

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 28/09/2016

SBAS Messages

start: 07:32:32.129 26.09.2016 (week: 1916 sec: 113552.129)
end: 14:33:41.129 26.09.2016 (week: 1916 sec: 138821.129)
duration: 07:01:09 ..

quality

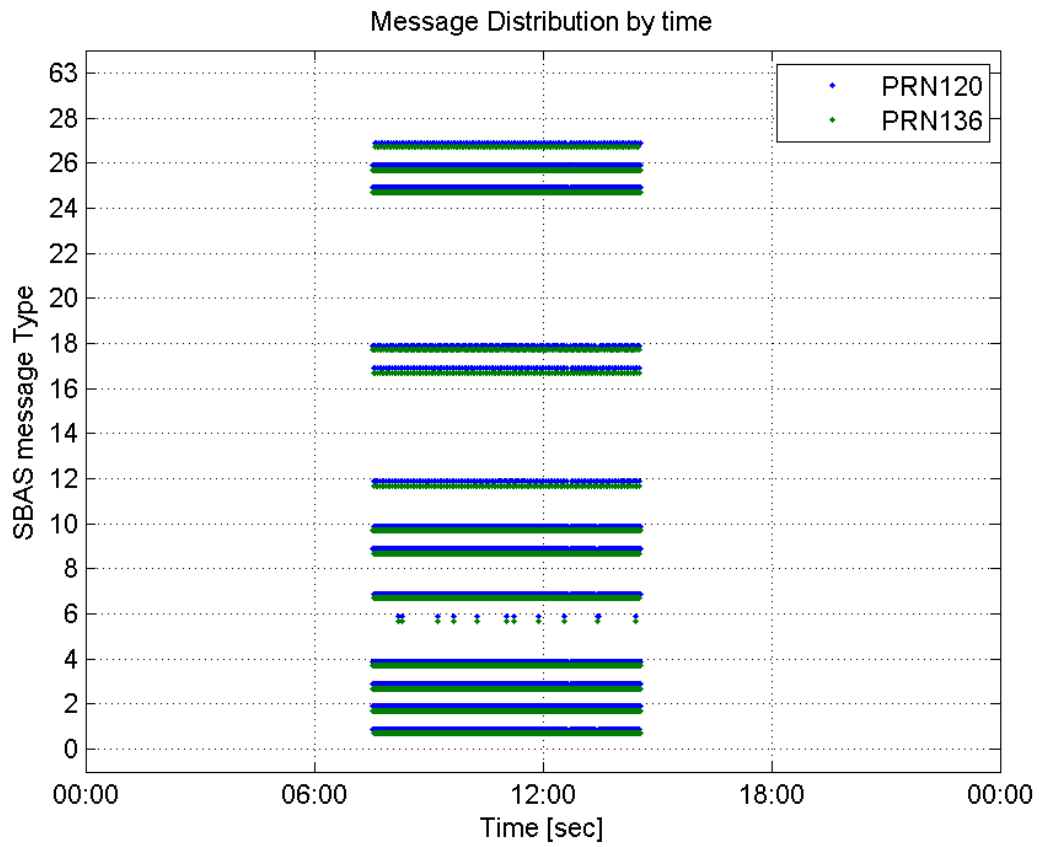
valid samples 50174
total samples 50174
number of SBAS PRNs 2

SBAS SIS Overview

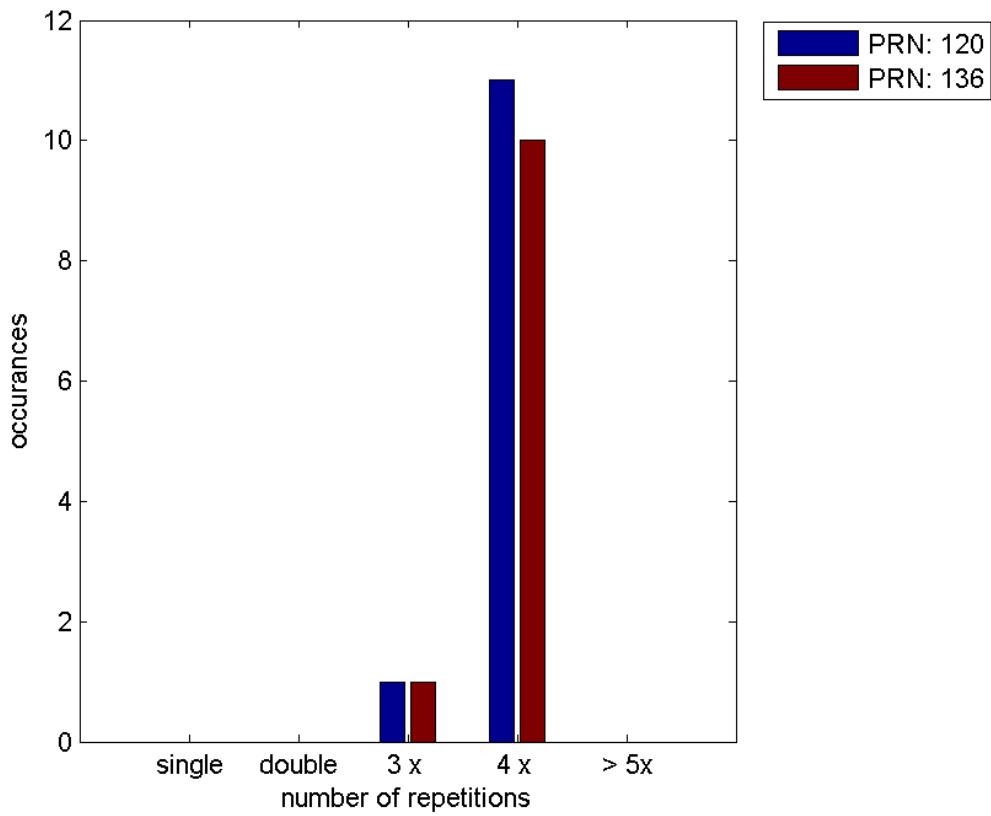
Message Type 6 repetitions :

	single	double	3 x	4 x	> 5x
PRN 120	0	0	1	11	0
PRN 136	0	0	1	10	0

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

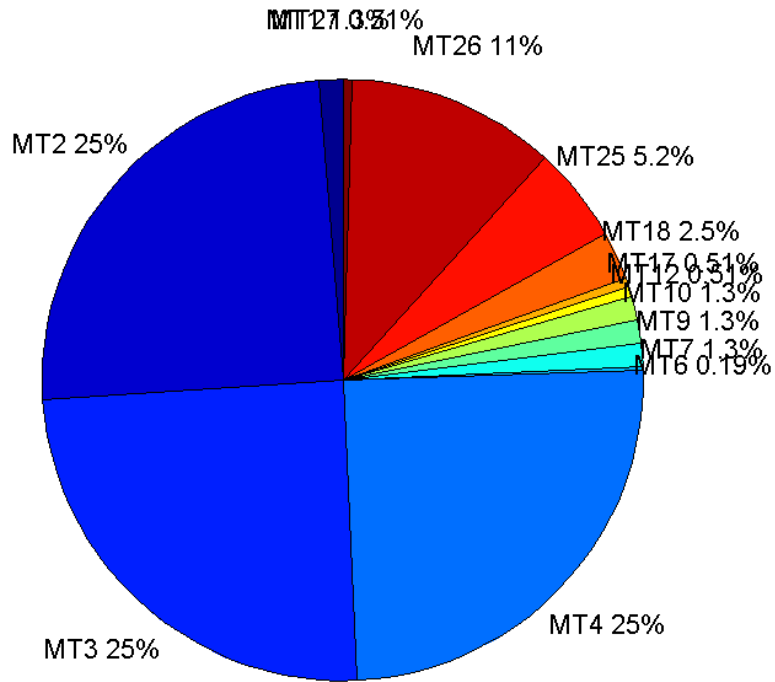
	number of messages	%
MT 0	0	0
MT 1	312	1.25281
MT 2	6167	24.7631
MT 3	6166	24.7591
MT 4	6166	24.7591
MT 5	0	0
MT 6	48	0.19274
MT 7	313	1.25683
MT 9	312	1.25281
MT 10	313	1.25683
MT 12	128	0.513974
MT 17	127	0.509958
MT 18	632	2.53774
MT 24	0	0
MT 25	1300	5.22004
MT 26	2793	11.2151
MT 27	127	0.509958
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	24904	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	317	81.0836	2	0	0
MT 2	4	189	4.09763	14	2	2
MT 3	4	189	4.09765	14	2	2
MT 4	4	194	4.0983	14	2	2
MT 5	--	--	--	--	--	--
MT 6	1	3462	476.064	11	11	11
MT 7	76	241	80.7212	2	0	1
MT 9	75	309	81.0707	0	0	0
MT 10	75	237	80.75	2	0	0
MT 12	183	397	197.803	127	1	1
MT 17	186	401	199.405	0	0	0
MT 18	1	353	39.8352	2	0	0
MT 24	--	--	--	--	--	--
MT 25	2	216	19.4257	0	0	0
MT	1	204	9.04799	0	0	0

26						
MT 27	188	396	199.317	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

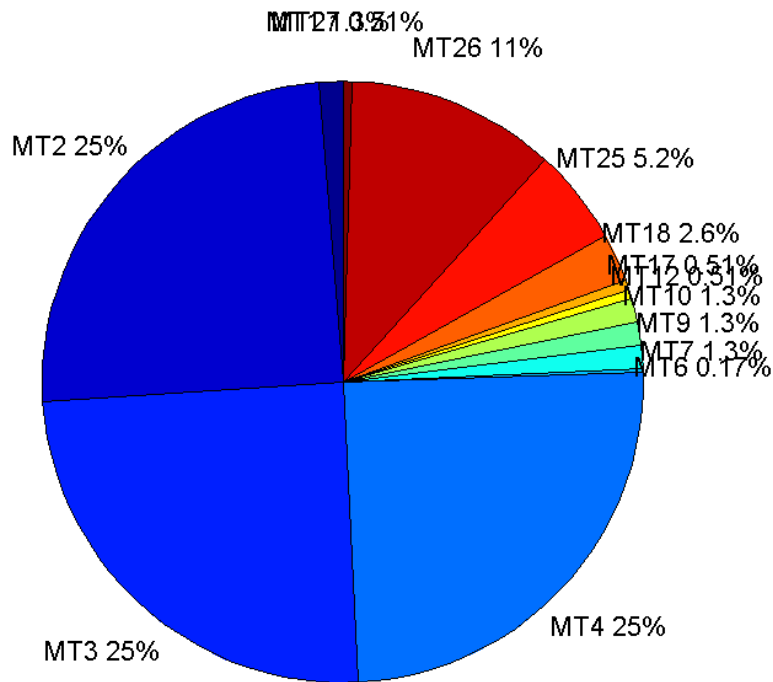
	number of messages	%
MT 0	0	0
MT 1	317	1.25445
MT 2	6258	24.7645
MT 3	6258	24.7645
MT 4	6259	24.7685
MT 5	0	0
MT 6	44	0.17412
MT 7	316	1.25049
MT 9	316	1.25049
MT 10	317	1.25445

MT 12	129	0.510487
MT 17	129	0.510487
MT 18	645	2.55243
MT 24	0	0
MT 25	1318	5.21567
MT 26	2836	11.2228
MT 27	128	0.506529
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	25270	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	86	79.7785	0	0	0
MT 2	4	9	4.03788	11	0	0
MT 3	4	9	4.03788	11	0	0
MT 4	4	9	4.03771	11	0	0
MT 5	--	--	--	--	--	--
MT 6	1	3641	520.349	10	10	10
MT 7	74	84	79.8254	0	0	0
MT 9	76	87	79.8381	0	0	0
MT 10	74	88	79.8165	0	0	0
MT 12	188	201	196.07	128	0	0
MT 17	188	202	196.047	0	0	0
MT 18	4	170	39.0109	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	53	19.1724	0	0	0
MT 26	4	42	8.91076	0	0	0
MT 27	188	202	196.047	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_09_26_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_09_26_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: 07:32:32 26.09.2016 (week: 1916 sec: 113552)
end: 14:33:41 26.09.2016 (week: 1916 sec: 138821)
duration: 07:01:10 ..

quality

valid samples 24909
total samples 25270

Event tables

Position discontinuity events type all
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	115372	1.49837	11.6468	0.128651	-0.647593	16.0683	0.0403025
max normVer	130775	1.24884	14.5504	0.0858288	2.78049	16.3823	0.169725
max HPE	120983	3.24663	114.411	0.0283769	-1.06458	79.7444	0.0133499
max VPE	121031	2.88816	113.929	0.0253505	3.45993	79.592	0.0434708
min HPL	123372	0.730525	8.92028	0.0818949	-0.156362	20.6883	0.00755801
min VPL	137498	0.953749	9.21576	0.103491	-0.357439	12.4878	0.028623

Position discontinuity events :

#	Epoch	duration	stable period
1	131984	250	18071
2	134626	178	2392
3	134841	1	37
4	134844	63	2

APV-I discontinuity events :

#	Epoch	duration	stable period
1	120946	195	7033
2	131983	255	10842
3	134626	182	2388
4	134840	2	32
5	134844	67	2

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	120946	195	7033
2	131983	268	10842
3	134625	183	2374
4	134832	4	24
5	134837	1	1
6	134839	72	1

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	120946	195	7033
2	131983	268	10842
3	134625	183	2374
4	134832	4	24

5	134837	1	1
6	134839	72	1

First Glance analysis

Duration	25270
Number of Samples	25270
Number of invalid sample	361
Number of no position solution samples	492
Number of missing sample	0
Logging Loss	0
Processing Loss	1.4286
Number of Misleading Information	0
Data gaps	0
Discontinuities	4

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
24417	24208	24186	0	24186

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.31102	1.30193	1.30091	NaN	1.30091
HPEscale 95%	NaN	4.03423	4.03509	NaN	4.03509
VPE 95%	1.74411	1.72597	1.72687	NaN	1.72687
VPEscale 95%	NaN	4.70326	3.29275	NaN	3.29275

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.980248	0.971858	0.970974	0	0.970974
measurements	0.966245	0.957974	0.957103	0	0.957103
Operational	0.966245	0.957974	0.957103	0	0.957103

