

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 05/07/2016

SBAS Messages

start: 12:08:16.129 14.06.2016 (week: 1901 sec: 216496.129)
end: 13:50:7.129 14.06.2016 (week: 1901 sec: 222607.129)
duration: 01:41:51 ..

quality

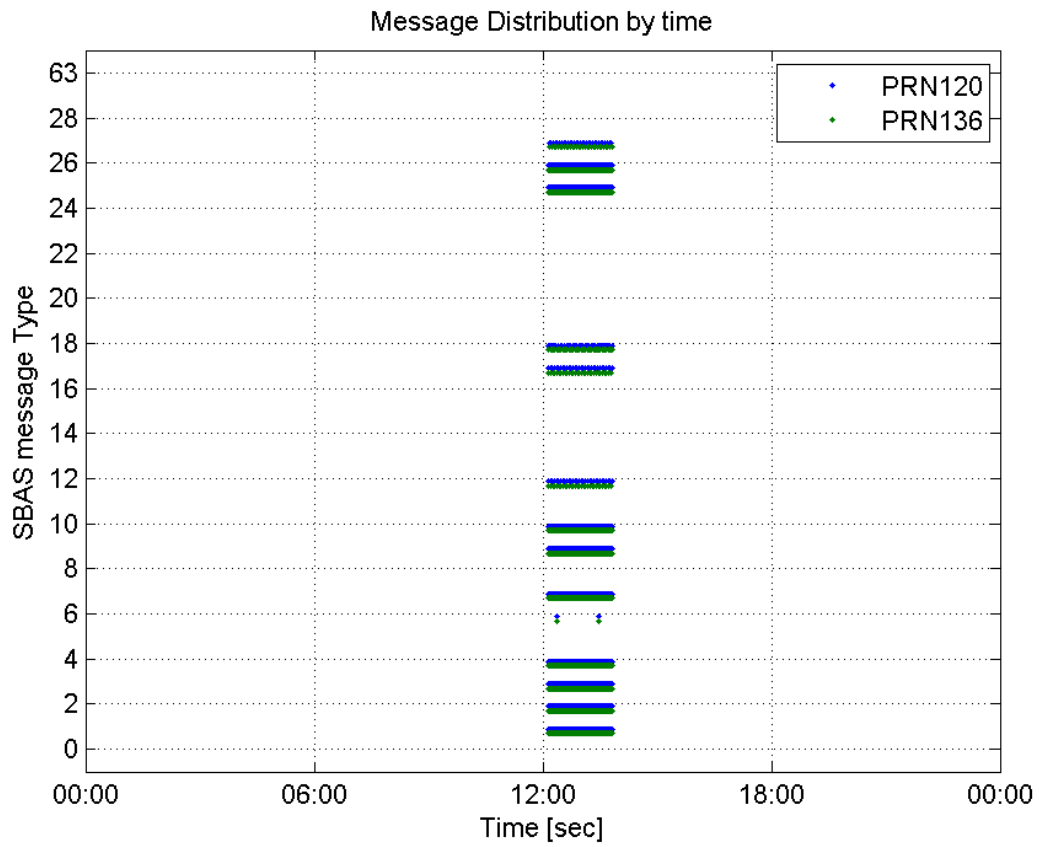
valid samples 12224
total samples 12224
number of SBAS PRNs 2

SBAS SIS Overview

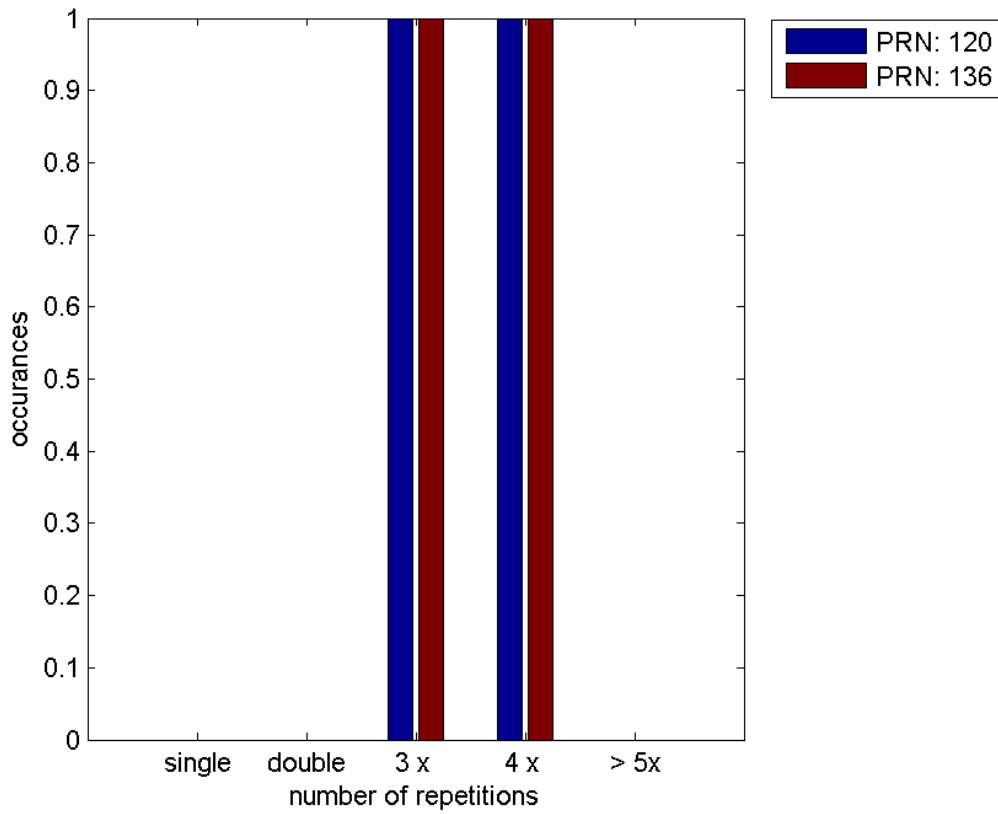
Message Type 6 repetitions :

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

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

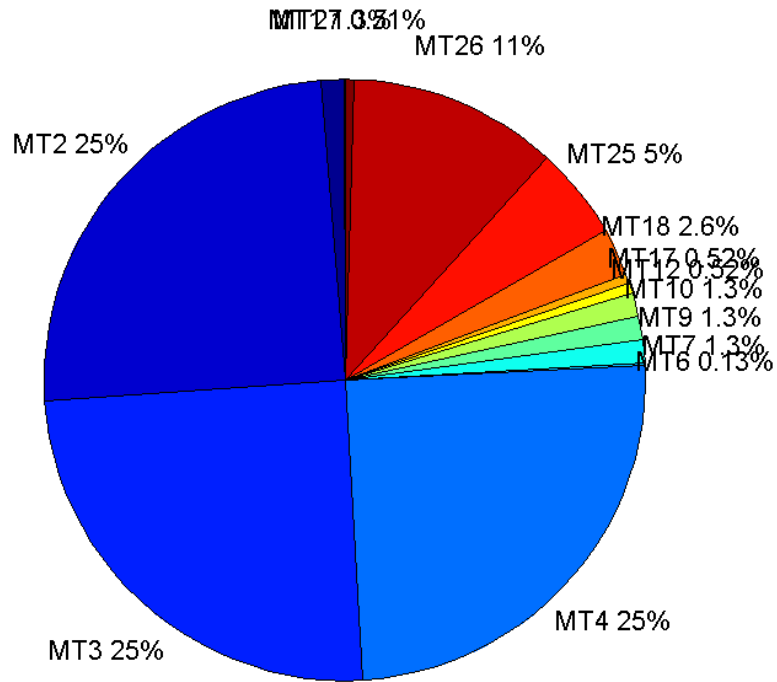
	number of messages	%
MT 0	0	0
MT 1	77	1.25982
MT 2	1518	24.8364
MT 3	1518	24.8364
MT 4	1518	24.8364
MT 5	0	0
MT 6	8	0.13089
MT 7	77	1.25982
MT 9	77	1.25982
MT 10	77	1.25982
MT 12	32	0.52356
MT 17	32	0.52356
MT 18	156	2.55236
MT 24	0	0
MT 25	303	4.95746
MT 26	688	11.2565
MT 27	31	0.507199
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	6112	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	82	79.6579	0	0	0
MT 2	4	8	4.02571	2	0	0
MT 3	4	8	4.02637	2	0	0
MT 4	4	8	4.02637	2	0	0
MT 5	--	--	--	--	--	--
MT 6	1	3938	563.429	1	1	1
MT 7	76	81	79.5526	0	0	0
MT 9	76	81	79.6053	0	0	0
MT 10	76	81	79.4474	0	0	0
MT 12	188	200	195.29	31	0	0
MT 17	188	201	195.29	0	0	0
MT 18	4	161	39.0516	0	0	0
MT 24	--	--	--	--	--	--
MT 25	3	44	20.0993	0	0	0
MT	4	32	8.88646	0	0	0

26						
MT 27	188	201	195.133	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

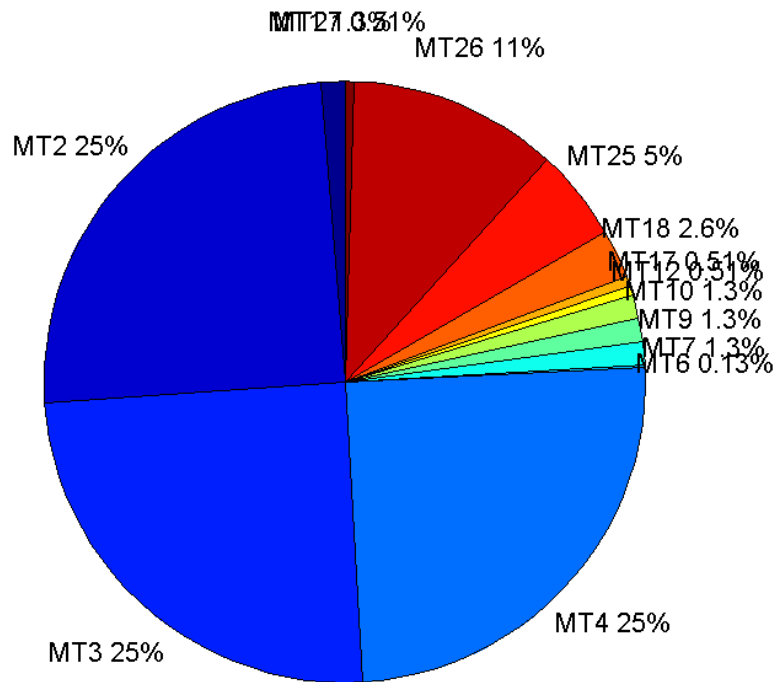
	number of messages	%
MT 0	0	0
MT 1	77	1.25982
MT 2	1518	24.8364
MT 3	1518	24.8364
MT 4	1518	24.8364
MT 5	0	0
MT 6	8	0.13089
MT 7	77	1.25982
MT 9	77	1.25982
MT 10	77	1.25982

MT 12	31	0.507199
MT 17	31	0.507199
MT 18	160	2.6178
MT 24	0	0
MT 25	303	4.95746
MT 26	686	11.2238
MT 27	31	0.507199
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	6112	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	83	79.5658	0	0	0
MT 2	4	7	4.02703	2	0	0
MT 3	4	7	4.02637	2	0	0
MT 4	4	8	4.02637	2	0	0
MT 5	--	--	--	--	--	--
MT 6	1	3938	563.429	1	1	1
MT 7	76	81	79.6711	0	0	0
MT 9	76	81	79.6711	0	0	0
MT 10	76	86	79.6711	0	0	0
MT 12	188	201	195.2	30	0	0
MT 17	188	200	195.267	0	0	0
MT 18	4	160	38.3333	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	52	20.0497	0	0	0
MT 26	4	32	8.89781	0	0	0
MT 27	188	201	195.167	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_06_14_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_06_14_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: 12:08:17 14.06.2016 (week: 1901 sec: 216497)
end: 13:50:08 14.06.2016 (week: 1901 sec: 222608)
duration: 01:41:52 ..

quality

valid samples 5751
total samples 6112

Event tables

Position discontinuity events type no (0)
 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	221118	2.28762	12.2437	0.186841	0.4394	14.9179	0.0294545
max normVer	221843	1.15047	14.5459	0.0790924	1.76004	20.3503	0.0864874
max HPE	218720	3.62693	122.779	0.0295403	2.4699	169.303	0.0145886
max VPE	221918	0.491353	26.1888	0.0187619	2.60892	37.1373	0.0702508
min HPL	222394	1.73952	11.85	0.146795	0.36582	18.674	0.0195898
min VPL	220218	2.0337	12.3878	0.164169	0.320025	14.4665	0.0221218

APV-I discontinuity events :

#	Epoch	duration	stable period
1	218523	826	1665

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	218523	826	1665
2	221420	8	2071
3	221889	395	461

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	218523	826	1665
2	221420	8	2071
3	221889	395	461

First Glance analysis

Duration 6112
 Number of Samples 6112
 Number of invalid sample 361
 Number of no position solution samples 0
 Number of missing sample 0
 Logging Loss 0
 Processing Loss 5.9064
 Number of Misleading Information 0
 Data gaps 0
 Discontinuities 0

Number of Samples :

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

5751	4925	4522	0	4522
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Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	2.33589	2.30004	2.30859	NaN	2.30859
HPEscale 95%	NaN	6.6105	6.68291	NaN	6.68291
VPE 95%	1.30204	1.38442	0.97017	NaN	0.97017
VPEscale 95%	NaN	2.75832	1.86459	NaN	1.86459

