

Global View

site Laboratory satellite systems
 abbreviation NAU
 country Ukraine
 city Kiev
 comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,
 P.50 - 54
 program Pegasus
 version 4.8.2
 date 17/02/2016

SBAS Messages

start: 07:37:31.129 15.02.2016 (week: 1884 sec: 113851.129)
end: 16:16:31.129 15.02.2016 (week: 1884 sec: 144991.129)
duration: 08:39:4.69387e-06 ..

quality

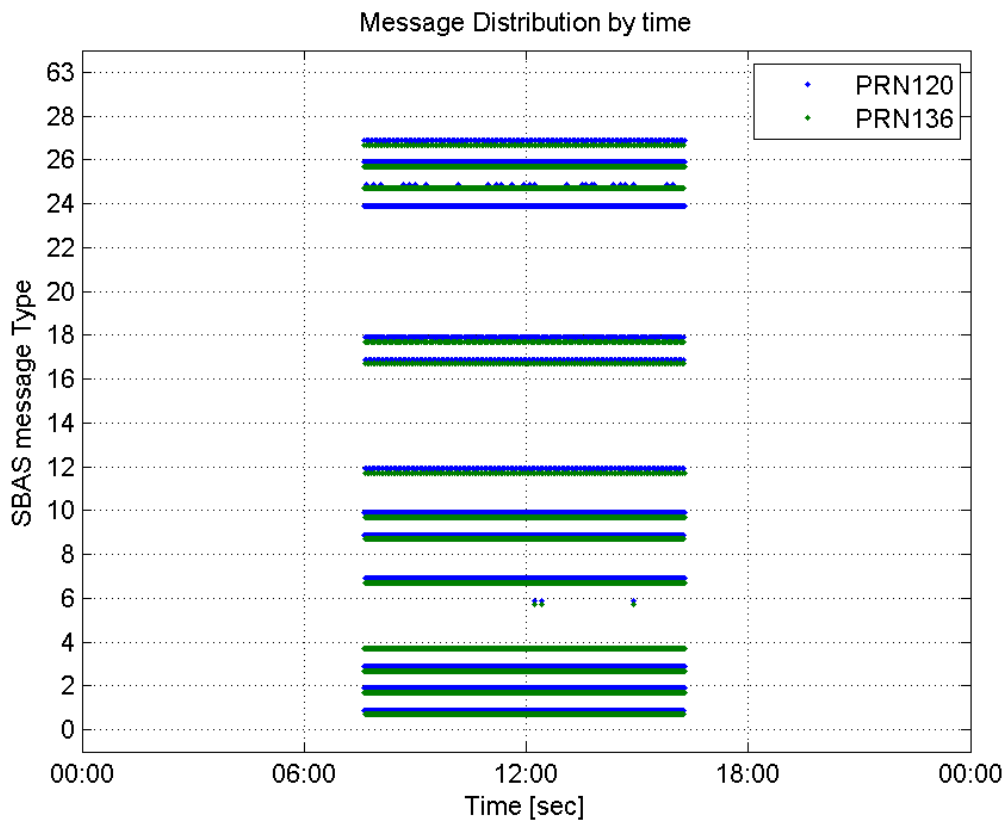
valid samples 62280
total samples 62280
number of SBAS PRNs 2

SBAS SIS Overview

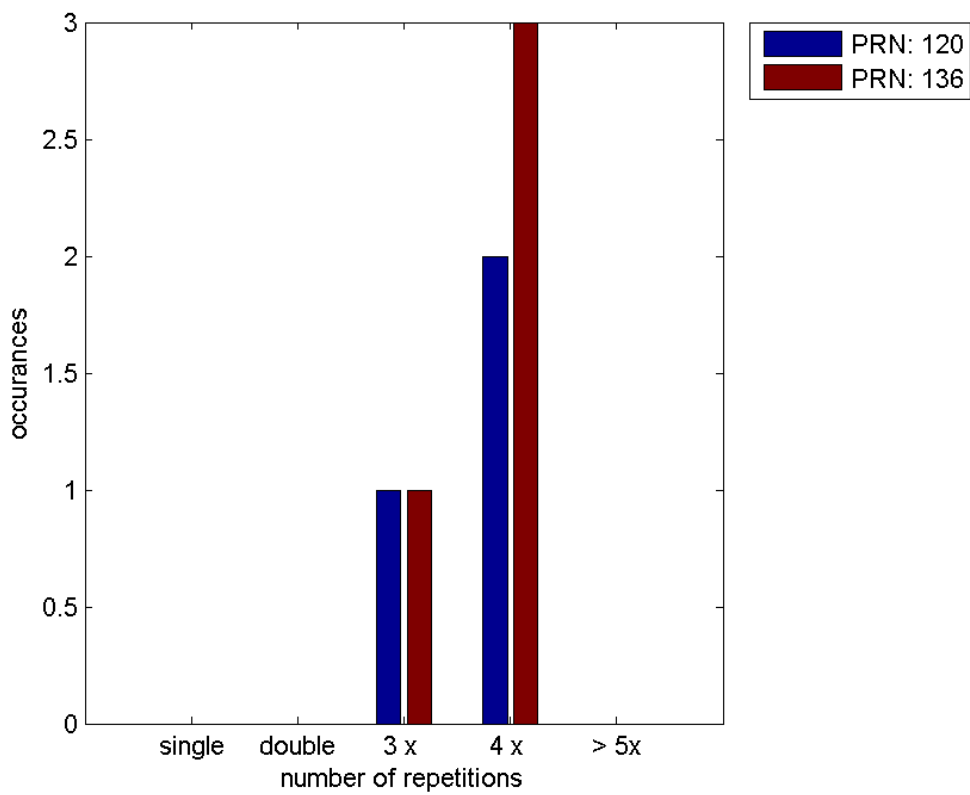
Message Type 6 repetitions :

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

Message Distribution by time:



Message Type 6 repetitions:



SBAS SIS Analysis

PRN 120

Broadcast SBAS Messages :

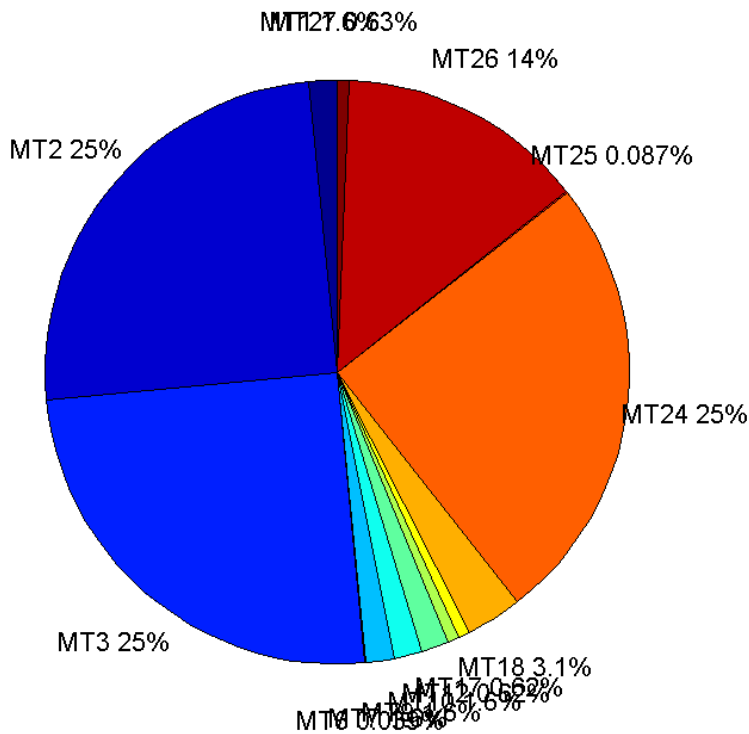
	number of messages	%
MT 0	0	0
MT 1	485	1.55743
MT 2	7778	24.9767
MT 3	7778	24.9767
MT 4	0	0
MT 5	0	0
MT 6	12	0.0385344
MT 7	485	1.55743
MT 9	485	1.55743
MT 10	486	1.56064
MT 12	194	0.622973
MT 17	194	0.622973
MT 18	970	3.11486
MT 24	7778	24.9767
MT 25	27	0.0867024
MT 26	4274	13.7247
MT 27	195	0.626184
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	31141	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	69	64.2004	0	0	0
MT 2	4	8	4.00373	4	0	0
MT 3	4	8	4.00373	4	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	8937	874.091	2	2	2
MT 7	64	70	64.2004	0	0	0
MT 9	64	69	64.1921	0	0	0
MT 10	64	70	64.1918	0	0	0
MT 12	156	173	160.42	193	0	0
MT 17	160	169	160.44	0	0	0
MT 18	4	133	31.9845	0	0	0
MT 24	4	8	4.00373	0	0	0
MT 25	75	3227	1146.54	0	0	0
MT 26	1	28	7.28411	0	0	0
MT 27	160	169	160.438	0	0	0

MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

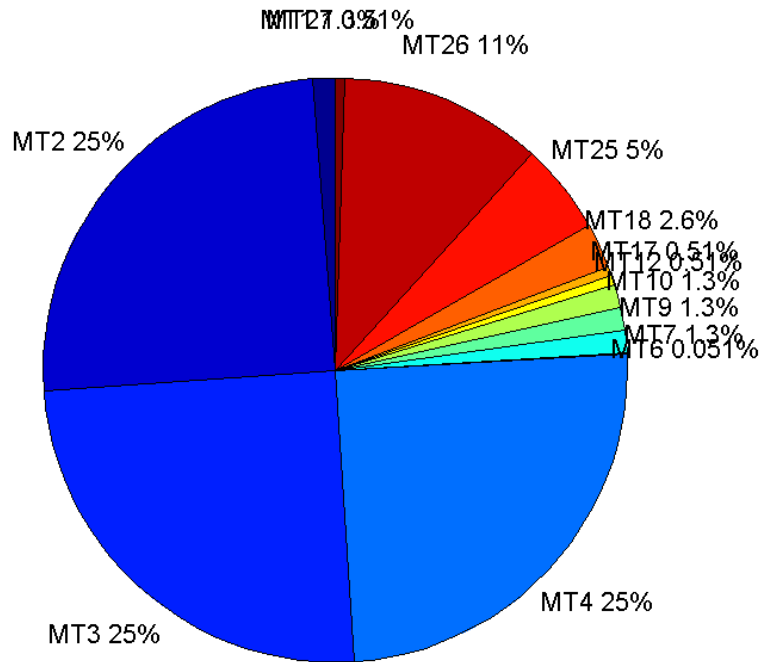
	number of messages	%
MT 0	0	0
MT 1	391	1.25566
MT 2	7748	24.882
MT 3	7747	24.8788
MT 4	7749	24.8852
MT 5	0	0
MT 6	16	0.0513825
MT 7	391	1.25566
MT 9	390	1.25245
MT 10	391	1.25566
MT 12	159	0.510614
MT 17	159	0.510614
MT 18	795	2.55307
MT 24	0	0

MT 25	1554	4.99053
MT 26	3490	11.2078
MT 27	159	0.510614
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	31139	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	74	82	79.6179	0	0	0
MT 2	4	8	4.01949	6	0	0
MT 3	4	8	4.01949	6	0	0
MT 4	4	8	4.01897	5	0	0
MT 5	--	--	--	--	--	--
MT 6	1	8917	641	3	2	3
MT 7	76	81	79.6487	0	0	0
MT 9	76	83	79.6478	0	0	0
MT 10	74	81	79.6487	0	0	0
MT 12	186	201	196.348	158	0	0
MT 17	185	201	196.373	0	0	0
MT 18	4	164	39.1222	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	60	20.0251	0	0	0
MT 26	1	36	8.92376	0	0	0
MT 27	188	201	196.373	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:/PEGASUS_DAT_job/JOB/2016_02_15EGNOS/01_User/01_User
Outputfile	System	D:/PEGASUS_DAT_job/JOB/2016_02_15EGNOS/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: 07:37:32 15.02.2016 (week: 1884 sec: 113852)
end: 16:16:32 15.02.2016 (week: 1884 sec: 144992)
duration: 08:39:01 ..

quality

valid samples 30780
total samples 31141

Event tables

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

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	124272	1.65807	9.77546	0.169616	0.650668	15.7448	0.0413259
max normVer	130986	2.09026	38.9669	0.053642	3.69649	17.5826	0.210236
max HPE	130709	30.246	832.324	0.0363393	-5.72314	217.039	0.0263692
max VPE	130709	30.246	832.324	0.0363393	-5.72314	217.039	0.0263692
min HPL	143475	1.14341	8.84632	0.129253	-0.206128	15.2277	0.0135364
min VPL	140061	0.925102	10.8819	0.0850129	1.37625	13.7568	0.100041

APV-I discontinuity events :

#	Epoch	duration	stable period
1	120613	480	6400
2	129905	58	8812
3	129998	965	35
4	131006	6	43

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	120613	480	6400
2	125343	72	3
3	129905	60	3605
4	129998	965	31
5	131006	6	43
6	136649	90	5637
7	136740	69	1

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	120613	480	6400
2	125343	72	3
3	129905	60	3605
4	129998	965	31
5	131006	6	43
6	136649	90	5637
7	136740	69	1

First Glance analysis

Duration 31141
Number of Samples 31141
Number of invalid sample 361
Number of no position solution samples 0

Number of missing sample	0
Logging Loss	0
Processing Loss	1.1592
Number of Misleading Information	0
Data gaps	0
Discontinuities	0

