

Global View

program Pegasus
 version 4.8.4
 site Laboratory satellite systems
 abbreviation NAU
 country Ukraine
 city Kiev
 comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,
 P.50 - 54
 date 27/09/2016

SBAS Messages

start: 05:56:13.129 30.08.2016 (week: 1912 sec: 194173.129)
end: 11:38:53.129 30.08.2016 (week: 1912 sec: 214733.129)
duration: 05:42:40 ..

quality

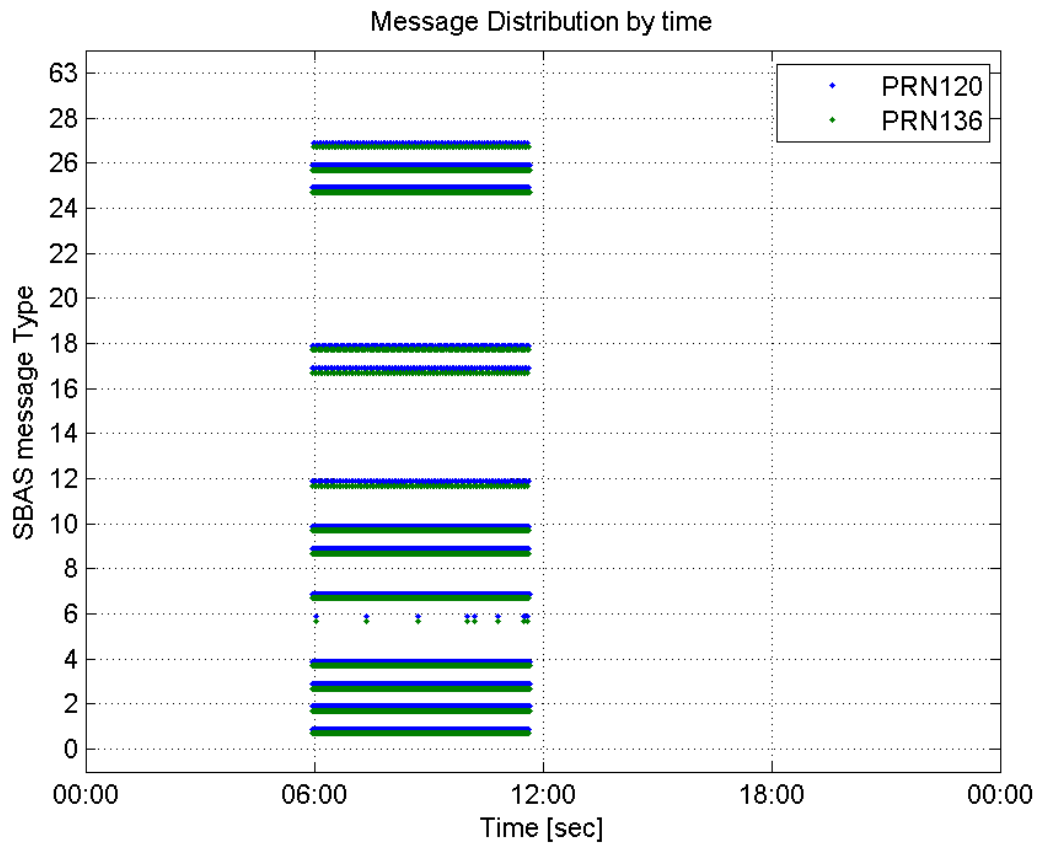
valid samples 41121
total samples 41121
number of SBAS PRNs 2

SBAS SIS Overview

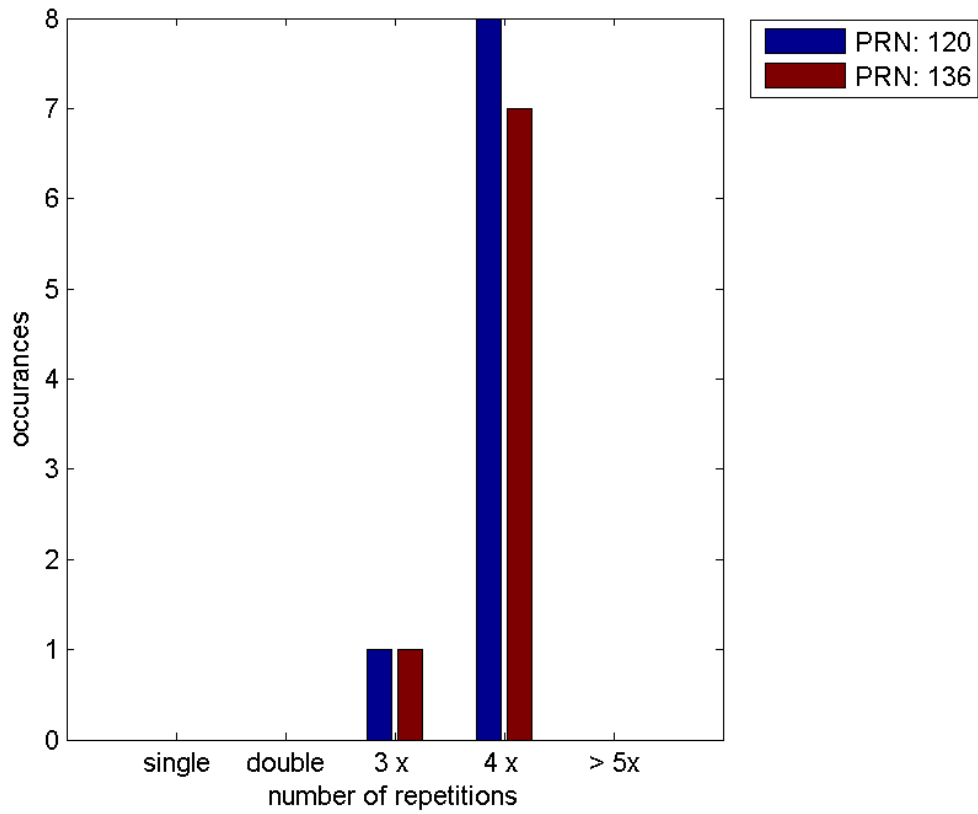
Message Type 6 repetitions :

	single	double	3 x	4 x	> 5x
PRN 120	0	0	1	8	0
PRN 136	0	0	1	7	0

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

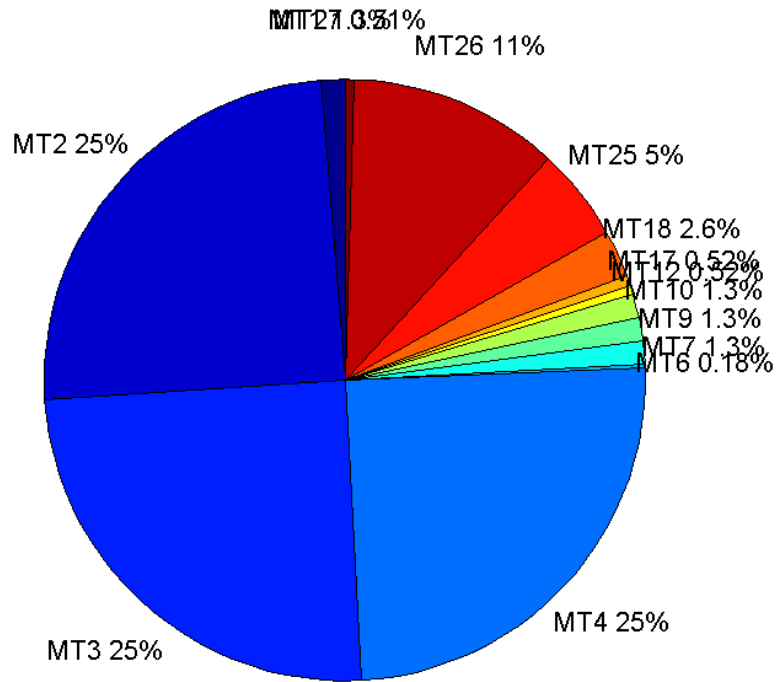
	number of messages	%
MT 0	0	0
MT 1	258	1.25486
MT 2	5100	24.8054
MT 3	5098	24.7957
MT 4	5099	24.8006
MT 5	0	0
MT 6	36	0.175097
MT 7	259	1.25973
MT 9	258	1.25486
MT 10	258	1.25486
MT 12	106	0.515564
MT 17	106	0.515564
MT 18	526	2.55837
MT 24	0	0
MT 25	1029	5.00486
MT 26	2322	11.2938
MT 27	105	0.5107
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	20560	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	85	79.607	0	0	0
MT 2	4	8	4.03216	9	0	0
MT 3	4	8	4.03296	10	0	0
MT 4	4	8	4.03237	9	0	0
MT 5	--	--	--	--	--	--
MT 6	1	4899	570.743	8	8	8
MT 7	75	81	79.6085	0	0	0
MT 9	76	81	79.5992	0	0	0
MT 10	76	85	79.5914	0	0	0
MT 12	186	201	194.886	105	0	0
MT 17	184	201	194.867	0	0	0
MT 18	4	163	38.9733	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	52	19.9796	0	0	0
MT	3	33	8.85437	0	0	0

26						
MT 27	187	202	194.923	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

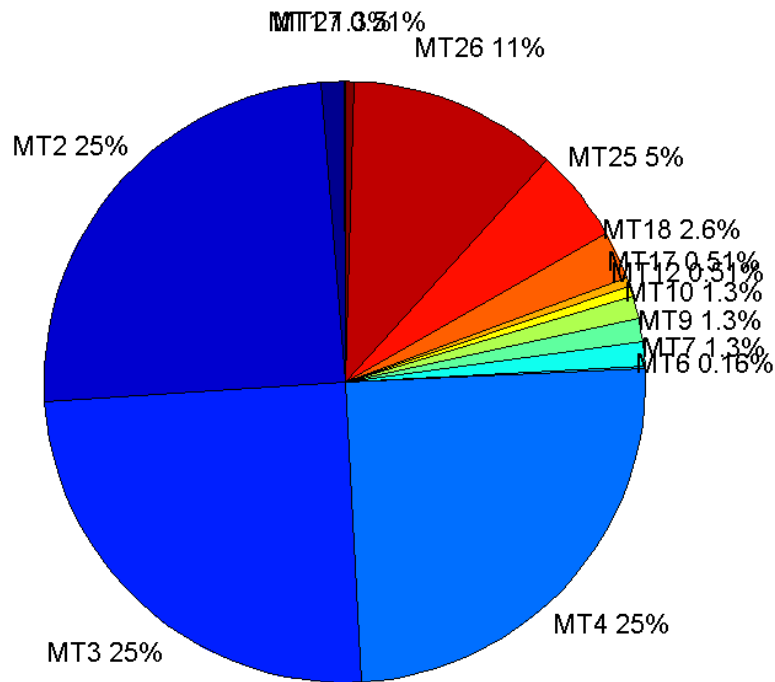
	number of messages	%
MT 0	0	0
MT 1	258	1.2548
MT 2	5103	24.8188
MT 3	5103	24.8188
MT 4	5103	24.8188
MT 5	0	0
MT 6	32	0.155634
MT 7	258	1.2548
MT 9	258	1.2548
MT 10	258	1.2548

MT 12	105	0.510676
MT 17	105	0.510676
MT 18	529	2.57283
MT 24	0	0
MT 25	1031	5.01435
MT 26	2313	11.2495
MT 27	105	0.510676
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	20561	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	72	83	79.6109	0	0	0
MT 2	4	9	4.0292	8	0	0
MT 3	4	8	4.0292	8	0	0
MT 4	4	8	4.0294	8	0	0
MT 5	--	--	--	--	--	--
MT 6	1	4899	645.194	7	7	7
MT 7	76	84	79.5953	0	0	0
MT 9	72	81	79.6109	0	0	0
MT 10	76	81	79.5798	0	0	0
MT 12	188	201	195.375	104	0	0
MT 17	188	201	195.308	0	0	0
MT 18	4	161	38.9015	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	48	19.9534	0	0	0
MT 26	1	36	8.88927	0	0	0
MT 27	185	201	195.423	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:/PegasusDateJob/job/2016_08_30_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_08_30_EGNOS/02_Convertor/02_Convertor

Configuration

Name	Section	Value
Receiver	Configuration	Novatel OEM4
Leap_Seconds	Configuration	17
Correction_mode	Configuration	SBAS MODE 0/2
Dual_Frequency	Configuration	no

Position Domain

start: 05:56:13 30.08.2016 (week: 1912 sec: 194173)
end: 11:38:54 30.08.2016 (week: 1912 sec: 214734)
duration: 05:42:42 ..

quality

valid samples 20201
total samples 20562

Event tables

Position discontinuity events type all
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	194868	1.83734	9.47144	0.193988	0.642989	16.2124	0.0396603
max normVer	198140	1.10526	11.4527	0.0965065	-1.33685	13.4678	0.0992628
max HPE	211313	2.5953	19.0742	0.136063	1.16938	24.6919	0.0473589
max VPE	210959	1.05981	24.6285	0.0430318	2.44031	39.6453	0.0615535
min HPL	213398	1.10084	8.60952	0.127863	1.15693	17.7598	0.0651435
min VPL	198182	0.757966	11.1536	0.0679571	-0.893197	13.1089	0.0681367

Position discontinuity events :

#	Epoch	duration	stable period
1	204938	264	10404

APV-I discontinuity events :

#	Epoch	duration	stable period
1	199238	1	4704
2	199242	1	3
3	199246	1	3
4	199250	1	3
5	199253	2	2
6	199257	2	2
7	199261	2	2
8	199265	2	2
9	199268	3	1
10	199272	3	1
11	199276	3	1
12	199280	3	1
13	199284	323	1
14	199749	252	142
15	200015	169	14
16	204814	388	4630

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	198465	306	3931
2	198866	741	1
3	199749	252	142
4	200015	169	14
5	204814	397	4630

6	210912	348	5701
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LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	198465	306	3931
2	198866	741	1
3	199749	252	142
4	200015	169	14
5	204814	397	4630
6	210912	348	5701

First Glance analysis

Duration	20562
Number of Samples	20562
Number of invalid sample	361
Number of no position solution samples	264
Number of missing sample	0
Logging Loss	0
Processing Loss	1.7557
Number of Misleading Information	0
Data gaps	0
Discontinuities	1

