0 errors.	June 14, 2012, 3:13 p.m.	0:15:20	36	eliana
XH.2012 - Kilauea Array (201157)	Deleting confirmed files. Deleted 1614 files.	May 17, 2012, 12:02 p.m.	0:01:03	0	mouse
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 1 of 1 MiniSEED files.	May 16, 2012, 4:49 p.m.	0:00:11	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 0 of 1 MiniSEED files.	May 15, 2012, 11:20 a.m.	0:00:11	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 53 of 54 MiniSEED files.	May 9, 2012, 1:30 p.m.	0:00:08	0	flow
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 1518 of 1572 MiniSEED files.	May 8, 2012, 3:53 p.m.	0:00:46	0	flow
XH.2012 - Kilauea Array (201157)	Sending data to DMC. No dataless sent & 2 miniseed files sent.	May 8, 2012, 3:51 p.m.	0:00:25	0	flow
XH.2012 - Kilauea Array (201157)	Sending data to DMC. No dataless sent & 1570 miniseed files sent.	May 8, 2012, 2:45 p.m.	3:08:45	0	flow
XH.2012 - Kilauea Array (201157)	DL Recheck for XH.12.KSA.20121171607.dataless.	May 8, 2012, 11:31 a.m.	0:00:35	0	flow
XH.2012 - Kilauea Array (201157)	Mseed Recheck: ms_in_dl: 21/21, QualityD: 21/21, ms2db: 21/21.	May 8, 2012, 11:30 a.m.	0:00:06	0	flow
XH.2012 - Kilauea Array (201157)	NEW MiniSEED files: Added 21 of 21 MiniSEED files with 0 errors.	May 8, 2012, 11:30 a.m.	0:00:03	21	mouse
XH.2012 - Kilauea Array (201157)	Confirming. Confirmed 43 of 43 MiniSEED files.	May 3, 2012, 9:25 a.m.	0:00:11	0	flow
XH.2012 - Kilauea Array (201157)	DL Recheck for XH.12.KSA.20121171607.dataless.	May 2, 2012, 11:34 a.m.	0:00:41	0	flow

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XH.2012.262.XH.12.kilarray.20121620800.dataless

Sent:
First ck:
Seed2db:
Dbv calibs:
Dbv calib not dynamic:
Dbv chan id:
Dbv chan wf sens:
Dbv joins:
Dbv orient:
Dbv samplerate:
Dbv sens inst:
Dbv stns:
Dbv wfdendtime:
Dbv wf future:

Time summary:

HP07:	EHE:	2012,088,00:00:00.0000	2013,056,23:59:59.0000
	EHN:	2012,088,00:00:00.0000	2013,056,23:59:59.0000
	EHZ:	2012,088,00:00:00.0000	2013,056,23:59:59.0000
	LOG:	2012,088,00:00:00.0000	2013,056,23:59:59.0000
HP08:	EHE:	2012,088,00:00:00.0000	2013,056,23:59:59.0000
	EHN:	2012,088,00:00:00.0000	2013,056,23:59:59.0000
	EHZ:	2012,088,00:00:00.0000	2013,056,23:59:59.0000
	LOG:	2012,088,00:00:00.0000	2013,056,23:59:59.0000
HP09:	EHE:	2012,089,00:00:00.0000	2013,056,23:59:59.0000
	EHN:	2012,089,00:00:00.0000	2013,056,23:59:59.0000
	EHZ:	2012,089,00:00:00.0000	2013,056,23:59:59.0000
	LOG:	2012,089,00:00:00.0000	2013,056,23:59:59.0000
HP10:	EHE:	2012,089,00:00:00.0000	2013,056,23:59:59.0000

...
dbverify -vtc -X dbv_samplerate.pf XW_2012_01
Exit code: 256

Start: Sept. 24, 2012, 11:13 a.m.
End: Sept. 24, 2012, 11:13 a.m.
Ran for:

performing consistency checks

Consistency check: bsamprate_ok
dbopen wfdisc
comment check that [BS].. channels have samprate>=10 && samprate<80
dbsubset chan=~/[BS].*/

Consistency check: hsamprate_ok
dbopen wfdisc
comment check that [HE].. channels have samprate >= 80
dbsubset chan=~/[HE].*/
dbverify samprate>=80

dbopen wfdisc
comment check that [HE].. channels have samprate >= 80
dbsubset chan=~/[HE].*/
dbverify samprate>=80

