

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 11/02/2016

SBAS Messages

start: 06:18:1.129 05.02.2016 (week: 1882 sec: 454681.129)
end: 13:56:22.129 05.02.2016 (week: 1882 sec: 482182.129)
duration: 07:38:21 ..

quality

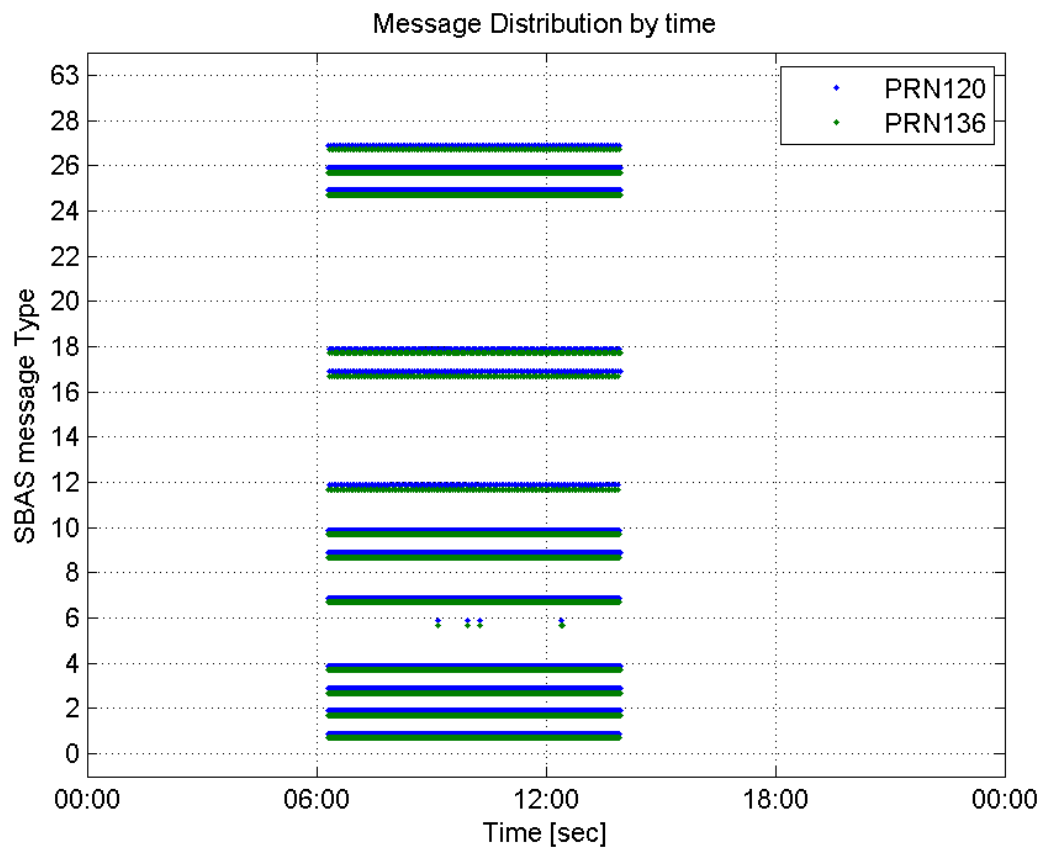
valid samples 55004
total samples 55004
number of SBAS PRNs 2

SBAS SIS Overview

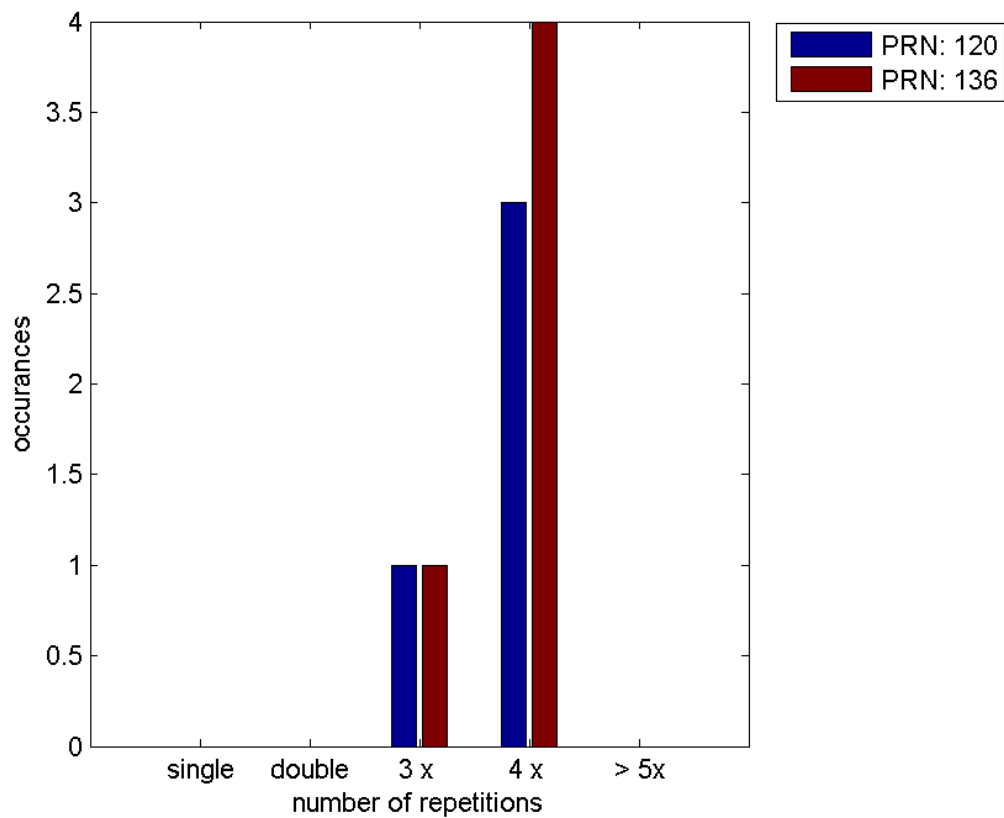
Message Type 6 repetitions :

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

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

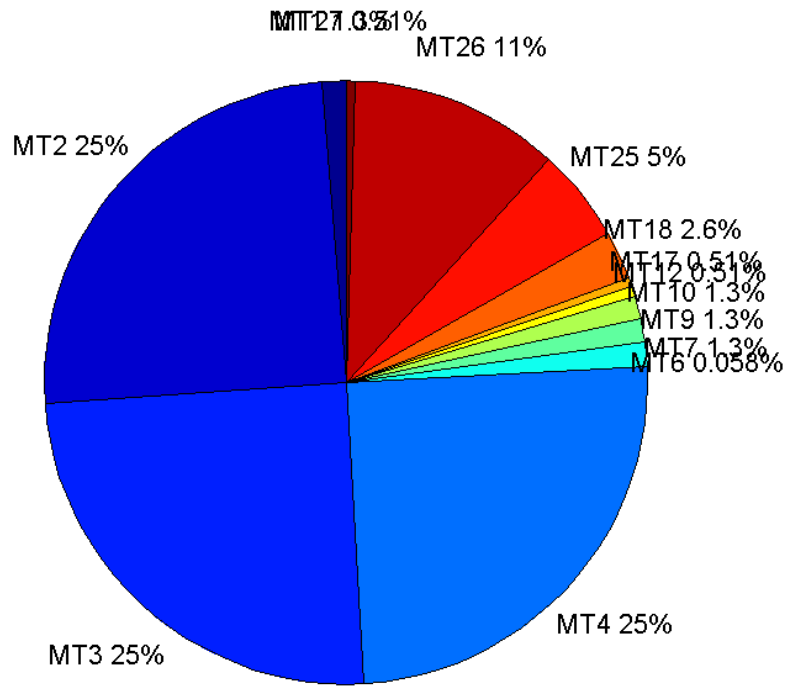
	number of messages	%
MT 0	0	0
MT 1	345	1.25445
MT 2	6836	24.8564
MT 3	6835	24.8527
MT 4	6835	24.8527
MT 5	0	0
MT 6	16	0.0581776
MT 7	345	1.25445
MT 9	346	1.25809
MT 10	345	1.25445
MT 12	140	0.509054
MT 17	141	0.51269
MT 18	705	2.56345
MT 24	0	0
MT 25	1375	4.99964
MT 26	3097	11.261
MT 27	141	0.51269
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	27502	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.6599	0	0	0
MT 2	4	8	4.02326	4	0	0
MT 3	4	8	4.02327	4	0	0
MT 4	4	8	4.02341	4	0	0
MT 5	--	--	--	--	--	--
MT 6	1	7710	773.4	3	3	3
MT 7	76	81	79.6017	0	0	0
MT 9	76	82	79.6812	0	0	0
MT 10	72	85	79.625	0	0	0
MT 12	185	201	195.36	139	0	0
MT 17	184	201	195.364	0	0	0
MT 18	4	161	38.902	0	0	0
MT 24	--	--	--	--	--	--
MT 25	2	63	19.9956	0	0	0
MT						

26	3	33	8.88275	0	0	0
MT 27	185	201	195.364	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

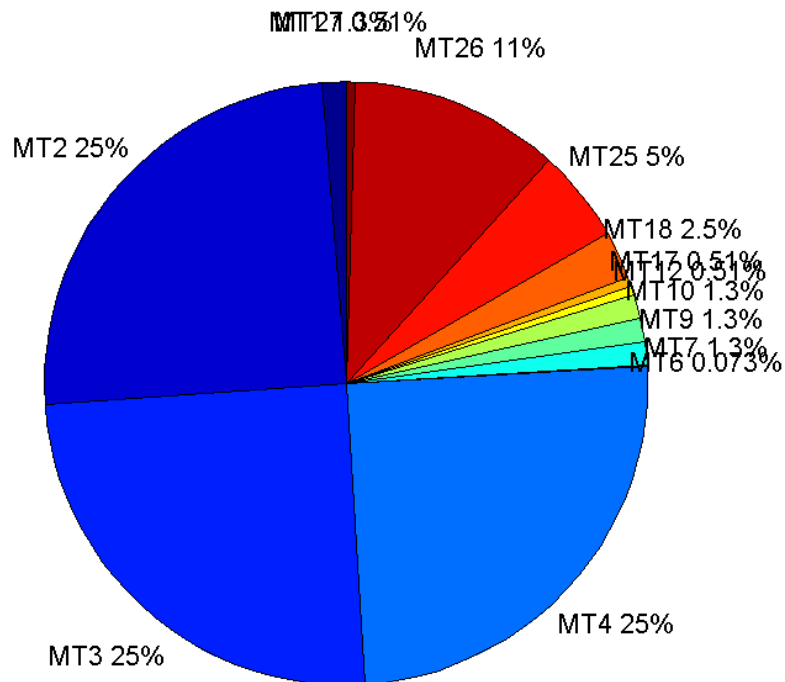
	number of messages	%
MT 0	0	0
MT 1	345	1.25445
MT 2	6843	24.8818
MT 3	6843	24.8818
MT 4	6843	24.8818
MT 5	0	0
MT 6	20	0.072722
MT 7	345	1.25445
MT 9	345	1.25445

MT 10	345	1.25445
MT 12	140	0.509054
MT 17	139	0.505418
MT 18	700	2.54527
MT 24	0	0
MT 25	1374	4.996
MT 26	3080	11.1992
MT 27	140	0.509054
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	27502	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.686	0	0	0
MT 2	4	8	4.01915	5	0	0
MT 3	4	8	4.019	5	0	0
MT 4	4	8	4.019	5	0	0
MT 5	--	--	--	--	--	--
MT 6	1	7708	613.947	4	4	4
MT 7	75	83	79.6395	0	0	0
MT 9	76	81	79.7558	0	0	0
MT 10	75	84	79.657	0	0	0
MT 12	188	201	196.489	139	0	0
MT 17	188	201	196.464	0	0	0
MT 18	4	160	39.1216	0	0	0
MT 24	--	--	--	--	--	--
MT 25	2	49	20.0153	0	0	0
MT 26	4	35	8.92563	0	0	0
MT 27	188	201	196.489	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/2016_02_05EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2016_02_05EGNOS/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: 06:18:02 05.02.2016 (week: 1882 sec: 454682)
end: 13:56:23 05.02.2016 (week: 1882 sec: 482183)
duration: 07:38:22 ..

quality

valid samples 27141
total samples 27502

Event tables

Position discontinuity events type all
APV-I discontinuity events type long
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	458241	2.11998	8.48313	0.249906	2.16495	15.3813	0.140752
max normVer	458241	2.11998	8.48313	0.249906	2.16495	15.3813	0.140752
max HPE	478776	13.916	999.718	0.0139199	-2.08407	258.133	0.00807364
max VPE	478954	2.04657	45.792	0.0446928	2.73124	28.0448	0.0973883
min HPL	460912	1.23585	7.67513	0.16102	0.672821	14.0114	0.0480195
min VPL	455853	0.944954	9.60918	0.0983387	0.711714	12.4229	0.0572905

Position discontinuity events :

#	Epoch	duration	stable period
1	478776	53	23733

APV-I discontinuity events :

#	Epoch	duration	stable period
1	467862	359	12819
2	469194	21	973
3	477945	141	8639
4	478143	978	3

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	467862	359	12819
2	469194	21	973
3	472788	114	3482
4	475728	268	2826
5	477945	141	1949
6	478143	978	3

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	467862	359	12819
2	469194	21	973
3	472788	114	3482

4	475728	268	2826
5	477945	141	1949
6	478143	978	3

First Glance analysis

Duration	27502
Number of Samples	27502
Number of invalid sample	361
Number of no position solution samples	53
Number of missing sample	0
Logging Loss	0
Processing Loss	1.3126
Number of Misleading Information	0
Data gaps	0
Discontinuities	1

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
27088	25582	25200	0	25200

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.87334	1.79634	1.7804	NaN	1.7804
HPEScale 95%	NaN	5.95304	5.96561	NaN	5.96561
VPE 95%	1.68668	1.59208	1.57289	NaN	1.57289
VPEscale 95%	NaN	4.34139	3.04549	NaN	3.04549

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.998047	0.942559	0.928485	0	0.928485
measurements	0.984947	0.930187	0.916297	0	0.916297
Operational	0.984947	0.930187	0.916297	0	0.916297

