

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: 04:47:9.129 20.09.2016 (week: 1915 sec: 190029.129)
end: 09:53:48.129 20.09.2016 (week: 1915 sec: 208428.129)
duration: 05:06:39 ..

quality

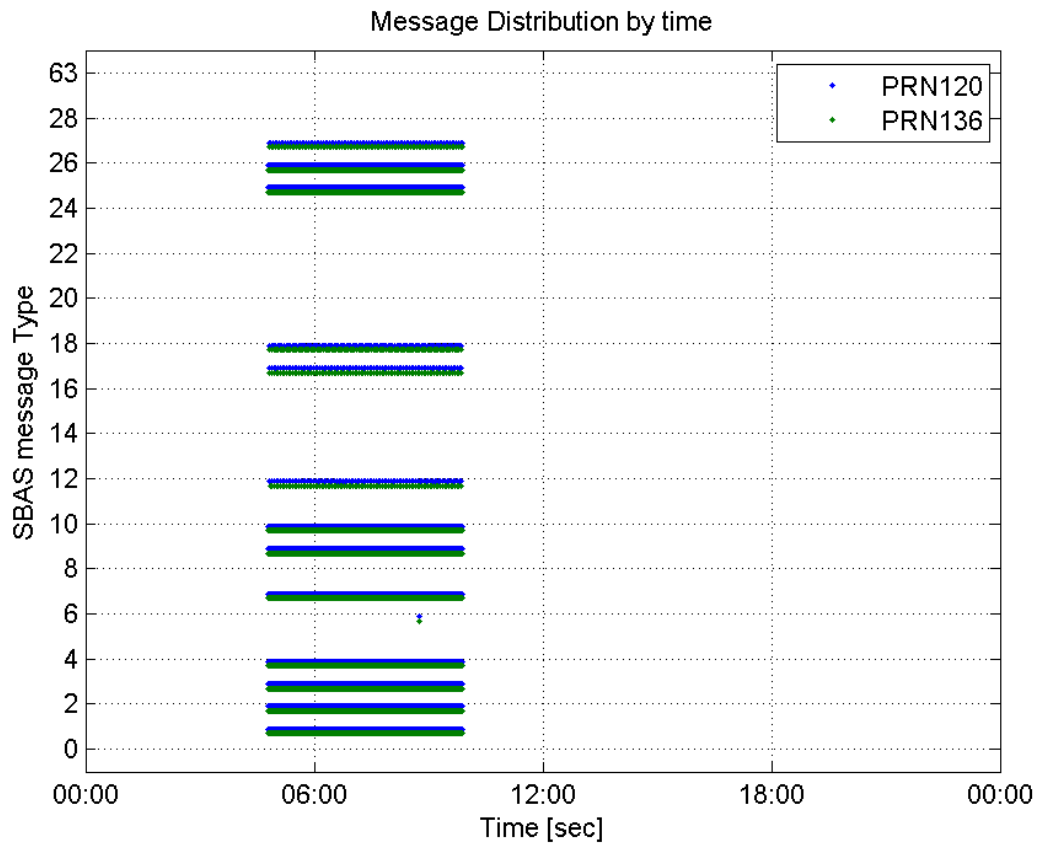
valid samples 36800
total samples 36800
number of SBAS PRNs 2

SBAS SIS Overview

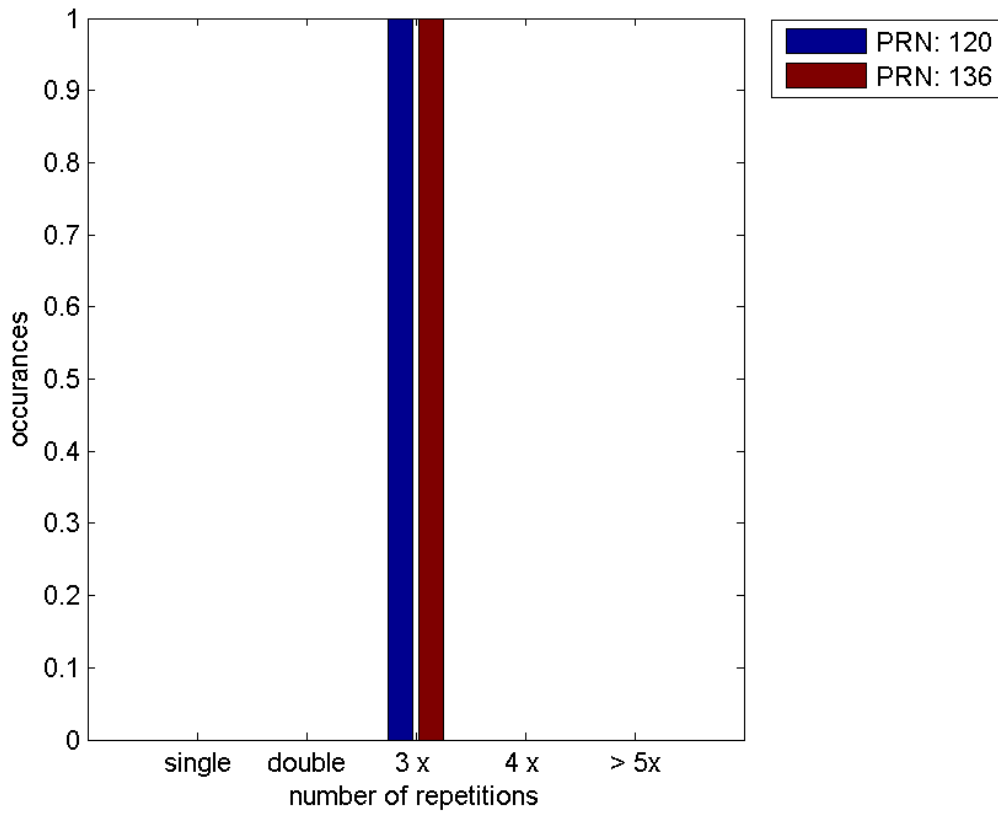
Message Type 6 repetitions :

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

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

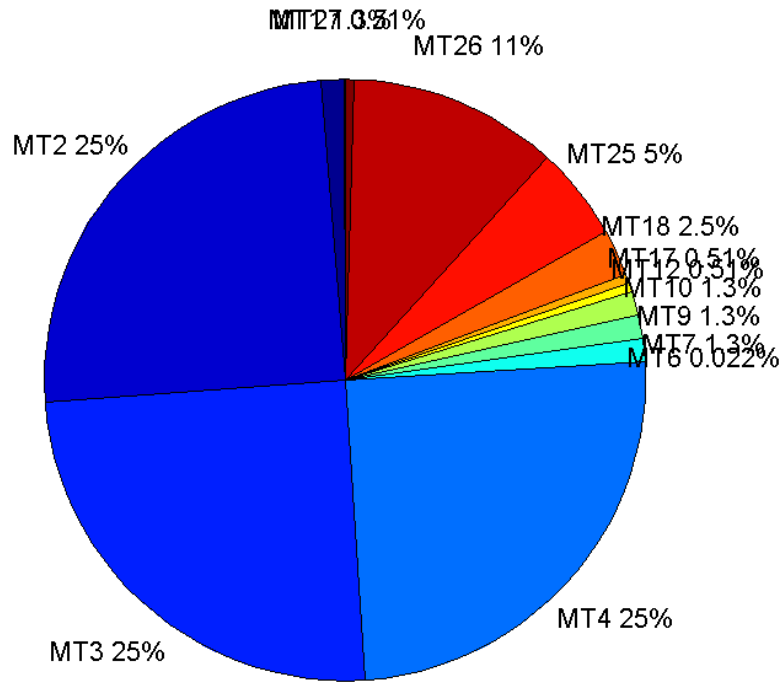
	number of messages	%
MT 0	0	0
MT 1	231	1.25543
MT 2	4581	24.8967
MT 3	4581	24.8967
MT 4	4581	24.8967
MT 5	0	0
MT 6	4	0.0217391
MT 7	231	1.25543
MT 9	231	1.25543
MT 10	231	1.25543
MT 12	93	0.505435
MT 17	93	0.505435
MT 18	465	2.52717
MT 24	0	0
MT 25	925	5.02717
MT 26	2059	11.1902
MT 27	94	0.51087
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	18400	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.6217	0	0	0
MT 2	4	7	4.01638	1	0	0
MT 3	4	7	4.01659	1	0	0
MT 4	4	7	4.01659	1	0	0
MT 5	--	--	--	--	--	--
MT 6	1	1	1	0	0	0
MT 7	75	81	79.587	0	0	0
MT 9	76	81	79.7435	0	0	0
MT 10	76	85	79.587	0	0	0
MT 12	188	201	196.891	92	0	0
MT 17	189	201	196.891	0	0	0
MT 18	4	161	39.1121	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	48	19.8929	0	0	0
MT	4	32	8.93343	0	0	0

26						
MT 27	189	201	196.903	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

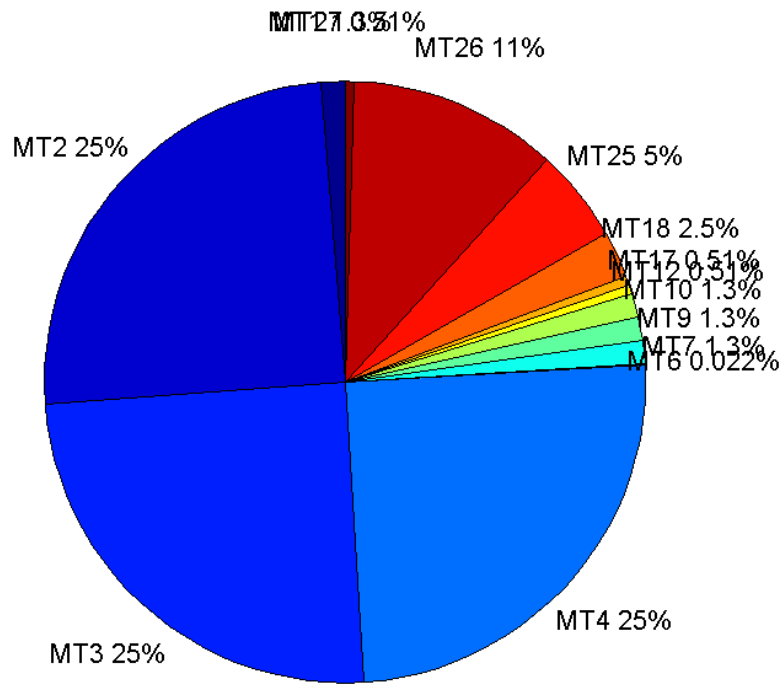
	number of messages	%
MT 0	0	0
MT 1	231	1.25543
MT 2	4580	24.8913
MT 3	4580	24.8913
MT 4	4581	24.8967
MT 5	0	0
MT 6	4	0.0217391
MT 7	231	1.25543
MT 9	231	1.25543
MT 10	231	1.25543

