

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 29/01/2017

SBAS Messages

start: 08:59:39.129 26.01.2017 (week: 1933 sec: 377979.129)
end: 13:37:30.129 26.01.2017 (week: 1933 sec: 394650.129)
duration: 04:37:51 ..

quality

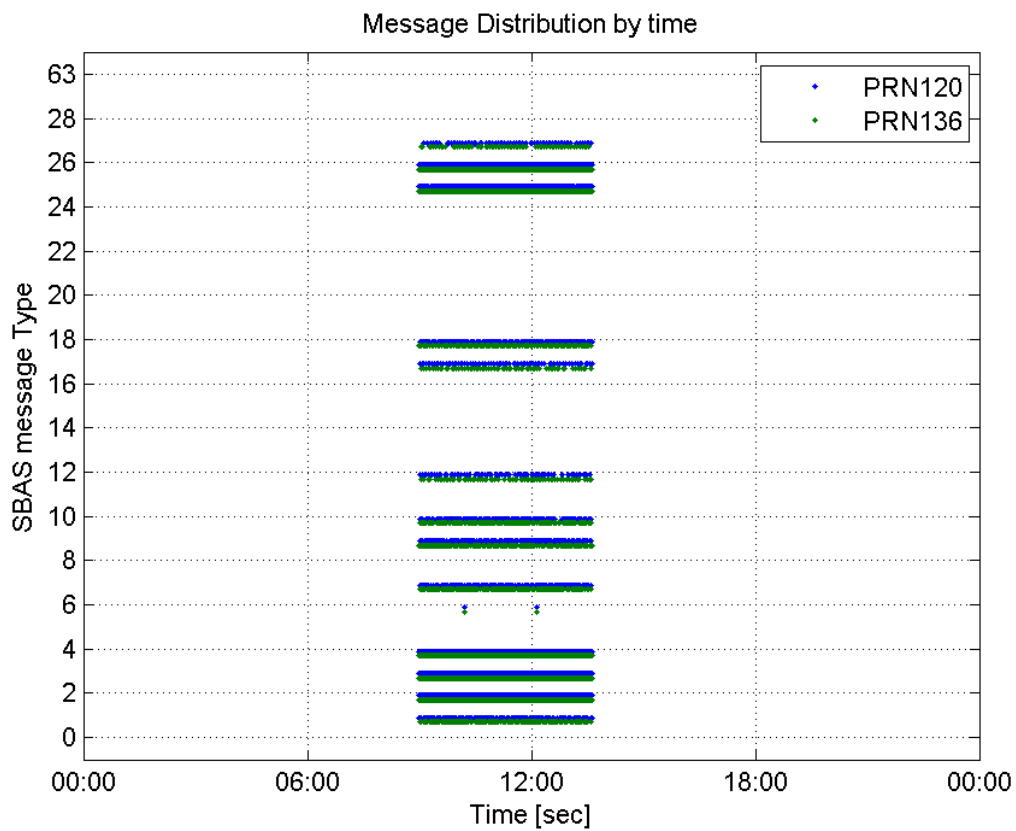
valid samples 26173
total samples 26173
number of SBAS PRNs 2

SBAS SIS Overview

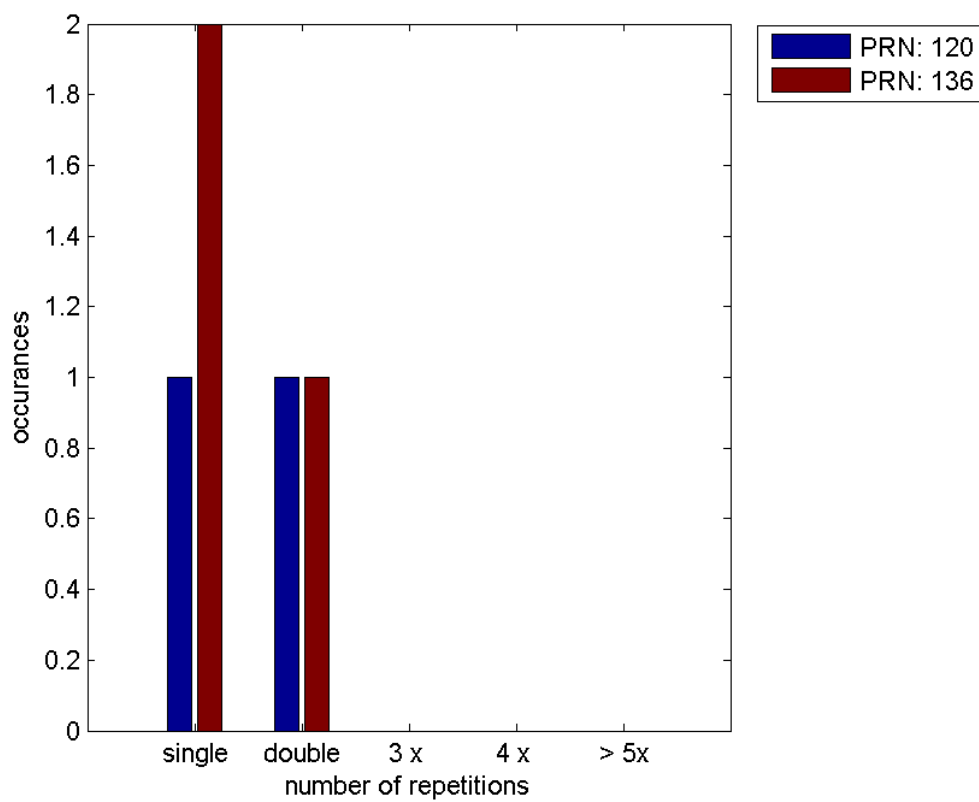
Message Type 6 repetitions :

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

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

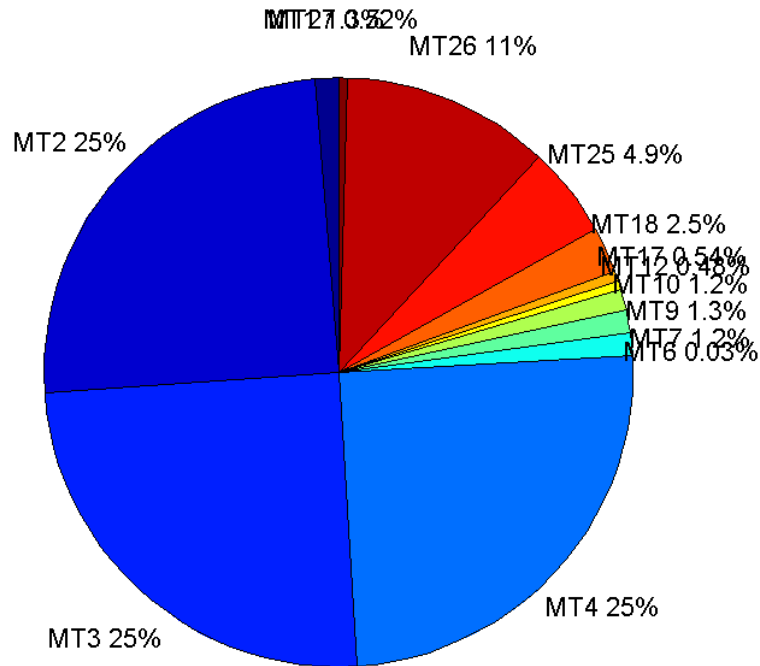
	number of messages	%
MT 0	0	0
MT 1	167	1.26842
MT 2	3274	24.8671
MT 3	3276	24.8823
MT 4	3276	24.8823
MT 5	0	0
MT 6	4	0.0303813
MT 7	159	1.20766
MT 9	165	1.25323
MT 10	157	1.19247
MT 12	63	0.478505
MT 17	71	0.539268
MT 18	332	2.52165
MT 24	0	0
MT 25	648	4.92177
MT 26	1506	11.4386
MT 27	68	0.516482
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	13166	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	320	100.307	25	0	0
MT 2	4	17	5.09258	827	0	7
MT 3	4	12	5.08947	825	0	0
MT 4	4	17	5.08855	814	0	8
MT 5	--	--	--	--	--	--
MT 6	1	7007	2336.33	1	1	1
MT 7	76	320	104.449	35	0	4
MT 9	76	395	100.579	0	0	0
MT 10	76	720	106.071	31	1	5
MT 12	188	780	264.242	62	17	17
MT 17	188	588	236.9	0	0	0
MT 18	4	193	50.2205	0	0	0
MT 24	--	--	--	--	--	--
MT 25	3	137	25.7357	0	0	0
MT 26	4	60	11.0744	0	0	0
MT						

27	188	778	241.537	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

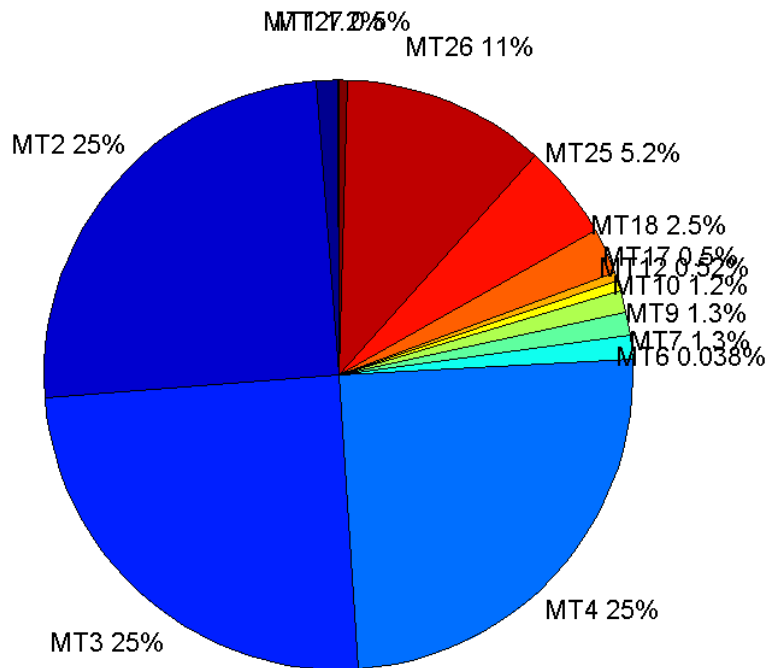
	number of messages	%
MT 0	0	0
MT 1	160	1.23011
MT 2	3254	25.0173
MT 3	3233	24.8558
MT 4	3215	24.7175
MT 5	0	0
MT 6	5	0.0384408
MT 7	168	1.29161
MT 9	166	1.27624
MT 10	157	1.20704
MT 12	68	0.522795
MT 17	65	0.499731

MT 18	327	2.51403
MT 24	0	0
MT 25	675	5.18951
MT 26	1449	11.1402
MT 27	65	0.499731
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	13007	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	320	104.038	36	0	0
MT 2	4	17	5.12266	836	0	9
MT 3	4	20	5.15687	859	1	8
MT 4	4	21	5.18606	867	1	7
MT 5	--	--	--	--	--	--
MT 6	1	7004	1752	1	1	1
MT 7	75	240	99.2036	34	0	0
MT 9	76	320	100.758	0	0	0
MT 10	76	400	105.679	38	1	5
MT 12	188	592	244.284	67	14	14
MT 17	184	780	255.734	0	0	0
MT 18	4	187	50.8896	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	123	24.7018	0	0	0
MT 26	4	68	11.5007	0	0	0
MT 27	188	978	252.625	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:/PegasusDataJob/job/2017_01_26EGNOS2Hz/01_User/01_User
Outputfile	System	D:/PegasusDataJob/job/2017_01_26EGNOS2Hz/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: 08:59:39.5 26.01.2017 (week: 1933 sec: 377979.5)
end: 13:37:30.5 26.01.2017 (week: 1933 sec: 394650.5)
duration: 04:37:52 ..

quality

valid samples 30201
total samples 30858

Event tables

Position discontinuity events type long
APV-I discontinuity events type long
APV-35m discontinuity events type independent
LPV-200 discontinuity events type independent
CAT-I discontinuity events type nothing

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	384291	1.61515	9.082	0.177841	-0.112214	13.466	0.00833313
max normVer	391882	1.39519	29.2578	0.047686	2.36099	21.058	0.112118
max HPE	394551	8.6087	216.723	0.0397221	7.29261	158.036	0.0461453
max VPE	386172	2.149	342.984	0.0062656	-7.64233	599.31	0.0127519
min HPL	381961	1.08122	8.40584	0.128627	-0.403823	14.2079	0.0284224
min VPL	378688	0.575608	9.74095	0.0590916	-0.962174	13.0458	0.0737535

Position discontinuity events :

#	Epoch	duration	stable period
1	385700	5.5	278
2	389479	773.5	505.5
3	390600	5.5	270.5

APV-I discontinuity events :

#	Epoch	duration	stable period
1	378533	79.5	87.5
2	379410	99	28.5
3	379570	74.5	61
4	380090	79.5	101
5	380443	9.5	273.5
6	382812	186.5	32
7	384260	9.5	336.5
8	385700	9.5	278
9	386170	5.5	444.5
10	386931	5.5	113
11	388311	9.5	711.5
12	389479	919.5	505.5
13	390497	787	96.5
14	391327	479.5	43
15	392170	80.5	268.5

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	378533	79.5	87.5
2	379410	99	28.5
3	379570	74.5	61
4	380090	79.5	101
5	380443	9.5	273.5
6	382812	186.5	32

7	384260	9.5	336.5
8	385700	9.5	278
9	386170	5.5	444.5
10	386536	5.5	90.5
11	386930	6.5	28.5
12	388311	9.5	711.5
13	389479	997.5	505.5
14	390497	787	20.5
15	391327	479.5	43
16	392170	80.5	268.5