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.856373	0.786298	0	0.786298
measurements	0.940936	0.805792	0.739856	0	0.739856
Operational	0.940936	0.805792	0.739856	0	0.739856

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	1	3	--	3
Long	--	1	3	--	3
Independent	--	1	3	--	3
P(disc.)	NaN	0.00304569	0.00995135	NaN	0.00995135
P(slide)	NaN	0.00304569	0.00995135	NaN	0.00995135

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	5751	4925	4522	0	4522
SIS Availability	1	0.856373	0.786298	0	0.786298
Local Availability	0.940936	0.805792	0.739856	0	0.739856
Operational Availability	0.940936	0.805792	0.739856	0	0.739856
HPE 95%	2.33589	2.30004	2.30859	NaN	2.30859
HPEscale 95%	NaN	6.6105	6.68291	NaN	6.68291
VPE 95%	1.30204	1.38442	0.97017	NaN	0.97017
VPEscale 95%	NaN	2.75832	1.86459	NaN	1.86459
All Discontinuity Events	--	1	3	--	3
Long Discontinuity Events	--	1	3	--	3
Independent Discontinuity Events	--	1	3	--	3
P(discontinuity)	NaN	0.00304569	0.00995135	NaN	0.00995135
P(sliding window)	NaN	0.00304569	0.00995135	NaN	0.00995135
All Integrity Events	0	0	0	0	0
Horizontal Integrity Events	0	0	0	0	0

Vertical Integrity Events

0

0

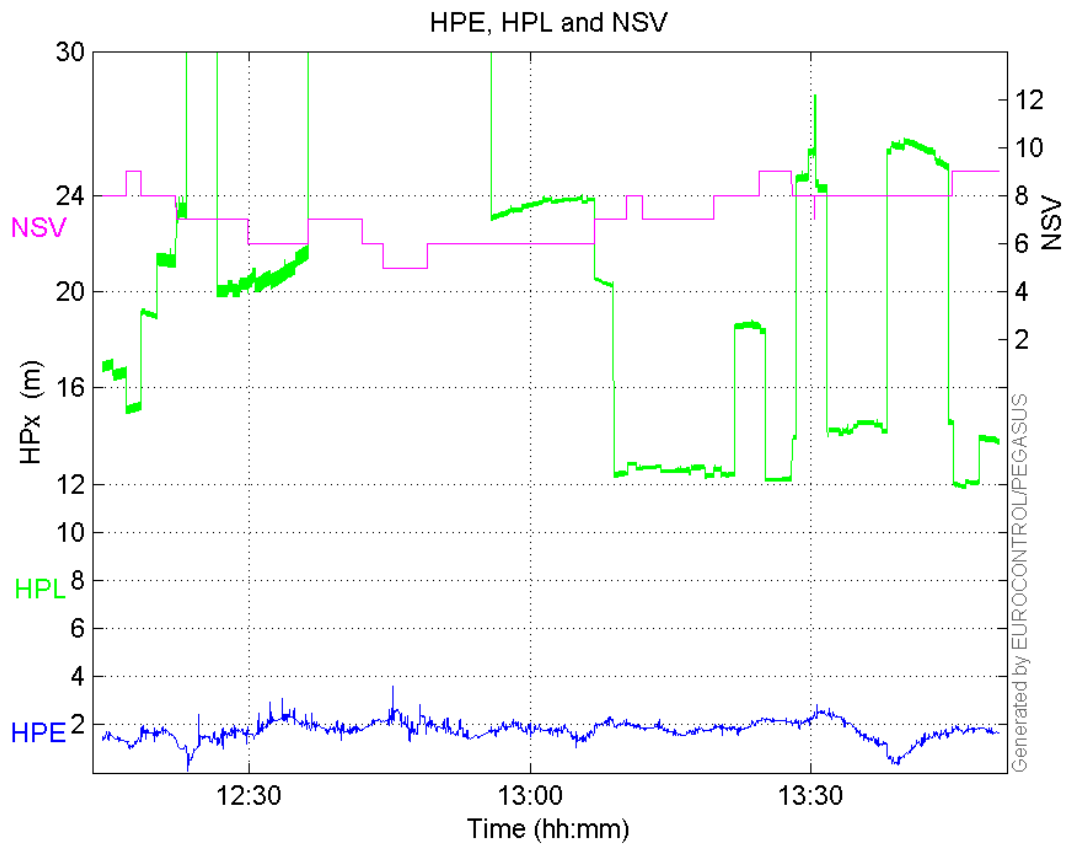
0

0

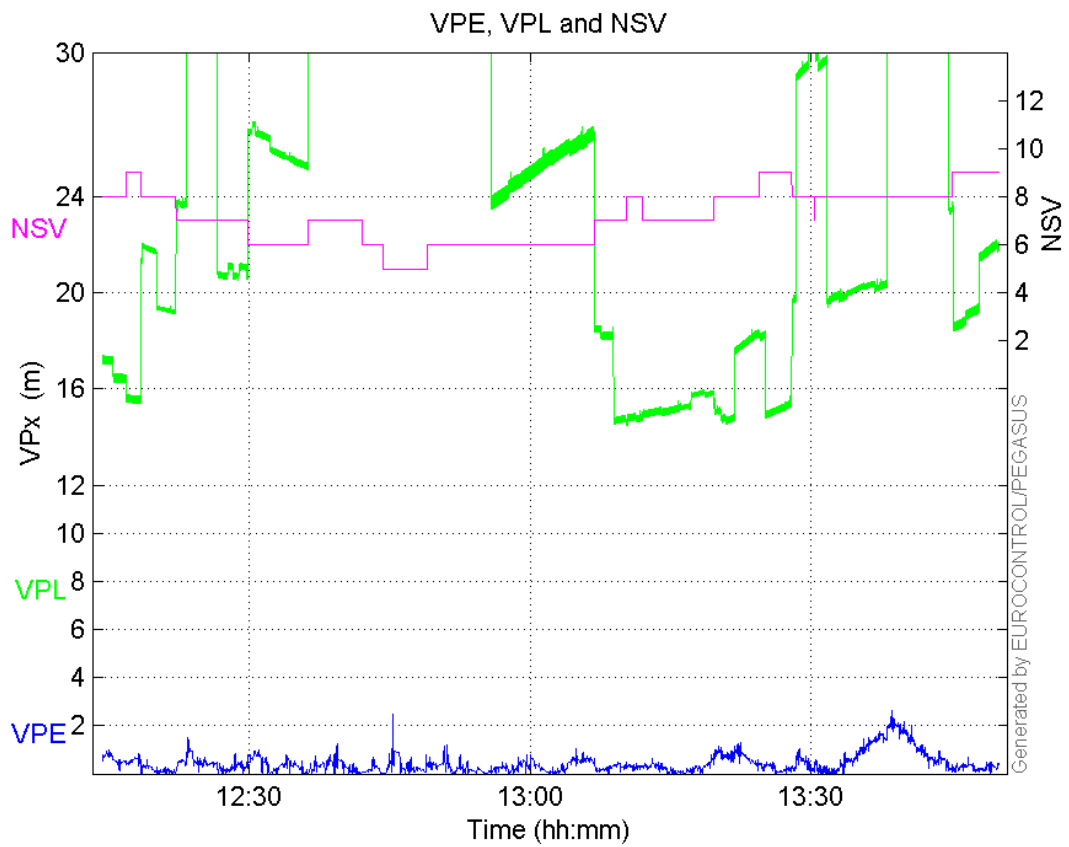
0

Time Series

HPE, HPL and NSV:

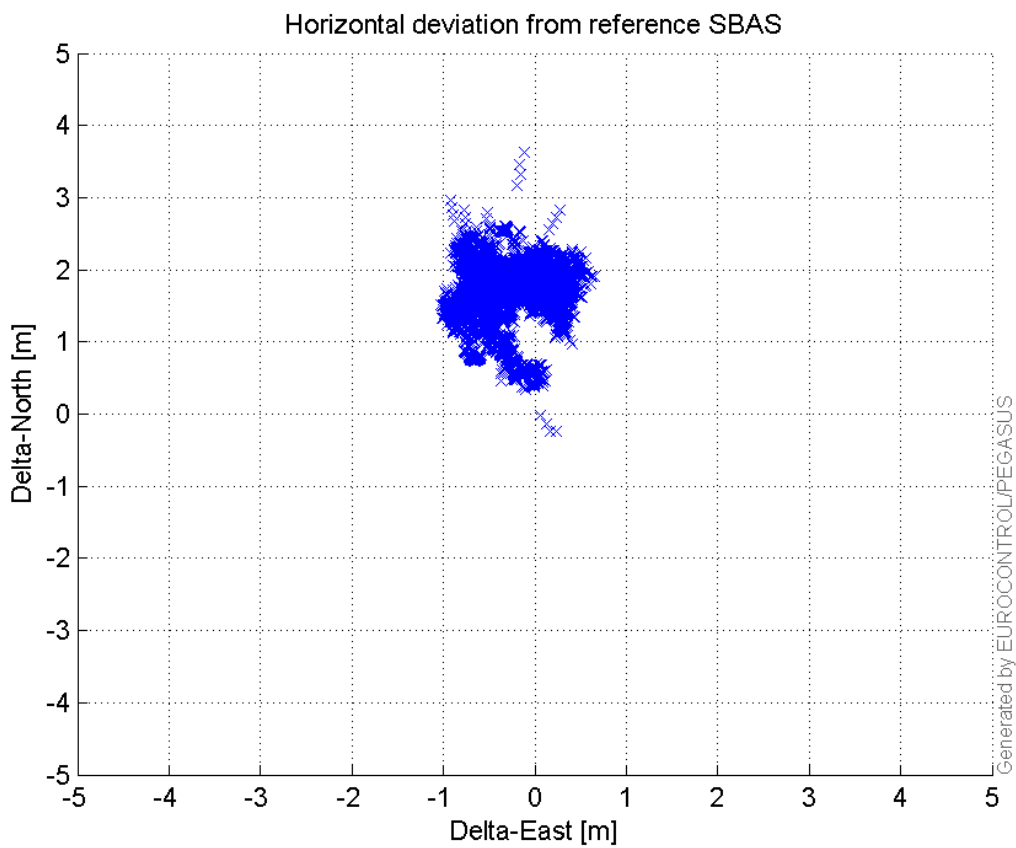


VPE, VPL and NSV:



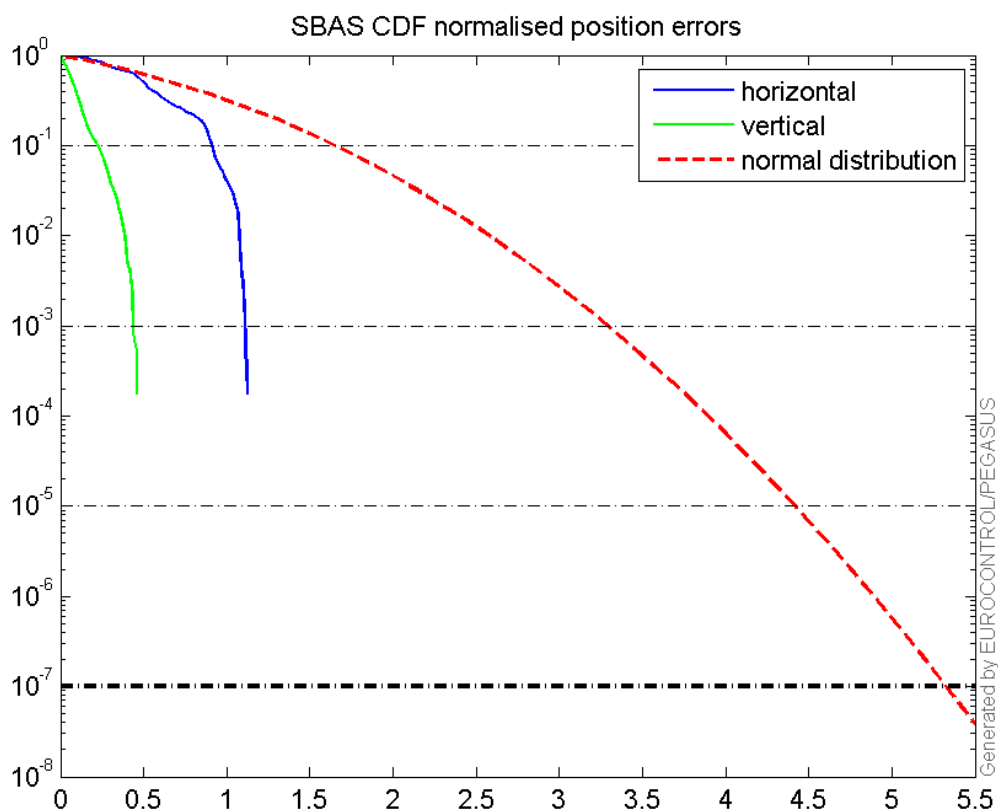
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