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
30780	29271	29004	0	29004

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.75363	1.66345	1.66364	NaN	1.66364
HPEscale 95%	NaN	4.92173	4.9261	NaN	4.9261
VPE 95%	2.48116	2.40729	2.41039	NaN	2.41039
VPEscale 95%	NaN	6.2579	4.39137	NaN	4.39137

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.950975	0.9423	0	0.9423
measurements	0.988408	0.939951	0.931377	0	0.931377
Operational	0.988408	0.939951	0.931377	0	0.931377

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	4	41	--	41
Long	--	4	7	--	7
Independent	--	4	5	--	5
P(disc.)	NaN	0.00204981	0.00258585	NaN	0.00258585
P(slide)	NaN	0.00204981	0.00768859	NaN	0.00768859

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

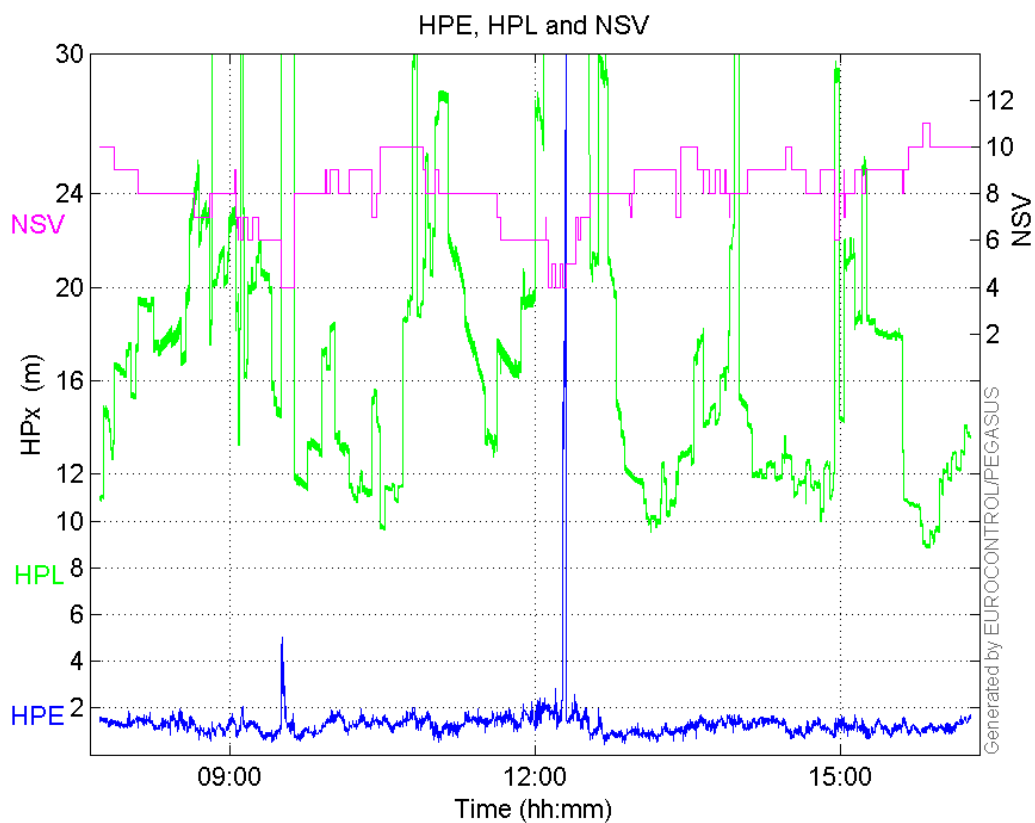
Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	30780	29271	29004	0	29004
SIS Availability	1	0.950975	0.9423	0	0.9423
Local Availability	0.988408	0.939951	0.931377	0	0.931377
Operational Availability	0.988408	0.939951	0.931377	0	0.931377
HPE 95%	1.75363	1.66345	1.66364	NaN	1.66364
HPEscale 95%	NaN	4.92173	4.9261	NaN	4.9261
VPE 95%	2.48116	2.40729	2.41039	NaN	2.41039
VPEscale 95%	NaN	6.2579	4.39137	NaN	4.39137

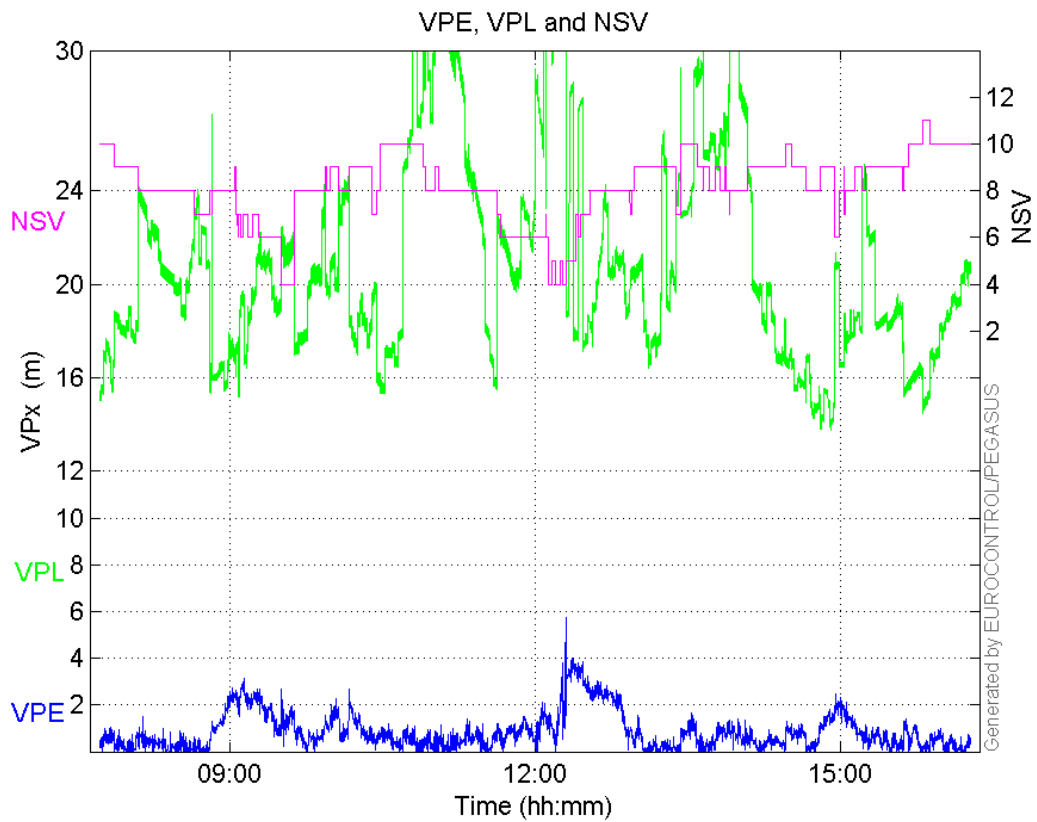
All Discontinuity Events	--	4	41	--	41
Long Discontinuity Events	--	4	7	--	7
Independent Discontinuity Events	--	4	5	--	5
P(discontinuity)	NaN	0.00204981	0.00258585	NaN	0.00258585
P(sliding window)	NaN	0.00204981	0.00768859	NaN	0.00768859
All Integrity Events	0	0	0	0	0
Horizontal Integrity Events	0	0	0	0	0
Vertical Integrity Events	0	0	0	0	0

Time Series

HPE, HPL and NSV:

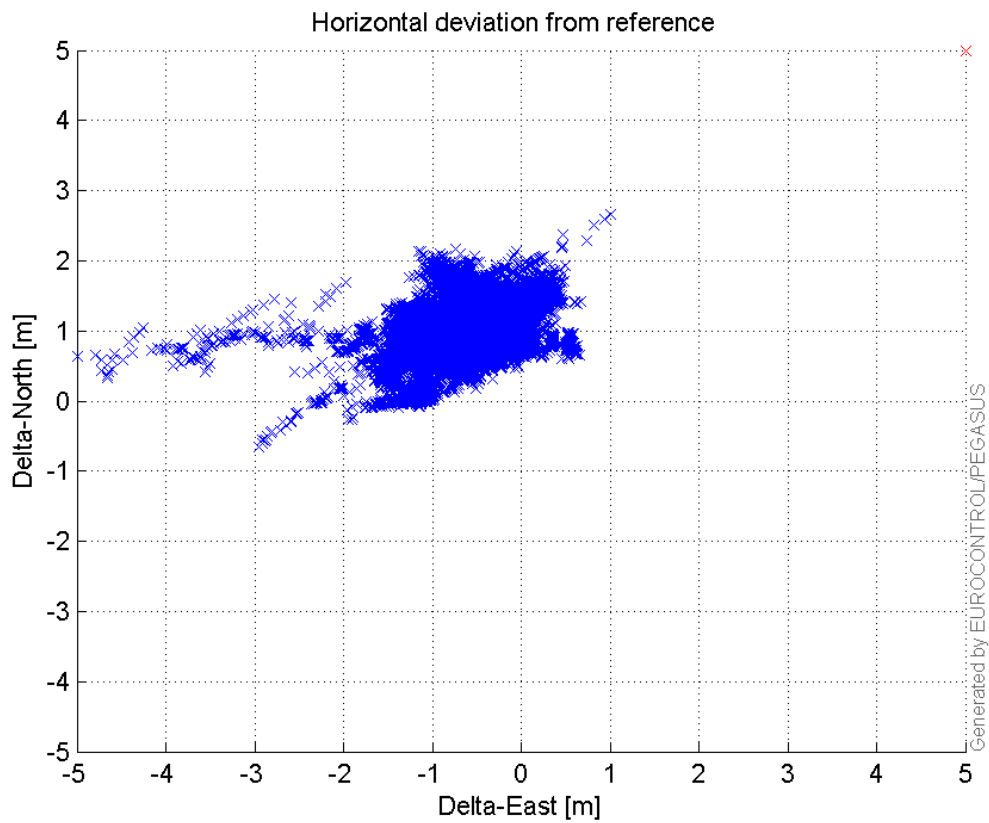


VPE, VPL and NSV:



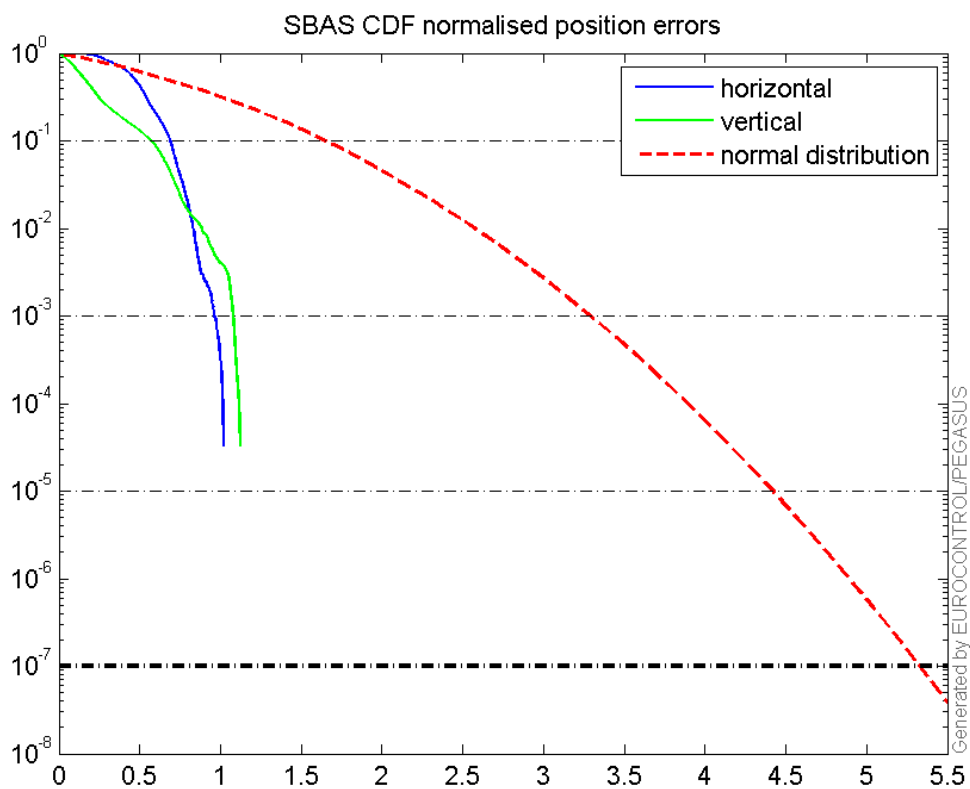
Horizontal deviation

Horizontal deviation from reference :



CDF position

SBAS CDF position domain:



Statistics

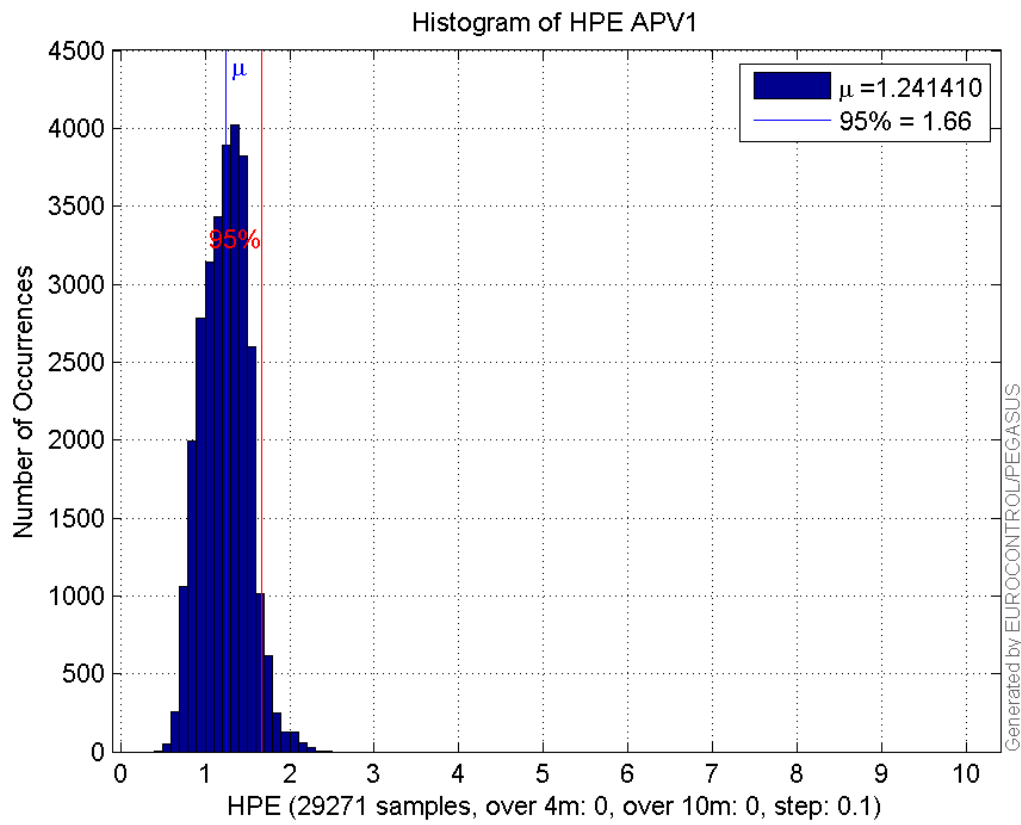
number	29271
sum	36337.31
sum2	47243.64
prctile95	1.6634465
prctile99	1.939173
number	29271
sum	23885.879
sum2	34856.361
prctile95	2.4072902
prctile99	3.2231338
number	29271
sum	490883.94
sum2	9151258
prctile95	28.75247
prctile99	36.049837
number	29271
sum	608177.6
sum2	13226137
prctile95	29.468545
prctile99	34.82968
number	29271
sum	2347.3159
sum2	207.0292
prctile95	0.12304319
prctile99	0.13892325
number	29271

sum 1213.8067
sum2 93.182288
prctile95 0.12515795
prctile99 0.1587872
number 29004
sum 35973.386
sum2 46733.913
prctile95 1.6636373
prctile99 1.9386543
number 29004
sum 23722.006
sum2 34728.533
prctile95 2.4103876
prctile99 3.2297177
number 29004
sum 481680.59
sum2 8830626.6
prctile95 28.1193
prctile99 32.10978
number 29004
sum 598562.75
sum2 12879769
prctile95 29.10997
prctile99 34.204788
number 29004
sum 2336.7054
sum2 206.59425
prctile95 0.12315252
prctile99 0.13899136
number 29004
sum 1209.2487
sum2 93.082997
prctile95 0.12546771
prctile99 0.15919602

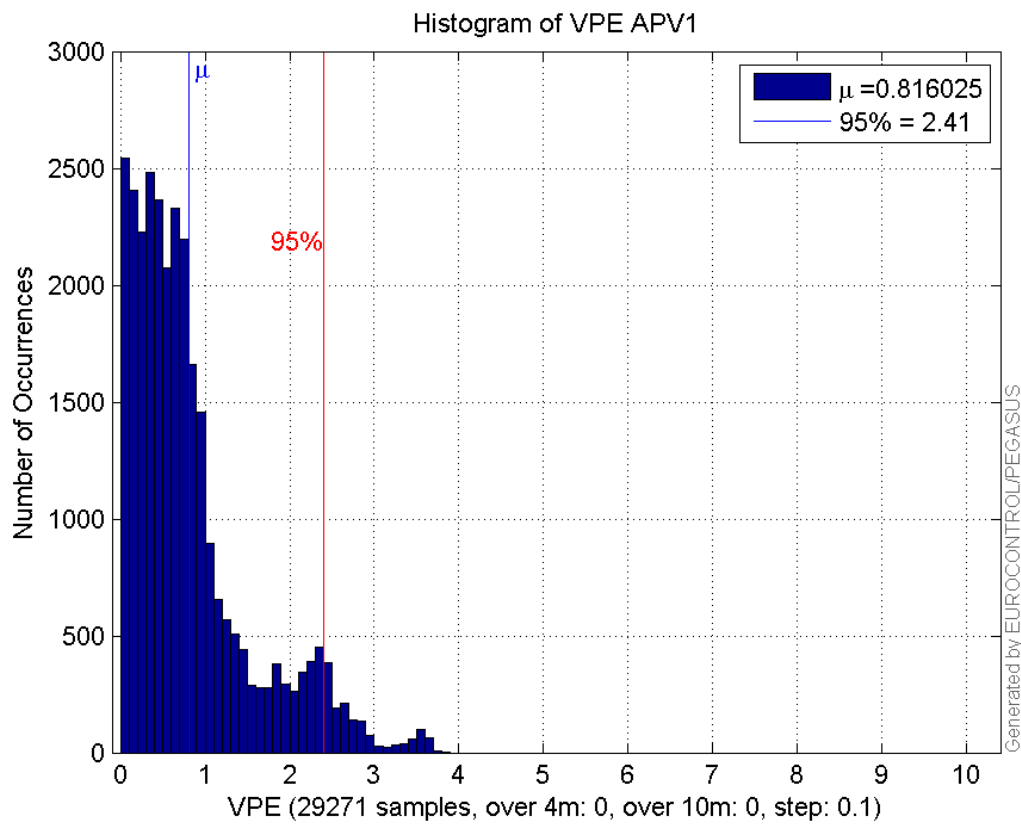
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.24141	0.270023	1.24553	1.66345	1.93917	1.27044
HPL	16.7703	5.60327	16.2714	28.7525	36.0498	17.6816
VPE	0.816025	0.724525	0.624312	2.40729	3.22313	1.09124
VPL	20.7775	4.48868	19.7588	29.4685	34.8297	21.2568

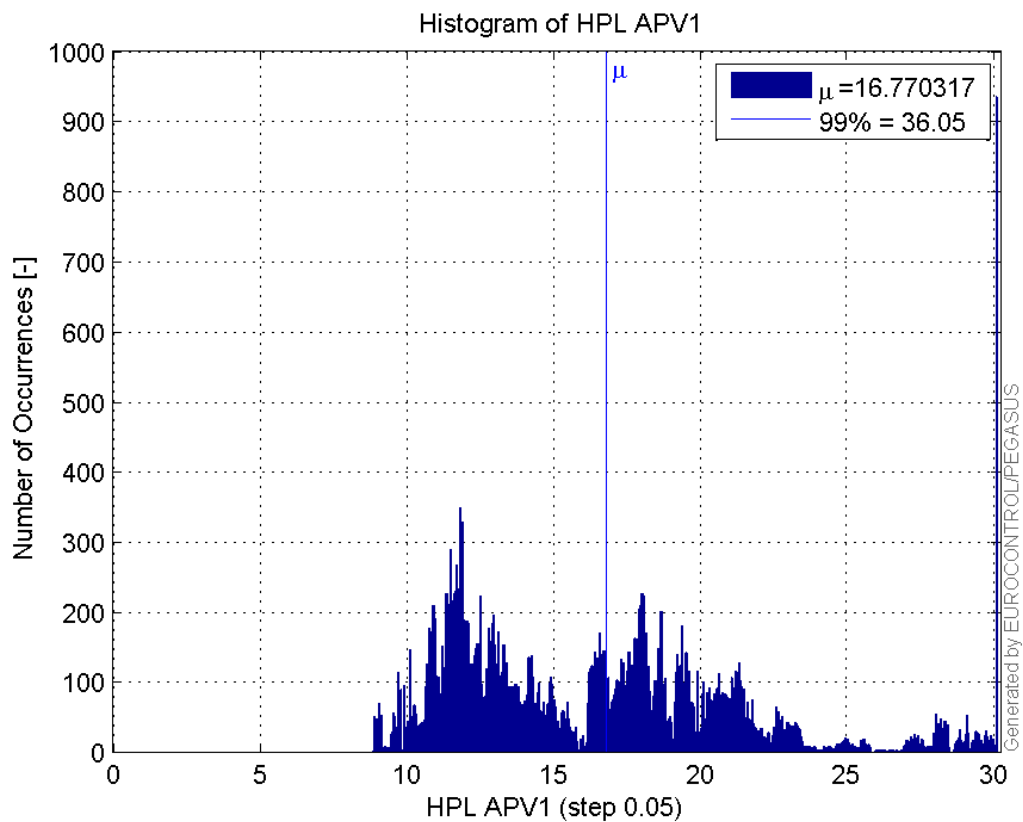
Histogram of HPE APV1:



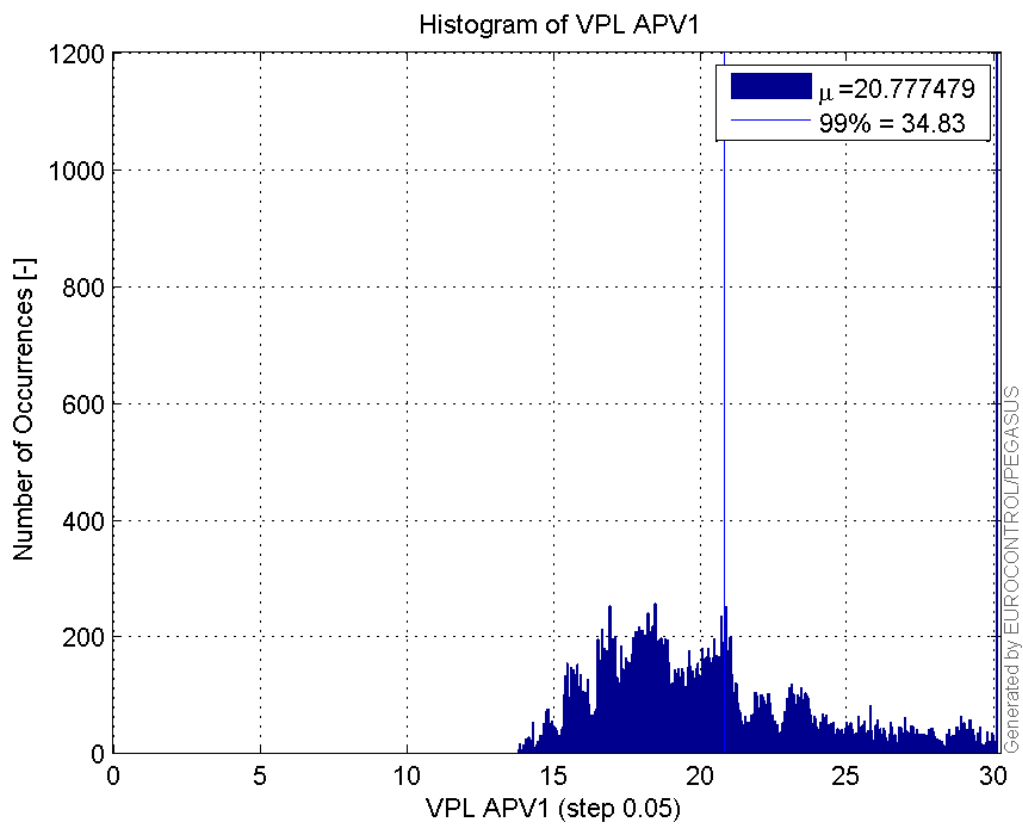
Histogram of VPE APV1:



Histogram of HPL APV1:

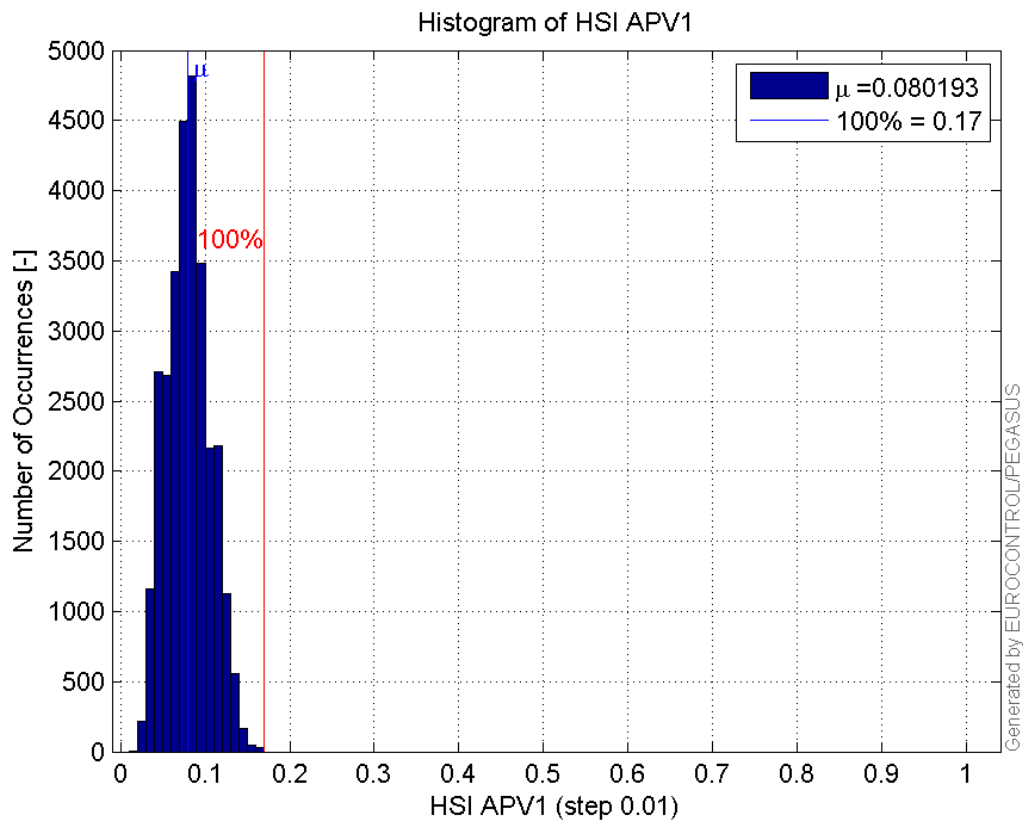
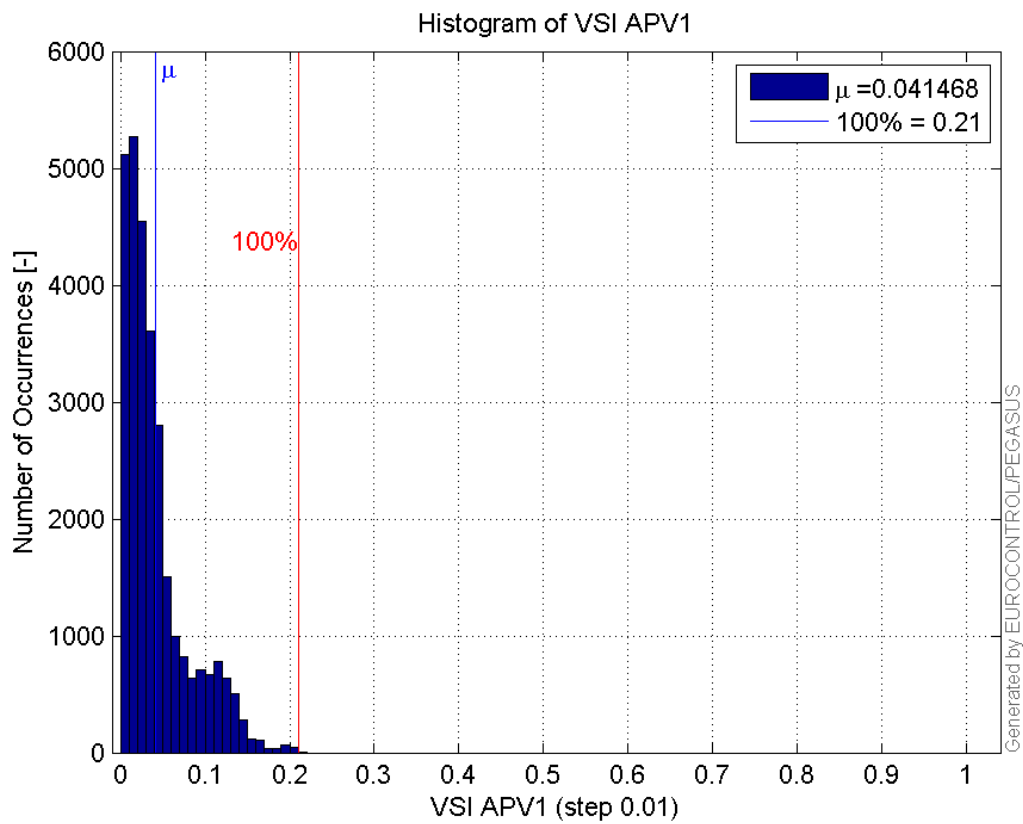


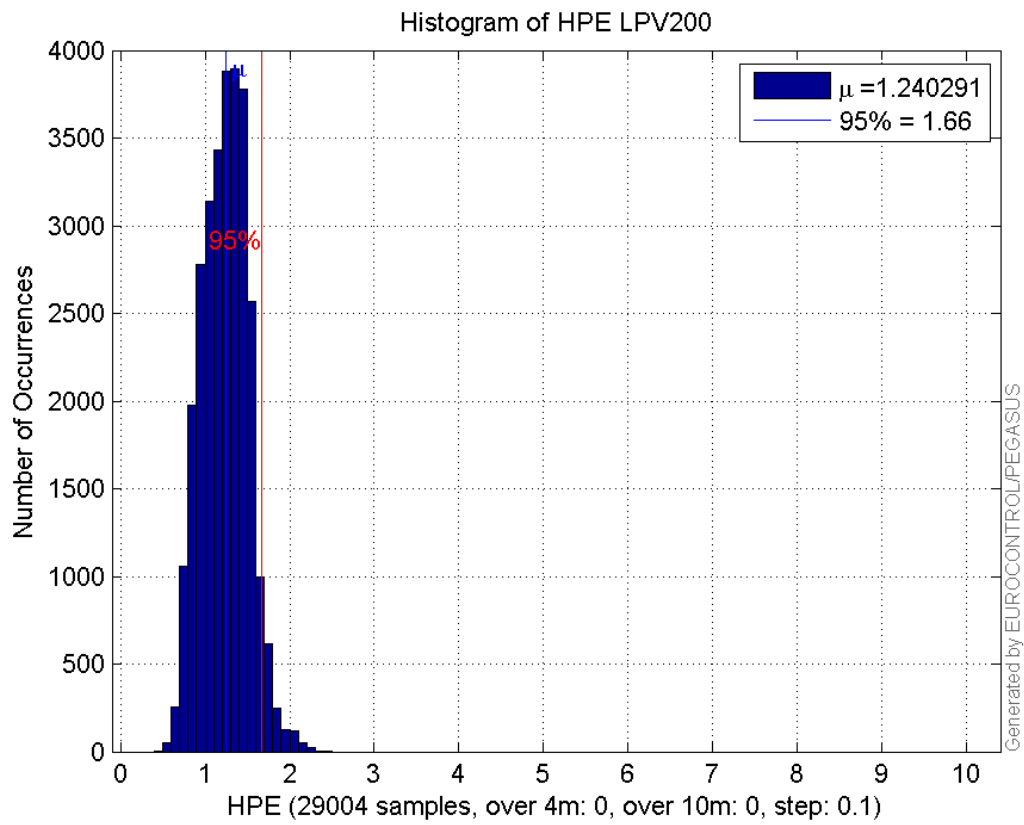
Histogram of VPL APV1:



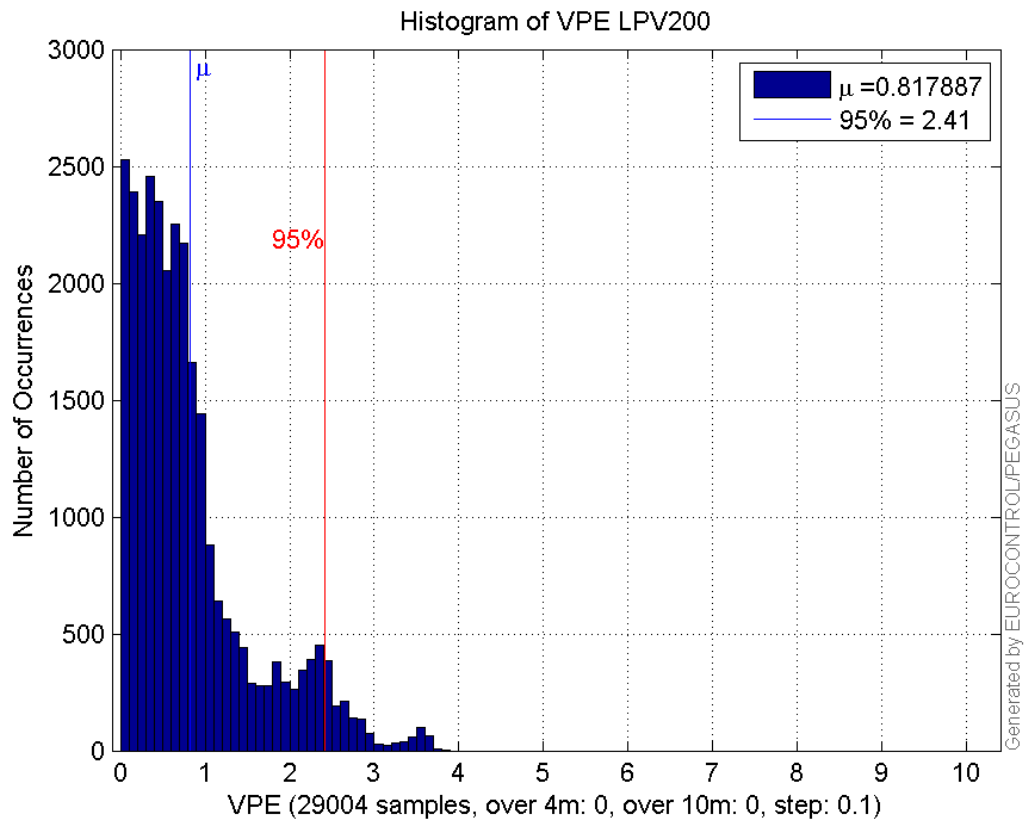
99

Histogram of HSI APV1:

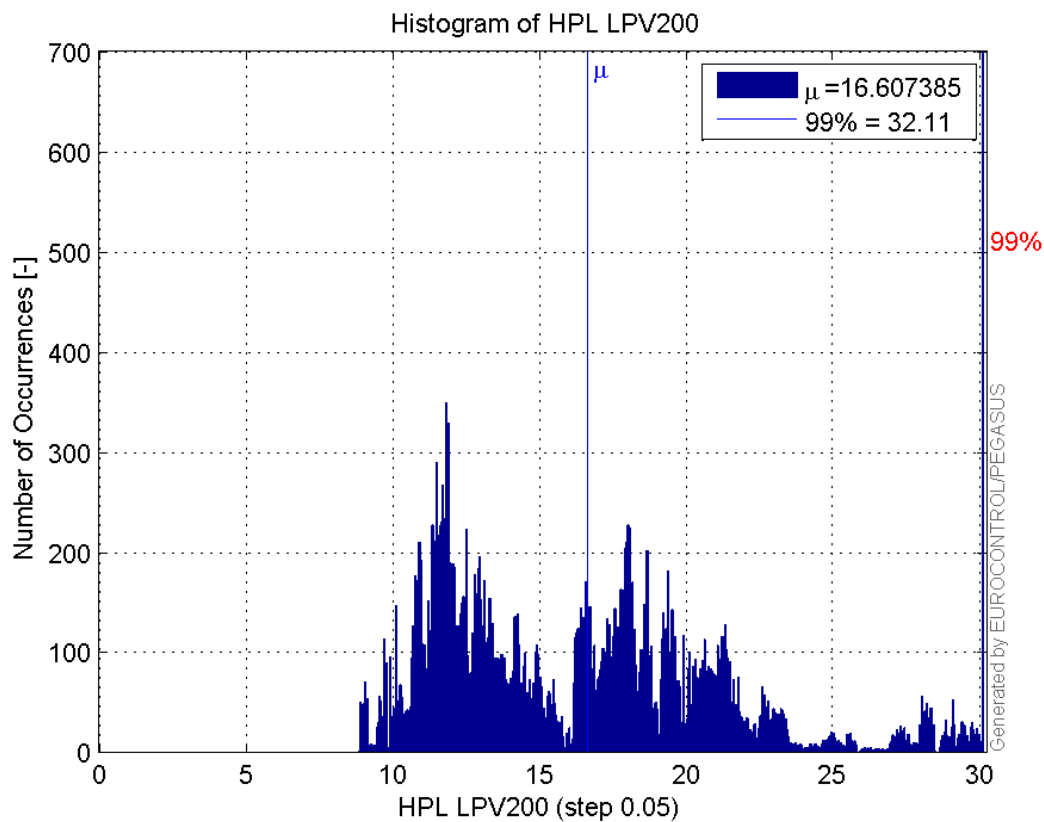
**Histogram of VSI APV1:****Histogram of HPE LPV200:**



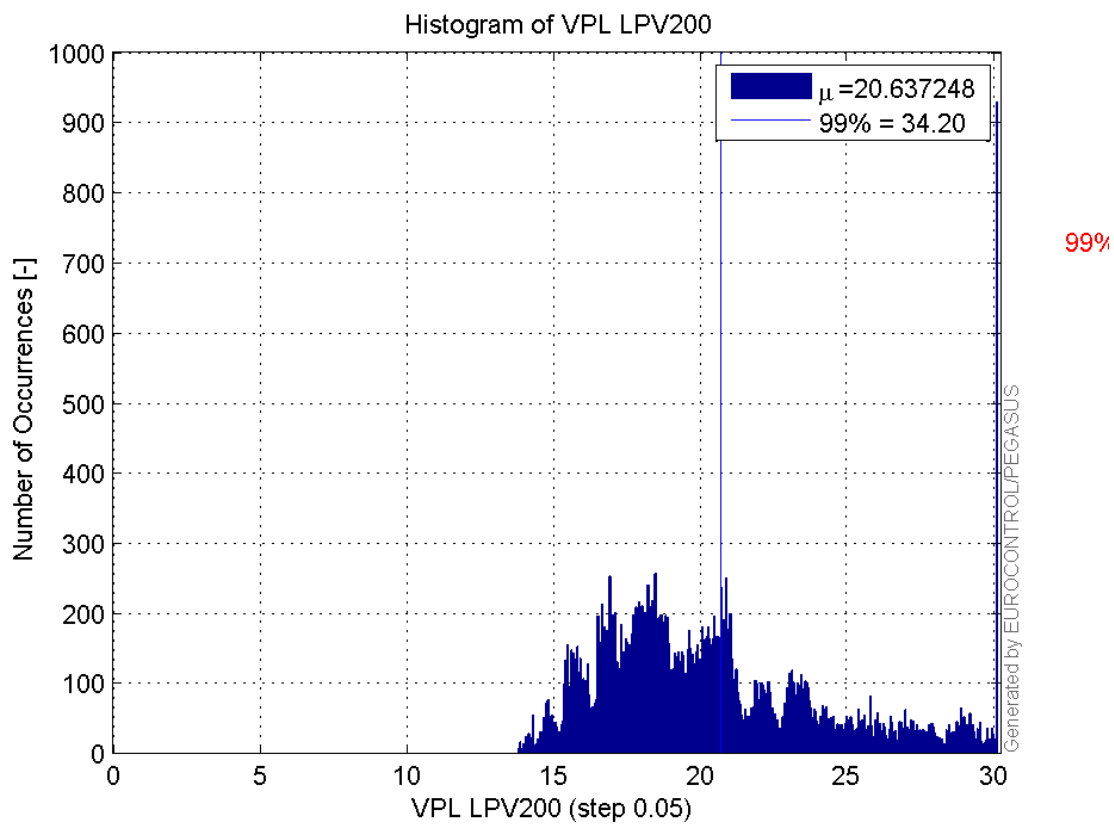
Histogram of VPE LPV200:



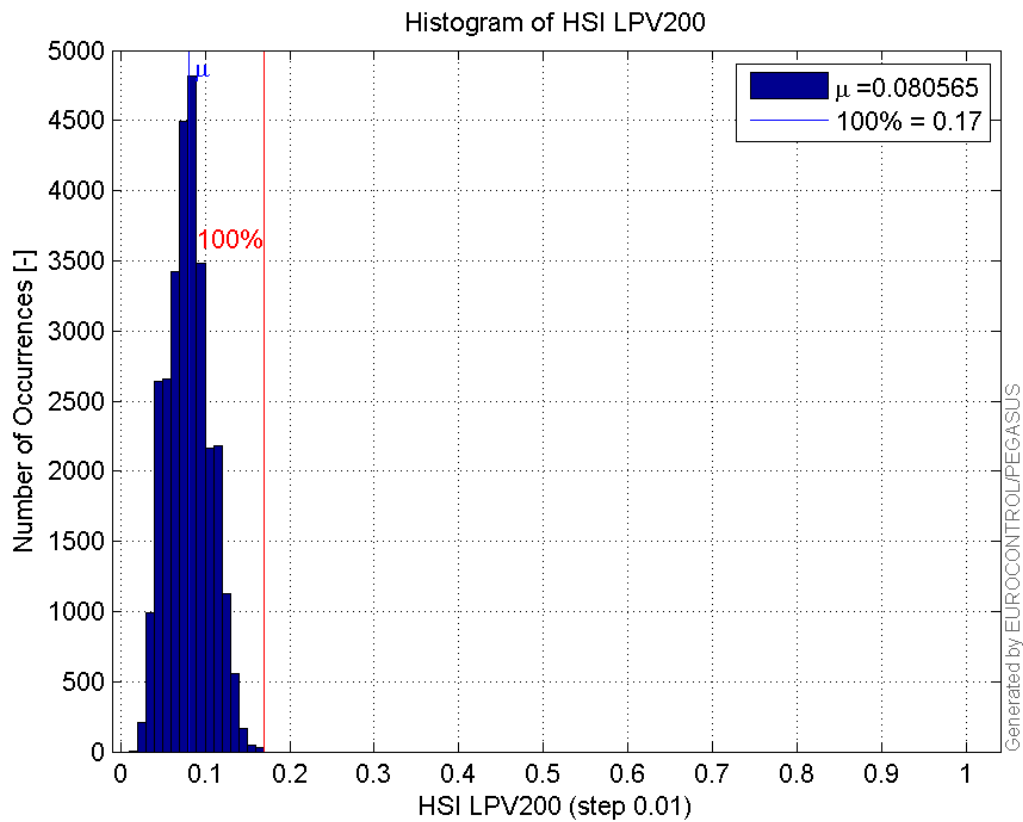
Histogram of HPL LPV200:



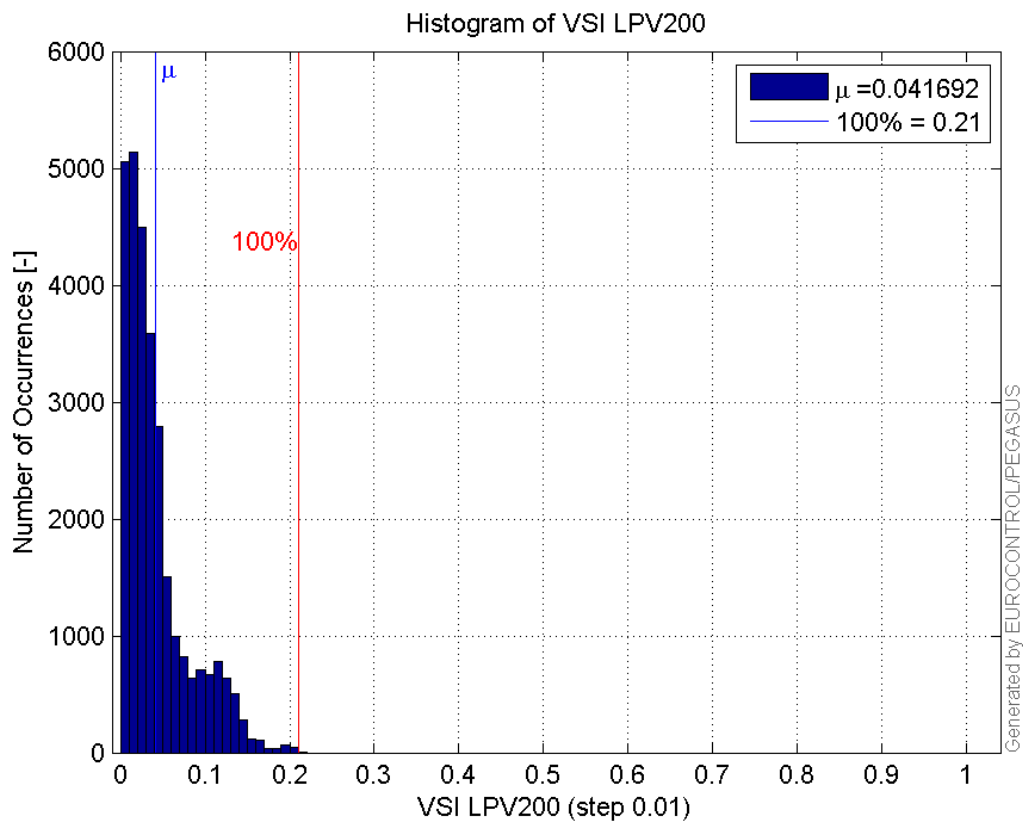
Histogram of VPL LPV200:



Histogram of HSI LPV200:

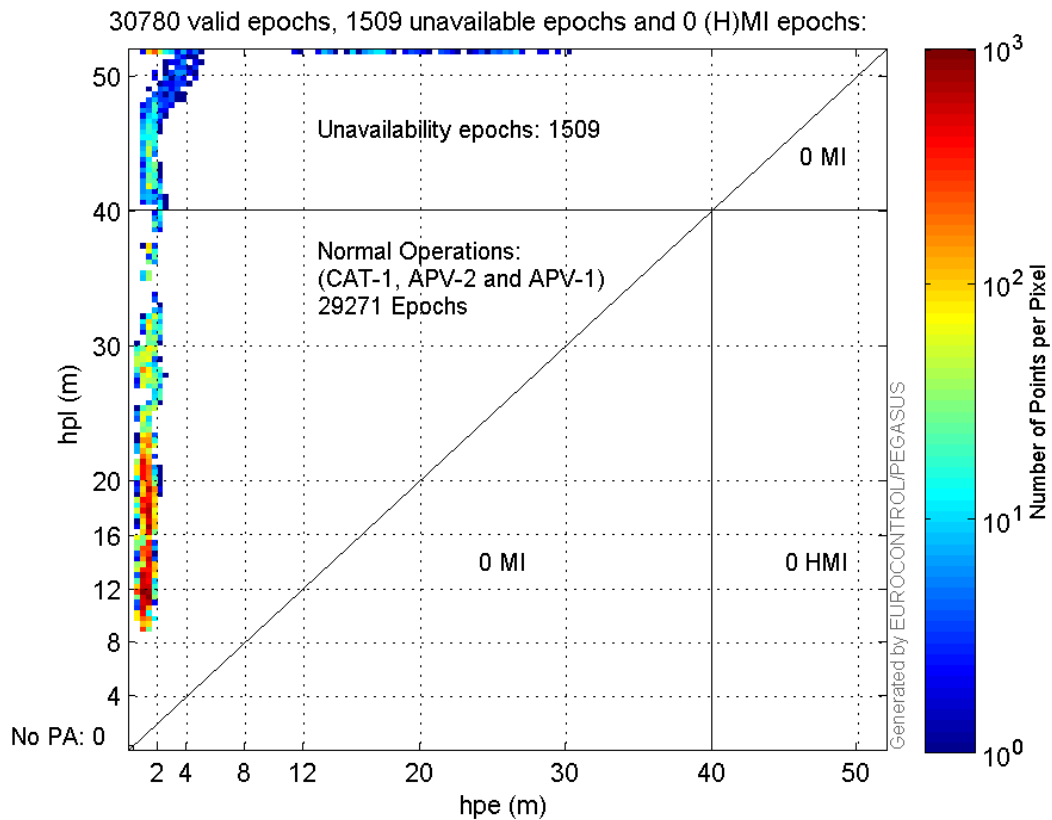


Histogram of VSI LPV200:

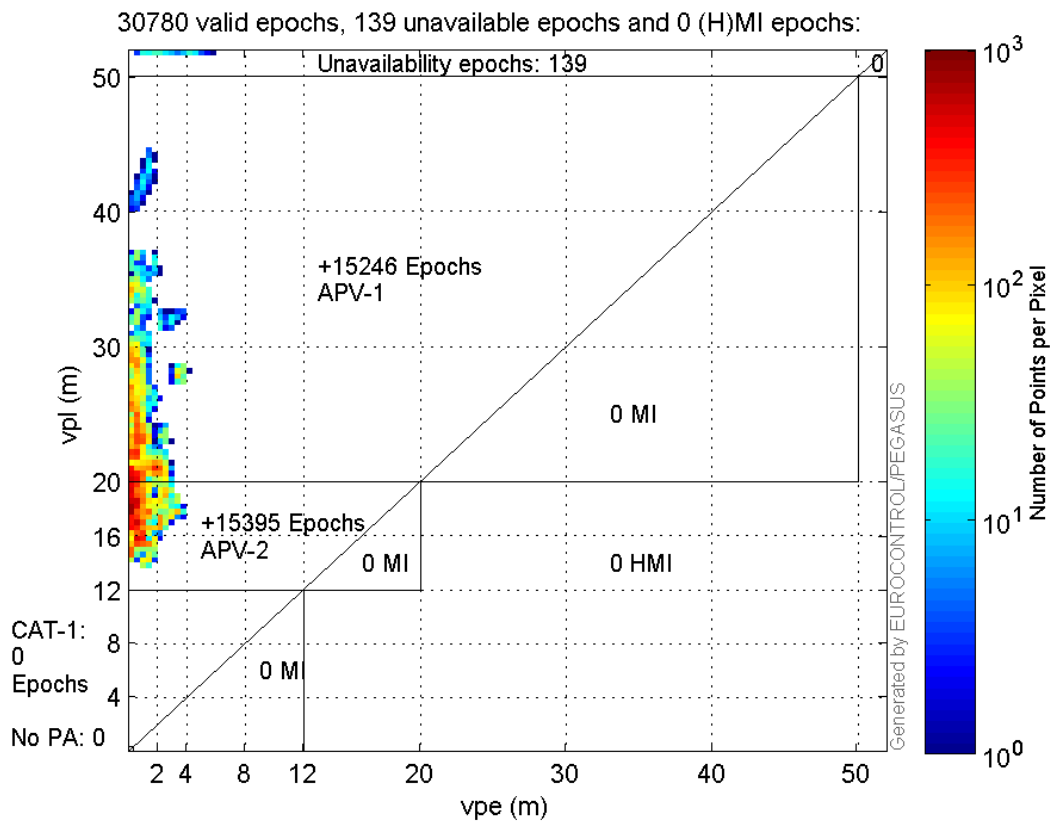


Stanford Plots

Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

Name	Section	Value
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name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PEGASUS_DAT_job/JOB/2016_02_15EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PEGASUS_DAT_job/JOB/2016_02_15EGNOS/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	229.8255
mi_numbers	results	0

Range Domain

start: 07:37:32 15.02.2016 (week: 1884 sec: 113852)
end: 16:16:32 15.02.2016 (week: 1884 sec: 144992)
duration: 08:39:01 ..