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	378533	79.5	87.5
2	379410	99	28.5
3	379570	74.5	61
4	380090	79.5	101
5	380443	9.5	273.5
6	382812	186.5	32
7	384260	9.5	336.5
8	385700	9.5	278
9	386170	5.5	444.5
10	386536	5.5	90.5
11	386930	6.5	28.5
12	388311	9.5	711.5
13	389479	997.5	505.5
14	390497	787	20.5
15	391327	479.5	43
16	392170	80.5	268.5

First Glance analysis

Duration	16672
Number of Samples	30858
Number of invalid sample	657
Number of no position solution samples	1535
Number of missing sample	2486
Logging Loss	7.4556
Processing Loss	2.1291
Number of Misleading Information	0
Data gaps	5
Discontinuities	39

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
28666	24913	24440	0	24440

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m

HPE 95%	1.60392	1.54483	1.53037	NaN	1.53037
HPEScale 95%	NaN	5.37243	5.38675	NaN	5.38675
VPE 95%	1.46768	1.29389	1.30212	NaN	1.30212
VPEscale 95%	NaN	3.44334	2.42583	NaN	2.42583

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.949174	0.824906	0.809245	0	0.809245
measurements	0.928965	0.807343	0.792015	0	0.792015
Operational	1.71941	1.4943	1.46593	0	1.46593

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	34	51	80	--	80
Long	3	15	24	--	24
Independent	3	15	16	--	16
P(disc.)	0.0015698	0.00903143	0.00981997	NaN	0.00981997
P(slide)	0.0173202	0.0301449	0.0396686	NaN	0.0396686

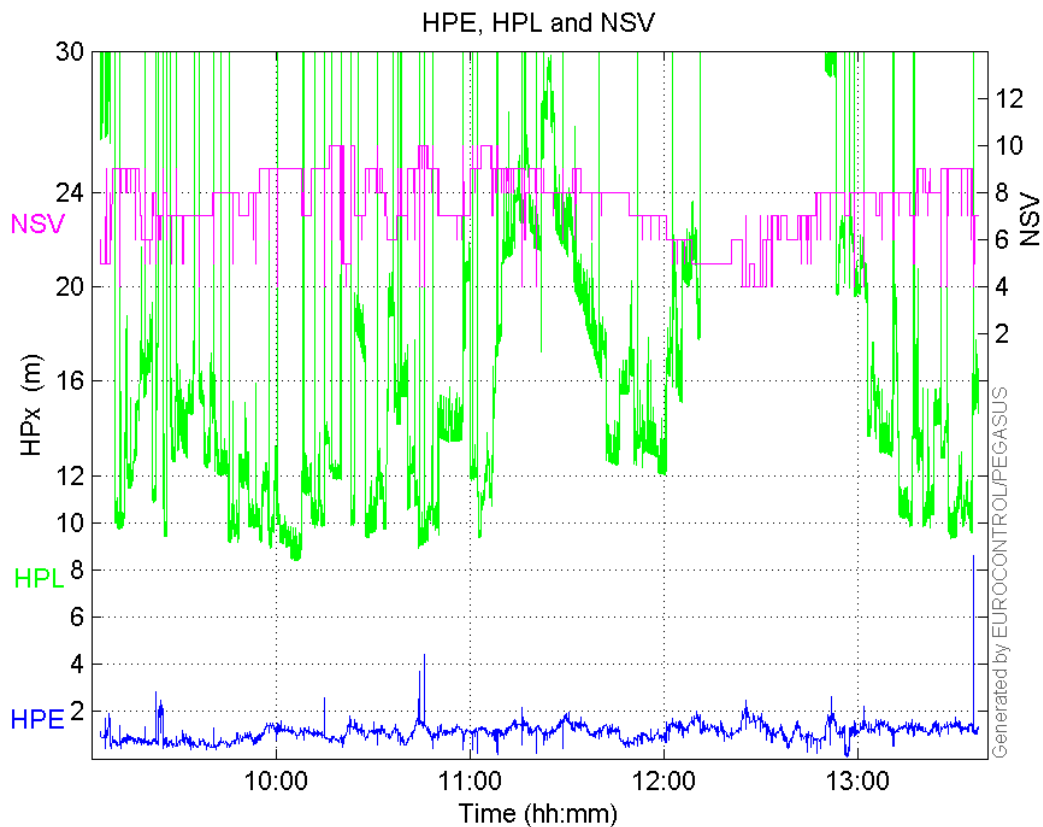
Integrity events :

	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

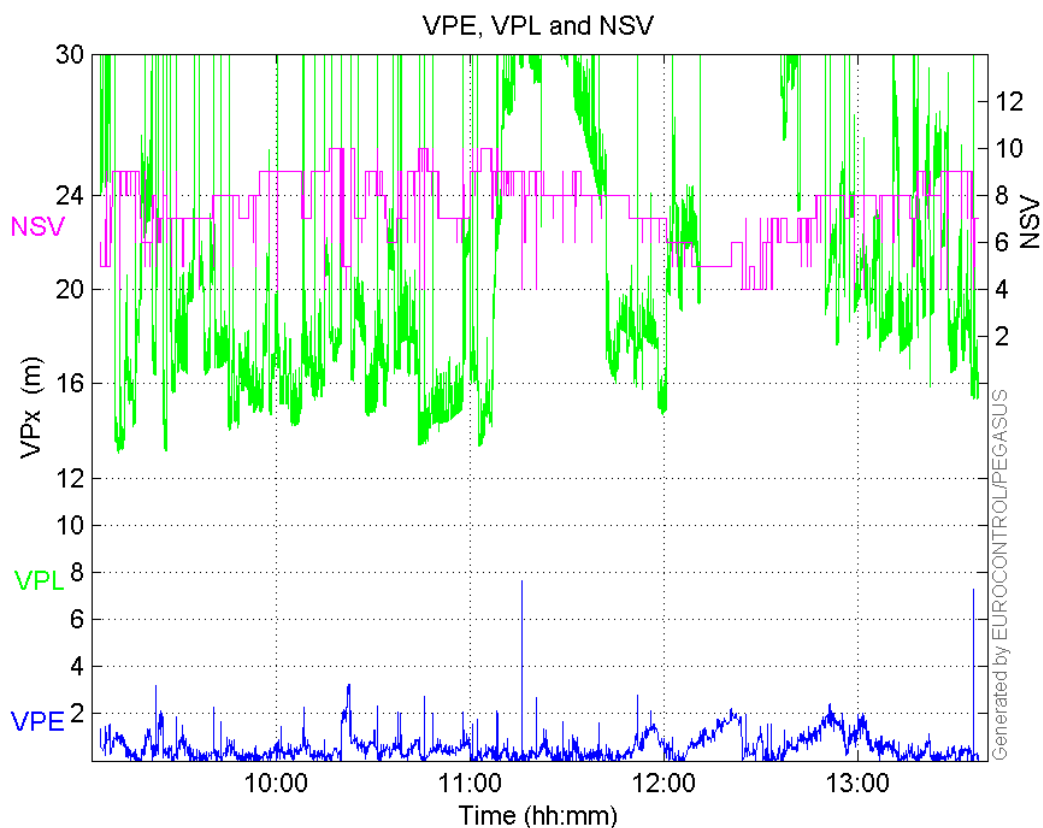
Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	28666	24913	24440	0	24440
SIS Availability	0.949174	0.824906	0.809245	0	0.809245
Local Availability	0.928965	0.807343	0.792015	0	0.792015
Operational Availability	1.71941	1.4943	1.46593	0	1.46593
HPE 95%	1.60392	1.54483	1.53037	NaN	1.53037
HPEScale 95%	NaN	5.37243	5.38675	NaN	5.38675
VPE 95%	1.46768	1.29389	1.30212	NaN	1.30212
VPEscale 95%	NaN	3.44334	2.42583	NaN	2.42583
All Discontinuity Events	34	51	80	--	80
Long Discontinuity Events	3	15	24	--	24
Independent Discontinuity Events	3	15	16	--	16
P(discontinuity)	0.0015698	0.00903143	0.00981997	NaN	0.00981997
P(sliding window)	0.0173202	0.0301449	0.0396686	NaN	0.0396686
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:**

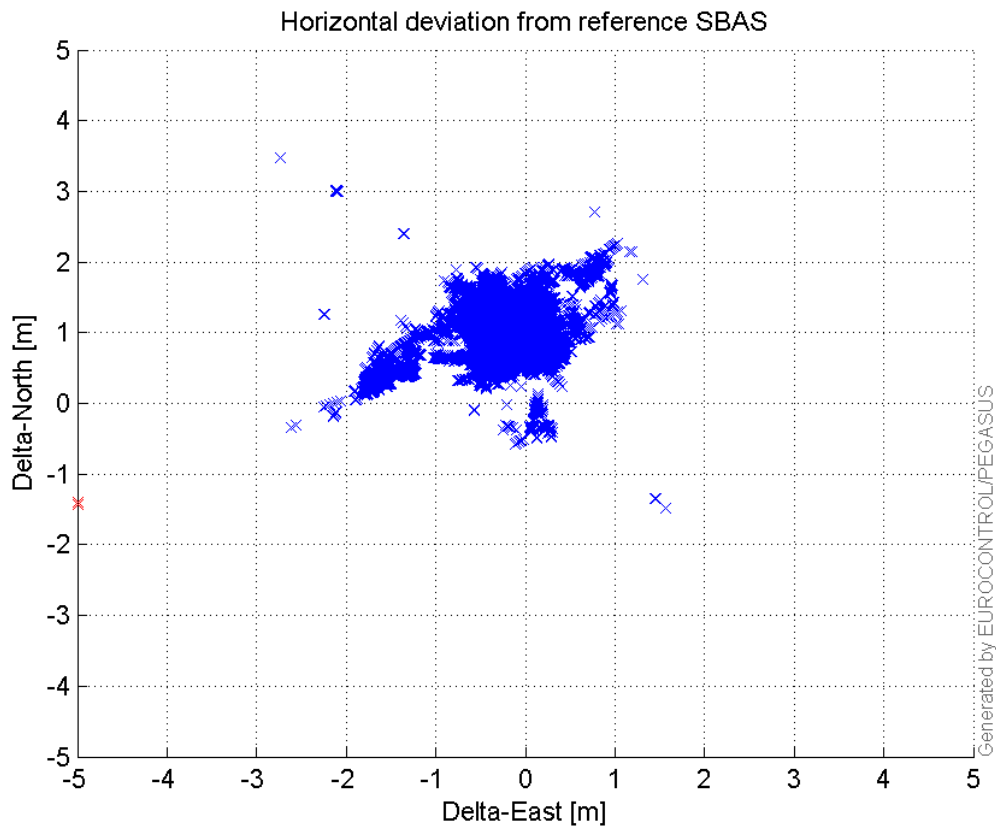


VPE, VPL and NSV:



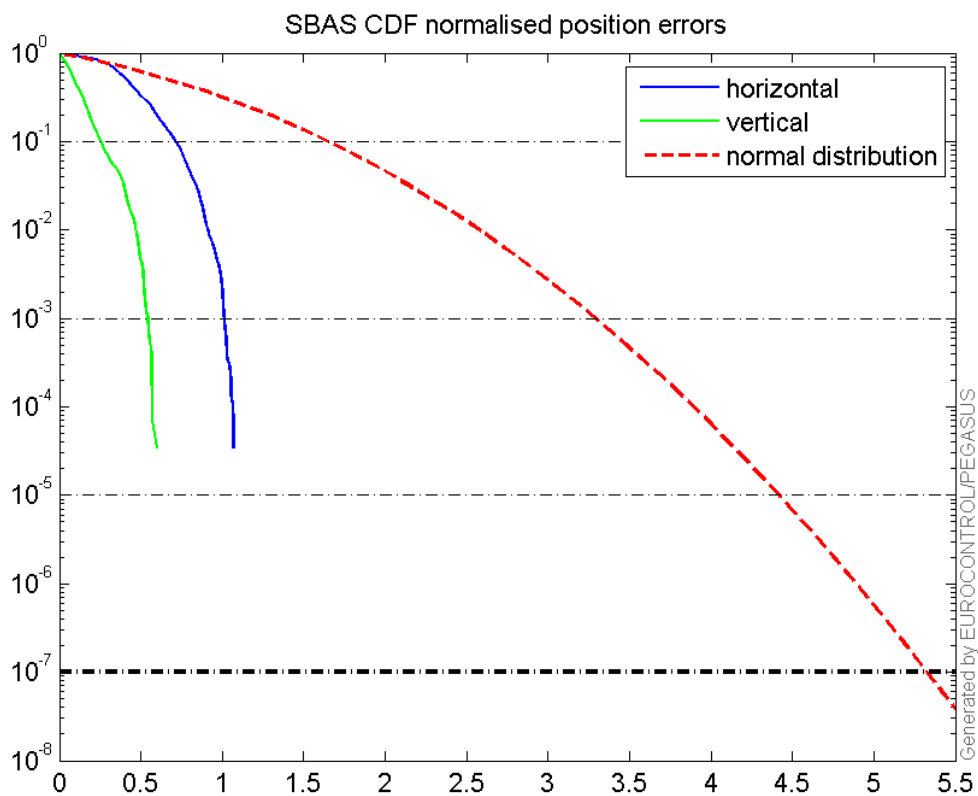
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