MT 12	93	0.505435
MT 17	93	0.505435
MT 18	465	2.52717
MT 24	0	0
MT 25	922	5.01087
MT 26	2064	11.2174
MT 27	94	0.51087
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	18400	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	80	79.7304	0	0	0
MT 2	4	7	4.01703	1	0	0
MT 3	4	7	4.01703	1	0	0
MT 4	4	7	4.01703	1	0	0
MT 5	--	--	--	--	--	--
MT 6	1	1	1	0	0	0
MT 7	76	81	79.7	0	0	0
MT 9	76	81	79.7304	0	0	0
MT 10	76	81	79.7304	0	0	0
MT 12	188	201	196.457	92	0	0
MT 17	188	201	196.457	0	0	0
MT 18	4	160	39.0366	0	0	0
MT 24	--	--	--	--	--	--
MT 25	2	52	19.9674	0	0	0
MT 26	4	32	8.91032	0	0	0
MT 27	188	201	196.484	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_20_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_09_20_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: 04:47:10 20.09.2016 (week: 1915 sec: 190030)
end: 09:53:49 20.09.2016 (week: 1915 sec: 208429)
duration: 05:06:40 ..

quality

valid samples 18039
total samples 18400

Event tables

Position discontinuity events type no (0)
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	197792	2.43542	12.0907	0.201429	-0.48853	15.0431	0.0324753
max normVer	193100	0.72654	11.7327	0.0619243	-1.71741	13.8339	0.124145
max HPE	193369	2.65912	43.1913	0.0615661	1.56757	53.7029	0.0291897
max VPE	204552	1.53654	18.6204	0.0825192	-2.22133	19.4351	0.114295
min HPL	208290	1.26098	8.58657	0.146855	0.514992	18.1551	0.0283662
min VPL	196425	1.39372	10.5451	0.132167	-0.40542	13.026	0.0311239

APV-I discontinuity events :

#	Epoch	duration	stable period
1	193345	4	1
2	193363	113	2
3	194015	281	1
4	195065	201	769

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	193282	194	2891
2	193673	623	197
3	195065	201	769
4	199769	4	1

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	193282	194	2891
2	193673	623	197
3	195065	201	769
4	199769	4	1

First Glance analysis

Duration 18400
Number of Samples 18400
Number of invalid sample 361
Number of no position solution samples 0
Number of missing sample 0
Logging Loss 0
Processing Loss 1.962
Number of Misleading Information 0

Data gaps 0

Discontinuities 0

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
18039	17369	16986	0	16986

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	2.05109	2.04504	2.05392	NaN	2.05392
HPEscale 95%	NaN	6.75202	6.77428	NaN	6.77428
VPE 95%	1.56634	1.56842	1.57103	NaN	1.57103
VPEscale 95%	NaN	4.06761	2.86091	NaN	2.86091

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.962858	0.941626	0	0.941626
measurements	0.98038	0.943967	0.923152	0	0.923152
Operational	0.98038	0.943967	0.923152	0	0.923152

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	33	28	--	28
Long	--	4	4	--	4
Independent	--	1	3	--	3
P(disc.)	NaN	0.000863608	0.00264924	NaN	0.00264924
P(slide)	NaN	0.00512407	0.00600495	NaN	0.00600495

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

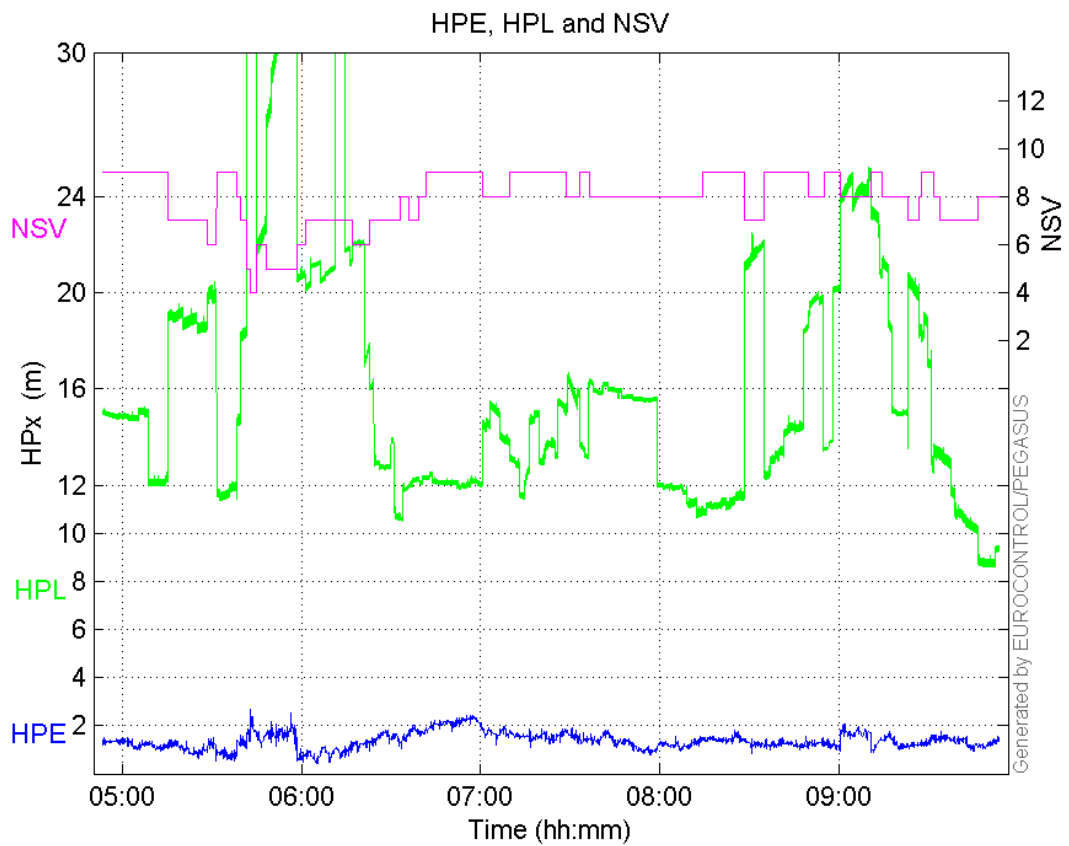
Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	18039	17369	16986	0	16986
SIS Availability	1	0.962858	0.941626	0	0.941626
Local Availability	0.98038	0.943967	0.923152	0	0.923152
Operational Availability	0.98038	0.943967	0.923152	0	0.923152
HPE 95%	2.05109	2.04504	2.05392	NaN	2.05392
HPEscale 95%	NaN	6.75202	6.77428	NaN	6.77428
VPE 95%	1.56634	1.56842	1.57103	NaN	1.57103
VPEscale 95%	NaN	4.06761	2.86091	NaN	2.86091
All Discontinuity Events	--	33	28	--	28
Long Discontinuity Events	--	4	4	--	4
Independent Discontinuity Events	--	1	3	--	3

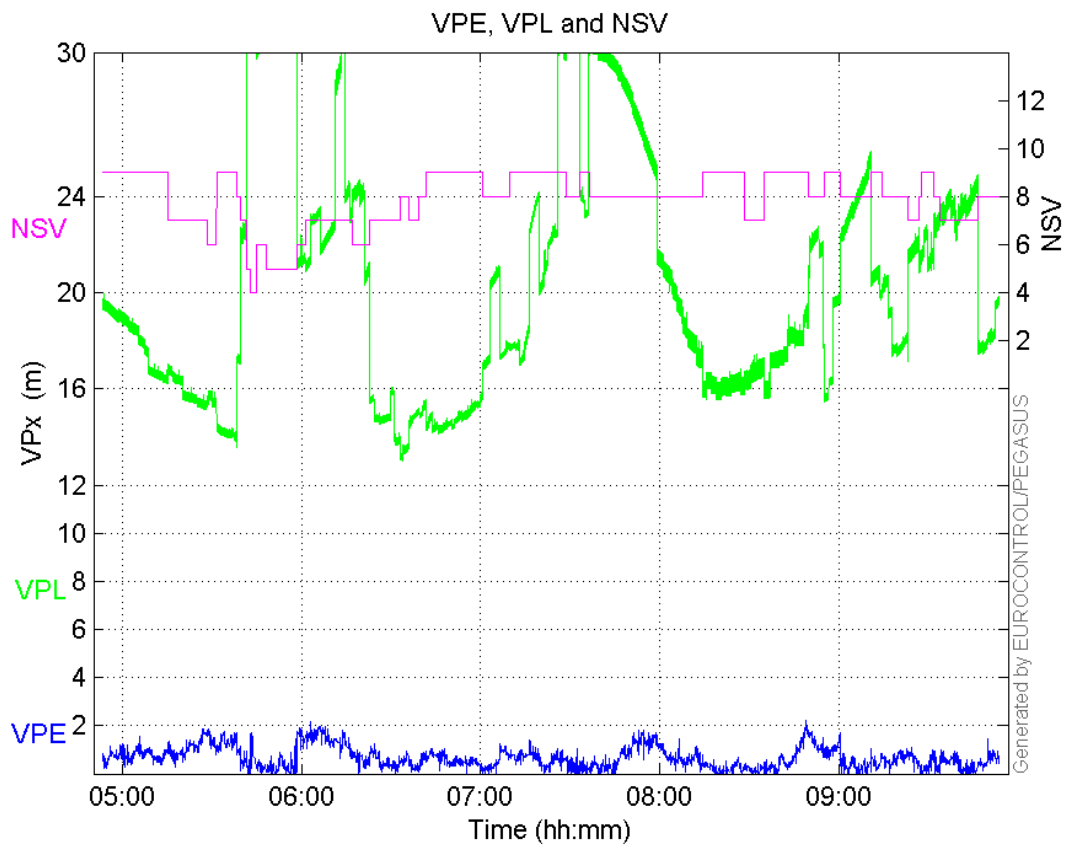
P(discontinuity)	NaN	0.000863608	0.00264924	NaN	0.00264924
P(sliding window)	NaN	0.00512407	0.00600495	NaN	0.00600495
All Integrity Events	0	0	0	0	0
Horizontal Integrity Events	0	0	0	0	0
Vertical Integrity Events	0	0	0	0	0