quality

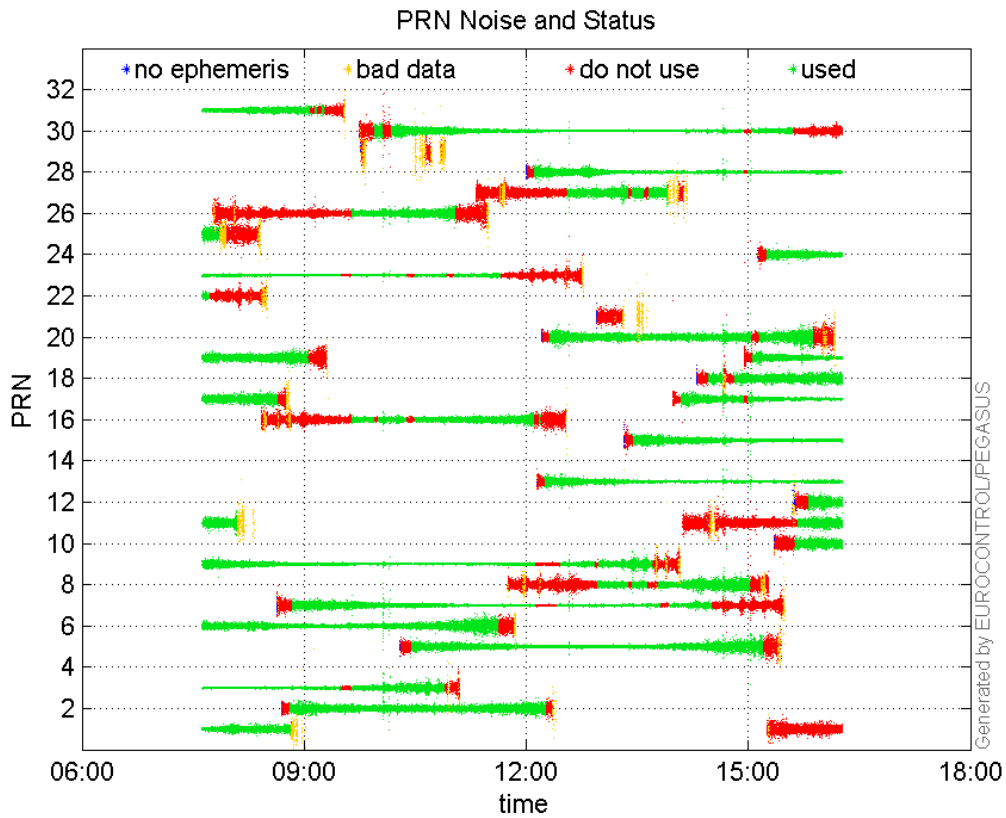
valid samples 31141
total samples 31141

PRN overview

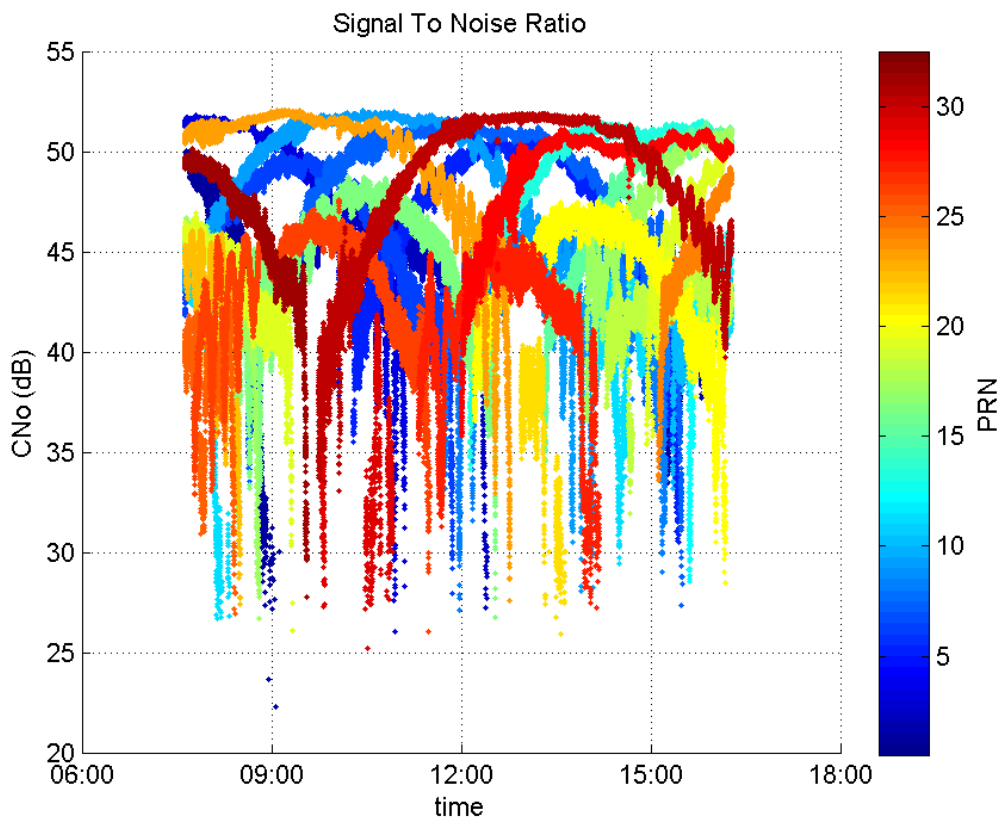
Number of Visible GPS Satellites 29
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



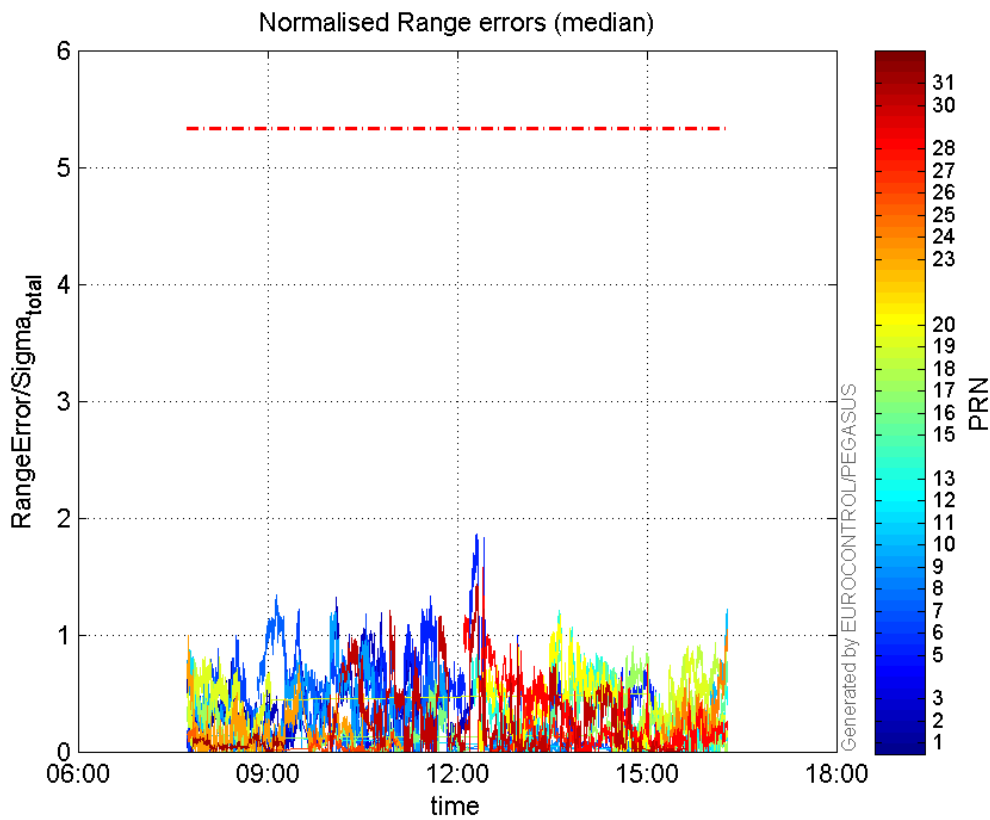
range errors

Number of Overbounding Norm Errors 0

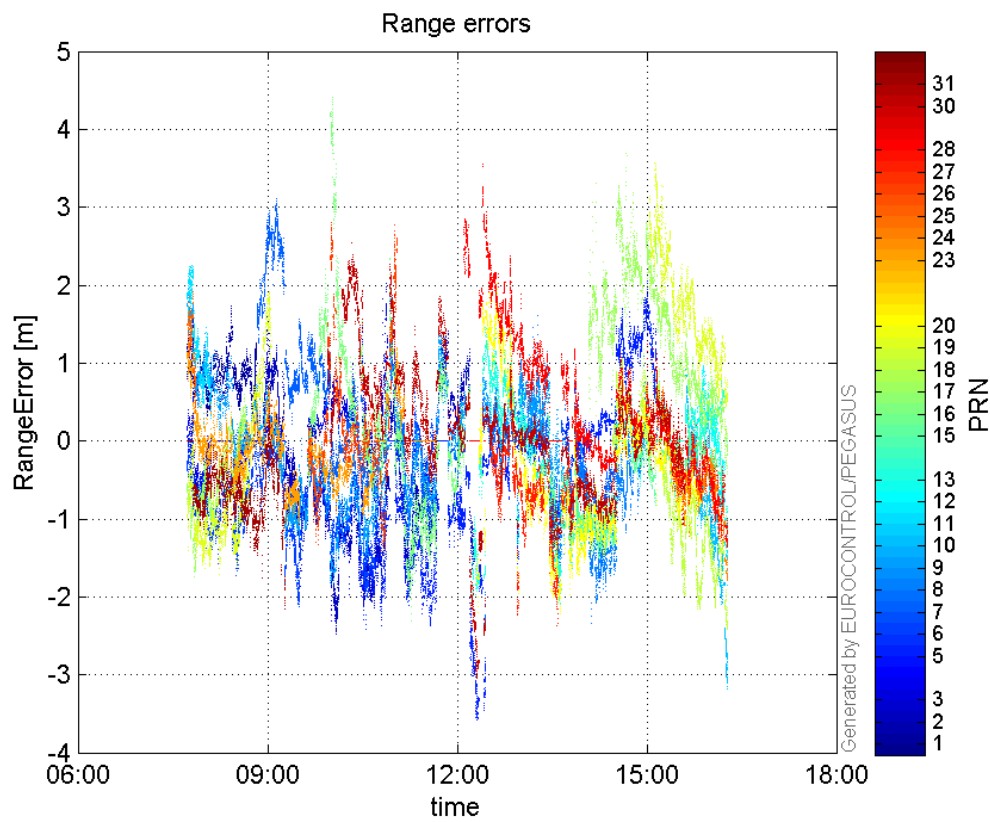
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1884	114262	1	0.825749	1.38181	1.67341
1884	122700	2	1.31652	-2.42806	1.8443
1884	117029	3	0.635727	-1.10281	1.73472
1884	130713	5	1.86366	-3.57801	1.91989
1884	120599	6	1.22102	-2.12377	1.73934
1884	119288	7	1.33699	3.1033	2.32112
1884	138031	8	0.557632	-1.92259	3.44777
1884	122660	9	1.19459	-1.67462	1.40183
1884	144978	10	1.21931	-3.17746	2.60595
1884	114318	11	0.867643	2.21137	2.54871
1884	144963	12	0.552644	-1.10573	2.00081
1884	135439	13	1.21349	-1.99573	1.64463
1884	135457	15	0.861453	-2.08857	2.42447
1884	128365	16	0.617628	-1.58435	2.56522
1884	139586	17	0.901387	3.17953	3.52738
1884	144965	18	0.976344	-2.40272	2.46094
1884	142718	19	0.899016	2.23194	2.48265
1884	135500	20	1.16419	-2.21192	1.89995
1884	114300	23	0.99099	1.57482	1.58914
1884	144965	24	1.04104	-1.78072	1.71052
1884	114574	25	0.253178	1.76839	6.98475
1884	121530	26	0.225565	-1.29872	5.75762
1884	133432	27	0.412914	-1.35876	3.29067
1884	131036	28	1.57696	3.52783	2.23711
1884	130713	30	1.42953	-3.04303	2.12869
1884	119168	31	0.165097	-0.751724	4.55322

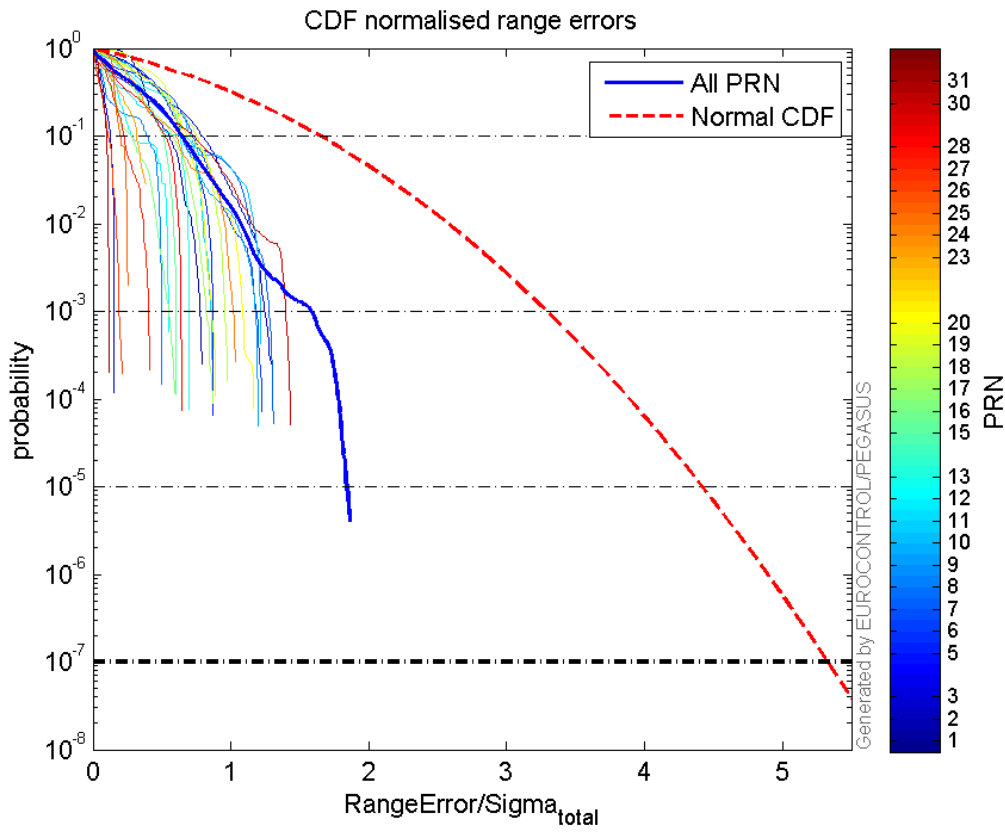
Normalised Range errors (median):