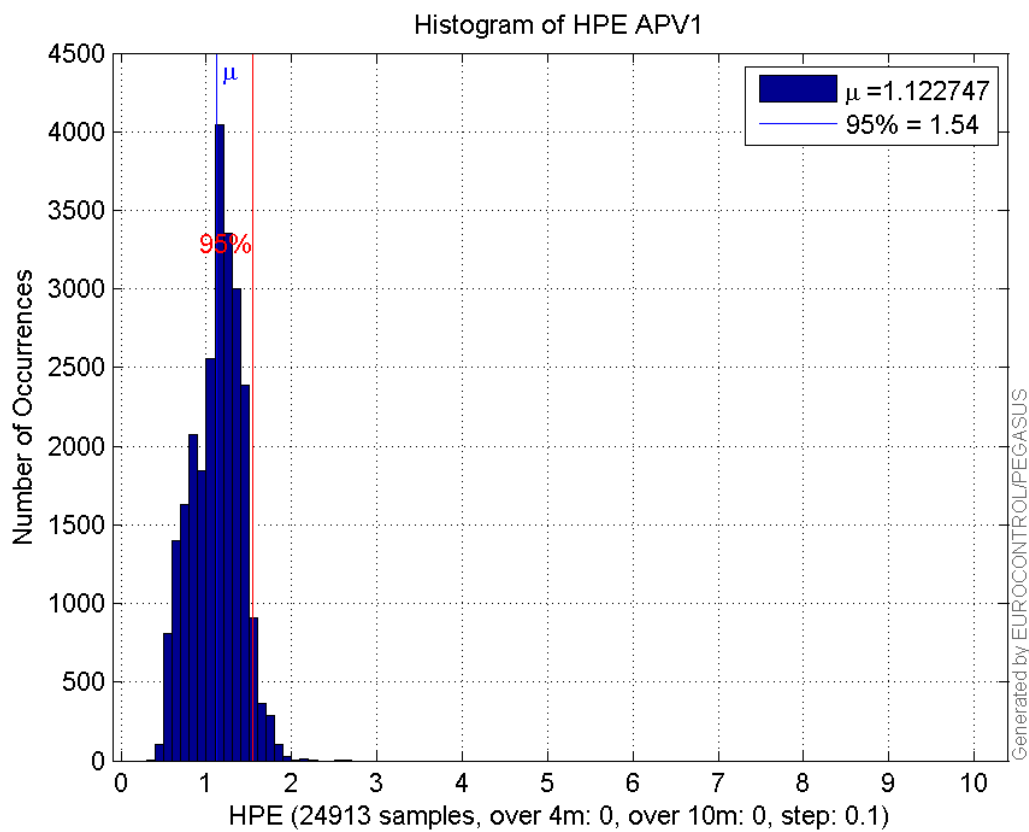
number	24913
sum	27971.005
sum2	33404.71
prctile95	1.5448346
prctile99	1.7625852
number	24913
sum	11361.615
sum2	8842.9847
prctile95	1.2938915
prctile99	1.8438184
number	24913
sum	386191.78
sum2	6753991.2
prctile95	27.1082
prctile99	35.912007
number	24913
sum	506500.77
sum2	11040168
prctile95	32.135485
prctile99	36.77741
number	24913
sum	1968.7036
sum2	176.54724
prctile95	0.13431069
prctile99	0.15363008
number	24913
sum	594.4481
sum2	24.257648
prctile95	0.068866747
prctile99	0.089261029
number	24440
sum	27369.028
sum2	32602.727
prctile95	1.5303668
prctile99	1.7579861
number	24440
sum	11180.656
sum2	8752.2419
prctile95	1.3021186
prctile99	1.845247
number	24440
sum	371702.34
sum2	6300256.3
prctile95	24.24035
prctile99	30.34156
number	24440
sum	488746.2
sum2	10371778
prctile95	30.5019
prctile99	34.20235
number	24440
sum	1948.9619
sum2	175.69119

prctile95 0.13466883
prctile99 0.15390329
number 24440
sum 589.64066
sum2 24.194062
prctile95 0.069309555
prctile99 0.089339001

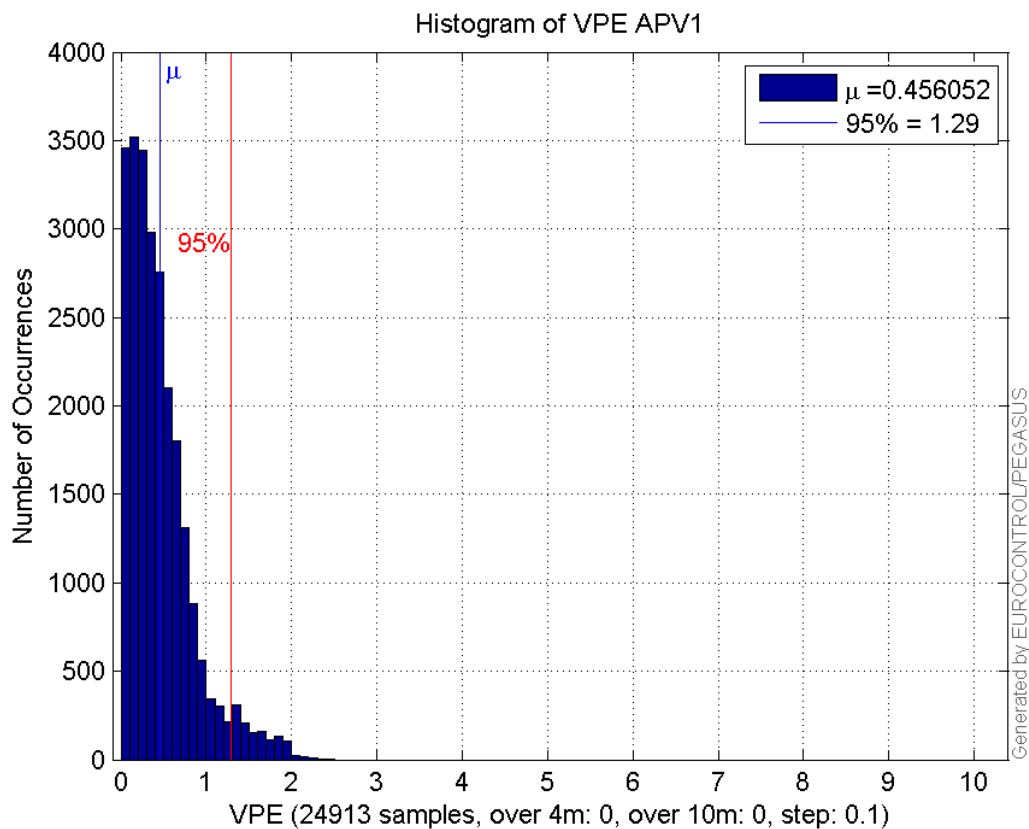
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.12275	0.283366	1.15405	1.54483	1.76259	1.15795
HPL	15.5016	5.55015	13.7333	27.1082	35.912	16.4652
VPE	0.456052	0.383376	0.369261	1.29389	1.84382	0.595781
VPL	20.3308	5.4598	18.4038	32.1355	36.7774	21.0511

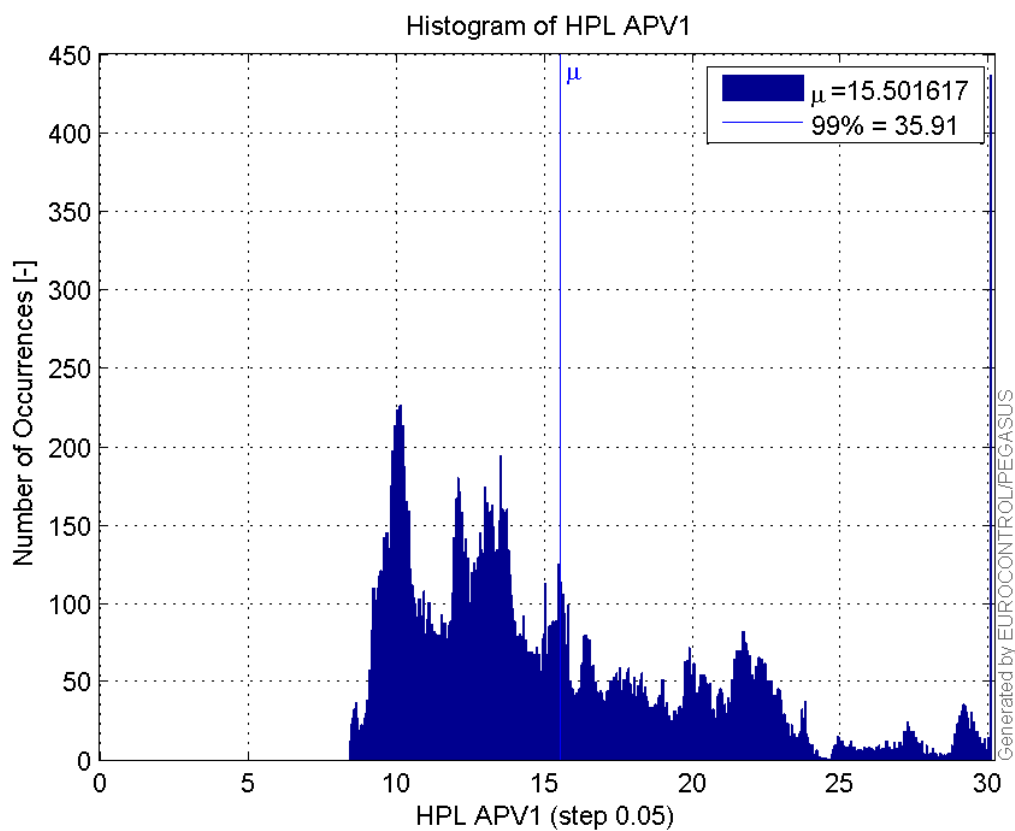
Histogram of HPE APV1:



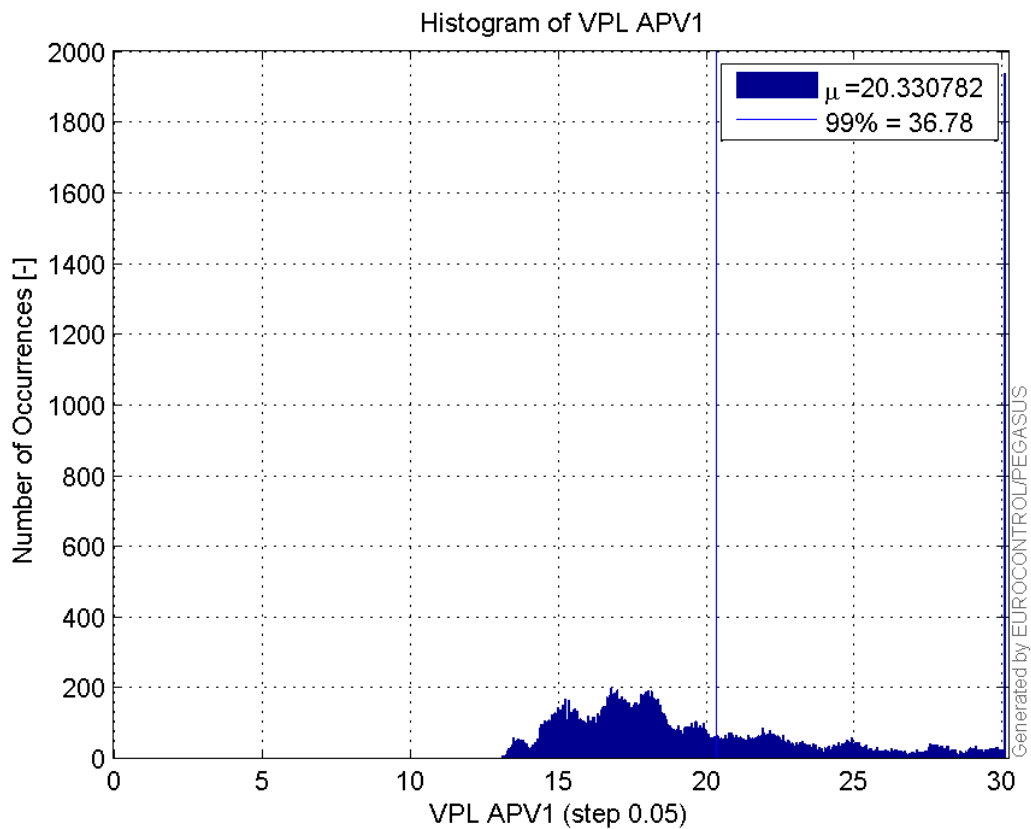
Histogram of VPE APV1:



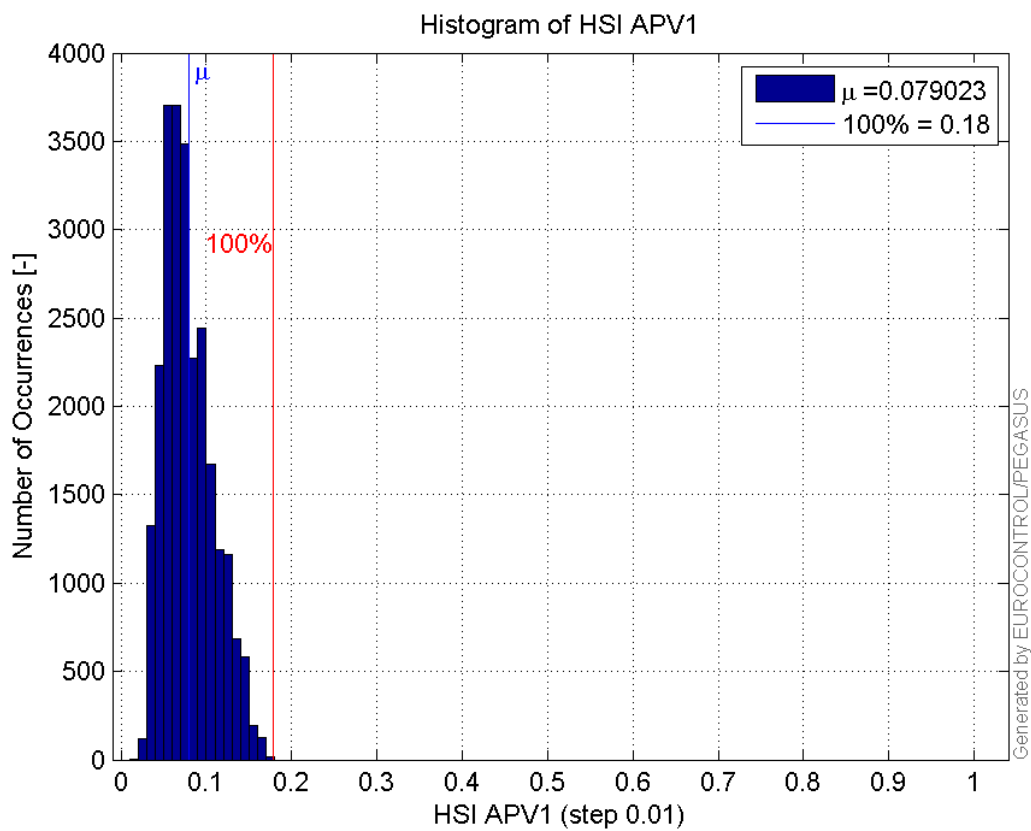
Histogram of HPL APV1:



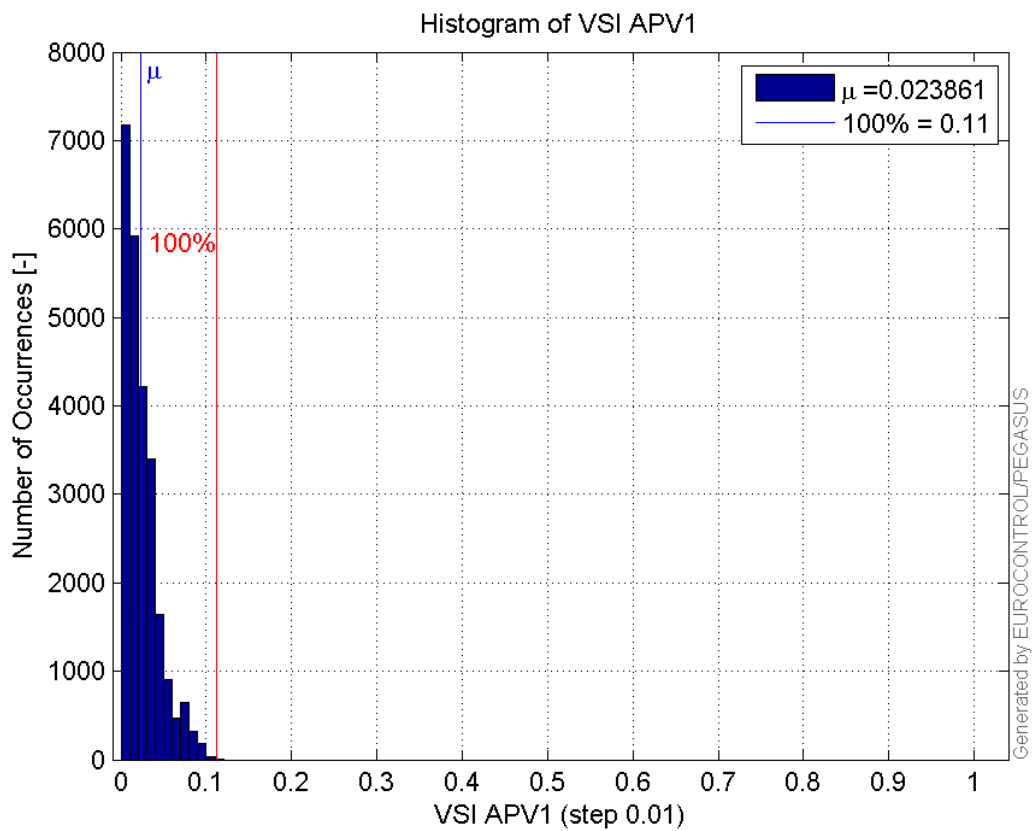
Histogram of VPL APV1:



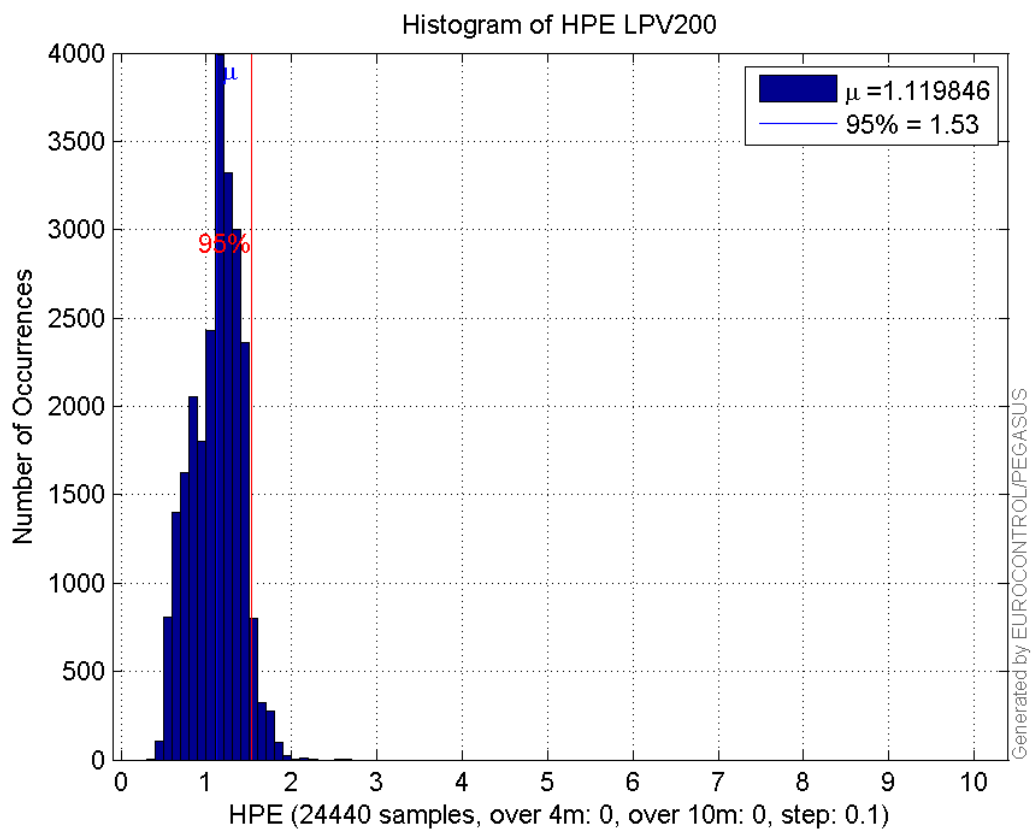
Histogram of HSI APV1:



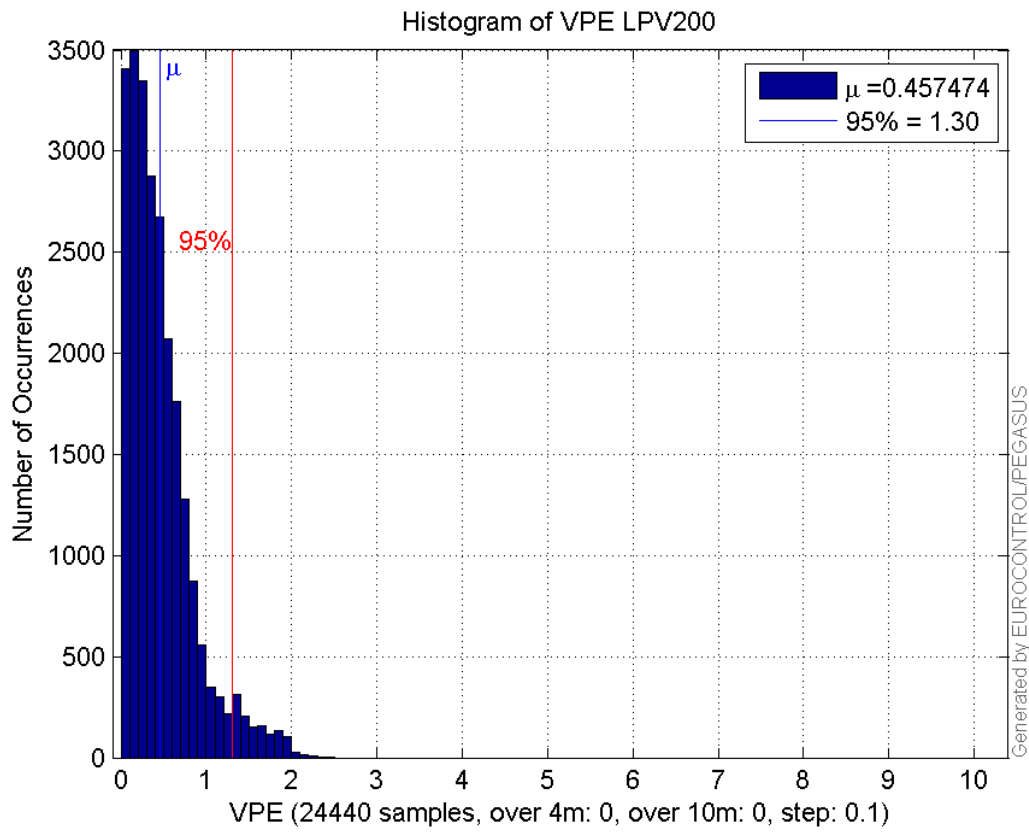
Histogram of VSI APV1:



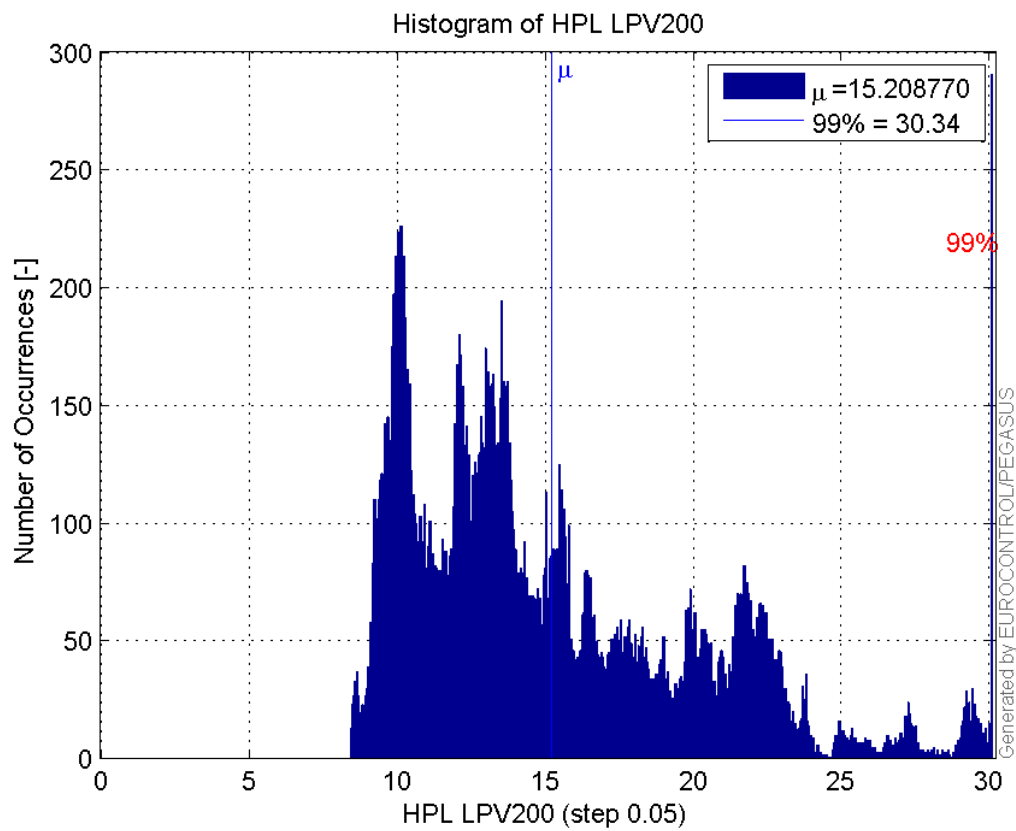
Histogram of HPE LPV200:



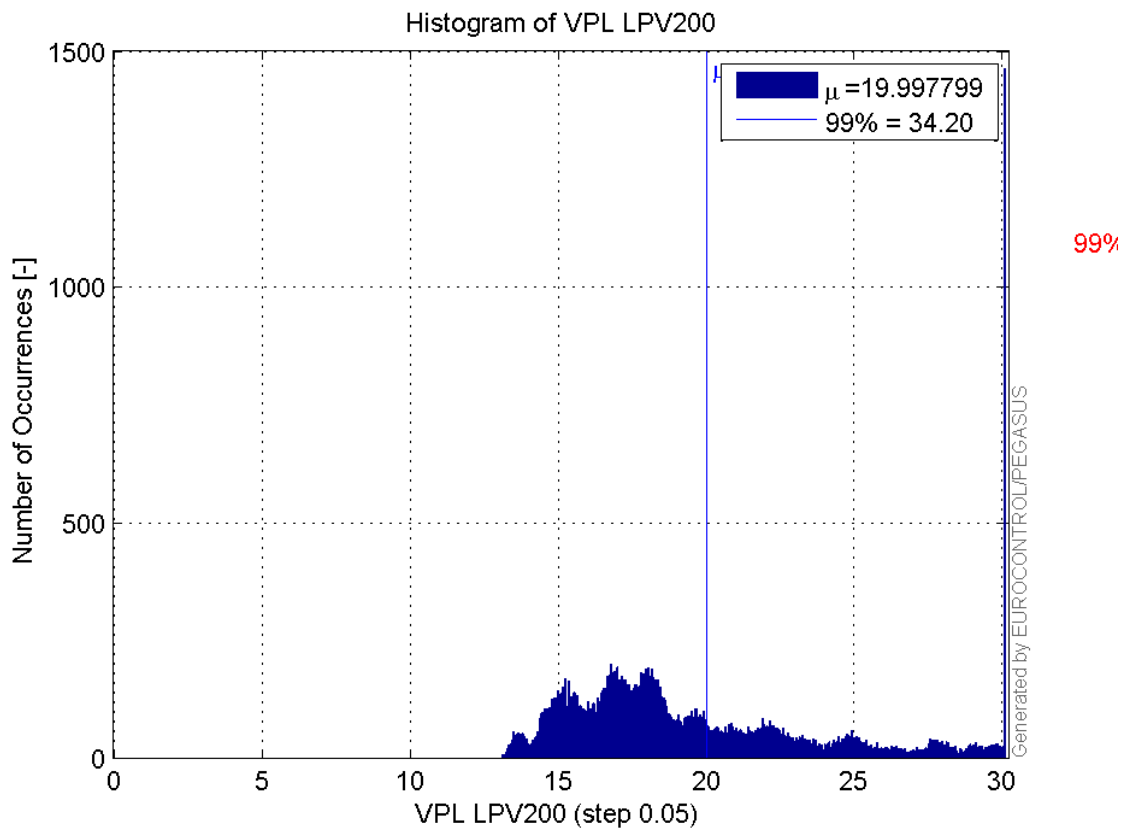
Histogram of VPE LPV200:



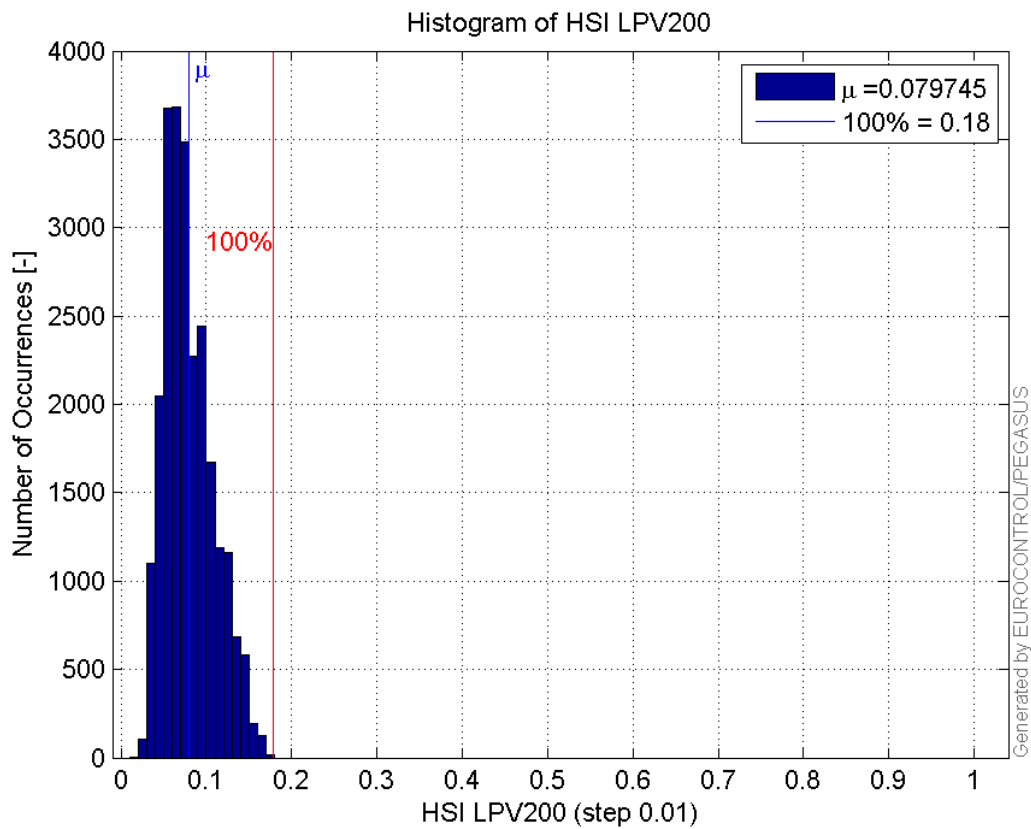
Histogram of HPL LPV200:



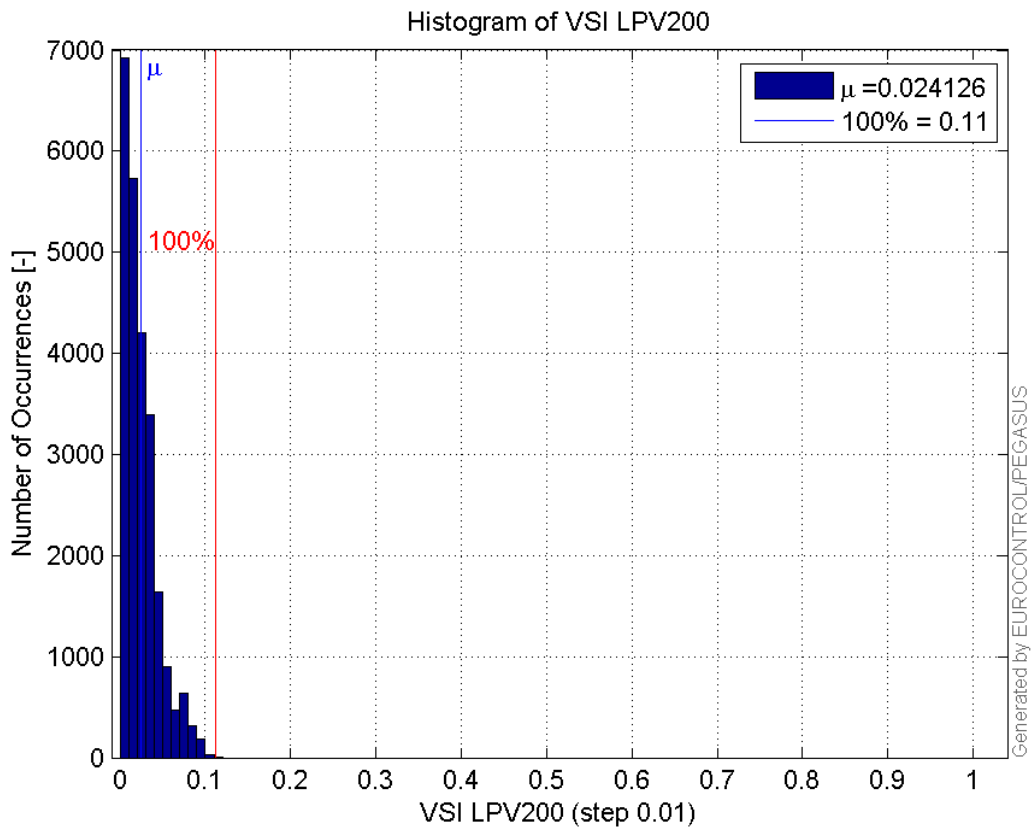
Histogram of VPL LPV200:



Histogram of HSI LPV200:

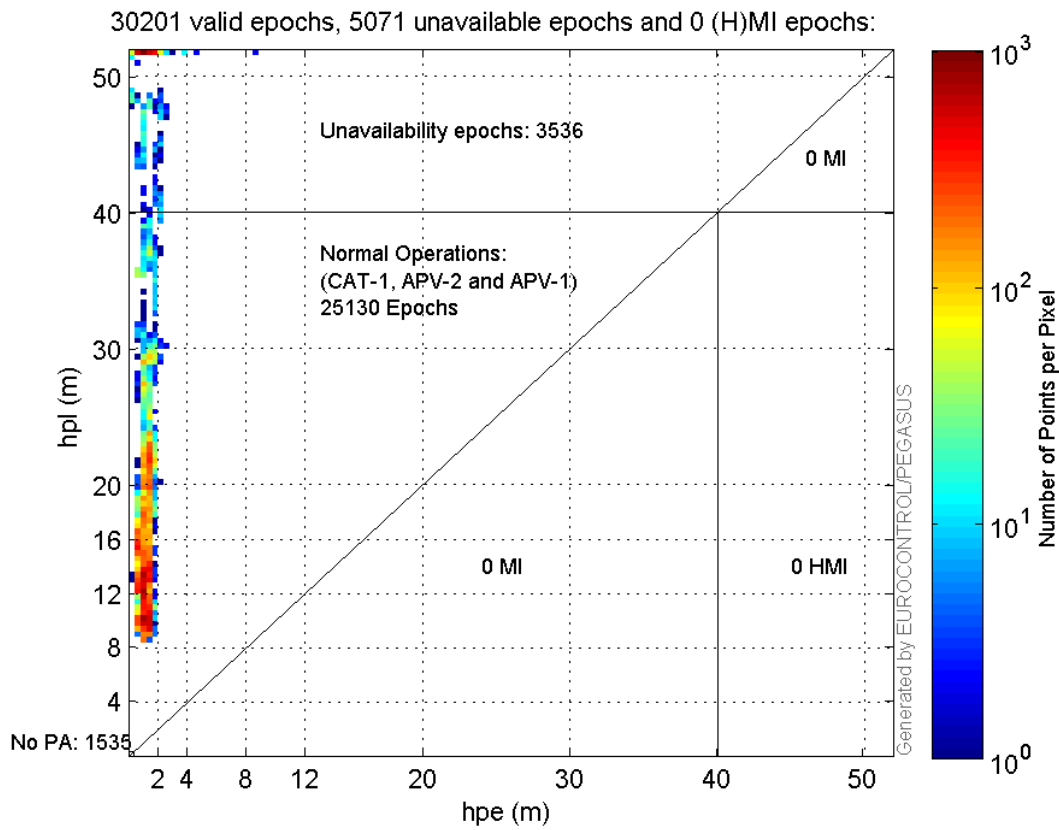


Histogram of VSI LPV200:

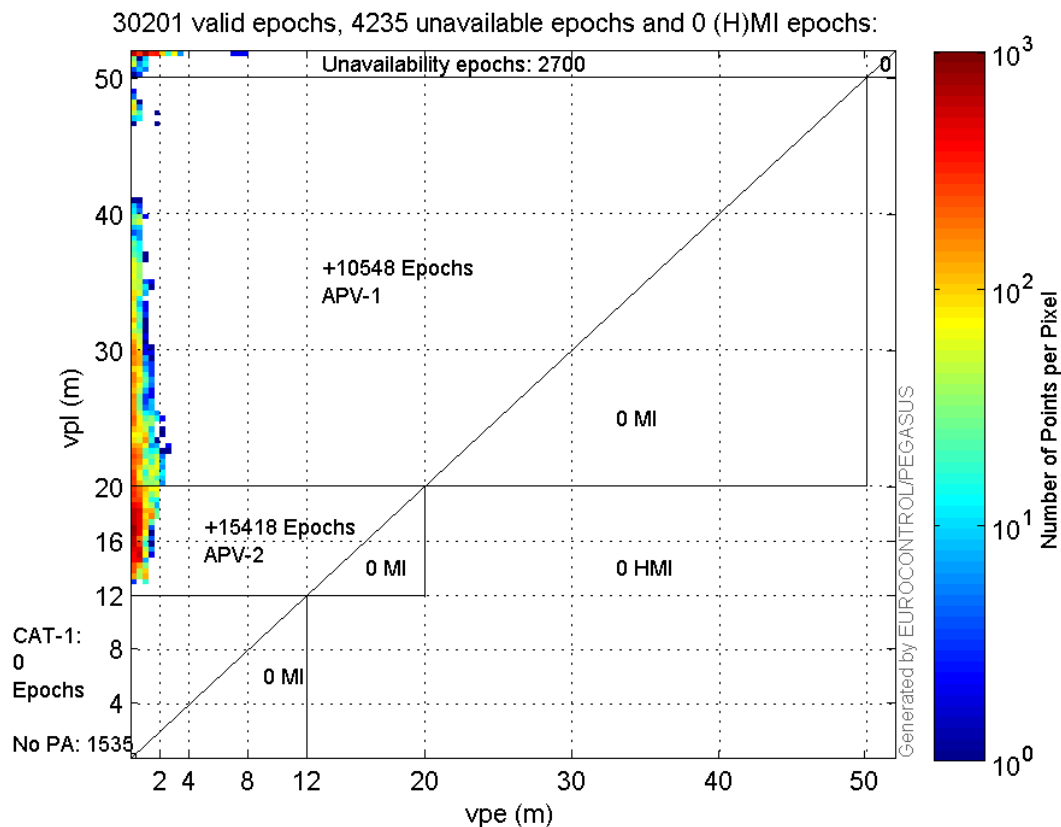


Stanford Plots

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/2017_01_26EGNOS2Hz/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2017_01_26EGNOS2Hz/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	218.7993
mi_numbers	results	0

Range Domain

start: 08:59:39.5 26.01.2017 (week: 1933 sec: 377979.5)
end: 13:37:30.5 26.01.2017 (week: 1933 sec: 394650.5)
duration: 04:37:52 ..