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	1	31	33	--	33
Long	1	4	6	--	6
Independent	1	3	5	--	5
P(disc.)	0.000553751	0.00175905	0.00297619	NaN	0.00297619
P(slide)	0.000553751	0.00418263	0.00543651	NaN	0.00543651

Integrity events :

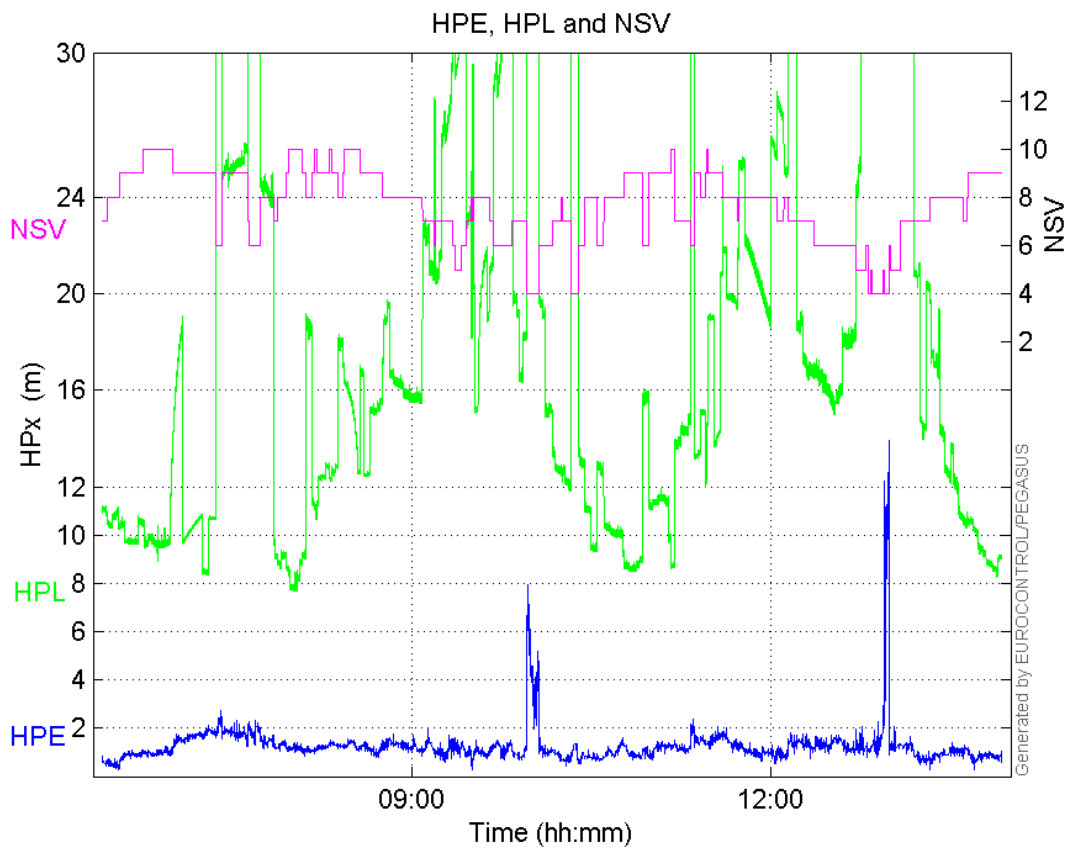
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

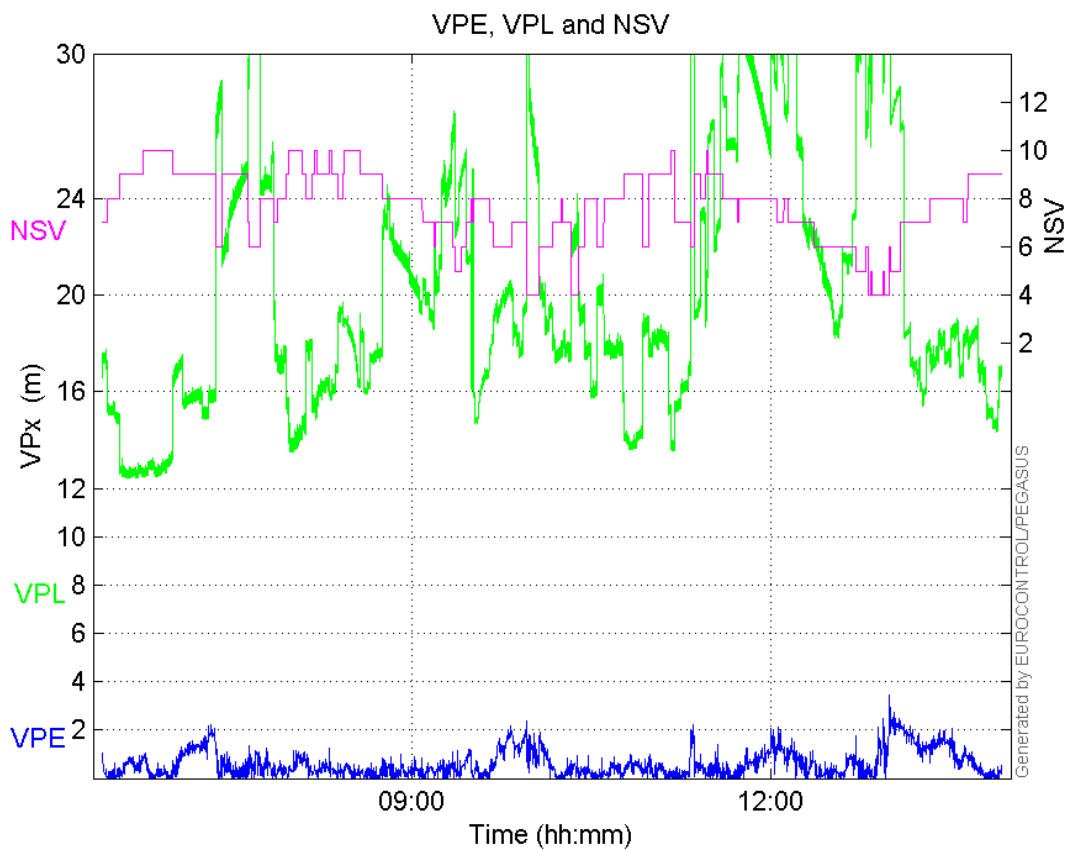
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	27088	25582	25200	0	25200
SIS Availability	0.998047	0.942559	0.928485	0	0.928485
Local Availability	0.984947	0.930187	0.916297	0	0.916297
Operational Availability	0.984947	0.930187	0.916297	0	0.916297
HPE 95%	1.87334	1.79634	1.7804	NaN	1.7804
HPEScale 95%	NaN	5.95304	5.96561	NaN	5.96561
VPE 95%	1.68668	1.59208	1.57289	NaN	1.57289
VPEscale 95%	NaN	4.34139	3.04549	NaN	3.04549
All Discontinuity Events	1	31	33	--	33
Long Discontinuity Events	1	4	6	--	6
Independent Discontinuity Events	1	3	5	--	5
P(discontinuity)	0.000553751	0.00175905	0.00297619	NaN	0.00297619
P(sliding window)	0.000553751	0.00418263	0.00543651	NaN	0.00543651
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:

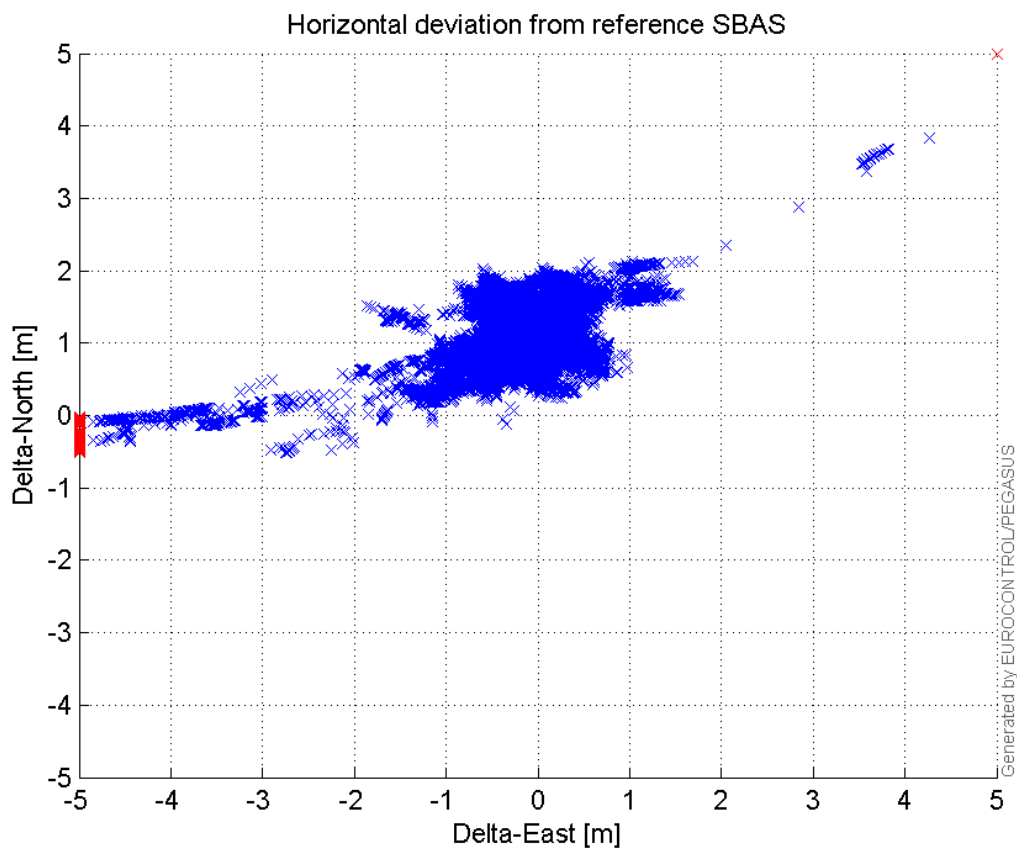


VPE, VPL and NSV:



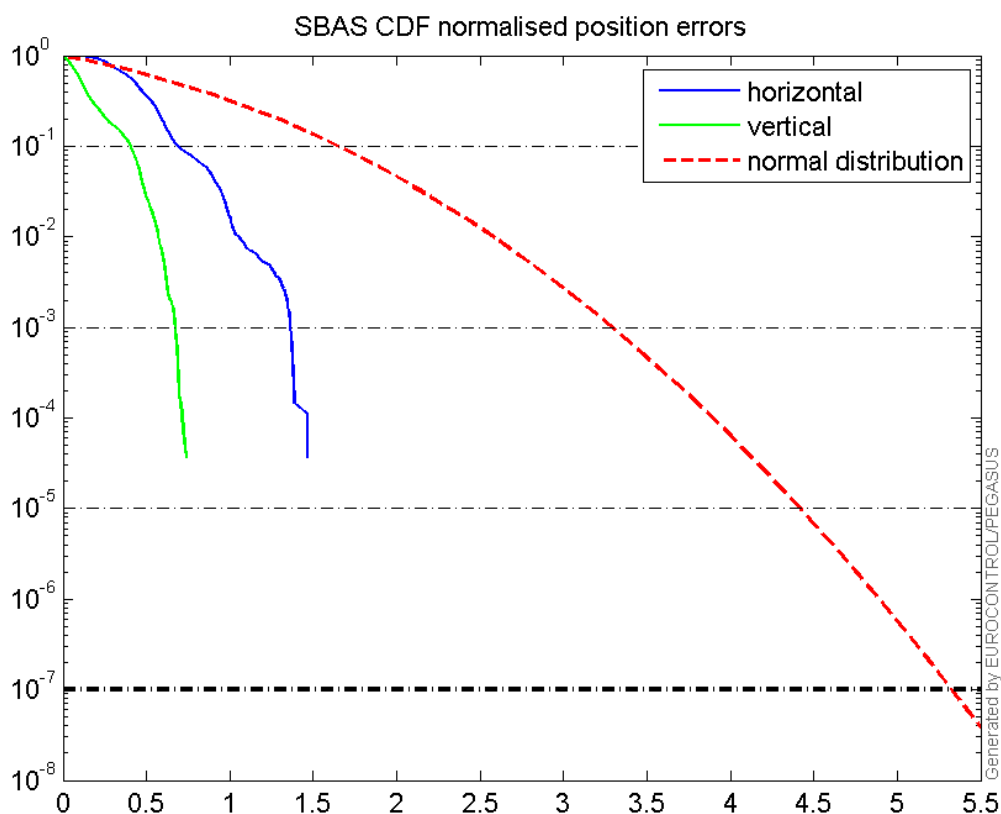
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

