

Global View

program Pegasus
 version 4.8.2
 site Laboratory satellite systems
 abbreviation NAU
 country Ukraine
 city Kiev
 comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,
 P.50 - 54
 date 07/11/2015

SBAS Messages

start: 07:03:50.129 07.11.2015 (week: 1869 sec: 543830.129)
end: 11:36:4.129 07.11.2015 (week: 1869 sec: 560164.129)
duration: 04:32:14 ..

quality

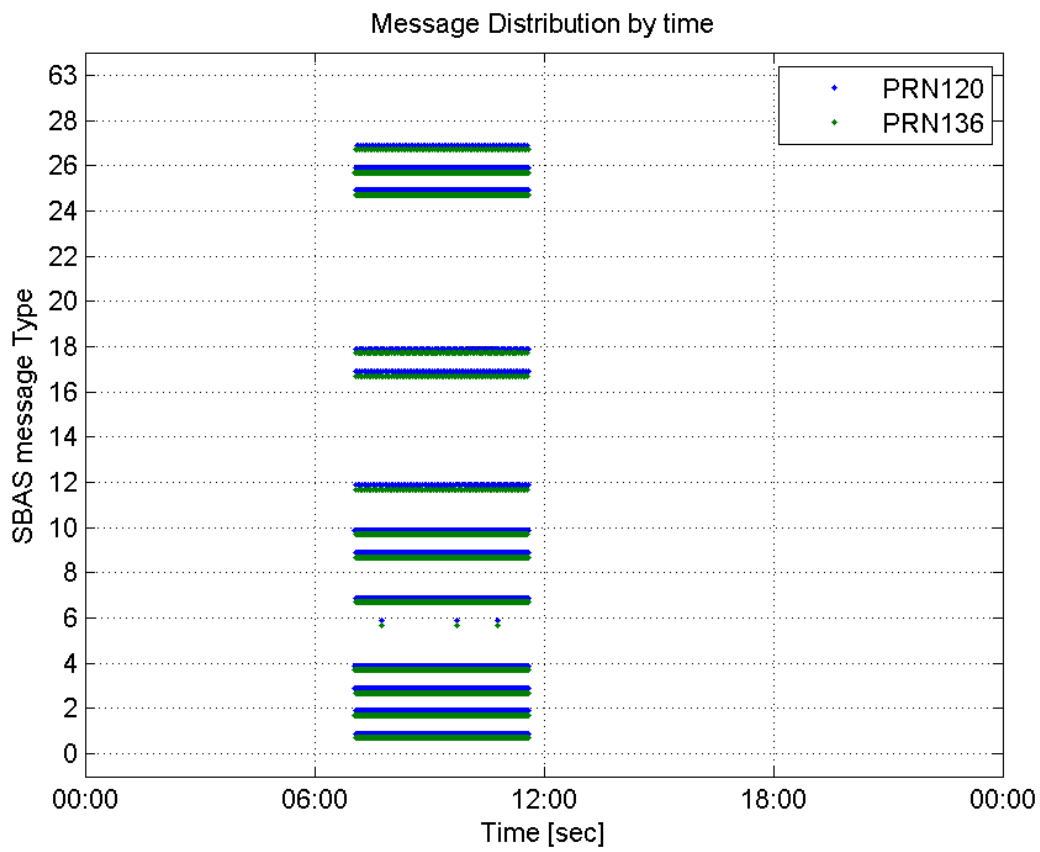
valid samples 32670
total samples 32670
number of SBAS PRNs 2

SBAS SIS Overview

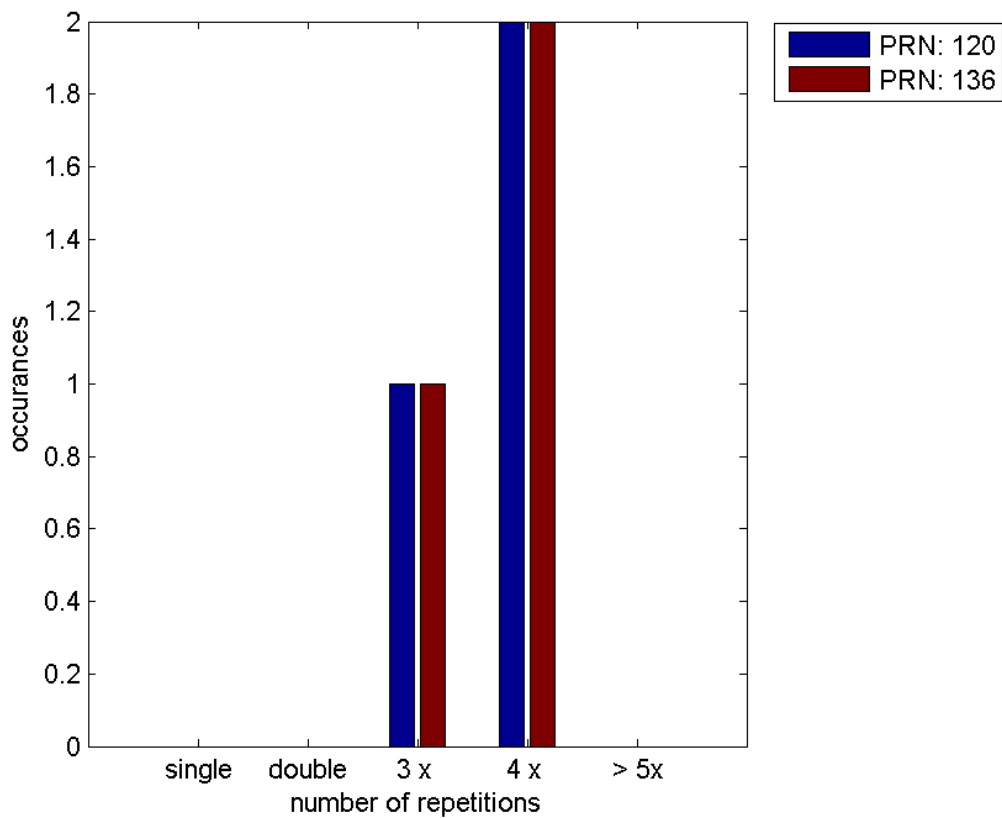
Message Type 6 repetitions :

	single	double	3 x	4 x	> 5x
PRN 120	0	0	1	2	0
PRN 136	0	0	1	2	0

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

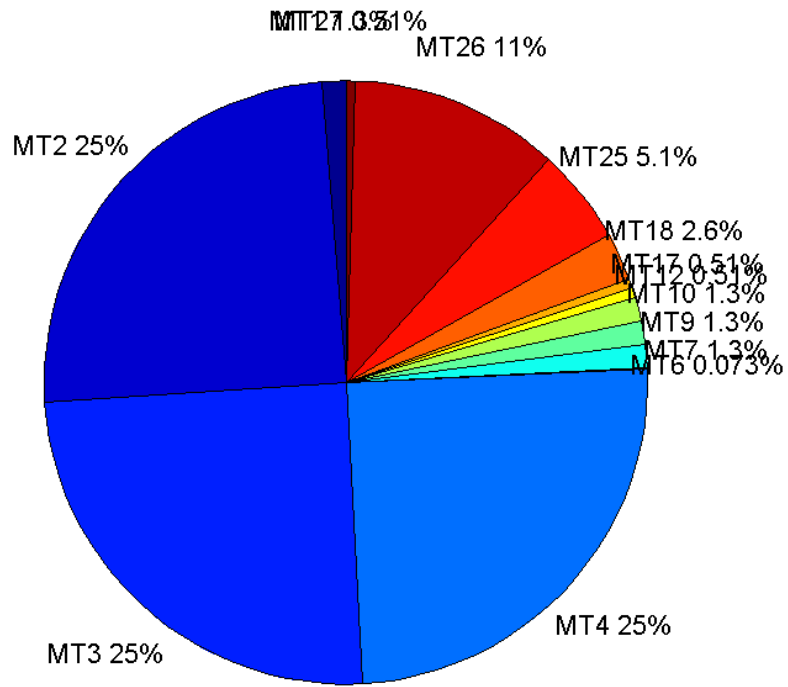
	number of messages	%
MT 0	0	0
MT 1	206	1.2611
MT 2	4053	24.8118
MT 3	4054	24.8179
MT 4	4054	24.8179
MT 5	0	0
MT 6	12	0.0734619
MT 7	205	1.25497
MT 9	205	1.25497
MT 10	206	1.2611
MT 12	84	0.514233
MT 17	84	0.514233
MT 18	418	2.55892
MT 24	0	0
MT 25	838	5.13009
MT 26	1833	11.2213
MT 27	83	0.508111
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	16335	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	82	79.6098	0	0	0
MT 2	4	8	4.02962	3	0	0
MT 3	4	8	4.02961	3	0	0
MT 4	4	8	4.02961	3	0	0
MT 5	--	--	--	--	--	--
MT 6	1	7107	991.455	2	2	2
MT 7	76	81	79.6324	0	0	0
MT 9	76	87	79.6716	0	0	0
MT 10	76	83	79.5512	0	0	0
MT 12	188	201	195.867	83	0	0
MT 17	188	201	195.819	0	0	0
MT 18	4	162	39.0144	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	50	19.4612	0	0	0
MT						

26	4	40	8.91266	0	0	0
MT 27	188	207	195.89	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

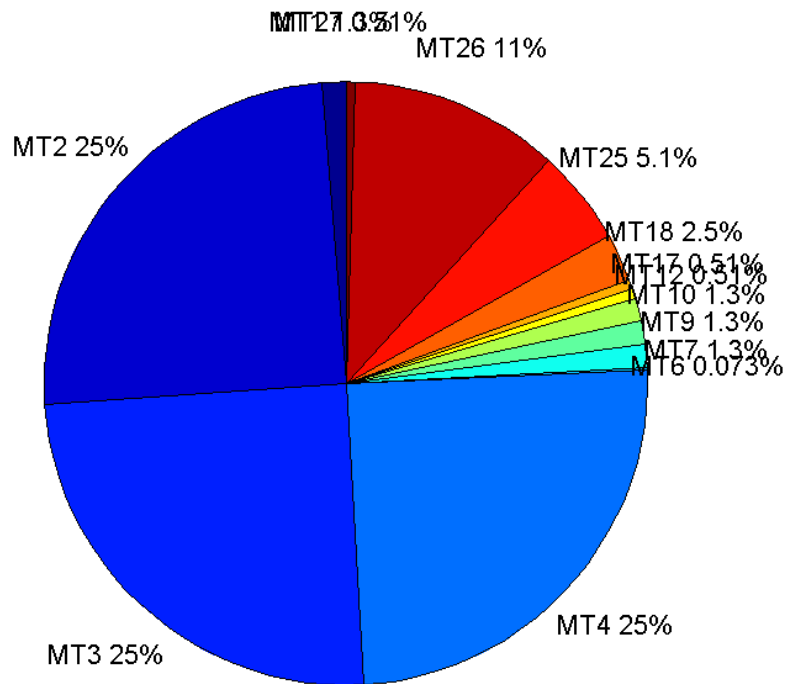
	number of messages	%
MT 0	0	0
MT 1	205	1.25497
MT 2	4056	24.8301
MT 3	4056	24.8301
MT 4	4056	24.8301
MT 5	0	0
MT 6	12	0.0734619
MT 7	205	1.25497
MT 9	205	1.25497

MT 10	205	1.25497
MT 12	83	0.508111
MT 17	83	0.508111
MT 18	415	2.54056
MT 24	0	0
MT 25	838	5.13009
MT 26	1832	11.2152
MT 27	84	0.514233
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	16335	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.7059	0	0	0
MT 2	4	8	4.02737	3	0	0
MT 3	4	8	4.02737	3	0	0
MT 4	4	8	4.02713	3	0	0
MT 5	--	--	--	--	--	--
MT 6	1	7107	991.455	2	2	2
MT 7	76	81	79.6275	0	0	0
MT 9	76	81	79.6078	0	0	0
MT 10	76	81	79.6667	0	0	0
MT 12	188	202	196.354	82	0	0
MT 17	188	201	196.366	0	0	0
MT 18	4	170	38.9662	0	0	0
MT 24	--	--	--	--	--	--
MT 25	2	40	19.4695	0	0	0
MT 26	4	52	8.91972	0	0	0
MT 27	184	201	196.337	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 136:



Parameters

System

Name	Section	Value
Name	System	Convertor
Version	System	4.3
Inputfile	System	D:/PegasusDateGob/job/2015_11_07EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2015_11_07EGNOS/02_Convertor/02_Convertor

Configuration

Name	Section	Value
Receiver	Configuration	Novatel OEM4
Leap_Seconds	Configuration	15
Correction_mode	Configuration	SBAS MODE 0
Dual_Frequency	Configuration	no

Position Domain

start: 07:03:50 07.11.2015 (week: 1869 sec: 543830)
end: 11:36:04 07.11.2015 (week: 1869 sec: 560164)
duration: 04:32:15 ..

quality

valid samples 15964
total samples 16335

Event tables

Position discontinuity events type no (0)
APV-I discontinuity events type all
APV-35m discontinuity events type all
LPV-200 discontinuity events type all
CAT-I discontinuity events type nothing

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	546051	1.55839	9.41426	0.165535	-0.733312	22.0392	0.0332731
max normVer	551680	1.13403	14.1974	0.0798757	-2.81892	17.4069	0.161943
max HPE	554177	8.63417	109.469	0.0788732	-5.49748	62.6004	0.0878186
max VPE	554177	8.63417	109.469	0.0788732	-5.49748	62.6004	0.0878186
min HPL	557537	0.913195	8.44789	0.108097	1.64253	21.5481	0.0762262
min VPL	554087	0.815223	10.74	0.0759054	-	13.3577	0.00109508

APV-I discontinuity events :

#	Epoch	duration	stable period
1	550505	142	6120
2	554173	314	3526
3	554608	358	121

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	550505	142	6120
2	554173	314	3526
3	554608	358	121

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	550505	142	6120
2	554173	314	3526
3	554608	358	121

First Glance analysis

Duration 16335
Number of Samples 16335
Number of invalid sample 371
Number of no position solution samples 0
Number of missing sample 0
Logging Loss 0

Processing Loss	2.2712
Number of Misleading Information	0
Data gaps	0
Discontinuities	0