quality

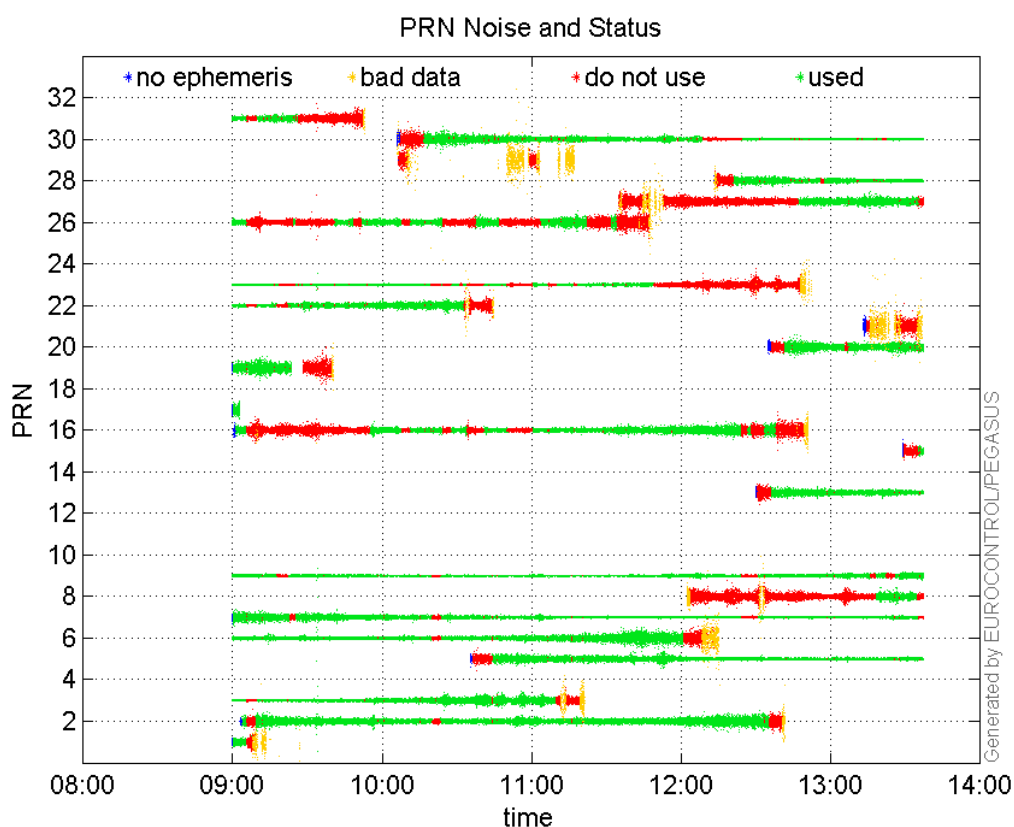
valid samples 30858
total samples 30858

PRN overview

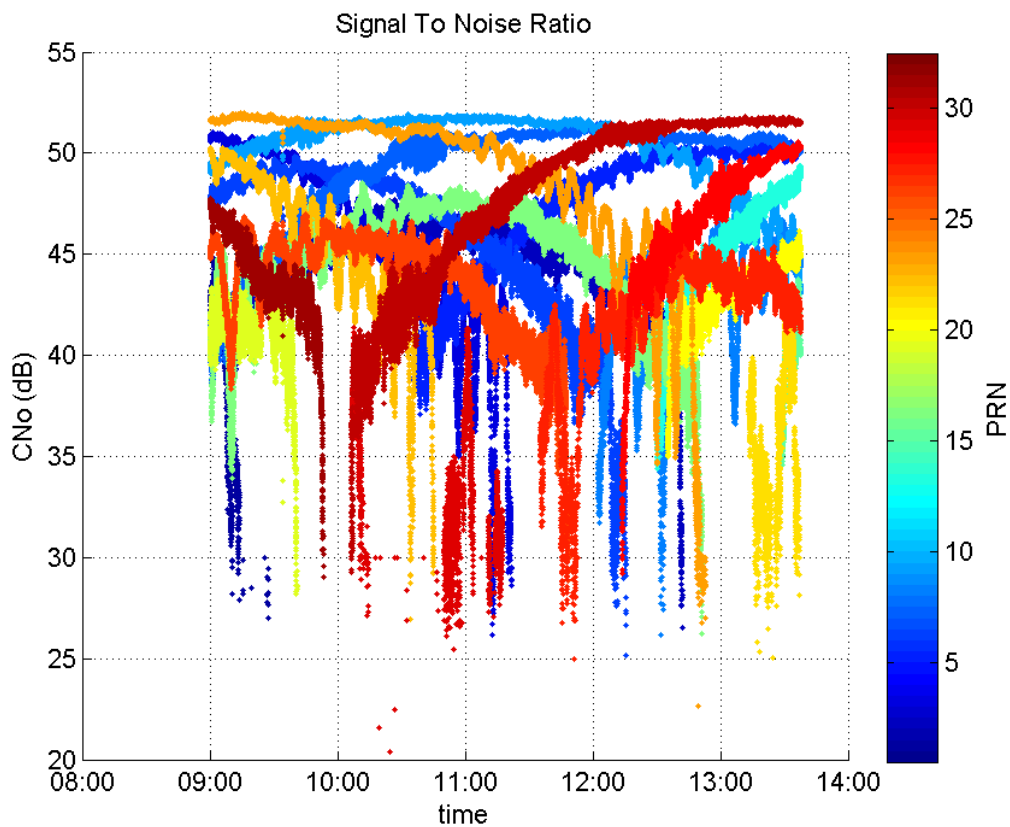
Number of Visible GPS Satellites 23
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



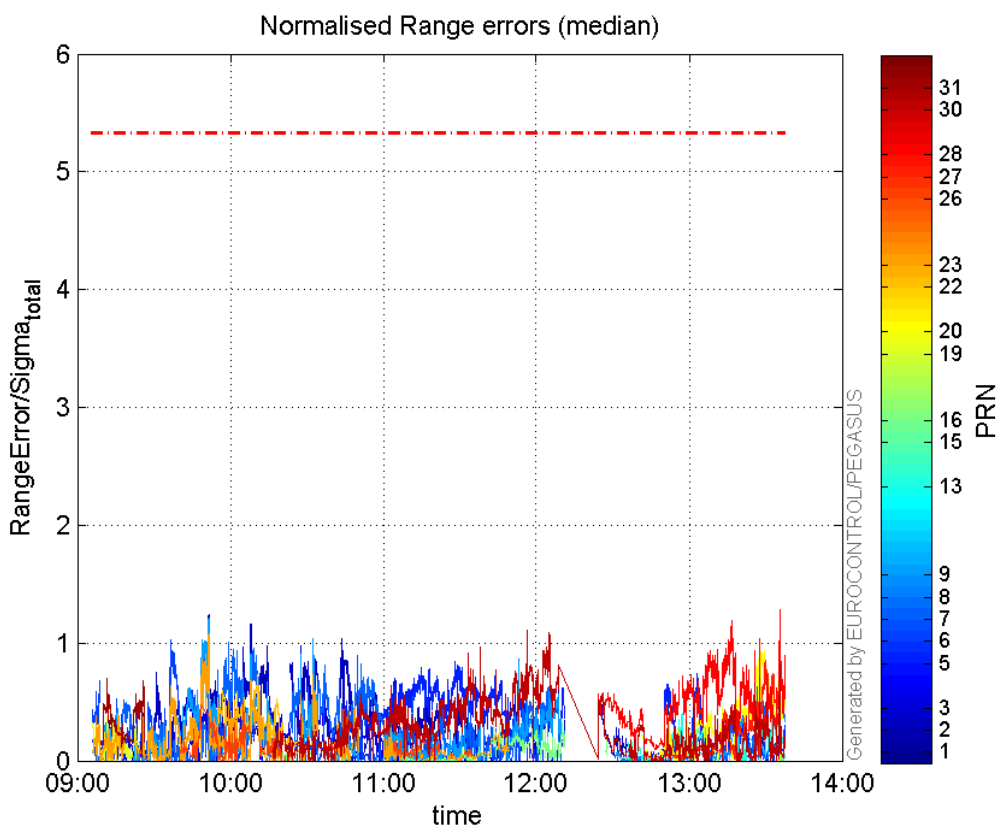
range errors

Number of Overbounding Norm Errors 0

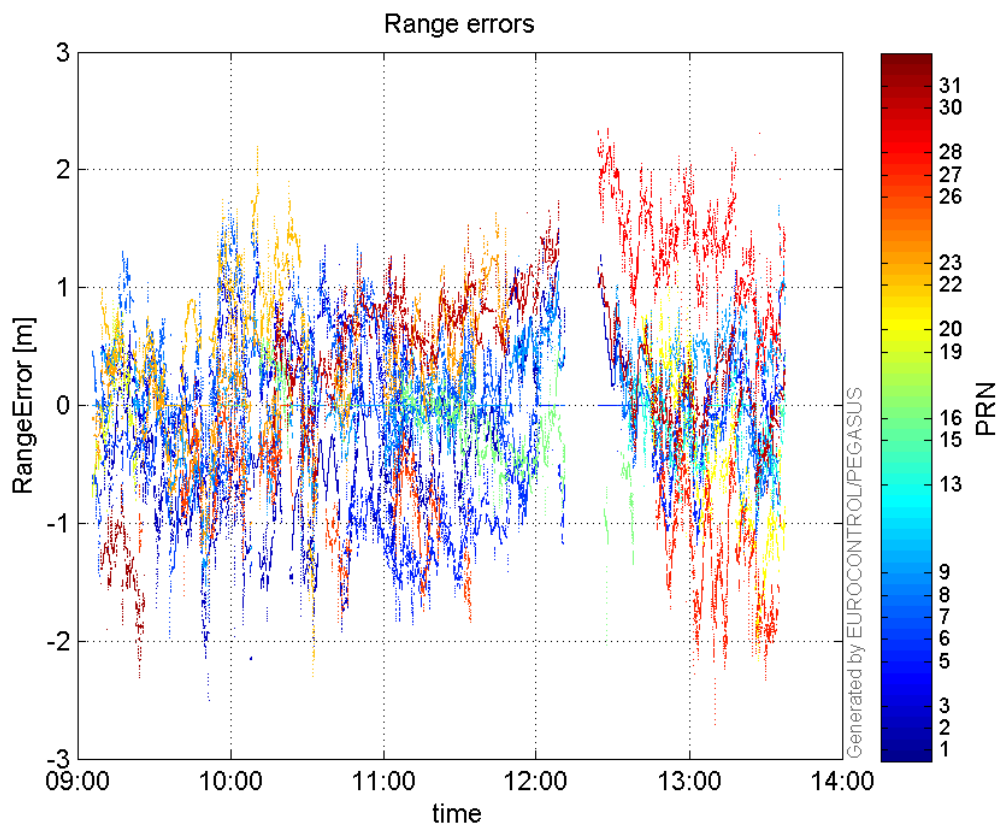
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1933	378446	1	NaN	NaN	11.9882
1933	381090	2	1.24145	-2.5016	2.01506
1933	381755	3	0.700504	1.36251	1.94504
1933	386882	5	0.841725	-1.62547	1.93112
1933	381090	6	1.18473	-1.83023	1.54485
1933	381561	7	1.00624	1.72036	1.70969
1933	393700	8	0.101885	-1.24448	12.2146
1933	381090	9	1.21486	-1.69435	1.39469
1933	394508	13	0.651662	-1.03244	1.58432
1933	394551	15	0.307035	0.970197	3.15989
1933	387795	16	0.348373	-0.942403	2.70515
1933	378699	19	0.37311	-0.894133	2.39643
1933	394160	20	0.931056	-1.71341	1.84029
1933	382233	22	0.726151	2.19767	3.02647
1933	381090	23	1.08256	-1.50853	1.39348
1933	381898	26	0.509762	-1.32005	2.58954
1933	394192	27	0.850196	-2.33042	2.74104
1933	394551	28	1.27901	1.92257	1.50317
1933	388574	30	1.11201	1.63975	1.47459
1933	378699	31	0.698212	-1.89707	2.71705

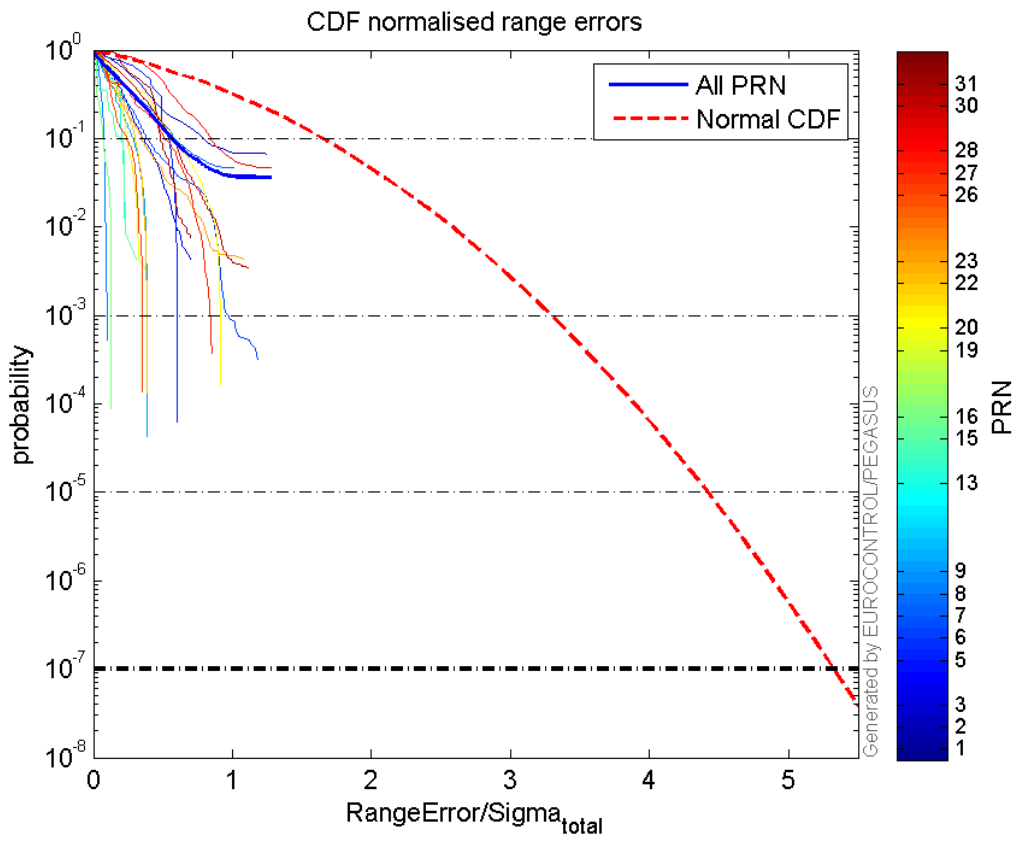
Normalised Range errors (median):