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
19937	19045	17932	0	17932

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.82985	1.83253	1.82026	NaN	1.82026
HPEscale 95%	NaN	6.07473	6.0999	NaN	6.0999
VPE 95%	1.34422	1.33761	1.33421	NaN	1.33421
VPEscale 95%	NaN	3.34503	2.35652	NaN	2.35652

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.986931	0.942775	0.887679	0	0.887679
measurements	0.969604	0.926223	0.872094	0	0.872094
Operational	0.969604	0.926223	0.872094	0	0.872094

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	1	16	31	--	31
Long	1	4	6	--	6
Independent	1	2	4	--	4
P(disc.)	0.00075237	0.00157522	0.00334597	NaN	0.00334597
P(slide)	0.00075237	0.00425308	0.00652465	NaN	0.00652465

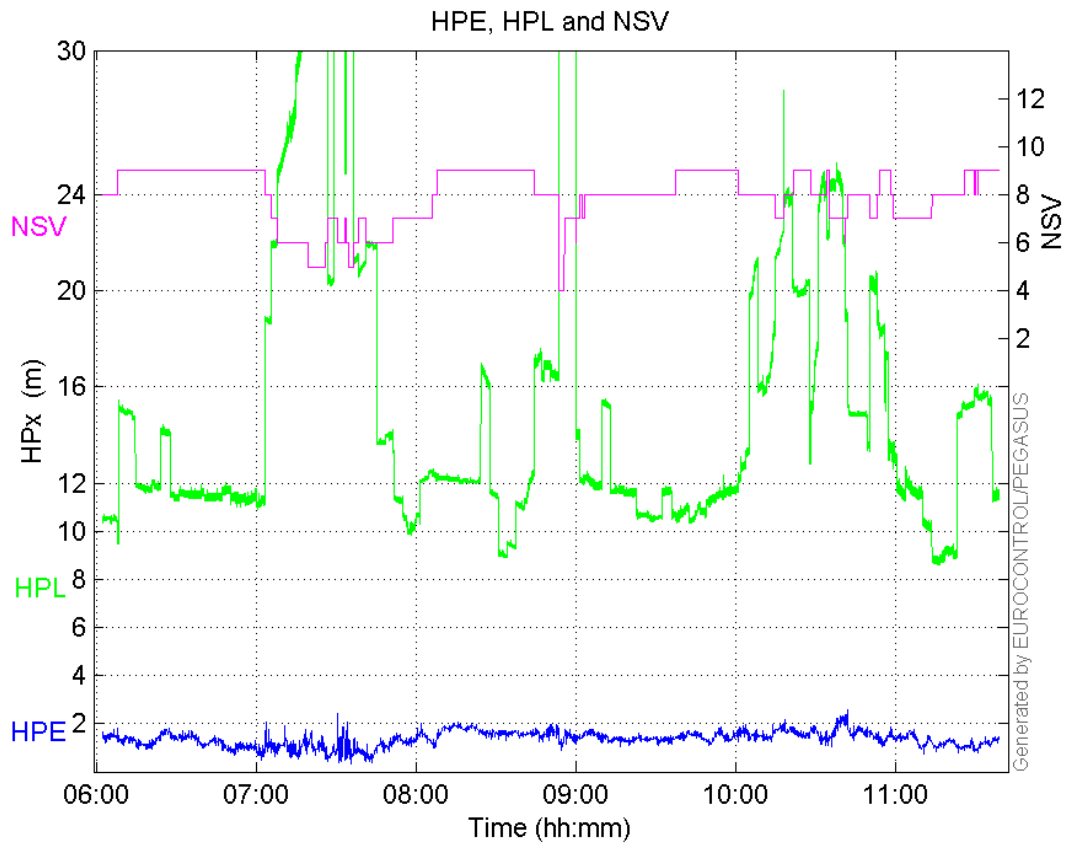
Integrity events :

	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

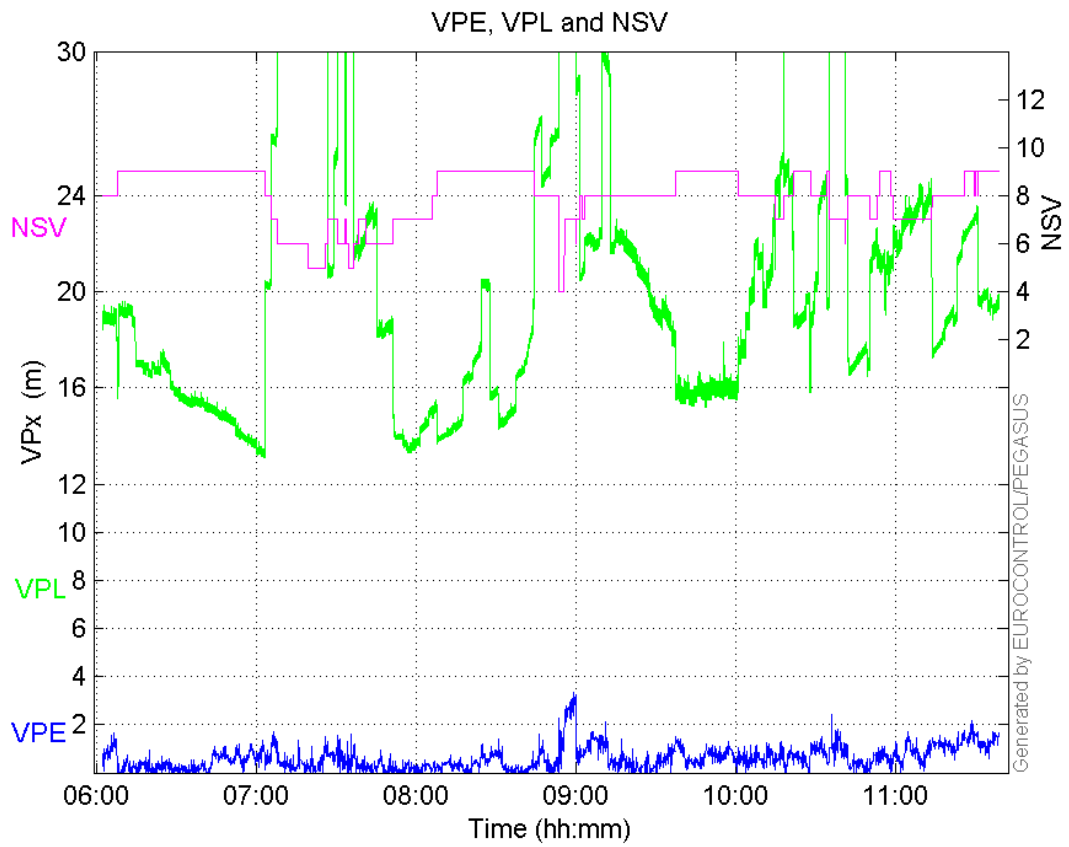
Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	19937	19045	17932	0	17932
SIS Availability	0.986931	0.942775	0.887679	0	0.887679
Local Availability	0.969604	0.926223	0.872094	0	0.872094
Operational Availability	0.969604	0.926223	0.872094	0	0.872094
HPE 95%	1.82985	1.83253	1.82026	NaN	1.82026
HPEScale 95%	NaN	6.07473	6.0999	NaN	6.0999
VPE 95%	1.34422	1.33761	1.33421	NaN	1.33421
VPEscale 95%	NaN	3.34503	2.35652	NaN	2.35652
All Discontinuity Events	1	16	31	--	31
Long Discontinuity Events	1	4	6	--	6
Independent Discontinuity Events	1	2	4	--	4
P(discontinuity)	0.00075237	0.00157522	0.00334597	NaN	0.00334597
P(sliding window)	0.00075237	0.00425308	0.00652465	NaN	0.00652465
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:**

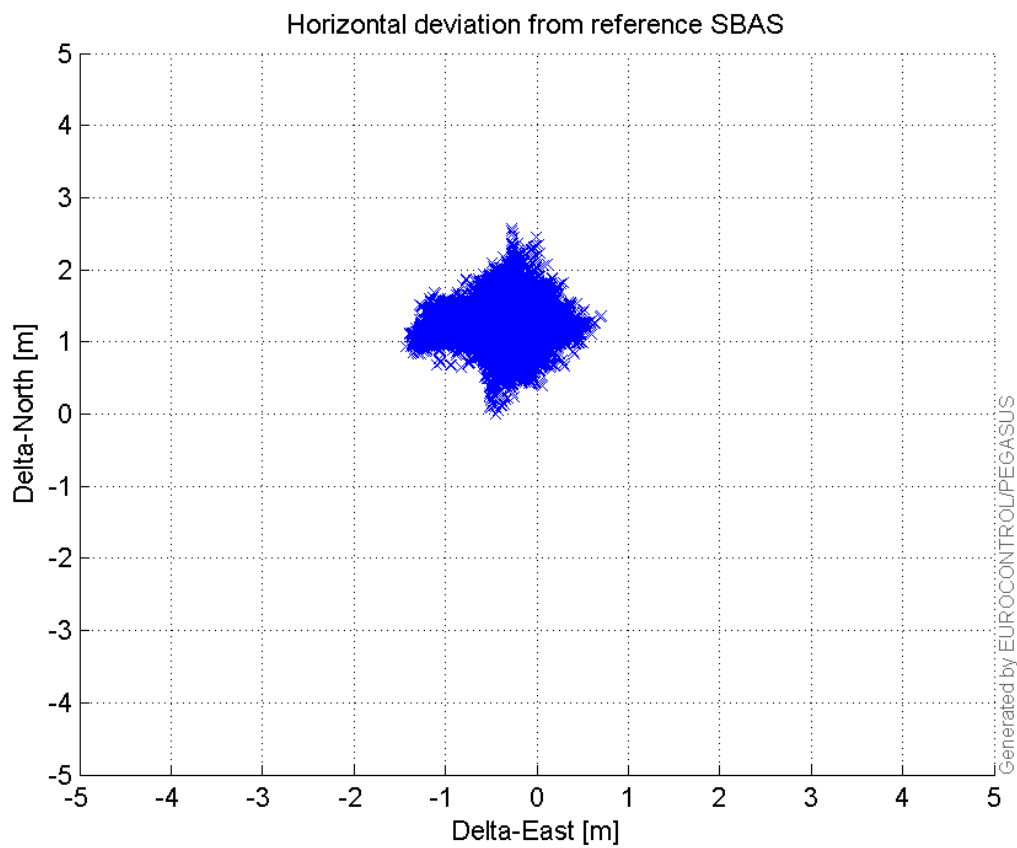


VPE, VPL and NSV:



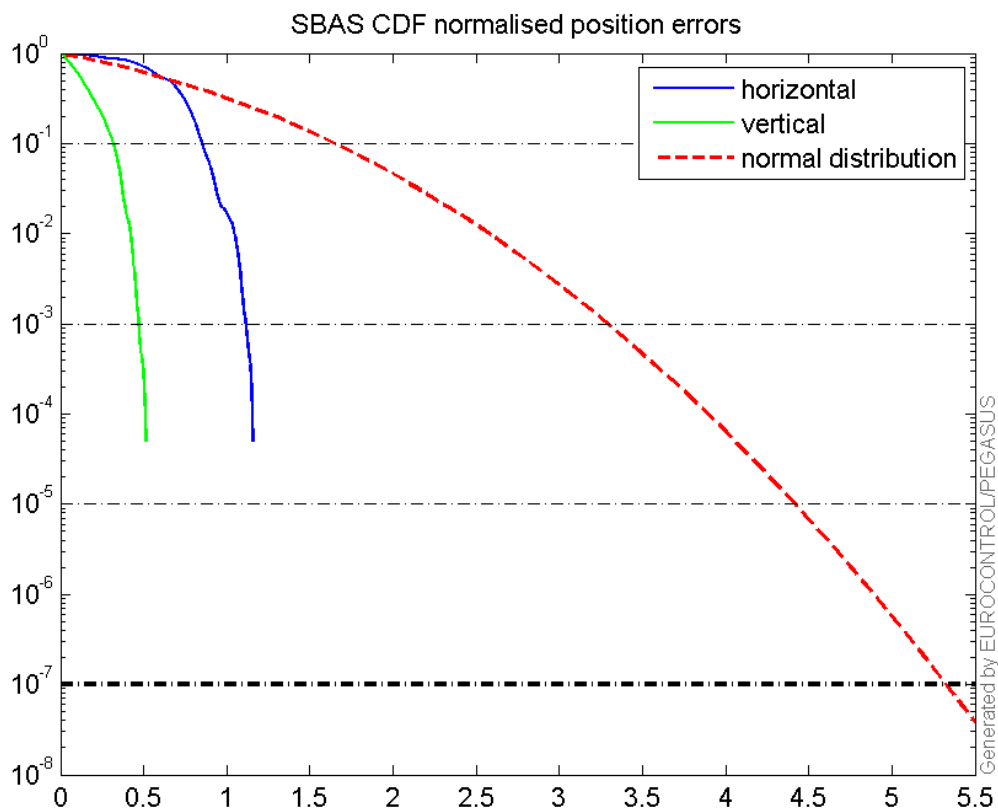
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

number	19045
sum	26345.222
sum2	38027.714
prctile95	1.8325284
prctile99	2.0132606
number	19045
sum	10994.125
sum2	9385.333
prctile95	1.3376107
prctile99	1.5665246
number	19045
sum	274957.24
sum2	4421415.9
prctile95	24.55755
prctile99	30.987785
number	19045
sum	382514.14
sum2	8400033.6
prctile95	36.861075
prctile99	42.685875
number	19045
sum	1993.0109
sum2	229.55231
prctile95	0.15186827
prctile99	0.17475949
number	19045
sum	561.32116
sum2	24.217798
prctile95	0.066900543
prctile99	0.07897746
number	17932
sum	24867.365
sum2	35865.405
prctile95	1.8202592
prctile99	1.920306
number	17932
sum	10339.441
sum2	8810.1182
prctile95	1.3342066
prctile99	1.562083
number	17932
sum	244725.62
sum2	3587835
prctile95	21.80435
prctile99	24.124818
number	17932
sum	338285.17
sum2	6628180
prctile95	25.19851
prctile99	29.343354