Time Series

HPE, HPL and NSV:

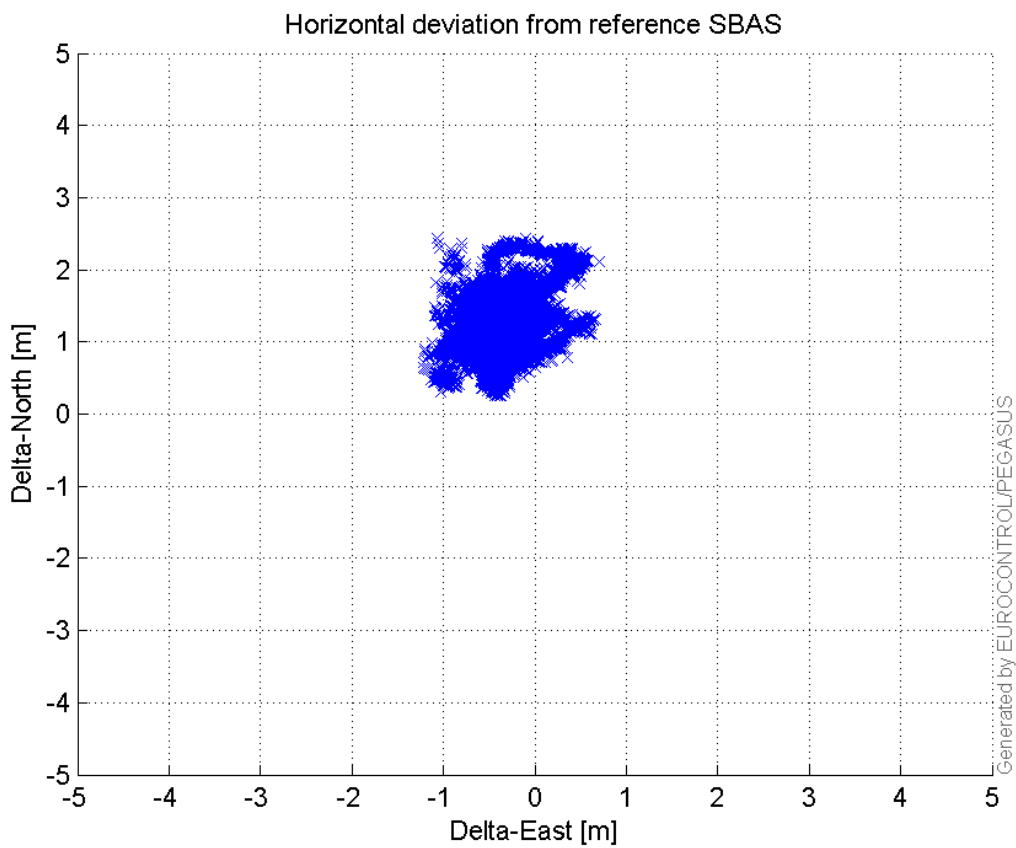


VPE, VPL and NSV:



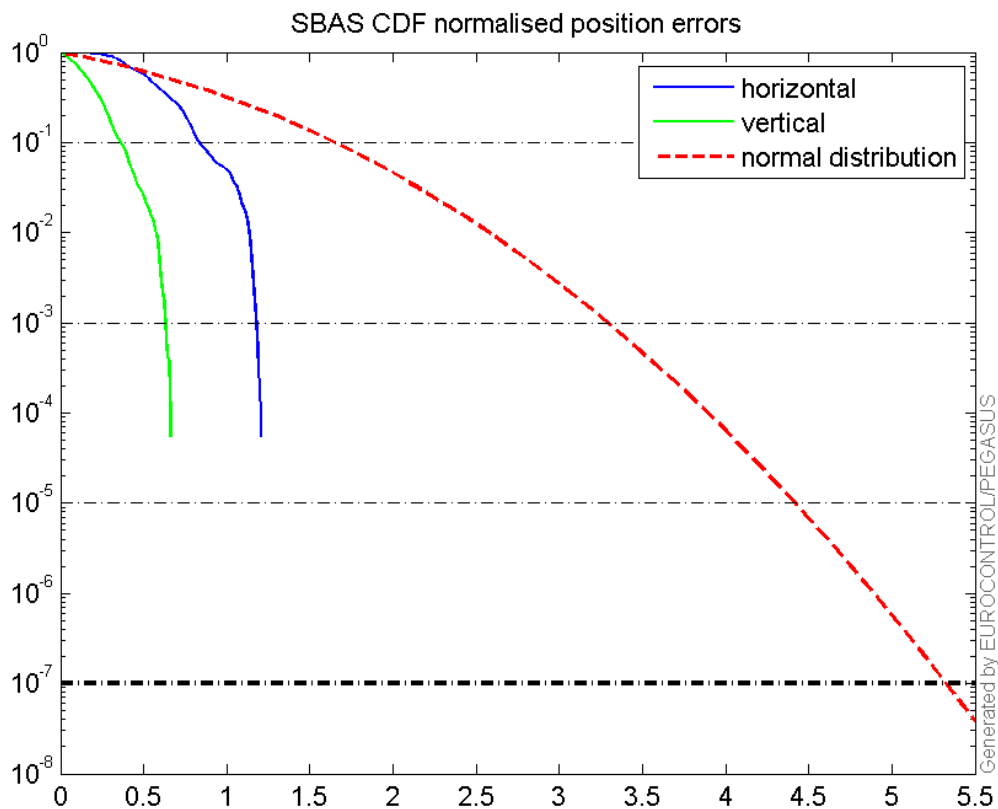
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

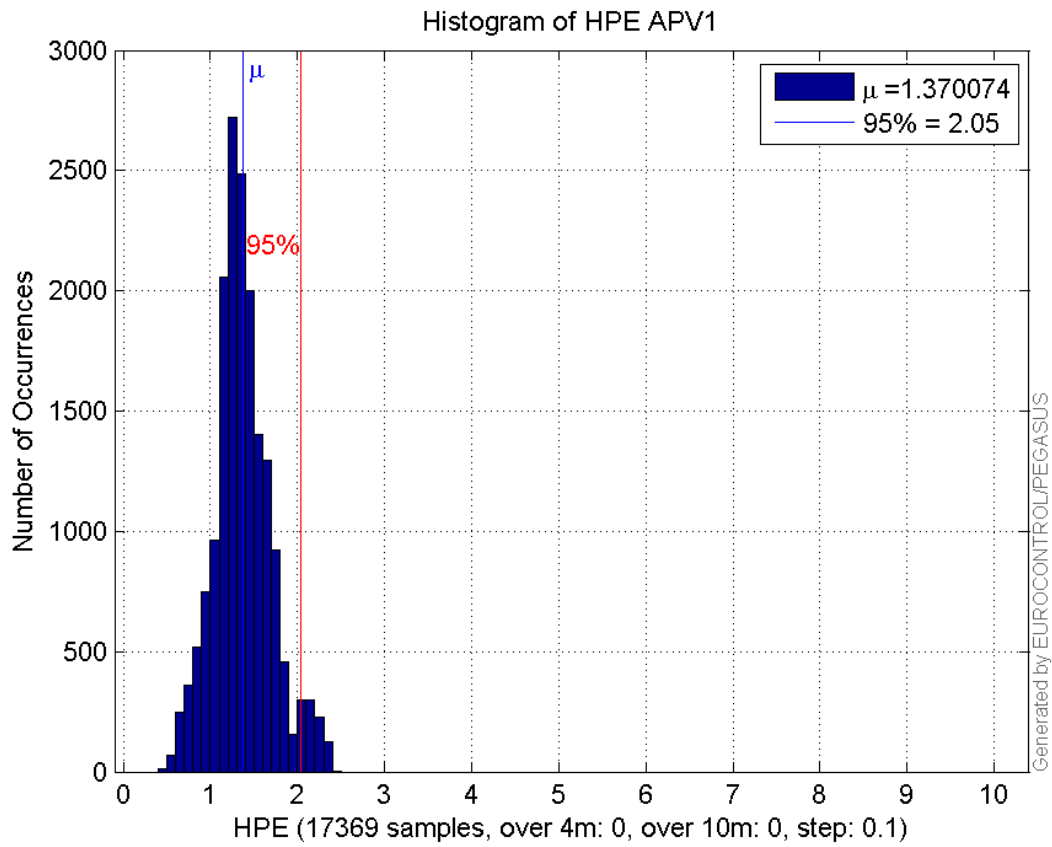
number	17369
sum	23796.809
sum2	34504.28
prctile95	2.04504
prctile99	2.2831945
number	17369
sum	11738.806
sum2	11209.537
prctile95	1.5684194
prctile99	1.7899358
number	17369
sum	271595.25
sum2	4588082.3
prctile95	23.921645
prctile99	29.587922
number	17369
sum	355022.8
sum2	7833222.3
prctile95	30.269105
prctile99	44.96894
number	17369
sum	1649.9043
sum2	179.11082

prctile95 0.16880045
prctile99 0.18899222
number 17369
sum 617.05284
sum2 31.993342
prctile95 0.081352168
prctile99 0.10834019
number 16986
sum 23158.003
sum2 33431.837
prctile95 2.0539151
prctile99 2.2836587
number 16986
sum 11632.246
sum2 11160.696
prctile95 1.571027
prctile99 1.7916926
number 16986
sum 260573.21
sum2 4261465.5
prctile95 22.38702
prctile99 24.504064
number 16986
sum 338293.77
sum2 7098083
prctile95 29.86444
prctile99 32.83554
number 16986
sum 1626.9083
sum2 177.66134
prctile95 0.1693569
prctile99 0.18906119
number 16986
sum 614.61965
sum2 31.968277
prctile95 0.081740239
prctile99 0.1084964