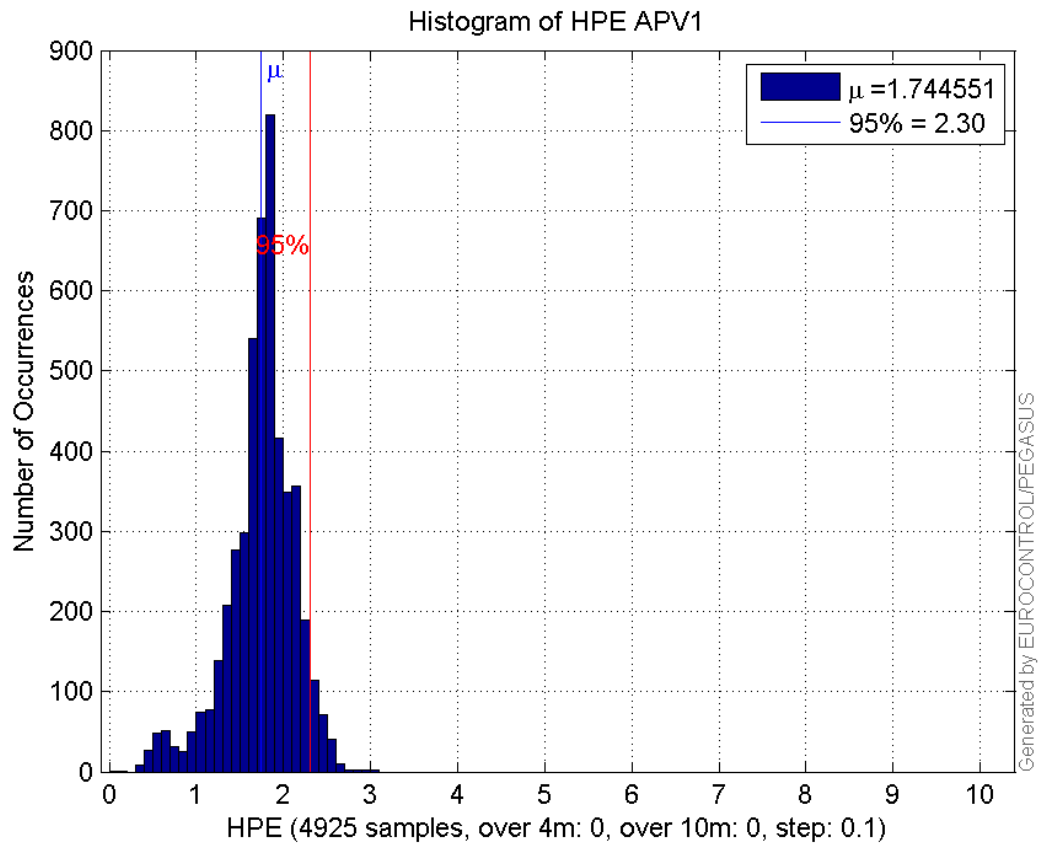
number	4925
sum	8591.9118
sum2	15727.808
prctile95	2.3000446
prctile99	2.5148219
number	4925
sum	2273.0105
sum2	1852.7001
prctile95	1.3844151
prctile99	2.0178001
number	4925
sum	100185.56
sum2	2284564.9
prctile95	36.871875
prctile99	38.564725
number	4925
sum	115127.73
sum2	2941411
prctile95	37.925775
prctile99	38.596675
number	4925
sum	479.88274
sum2	54.843777

prctile95 0.16526243
prctile99 0.17932823
number 4925
sum 99.612503
sum2 3.326189
prctile95 0.055166388
prctile99 0.073067329
number 4522
sum 8130.0411
sum2 15110.839
prctile95 2.3085884
prctile99 2.5148225
number 4522
sum 1790.9496
sum2 1127.2192
prctile95 0.97017001
prctile99 1.4846578
number 4522
sum 89741.051
sum2 2013792
prctile95 37.01234
prctile99 38.58638
number 4522
sum 99824.755
sum2 2360182.4
prctile95 33.35428
prctile99 33.715456
number 4522
sum 462.03396
sum2 53.92271
prctile95 0.16707275
prctile99 0.17949033
number 4522
sum 86.823784
sum2 2.8100972
prctile95 0.053273944
prctile99 0.073482175

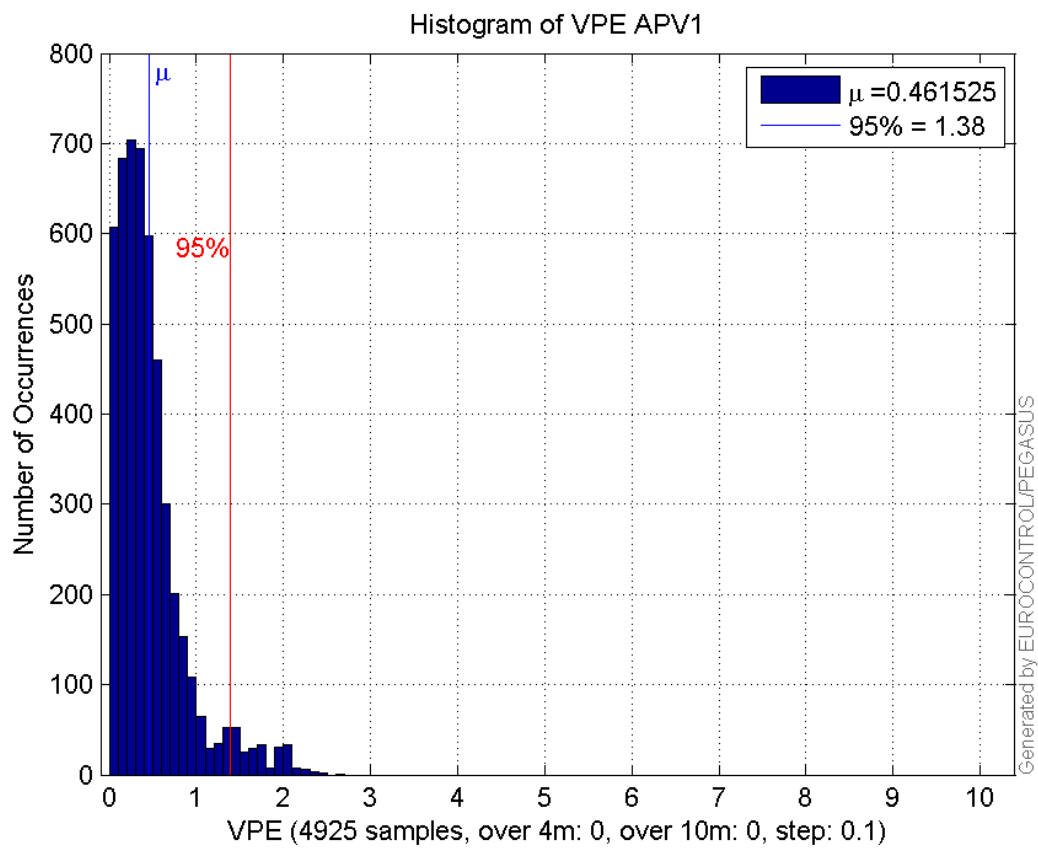
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.74455	0.387346	1.7875	2.30004	2.51482	1.78703
HPL	20.3422	7.07631	20.3029	36.8719	38.5647	21.5377
VPE	0.461525	0.403993	0.364892	1.38442	2.0178	0.613337
VPL	23.3762	7.12776	21.6102	37.9258	38.5967	24.4385

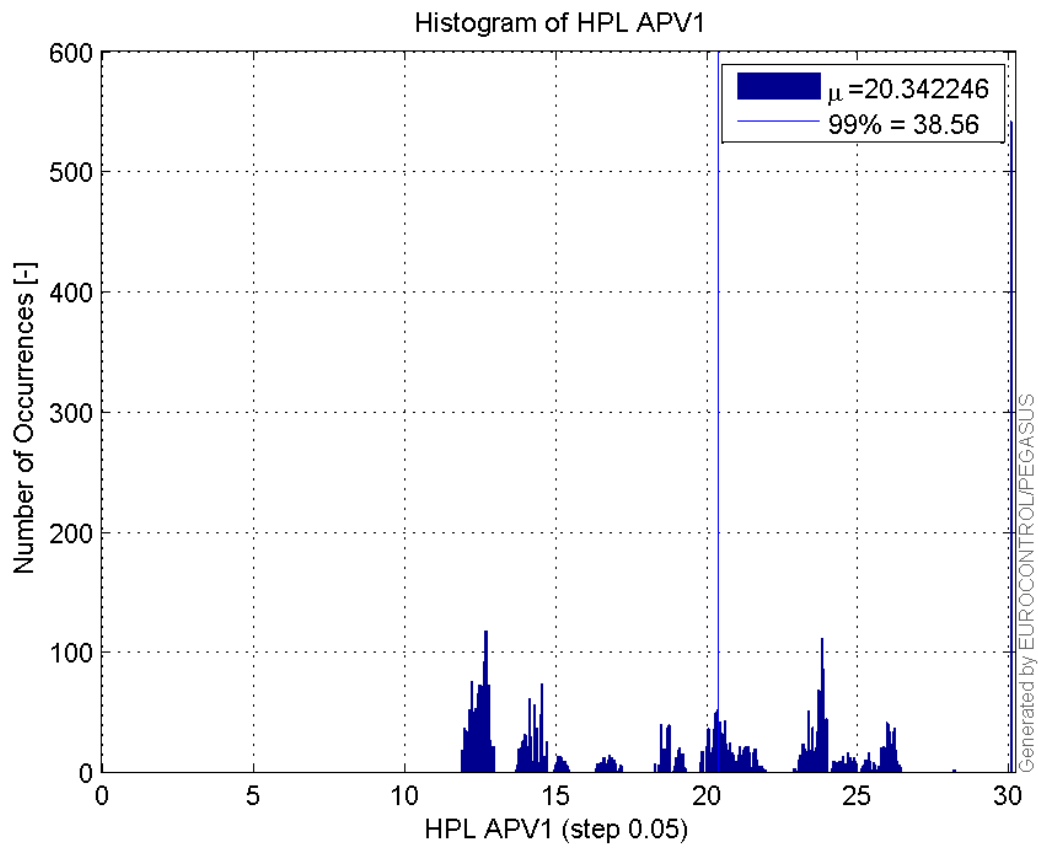
Histogram of HPE APV1:



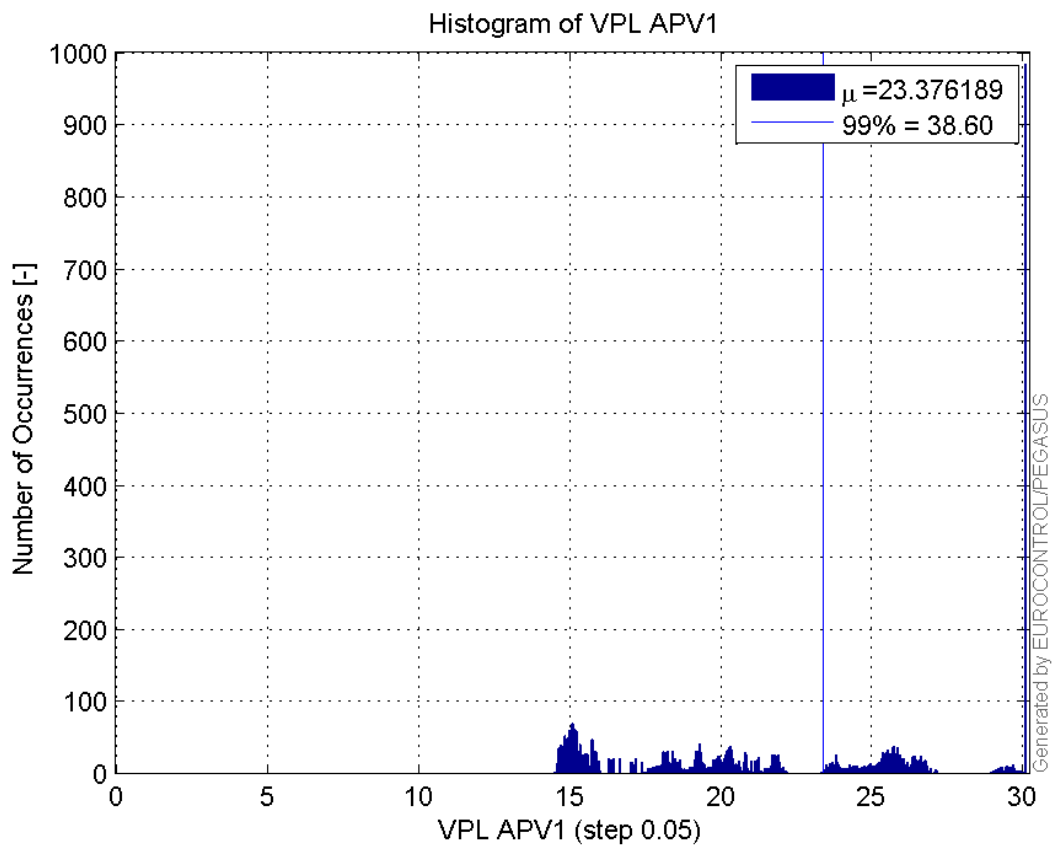
Histogram of VPE APV1:



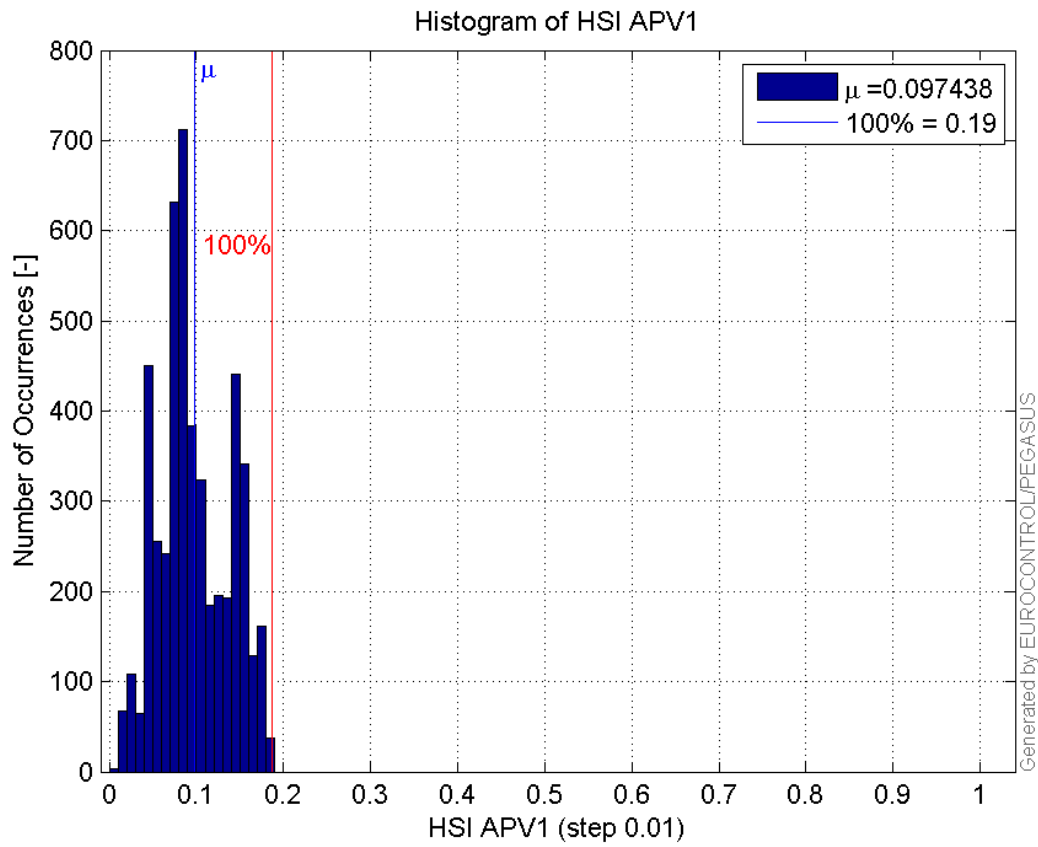
Histogram of HPL APV1:



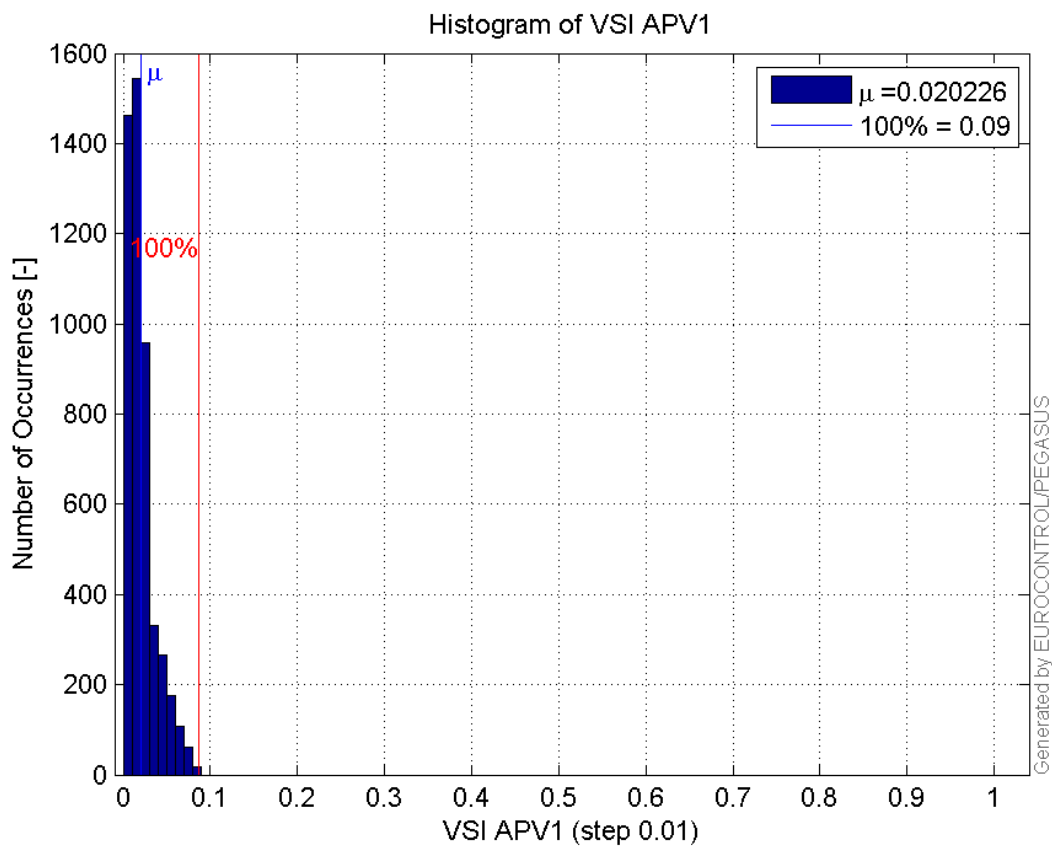
Histogram of VPL APV1:



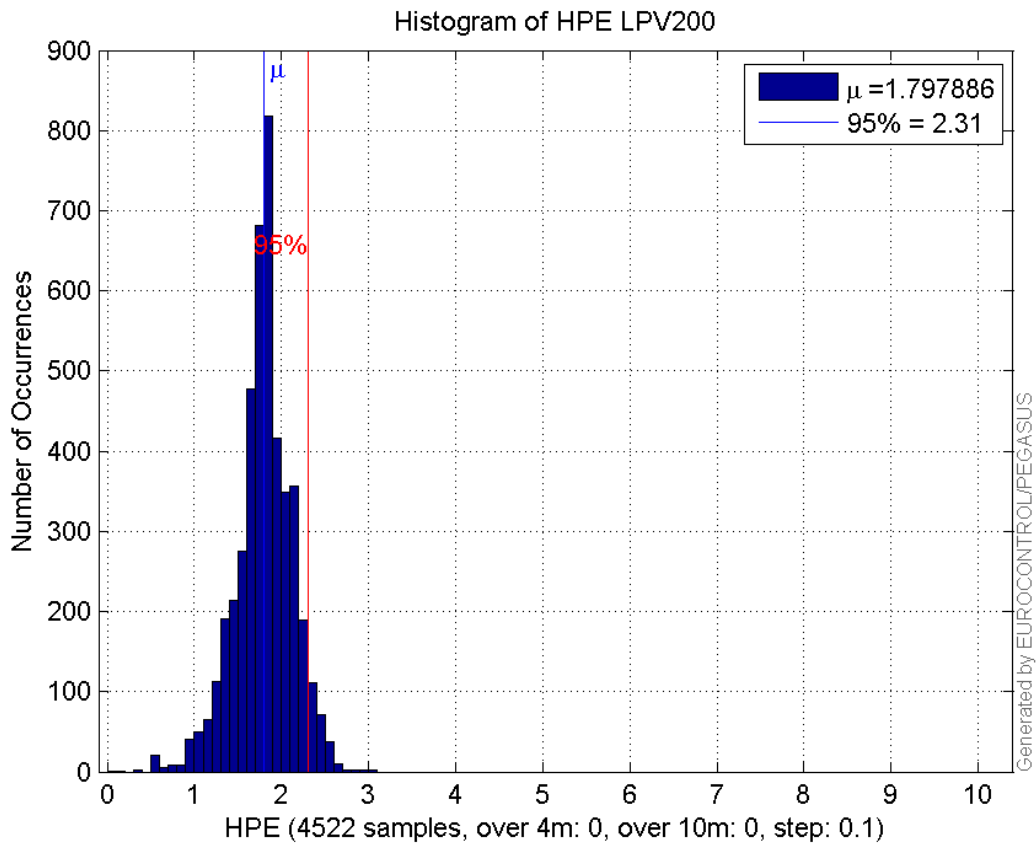
Histogram of HSI APV1:



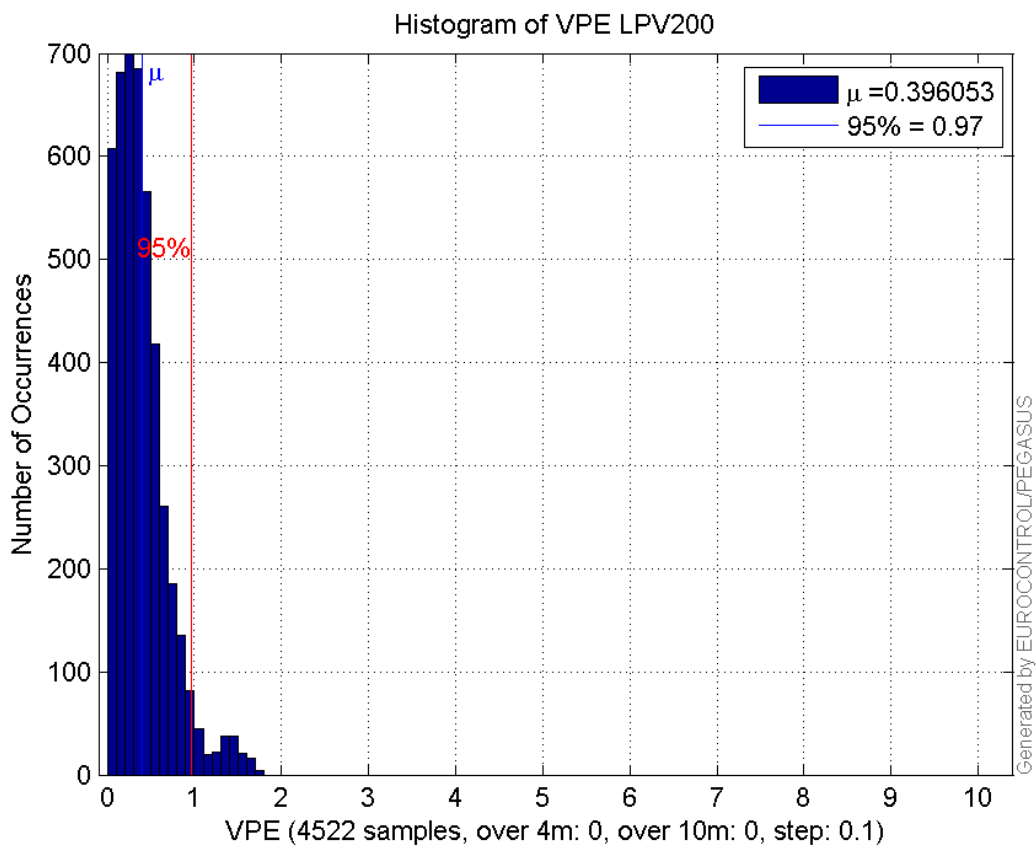
Histogram of VSI APV1:



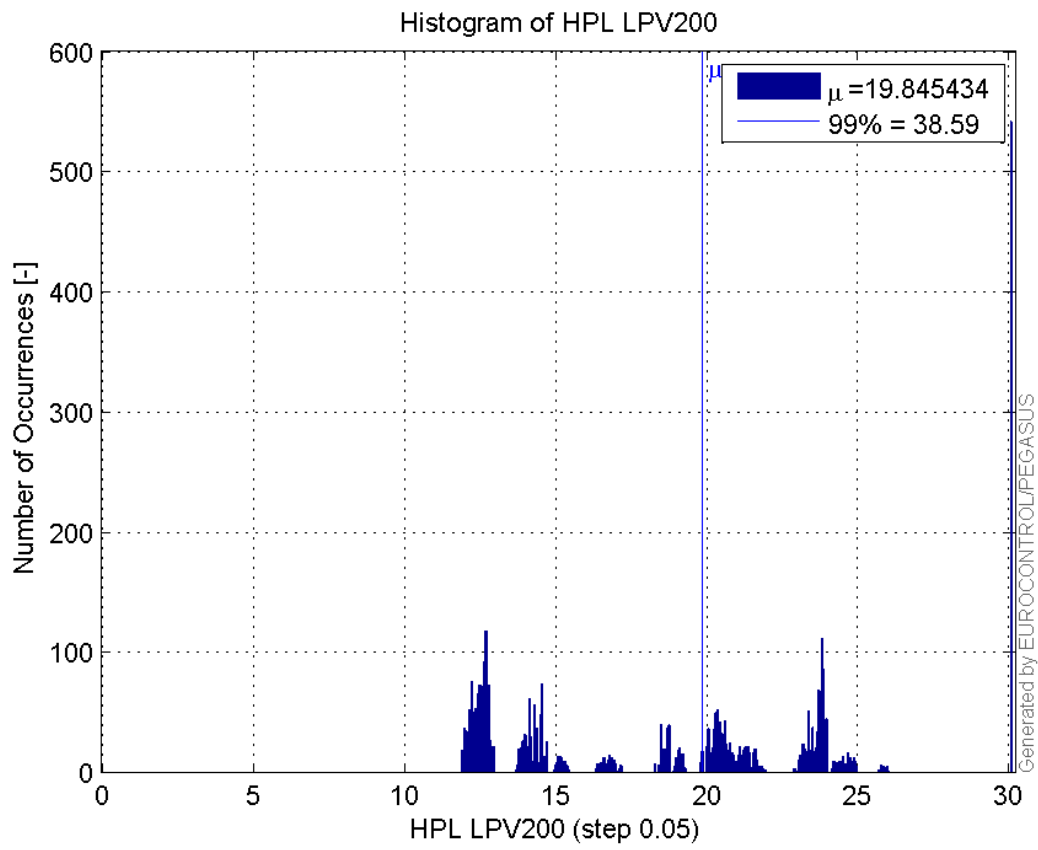
Histogram of HPE LPV200:



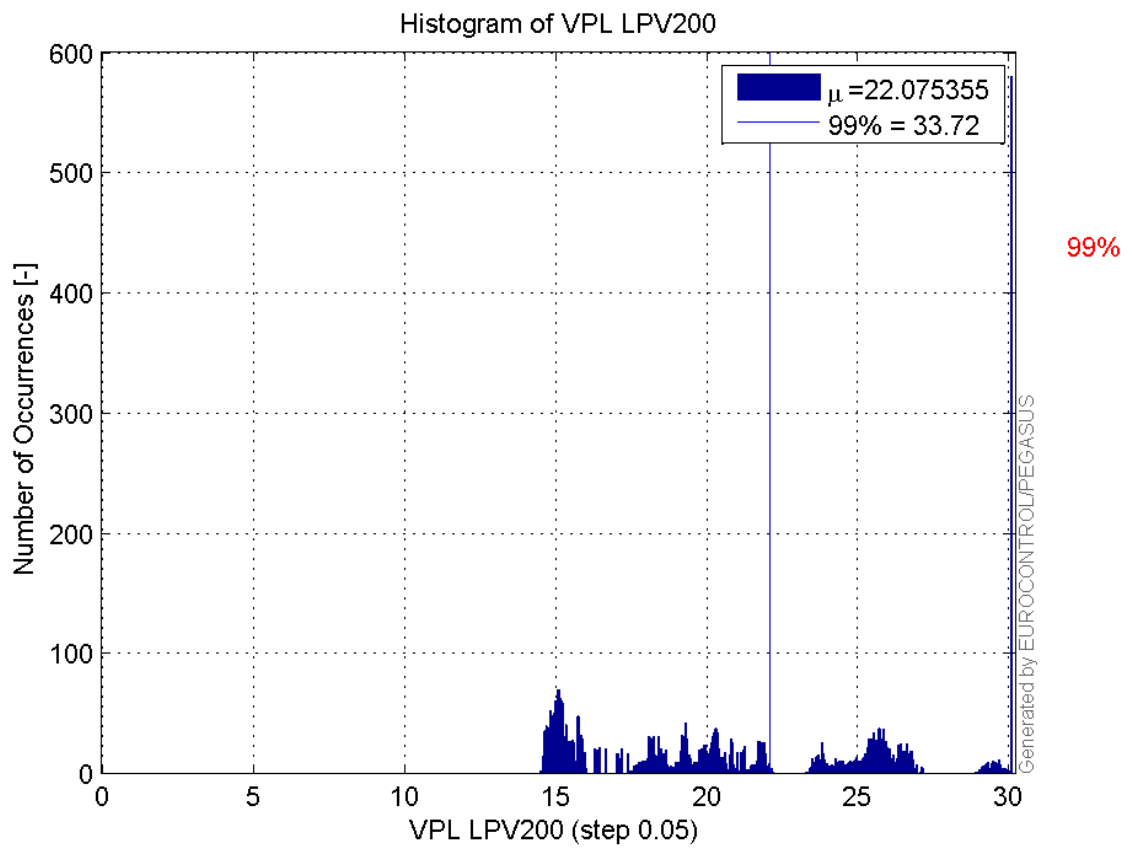
Histogram of VPE LPV200:



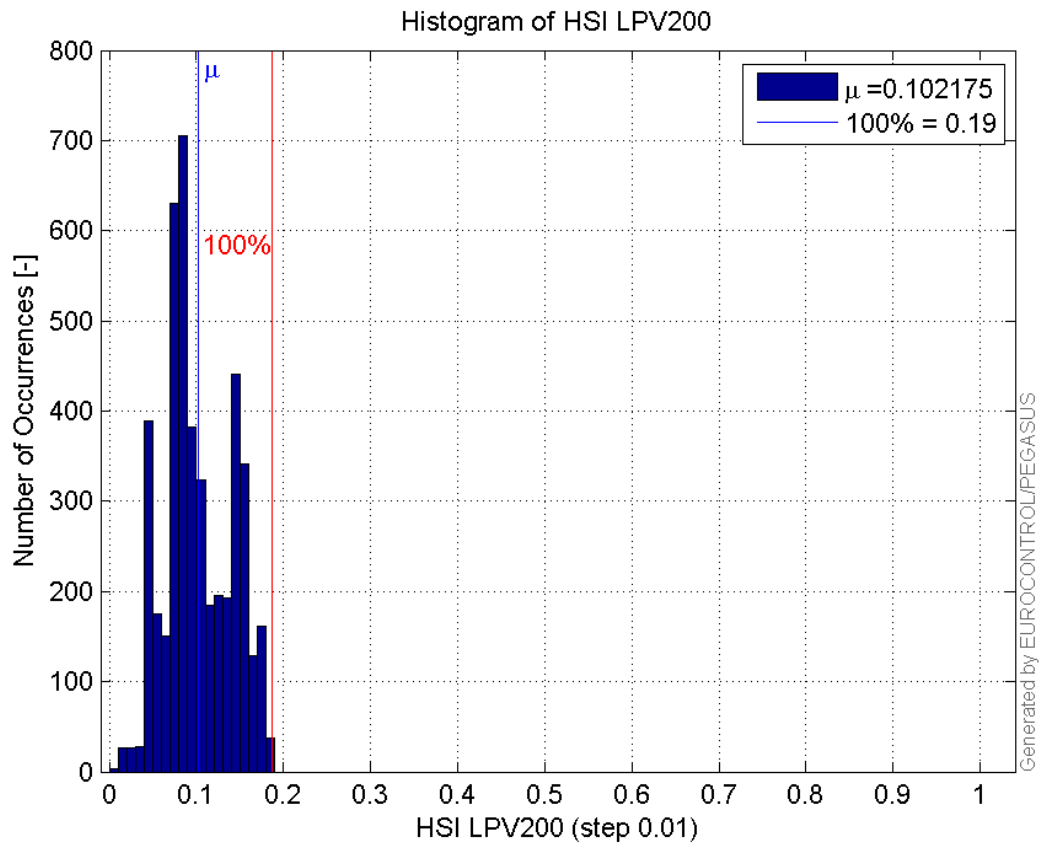
Histogram of HPL LPV200:



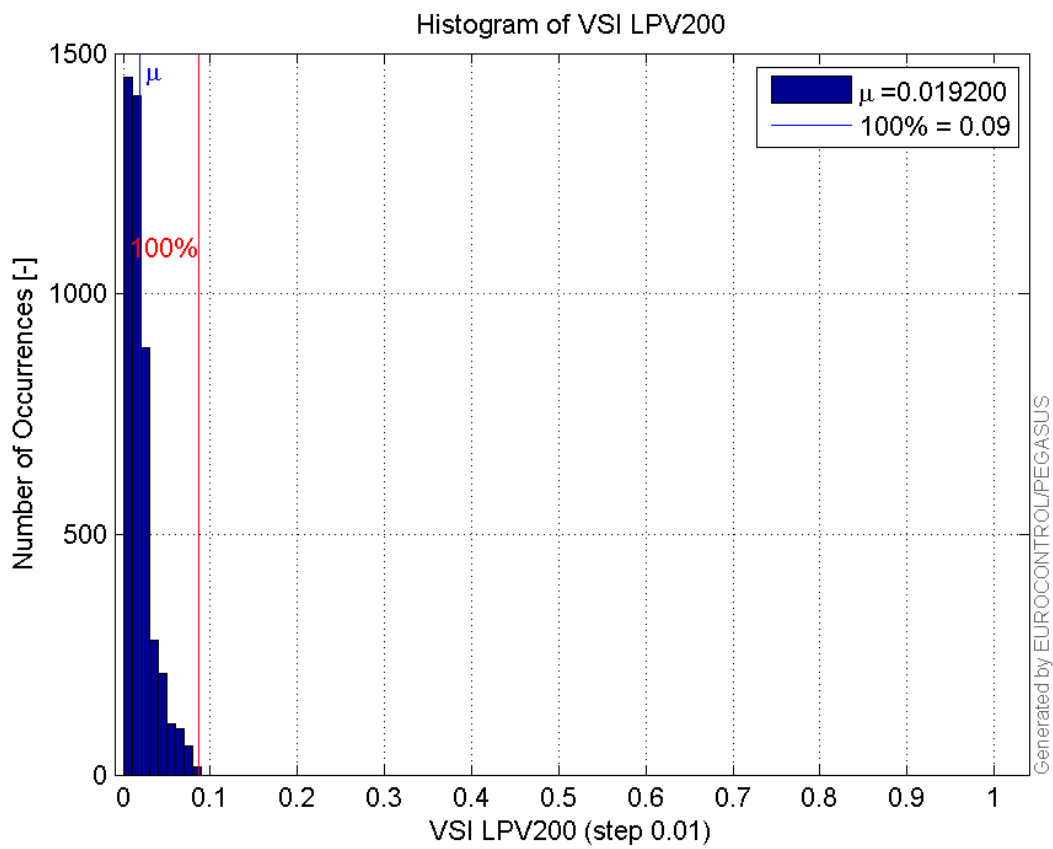
Histogram of VPL LPV200:



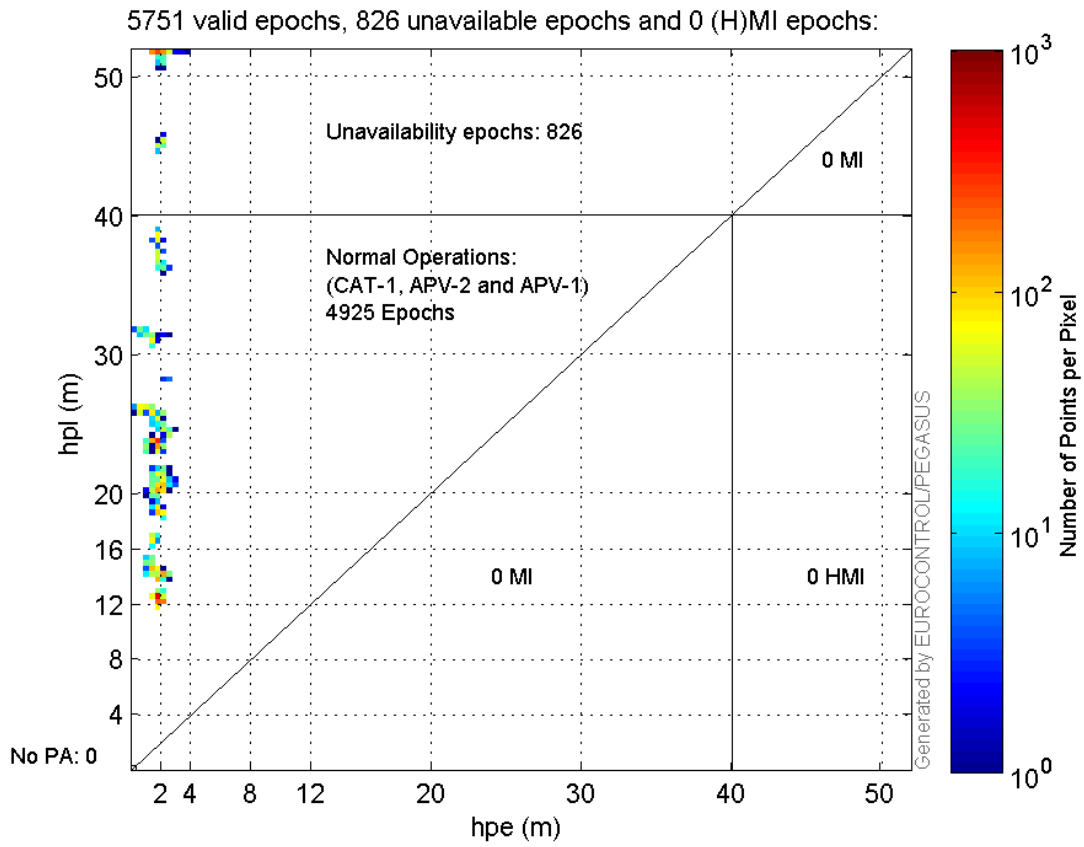
Histogram of HSI LPV200:



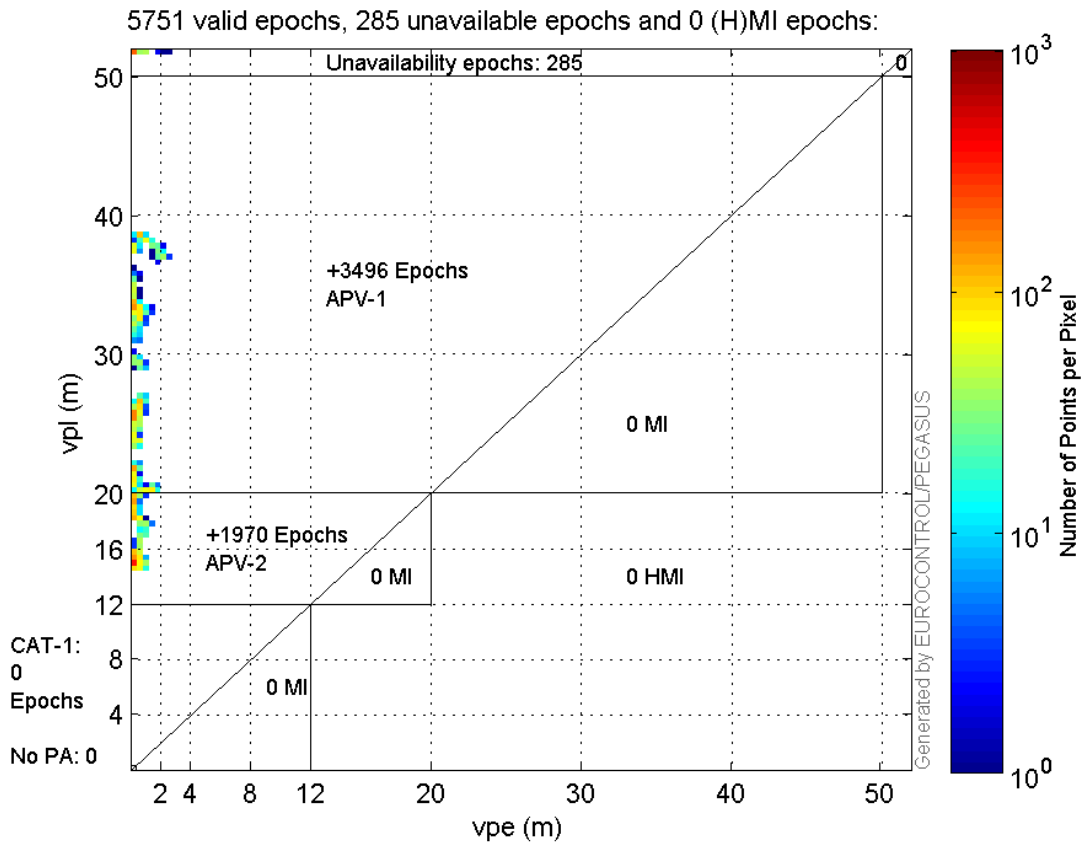
Histogram of VSI LPV200:



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_06_14_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_06_14_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	30.4297
init_alt	results	224.3722
mi_numbers	results	0

Range Domain

start: 12:08:17 14.06.2016 (week: 1901 sec: 216497)
end: 13:50:08 14.06.2016 (week: 1901 sec: 222608)
duration: 01:41:52 ..

quality

valid samples 6112
total samples 6112

PRN overview

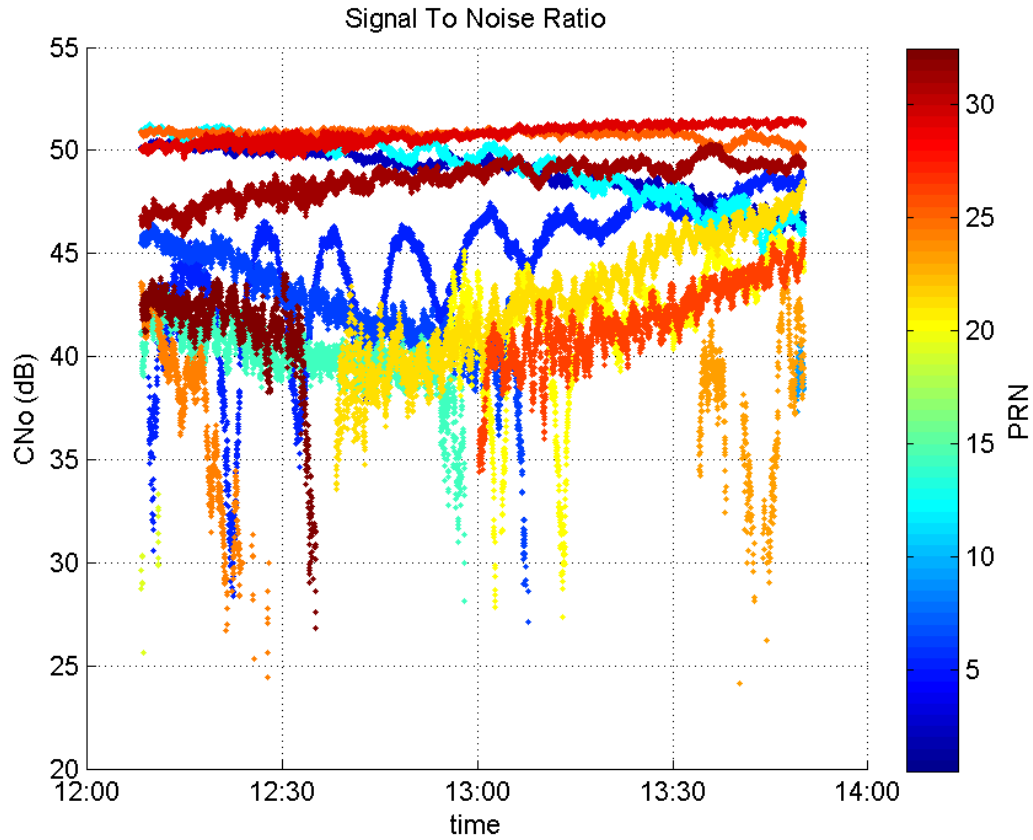
Number of Visible GPS Satellites 16
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



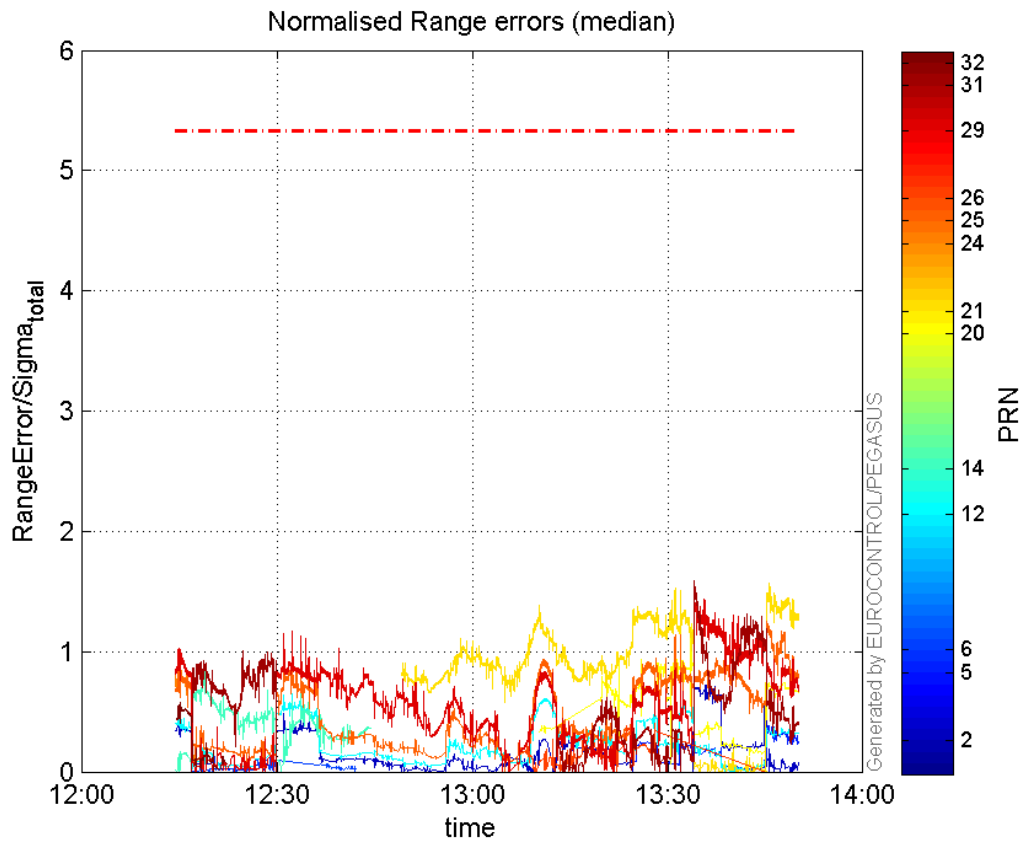
range errors

Number of Overbounding Norm Errors 0

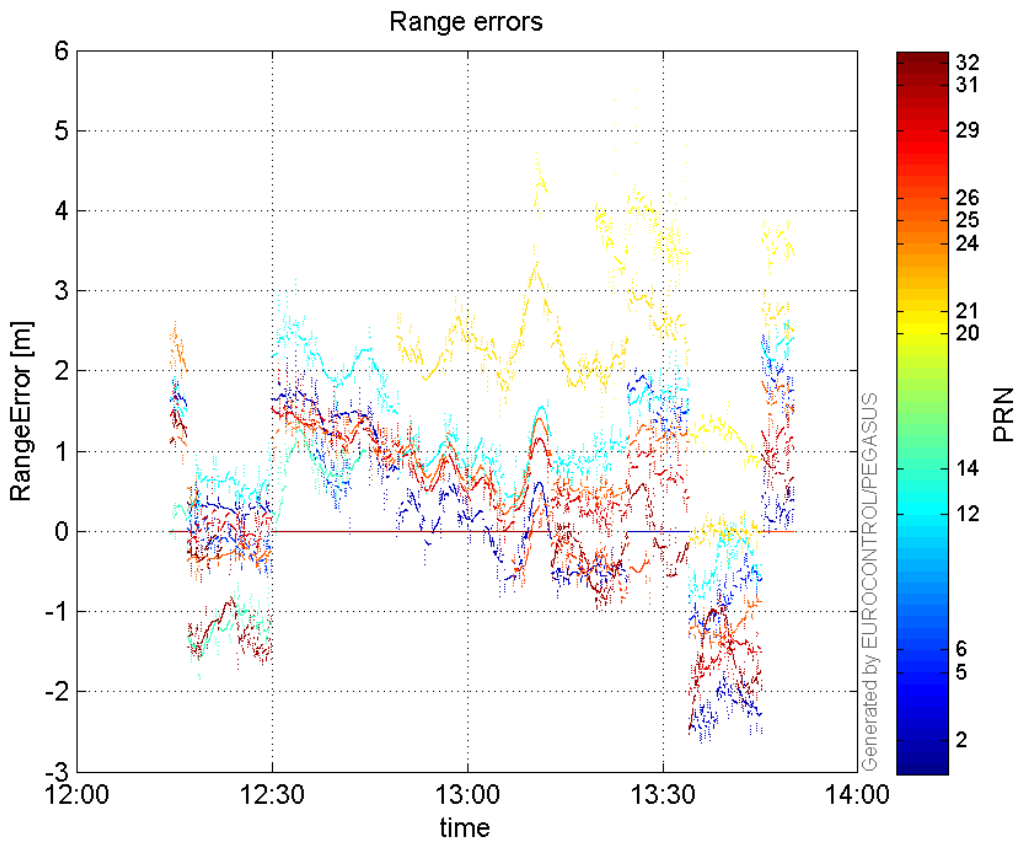
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1901	221759	2	0.724641	-2.63286	3.63333
1901	222318	5	0.387515	2.4537	6.33188
1901	217748	6	0.156518	-0.569144	3.63628
1901	218011	12	0.671128	3.1391	4.67734
1901	217121	14	0.848459	-1.79328	2.11357
1901	221614	20	1.22735	4.8105	3.91943
1901	222334	21	1.57219	2.92522	1.8606
1901	216907	24	0.875002	2.61245	2.98565
1901	222310	25	1.24744	1.87373	1.50206
1901	221277	26	0.402187	-0.899623	2.23683
1901	221645	29	1.45636	-2.02584	1.39103
1901	221645	31	1.5917	-2.53127	1.5903
1901	216902	32	0.578624	1.50836	2.6068

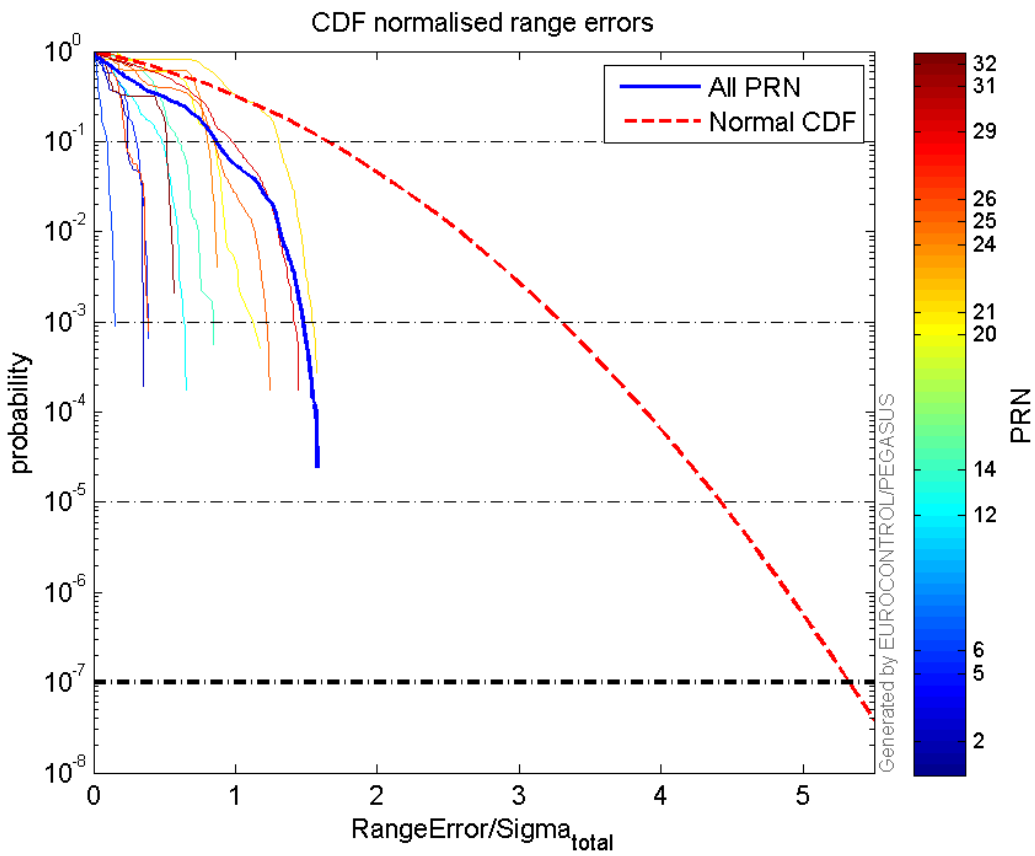
Normalised Range errors (median):