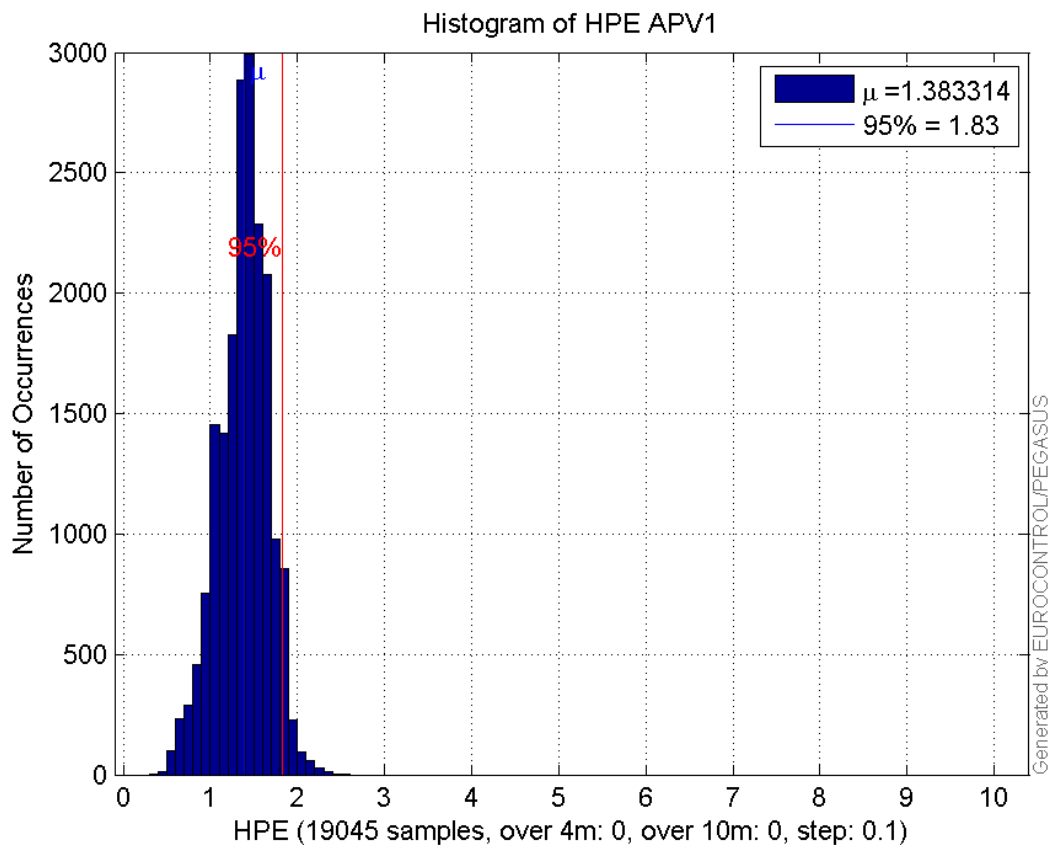
```

number 17932
sum 1936.7223
sum2 226.23771
prctile95 0.15249743
prctile99 0.17546021
number 17932
sum 544.9335
sum2 23.865691
prctile95 0.067329032
prctile99 0.079239387
    
```

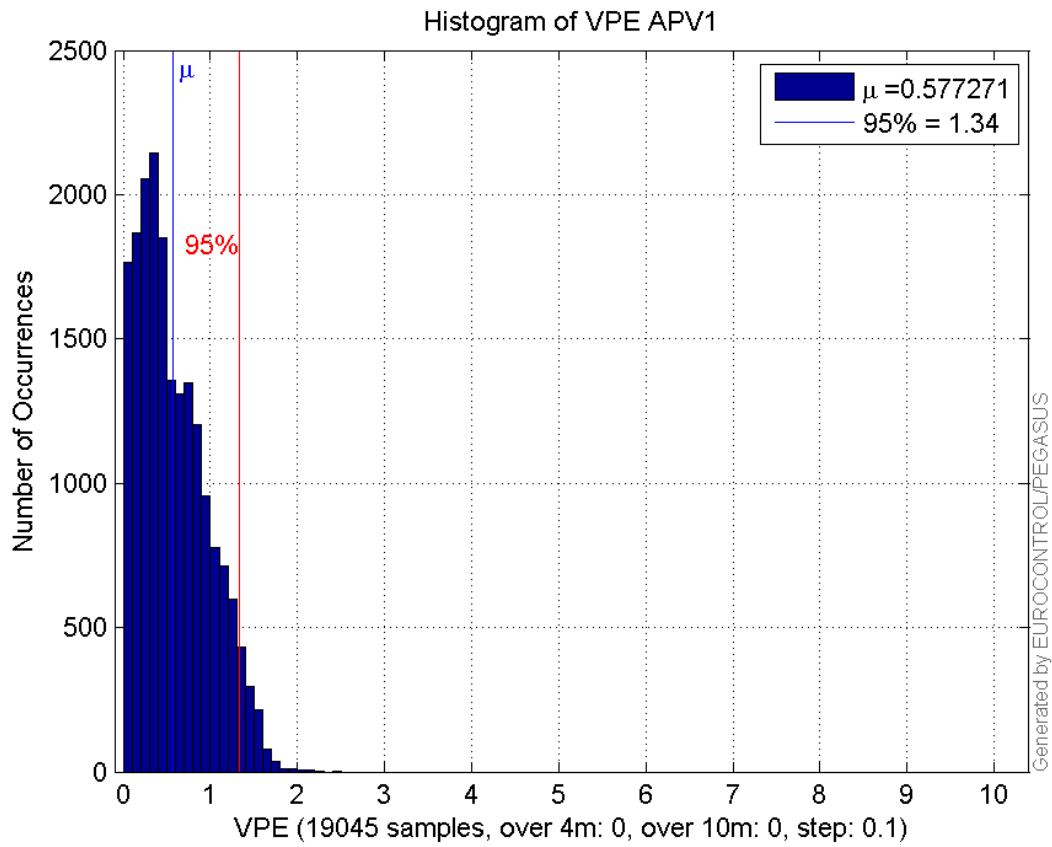
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.38331	0.288401	1.40287	1.83253	2.01326	1.41306
HPL	14.4372	4.87069	12.0791	24.5575	30.9878	15.2367
VPE	0.577271	0.399455	0.49112	1.33761	1.56652	0.701996
VPL	20.0848	6.13735	18.9146	36.8611	42.6859	21.0015

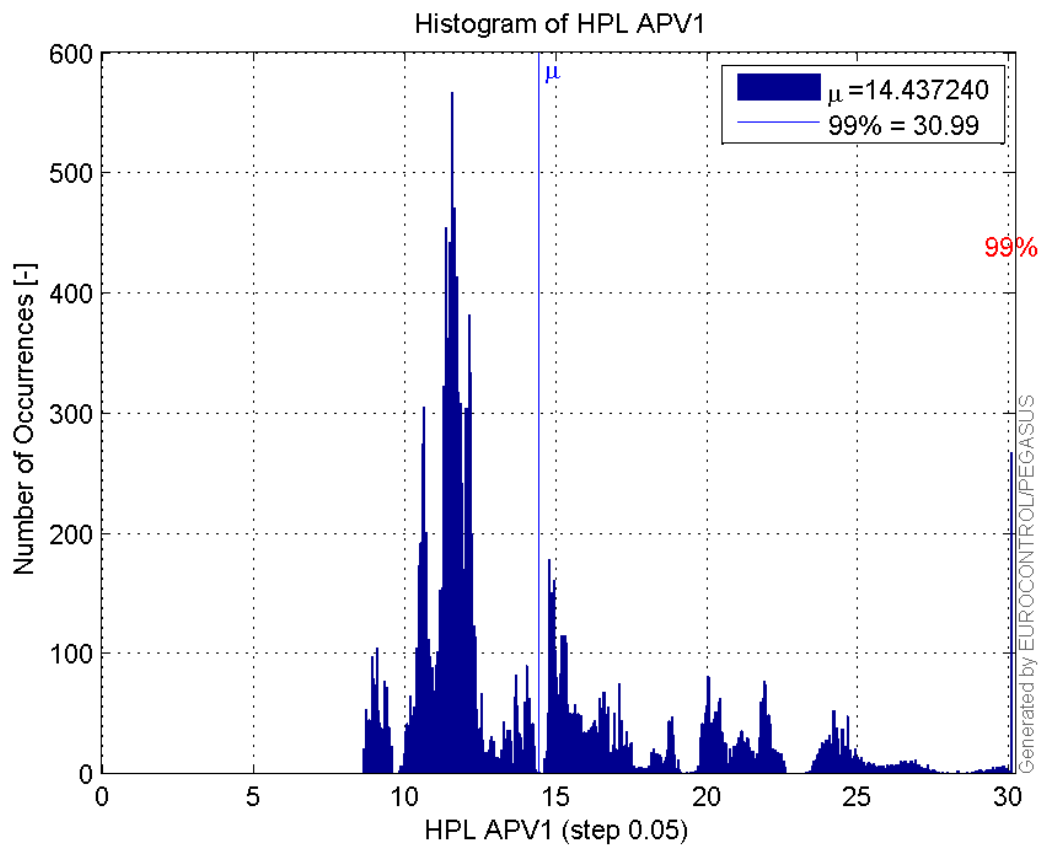
Histogram of HPE APV1:



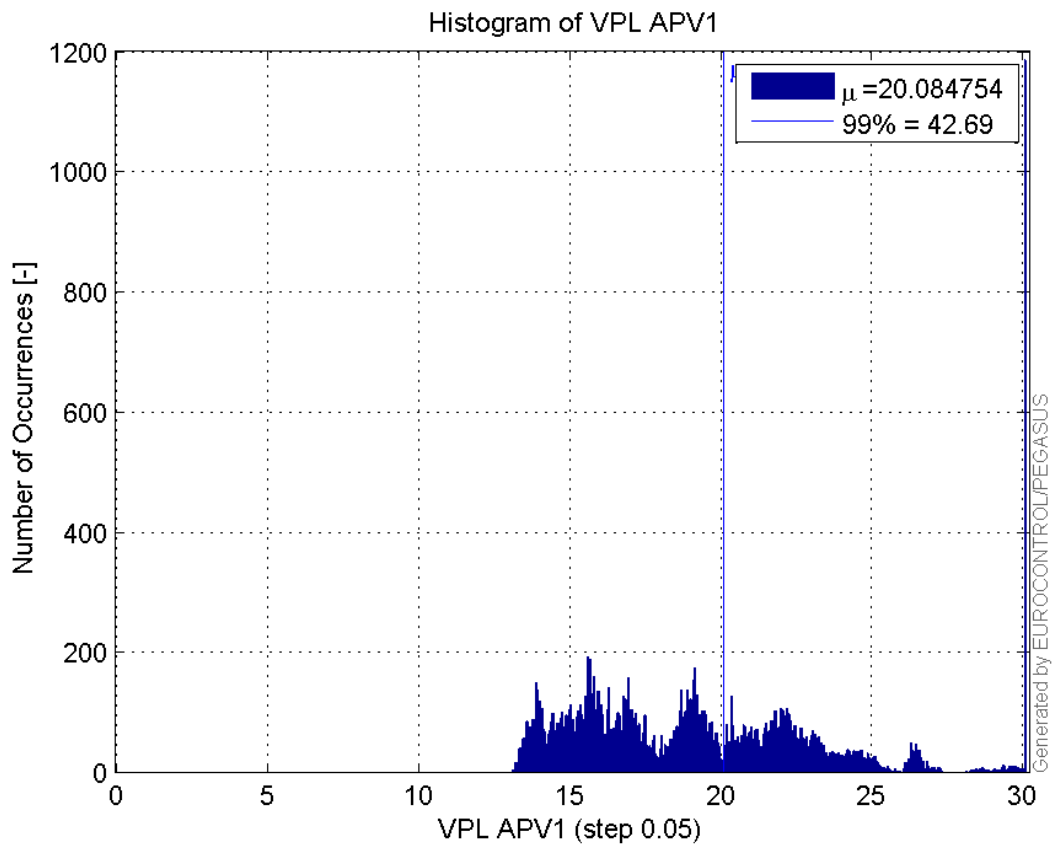
Histogram of VPE APV1:



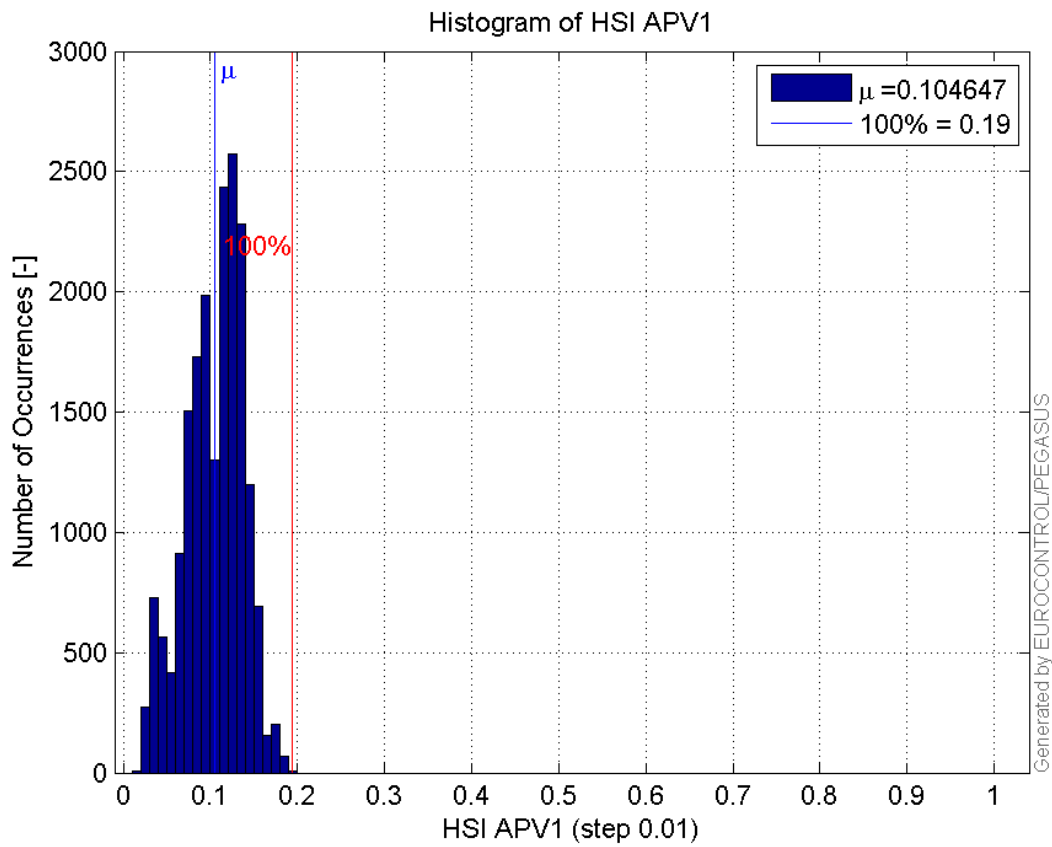
Histogram of HPL APV1:



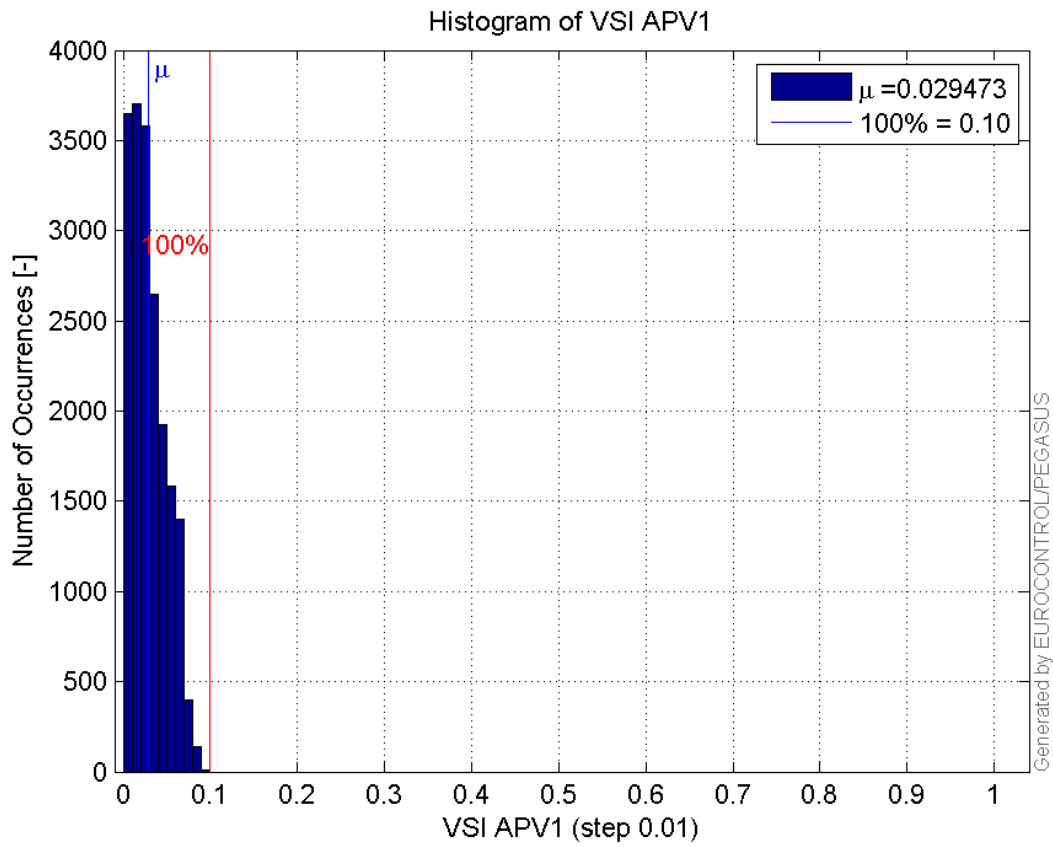
Histogram of VPL APV1:



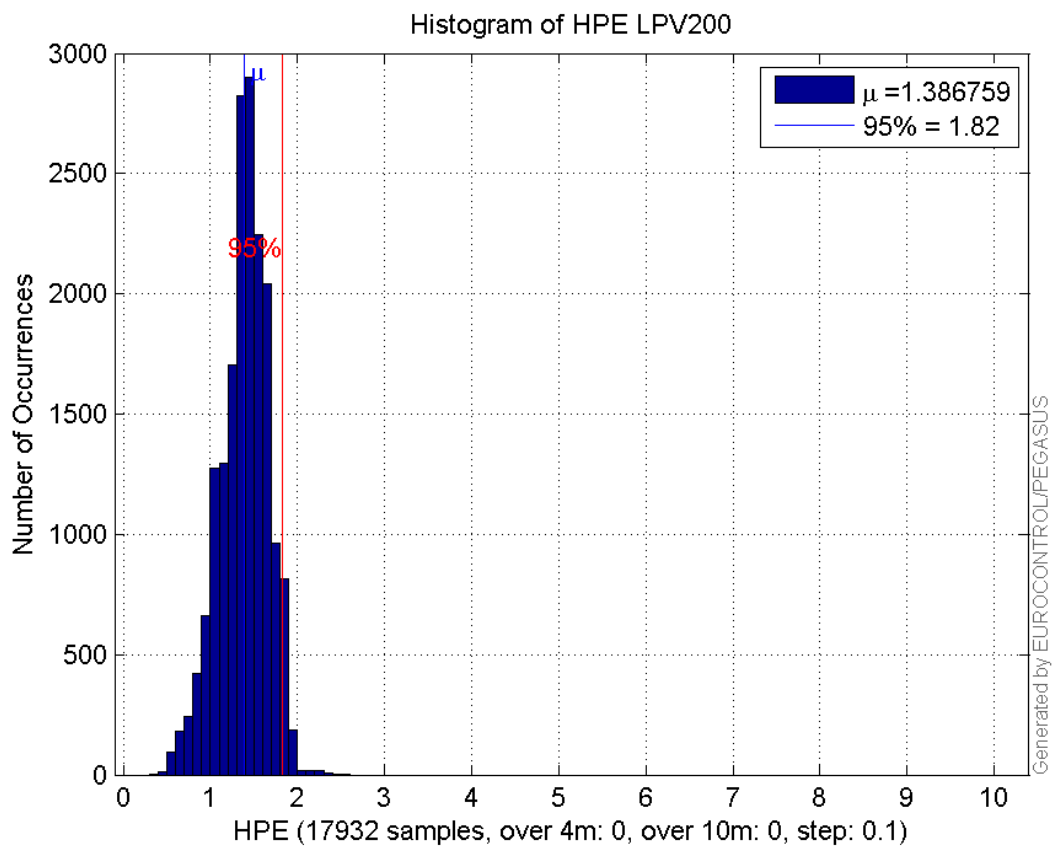
Histogram of HSI APV1:



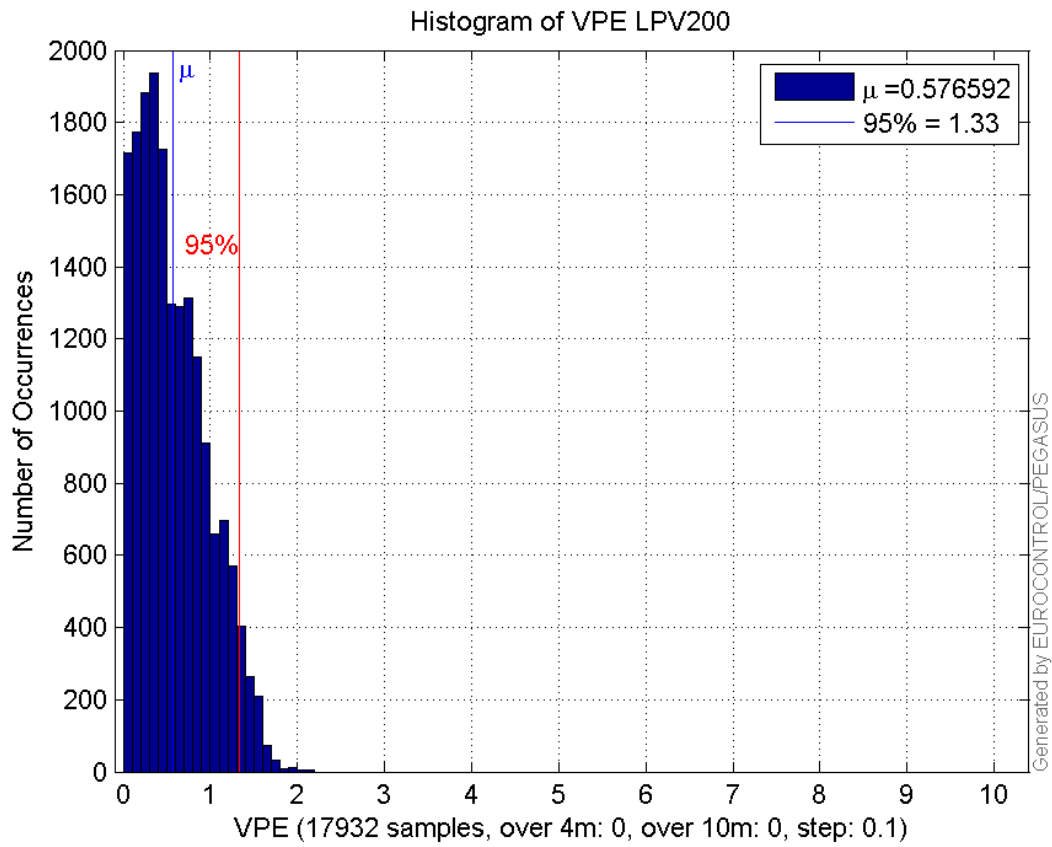
Histogram of VSI APV1:



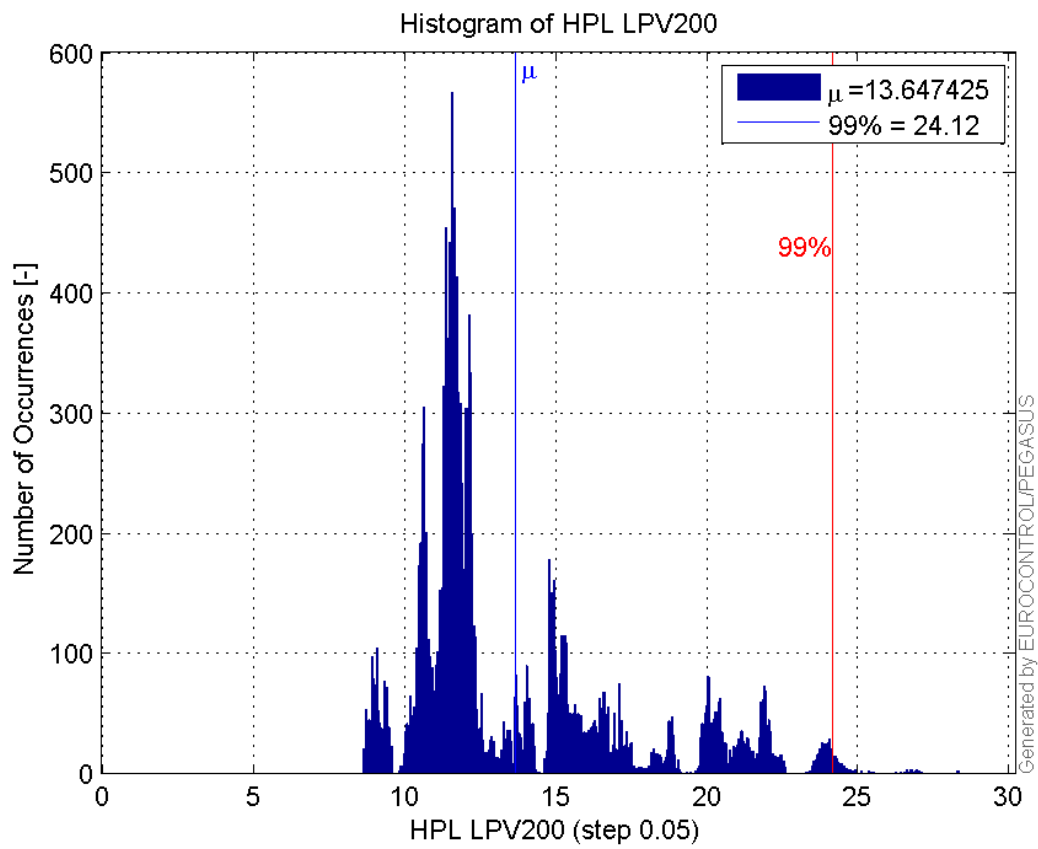
Histogram of HPE LPV200:



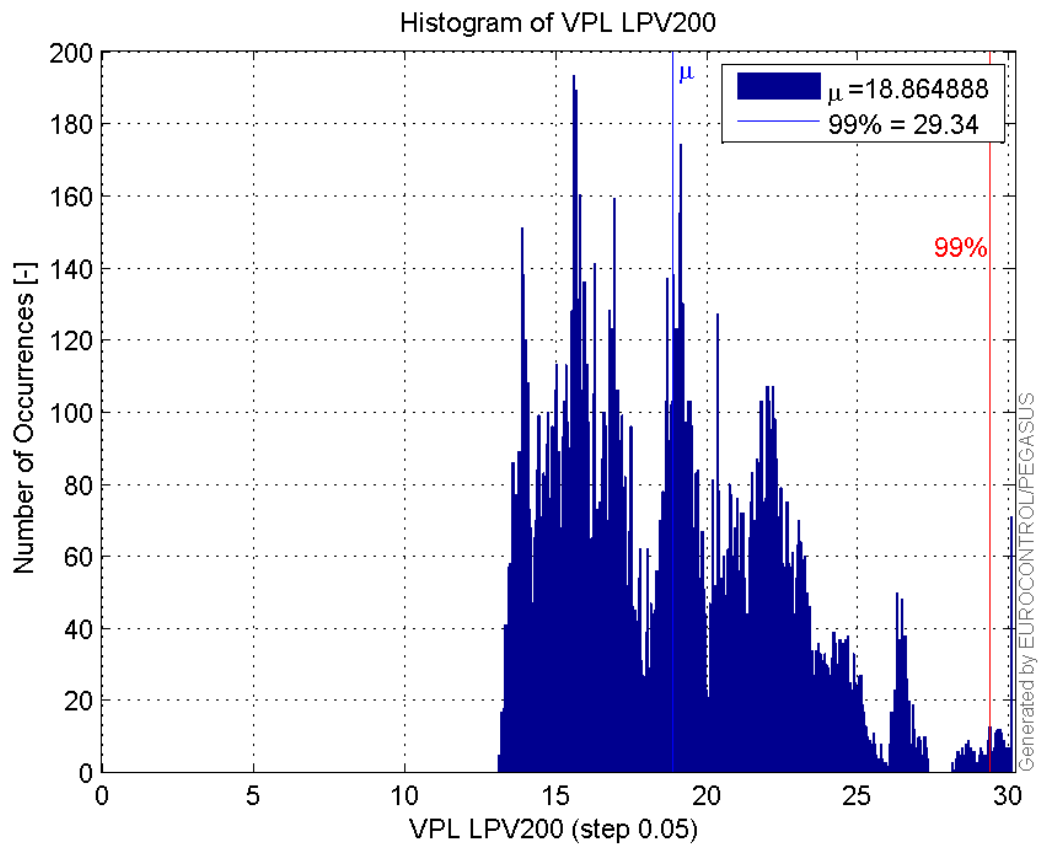
Histogram of VPE LPV200:



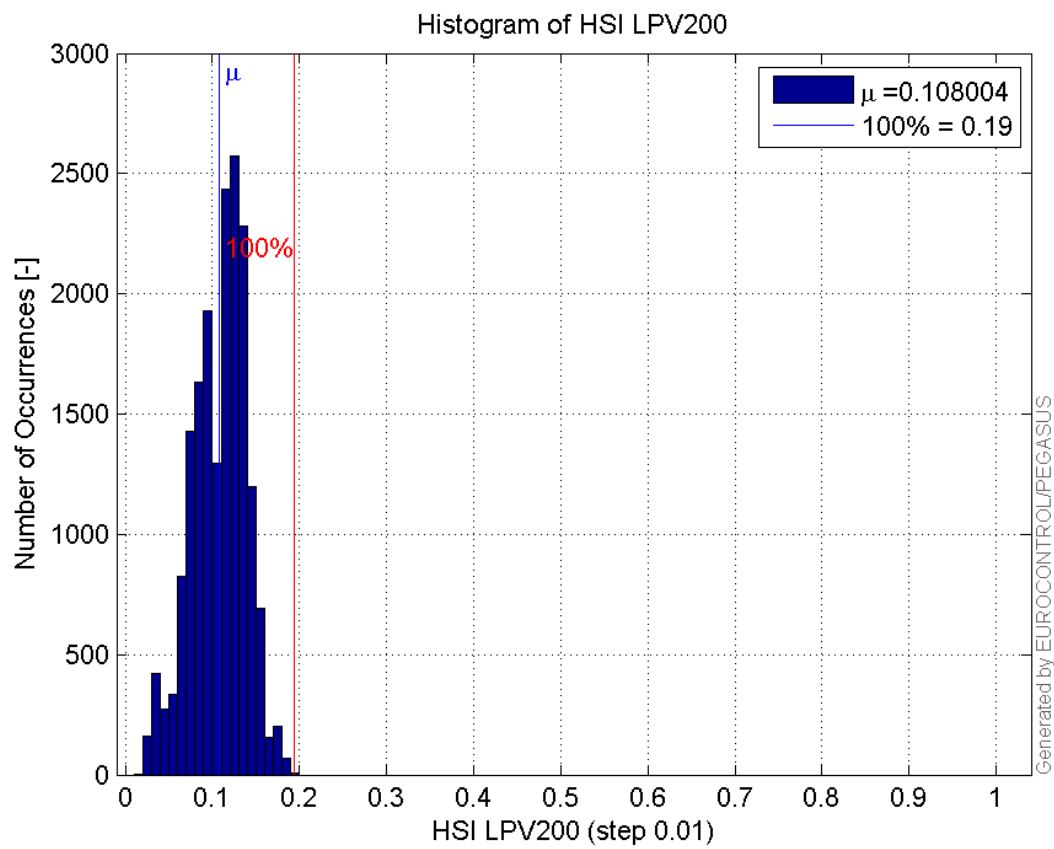
Histogram of HPL LPV200:



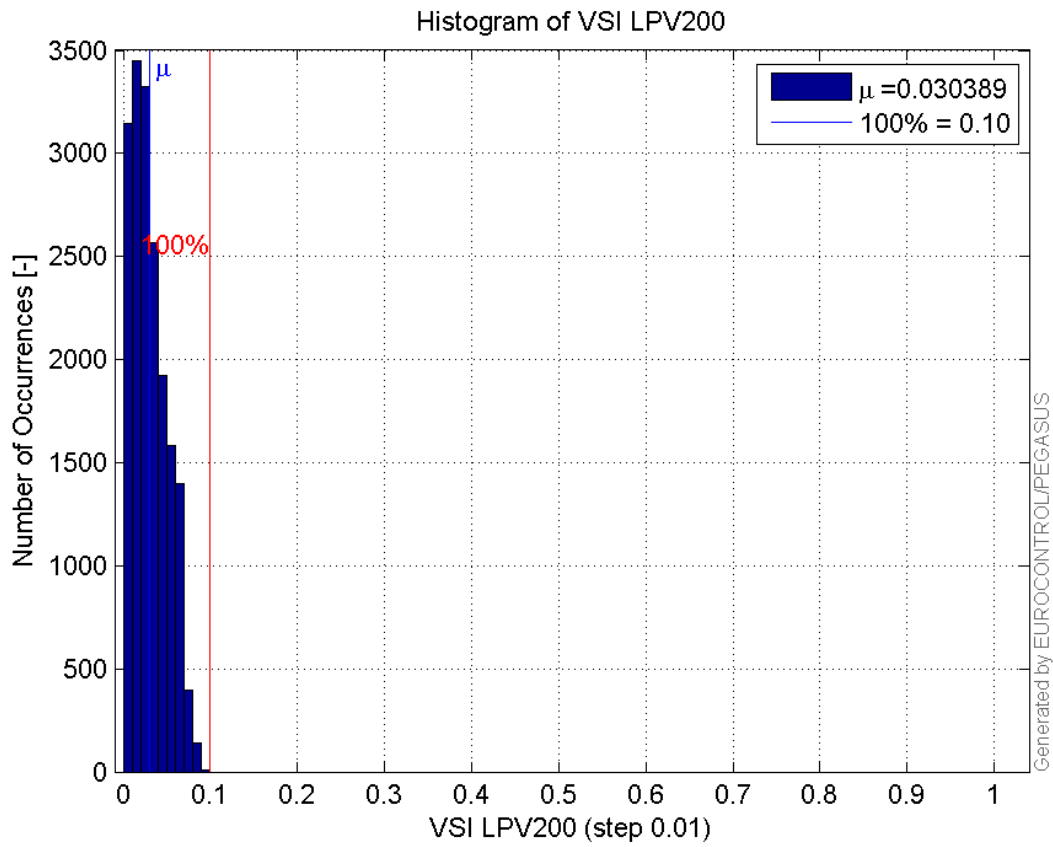
Histogram of VPL LPV200:



Histogram of HSI LPV200:

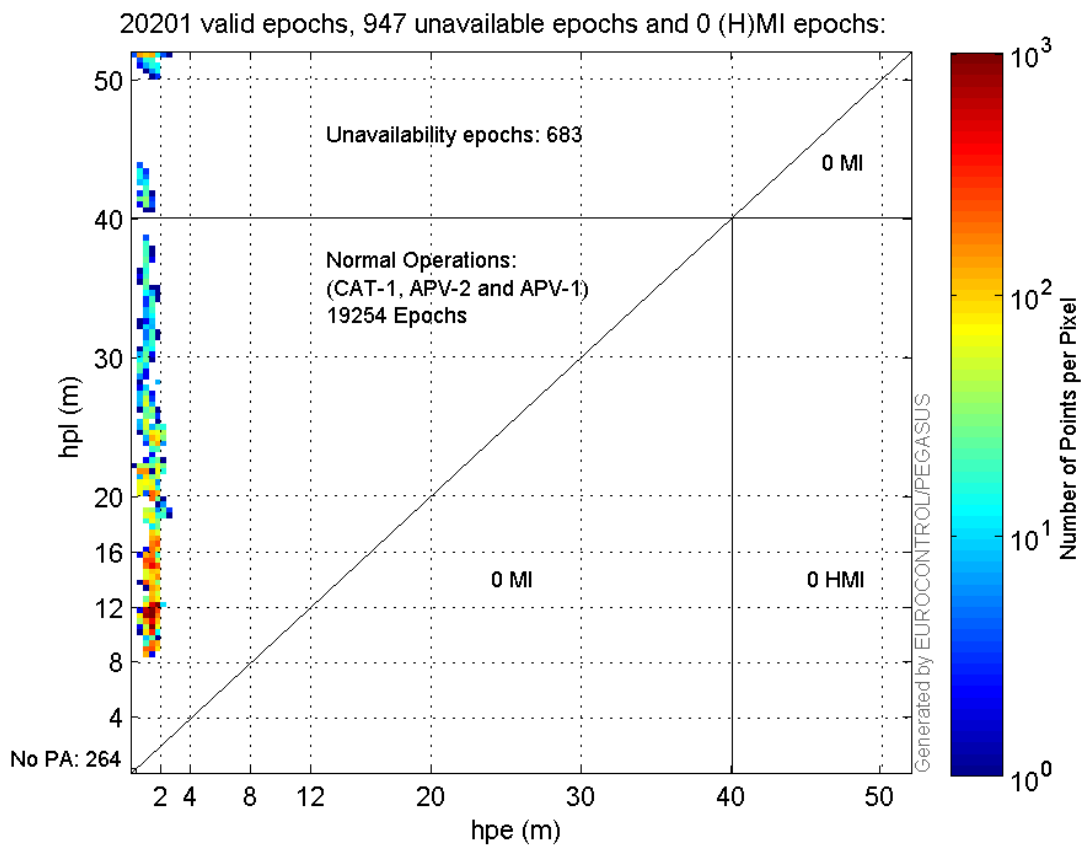


Histogram of VSI LPV200:

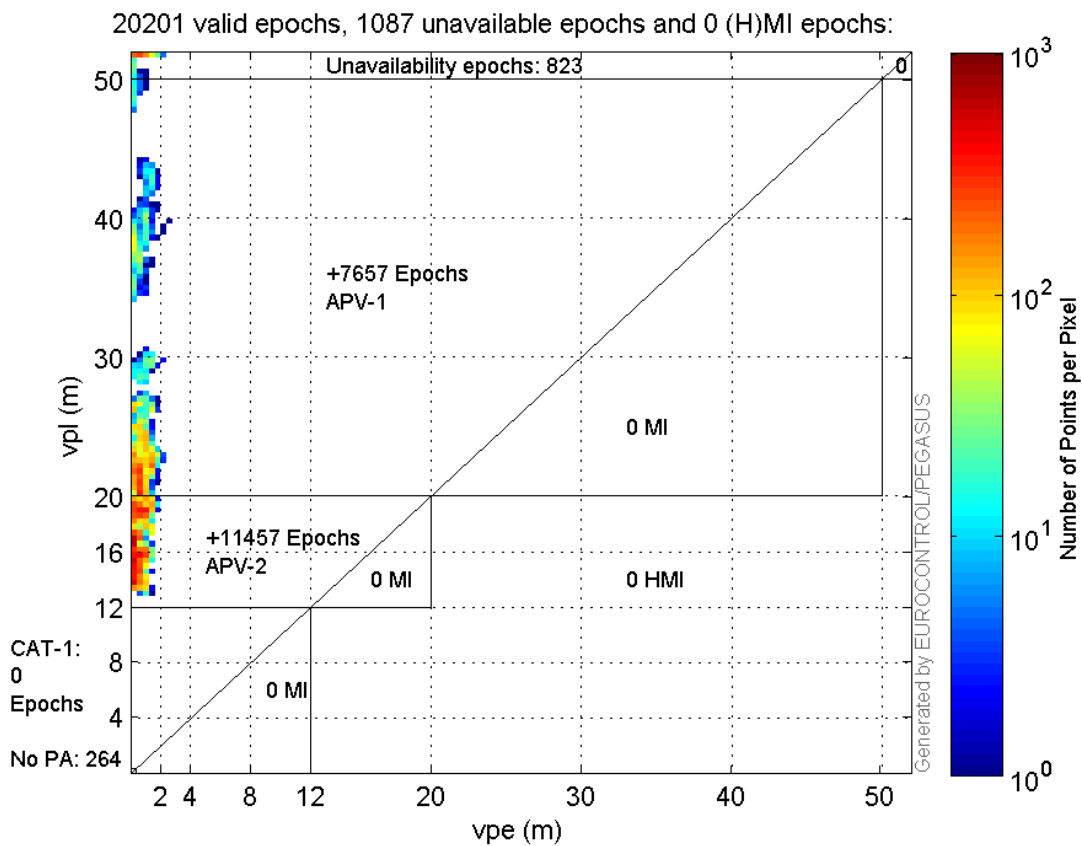


Stanford Plots

Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateJob/job/2016_08_30_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_08_30_EGNOS/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	30.4296
init_alt	results	246.9059
mi_numbers	results	0

Range Domain

start: 05:56:13 30.08.2016 (week: 1912 sec: 194173)
end: 11:38:54 30.08.2016 (week: 1912 sec: 214734)
duration: 05:42:42 ..