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	4	5	6	--	6
Long	3	4	5	--	5
Independent	2	3	4	--	4
P(disc.)	0.00122865	0.00185889	0.00248077	NaN	0.00248077
P(slide)	0.00192489	0.00256114	0.00256347	NaN	0.00256347

Integrity events :

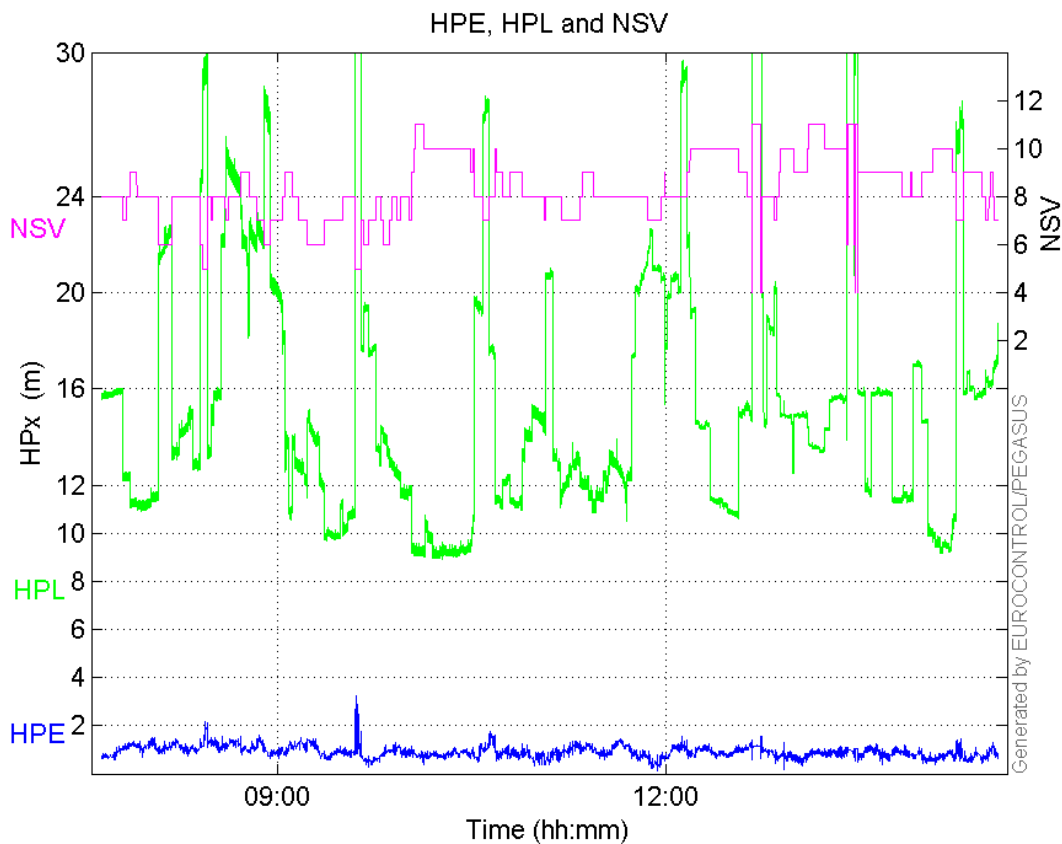
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

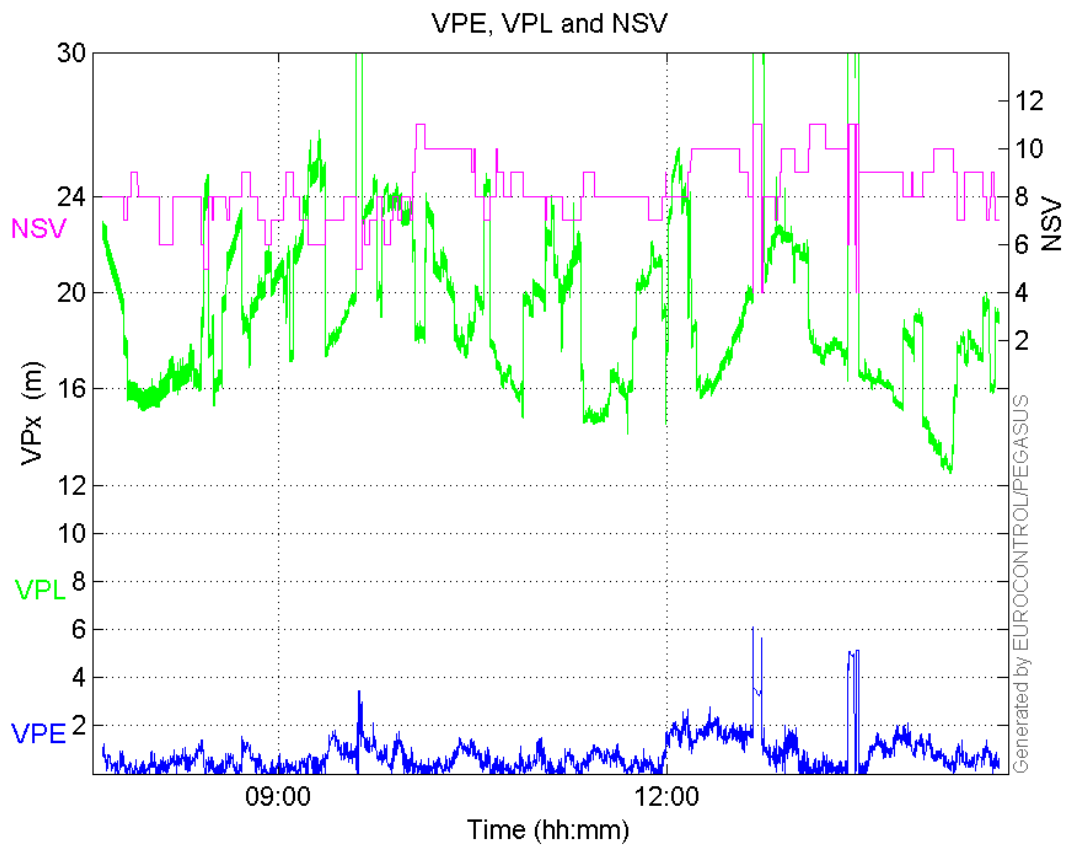
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	24417	24208	24186	0	24186
SIS Availability	0.980248	0.971858	0.970974	0	0.970974
Local Availability	0.966245	0.957974	0.957103	0	0.957103
Operational Availability	0.966245	0.957974	0.957103	0	0.957103
HPE 95%	1.31102	1.30193	1.30091	NaN	1.30091
HPEscale 95%	NaN	4.03423	4.03509	NaN	4.03509
VPE 95%	1.74411	1.72597	1.72687	NaN	1.72687
VPEscale 95%	NaN	4.70326	3.29275	NaN	3.29275
All Discontinuity Events	4	5	6	--	6
Long Discontinuity Events	3	4	5	--	5
Independent Discontinuity Events	2	3	4	--	4
P(discontinuity)	0.00122865	0.00185889	0.00248077	NaN	0.00248077
P(sliding window)	0.00192489	0.00256114	0.00256347	NaN	0.00256347
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:

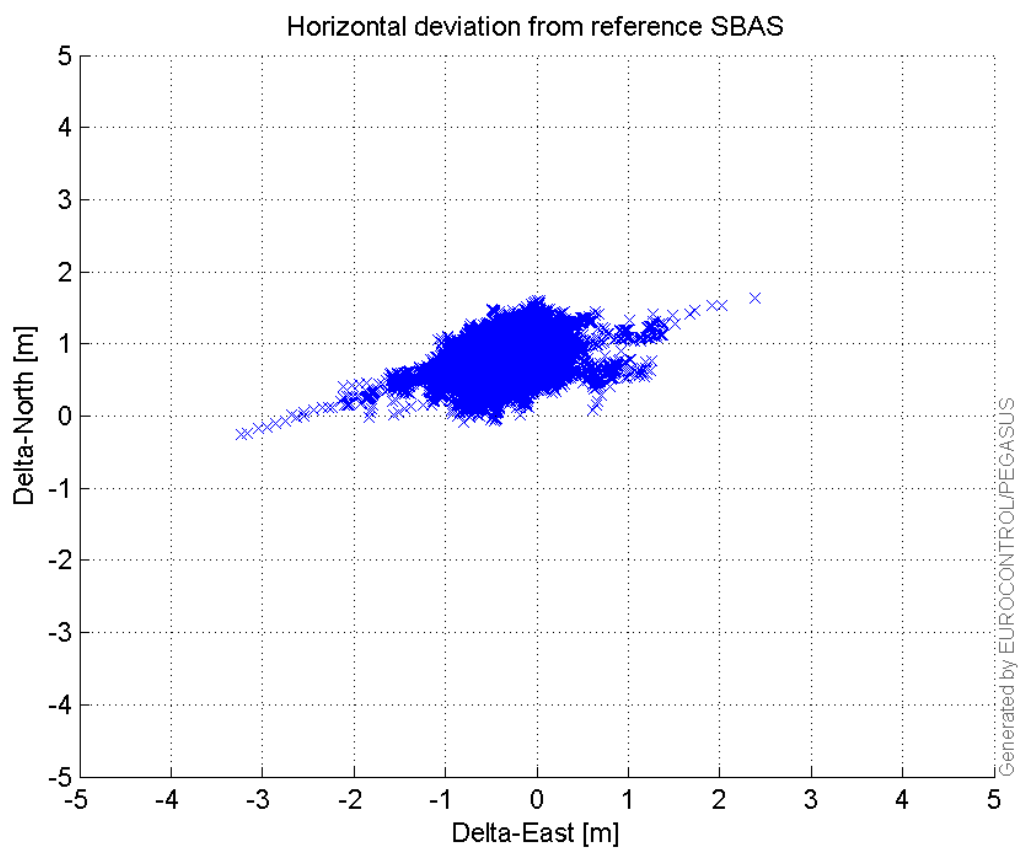


VPE, VPL and NSV:



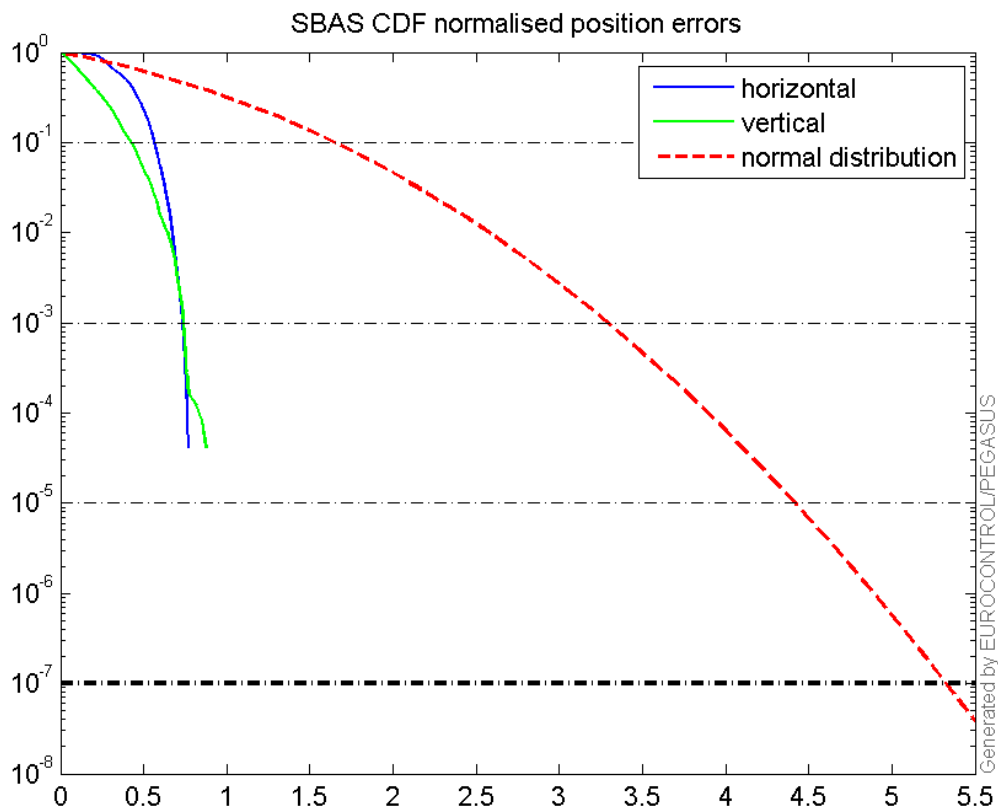
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