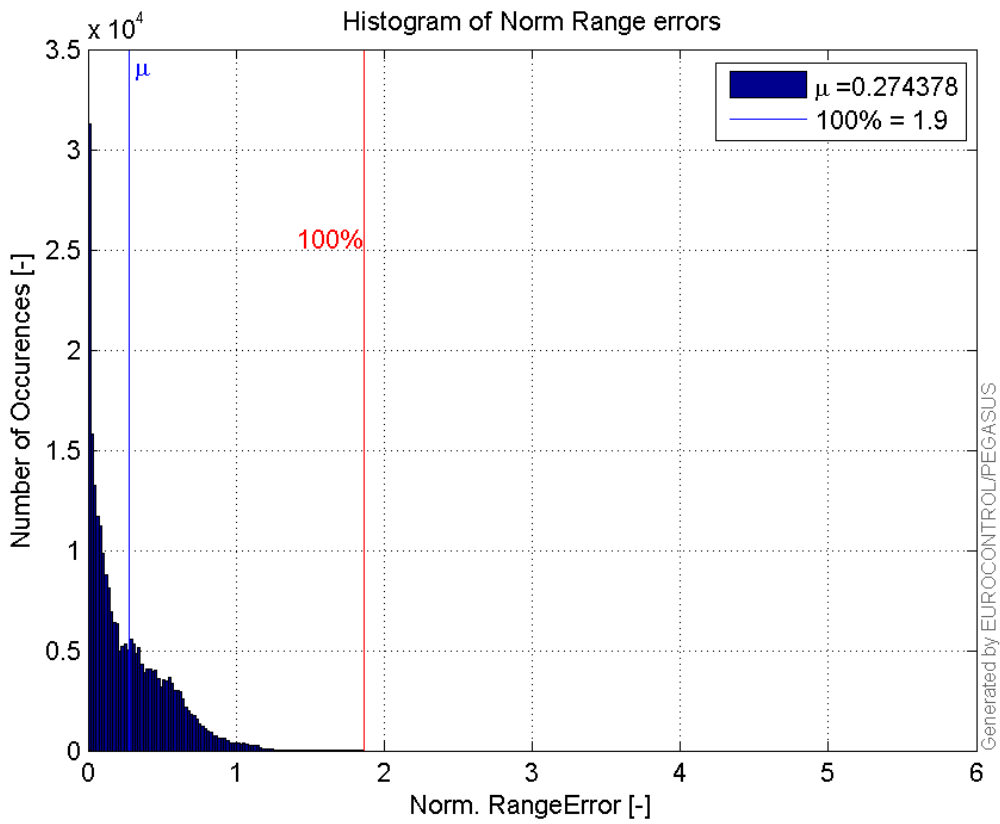
Range errors:



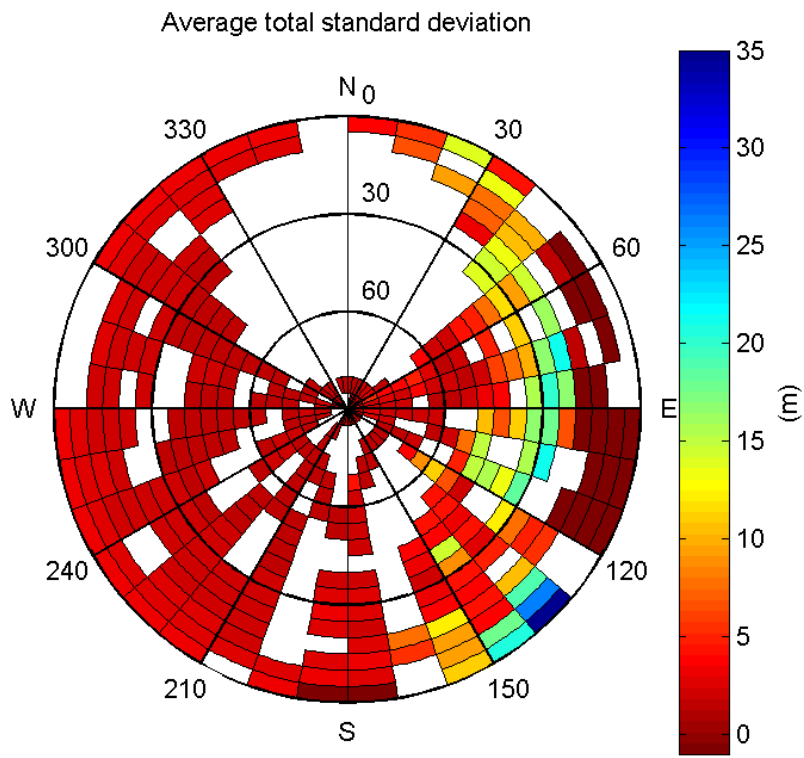
CDF normalised range errors:



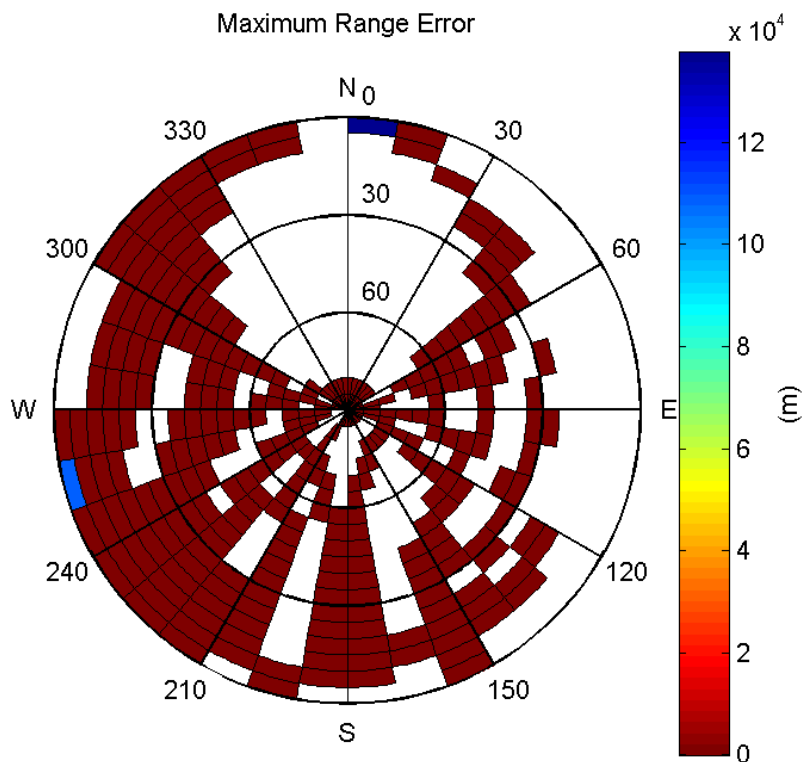
Histogram of Norm Range errors:



Sigma Sky Plot:

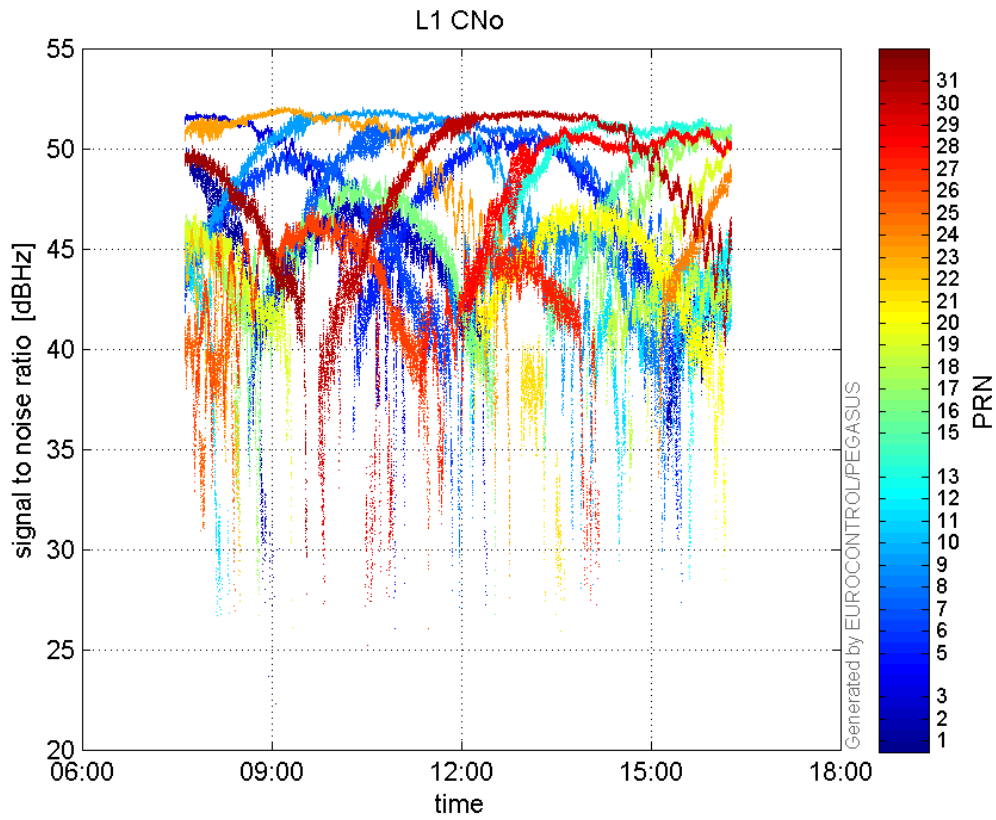


Norm Error Sky Plot:

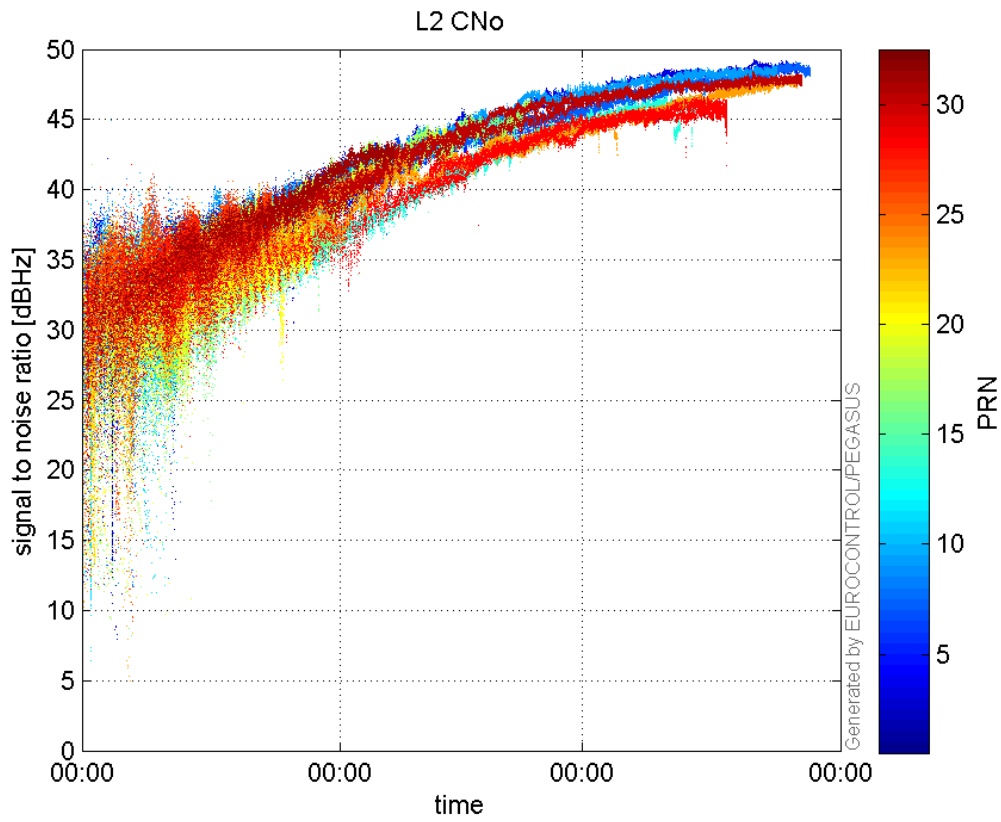


signal quality

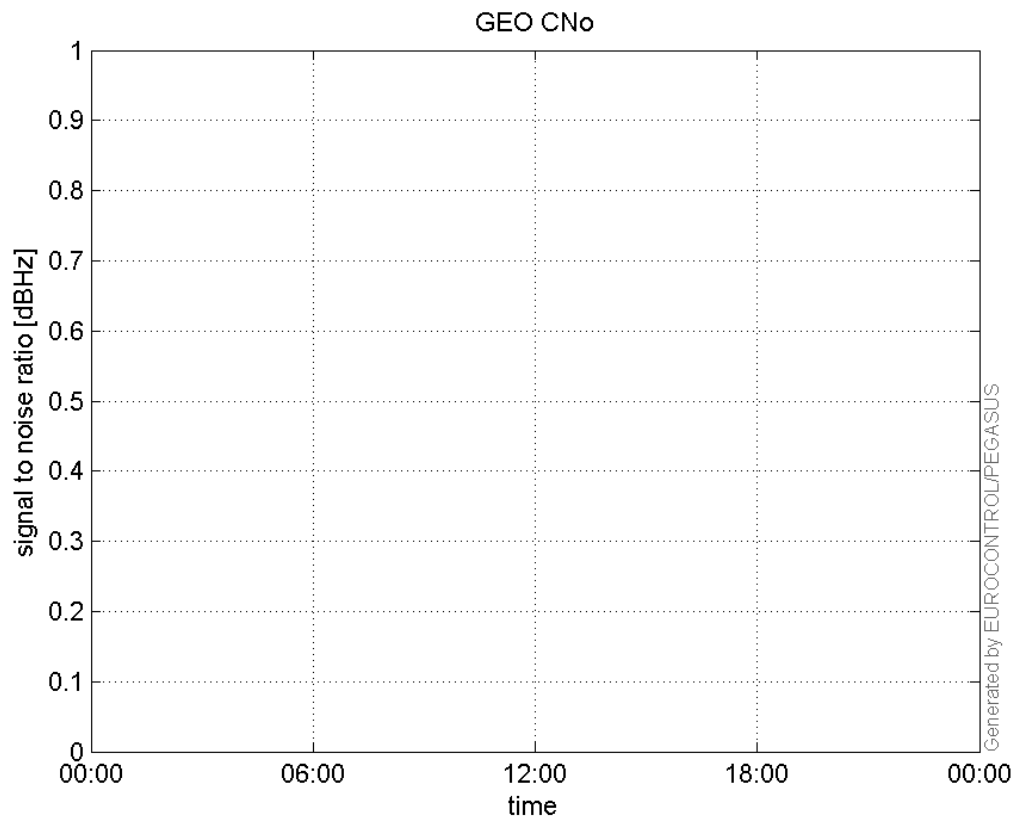
L1 CNo:



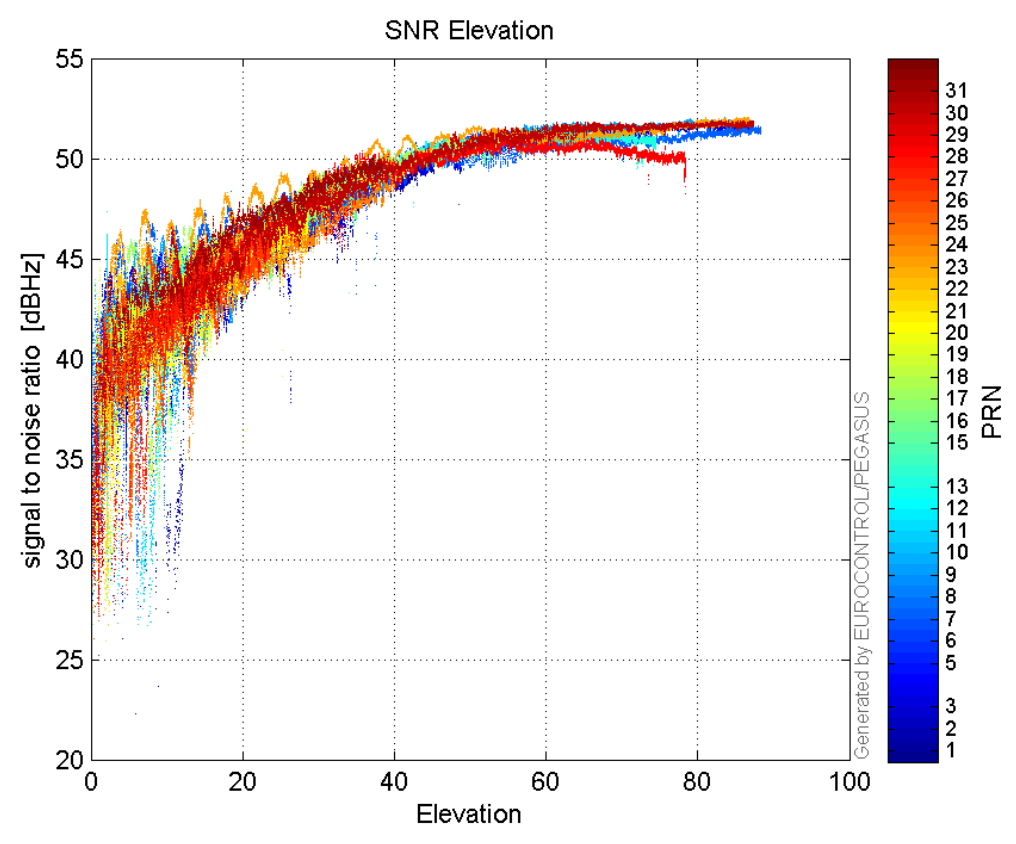
L2 CNo:



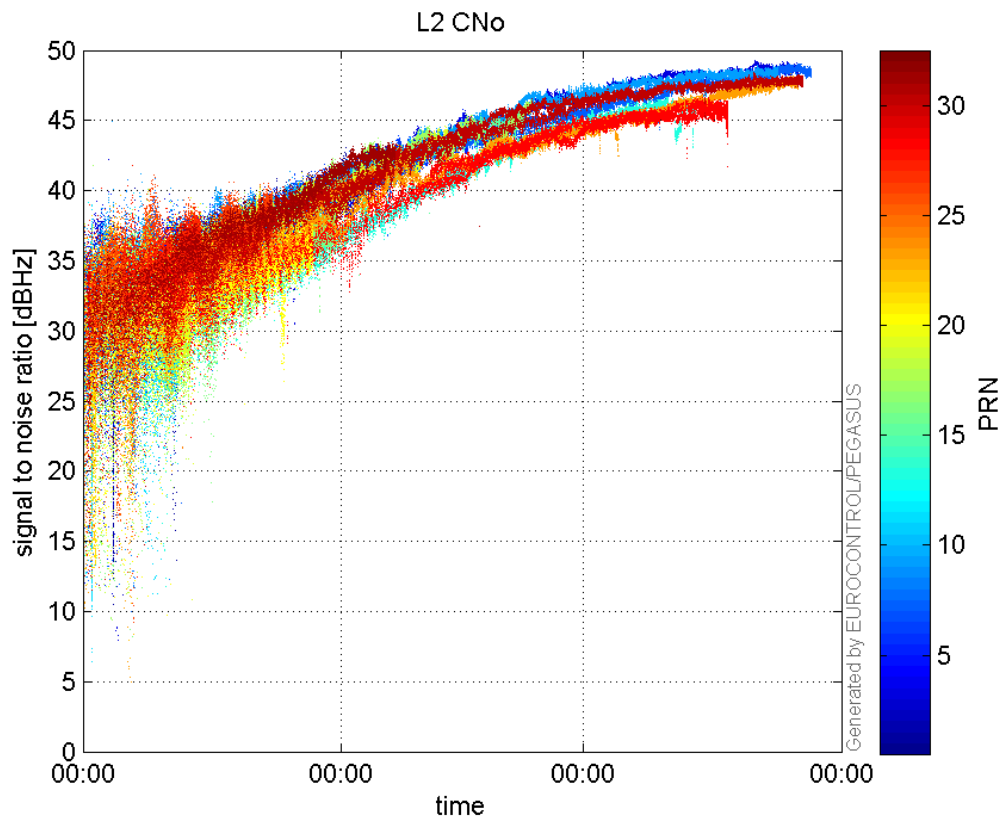
GEO CNo:



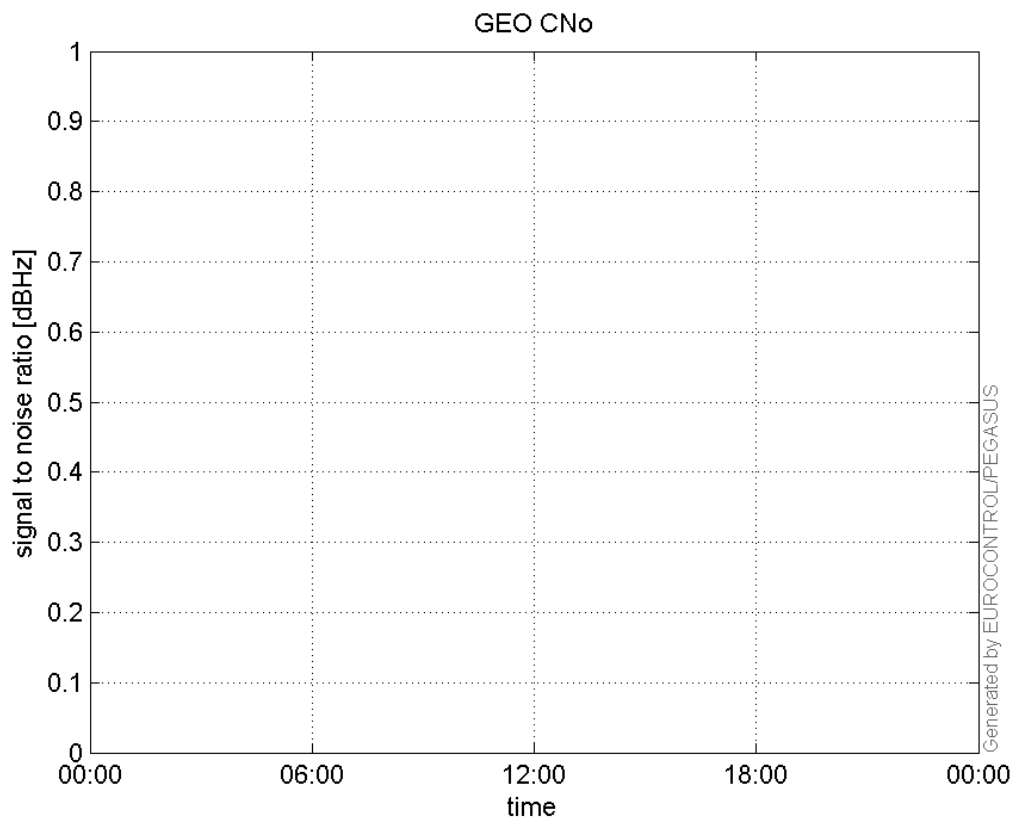
SNR Elevation:



L2 CNo:

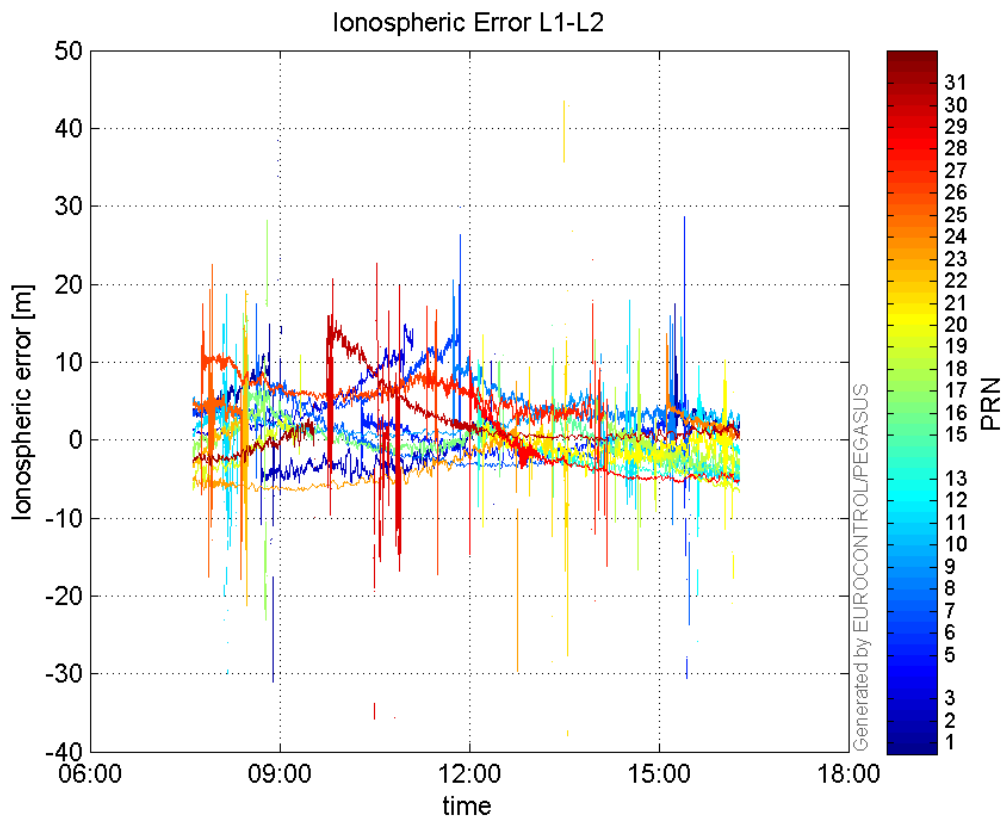


GEO CNo:



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:/PEGASUS_DAT_job/JOB/2016_02_15EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PEGASUS_DAT_job/JOB/2016_02_15EGNOS/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	229.8255
mi_numbers	results	0