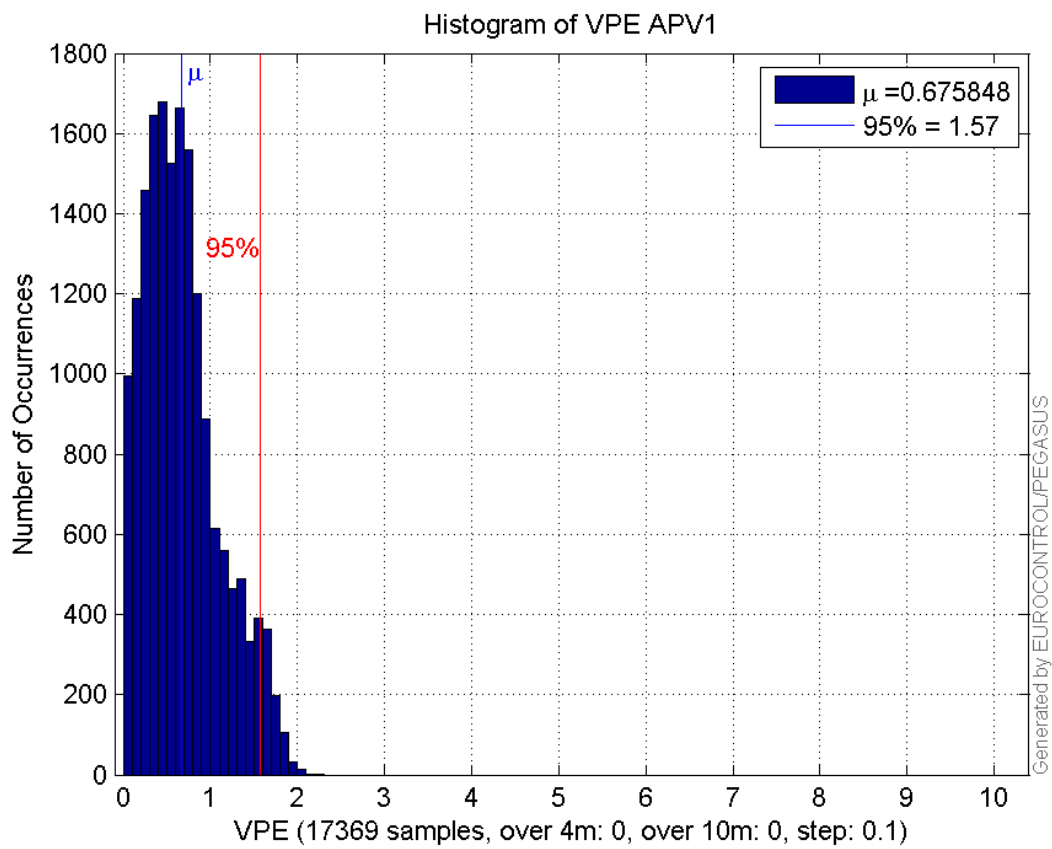
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.37007	0.33083	1.33639	2.04504	2.28319	1.40945
HPL	15.6368	4.43235	14.7838	23.9216	29.5879	16.2528
VPE	0.675848	0.4343	0.610577	1.56842	1.78994	0.803353
VPL	20.44	5.76159	18.9268	30.2691	44.9689	21.2365

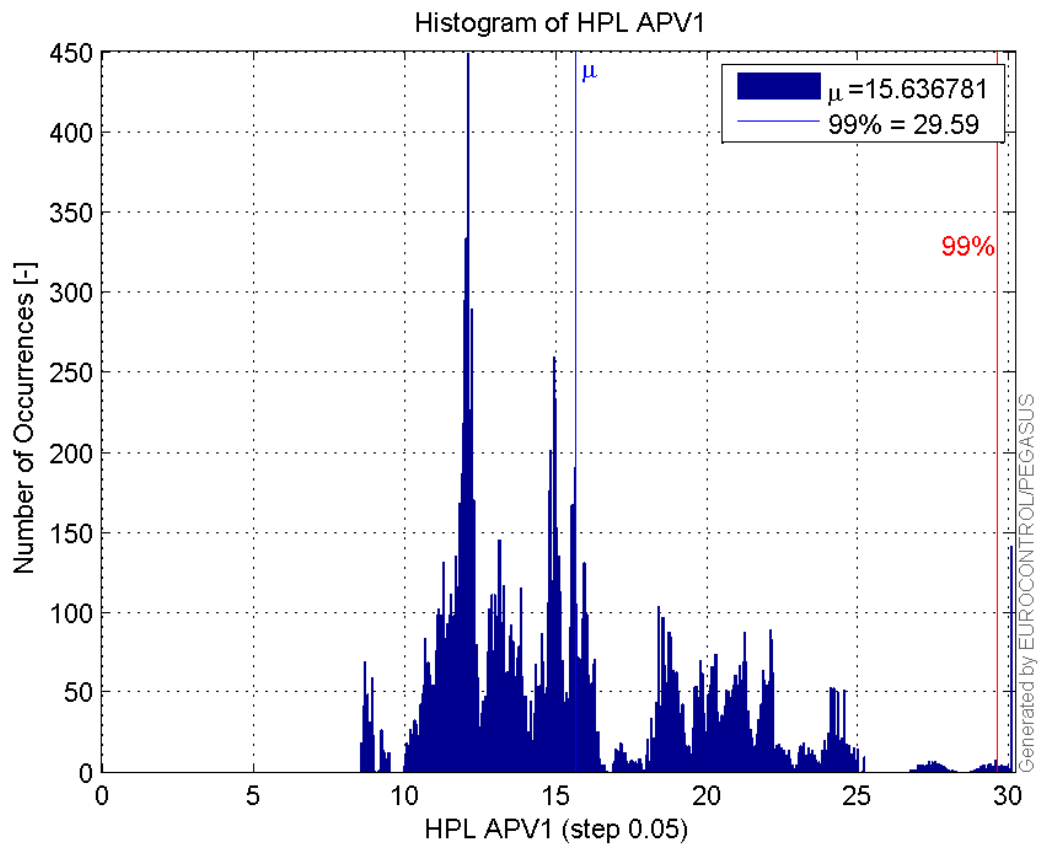
Histogram of HPE APV1:



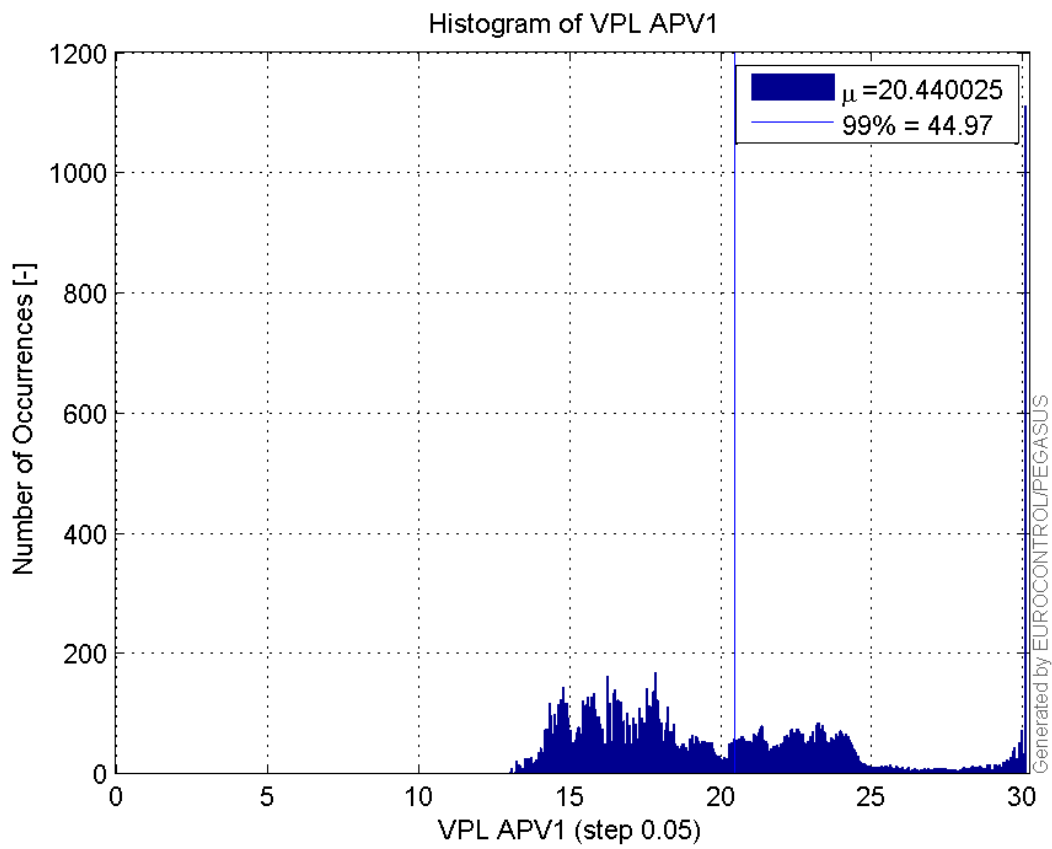
Histogram of VPE APV1:



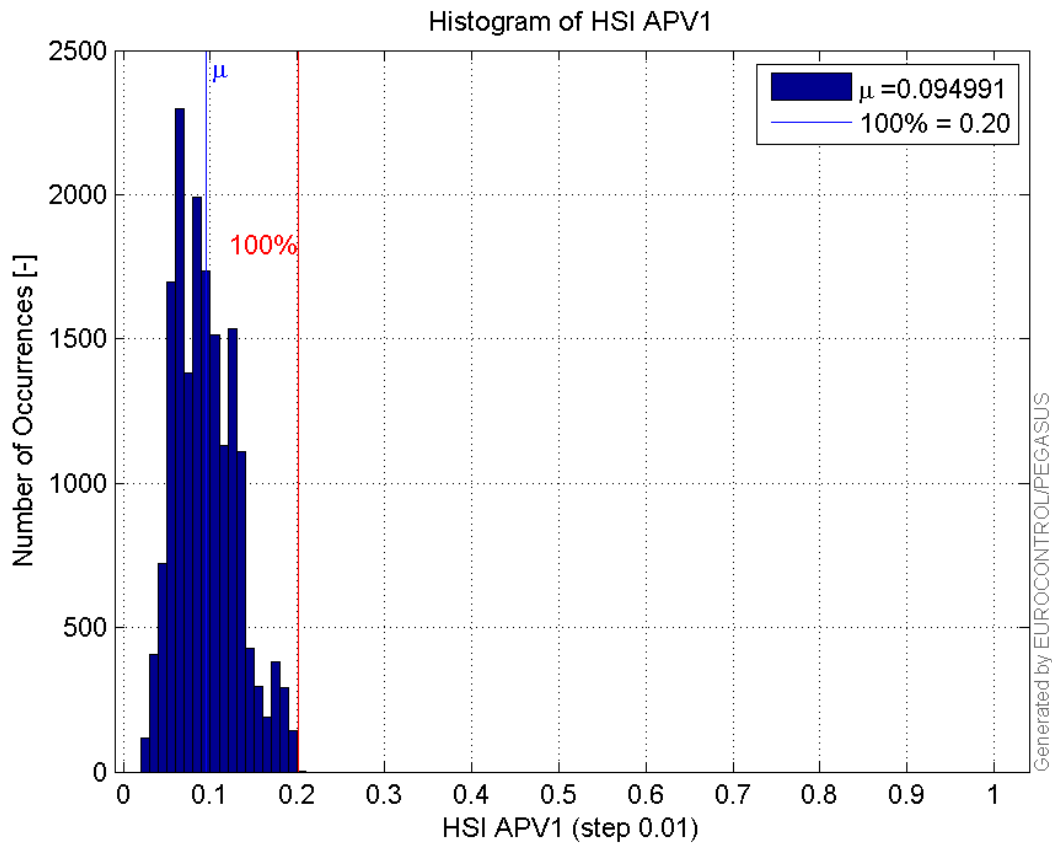
Histogram of HPL APV1:



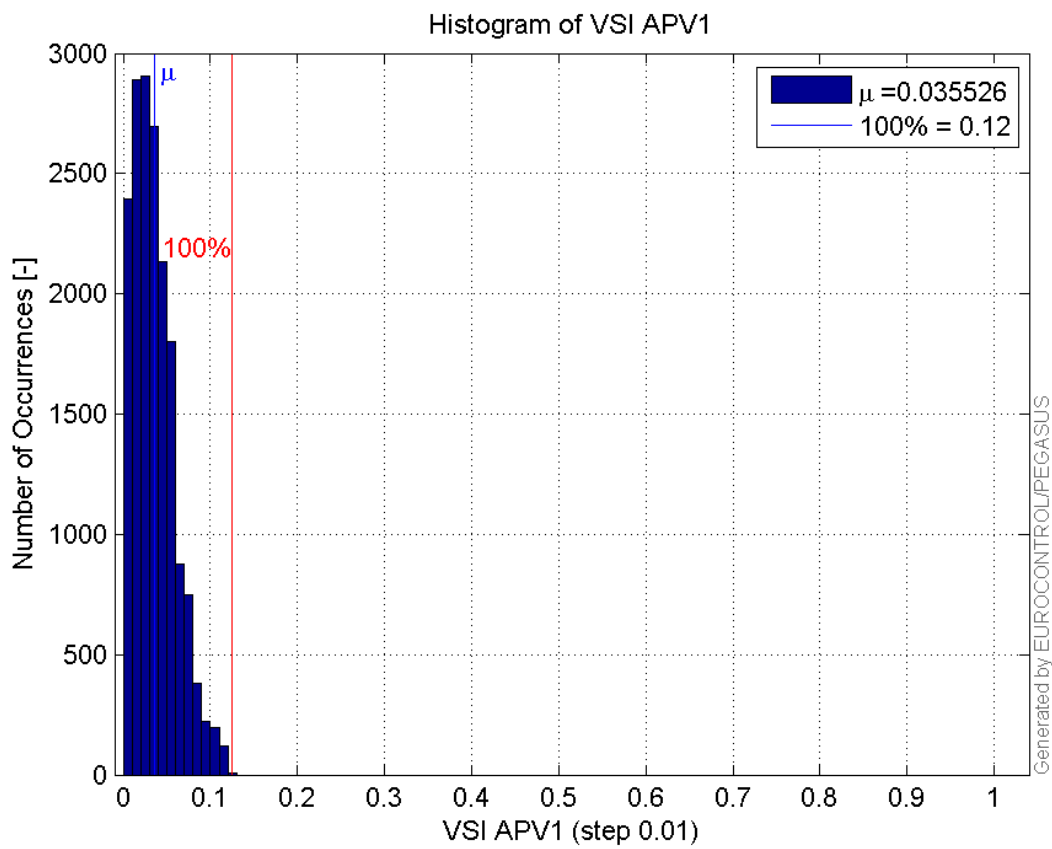
Histogram of VPL APV1:



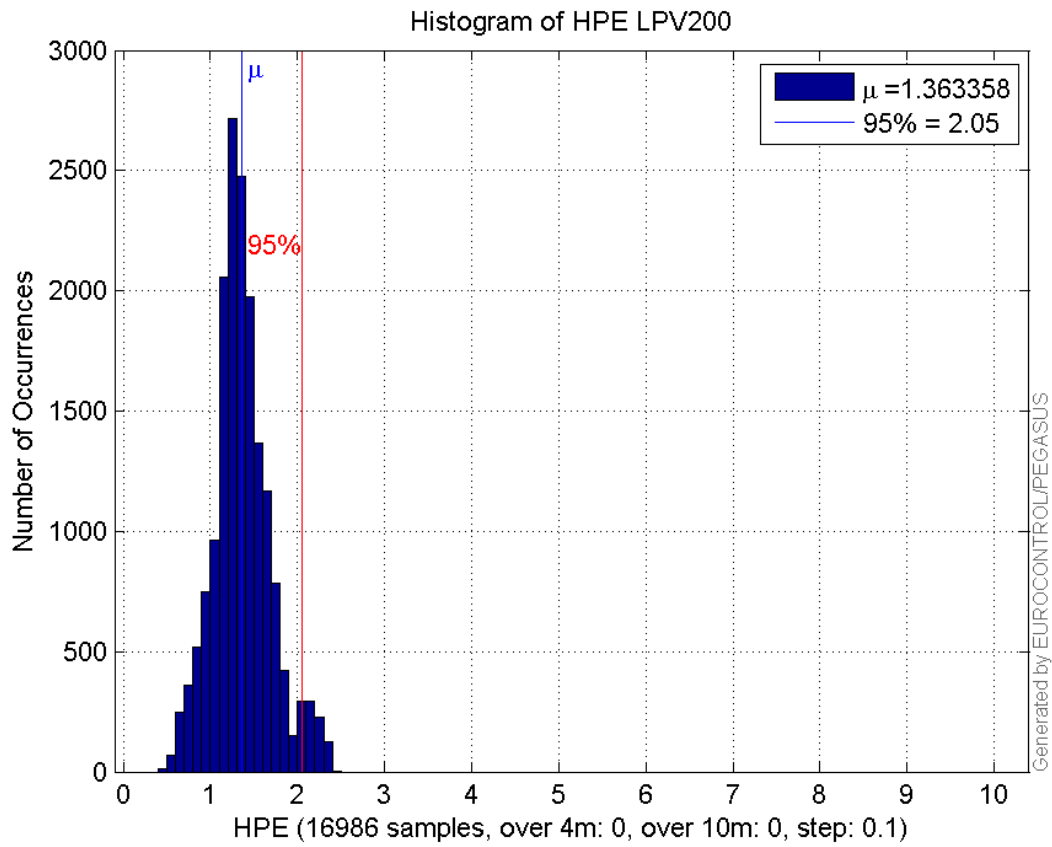
Histogram of HSI APV1:



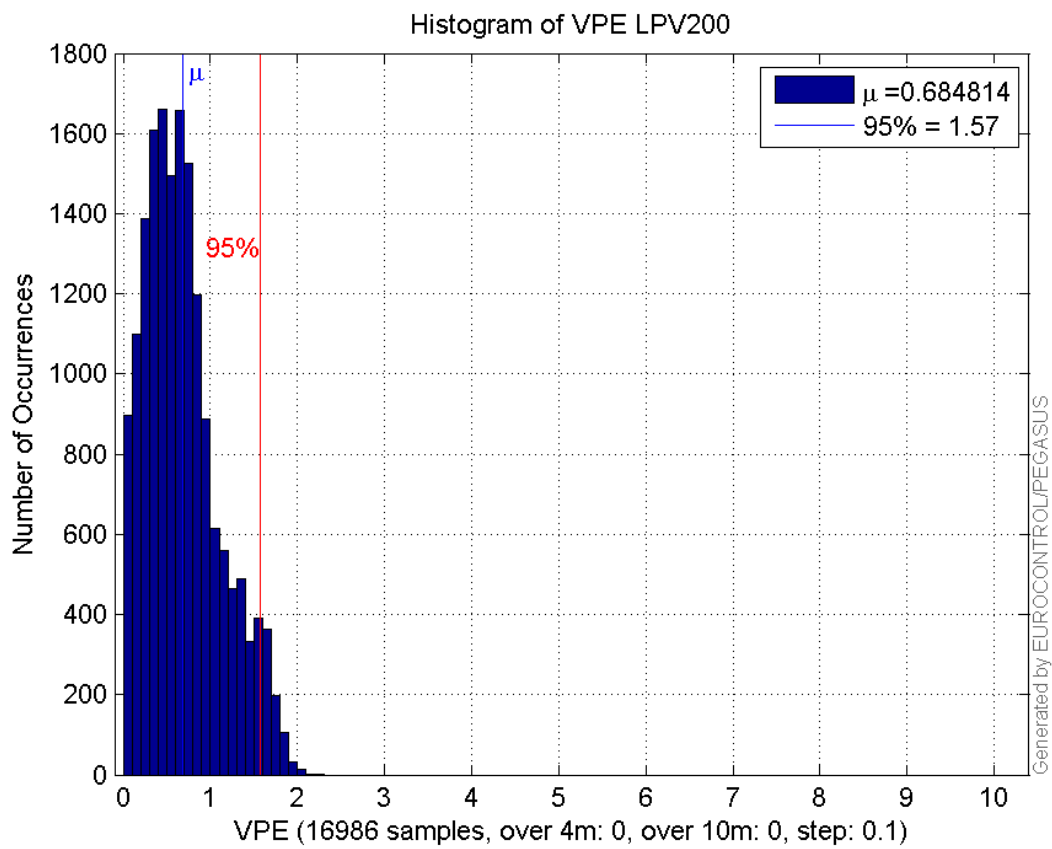
Histogram of VSI APV1:



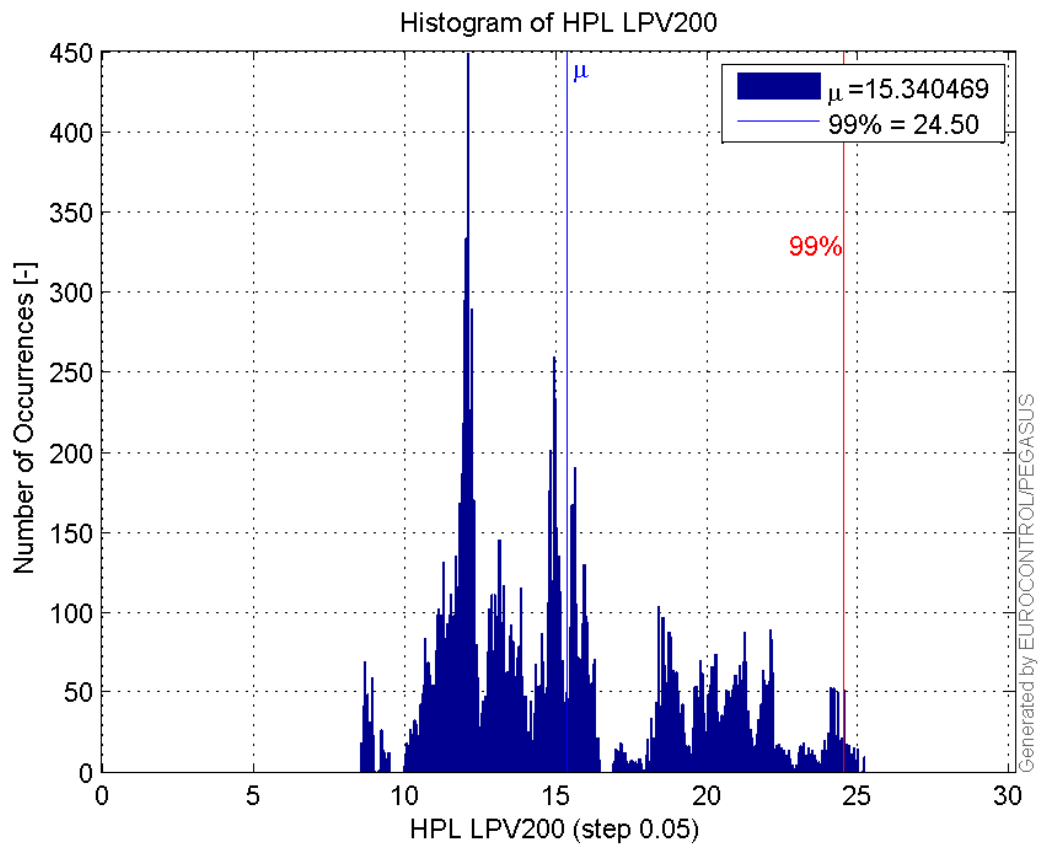
Histogram of HPE LPV200:



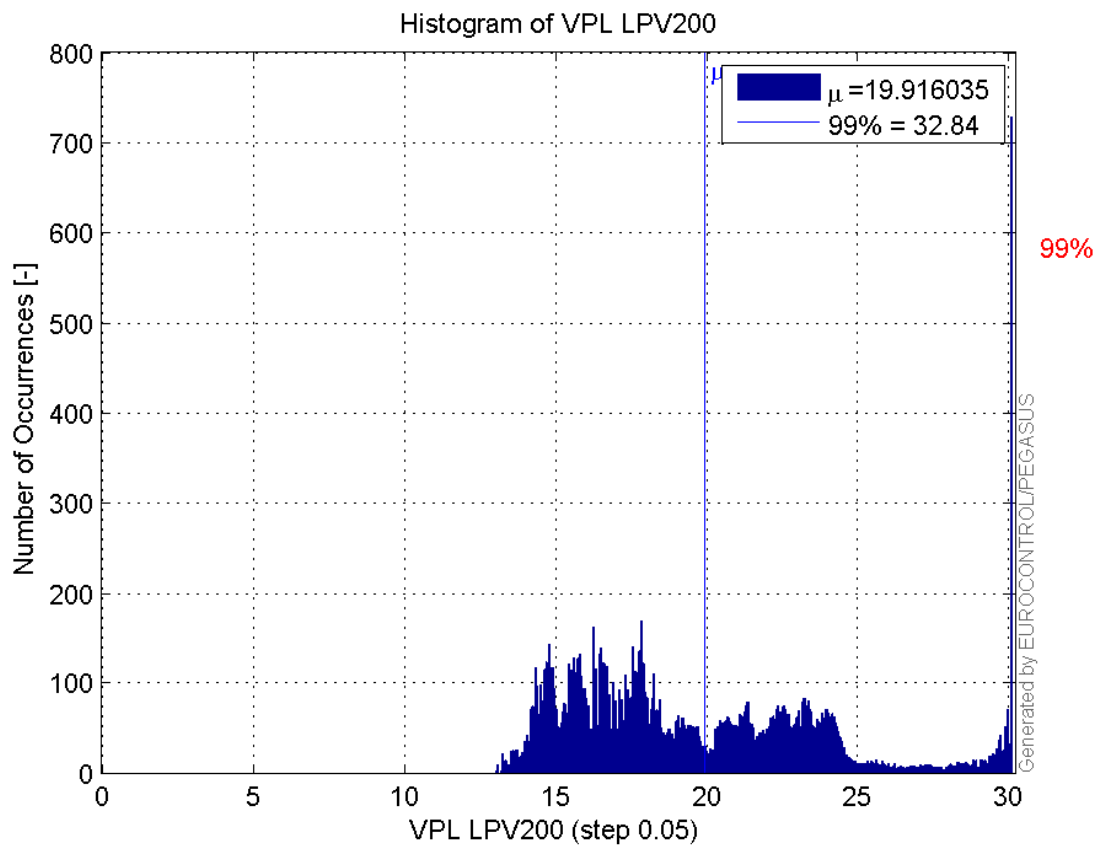
Histogram of VPE LPV200:



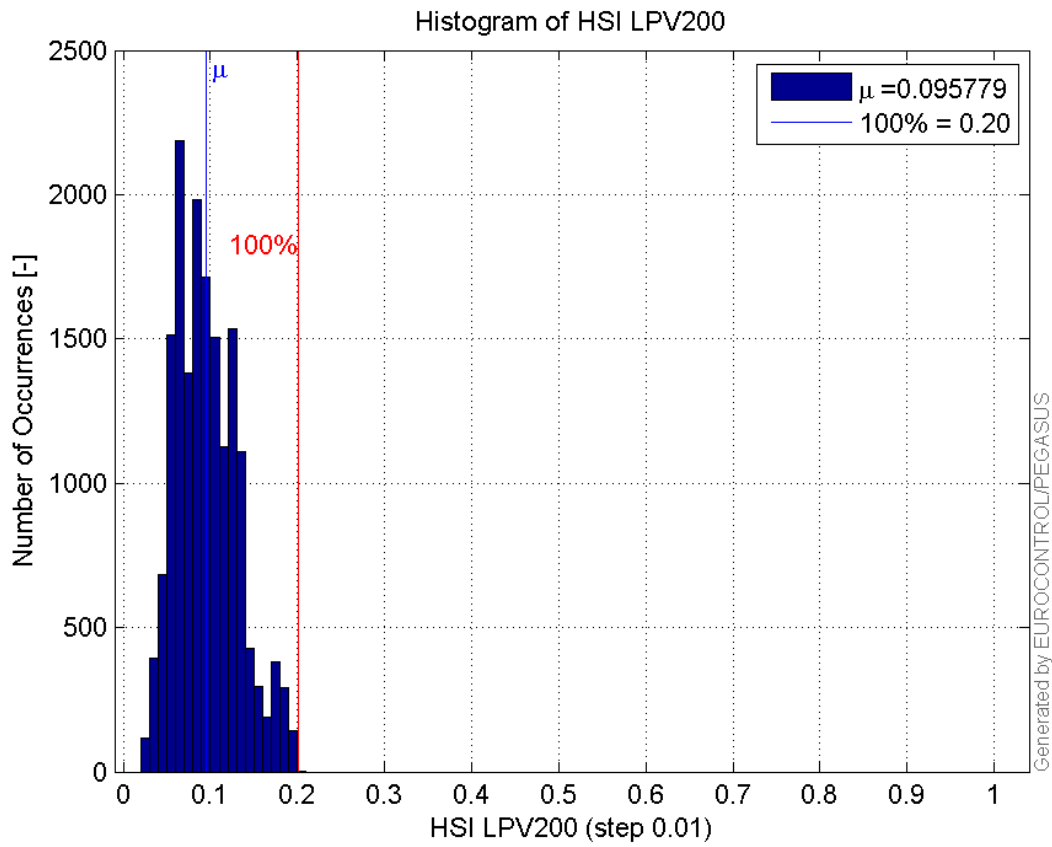
Histogram of HPL LPV200:



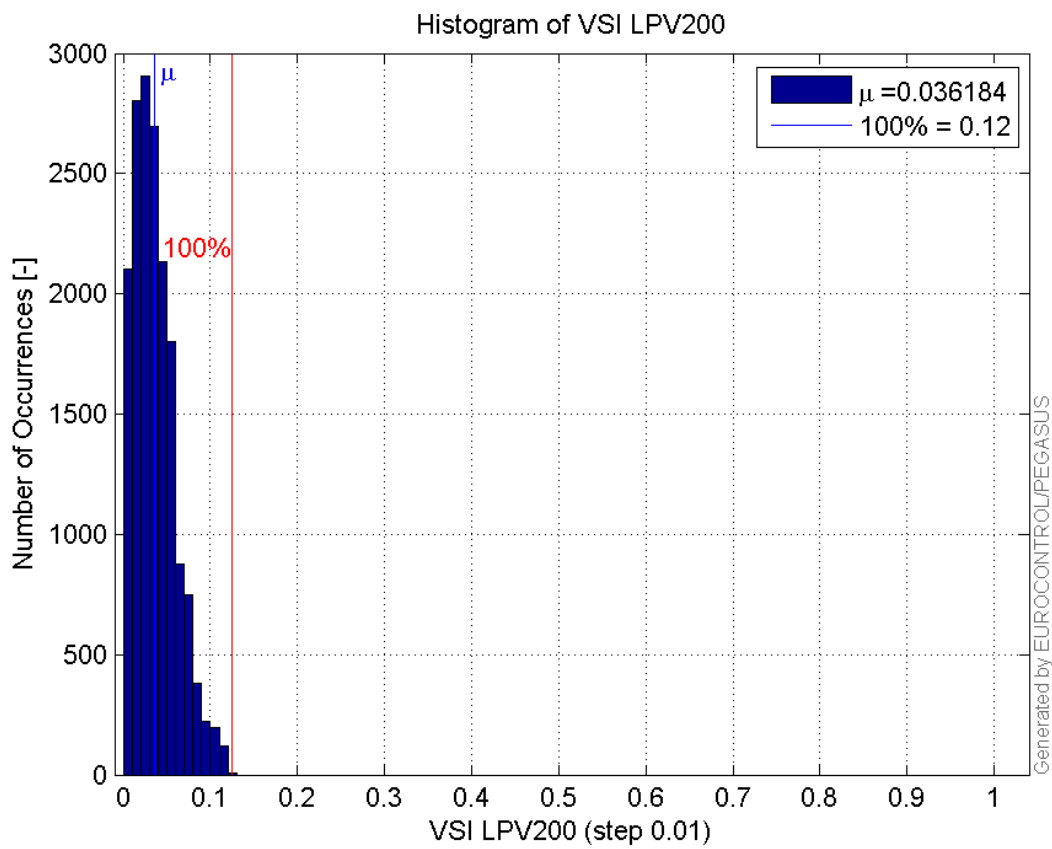
Histogram of VPL LPV200:



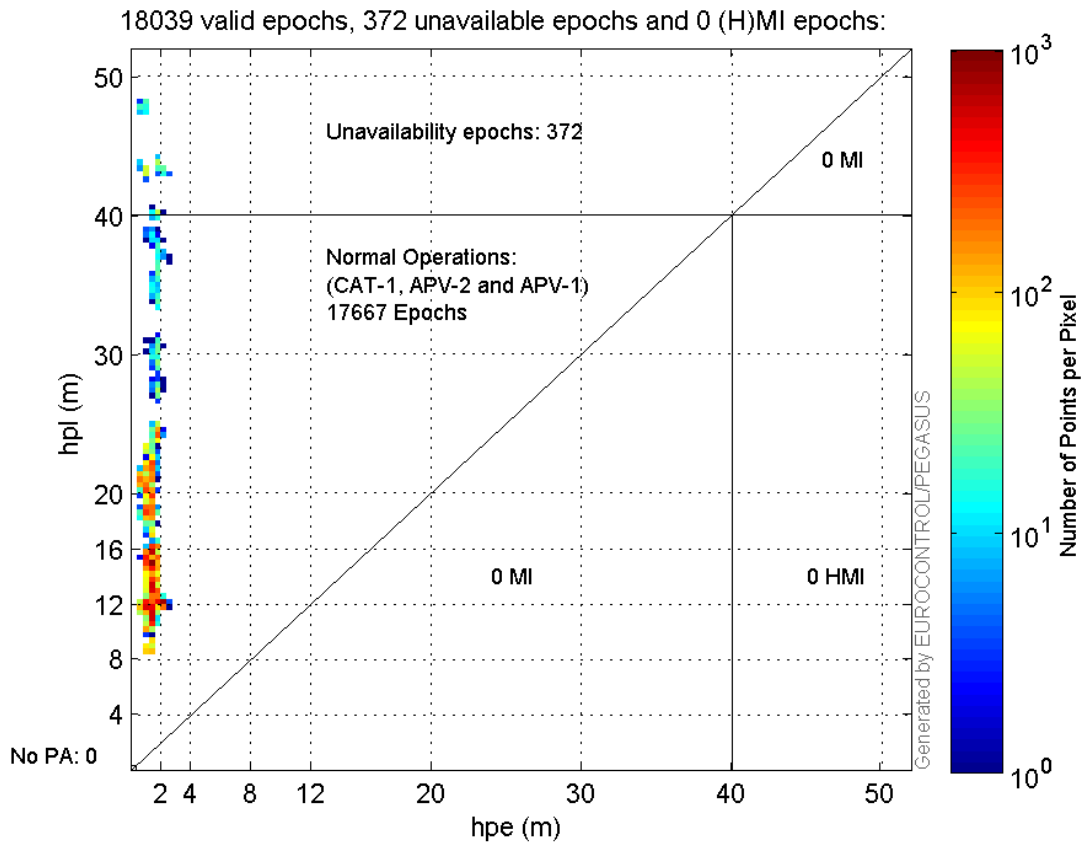
Histogram of HSI LPV200:



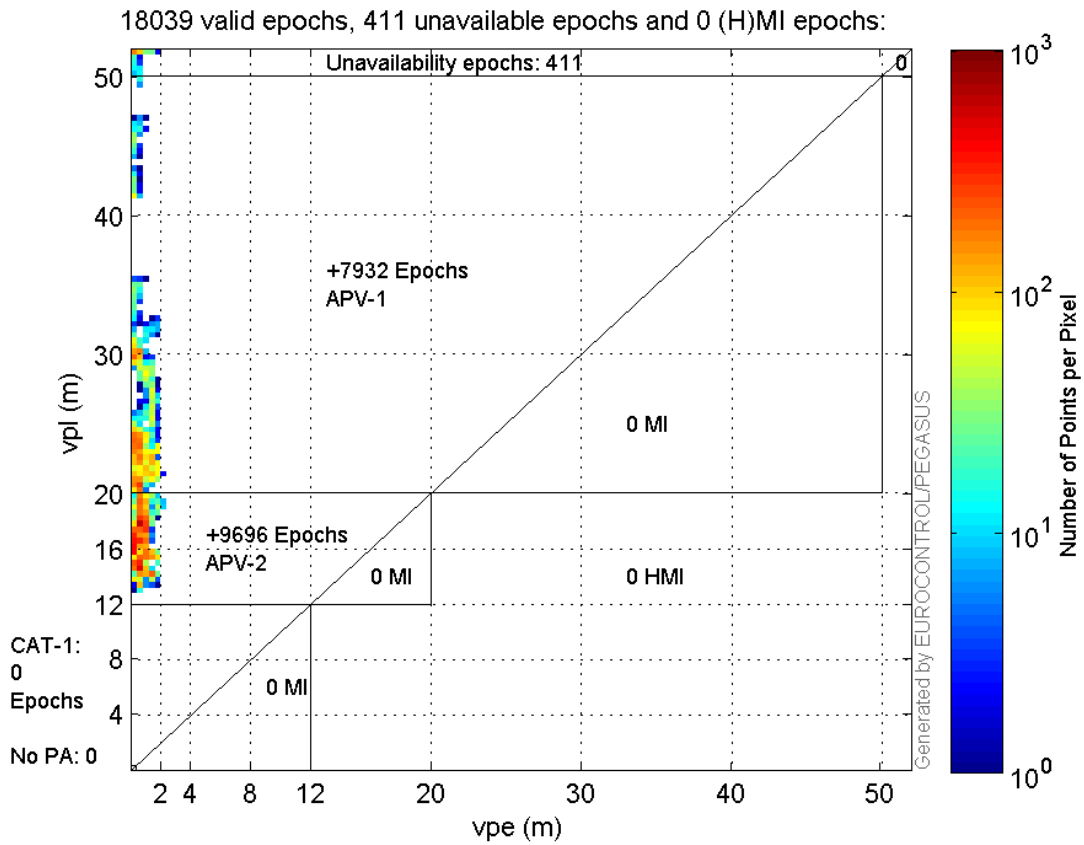
Histogram of VSI LPV200:



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_20_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_09_20_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	30.4297
init_alt	results	222.4408
mi_numbers	results	0

Range Domain

start: 04:47:10 20.09.2016 (week: 1915 sec: 190030)
end: 09:53:49 20.09.2016 (week: 1915 sec: 208429)
duration: 05:06:40 ..