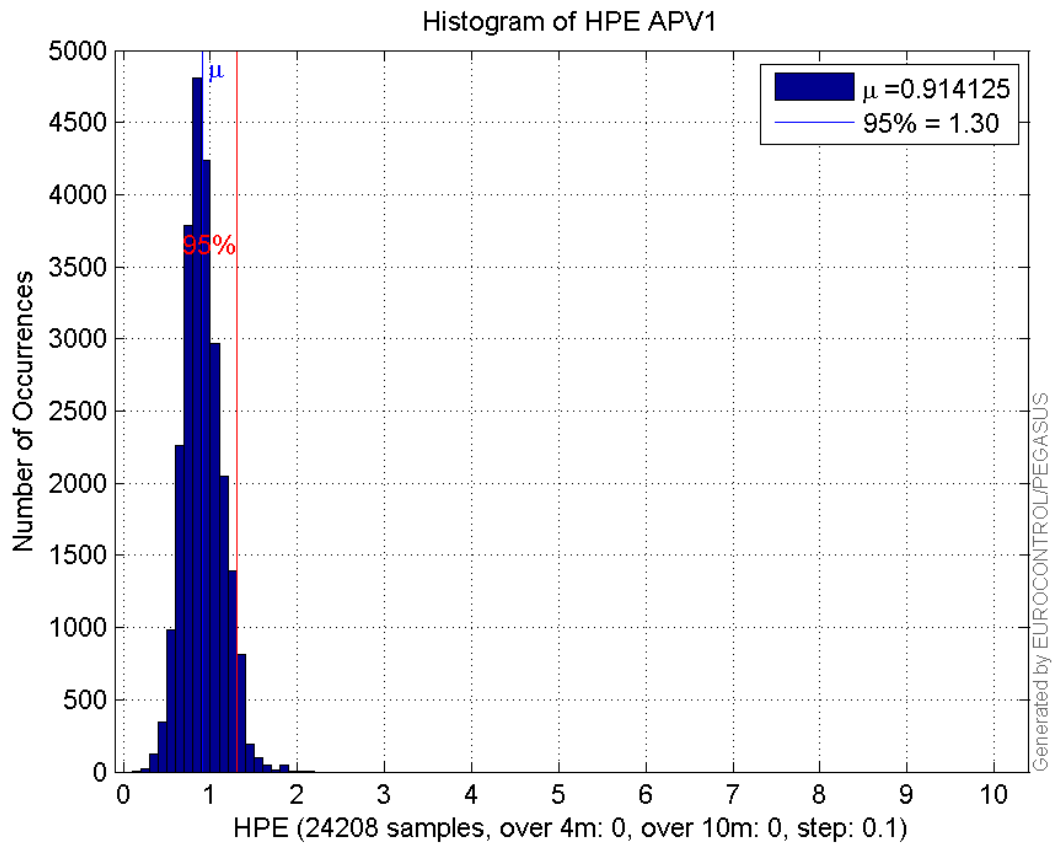
number	24208
sum	22129.143
sum2	21414.541
prctile95	1.301933
prctile99	1.4719803
number	24208
sum	16664.931
sum2	18073.126
prctile95	1.7259678
prctile99	2.059566
number	24208
sum	364005.21
sum2	5984345.4
prctile95	24.68962
prctile99	28.708198
number	24208
sum	460742.67
sum2	8996960.1
prctile95	24.23643
prctile99	25.628084
number	24208
sum	1584.2959
sum2	115.04653

prctile95 0.10085578
prctile99 0.11186687
number 24208
sum 901.01547
sum2 53.93694
prctile95 0.094065179
prctile99 0.12102438
number 24186
sum 22104.292
sum2 21382.802
prctile95 1.3009111
prctile99 1.4625495
number 24186
sum 16645.665
sum2 18053.053
prctile95 1.7268711
prctile99 2.0596676
number 24186
sum 363276.9
sum2 5959976.3
prctile95 24.64226
prctile99 28.619348
number 24186
sum 459878.73
sum2 8962897.1
prctile95 24.22288
prctile99 25.57704
number 24186
sum 1583.5601
sum2 115.01986
prctile95 0.10087731
prctile99 0.11187132
number 24186
sum 900.53299
sum2 53.924489
prctile95 0.094078513
prctile99 0.12103694

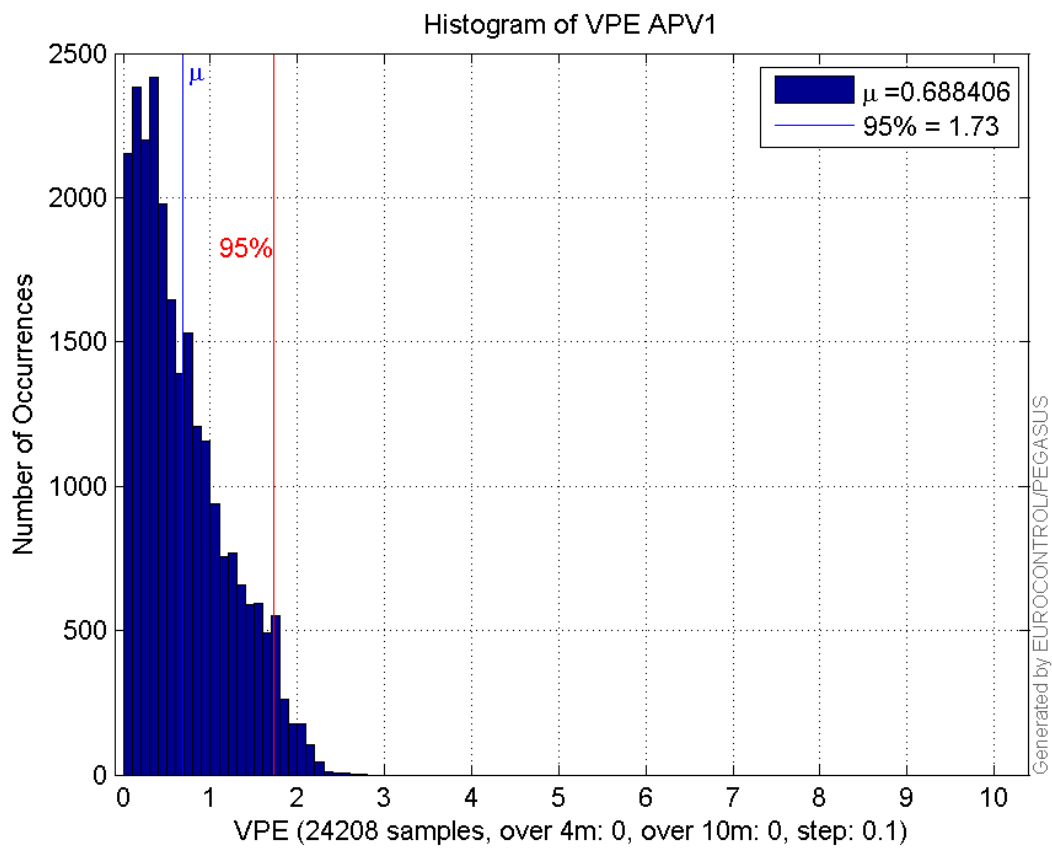
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	0.914125	0.221321	0.89545	1.30193	1.47198	0.940535
HPL	15.0366	4.59432	14.2469	24.6896	28.7082	15.7228
VPE	0.688406	0.522193	0.561503	1.72597	2.05957	0.864047
VPL	19.0327	3.06766	18.4898	24.2364	25.6281	19.2783

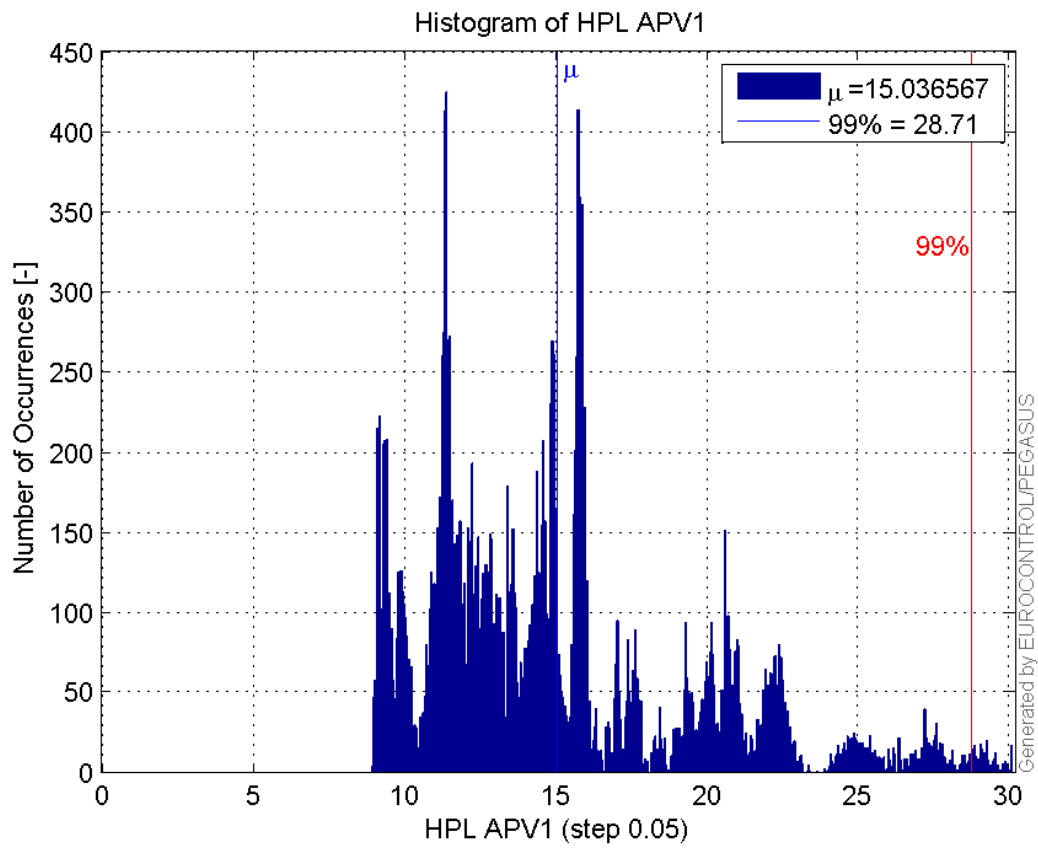
Histogram of HPE APV1:



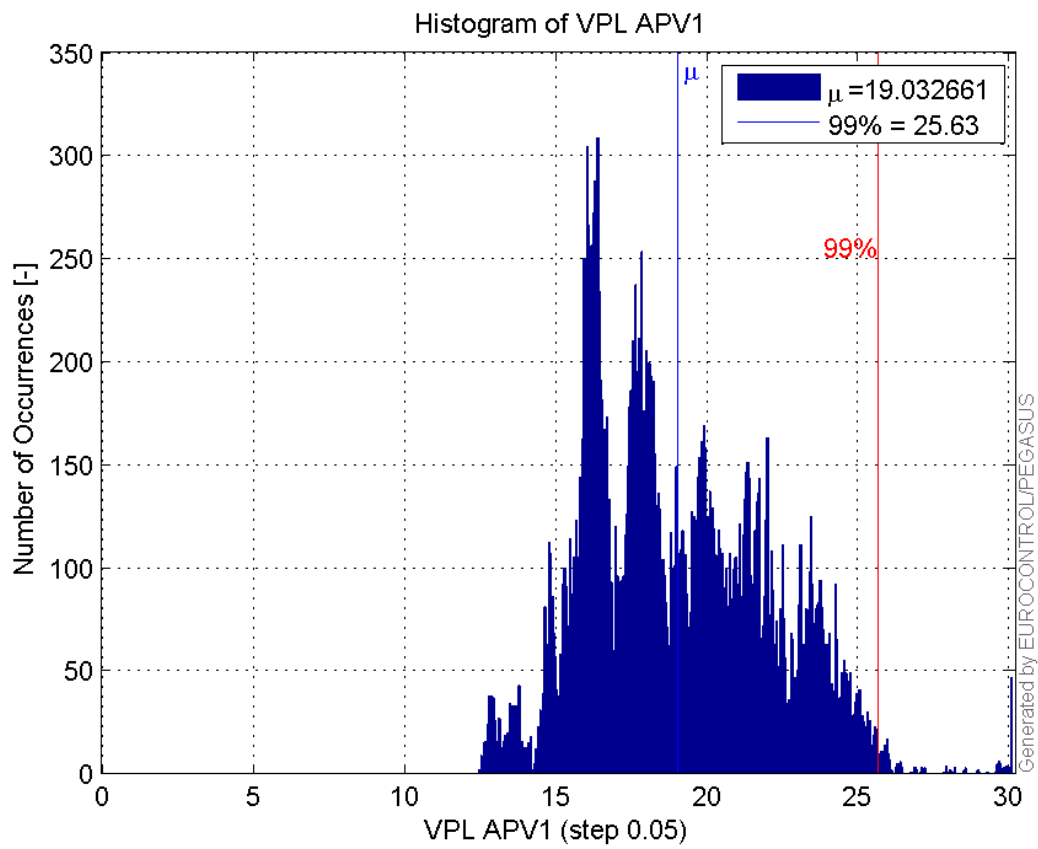
Histogram of VPE APV1:



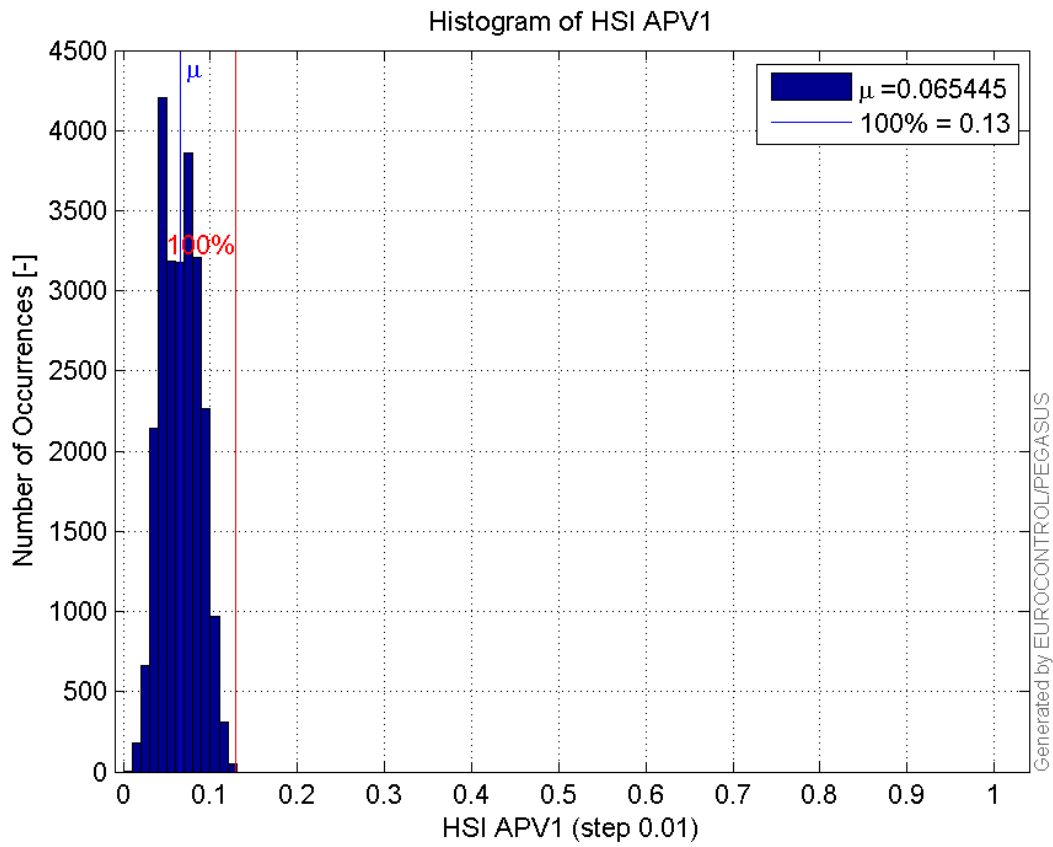
Histogram of HPL APV1:



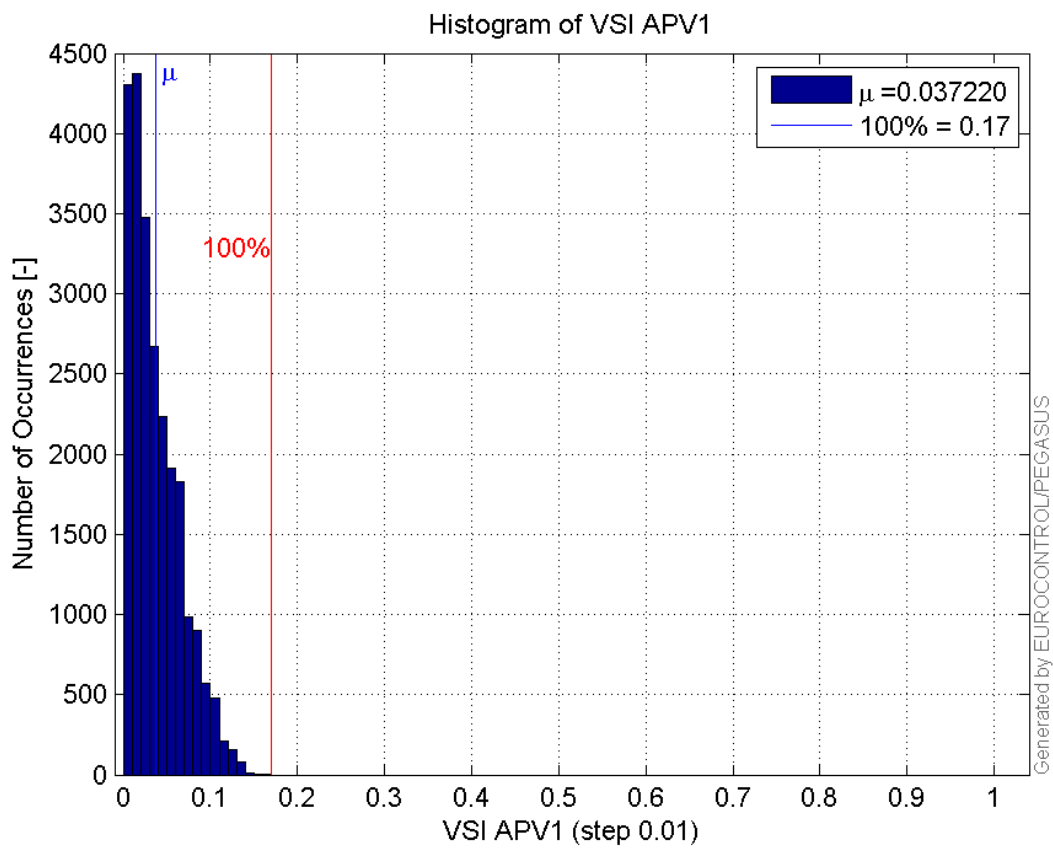
Histogram of VPL APV1:



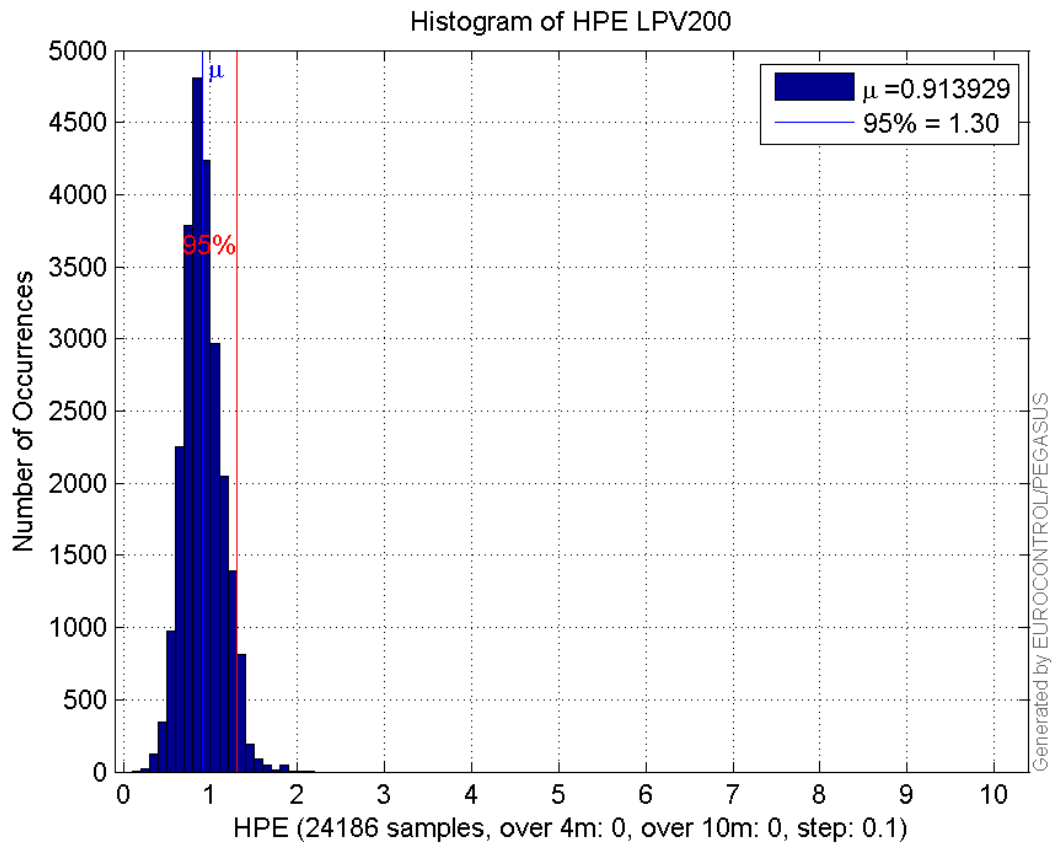
Histogram of HSI APV1:



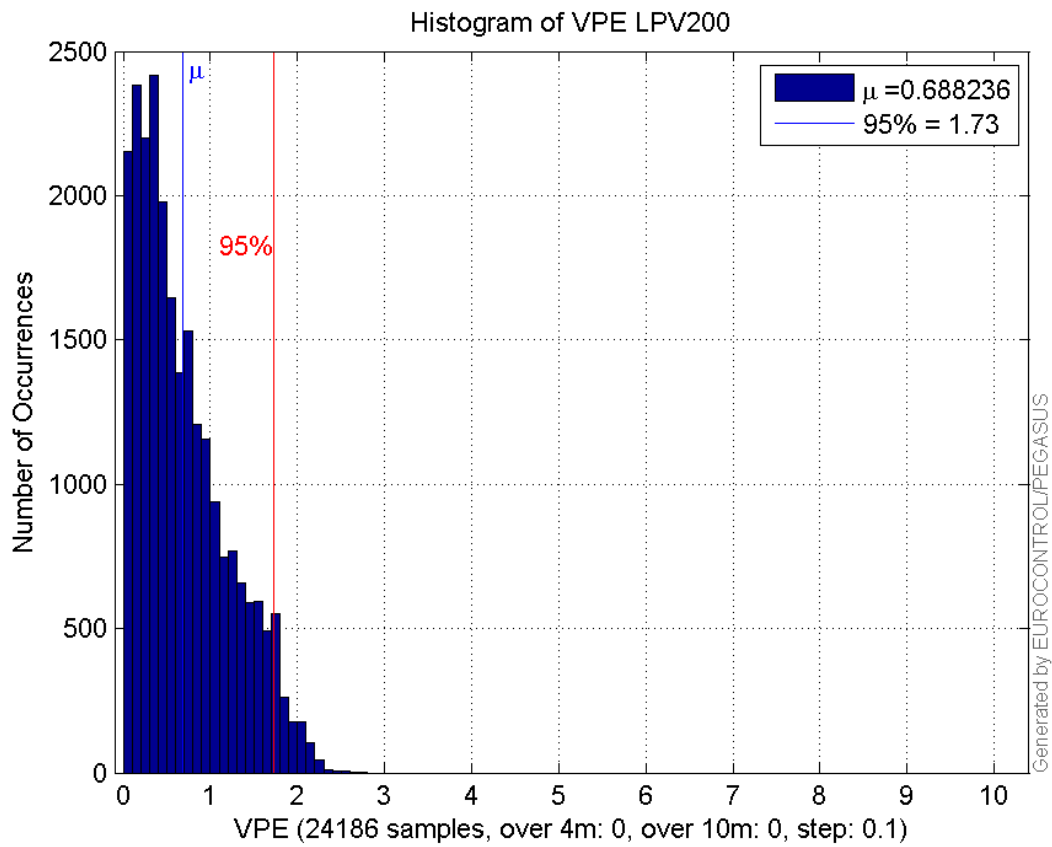
Histogram of VSI APV1:



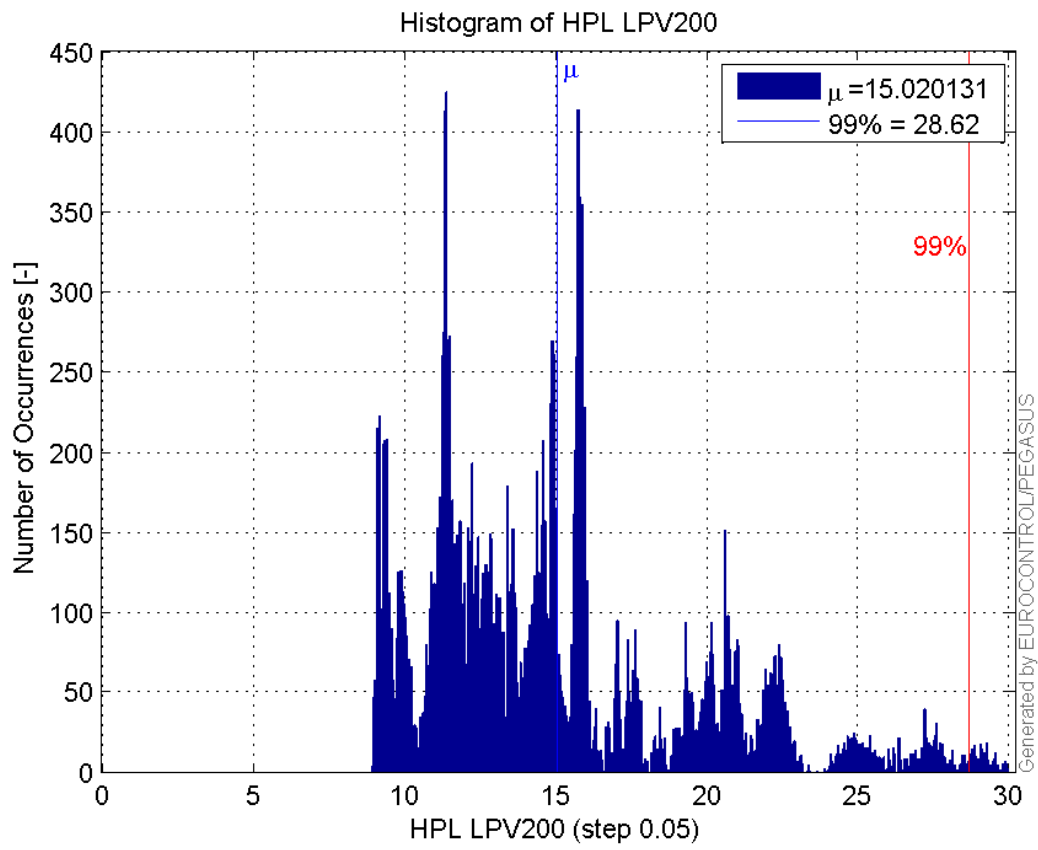
Histogram of HPE LPV200:



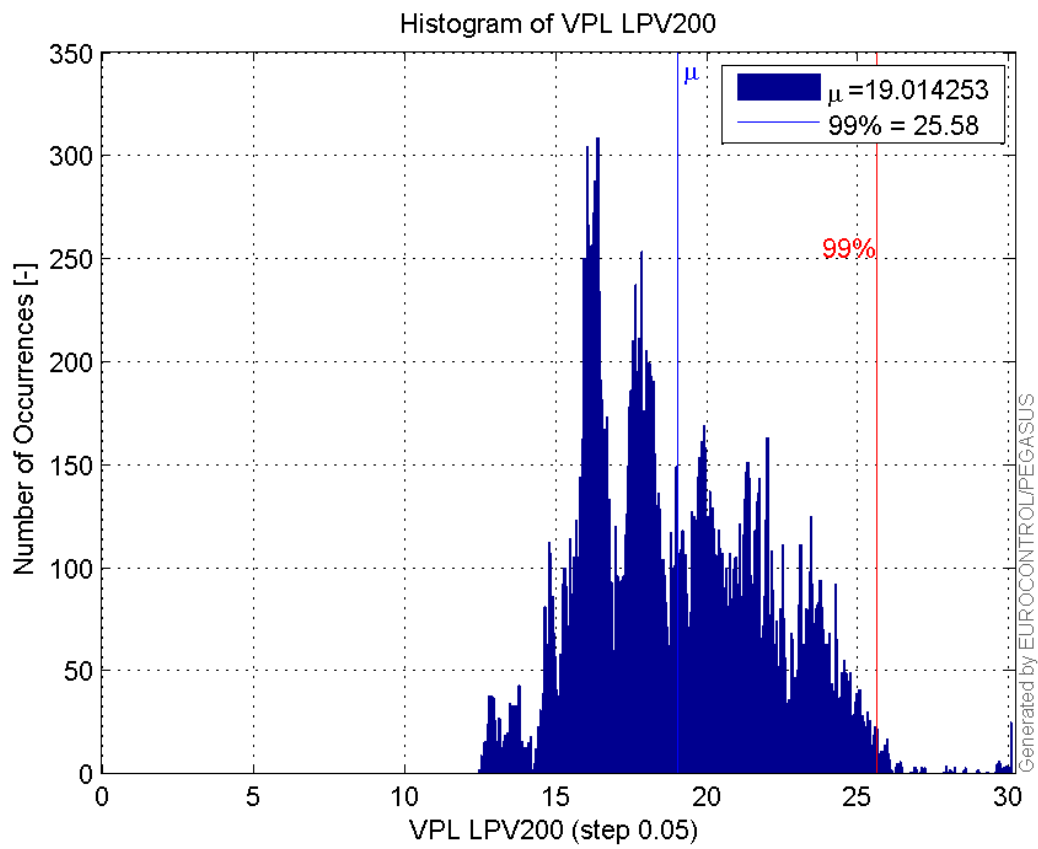
Histogram of VPE LPV200:



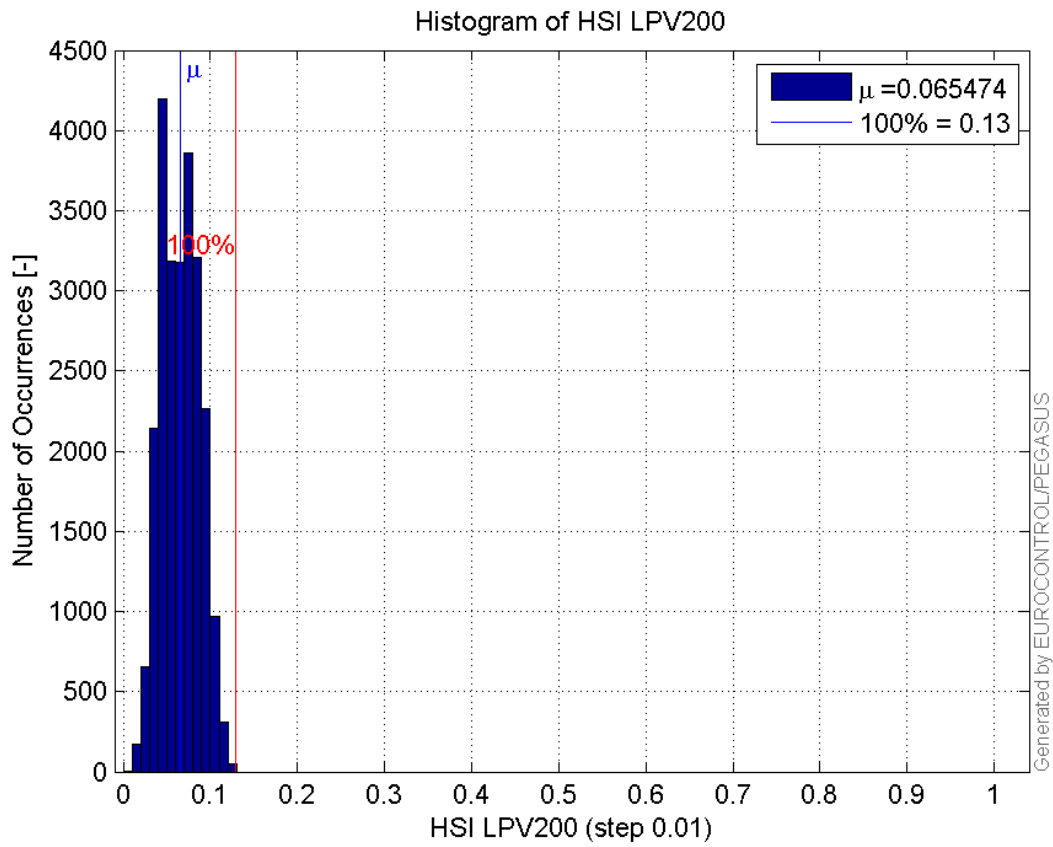
Histogram of HPL LPV200:



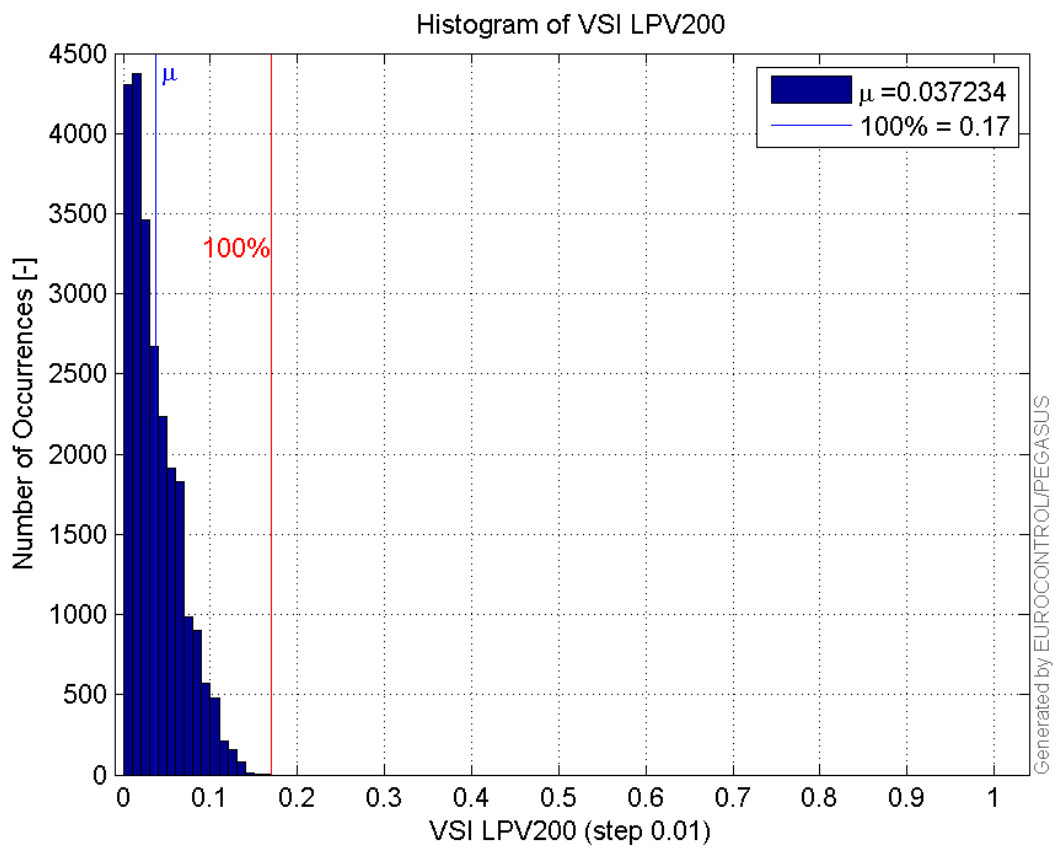
Histogram of VPL LPV200:



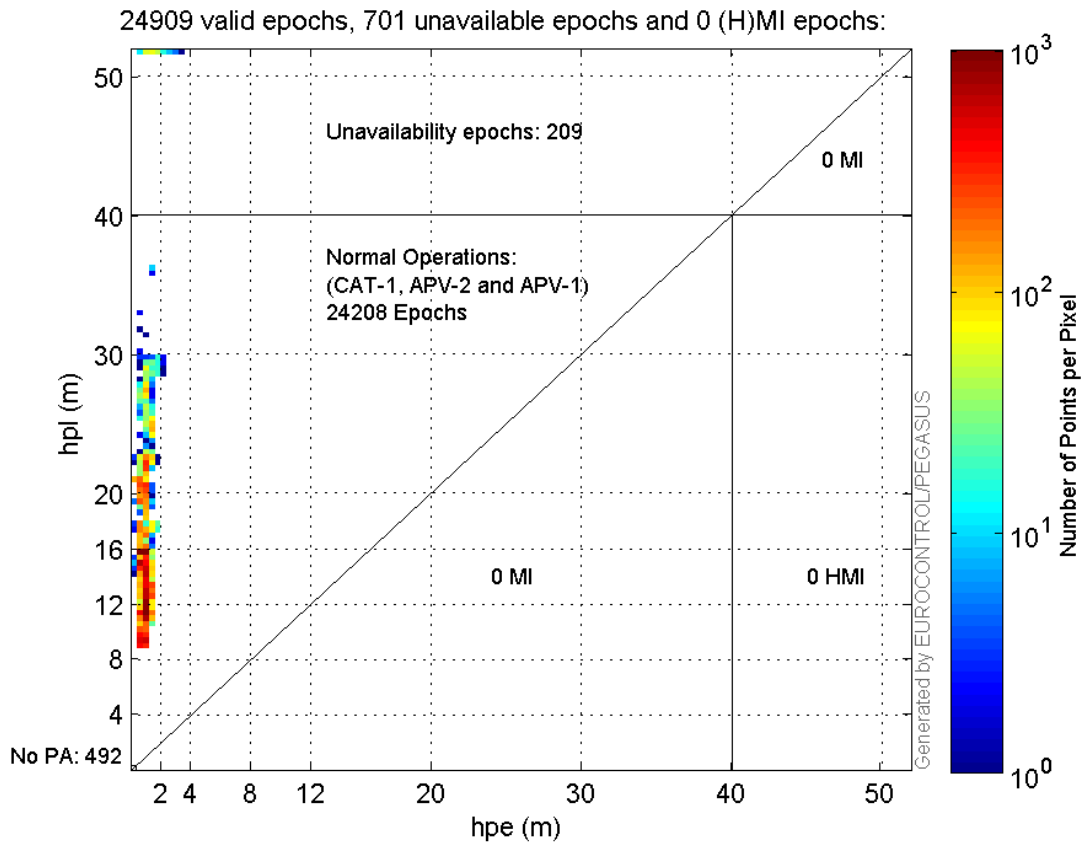
Histogram of HSI LPV200:



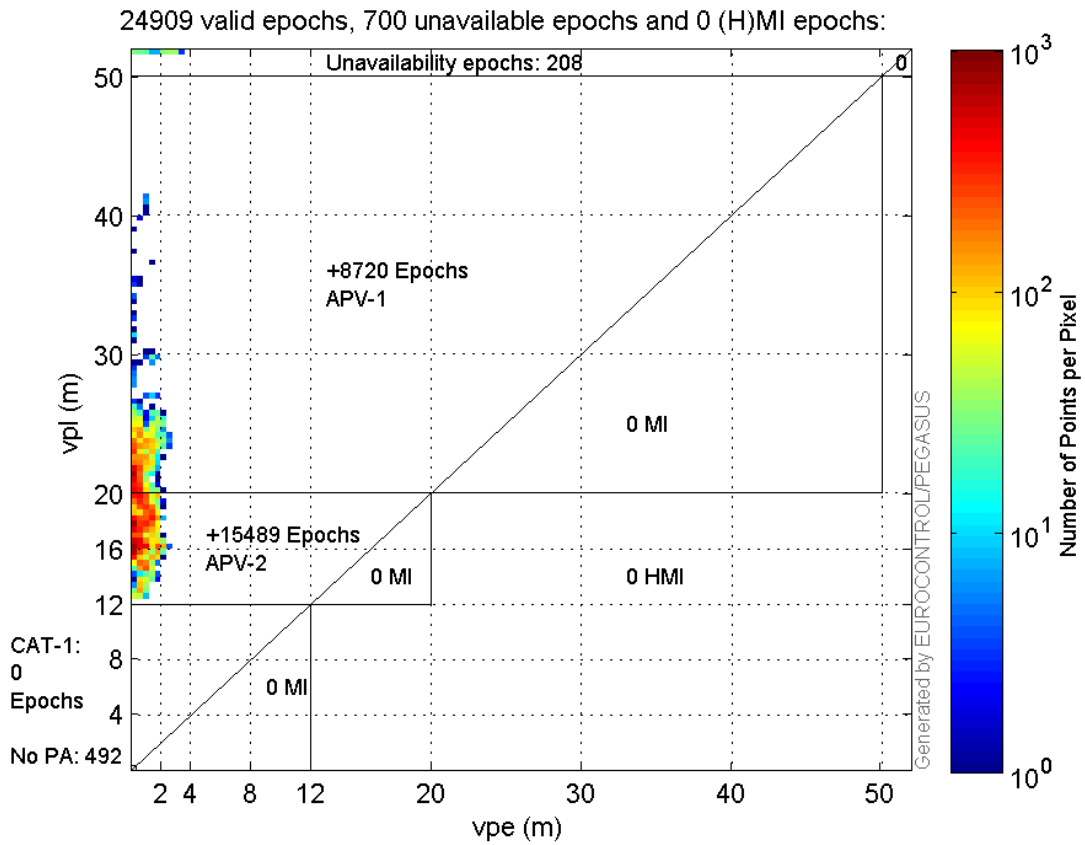
Histogram of VSI LPV200:



Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateJob/job/2016_09_26_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_09_26_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	50.4391
init_lon	results	30.4296
init_alt	results	263.3928
mi_numbers	results	0

Range Domain

start: 07:32:32 26.09.2016 (week: 1916 sec: 113552)
end: 14:33:41 26.09.2016 (week: 1916 sec: 138821)
duration: 07:01:10 ..