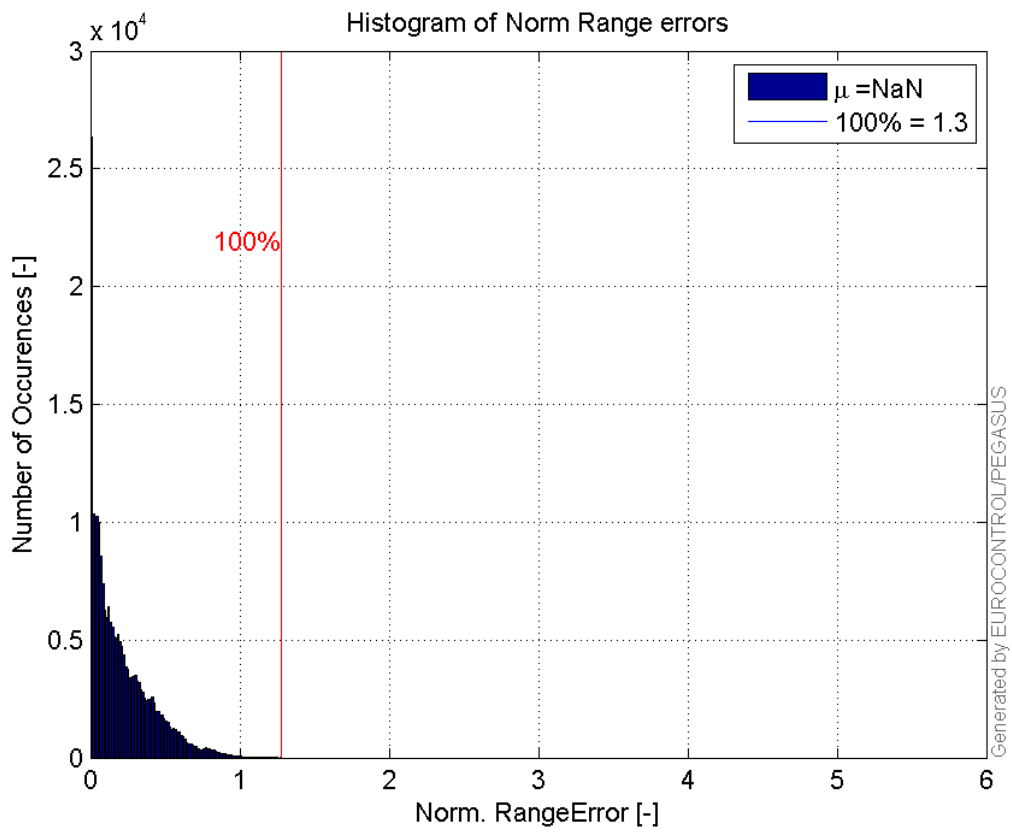
Range errors:



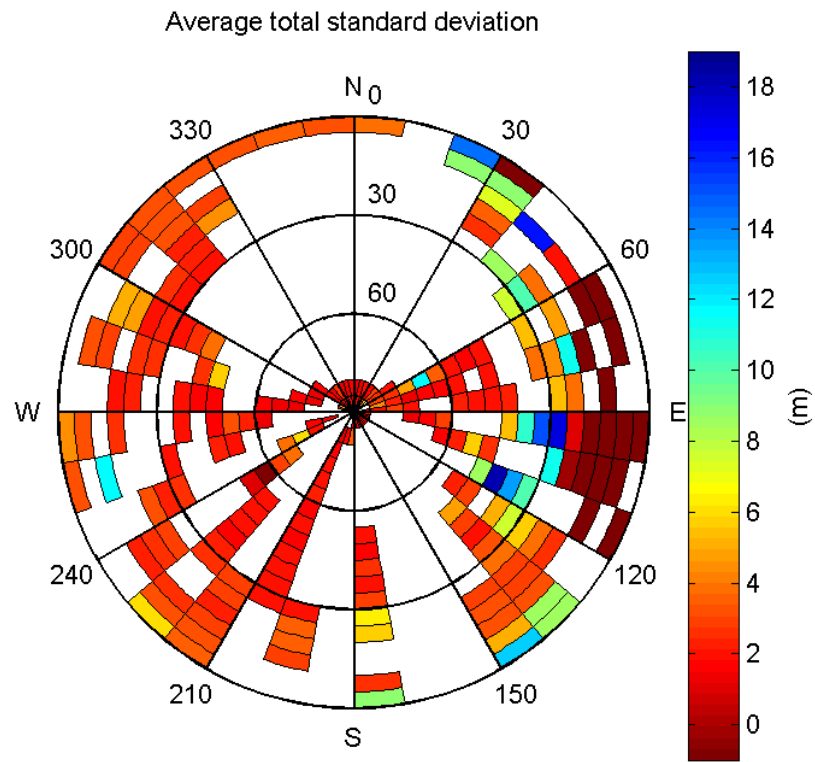
CDF normalised range errors:



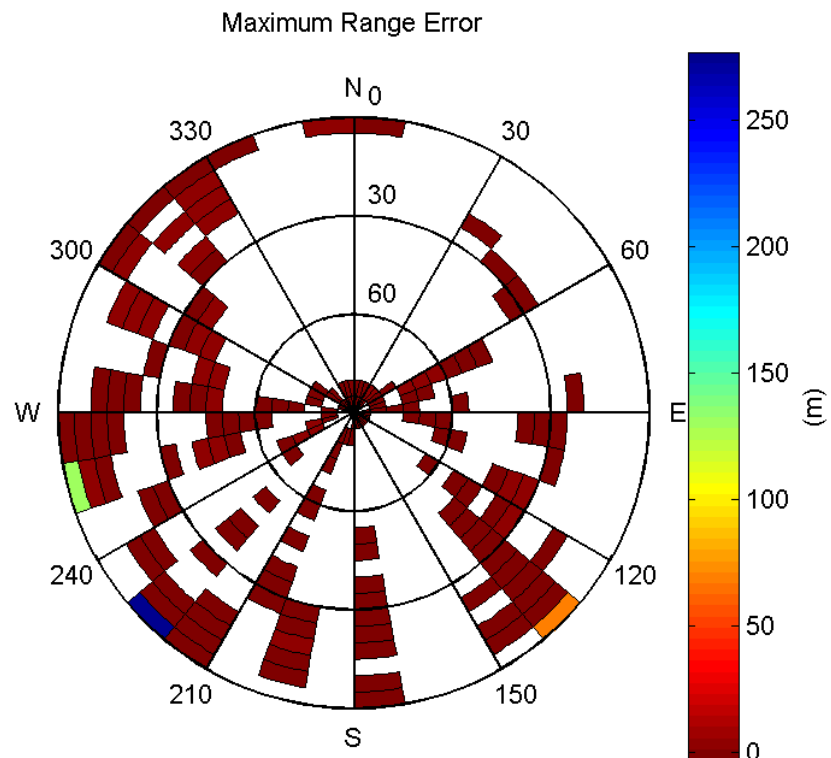
Histogram of Norm Range errors:



Sigma Sky Plot:

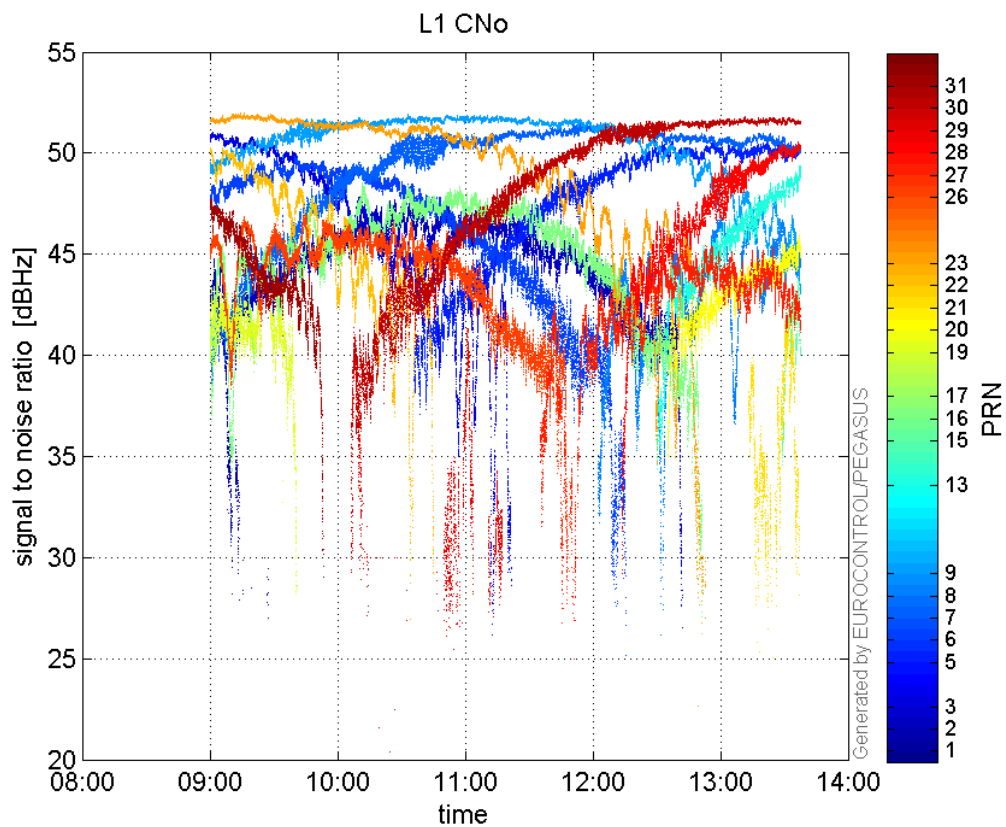


Norm Error Sky Plot:

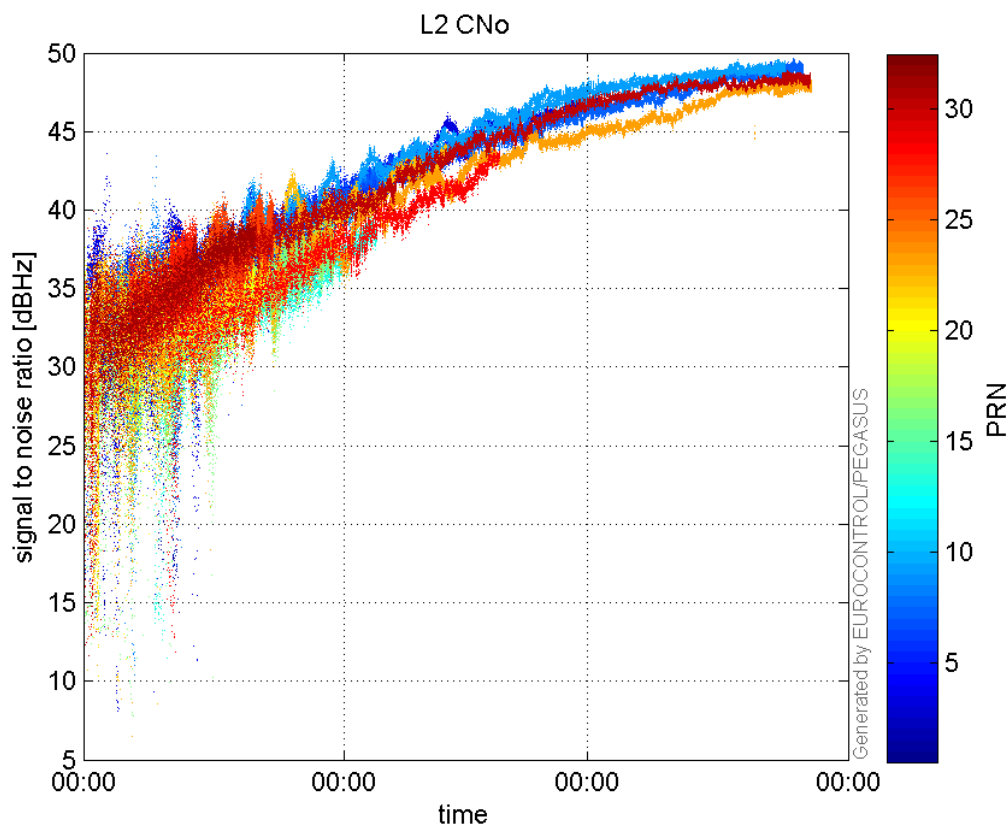


signal quality

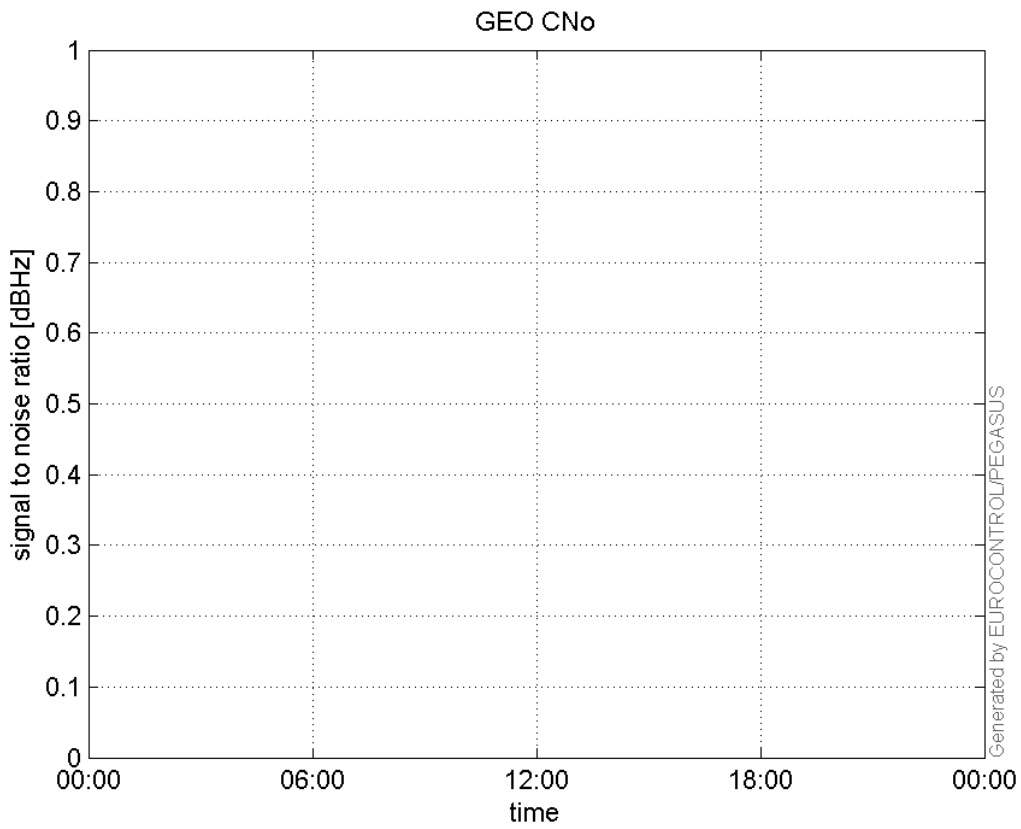
L1 CNo:



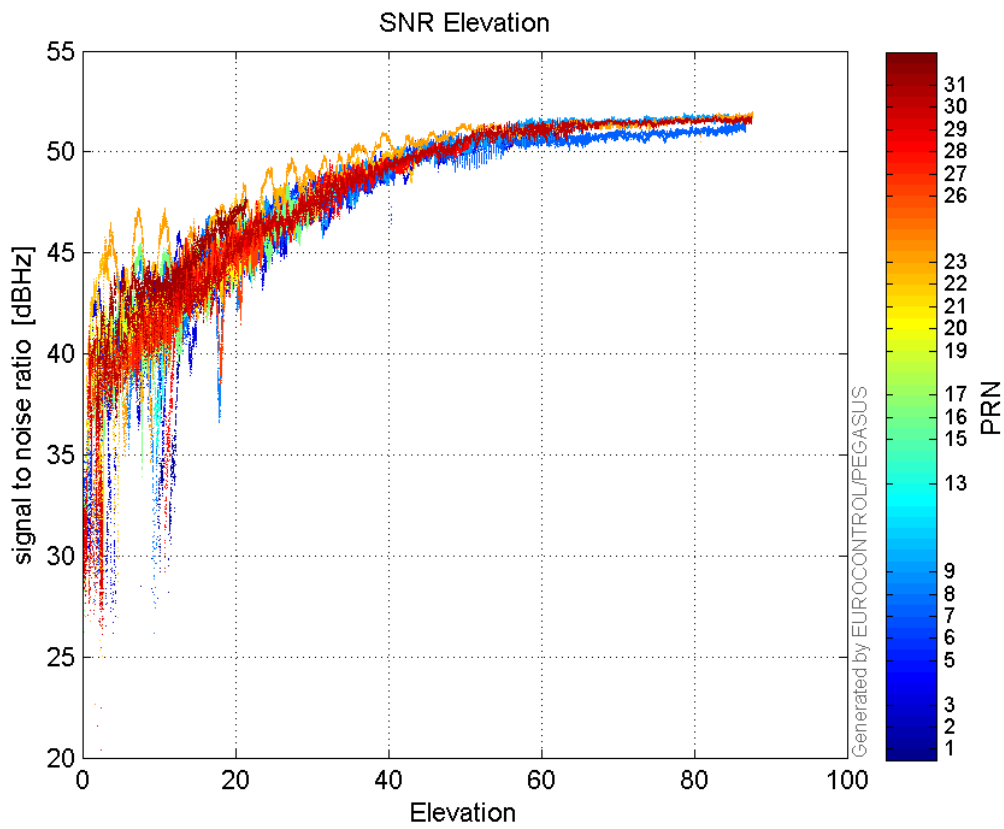
L2 CNo:



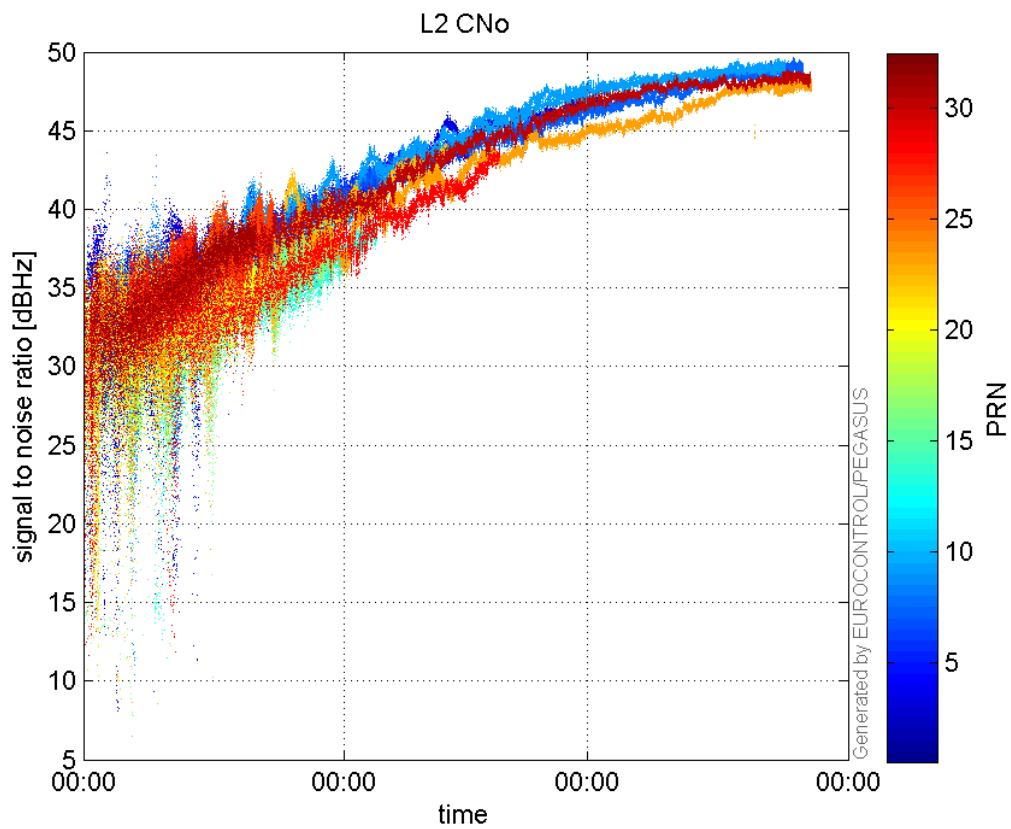
GEO CNo:



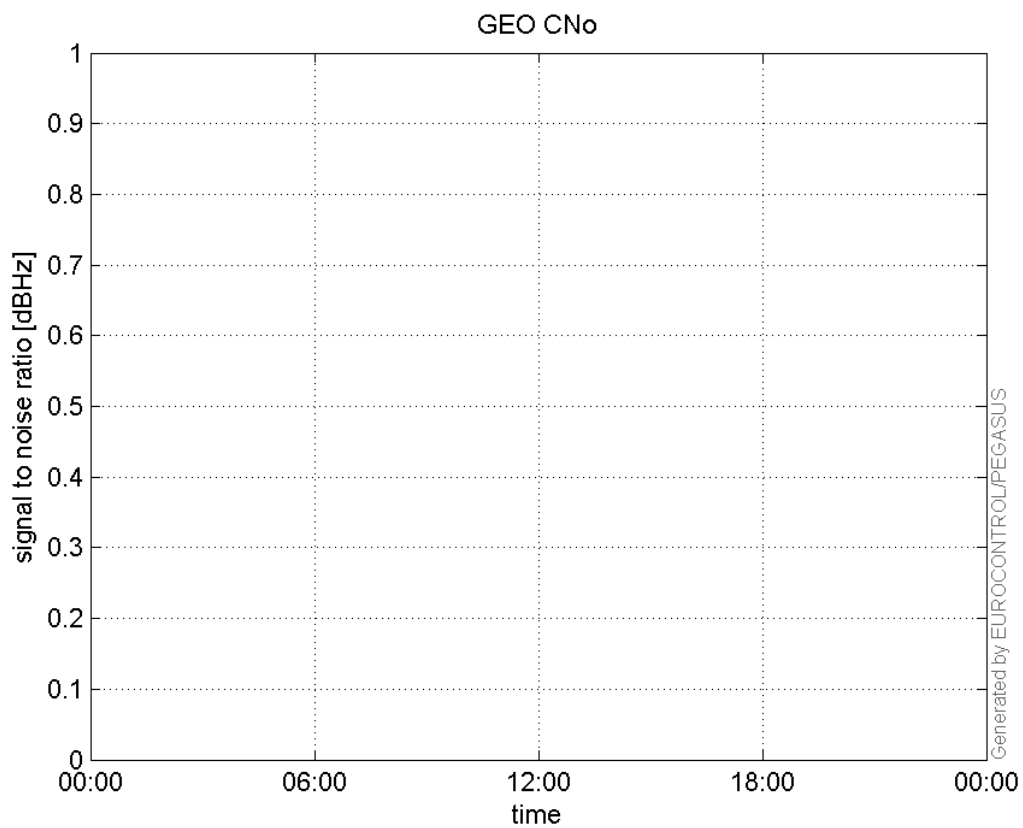
SNR Elevation:



L2 CNo:

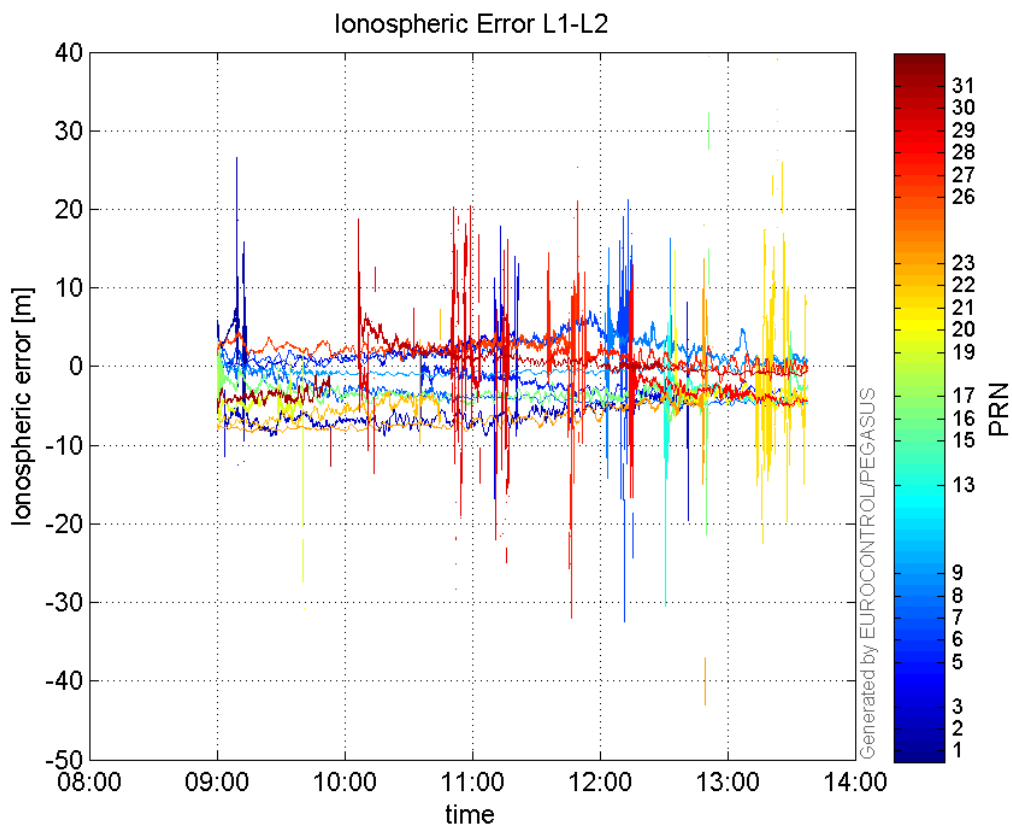


GEO CNo:



dual frequency

Ionospheric Error L1-L2:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateJob/job/2017_01_26EGNOS2Hz/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2017_01_26EGNOS2Hz/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	218.7993
mi_numbers	results	0