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
15964	14966	14966	0	14966

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.61458	1.4452	1.4452	NaN	1.4452
HPEscale 95%	NaN	5.1424	5.1424	NaN	5.1424
VPE 95%	2.03791	1.85558	1.85558	NaN	1.85558
VPEscale 95%	NaN	4.53253	3.17277	NaN	3.17277

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.937484	0.937484	0	0.937484
measurements	0.977288	0.916192	0.916192	0	0.916192
Operational	0.977288	0.916192	0.916192	0	0.916192

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	3	3	--	3
Long	--	3	3	--	3
Independent	--	3	3	--	3
P(disc.)	NaN	0.00300682	0.00300682	NaN	0.00300682
P(slide)	NaN	0.00300682	0.00300682	NaN	0.00300682

Integrity events :

	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

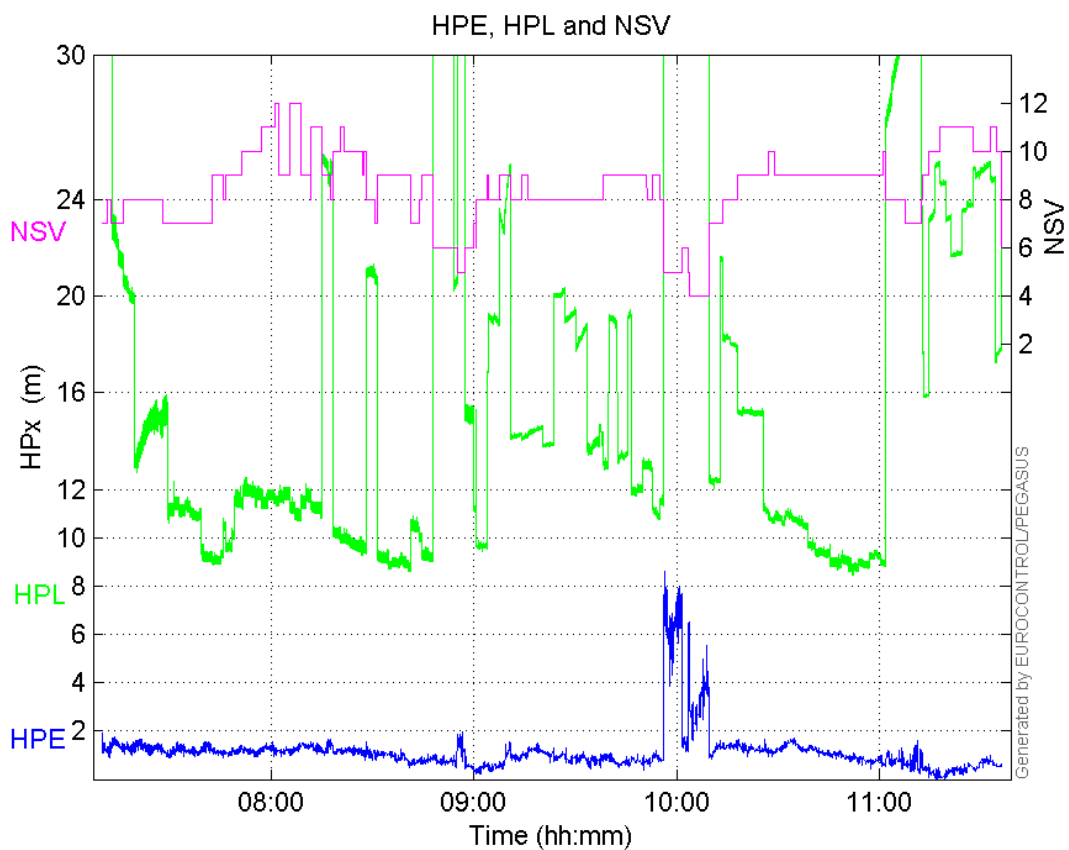
Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	15964	14966	14966	0	14966
SIS Availability	1	0.937484	0.937484	0	0.937484
Local Availability	0.977288	0.916192	0.916192	0	0.916192
Operational Availability	0.977288	0.916192	0.916192	0	0.916192
HPE 95%	1.61458	1.4452	1.4452	NaN	1.4452
HPEscale 95%	NaN	5.1424	5.1424	NaN	5.1424
VPE 95%	2.03791	1.85558	1.85558	NaN	1.85558
VPEscale 95%	NaN	4.53253	3.17277	NaN	3.17277
All Discontinuity Events	--	3	3	--	3

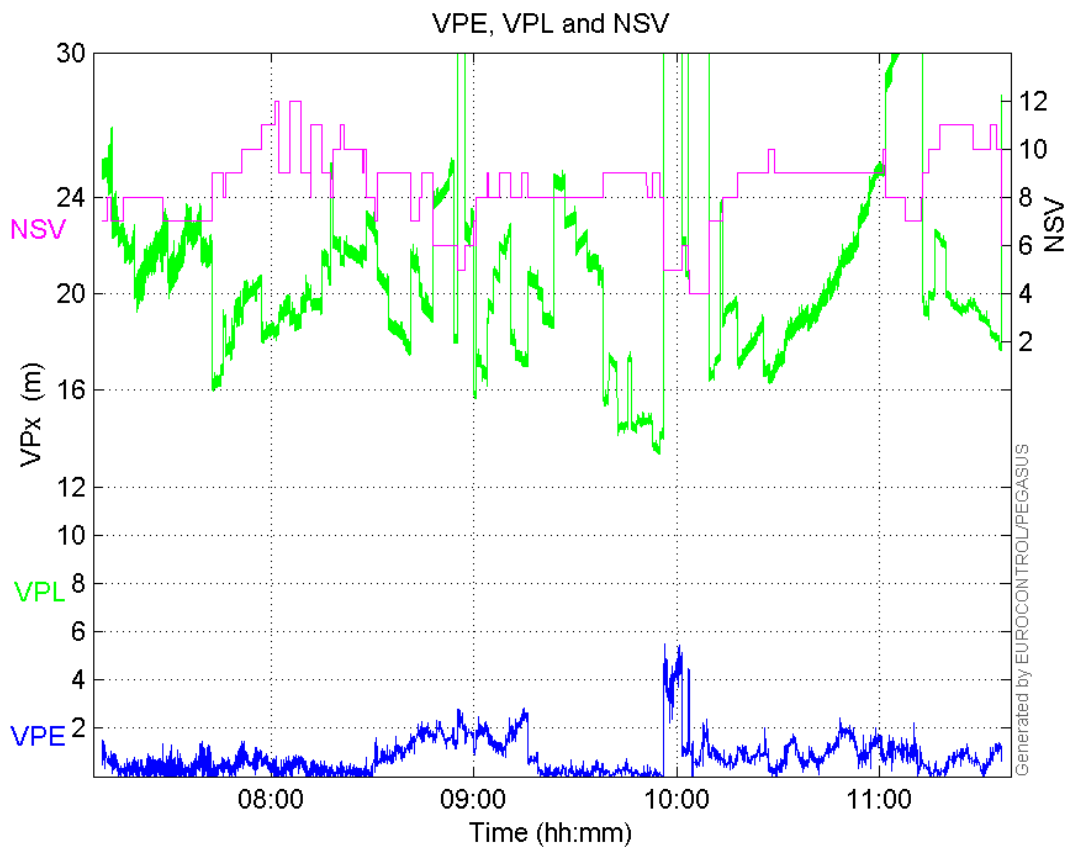
Long Discontinuity Events	--	3	3	--	3
Independent Discontinuity Events	--	3	3	--	3
P(discontinuity)	NaN	0.00300682	0.00300682	NaN	0.00300682
P(sliding window)	NaN	0.00300682	0.00300682	NaN	0.00300682
All Integrity Events	0	0	0	0	0
Horizontal Integrity Events	0	0	0	0	0
Vertical Integrity Events	0	0	0	0	0

Time Series

HPE, HPL and NSV:

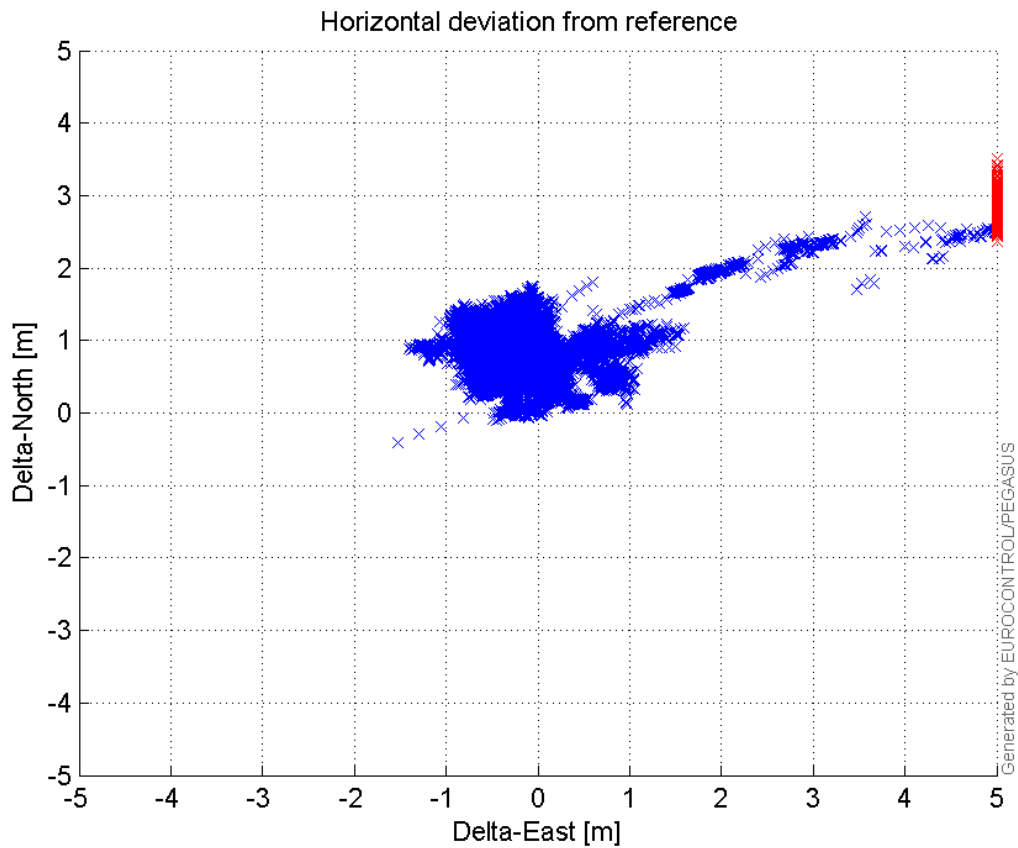


VPE, VPL and NSV:



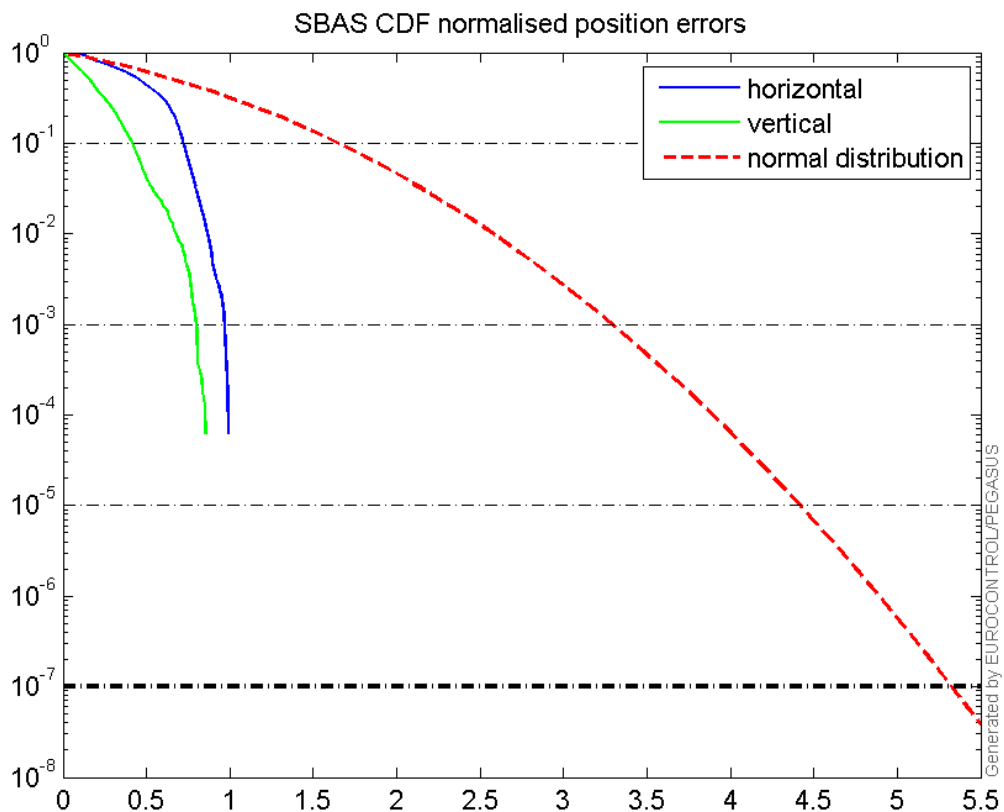
Horizontal deviation

Horizontal deviation from reference :



CDF position

SBAS CDF position domain:



Statistics

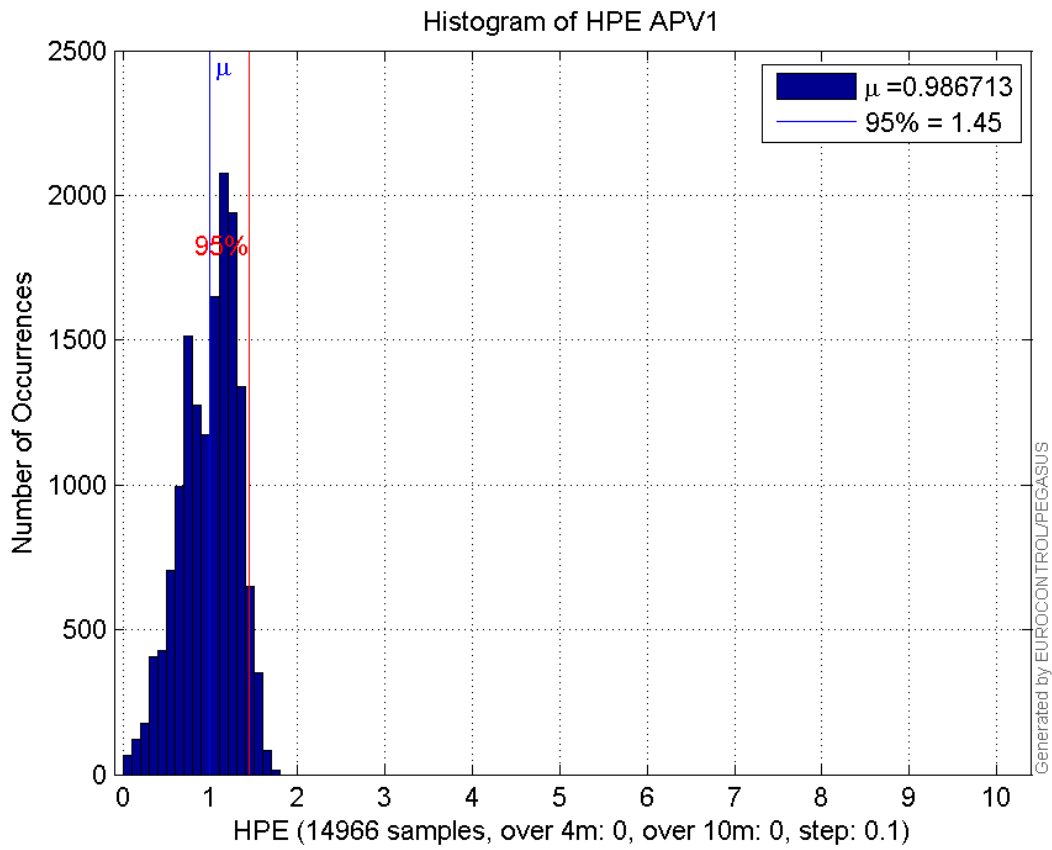
number	14966
sum	14767.149
sum2	16113.588
prctile95	1.4451969
prctile99	1.5863703
number	14966
sum	10802.332
sum2	12767.247
prctile95	1.8555816
prctile99	2.2280943
number	14966
sum	231996.91
sum2	4291001.4
prctile95	31.04536
prctile99	35.705888
number	14966
sum	305335.92
sum2	6394587.2
prctile95	25.31446
prctile99	32.106032
number	14966
sum	1141.8999

sum2 107.15623
prctile95 0.12855998
prctile99 0.14499874
number 14966
sum 533.37061
sum2 31.720593
prctile95 0.090650515
prctile99 0.12793663
number 14966
sum 14767.149
sum2 16113.588
prctile95 1.4451969
prctile99 1.5863703
number 14966
sum 10802.332
sum2 12767.247
prctile95 1.8555816
prctile99 2.2280943
number 14966
sum 231996.91
sum2 4291001.4
prctile95 31.04536
prctile99 35.705888
number 14966
sum 305335.92
sum2 6394587.2
prctile95 25.31446
prctile99 32.106032
number 14966
sum 1141.8999
sum2 107.15623
prctile95 0.12855998
prctile99 0.14499874
number 14966
sum 533.37061
sum2 31.720593
prctile95 0.090650515
prctile99 0.12793663

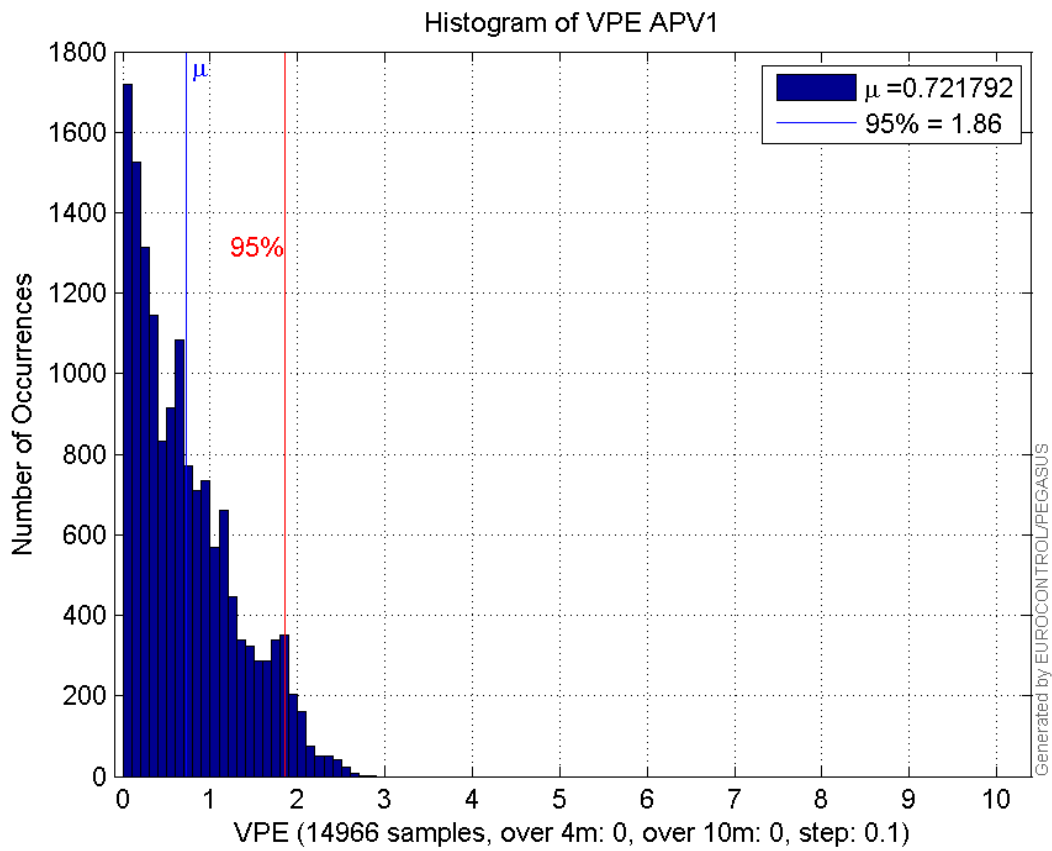
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	0.986713	0.321067	1.04126	1.4452	1.58637	1.03763
HPL	15.5016	6.81324	13.024	31.0454	35.7059	16.9327
VPE	0.721792	0.576301	0.602354	1.85558	2.22809	0.923625
VPL	20.402	3.32183	19.9334	25.3145	32.106	20.6706

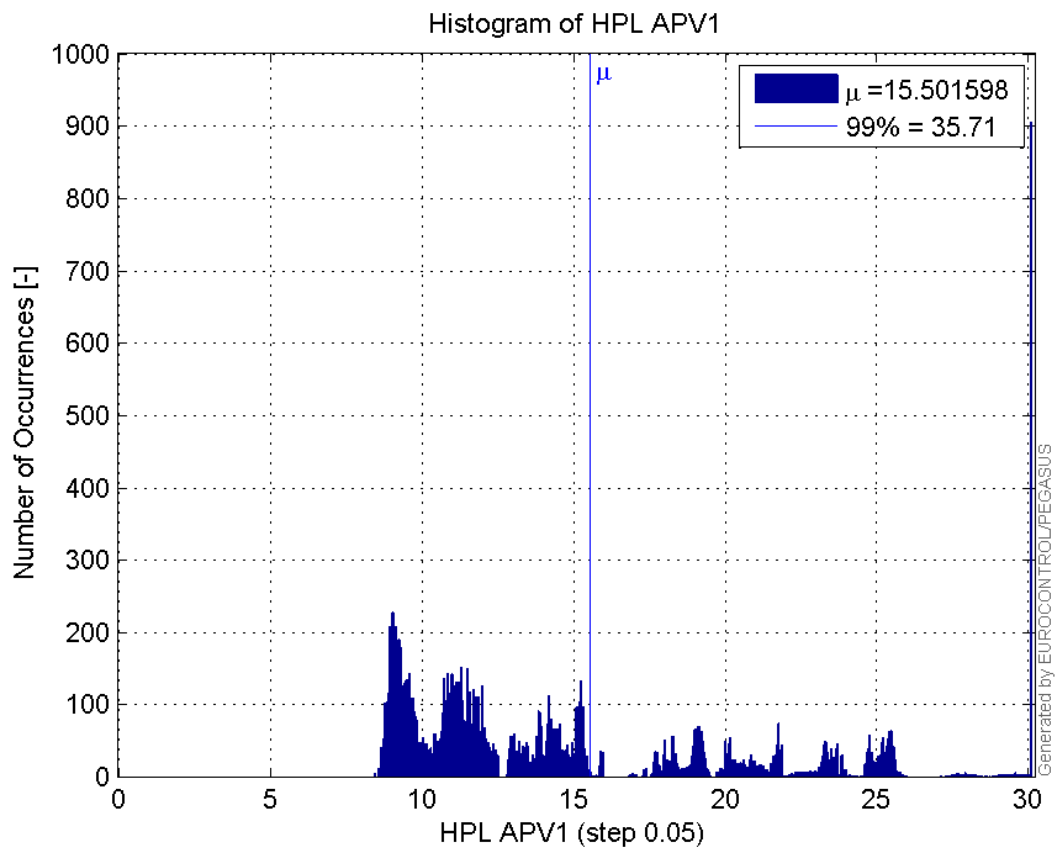
Histogram of HPE APV1:



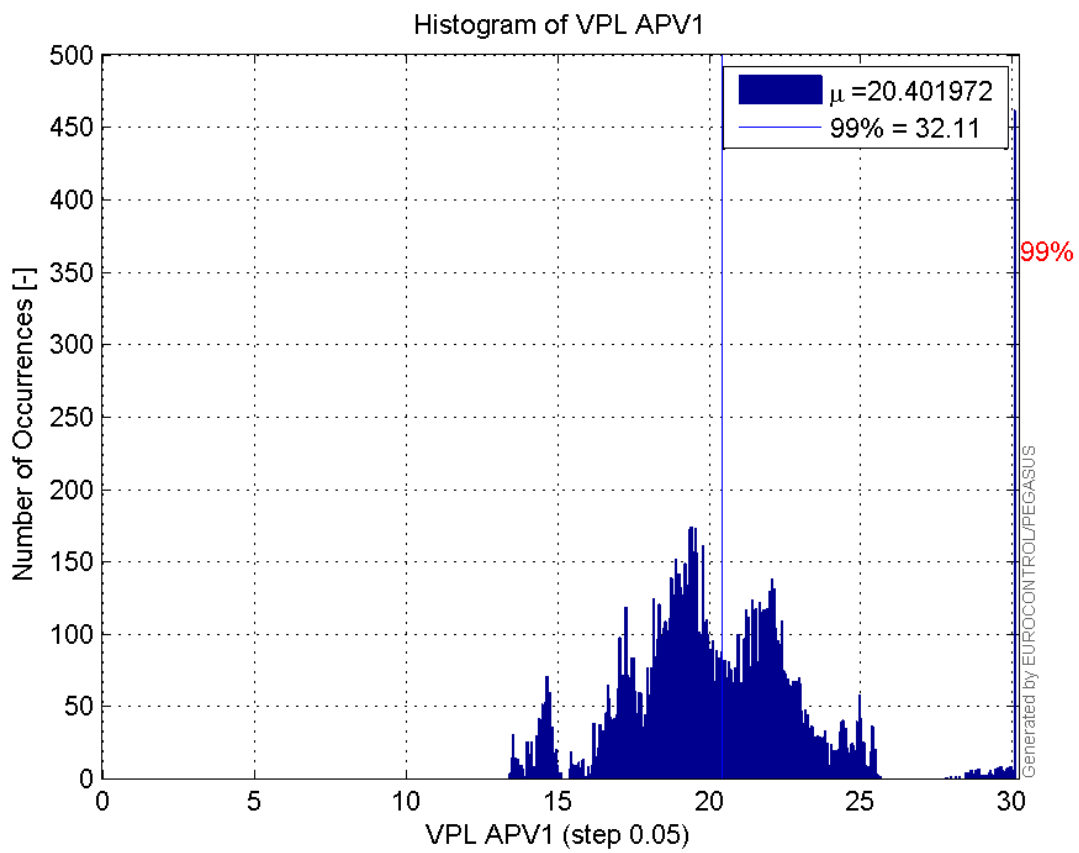
Histogram of VPE APV1:



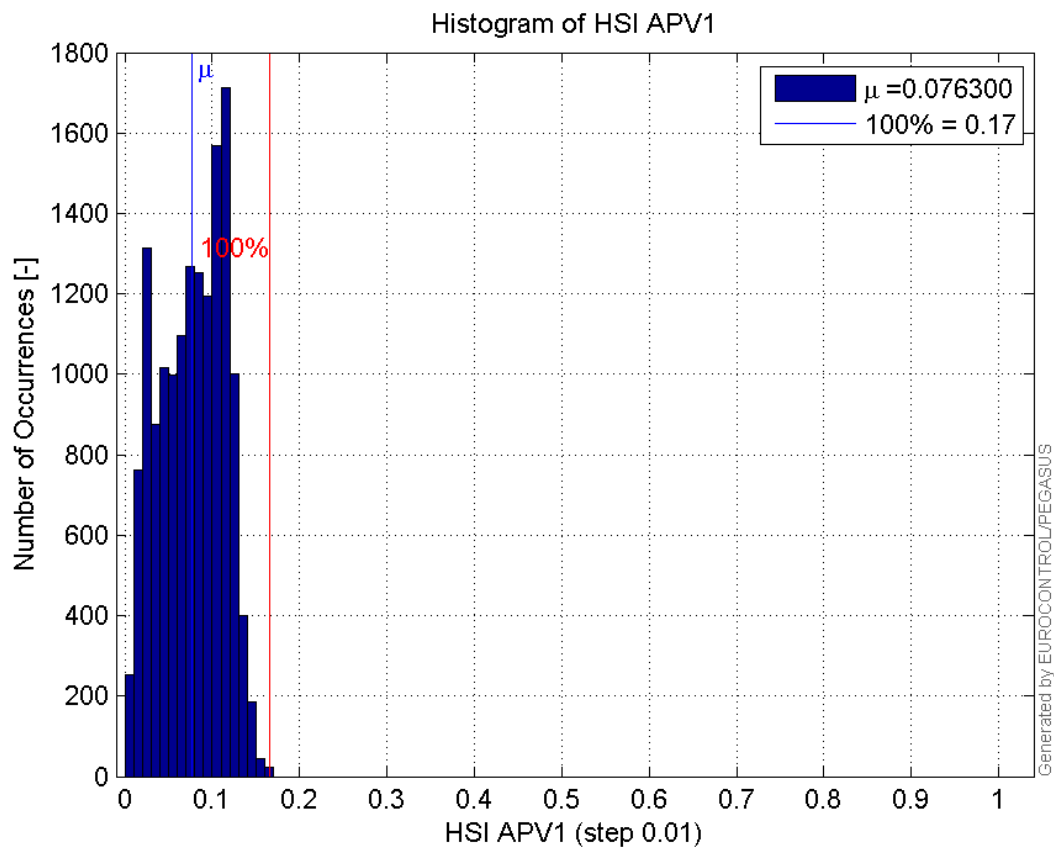
Histogram of HPL APV1:



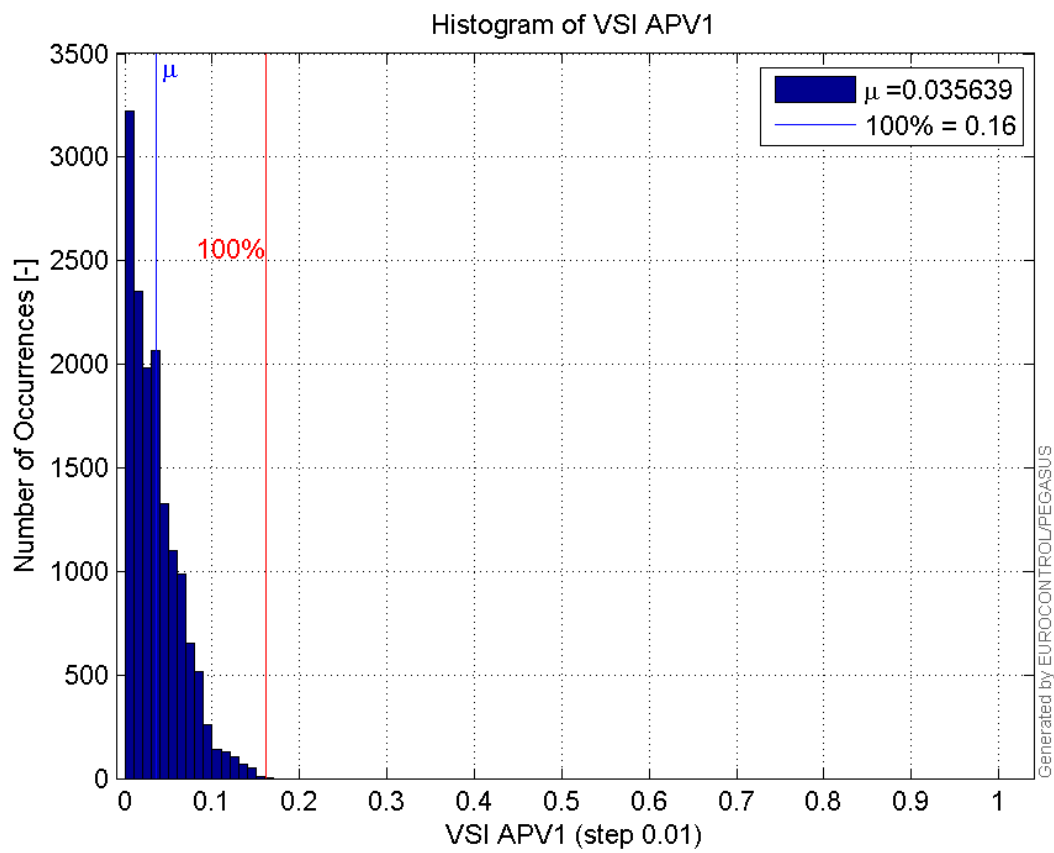
Histogram of VPL APV1:



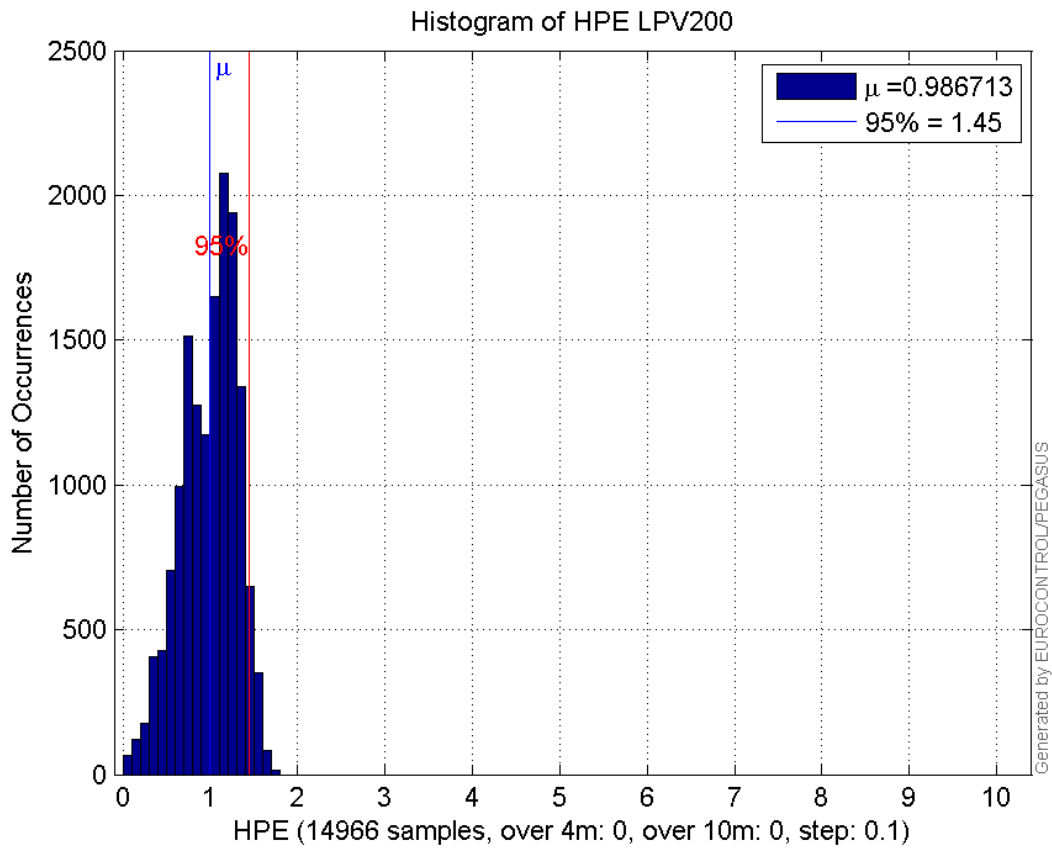
Histogram of HSI APV1:



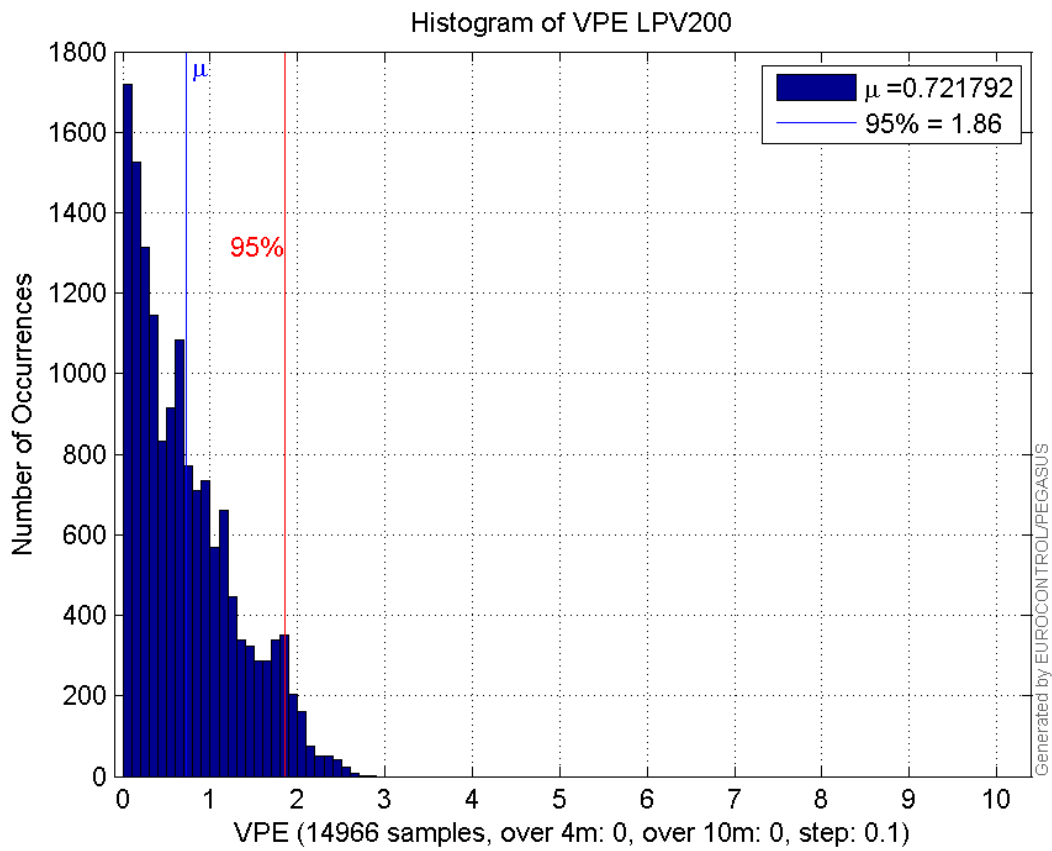
Histogram of VSI APV1:



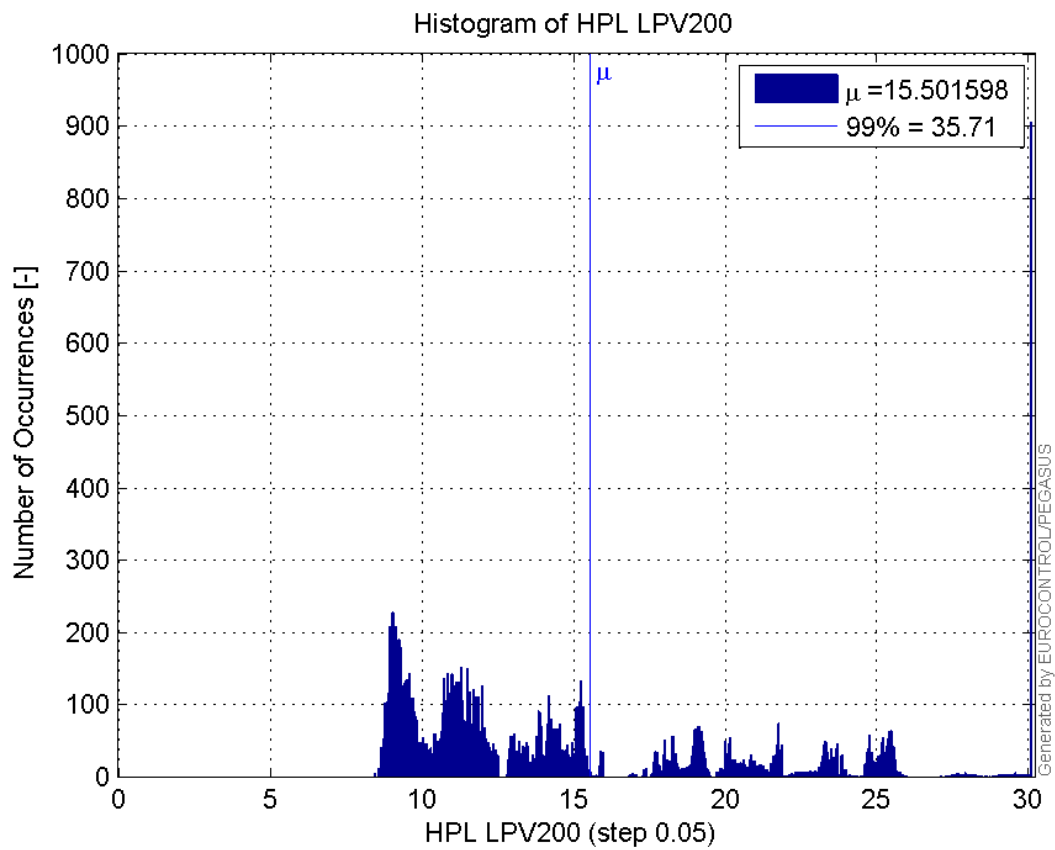
Histogram of HPE LPV200:



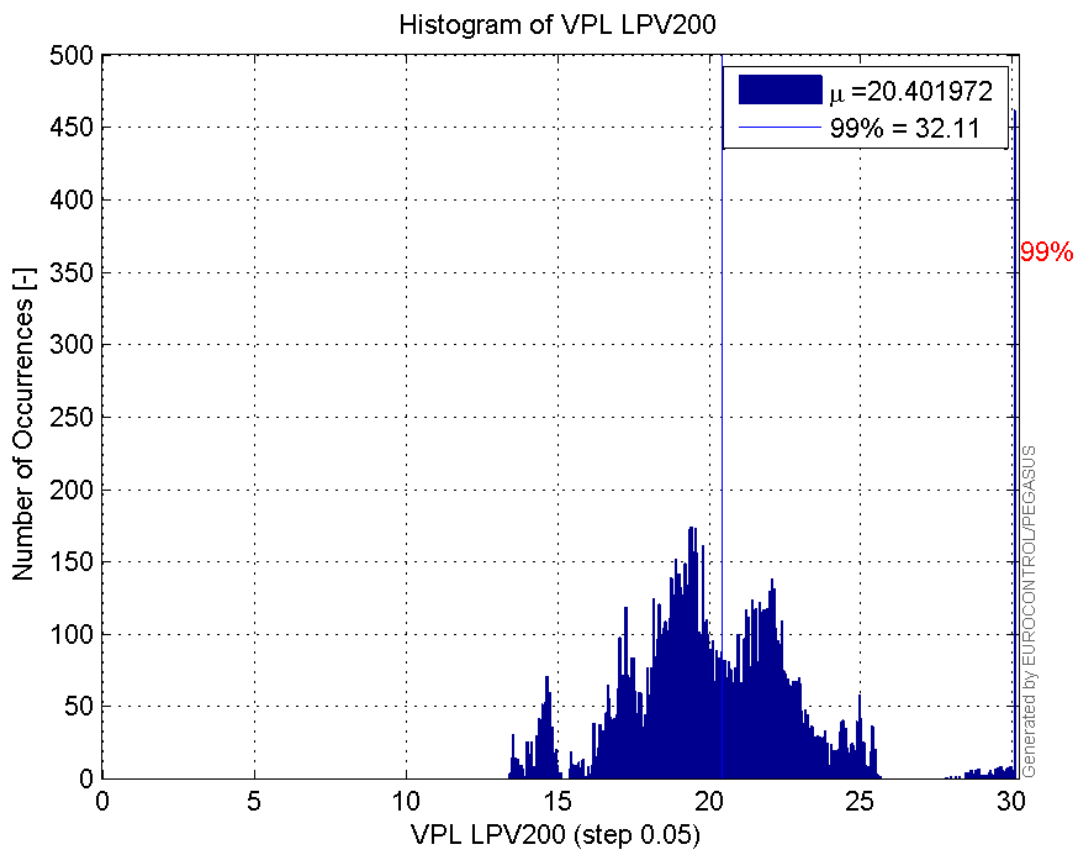
Histogram of VPE LPV200:



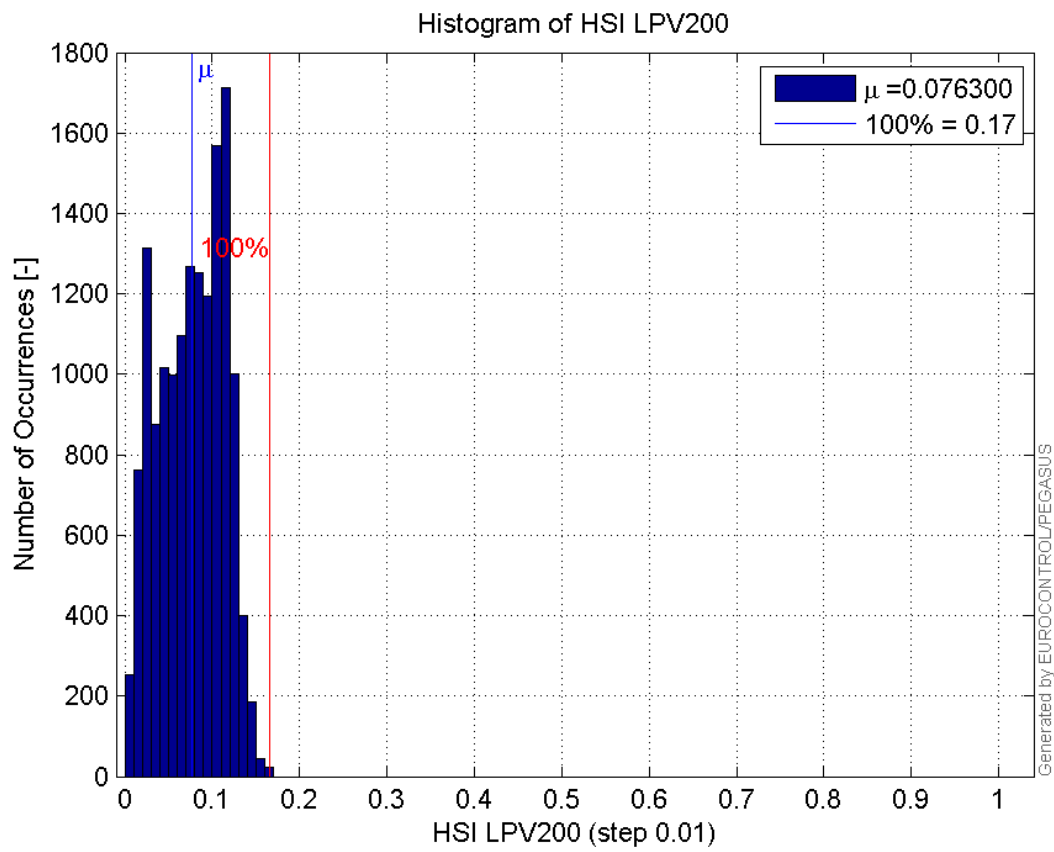
Histogram of HPL LPV200:



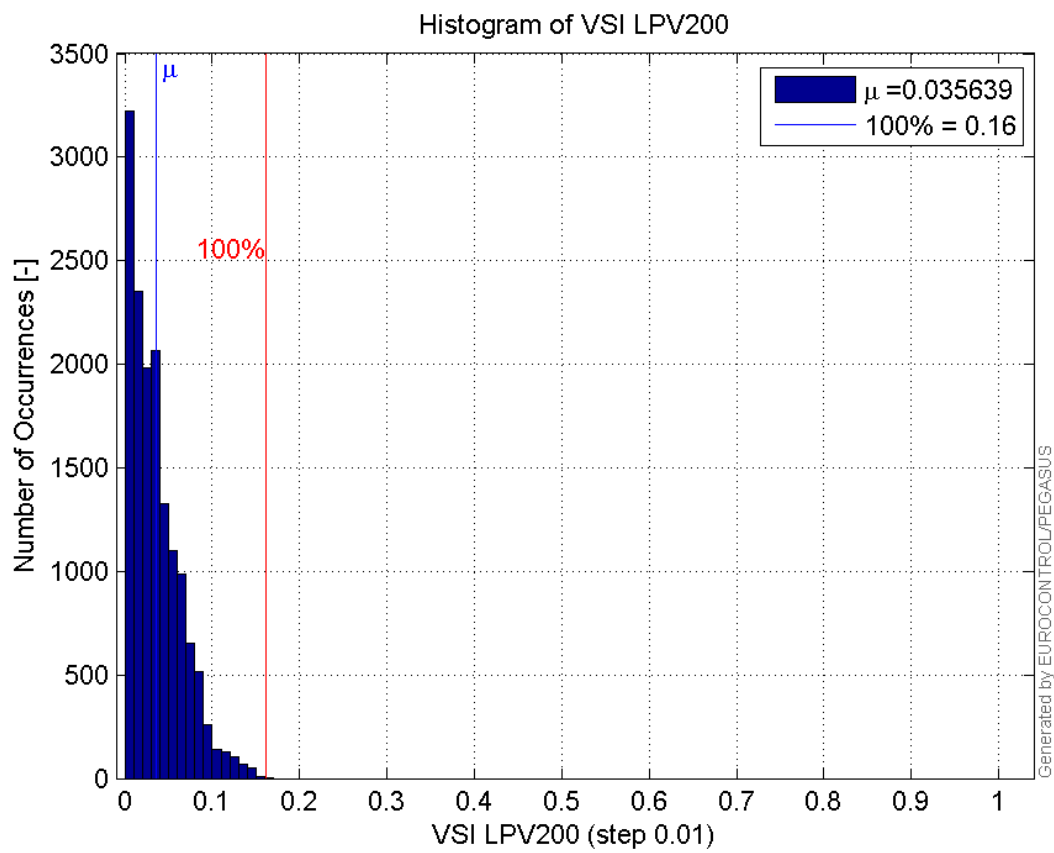
Histogram of VPL LPV200:



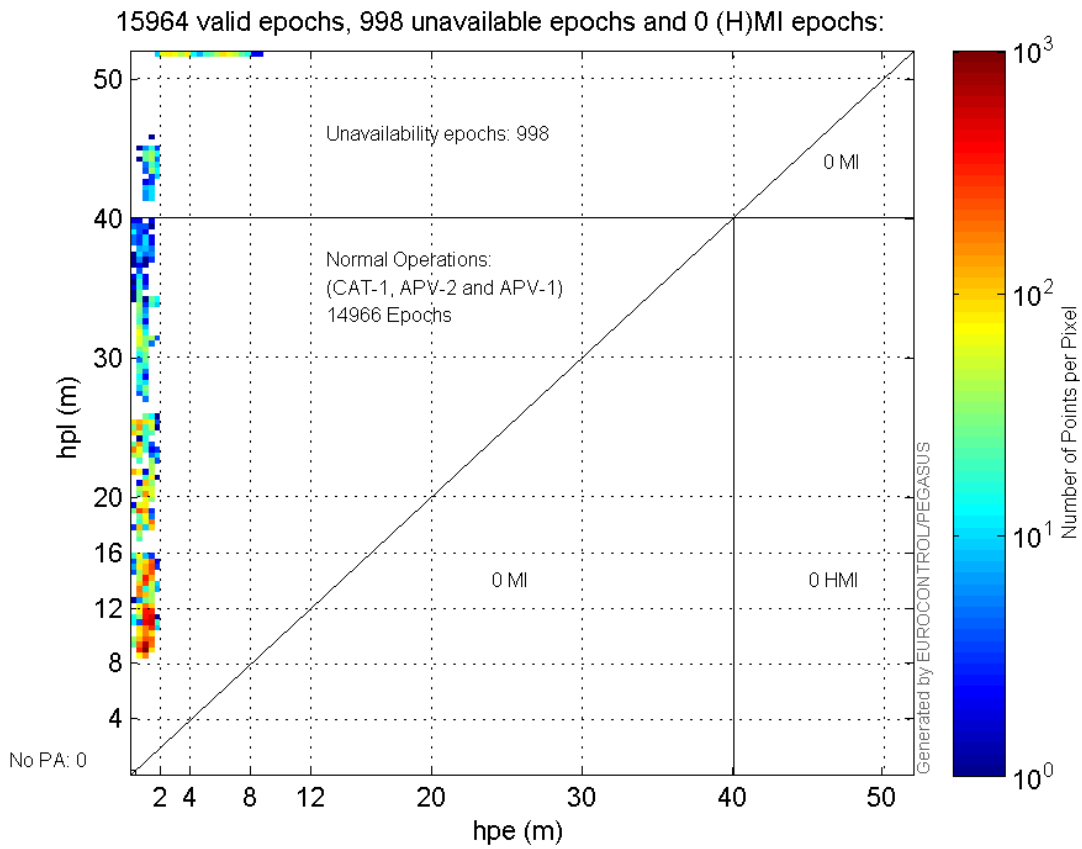
Histogram of HSI LPV200:



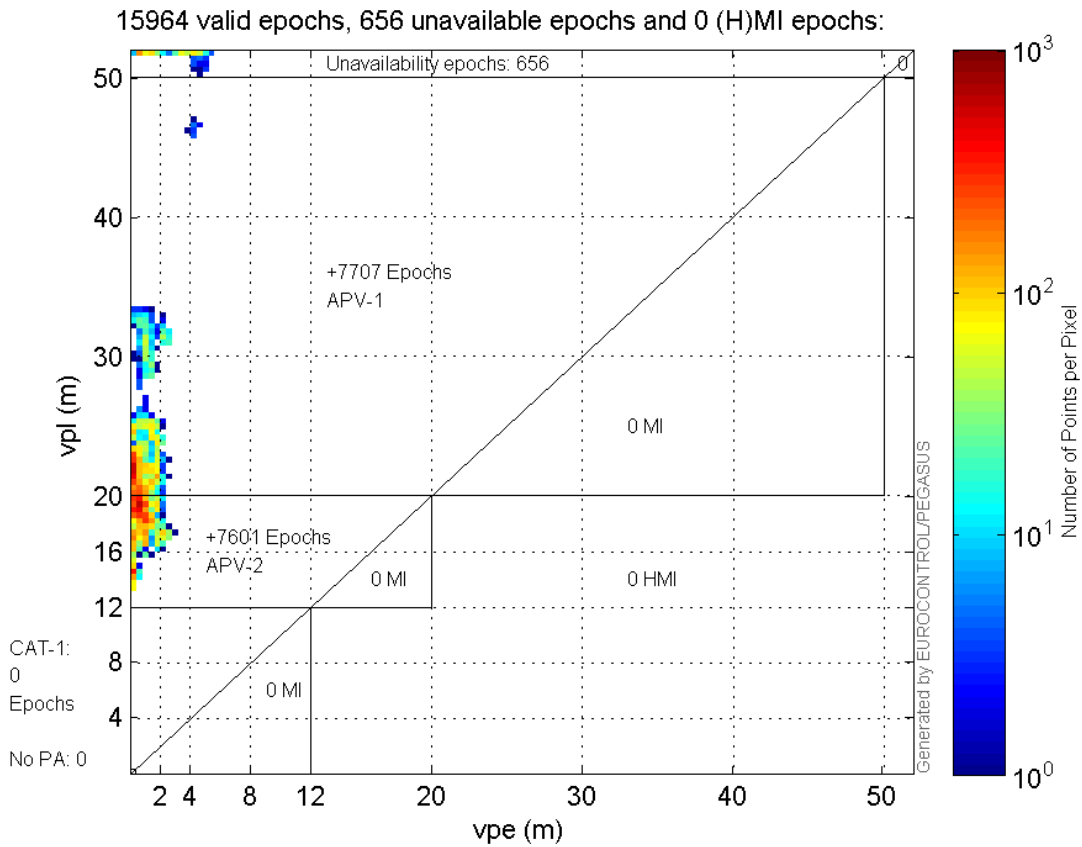
Histogram of VSI LPV200:



Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDateGob/job/2015_11_07EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_11_07EGNOS/03_GNSS_Solution/03_GNSS_Solution_sol

settings

Name	Section	Value
ref_lat	settings	50.439
ref_lon	settings	30.4297
ref_alt	settings	215.271
smoothing	settings	yes
smoothing_constant	settings	100
smoothing_max_gap	settings	10
smoothing_max_divergence	settings	3
min_elevation	settings	5
aad_model	settings	a
output_range_file	settings	yes
sbas_prn	settings	120
gnss_mode	settings	sbas

results

Name	Section	Value
init_lat	results	50.439
init_lon	results	30.4297
init_alt	results	225.4472
mi_numbers	results	0

Range Domain

start: 07:03:50 07.11.2015 (week: 1869 sec: 543830)
end: 11:36:04 07.11.2015 (week: 1869 sec: 560164)
duration: 04:32:15 ..