quality

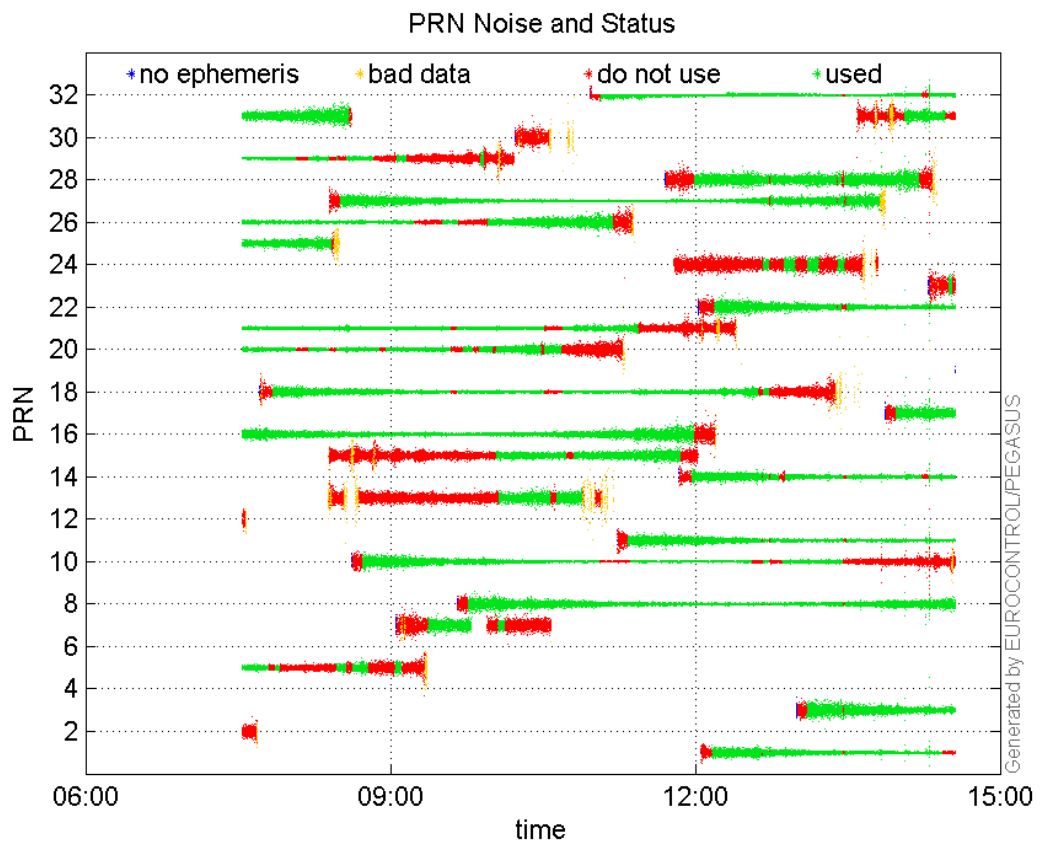
valid samples 25270
total samples 25270

PRN overview

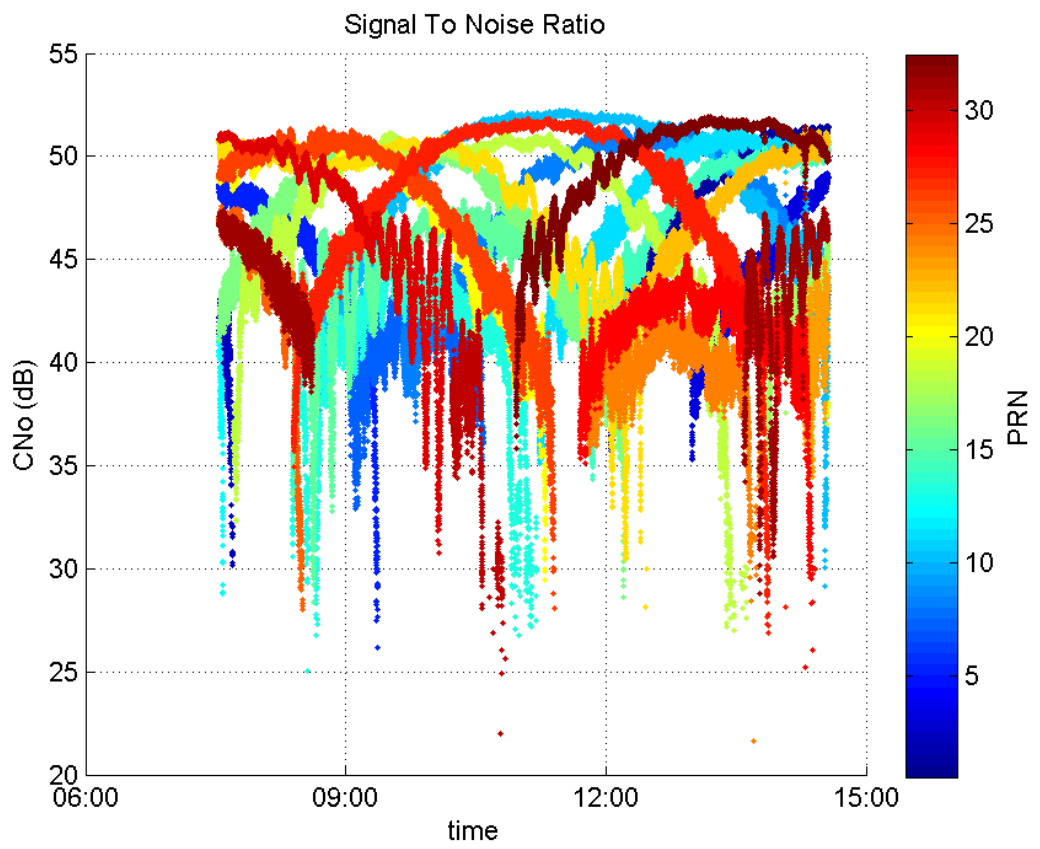
Number of Visible GPS Satellites 29
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



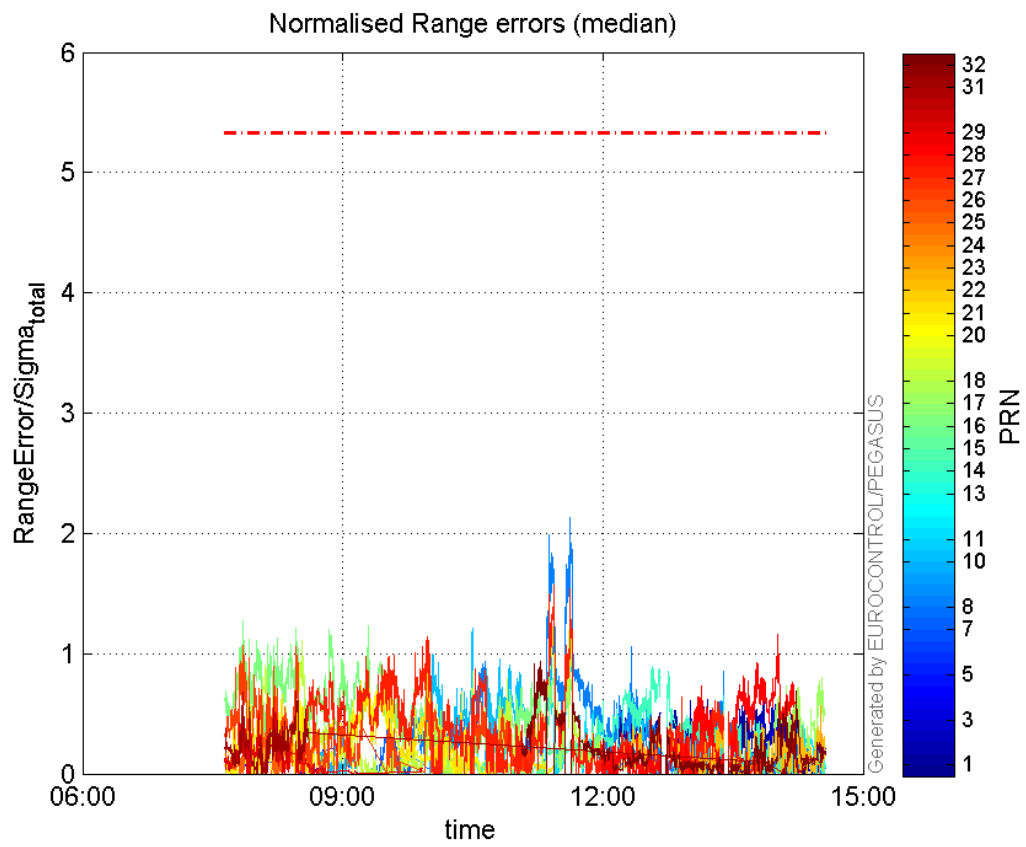
range errors

Number of Overbounding Norm Errors 0

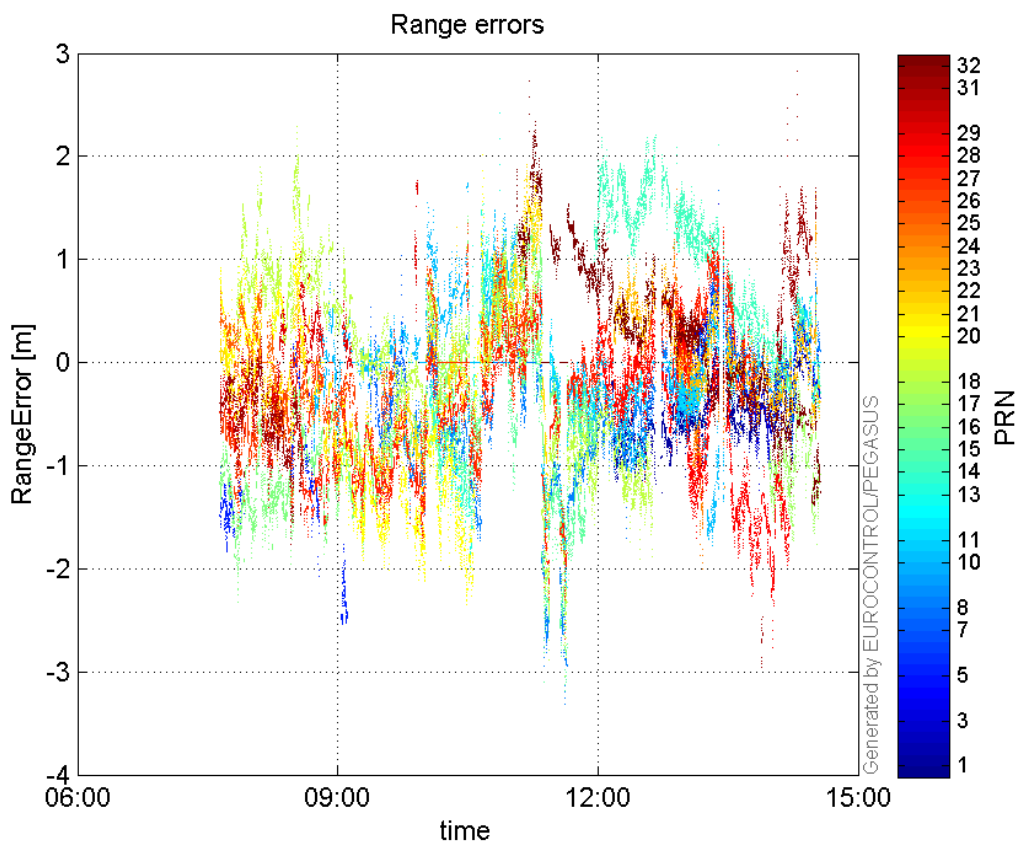
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1916	133926	1	0.615054	-0.980042	1.59342
1916	136279	3	0.644478	-1.23614	1.91805
1916	119161	5	0.52616	-2.51965	4.78876
1916	120614	7	0.442343	-1.22079	2.75983
1916	128236	8	2.13039	-3.32012	1.55845
1916	128236	10	1.37767	-2.3422	1.70011
1916	128236	11	1.07308	-2.55931	2.38501
1916	125516	13	0.515274	2.42622	4.7086
1916	131662	14	0.89213	2.17727	2.44053
1916	128506	15	0.380521	-1.51564	3.98307
1916	114683	16	1.27194	-2.3207	1.82454
1916	138667	17	0.800298	-1.76635	2.20712
1916	127552	18	1.5477	-2.88066	1.86125
1916	119856	20	0.802609	-1.91915	2.39115
1916	122303	21	0.947721	-1.96773	2.07628
1916	137196	22	0.538796	-0.77105	1.43106
1916	138631	23	0.563016	1.65073	2.93195
1916	133929	24	0.201082	-2.00483	9.97022
1916	116513	25	0.458776	-1.09861	2.39466
1916	114683	26	1.07005	-1.58604	1.48221
1916	127557	27	1.5693	-2.21248	1.40985
1916	136872	28	1.15801	-2.77074	2.39267
1916	115936	29	0.636958	-1.40268	2.20215
1916	116875	31	0.693681	-1.76461	2.54384
1916	126999	32	0.932761	2.33627	2.50469

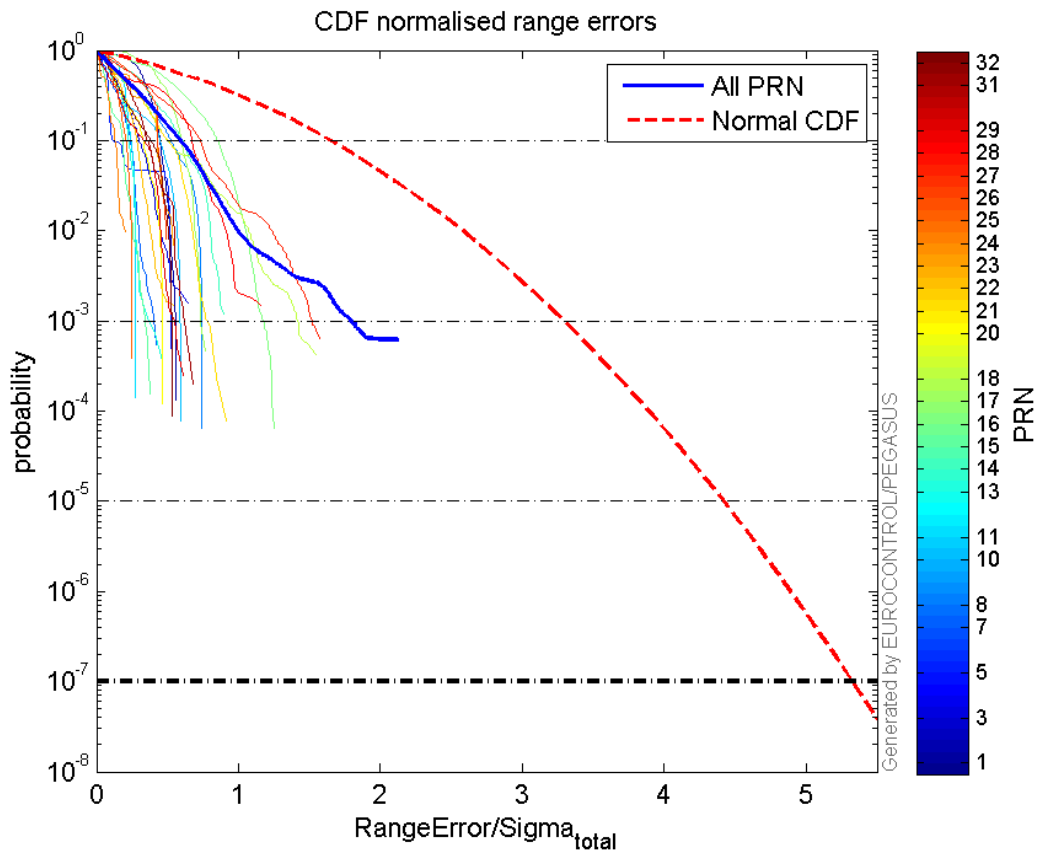
Normalised Range errors (median):