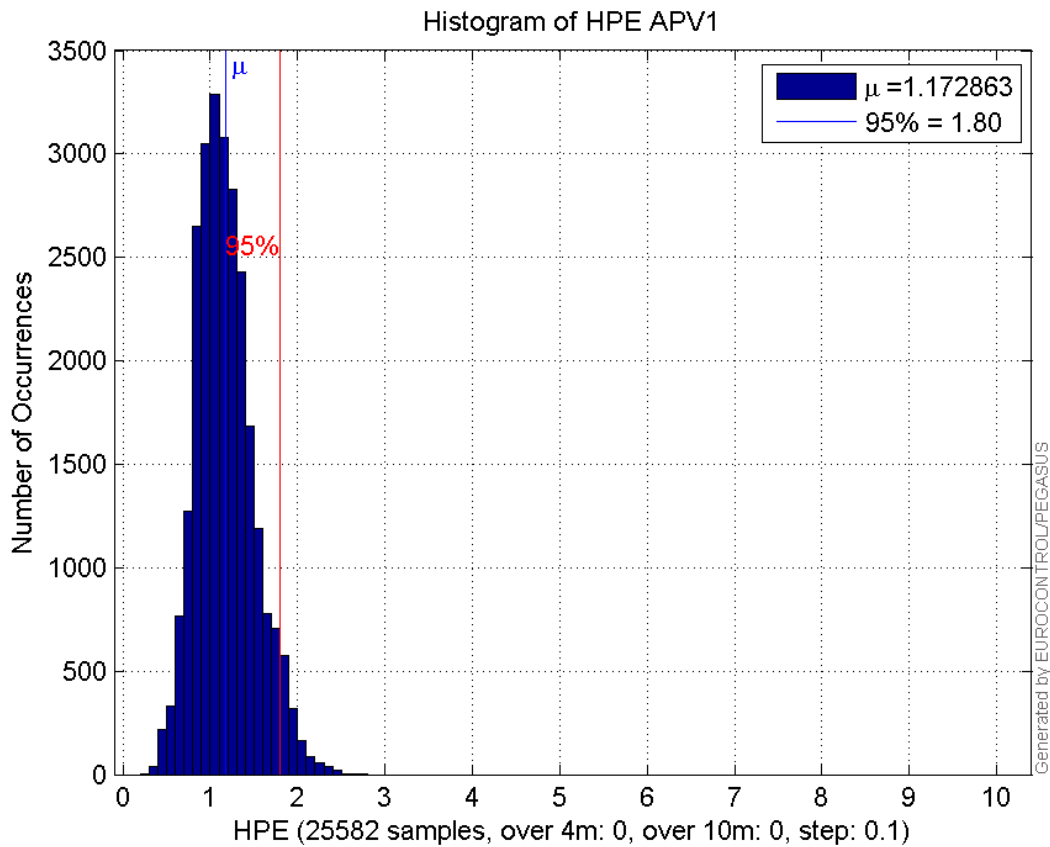
number	25582
sum	30004.181
sum2	37981.582
prctile95	1.7963353
prctile99	2.0697836
number	25582
sum	14567.986
sum2	14388.497
prctile95	1.5920801
prctile99	1.9716239
number	25582
sum	437558.27
sum2	8863304.2
prctile95	31.82448
prctile99	38.162292
number	25582
sum	509062.45
sum2	10862928
prctile95	29.96598
prctile99	42.574816
number	25582
sum	1998.8197
sum2	184.43423
prctile95	0.14882593
prctile99	0.1771228
number	25582
sum	760.98798
sum2	40.632512
prctile95	0.086827825
prctile99	0.10767533
number	25200
sum	29394.953
sum2	36976.909
prctile95	1.780396
prctile99	2.0345874
number	25200
sum	14096.893
sum2	13750.433
prctile95	1.5728904
prctile99	1.9710458
number	25200
sum	425214.8
sum2	8463592.2
prctile95	31.3573
prctile99	38.17825
number	25200
sum	492999.37
sum2	10184498
prctile95	29.3966

prctile99 31.0476
number 25200
sum 1980.0641
sum2 183.49475
prctile95 0.14914033
prctile99 0.17763464
number 25200
sum 749.53871
sum2 40.240243
prctile95 0.087014087
prctile99 0.10791506

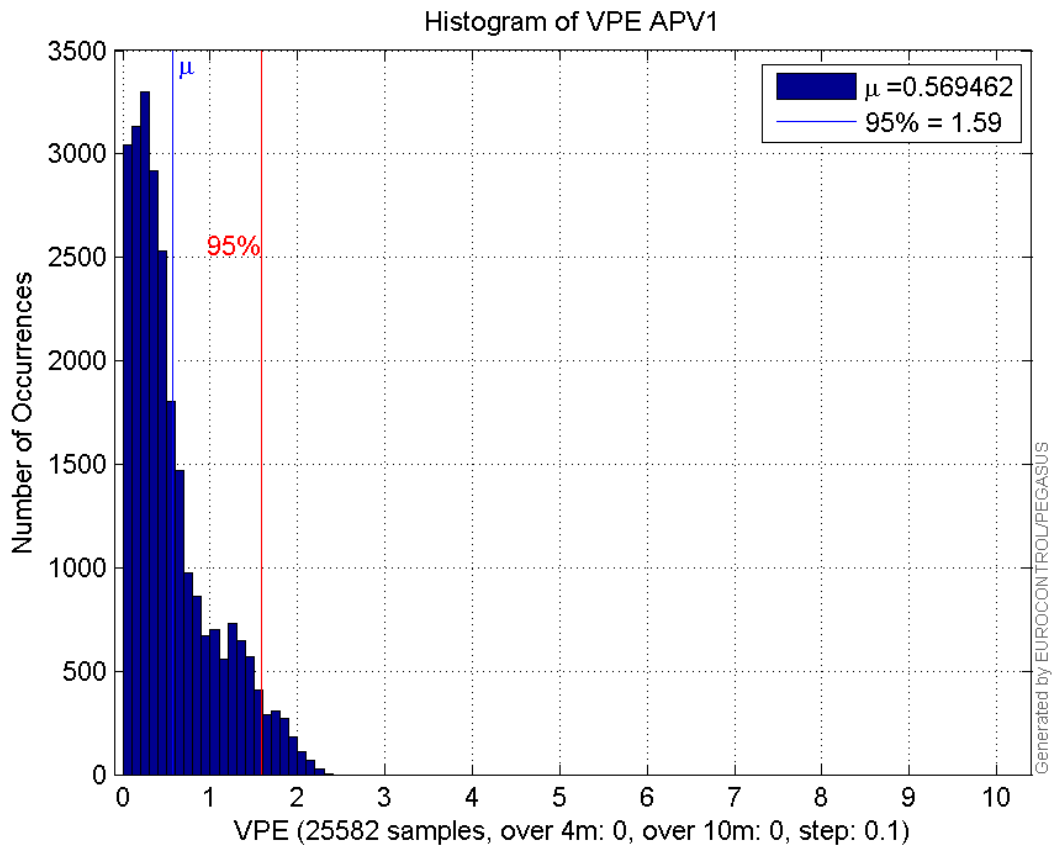
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.17286	0.330297	1.14252	1.79634	2.06978	1.21848
HPL	17.1041	7.3428	15.5972	31.8245	38.1623	18.6136
VPE	0.569462	0.488025	0.414828	1.59208	1.97162	0.749964
VPL	19.8992	5.35284	18.3209	29.966	42.5748	20.6066

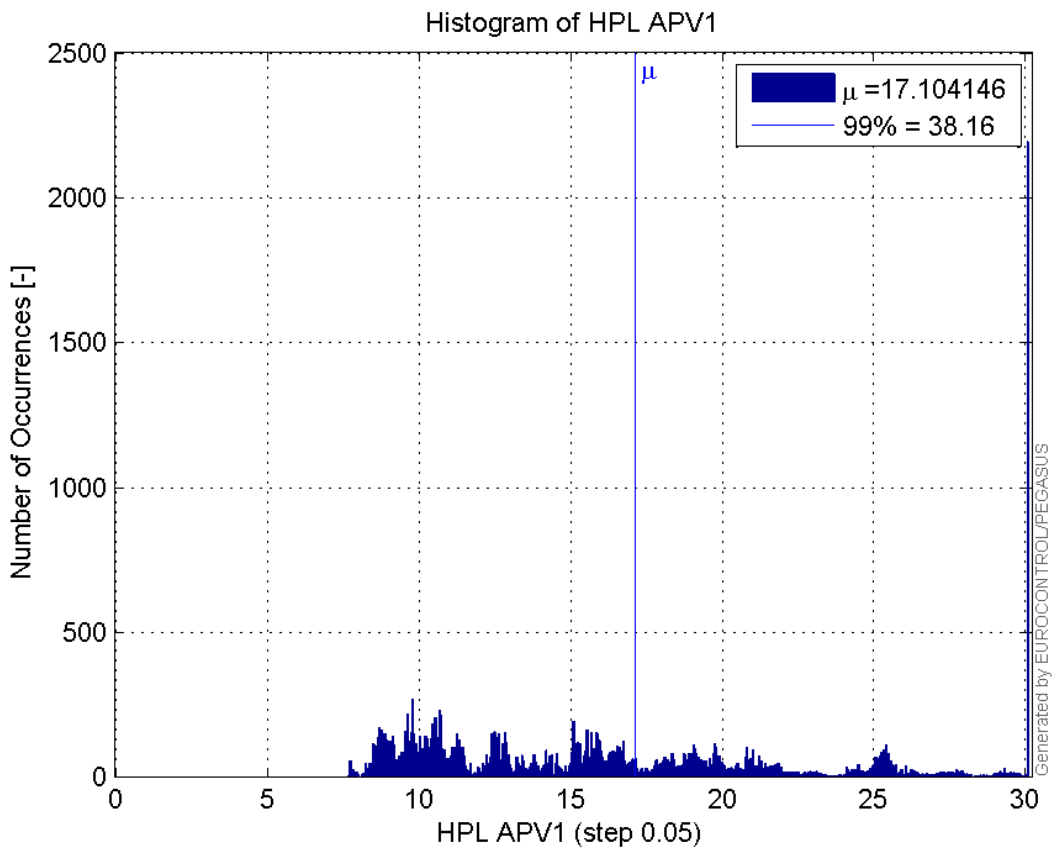
Histogram of HPE APV1:



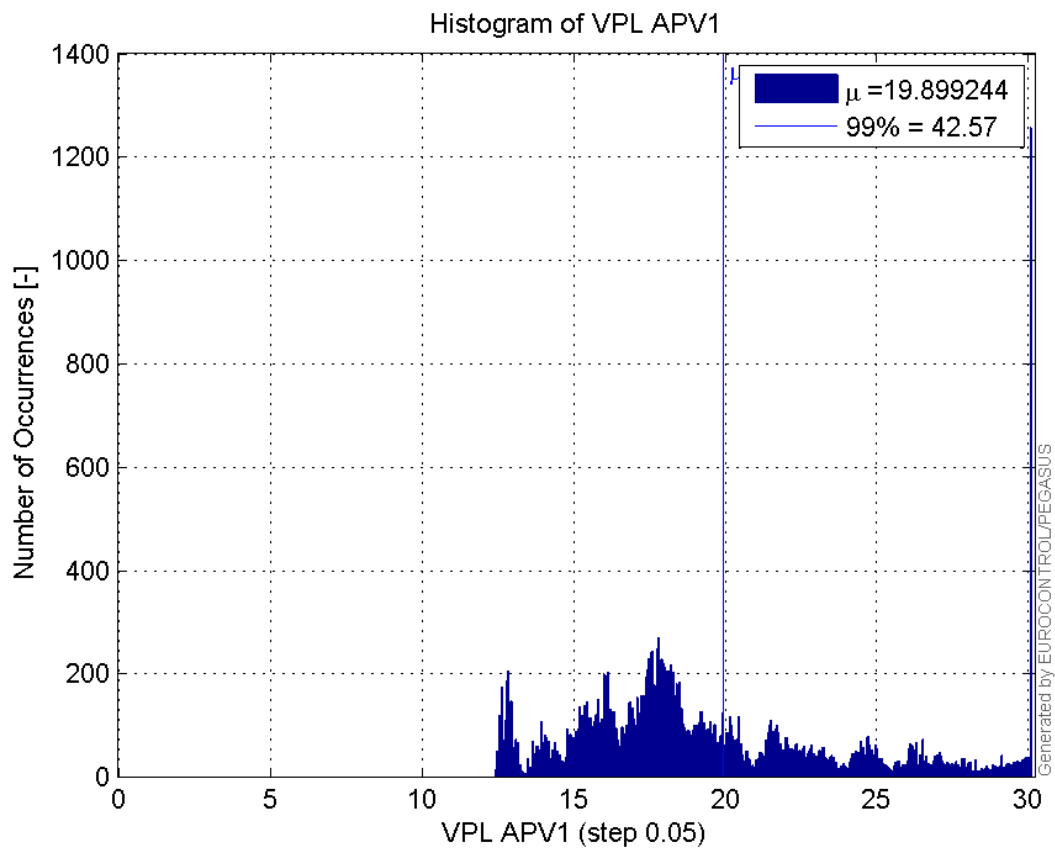
Histogram of VPE APV1:



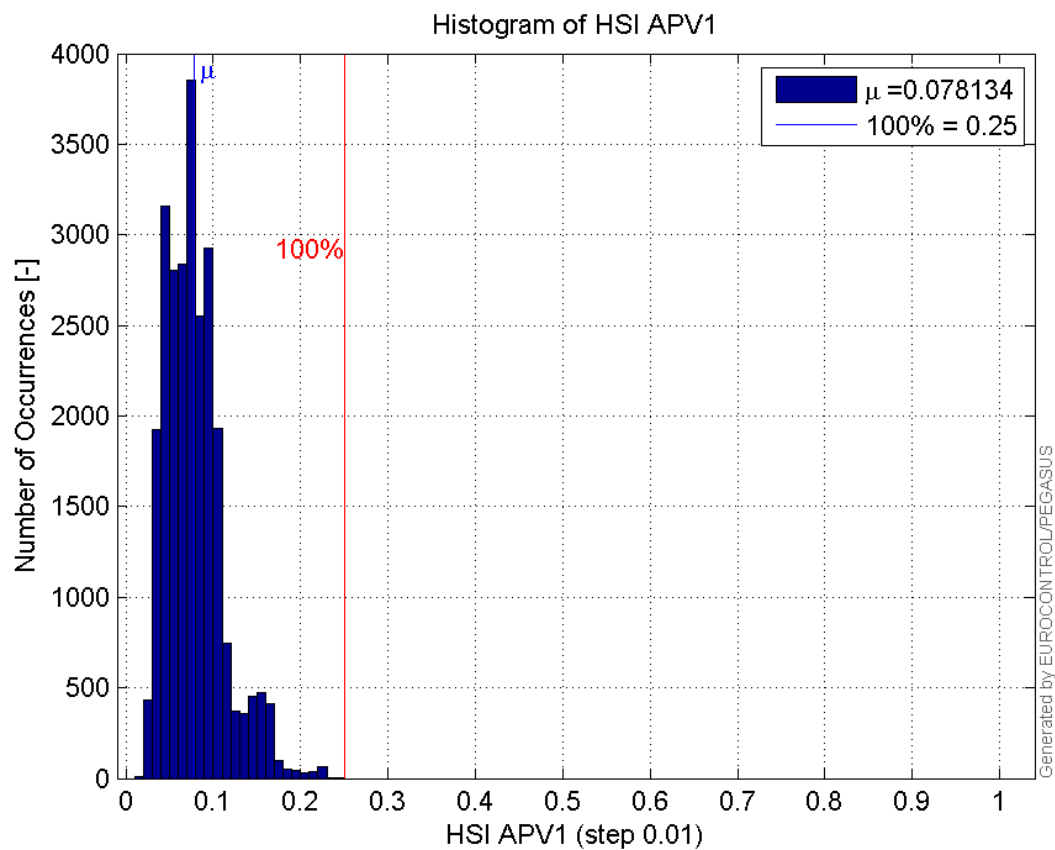
Histogram of HPL APV1:



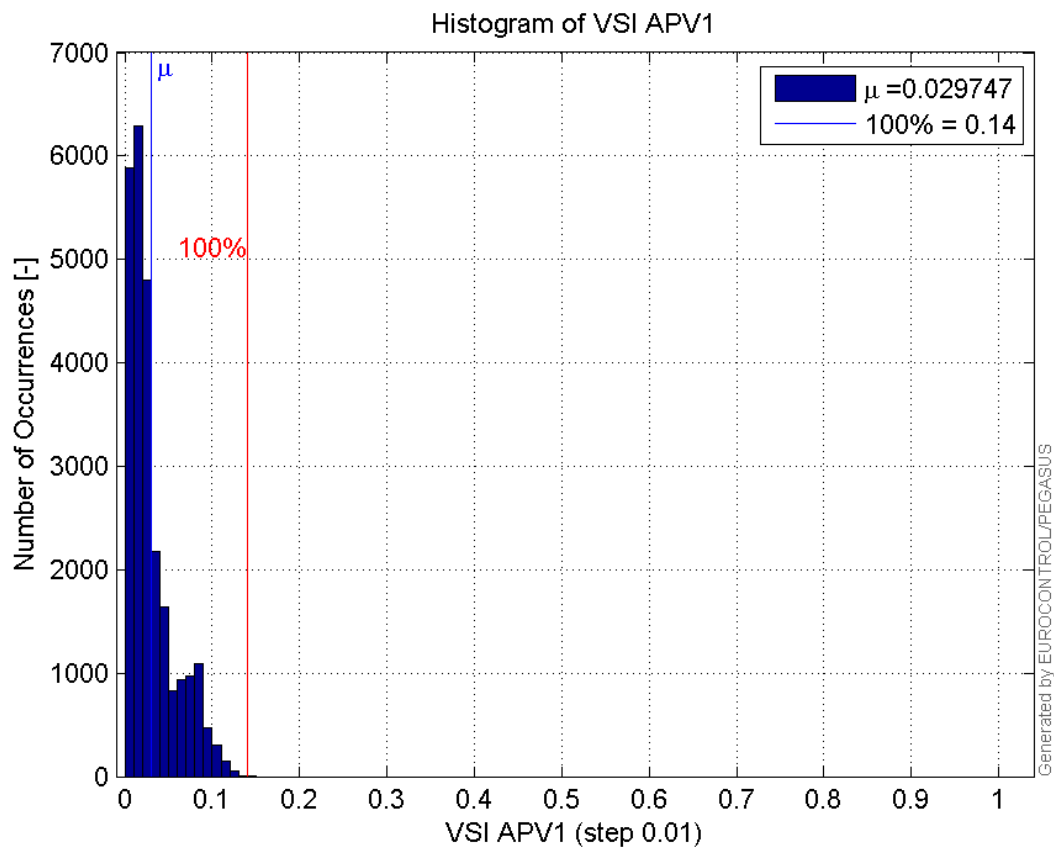
Histogram of VPL APV1:



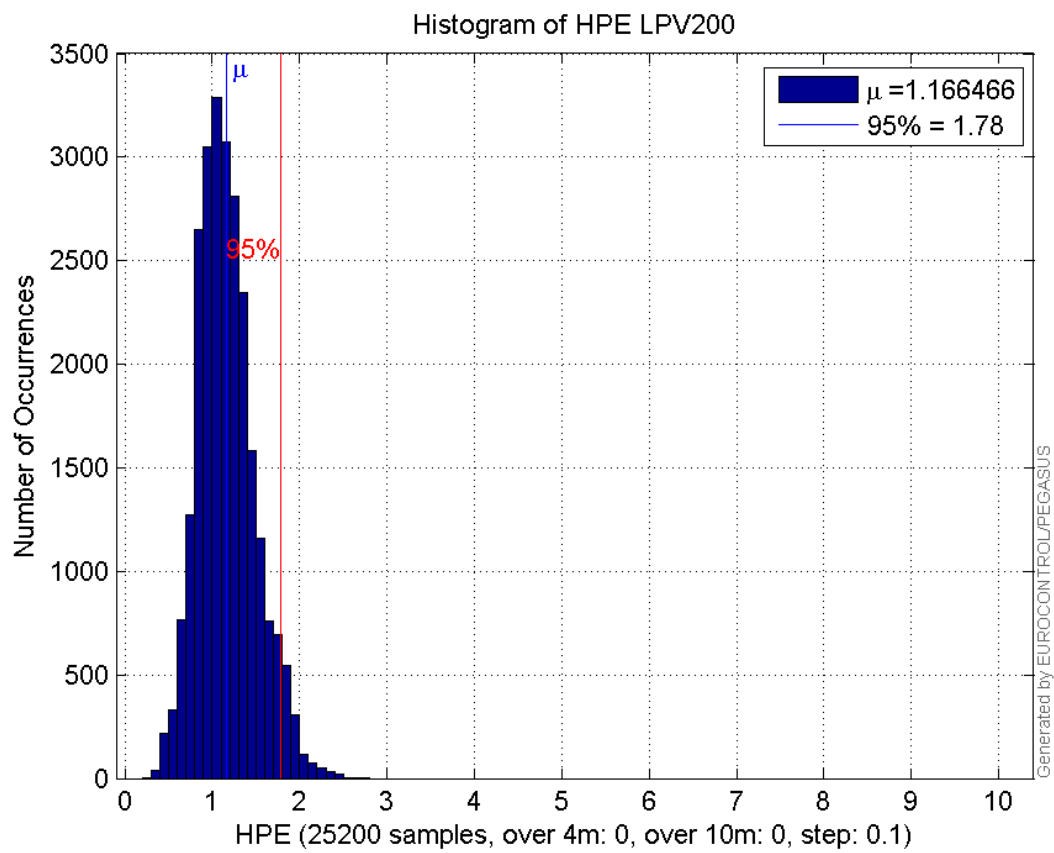
Histogram of HSI APV1:



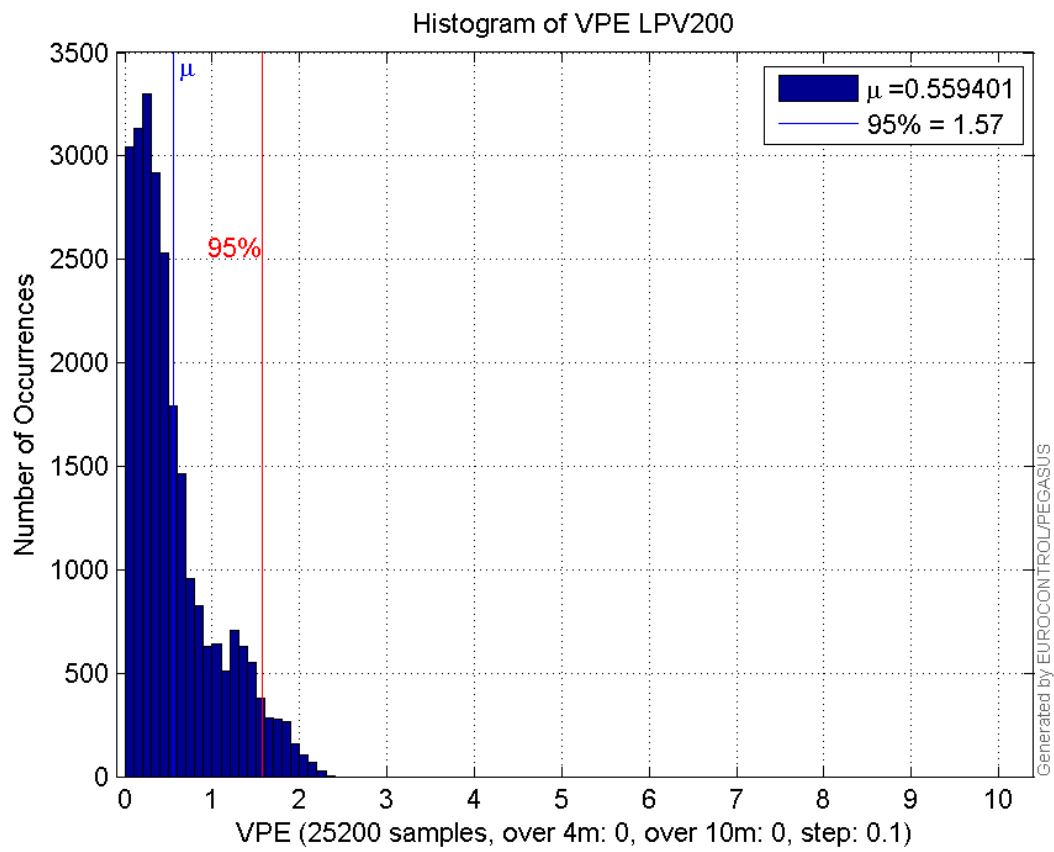
Histogram of VSI APV1:



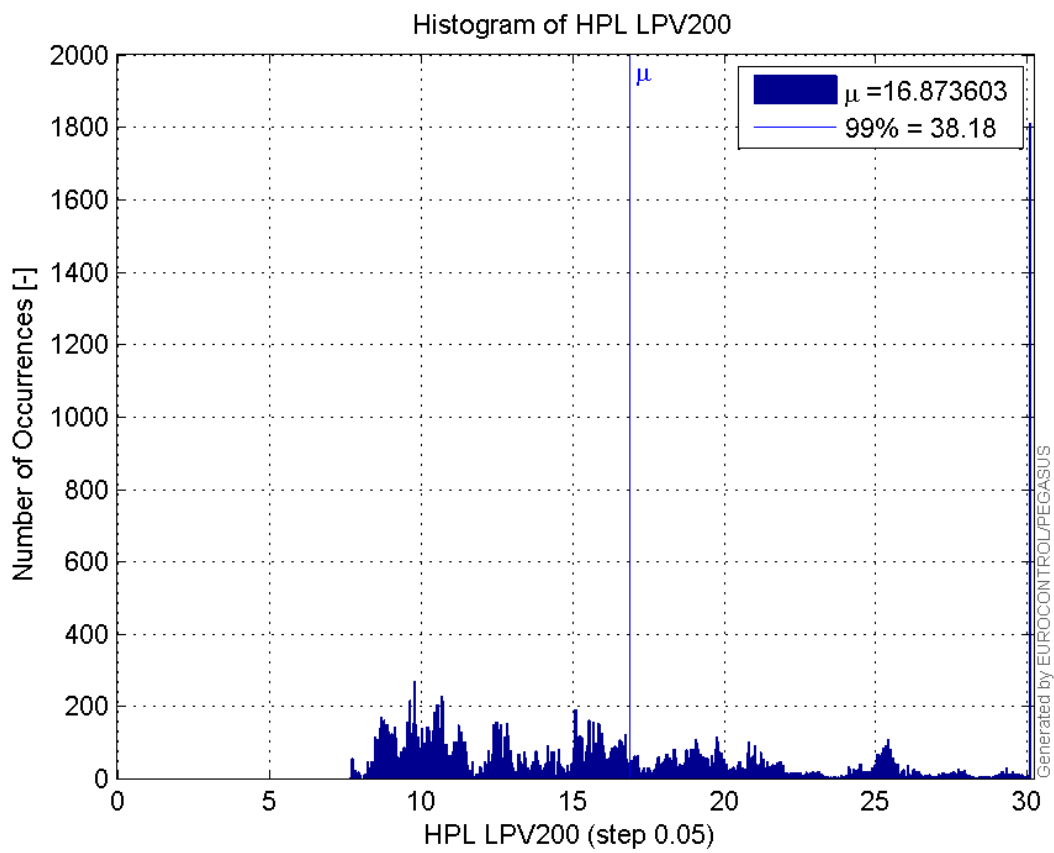
Histogram of HPE LPV200:



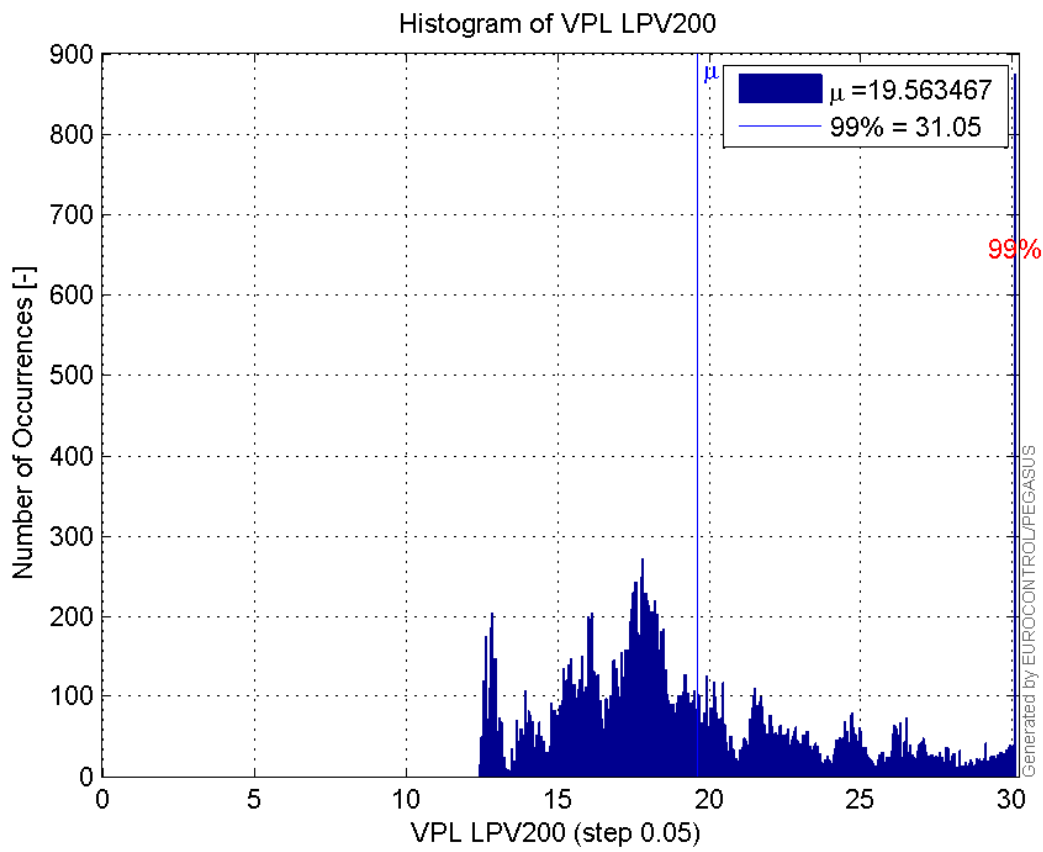
Histogram of VPE LPV200:



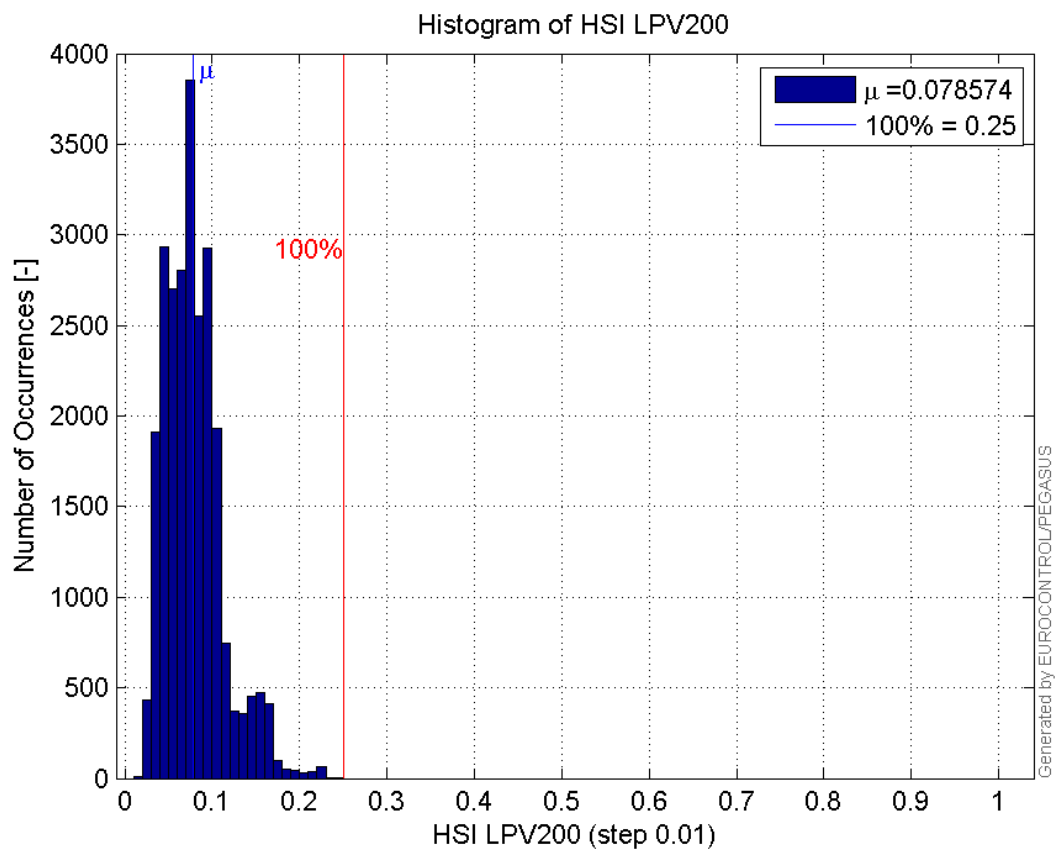
Histogram of HPL LPV200:



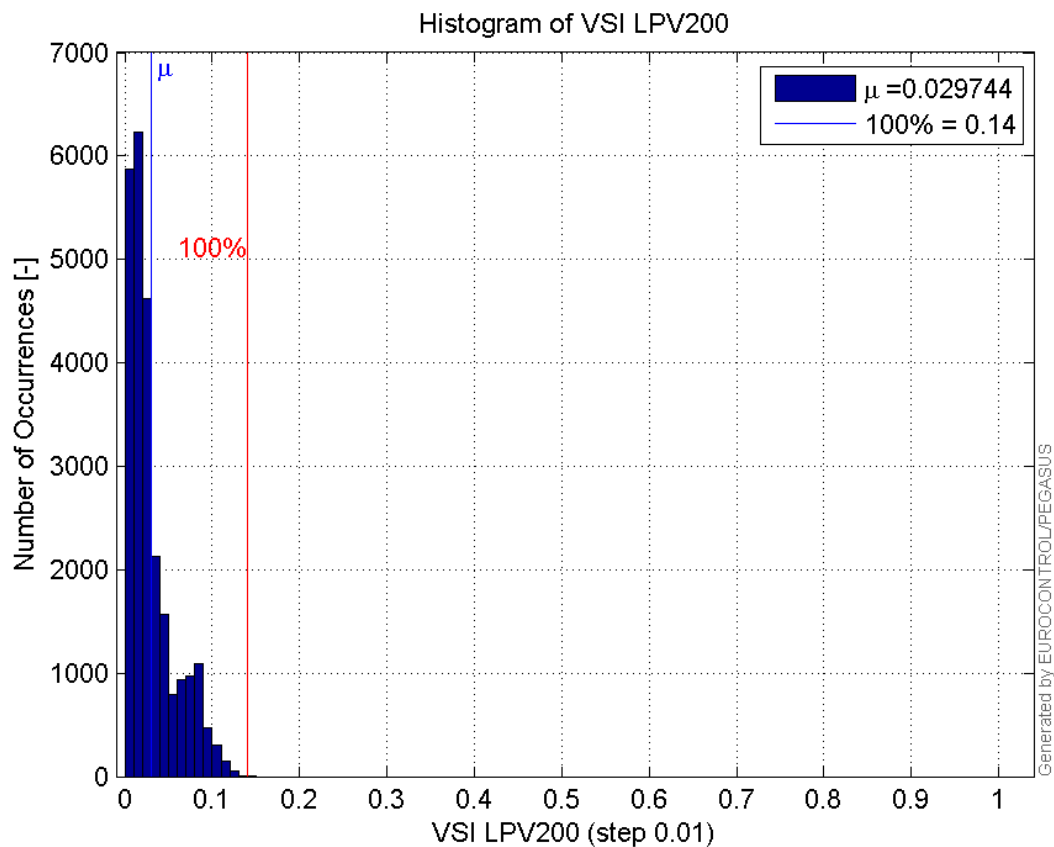
Histogram of VPL LPV200:



Histogram of HSI LPV200:

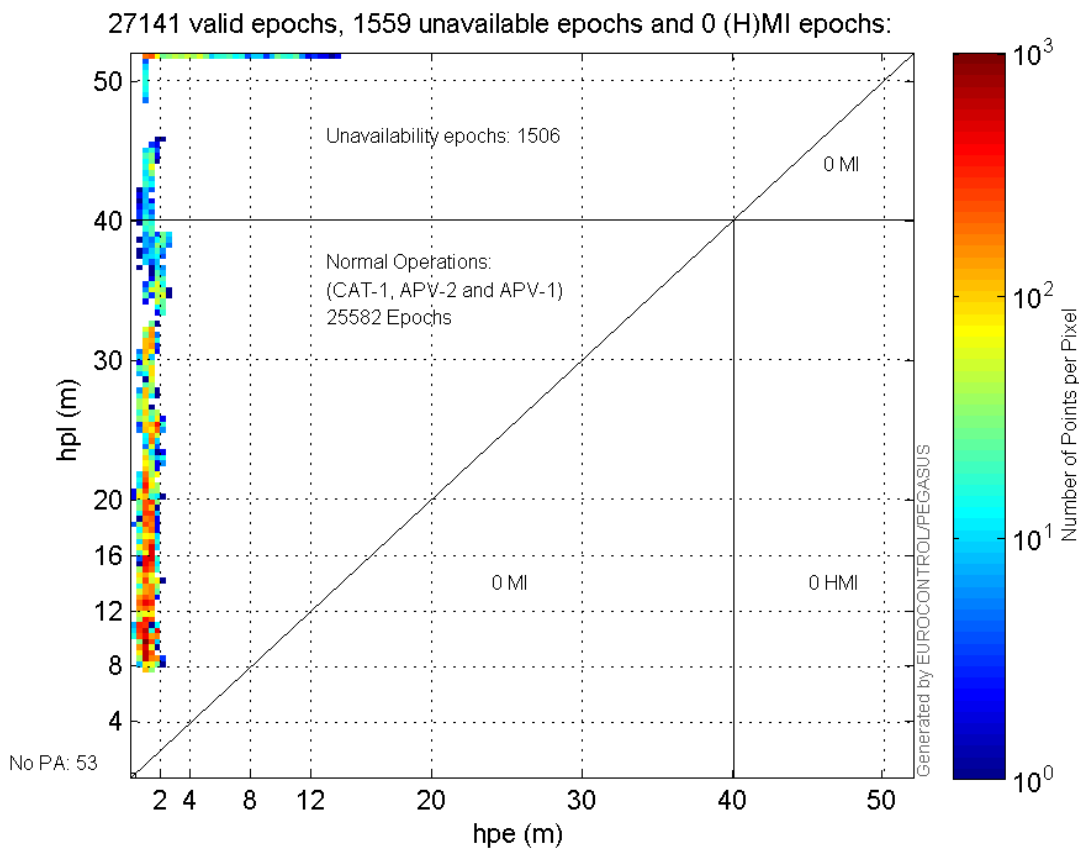


Histogram of VSI LPV200:

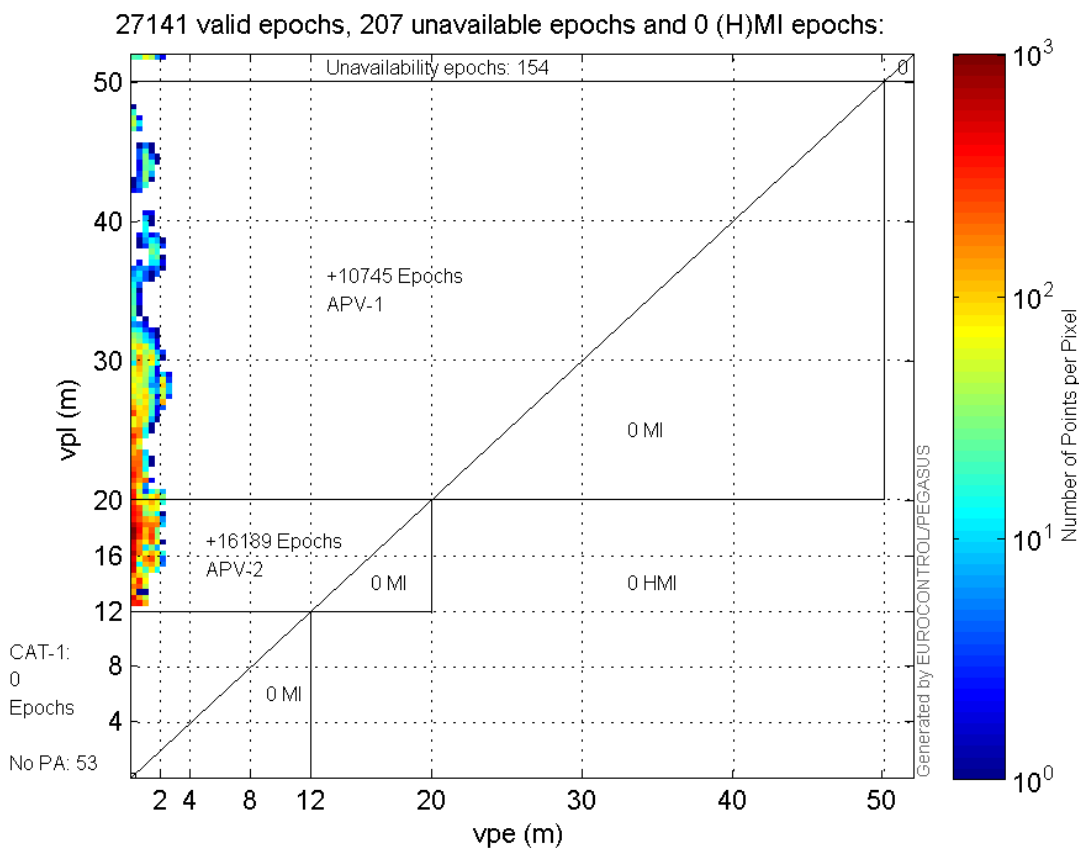


Stanford Plots

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:/PegasusDateGob/job/2016_02_05EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_05EGNOS/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	230.3205
mi_numbers	results	0

Range Domain

start: 06:18:02 05.02.2016 (week: 1882 sec: 454682)
end: 13:56:23 05.02.2016 (week: 1882 sec: 482183)
duration: 07:38:22 ..