quality

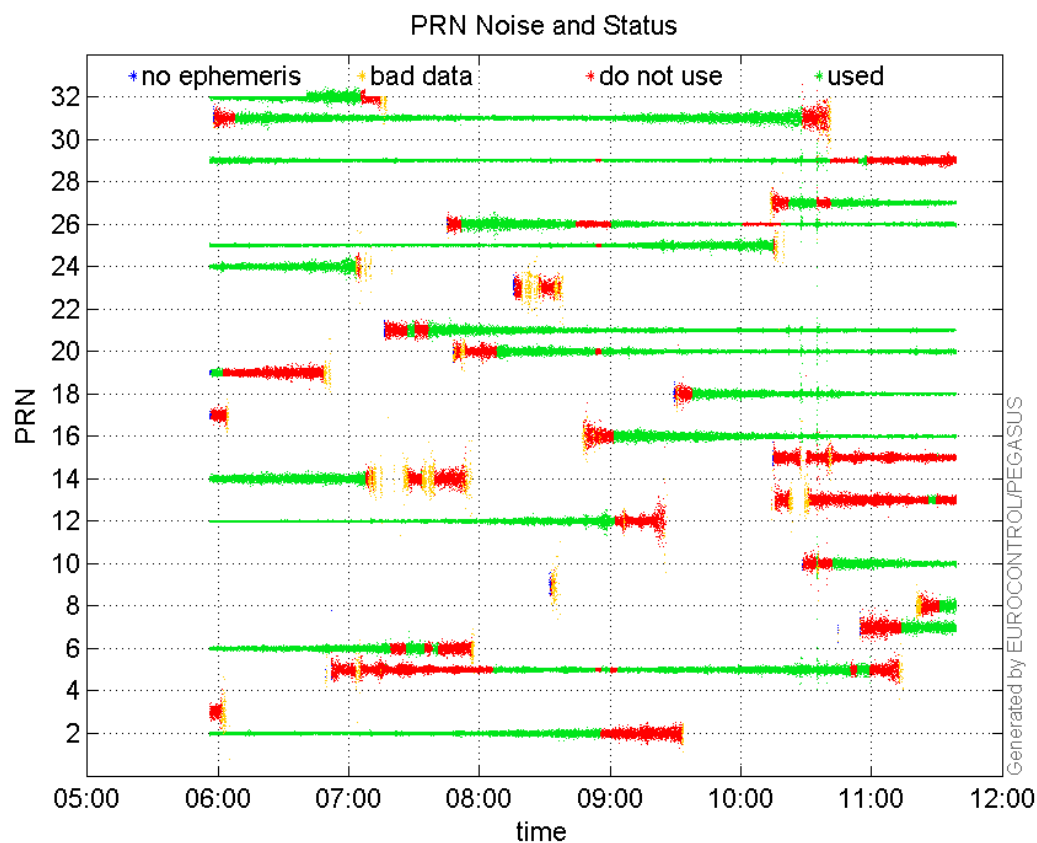
valid samples 20562
total samples 20562

PRN overview

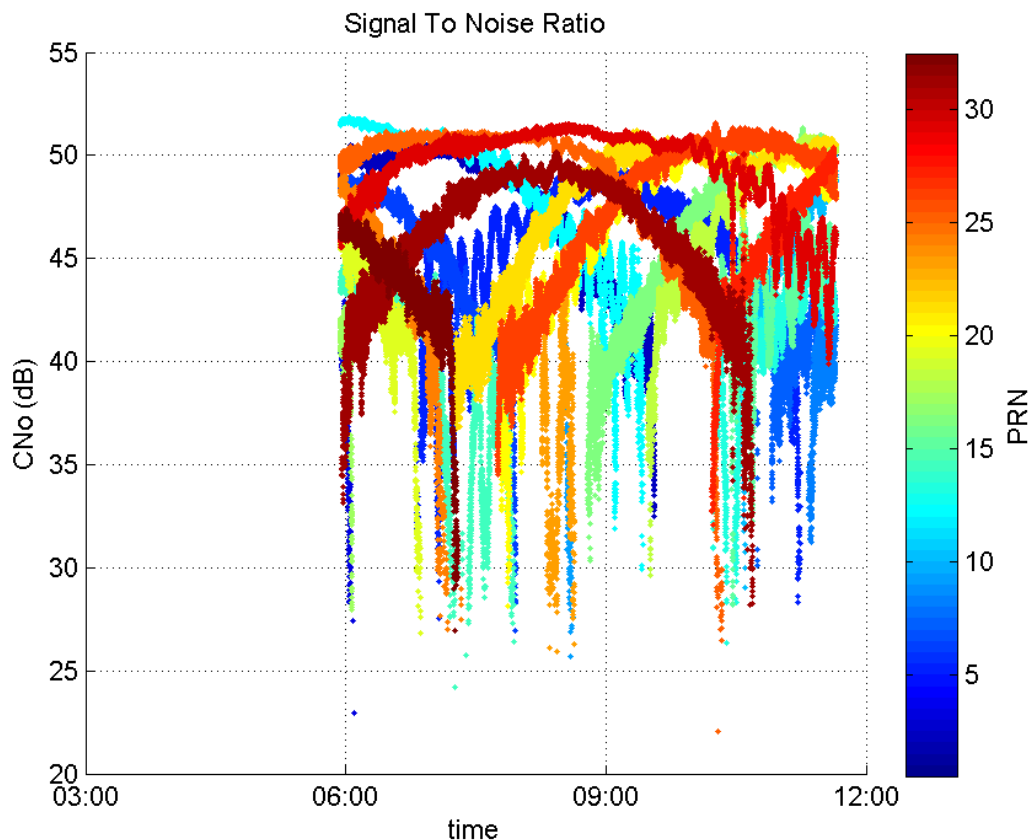
Number of Visible GPS Satellites 26
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:

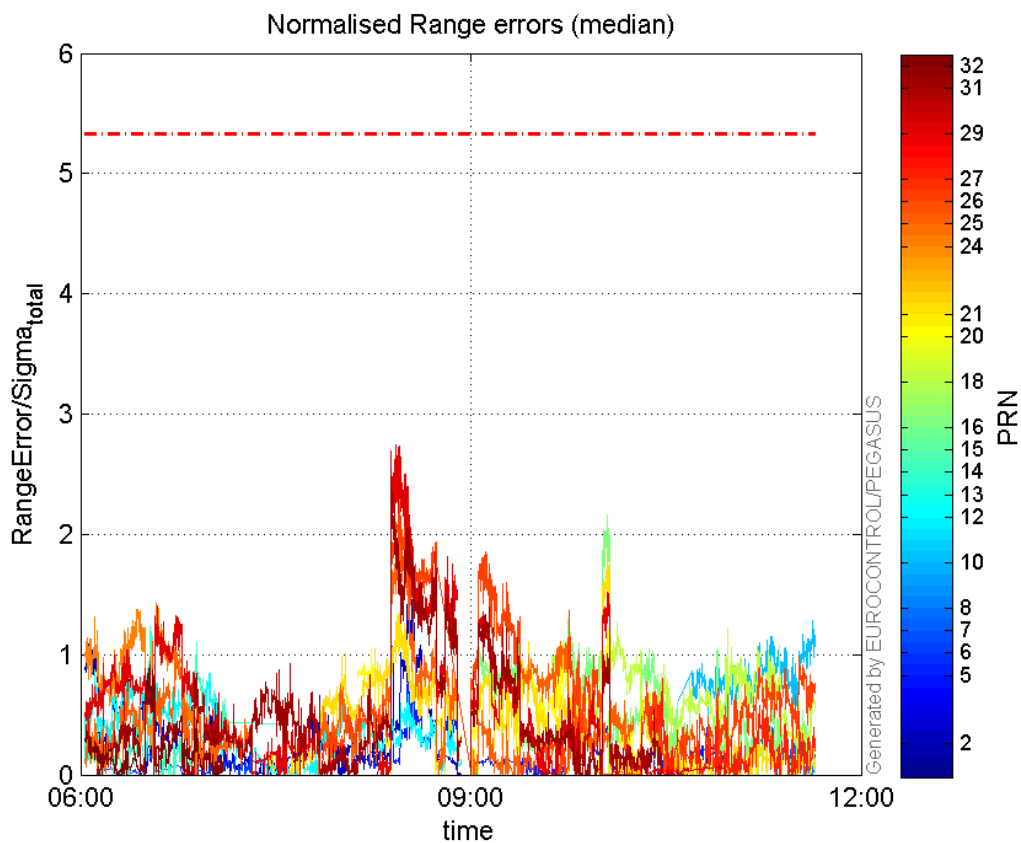
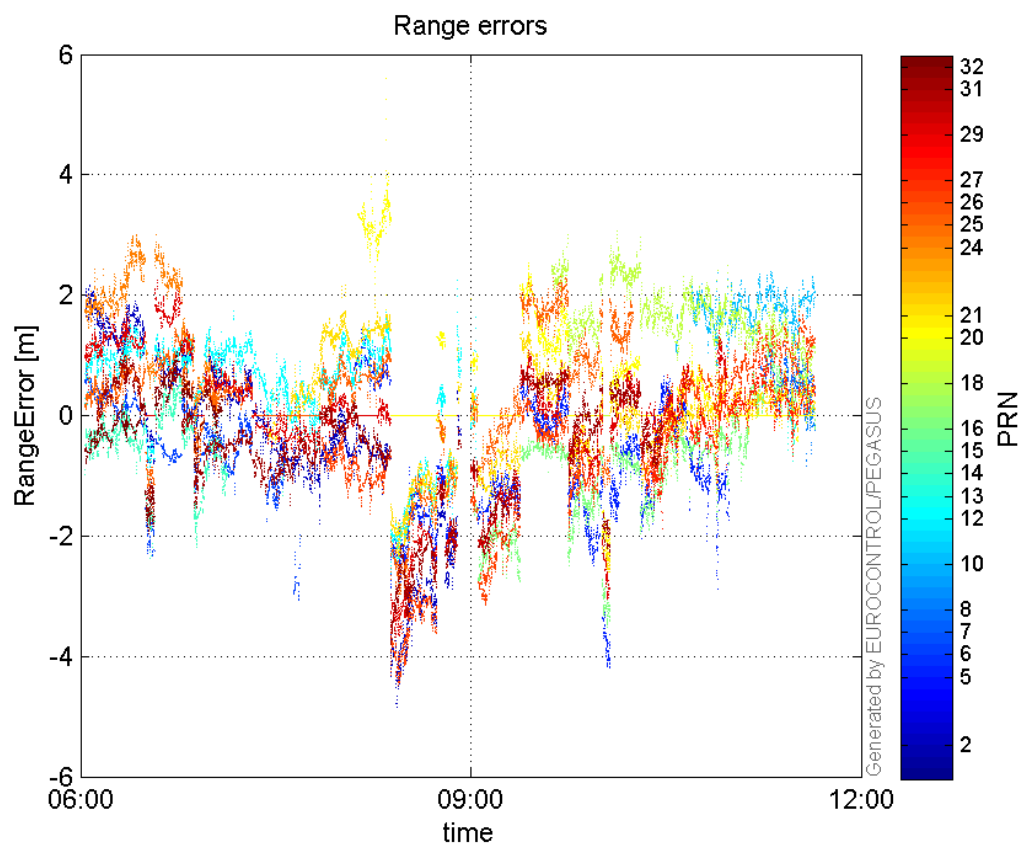


range errors

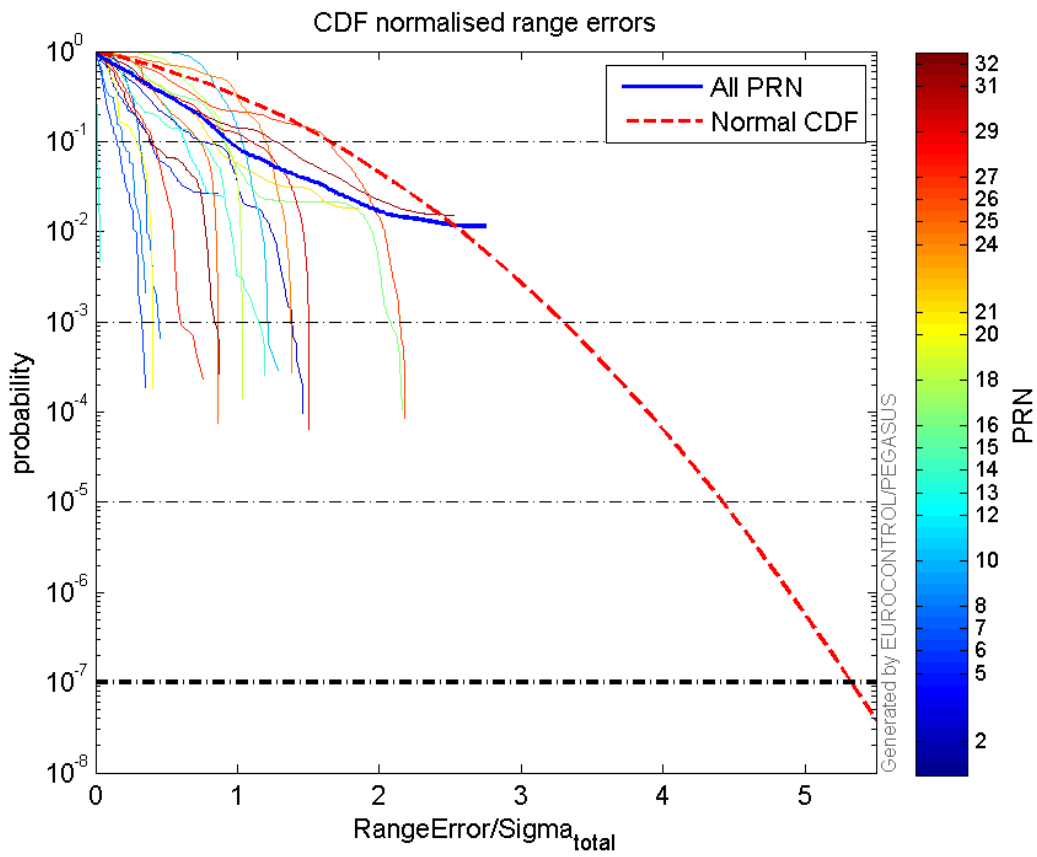
Number of Overbounding Norm Errors 0

Max Norm Errors :