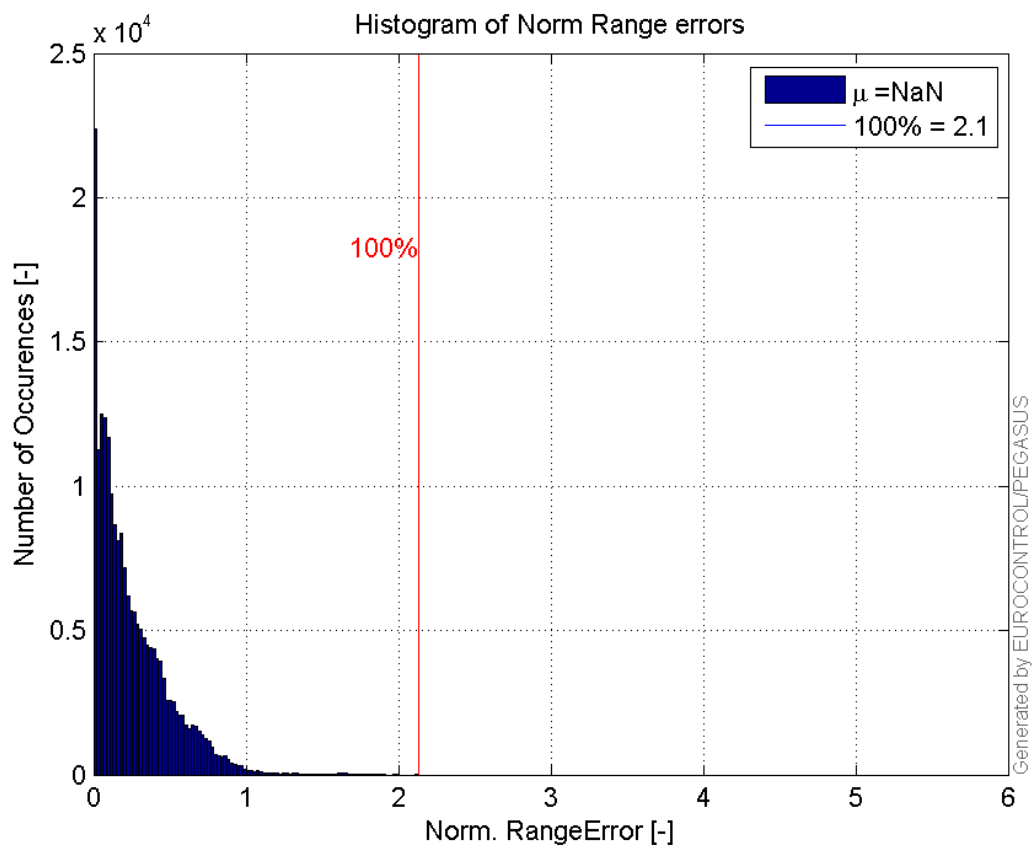
Range errors:



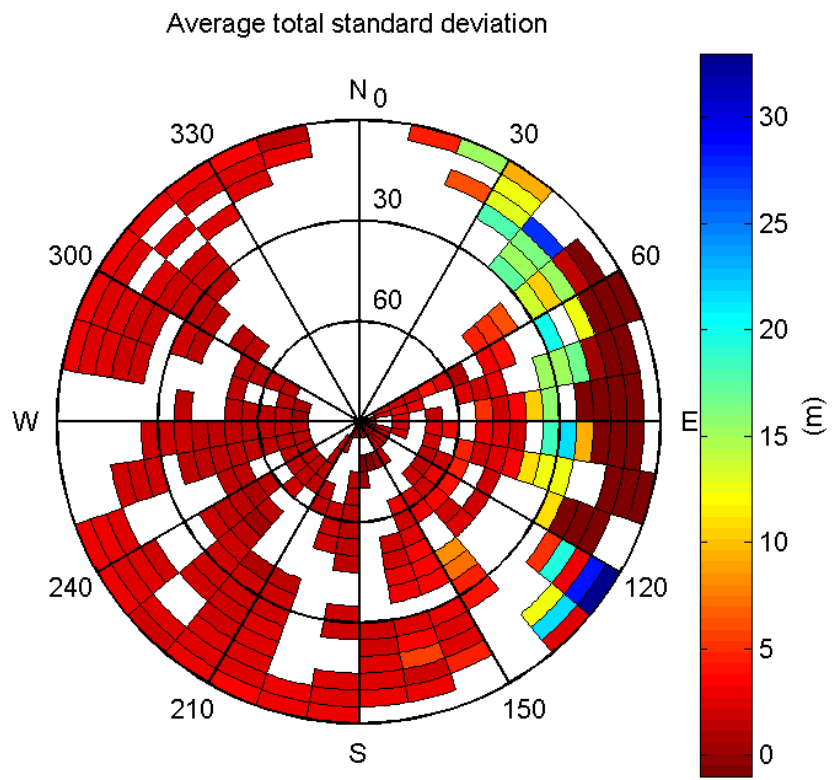
CDF normalised range errors:



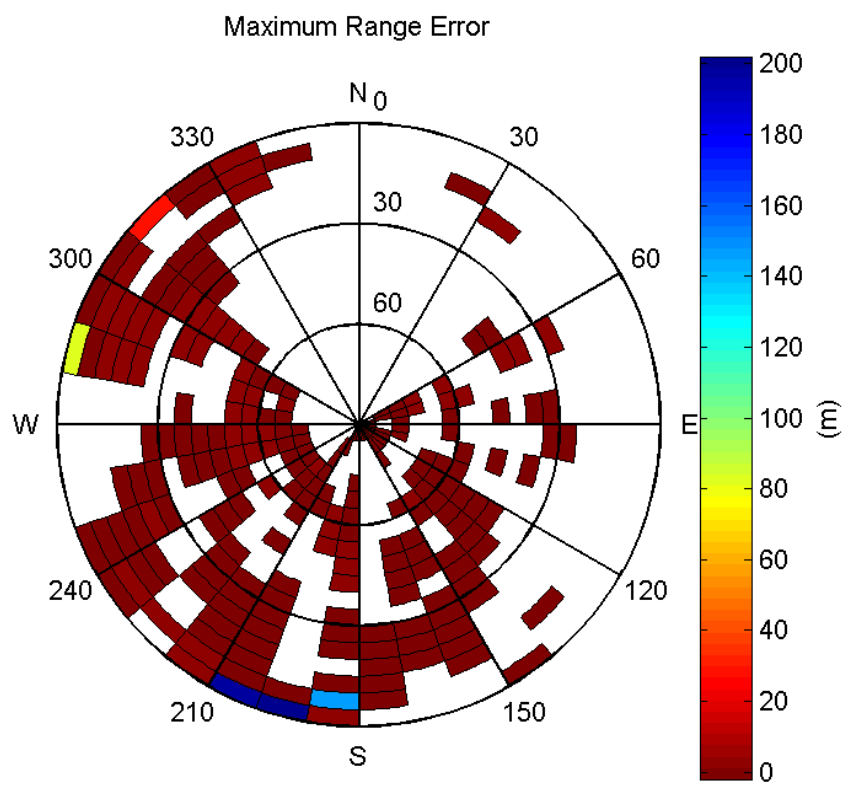
Histogram of Norm Range errors:



Sigma Sky Plot:

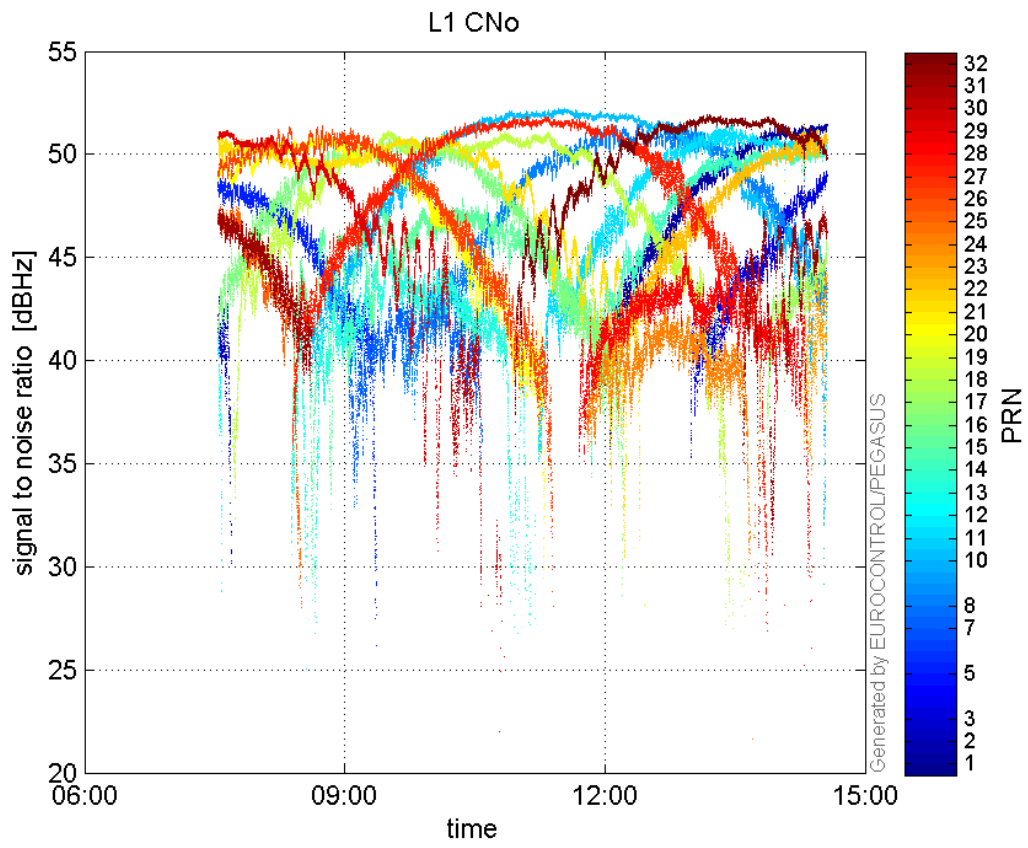


Norm Error Sky Plot:

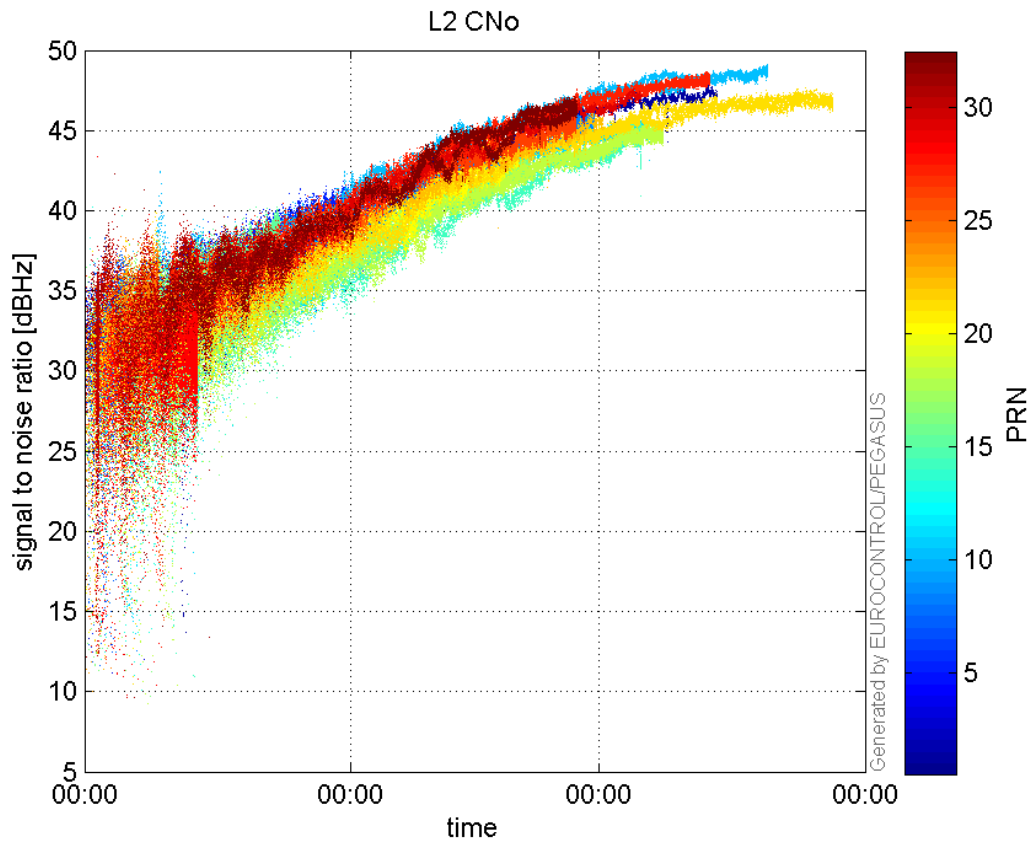


signal quality

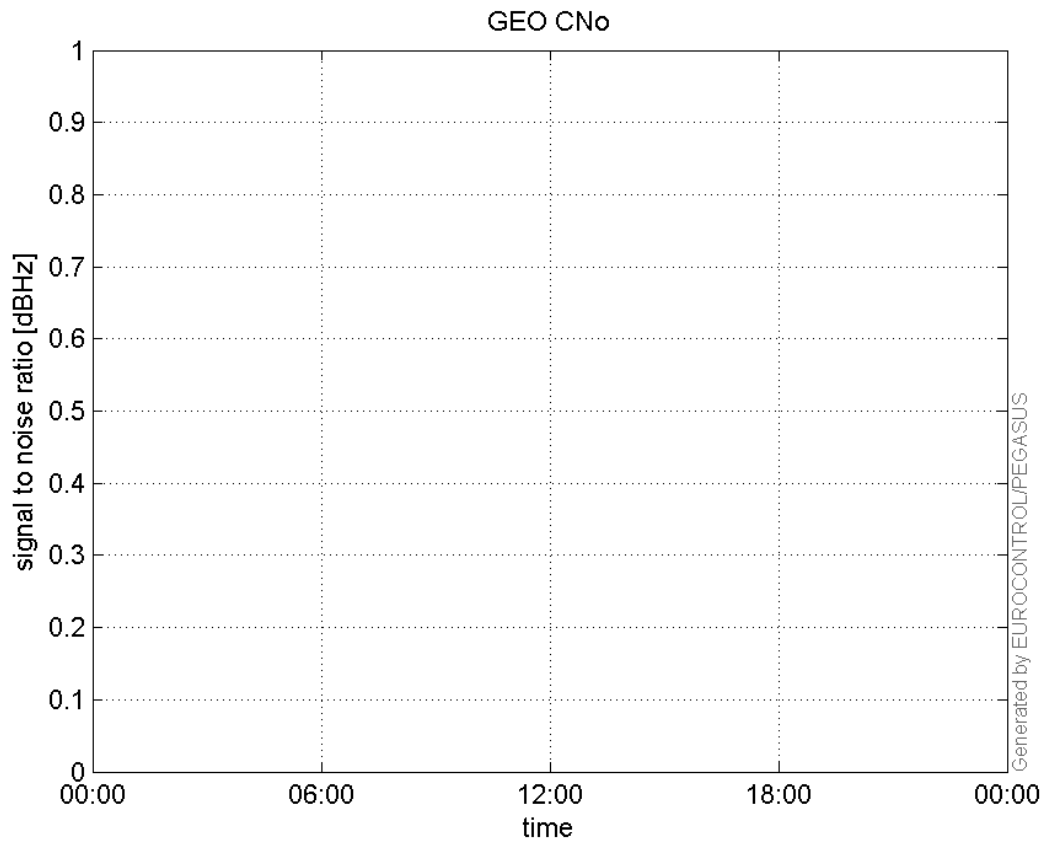
L1 CNo:



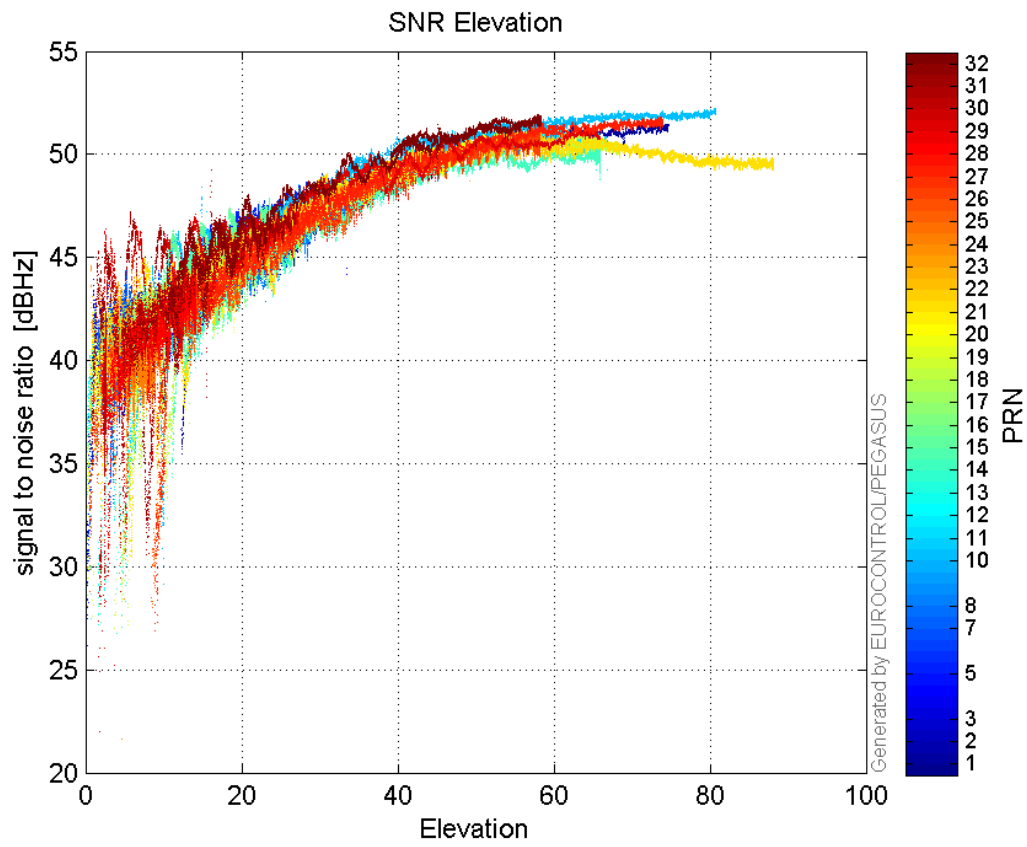
L2 CNo:



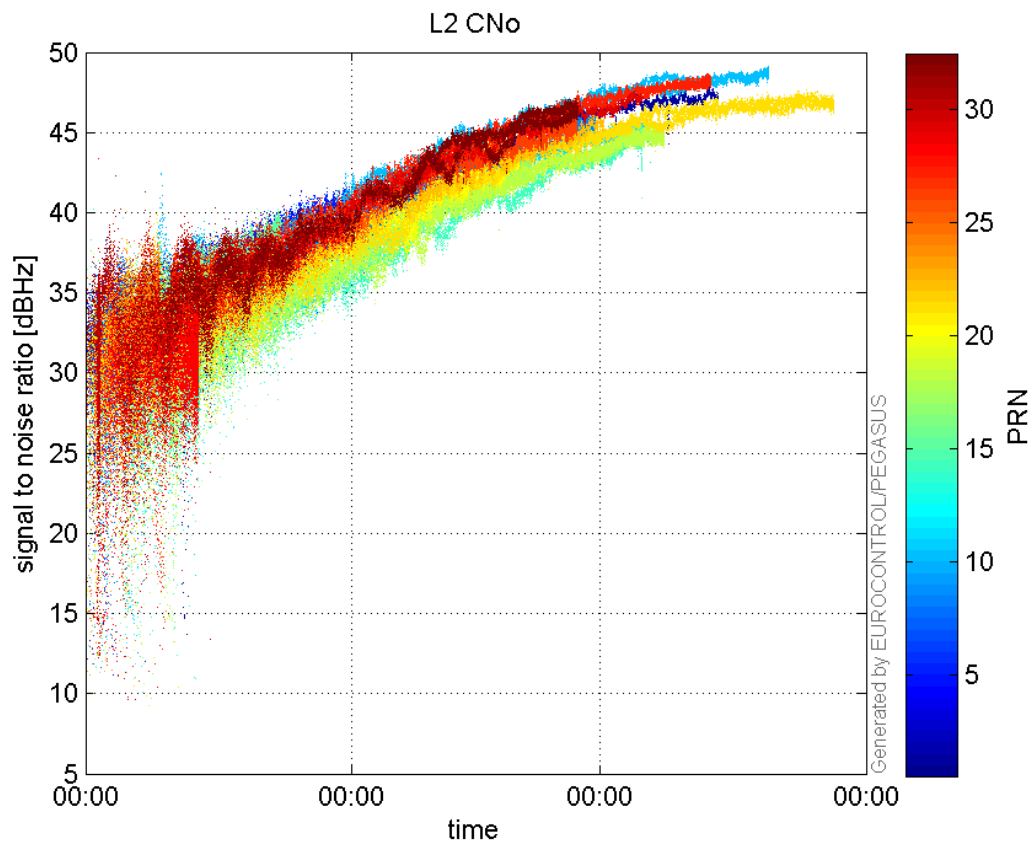
GEO CNo:



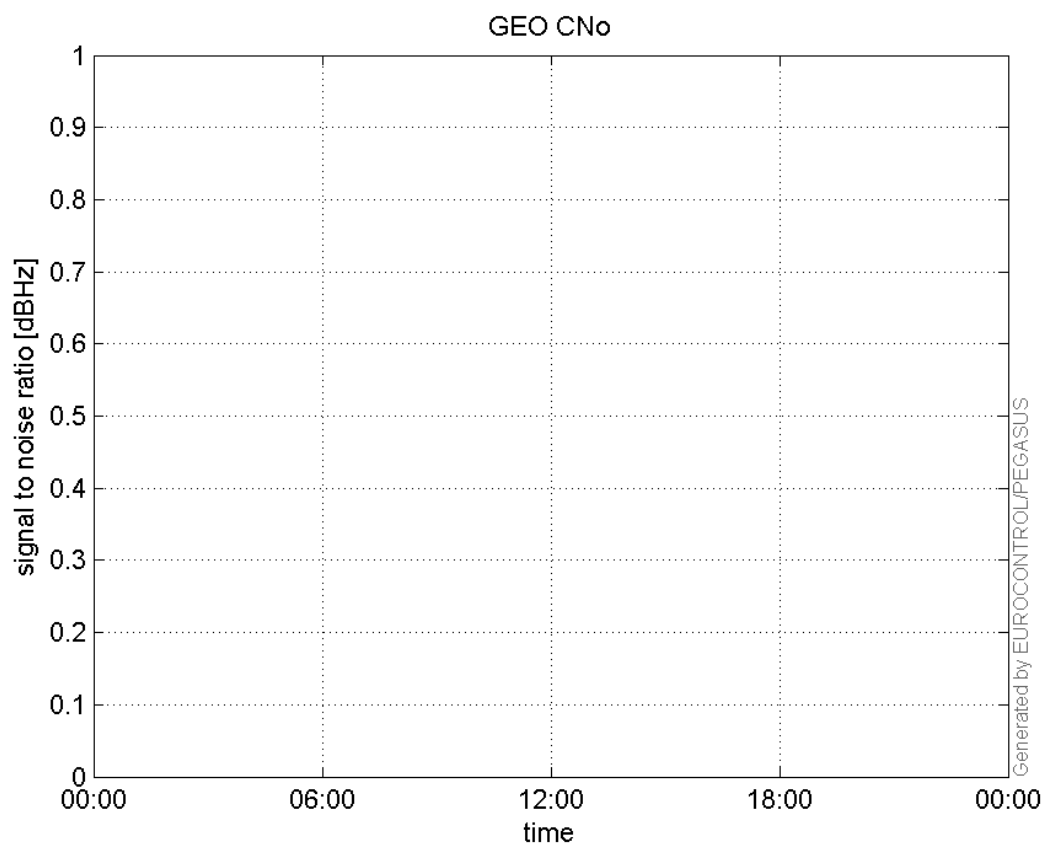
SNR Elevation:



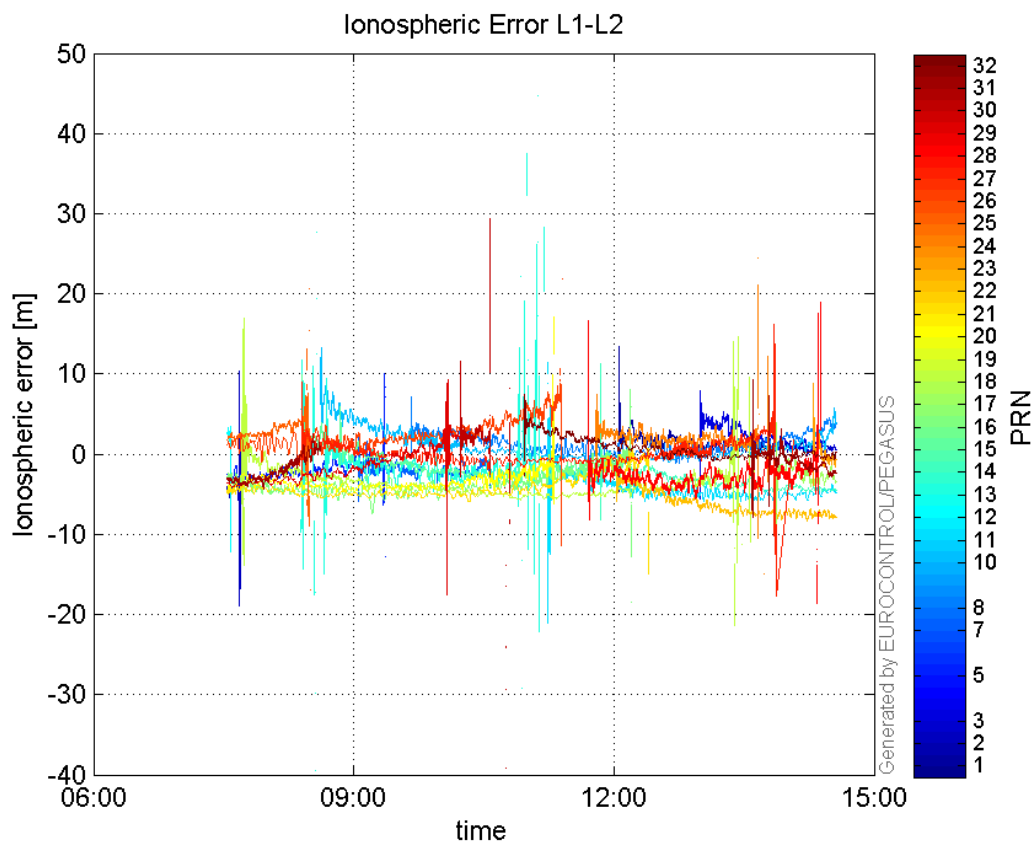
L2 CNo:



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_09_26_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_09_26_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	50.4391
init_lon	results	30.4296
init_alt	results	263.3928
mi_numbers	results	0