quality

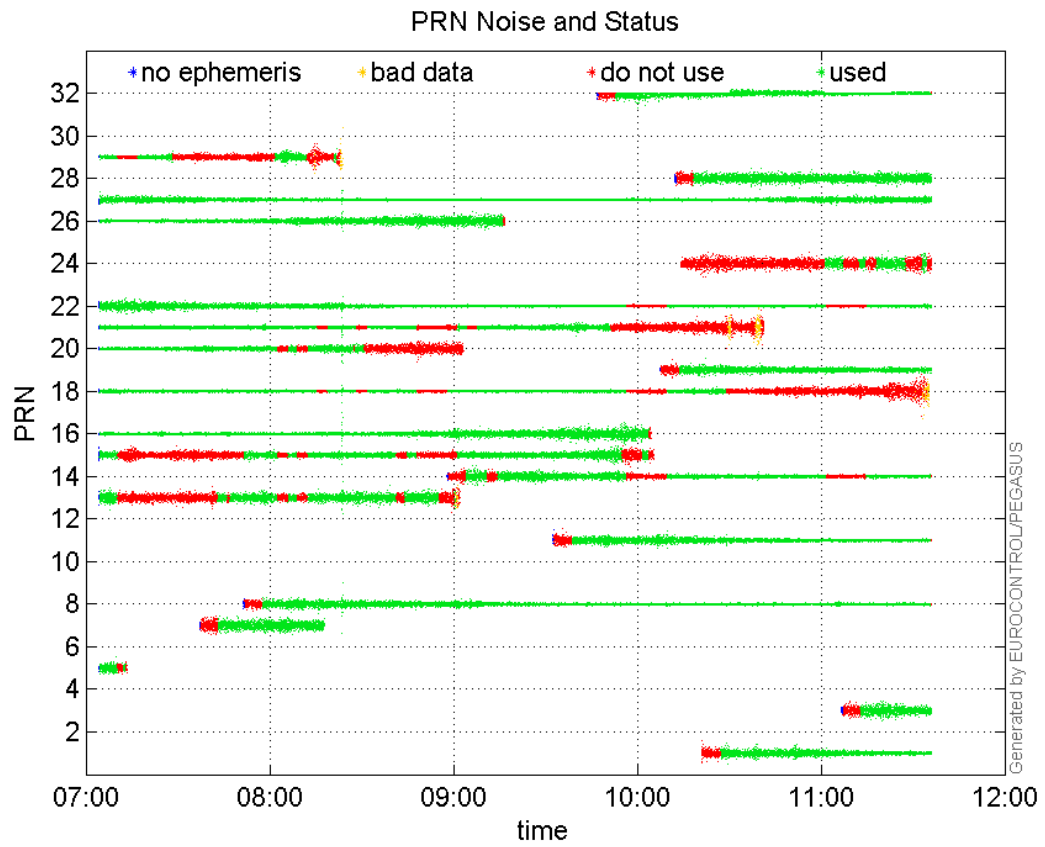
valid samples 16335
total samples 16335

PRN overview

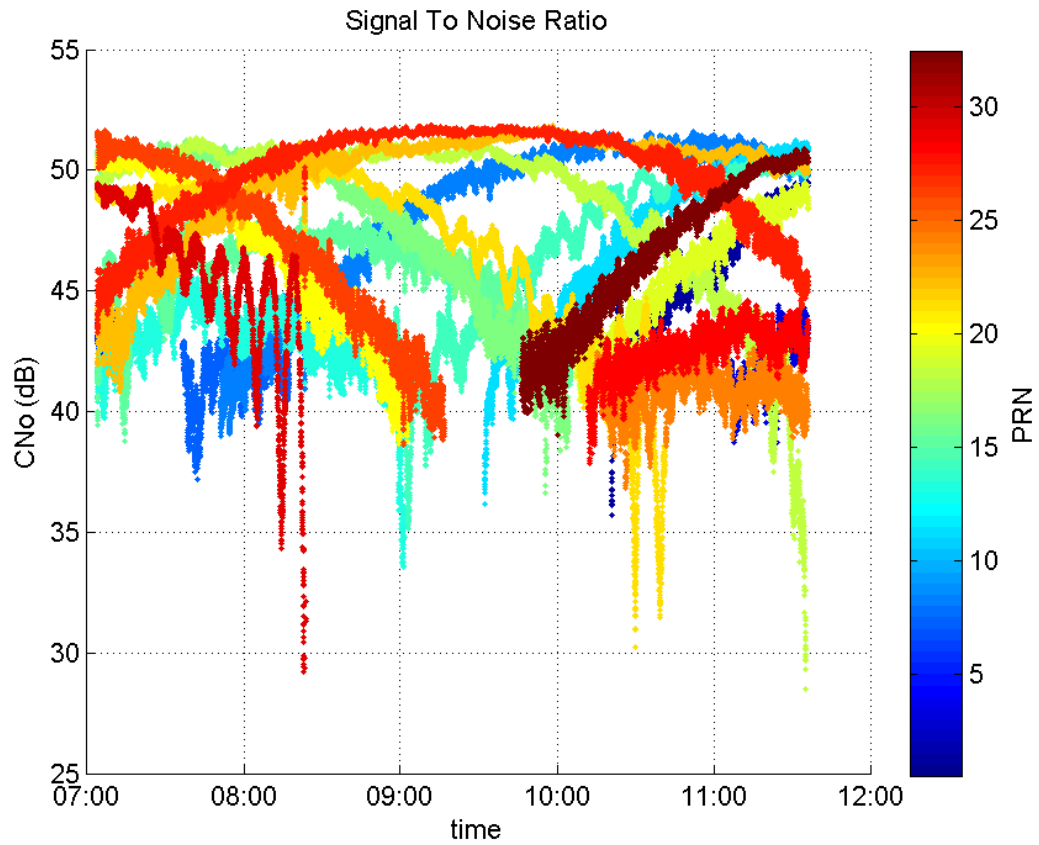
Number of Visible GPS Satellites 21
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



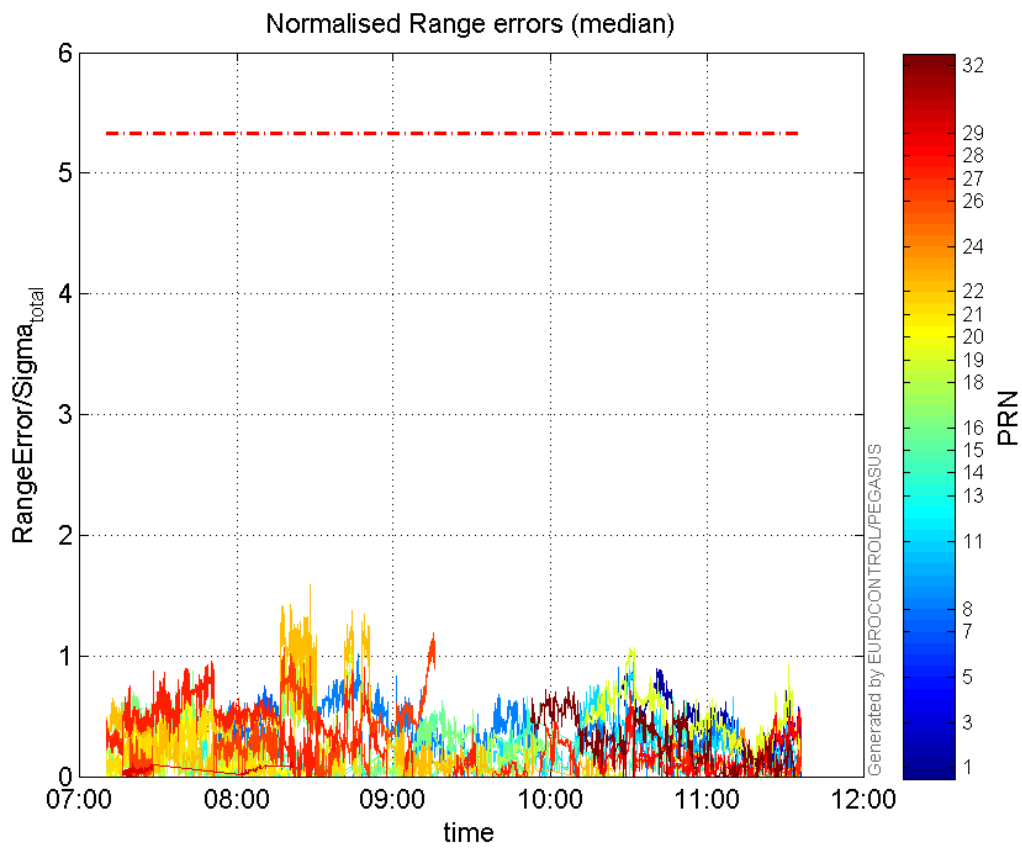
range errors

Number of Overbounding Norm Errors 0

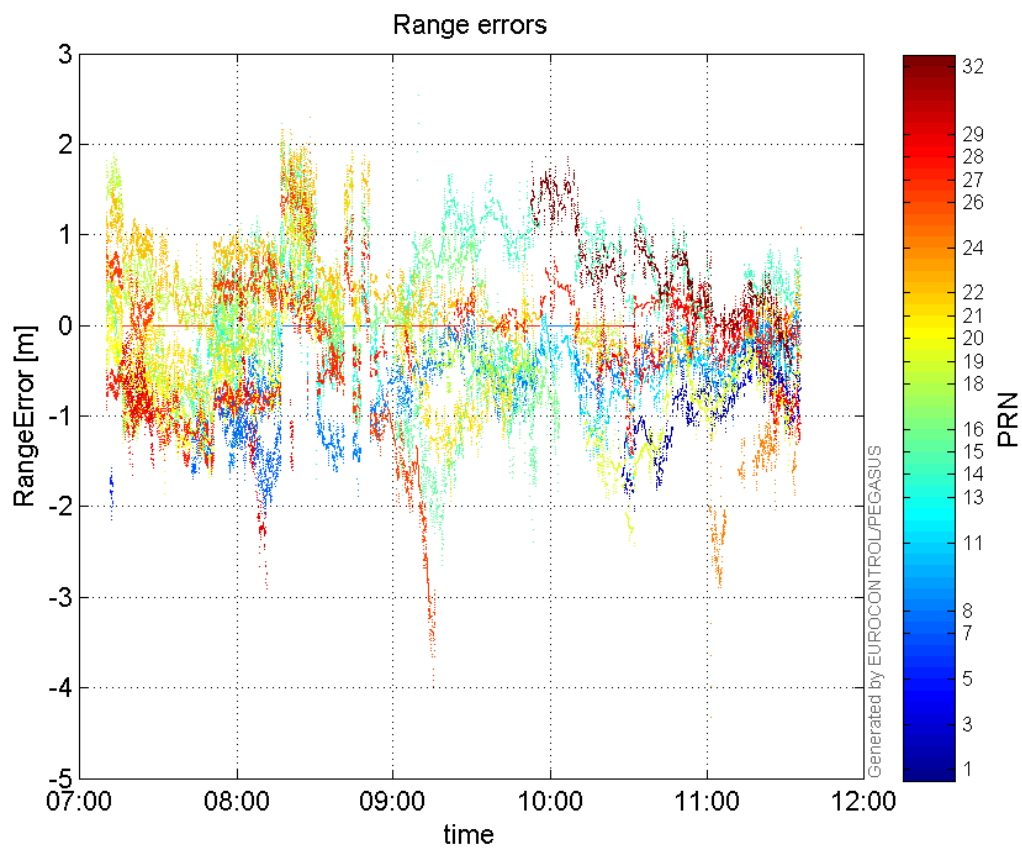
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1869	556329	1	0.957802	-2.04346	2.13349
1869	559859	3	0.45829	-1.12486	2.45448
1869	544330	5	0.0618872	-2.15113	34.759
1869	547851	7	0.75296	-2.1244	2.8214
1869	549980	8	1.02165	-1.88555	1.8456
1869	556329	11	1.03609	-1.80896	1.74594
1869	546497	13	0.334988	-1.52535	4.55344
1869	553883	14	0.661813	1.59177	2.40516
1869	551914	15	0.625415	-2.65355	4.24287
1869	548898	16	1.03641	1.54826	1.49387
1869	548432	18	1.29189	1.91752	1.48427
1869	556238	19	1.07257	-2.3802	2.21916
1869	546091	20	0.717271	-1.46367	2.04062
1869	549845	21	0.978569	1.8657	1.90656
1869	548898	22	1.58953	2.29604	1.44447
1869	558864	24	0.406285	-1.79218	4.41113
1869	551725	26	1.19375	-3.97948	3.3336
1869	546631	27	0.960217	-1.61155	1.67832
1869	556266	28	0.708857	-1.77862	2.50914
1869	548481	29	0.116071	-1.59712	13.7598
1869	554809	32	0.744661	1.85904	2.49649

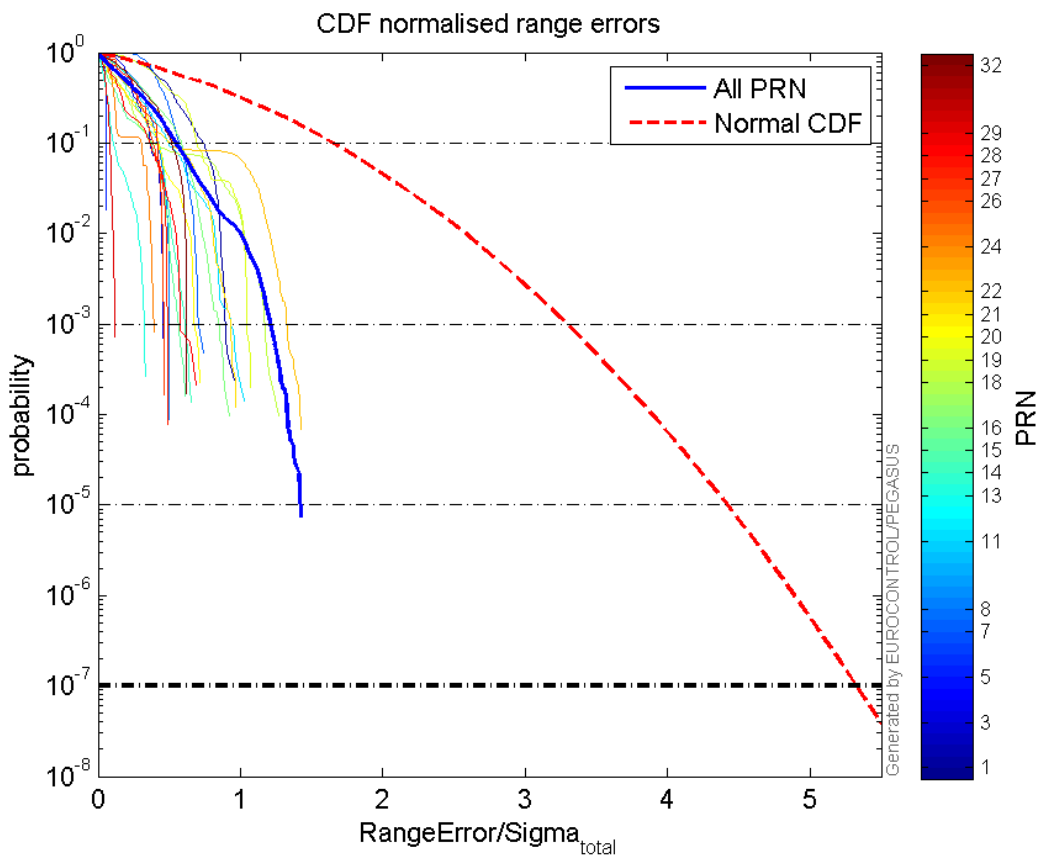
 Normalised Range errors (median):