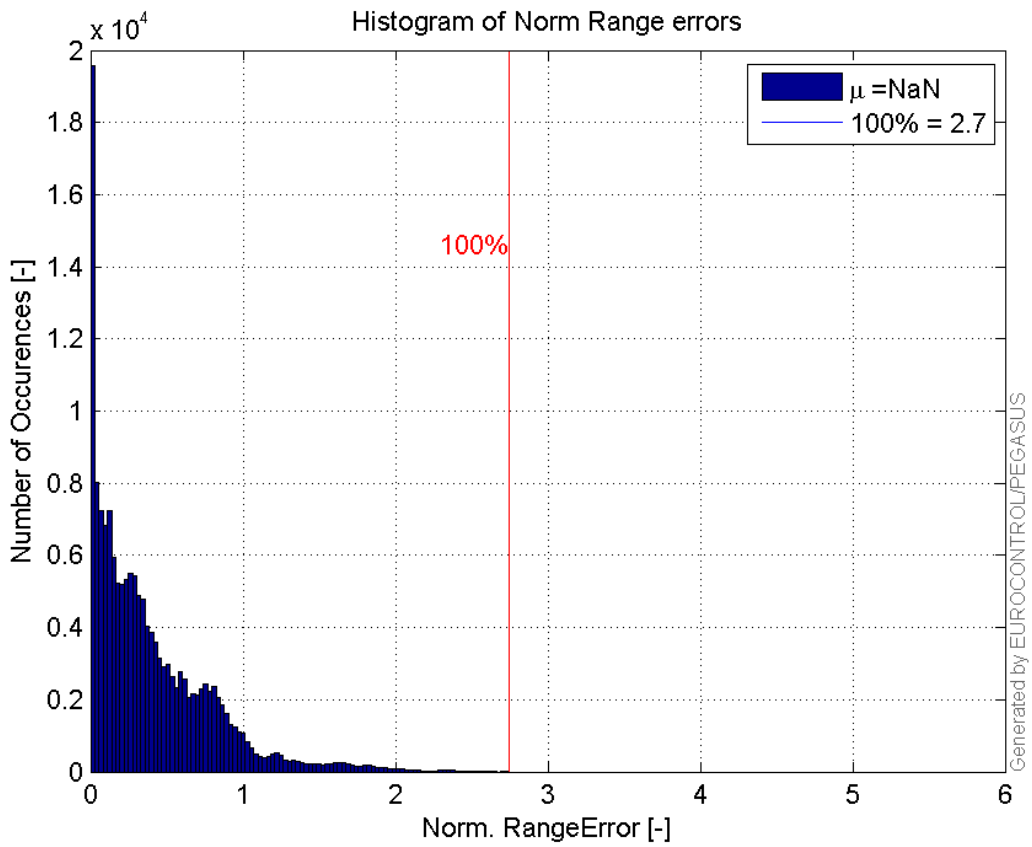
GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1912	203451	2	1.46132	-3.73225	2.55403
1912	203451	5	0.865443	-2.46639	2.84986
1912	194552	6	0.352253	0.805947	2.28798
1912	214272	7	0.476155	1.29154	2.71243
1912	214269	8	0.367381	1.03498	2.81717
1912	214651	10	1.28752	2.31129	1.79515
1912	195792	12	0.902394	1.50672	1.66969
1912	213978	13	0.0319117	0.871463	27.3085
1912	196337	14	1.23064	-2.36652	1.92301
1912	214221	15	0.00134707	-0.0398443	29.5785
1912	208970	16	2.16493	-3.42133	1.58034
1912	209259	18	1.26136	3.06934	2.43336
1912	209001	20	1.20638	-2.59081	2.1476
1912	208970	21	1.86045	-2.62222	1.40946
1912	196478	24	1.42986	3.00258	2.09991
1912	203237	25	2.27783	-3.3203	1.45766
1912	203187	26	2.18386	-4.37974	2.00551
1912	210492	27	0.801089	-1.87223	2.33711
1912	203142	29	2.74588	-3.6751	1.33841
1912	203005	31	2.52637	-4.09183	1.61965
1912	196284	32	0.879409	-1.96205	2.2311

Normalised Range errors (median):**Range errors:**

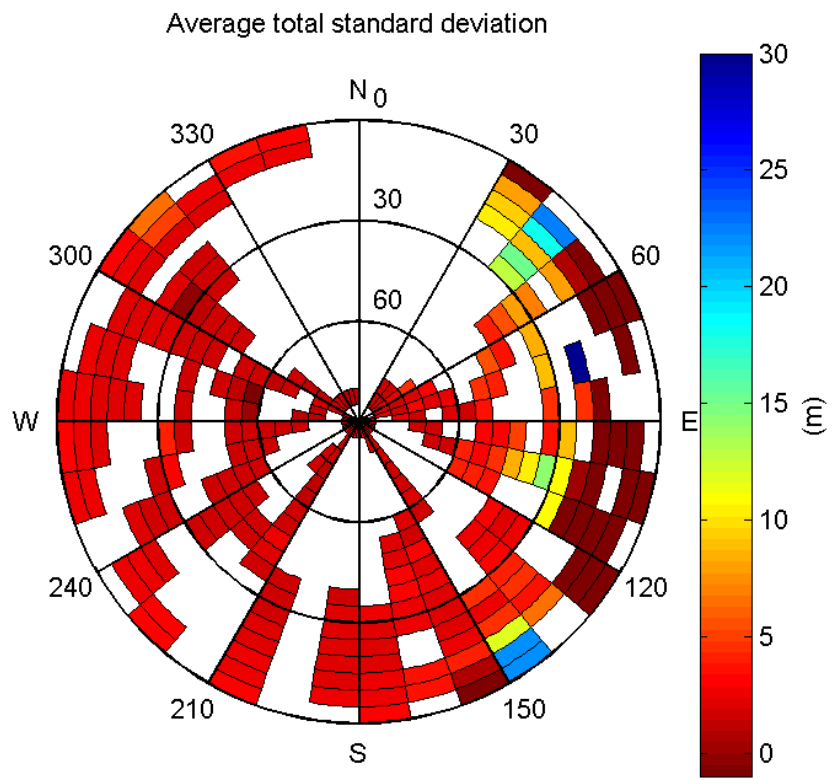
CDF normalised range errors:



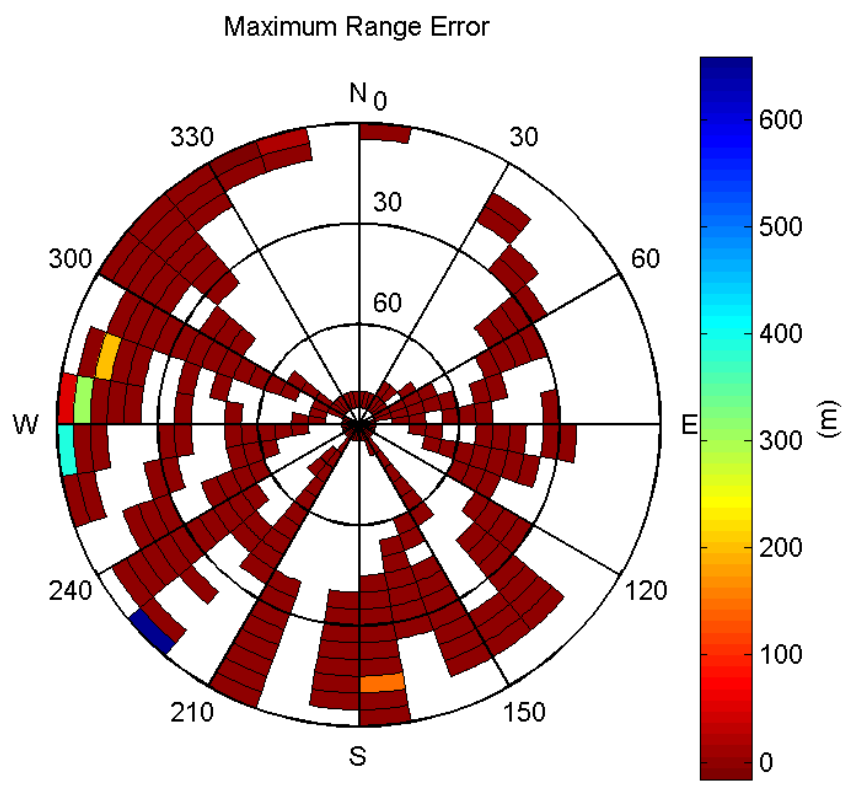
Histogram of Norm Range errors:



Sigma Sky Plot:

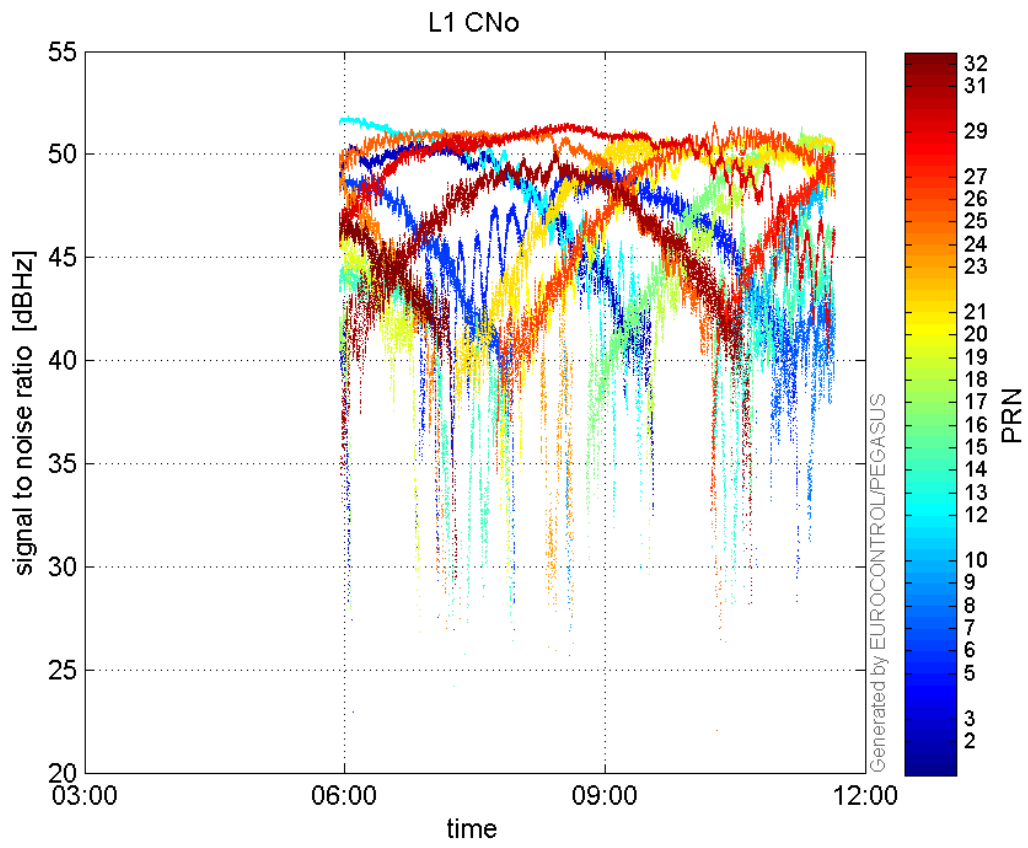


Norm Error Sky Plot:

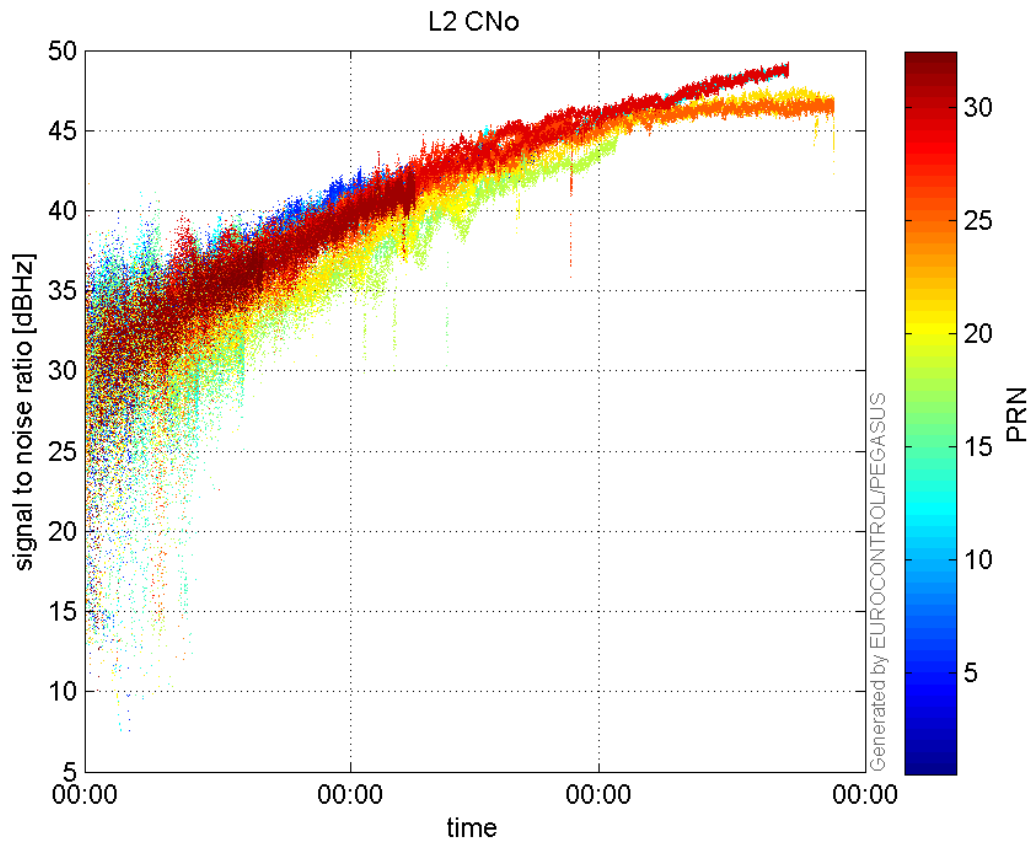


signal quality

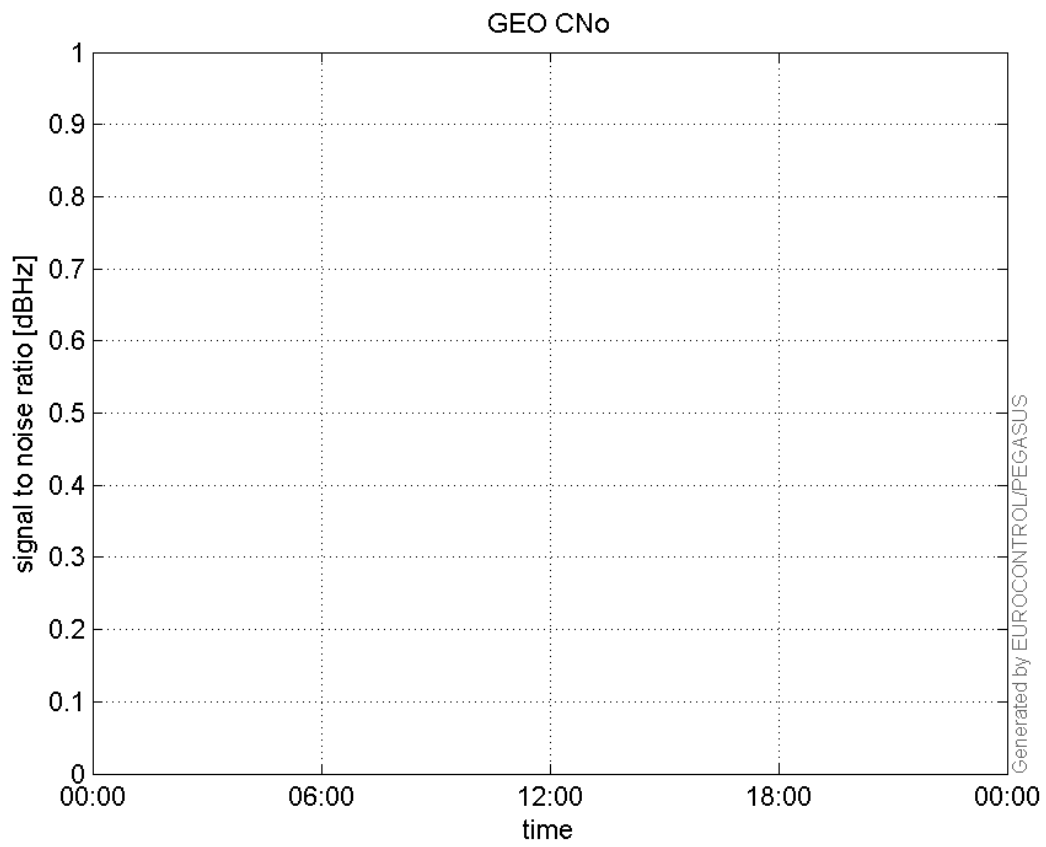
L1 CNo:



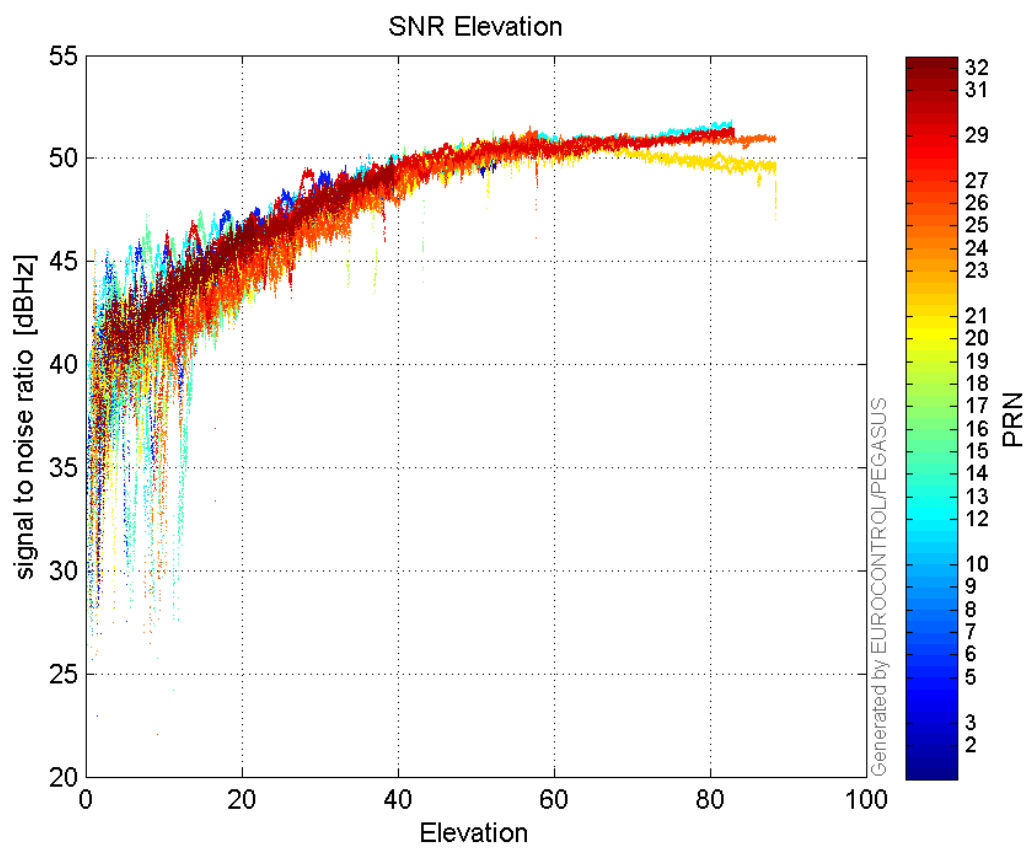
L2 CNo:



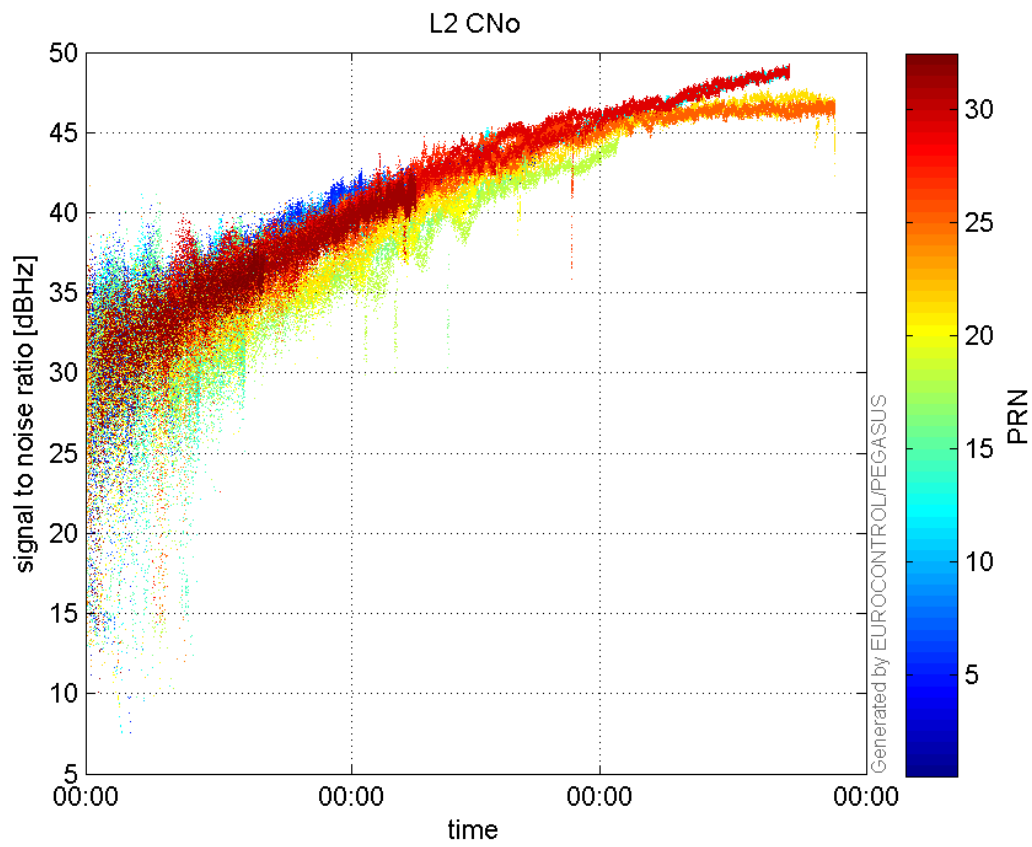
GEO CNo:



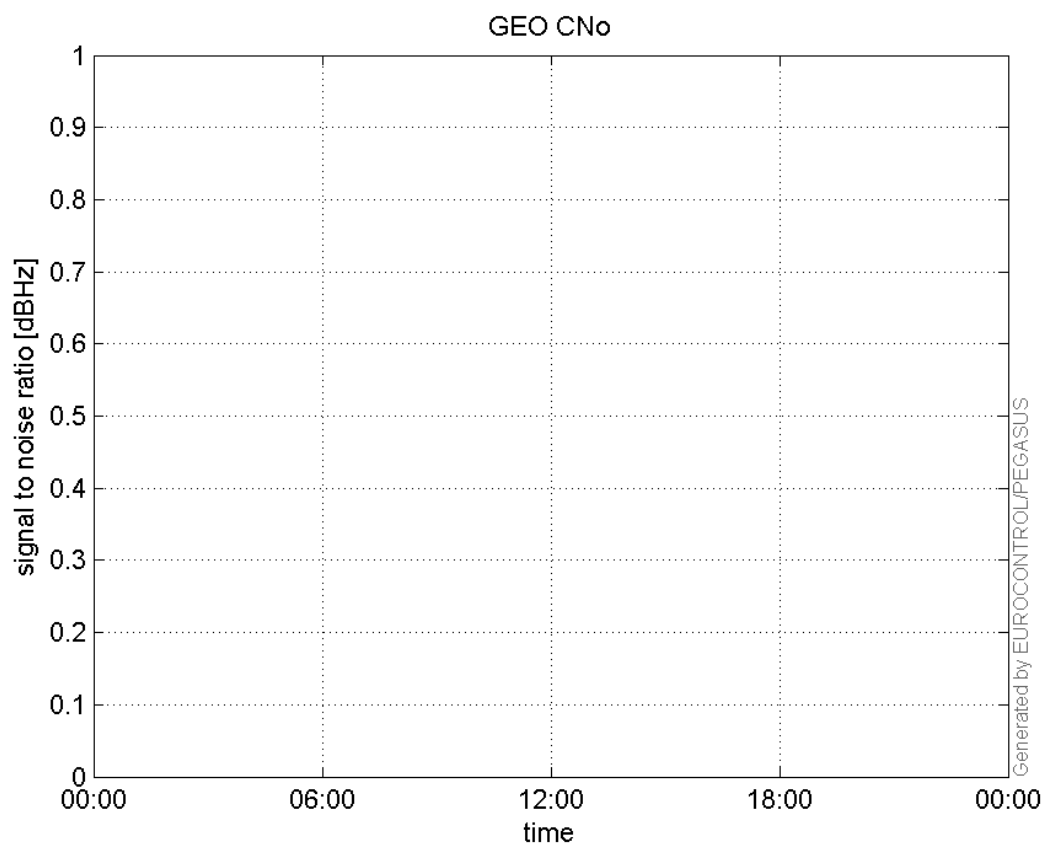
SNR Elevation:



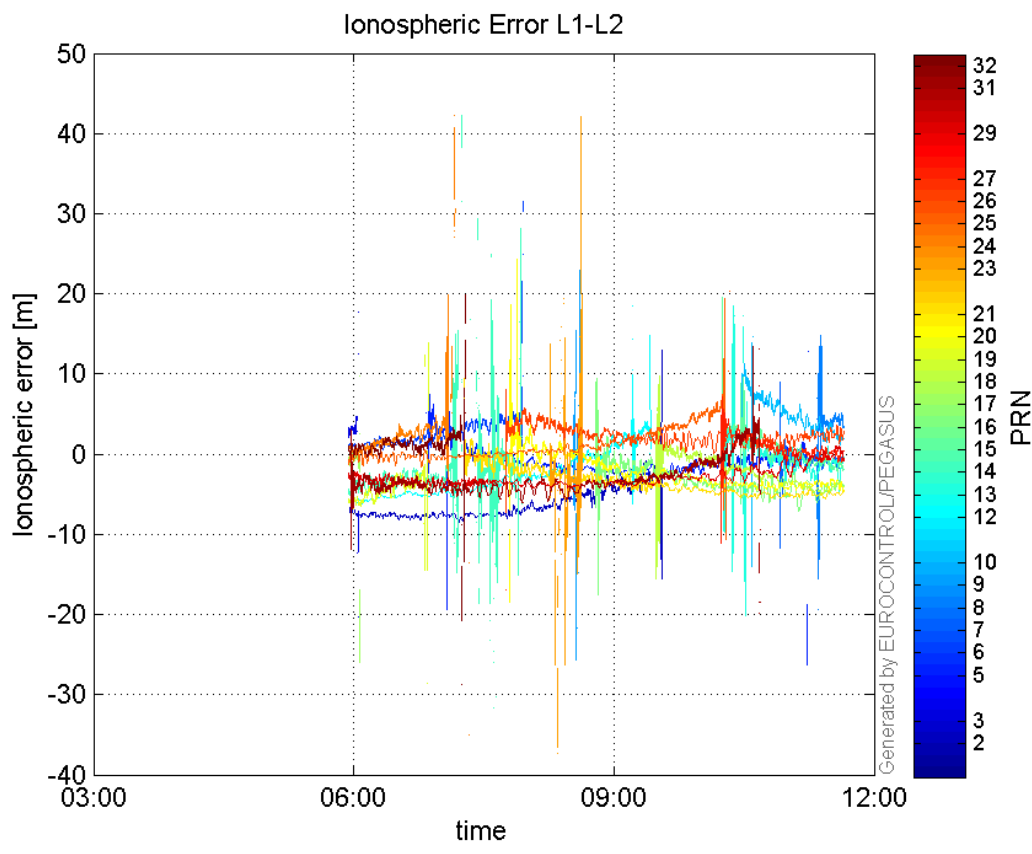
L2 CNo:



GEO CNo:



Ionospheric Error L1-L2:



Parameters

system		
Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateJob/job/2016_08_30_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_08_30_EGNOS/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	30.4296
init_alt	results	246.9059
mi_numbers	results	0