Record #314	: sta = ST8	chan = HHN	time = 6/19/2012 (171) 13:38:23.155	endtime = 6/19/2012 (171) 13:41:11.505
false				
Record #315	: sta = ST8	chan = HHN	time = 6/19/2012 (171) 19:43:52.270	endtime = 6/19/2012 (171) 19:57:15.770
false				
Record #316	: sta = ST8	chan = HHN	time = 6/19/2012 (171) 19:57:15.360	endtime = 6/20/2012 (172) 0:01:24.735
false				
Record #321	: sta = ST8	chan = HHE	time = 6/19/2012 (171) 13:38:23.155	endtime = 6/19/2012 (171) 13:41:15.680
false				
Record #322	: sta = ST8	chan = HHE	time = 6/19/2012 (171) 19:43:52.270	endtime = 6/19/2012 (171) 19:57:24.720
false				
Record #323	: sta = ST8	chan = HHE	time = 6/19/2012 (171) 19:57:24.310	endtime = 6/20/2012 (172) 0:01:31.035
false				
Record #334	: sta = ST8	chan = HHZ	time = 6/19/2012 (171) 13:38:23.155	endtime = 6/19/2012 (171) 13:41:17.255
false				
Record #335	: sta = ST8	chan = HHZ	time = 6/19/2012 (171) 19:43:52.270	endtime = 6/19/2012 (171) 19:57:17.270
false				
Record #336	: sta = ST8	chan = HHZ	time = 6/19/2012 (171) 19:57:16.860	endtime = 6/20/2012 (172) 0:00:44.935
false				

9 failures of 'samprate>=80'.

Consistency check: lsamprate_ok
dbopen wfdisc
comment check that L.. channels have samprate of 1 sps
dbsubset chan=~/.*/

Consistency check: samprate_ok
dbopen wfdisc
dbverify samprate>0. sta chan samprate
9 problems

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[Poke](#)

Quick sort

- Bad
- Quarantined
- Unsent
- Unconfirmed
- Not Described by Current Dataless

Show entries

Search:

File	In Dataless	QualityD	Ms2db	Dblersdwf	Sent	Confirmed	Quarantined	On Disk
HP07.XH..EHE.2012.040	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.041	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.042	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.043	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.044	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.045	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.046	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.047	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.048	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.049	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.050	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.051	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.052	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.053	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.054	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.055	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.056	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.057	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.058	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.059	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.060	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.061	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.062	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.063	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.064	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.065	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.066	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.067	false	pass	pass	excuse	true	true	false	false
HP07.XH..EHE.2012.068	false	pass	pass	excuse	true	true	false	false

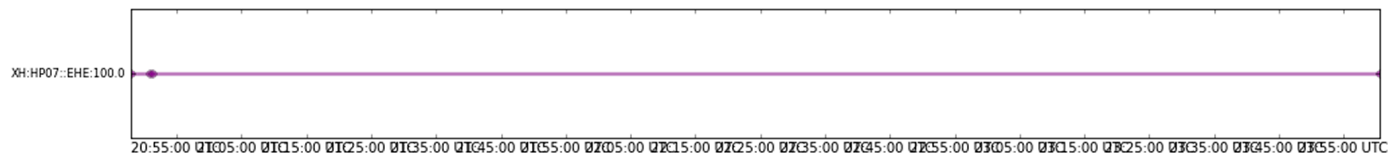
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HP07.XH..EHE.2012.040

Sent:
Confirmed:
In dataless:
QualityD:
Ms2db:
Dbversdwf:

Sync

```
XH|HP07||EHE|2012,040,20:47:56.015000|2012,040,20:50:48.045000||100|17204|||||2012,117
XH|HP07||EHE|2012,040,20:51:10.620000|2012,040,20:51:39.150000||100|2854|||||2012,117
XH|HP07||EHE|2012,040,20:51:38.415000|2012,041,00:00:33.455000||100|1133505|||||2012,117
```



Actions:

ms in db

Exit code: 1

Start: Oct. 22, 2012, 7:42 a.m.
 End: Oct. 22, 2012, 7:42 a.m.
 Ran for: 0:00:00

ms in db

Exit code: 1

Start: June 15, 2012, 8:38 a.m.
 End: June 15, 2012, 8:38 a.m.
 Ran for: 0:00:00

`minised2dmc -w /data/flow/AIITO/EXPS/XH.2012/DATA/SYNC/ms2dmc bob.iris.washington.edu:16001 /data/flow/AIITO/EXPS/XH.2012/DATA/MSFFD/HP07.XH..EHE.2012.040`

PASSCAL information (cont)

13. Research tools relied upon: none

14. 5-year vision for the network: IRIS PASSCAL is looking ahead. This will require equipment that is smarter about the meta-data as well as moving closer to archive-ready data formats. Antelope tools that continue to simplify and expedite the archiving steps will be critical to the success of PASSCAL's efforts.