quality

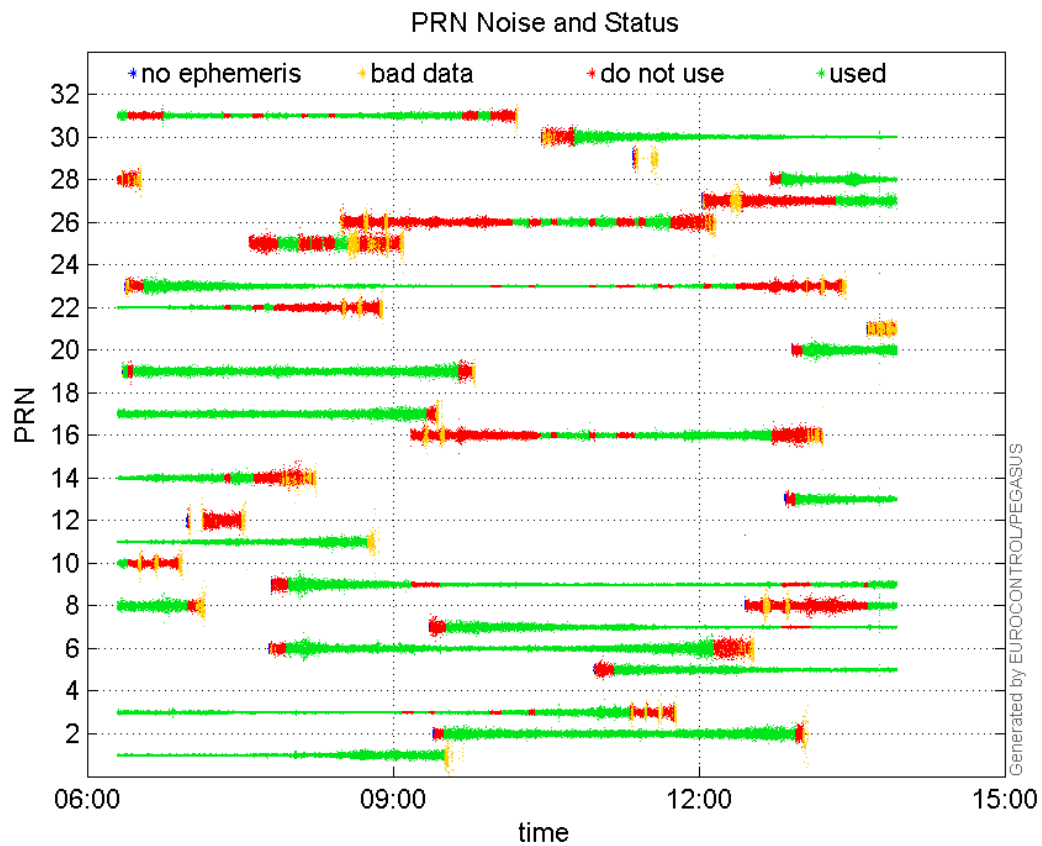
valid samples 27502
total samples 27502

PRN overview

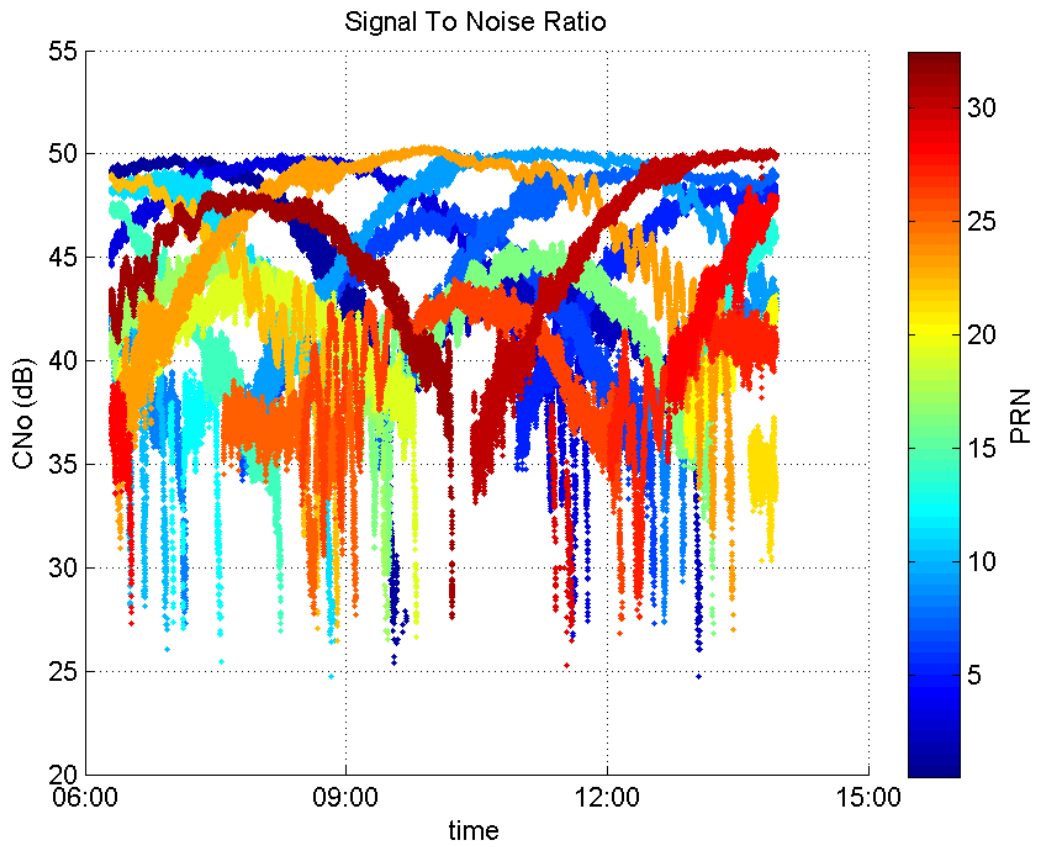
Number of Visible GPS Satellites 27
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



range errors

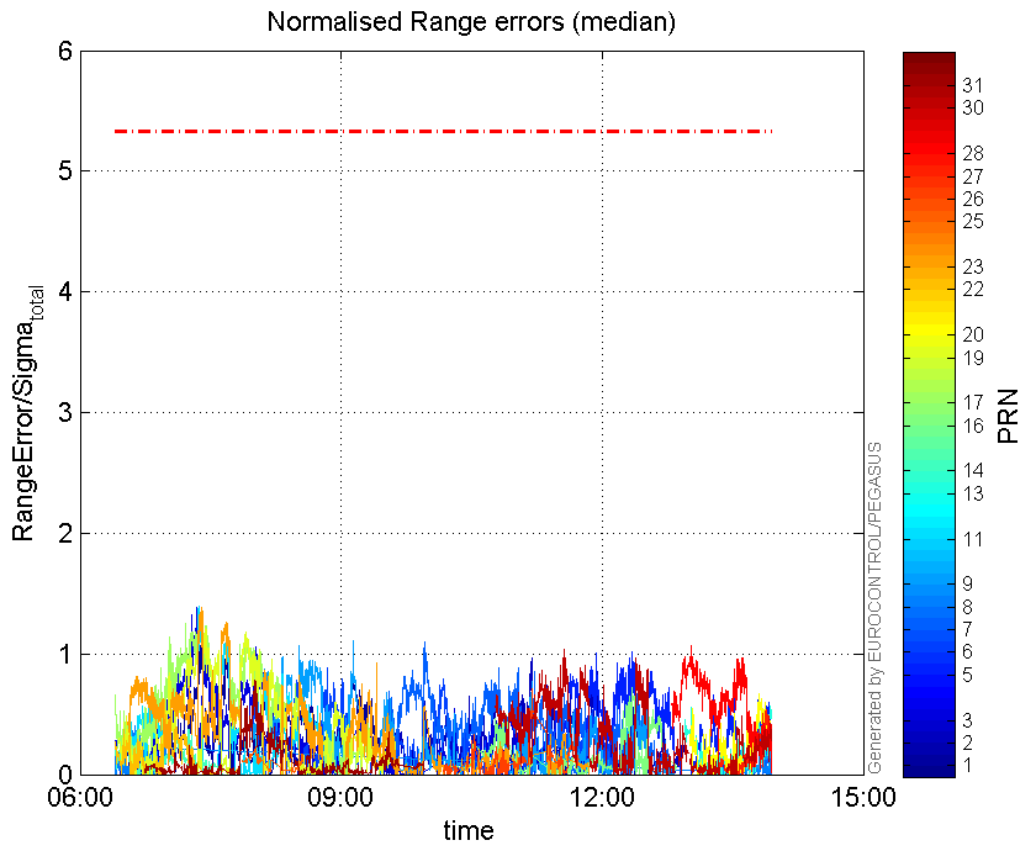
Number of Overbounding Norm Errors 0

Max Norm Errors :

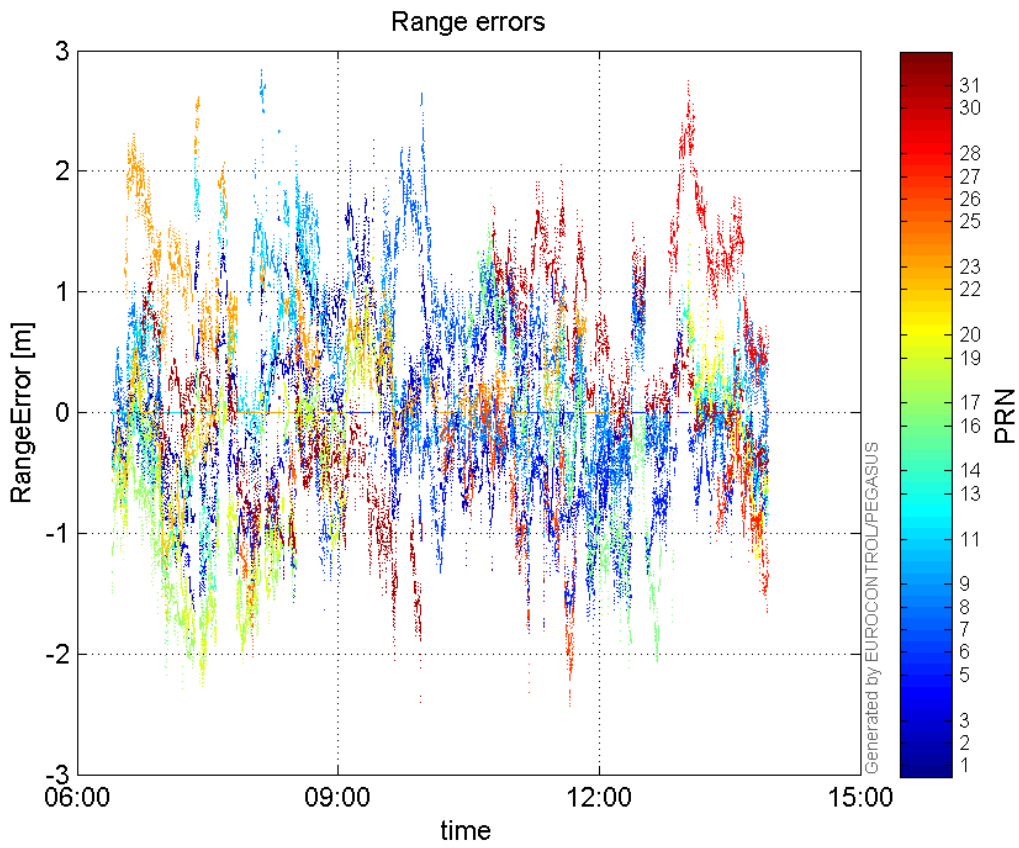
GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1882	458650	1	1.21936	1.60879	1.31937
1882	472307	2	0.964242	-1.8327	1.90066
1882	458432	3	1.382	-1.81405	1.31262
1882	476457	5	1.02162	-1.73783	1.70105
1882	463838	6	0.885154	-1.63731	1.84974
1882	467861	7	1.09465	2.64079	2.41246
1882	455952	8	0.431509	1.07759	2.49727
1882	464885	9	1.10591	1.86353	1.68507
1882	458540	11	1.3912	2.10817	1.51536
1882	482165	13	0.569712	-0.926498	1.62626
1882	455424	14	0.389129	-1.12557	2.89253
1882	476457	16	0.721265	-2.12034	2.93975
1882	457987	17	1.2503	-2.29049	1.83195
1882	458782	19	1.21534	-2.27075	1.8684
1882	481709	20	0.669979	-1.3244	1.97677
1882	457119	22	0.617569	-1.5209	2.46272
1882	458644	23	1.38965	2.6148	1.88162
1882	460871	25	0.23494	-2.02019	8.59875
1882	472314	26	0.705652	-2.31822	3.28522

1882	481999	27	0.535587	-1.50702	2.81378
1882	478863	28	1.07192	2.7452	2.561
1882	473604	30	1.03288	2.0563	1.99083
1882	460839	31	0.779768	-1.23503	1.58385

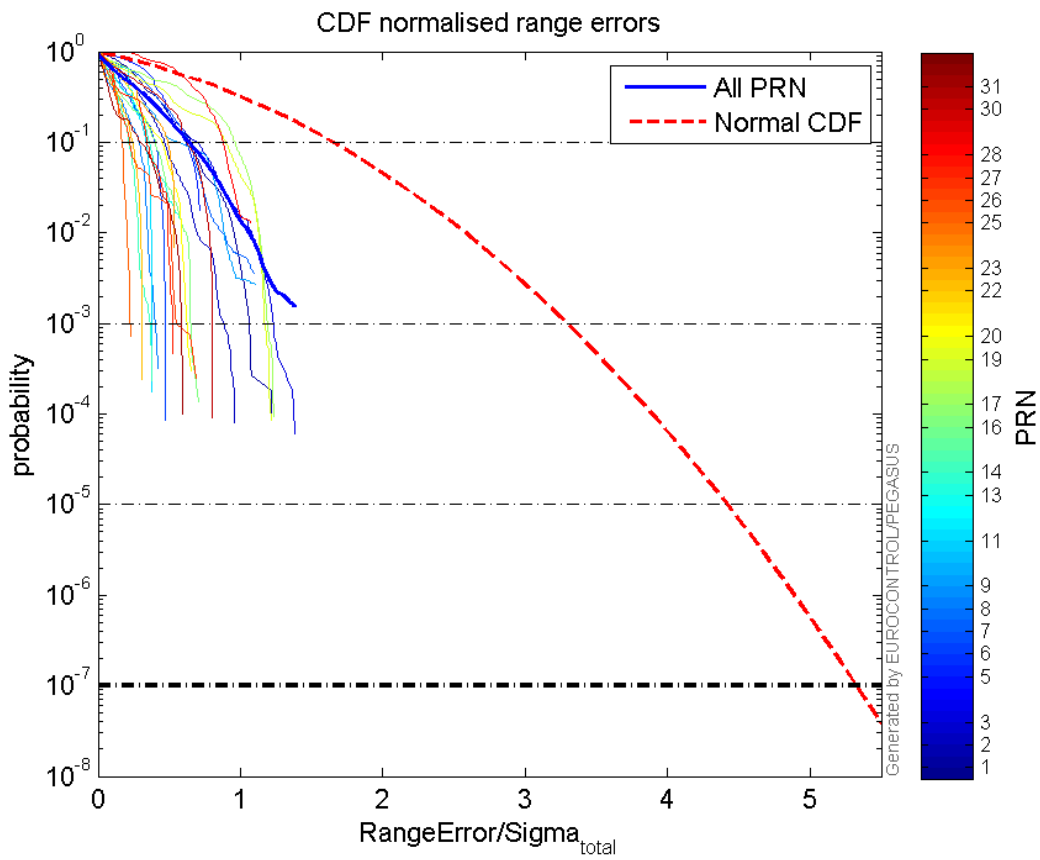
Normalised Range errors (median):