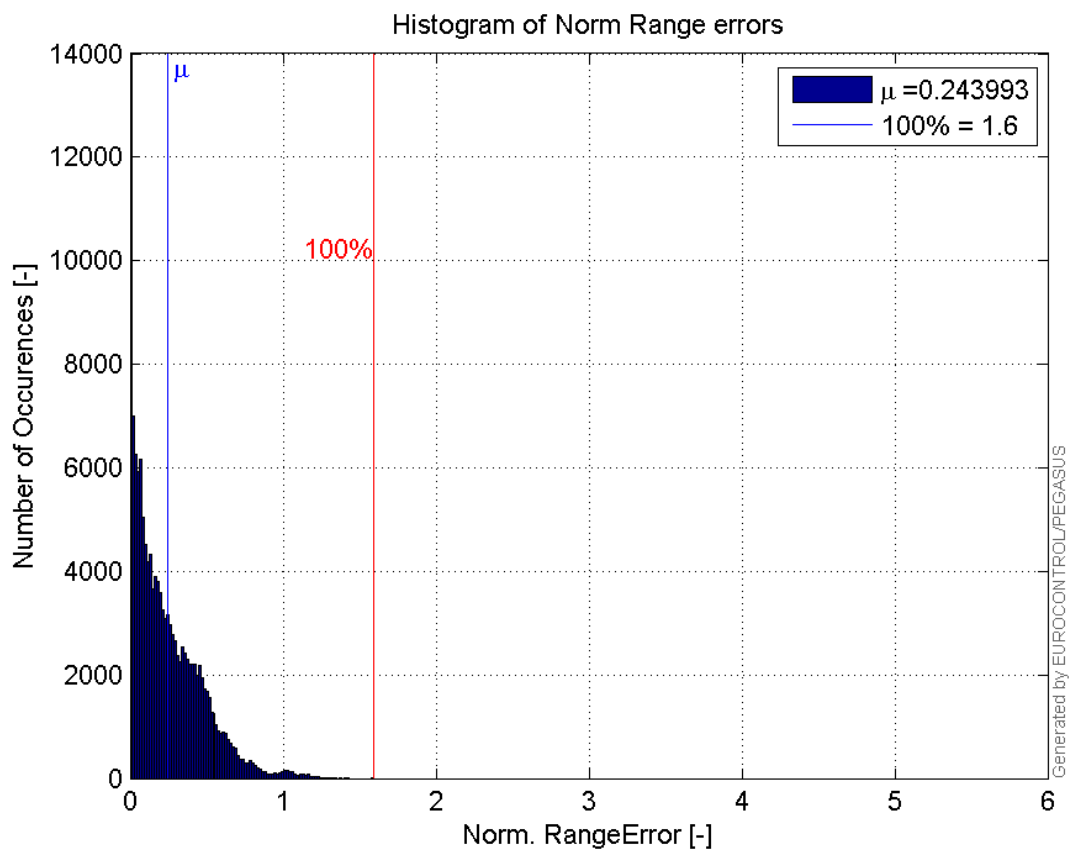
Range errors:



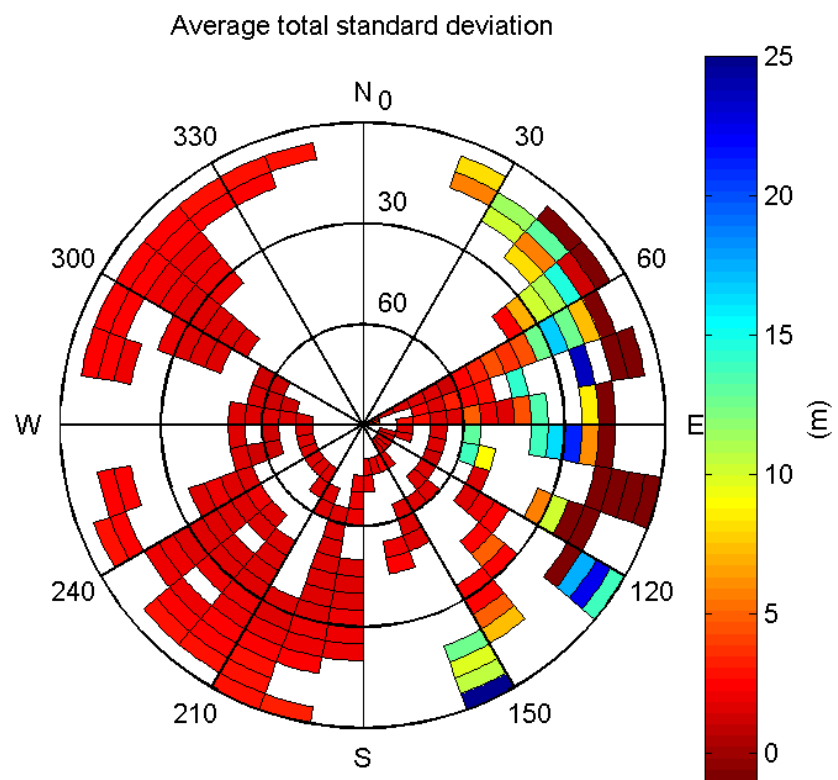
CDF normalised range errors:



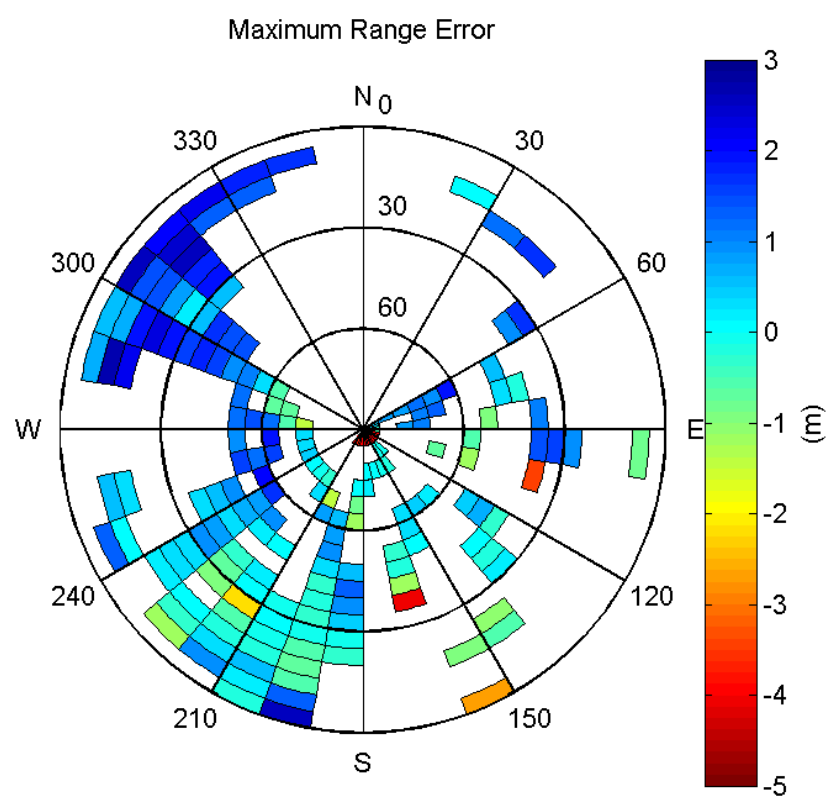
Histogram of Norm Range errors:



Sigma Sky Plot:

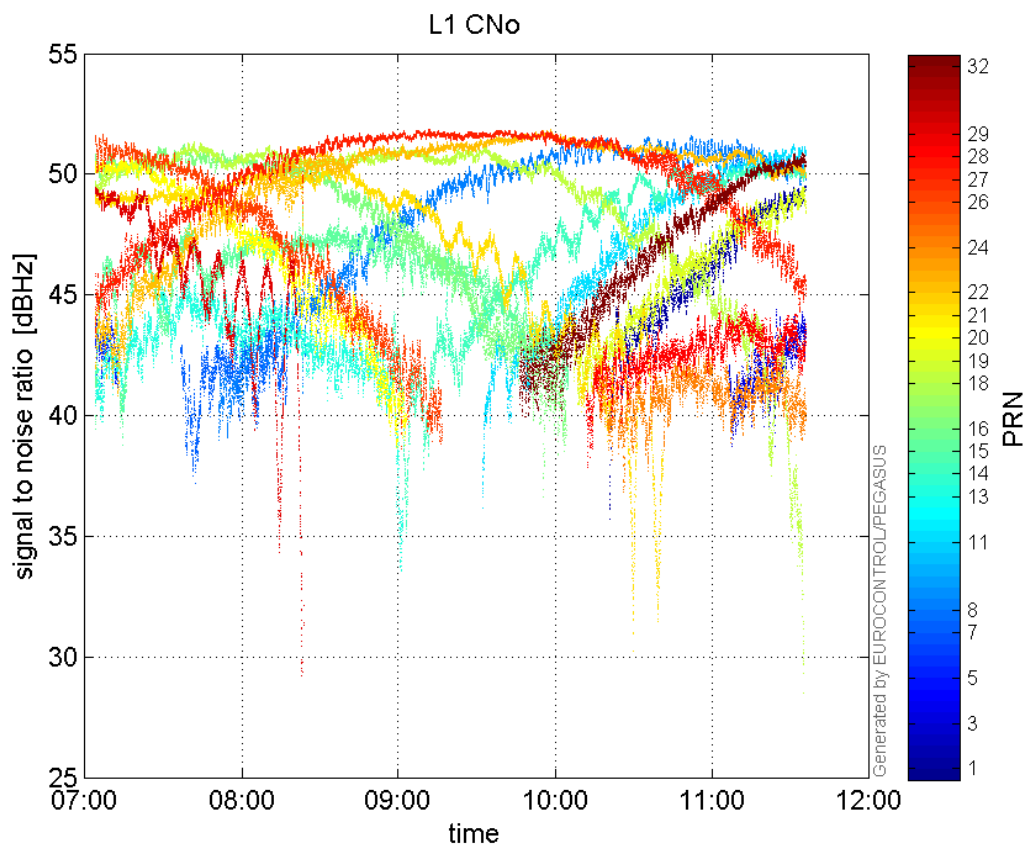


Norm Error Sky Plot:

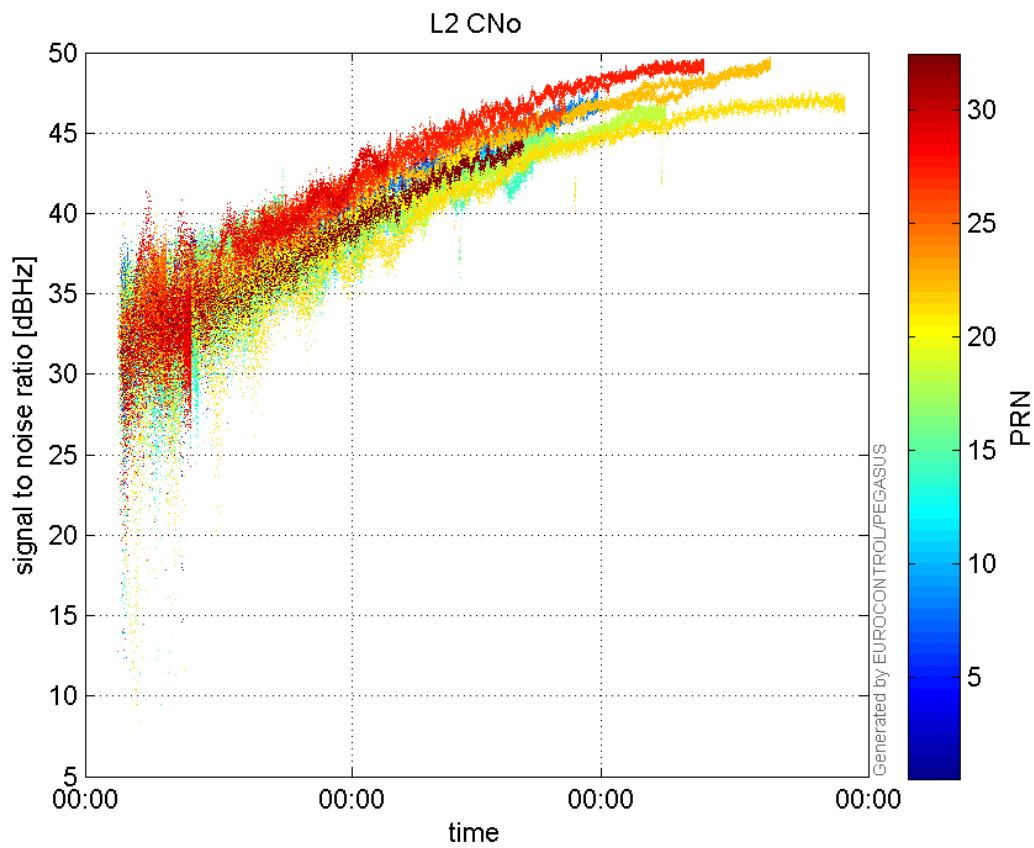


signal quality

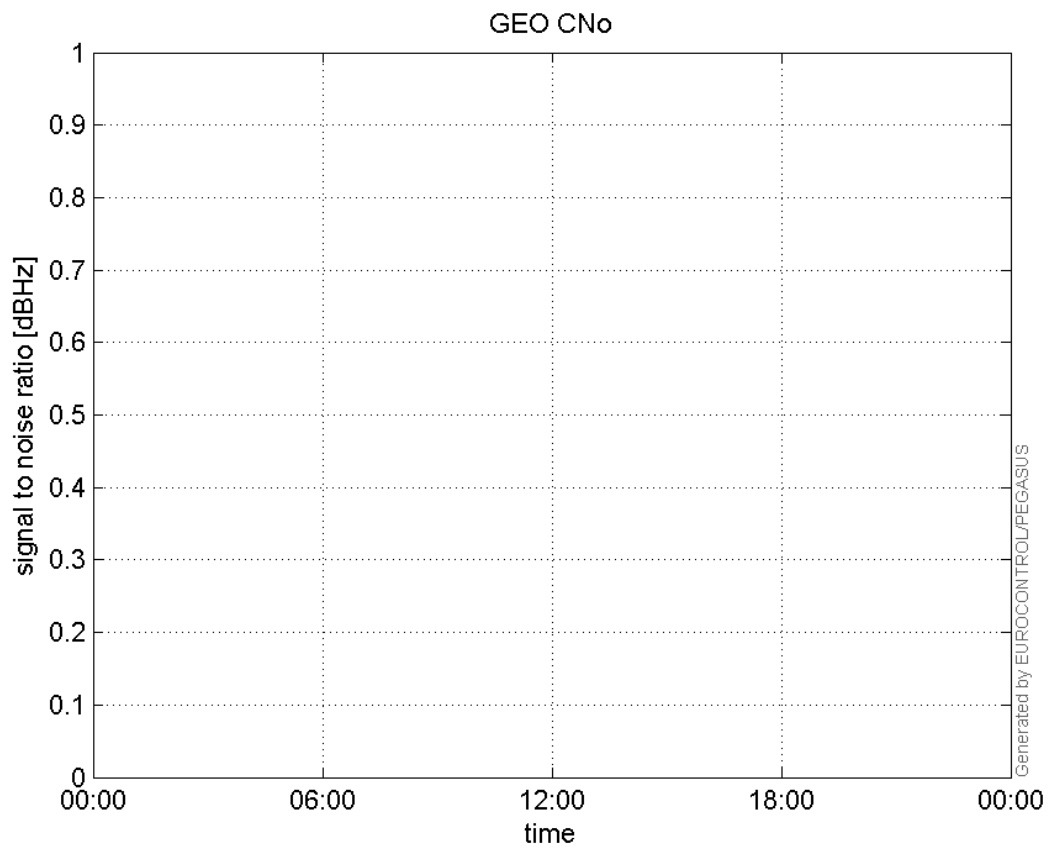
L1 CNo:



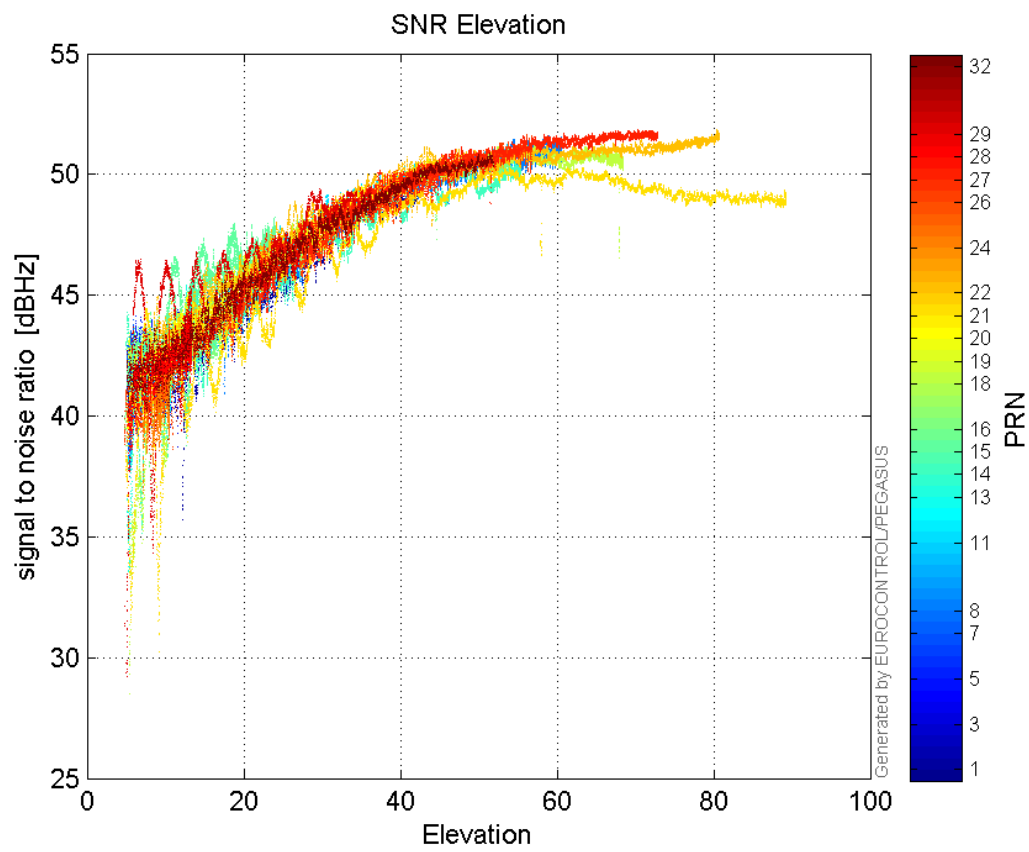
L2 CNo:



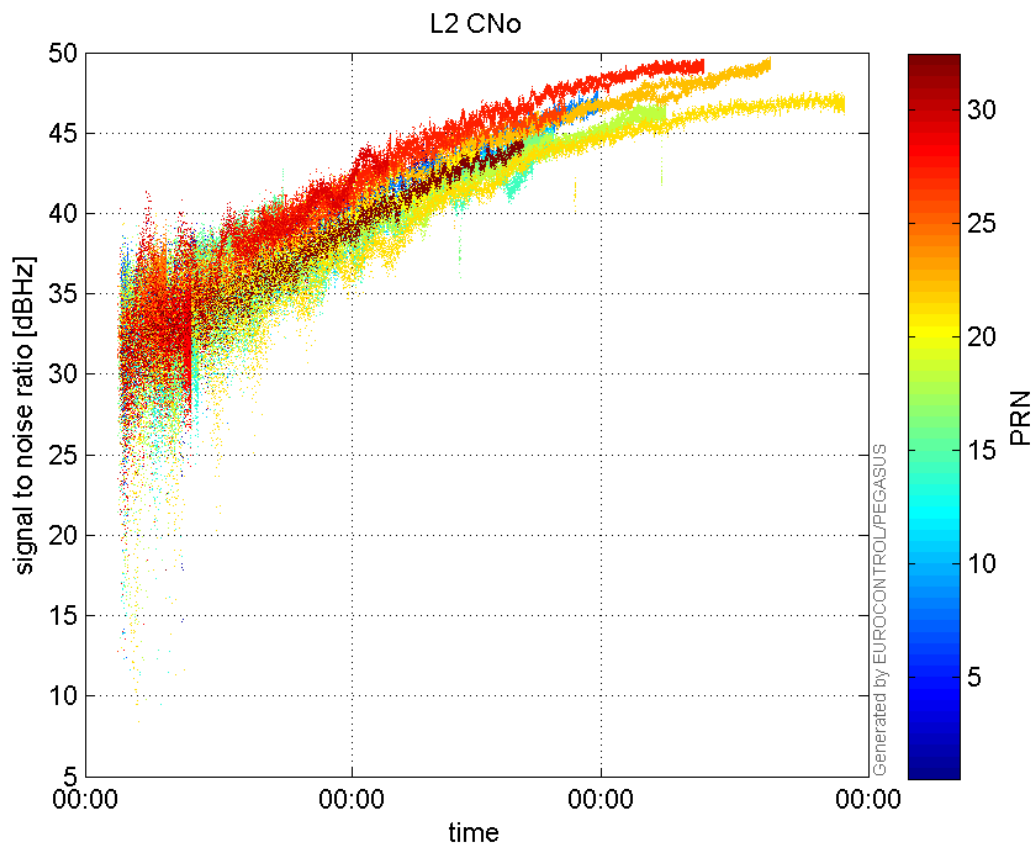
GEO CNo:



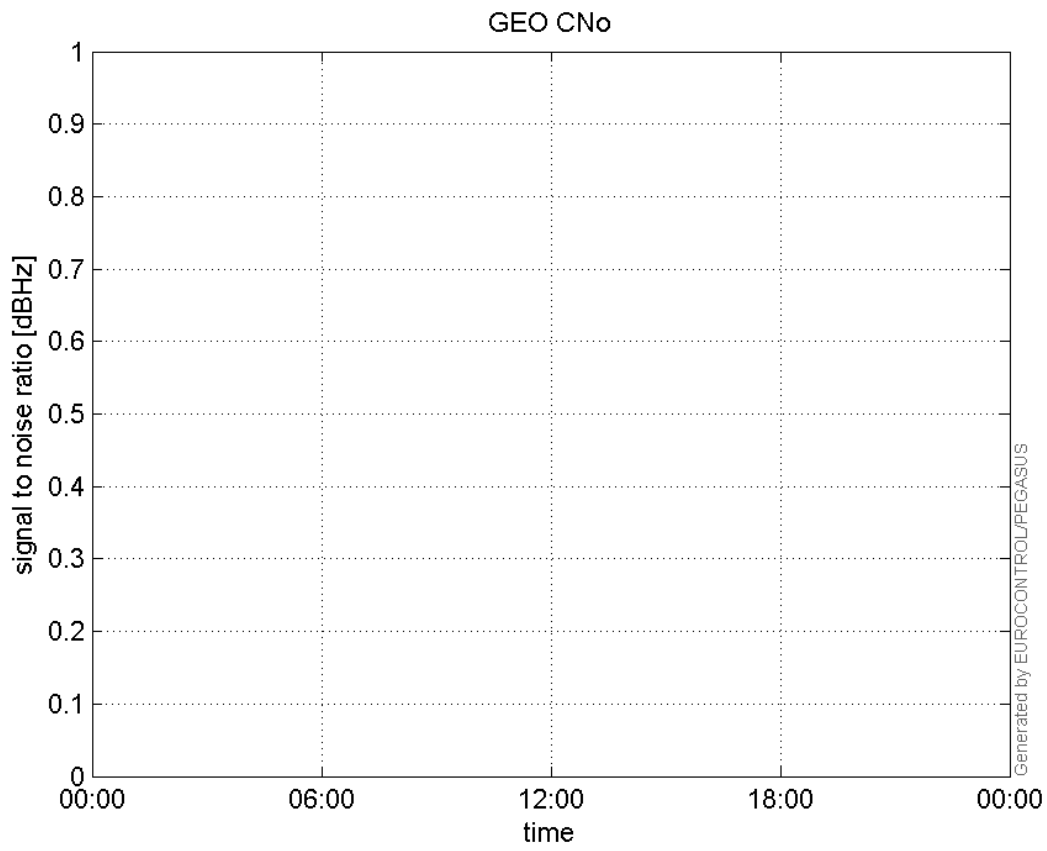
SNR Elevation:



L2 CNo:

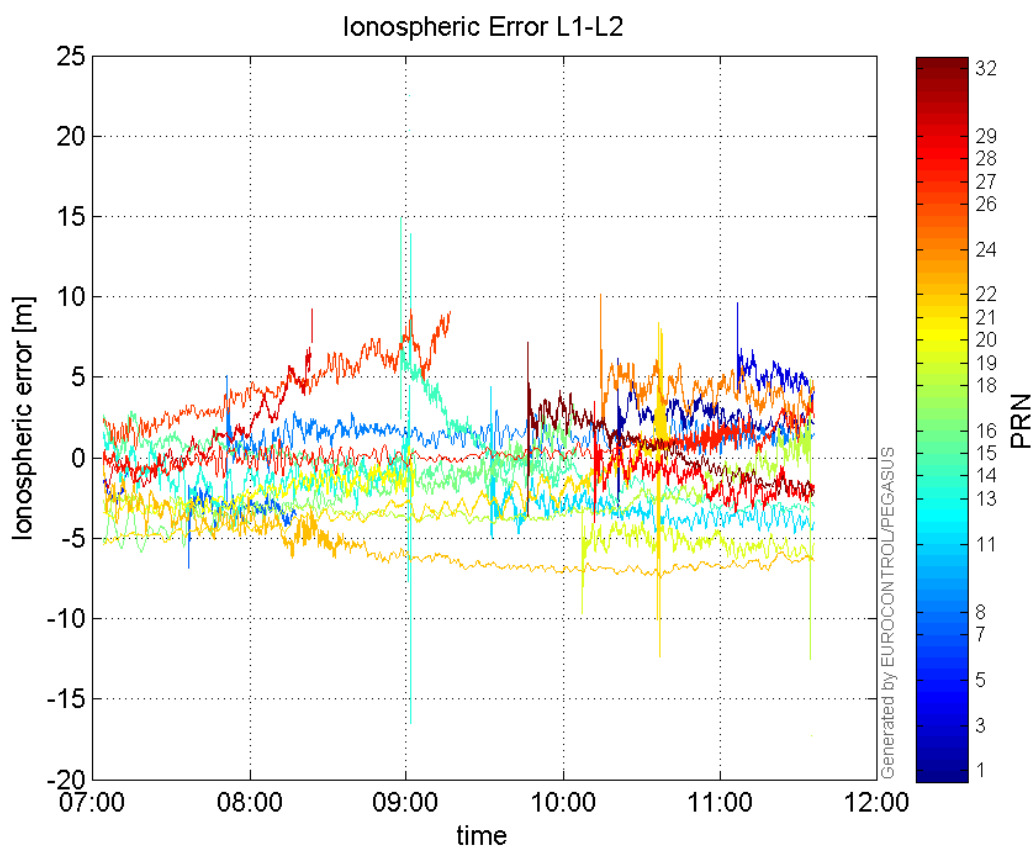


GEO CNo:



dual frequency

Ionospheric Error L1-L2:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDateGob/job/2015_11_07EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_11_07EGNOS/03_GNSS_Solution/03_GNSS_Solution_sol

settings

Name	Section	Value
ref_lat	settings	50.439
ref_lon	settings	30.4297
ref_alt	settings	215.271
smoothing	settings	yes
smoothing_constant	settings	100
smoothing_max_gap	settings	10
smoothing_max_divergence	settings	3
min_elevation	settings	5
aad_model	settings	a
output_range_file	settings	yes
sbas_prn	settings	120
gnss_mode	settings	sbas

results		
Name	Section	Value
init_lat	results	50.439
init_lon	results	30.4297
init_alt	results	225.4472
mi_numbers	results	0