GLISN



Network map for _GLISN Greenland Icesheet Monitoring Network



GLISN – The new kid on the block

- ▶ 1. How many stations: 12, 5 real-time and 6 pseudo-real-time (higher latency)
- ▶ 2. Operating budget and staffing: 1.6 FTE ~190k/yr for an engineer and a network operator/analyst
- ▶ 3. Current hardware platforms: Apple computers with an Apple server (probably will be converted over to Linux soon)



GLISN (cont)

- ▶ 4a. Datalogger/sensor allocations: All 3- or 6-channel Q330s with 3 Guralp 3ts and 2 3tbs as well as 9 STS-2s.
- ▶ 4b. Data retrieval mechanisms: 5 stations have real-time data and the other 6 have lower sample-rate data pulled three times a day. The data are also collected during site visits and all of these data are archived, adding higher sample rate data (20 and 100sps) to the archive for the 6 high-latency stations.



GLISN (cont)

- ▶ 5. Failover procedures: Server backups, DMC for some RT
- ▶ 6. Regular network operator meetings: No
- ▶ 7. Principle telemetry mechanisms:
 - ADSL (asymmetric digital subscriber line)
 - Spread spectrum radio link
 - MPLS (multiprotocol label switching)
 - Xeos satellite (lower sample rate data)

GLISN (cont)

- ▶ 3 GEUS stations are transmitted via seedlink connection to Denmark and then on to the DMC
- ▶ 2 PIC GLISN RT stations are transmitted using Antelope orbs
- ▶ Pseudo-real-time stations are tunneled into and data files are copied over to a PASSCAL server three times a day, then sent to the DMC



GLISN (cont)

- ▶ 8. Obligations as a network: PIC GLISN is international endeavor but has no standard implementation. Data qc and archiving are handled by different nations feeding into a single virtual network (_GLISN) leading to different standards in quality and even naming conventions. Ultimate goal is more open data, hopefully better quality...