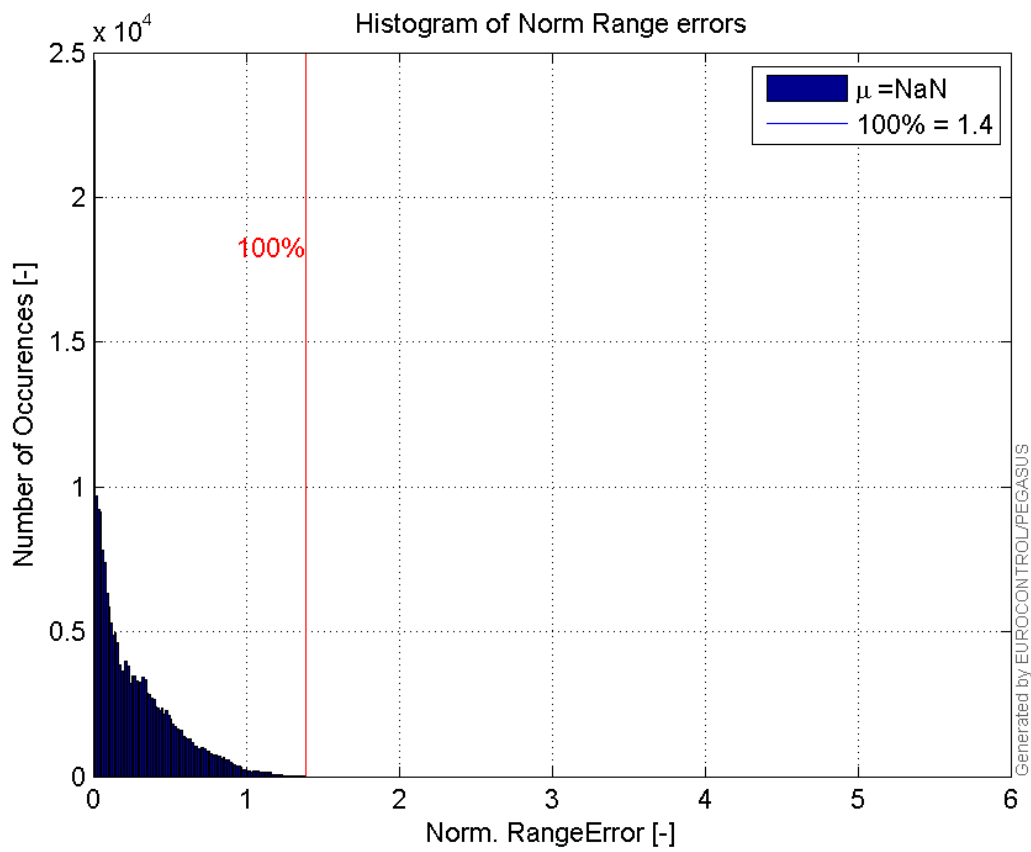
Range errors:



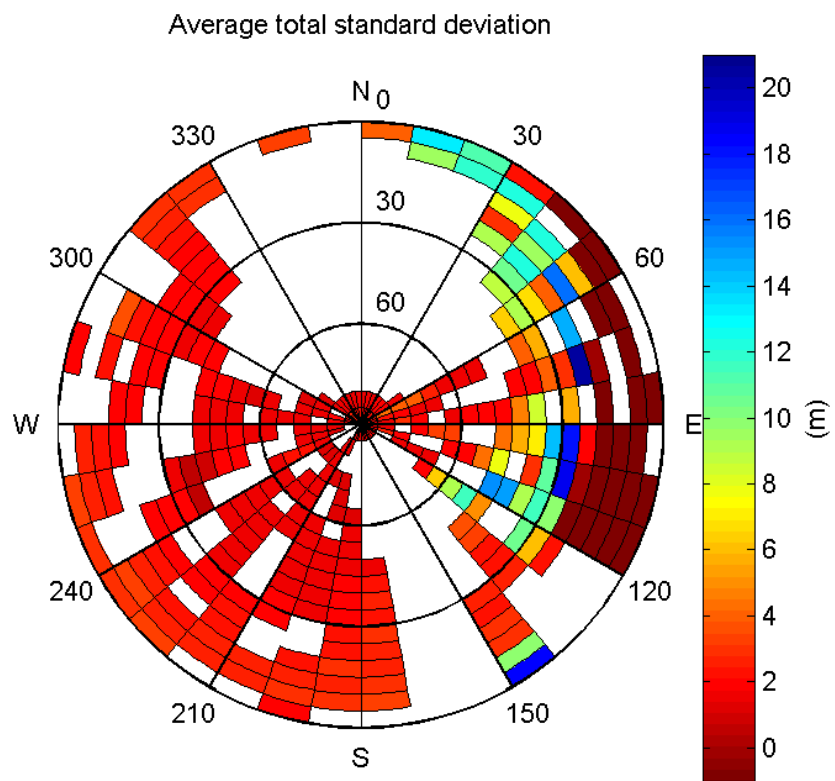
CDF normalised range errors:



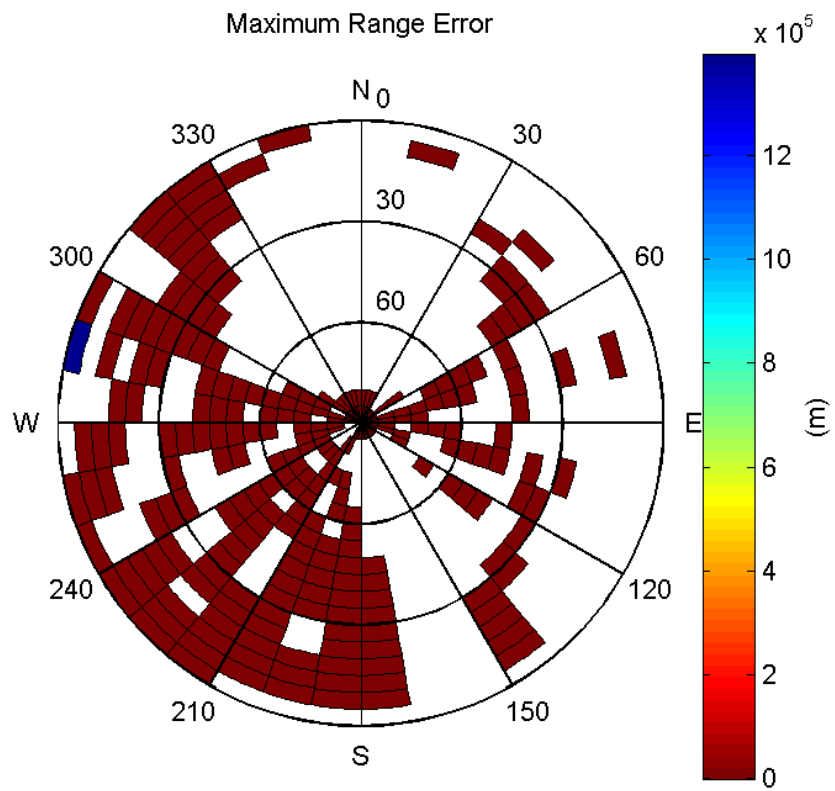
Histogram of Norm Range errors:



Sigma Sky Plot:

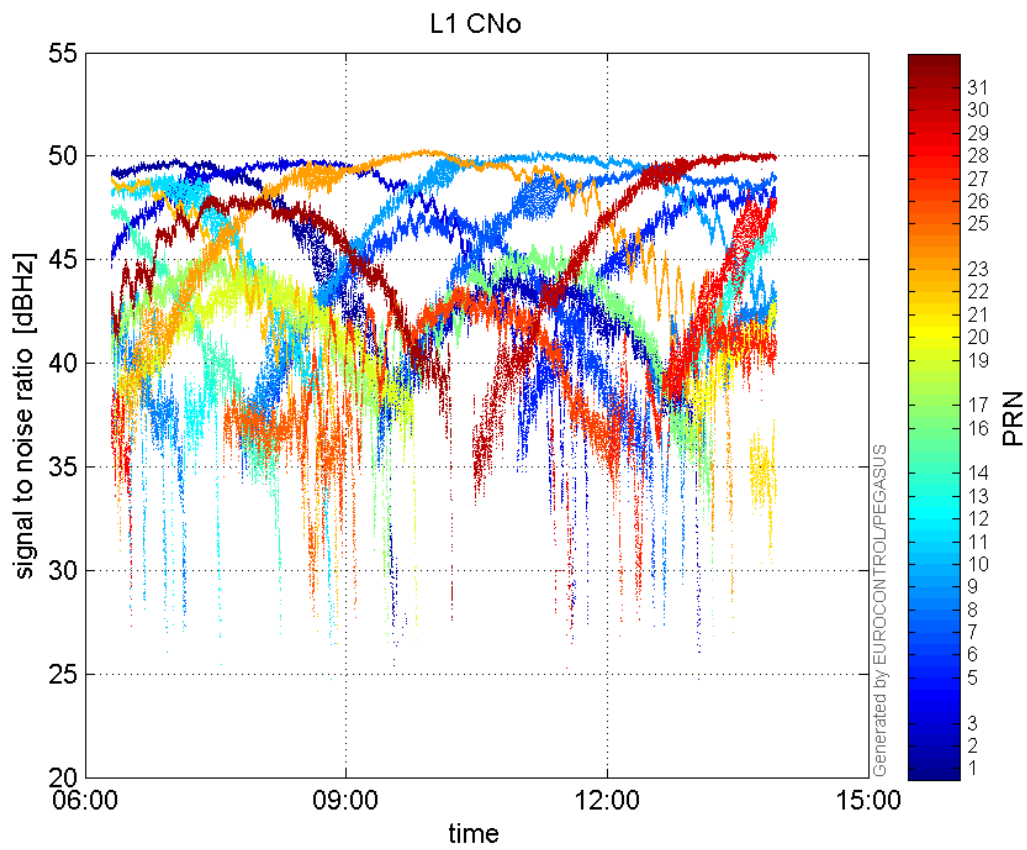


Norm Error Sky Plot:

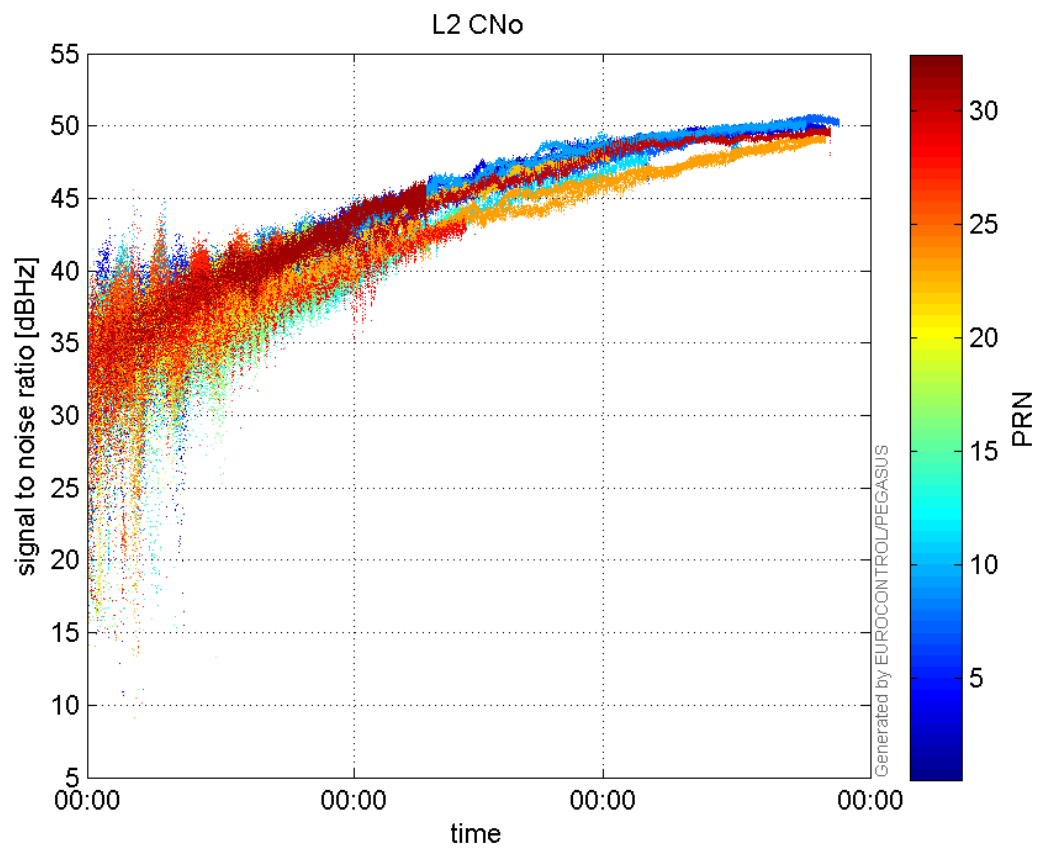


signal quality

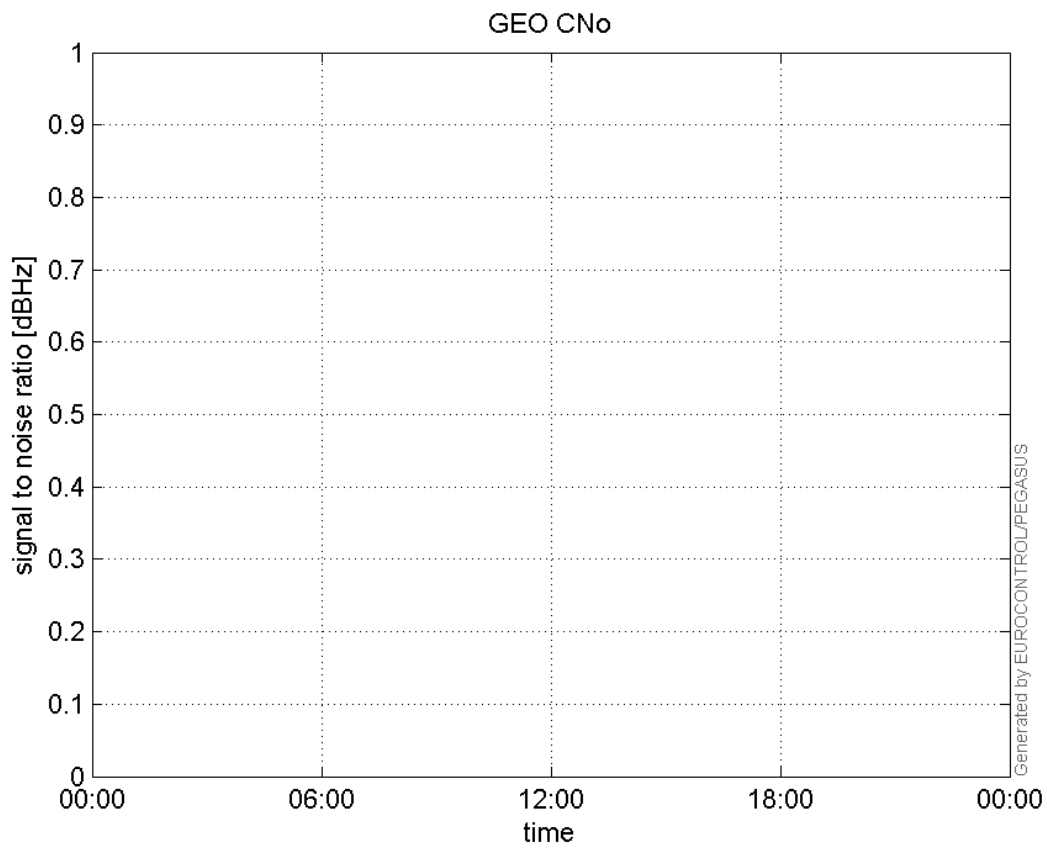
L1 CNo:



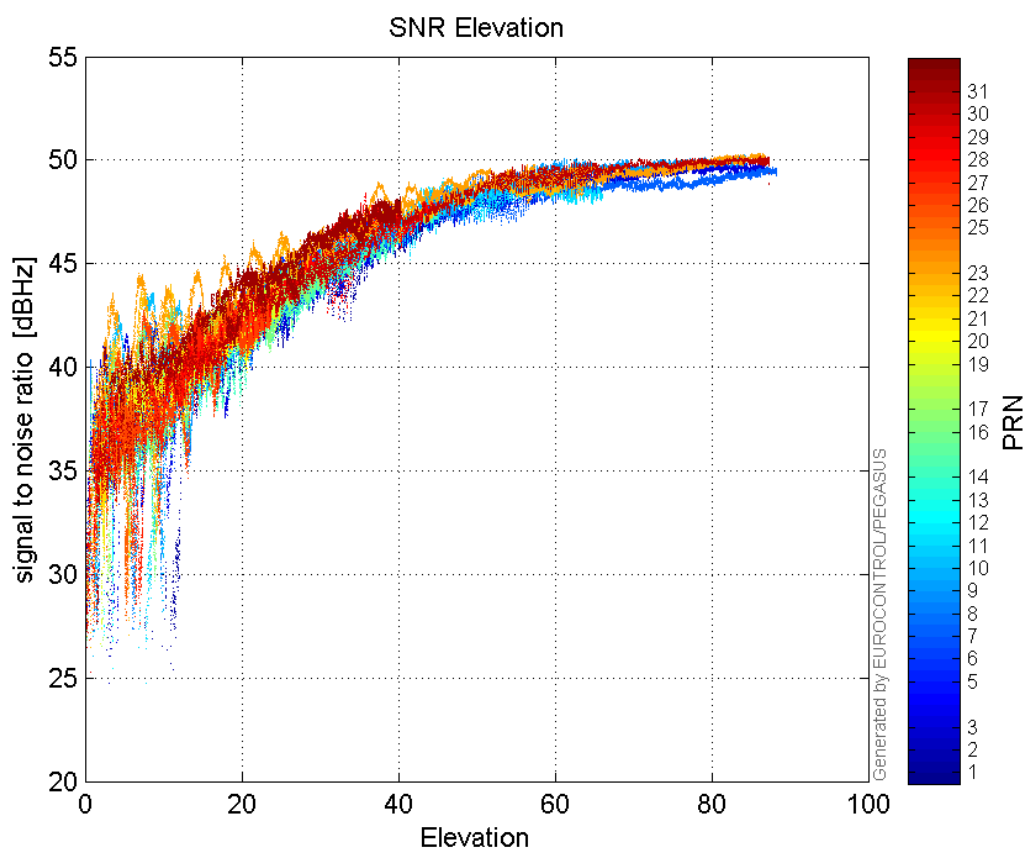
L2 CNo:



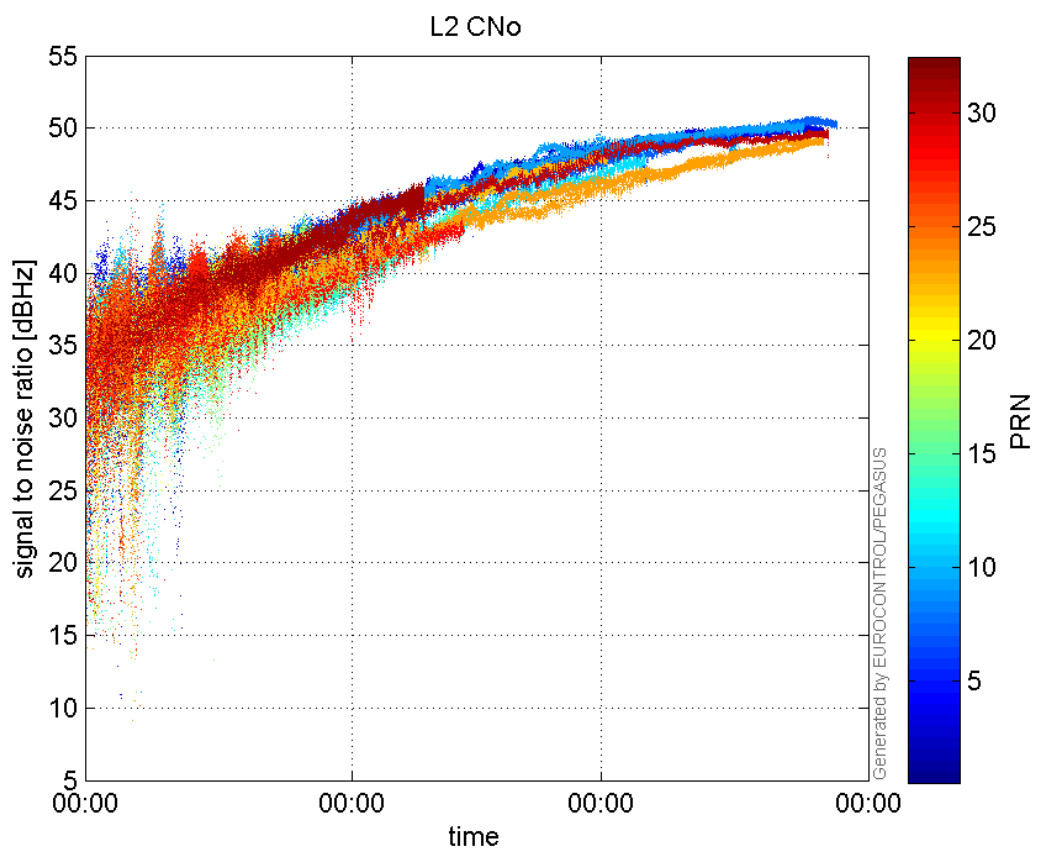
GEO CNo:



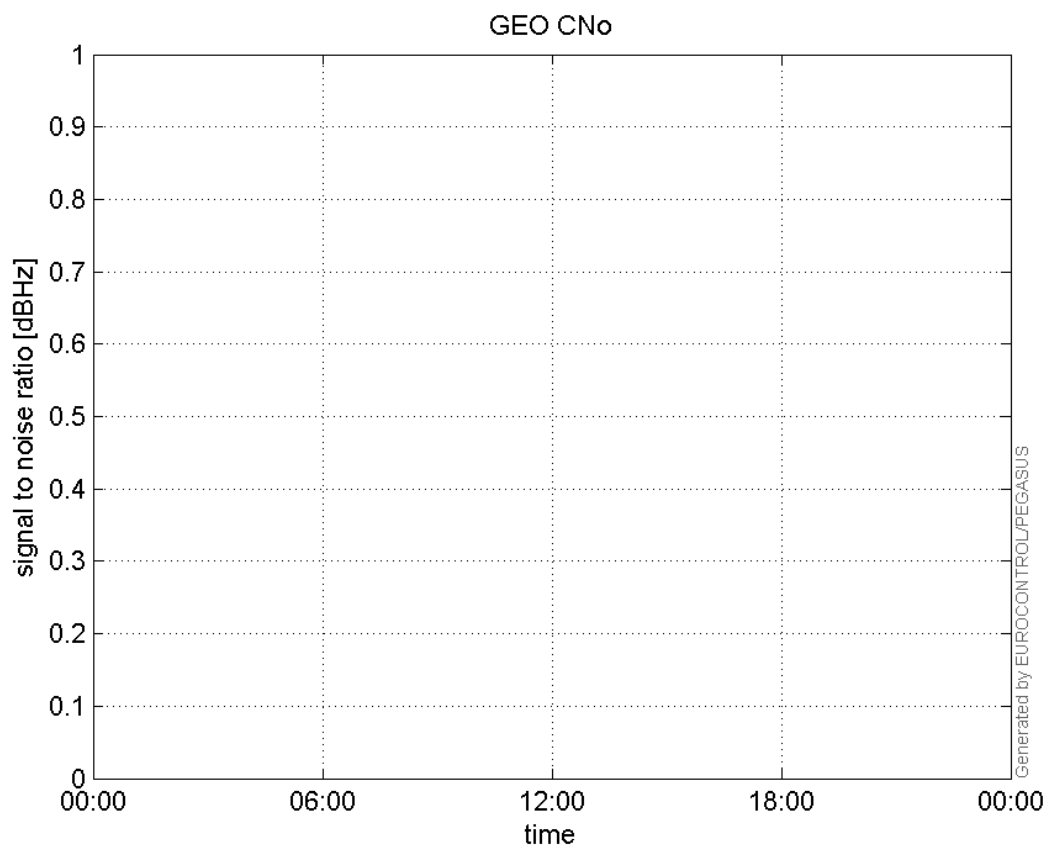
SNR Elevation:



L2 CNo:

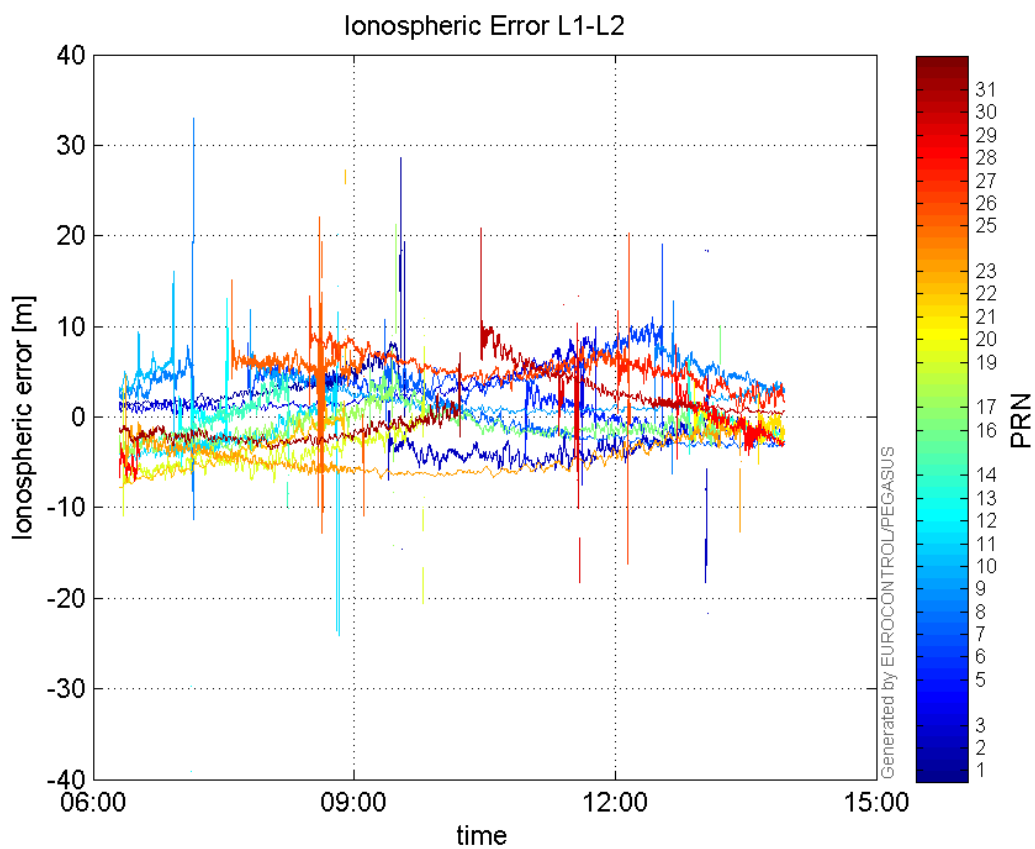


GEO CNo:



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:/PegasusDateGob/job/2016_02_05EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_05EGNOS/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	230.3205
mi_numbers	results	0