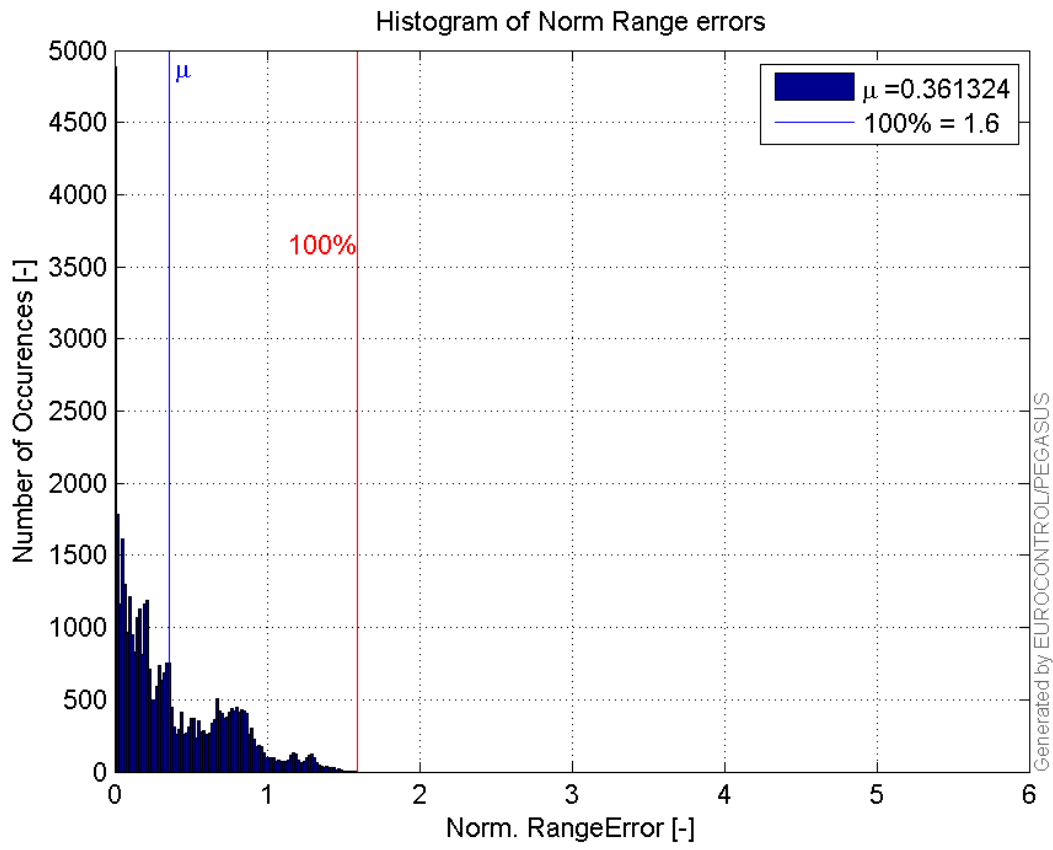
Range errors:



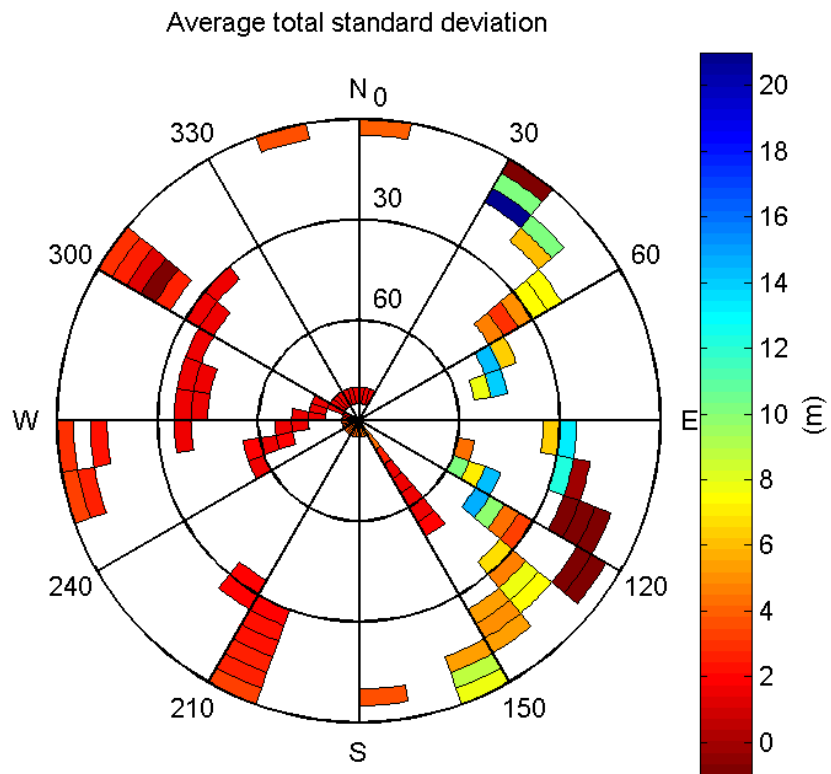
CDF normalised range errors:



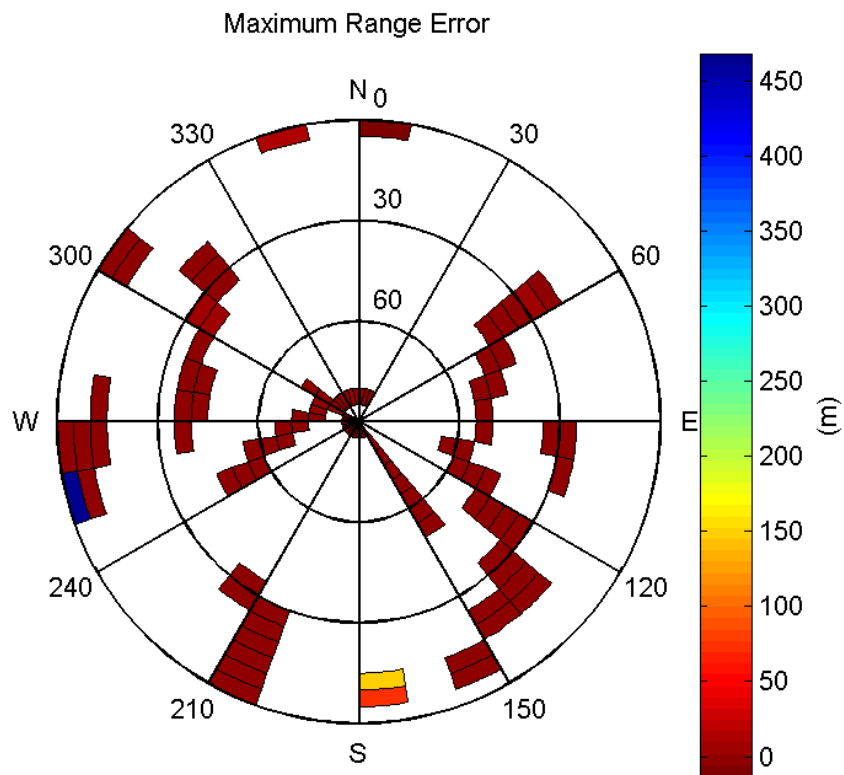
Histogram of Norm Range errors:



Sigma Sky Plot:

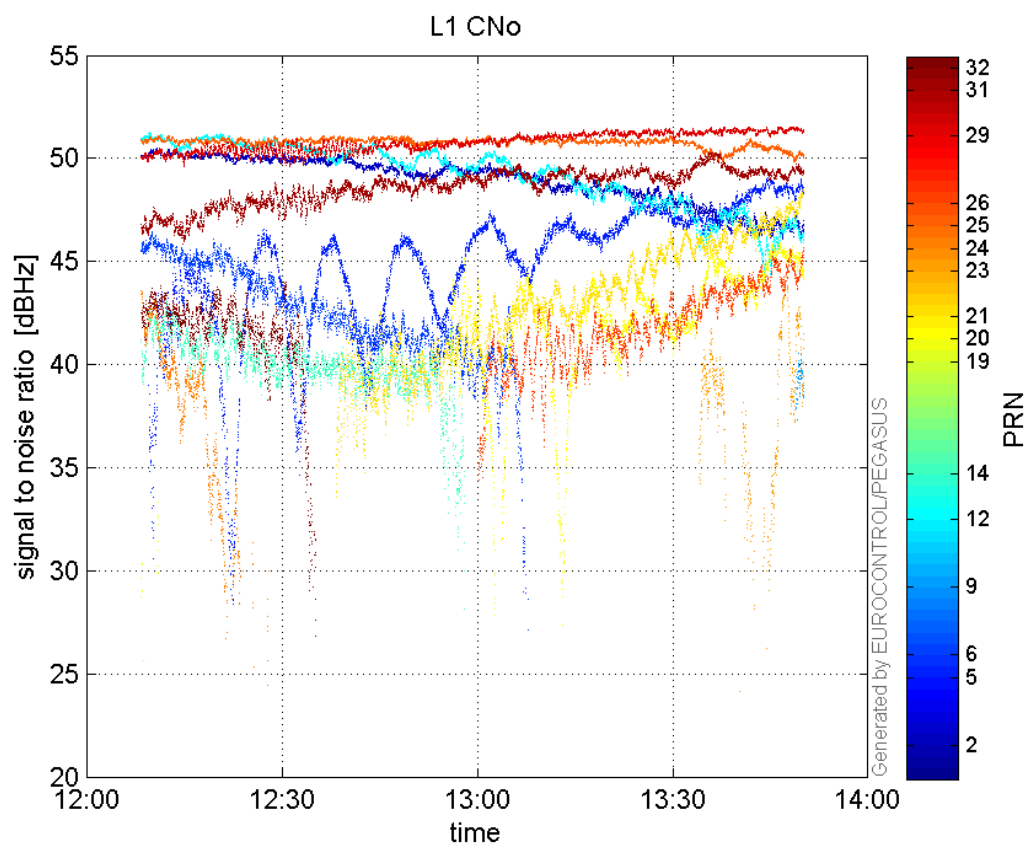


Norm Error Sky Plot:

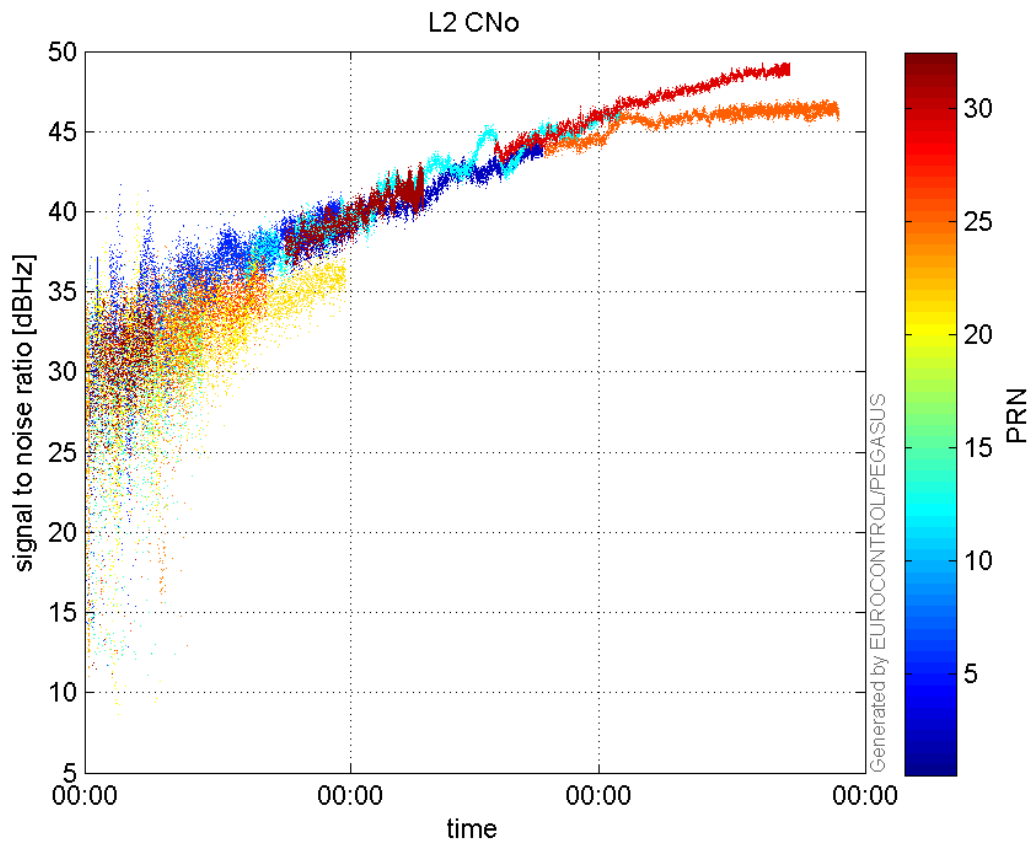


signal quality

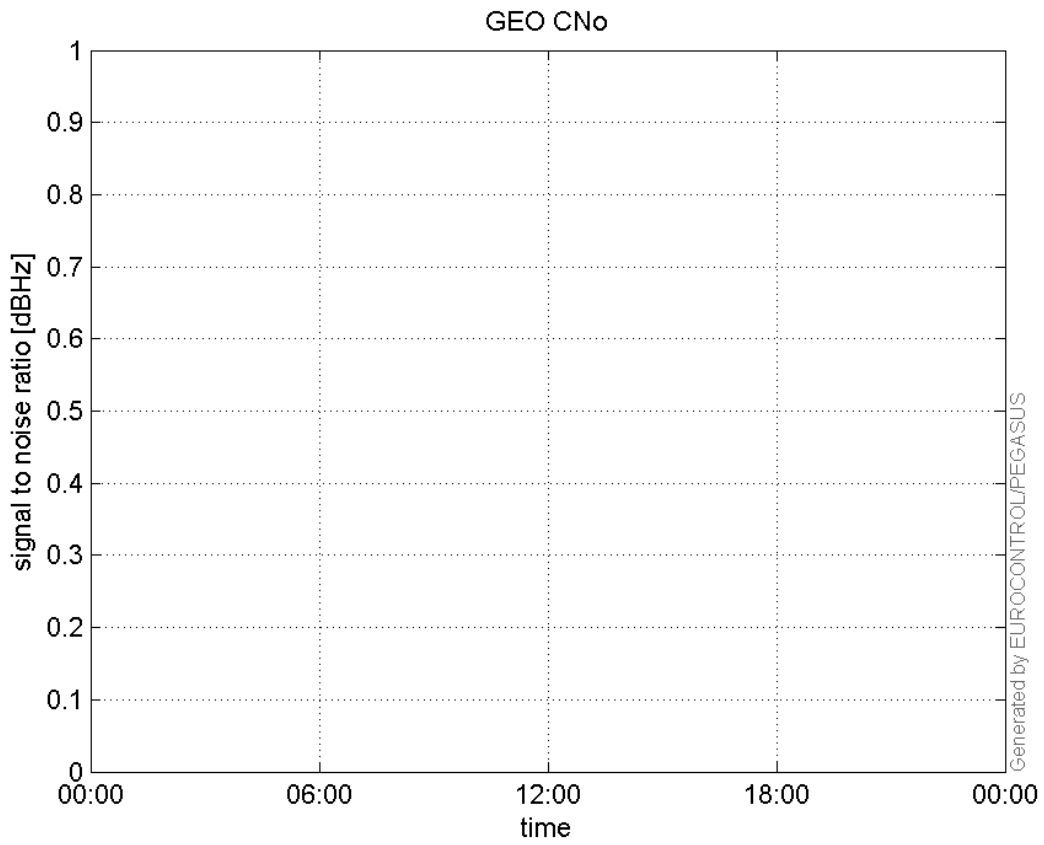
L1 CNo:



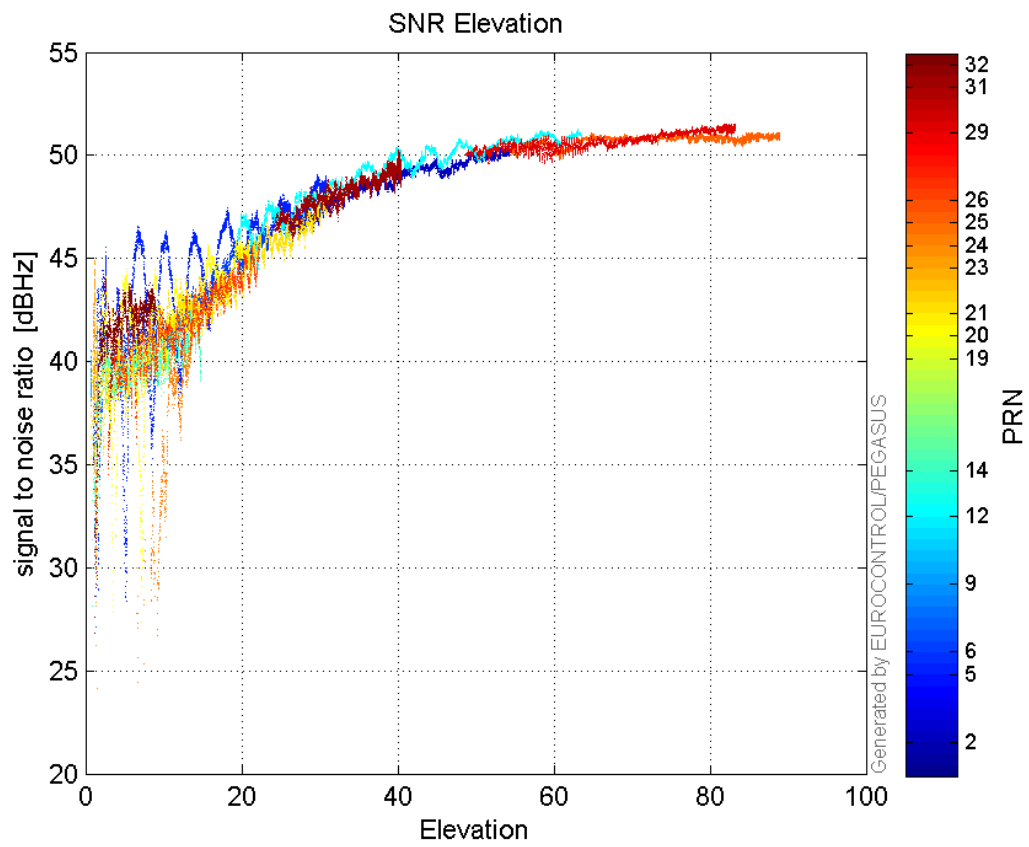
L2 CNo:



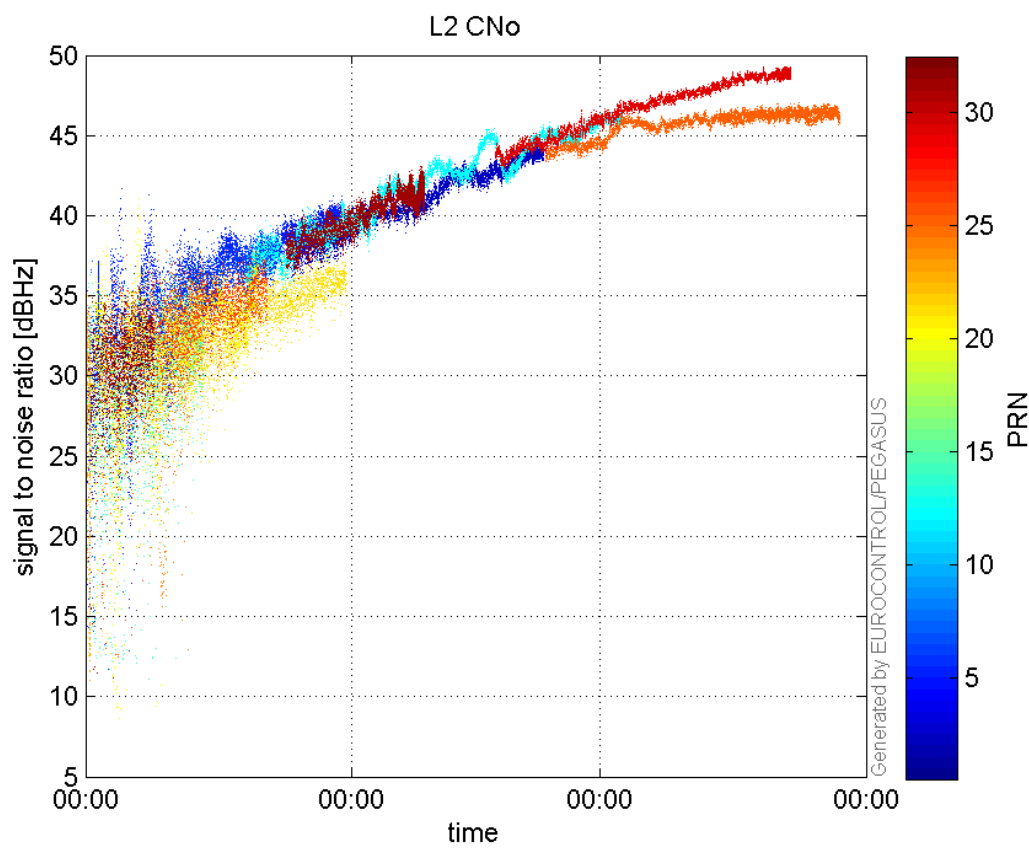
GEO CNo:



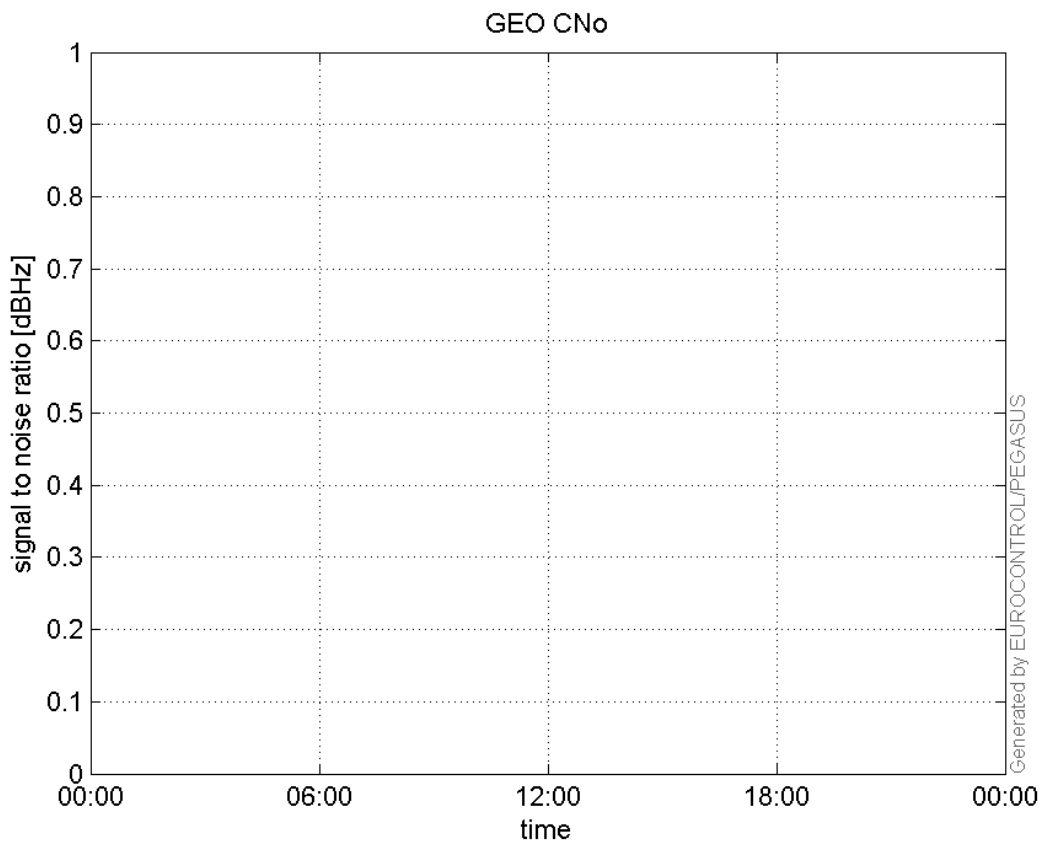
SNR Elevation:



L2 CNo:

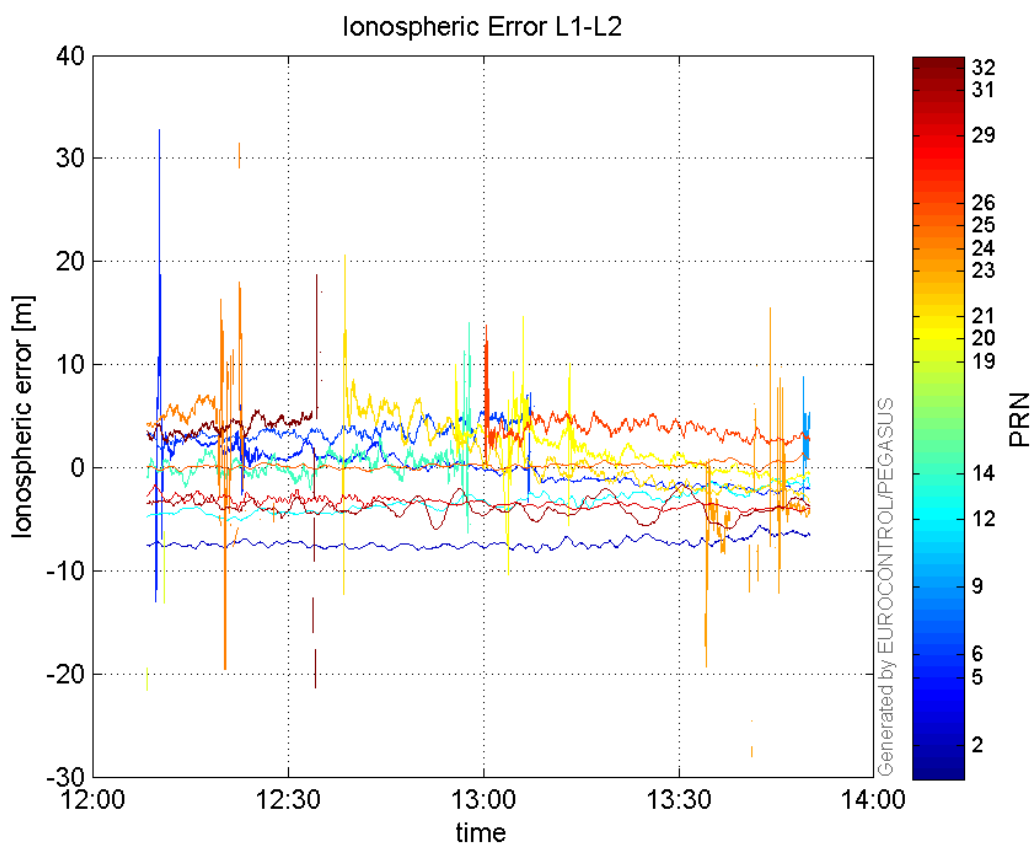


GEO CNo:



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/2016_06_14_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_06_14_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	30.4297
init_alt	results	224.3722
mi_numbers	results	0