R	A	CN	RES	RESOLUTE, NU	74.69	-94.90	19	1995/09/01 00:00:00	2599/12/31 23:59:59
R	A	DK	ANGG	Tasiilaq, Greenland	65.62	-37.64	9	2010/08/02 00:00:00	2599/12/31 23:59:59
	A	DK	DBG	Daneborg, Greenland	74.31	-20.22	1	2010/08/12 00:00:00	2599/12/31 23:59:59
	A	DK	DY2G	Raven Camp, Greenland	66.48	-46.31	2132	2011/05/24 00:00:00	2599/12/31 23:59:59
	A	DK	ICESG	Ice sheet ridge, Greenland	69.09	-39.65	2931.6	2011/06/09 00:00:00	2599/12/31 23:59:59
R	A	DK	ILULI	Ilulissat, Greenland	69.21	-51.10	53.5	2009/07/14 00:00:00	2599/12/31 23:59:59
R	A	DK	KULLO	Kullorsuaq, Greenland	74.58	-57.22	44	2009/07/18 00:00:00	2599/12/31 23:59:59
	A	DK	NEEM	Ice sheet ridges, Greenland	77.44	-51.07	2513	2011/07/22 00:00:00	2599/12/31 23:59:59
	A	DK	NOR	Station Nord, Greenland	81.60	-16.66	36	2010/07/06 00:00:00	2599/12/31 23:59:59
R	A	DK	NRS	Narsarsuaq, Greenland	61.16	-45.42	80	2010/07/04 00:00:00	2599/12/31 23:59:59
R	A	DK	NUUG	Nuugaatsiq, Greenland	71.54	-53.20	36	2010/07/21 00:00:00	2599/12/31 23:59:59
R	A	DK	NUUK	Nuuk, Greenland	64.18	-51.67	110	2010/08/01 17:28:37	2599/12/31 23:59:59
R	A	DK	SCO	Ittoqqortoormiit, Greenland	70.49	-21.95	69	2010/08/06 00:00:00	2599/12/31 23:59:59
	A	DK	SOEG	Sodalen, Greenland	68.20	-31.38	179	2011/08/01 00:00:00	2599/12/31 23:59:59
R	A	DK	TULEG	Thule Air Base, Greenland	76.54	-68.82	38	2010/05/04 00:00:00	2599/12/31 23:59:59
R	A	G	IVI	Ivittuut, Greenland	61.21	-48.17	15	2011/09/12 09:00:00	2599/12/31 23:59:59
R	A	GE	DAG	GEOFON/AWI Station Danmarkshavn, Greenland	76.77	-18.66	23	1998/06/16 15:44:00	2599/12/31 23:59:59
R	A	GE	SUMG	GEOFON Station Summit Camp, Greenland	72.58	-38.45	3240	2006/09/06 18:12:00	2599/12/31 23:59:59
	A	II	ALE	Alert, N.W.T., Canada	82.50	-62.35	60	1990/02/19 00:00:00	2599/12/31 23:59:59
R	A	II	BORG	Borgarfjordur, Asbjarnarstadir, Iceland	64.75	-21.33	110	1994/07/31 00:00:00	2599/12/31 23:59:59
R	A	IU	KBS	Ny-Alesund, Spitzbergen, Norway	78.92	11.94	90	1994/11/05 00:00:00	2599/12/31 23:59:59
	A	IU	SFJ	Sondre Stromfjord, Greenland	67.00	-50.62	328	1996/03/21 00:00:00	2005/01/31 16:03:37
	A	IU	SFJ	Sondre Stromfjord, Greenland	67.00	-50.62	365	1996/03/21 00:00:00	2005/01/31 16:03:37
R	A	IU	SFJD	Sondre Stromfjord, Greenland	67.00	-50.62	330	2005/02/04 18:05:42	2599/12/31 23:59:59
R	A	NO	JMIC	JAN MAYEN, NORWAY	70.99	-8.51	161	2003/10/02 00:00:00	2599/12/31 23:59:59
R	A	NO	SPA0	SPITSBERGEN ARRAY SITE A0, SVALBARD	78.18	16.37	323	2004/08/11 00:00:00	2599/12/31 23:59:59
R	A	NO	SPB1	SPITSBERGEN ARRAY SITE B1, SVALBARD	78.18	16.39	301	2004/08/11 00:00:00	2599/12/31 23:59:59
R	A	NO	SPB2	SPITSBERGEN ARRAY SITE B2, SVALBARD	78.17	16.38	200	2004/08/11 00:00:00	2599/12/31 23:59:59
R	A	NO	SPB3	SPITSBERGEN ARRAY SITE B3, SVALBARD	78.17	16.36	234	2004/08/11 00:00:00	2599/12/31 23:59:59
R	A	NO	SPB4	SPITSBERGEN ARRAY SITE B4, SVALBARD	78.18	16.35	340	2004/08/11 00:00:00	2599/12/31 23:59:59
R	A	NO	SPB5	SPITSBERGEN ARRAY SITE B5, SVALBARD	78.18	16.37	295	2004/08/11 00:00:00	2599/12/31 23:59:59
R	A	PL	HSPB		77.00	15.53	11	2010/05/12 00:00:00	2599/12/31 23:59:59

GLISN (cont)

- ▶ 9. RT/reviewed products: None
- ▶ 10. Internal/external catalogs: None via PIC GLISN
- ▶ 11. Local archive: Data are kept locally for use by the network operator (some waveform analysis, PQLX, hardware troubleshooting) but are not shared from here. All data are sent to the DMC and are freely available.

GLISN (cont)

- ▶ 12. Other products: None
- ▶ 13. Research tools: Currently synthetics and orientation analysis are provided by Lamont-Doherty. For improving the quality and return rate of data, these along with noise analysis and more are options on the table.



GLISN (cont)

- ▶ 14. 5-year vision: Improve efficiency of archiving and quality-controlling of data. Improving automation of checks, triggers, etc with Antelope. Anybody want to share rtextec files?
- ▶ More info at glisn.info
- ▶ We are very interested in improving and adopting new tools and strategies to improve the network!