quality

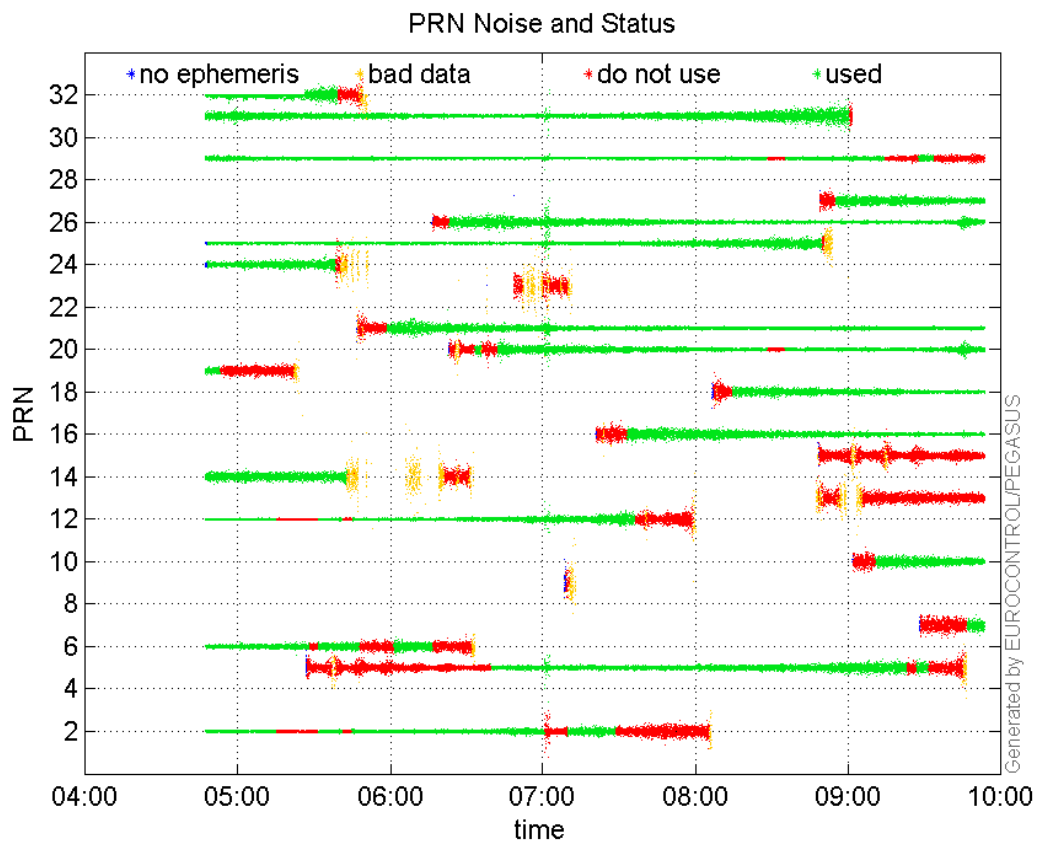
valid samples 18400
total samples 18400

PRN overview

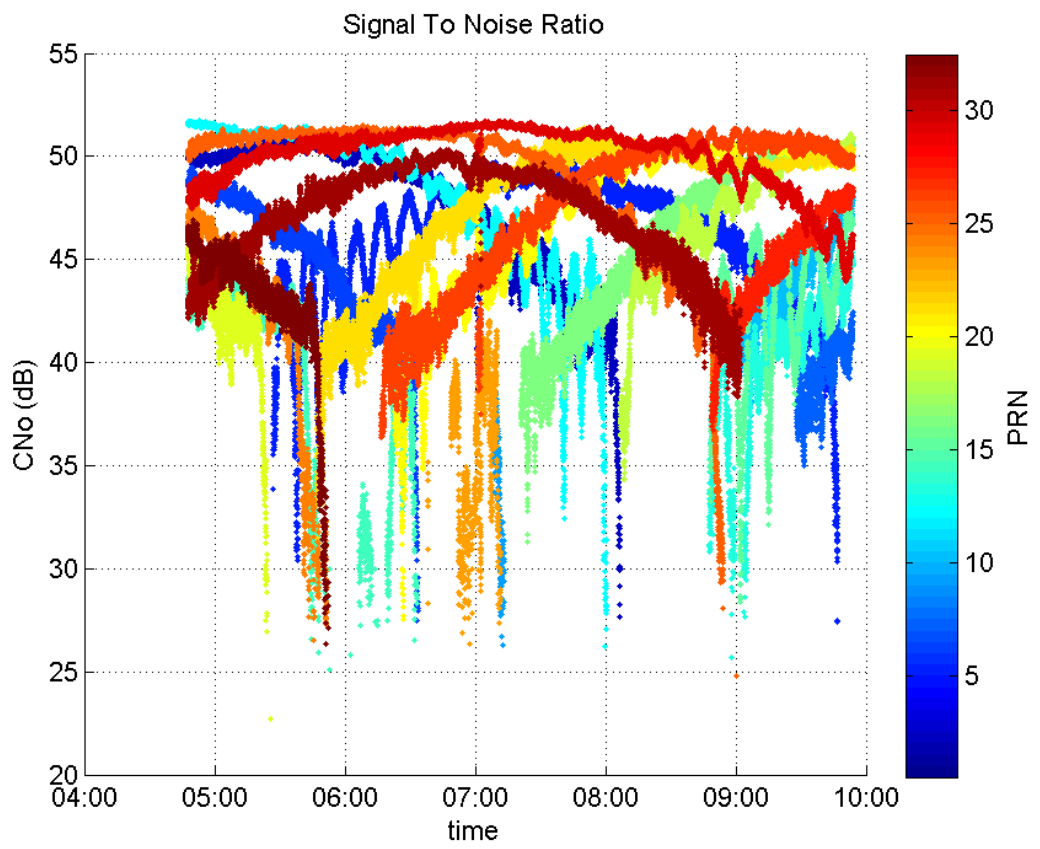
Number of Visible GPS Satellites 23
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



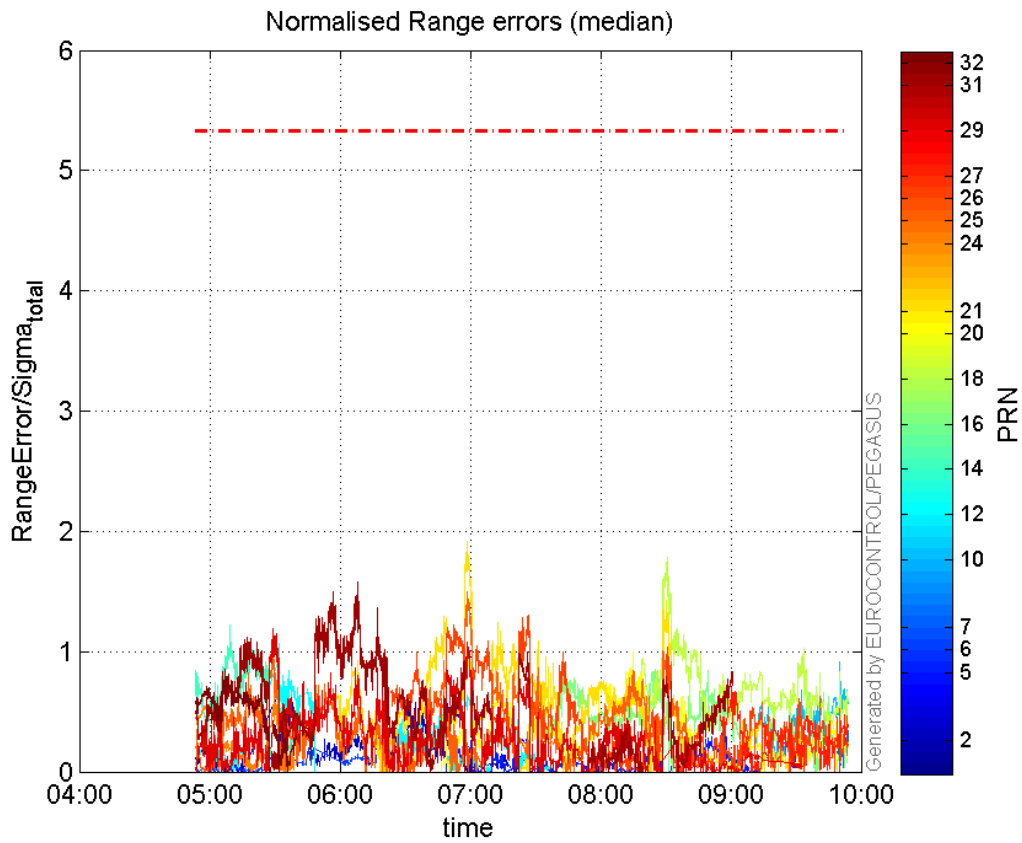
range errors

Number of Overbounding Norm Errors 0

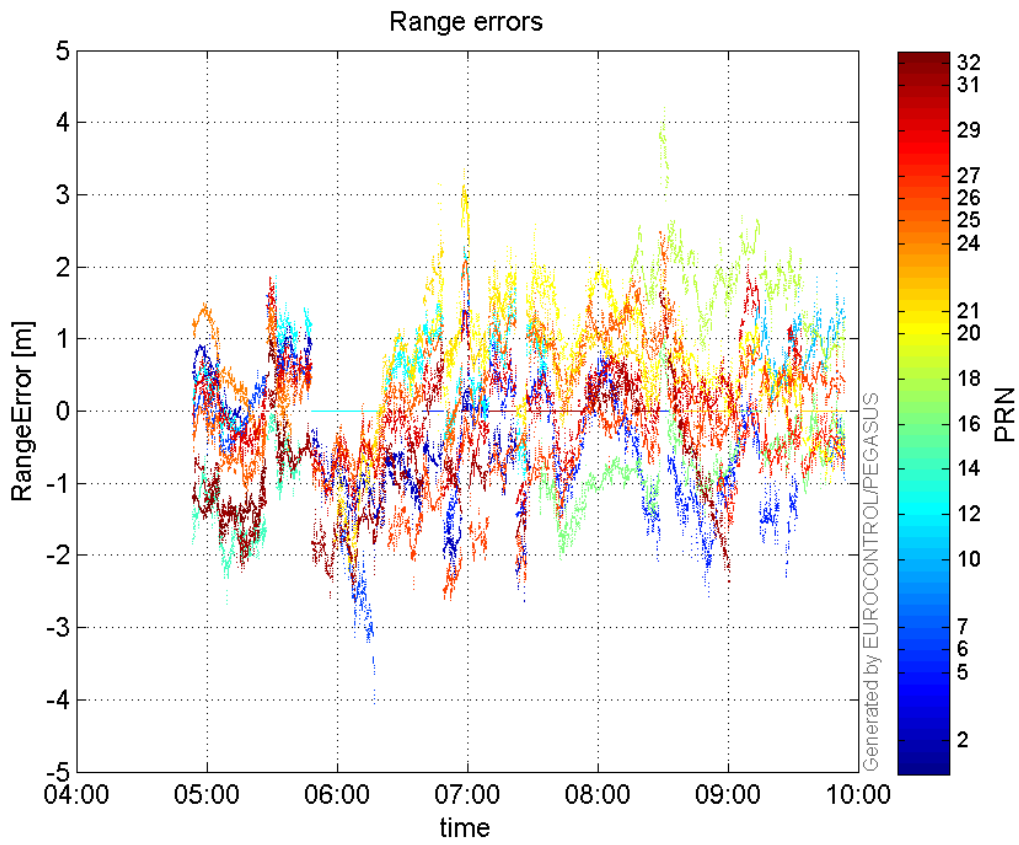
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1915	192700	2	0.795524	1.58782	1.99595
1915	206513	5	0.344926	-1.84451	5.34756
1915	193653	6	0.201926	0.64525	3.19547
1915	208426	7	0.343901	-0.951852	2.76781
1915	208192	10	0.914416	1.90079	2.07869
1915	192698	12	1.06965	1.87667	1.75448
1915	191324	14	1.21938	-2.68255	2.19992
1915	203112	16	0.84968	-1.44988	1.70639
1915	203454	18	1.78152	4.21372	2.36523
1915	202480	20	0.991748	1.84117	1.85649
1915	197883	21	1.91864	3.32078	1.7308
1915	192568	24	0.700178	1.84037	2.62844
1915	197883	25	1.49534	2.22339	1.48688
1915	199609	26	1.29997	-2.28743	1.7596
1915	205103	27	0.703784	-1.68872	2.39949
1915	192524	29	1.19362	1.77572	1.48767
1915	194861	31	1.5784	-2.58016	1.63467
1915	191139	32	0.832897	-1.84417	2.21416

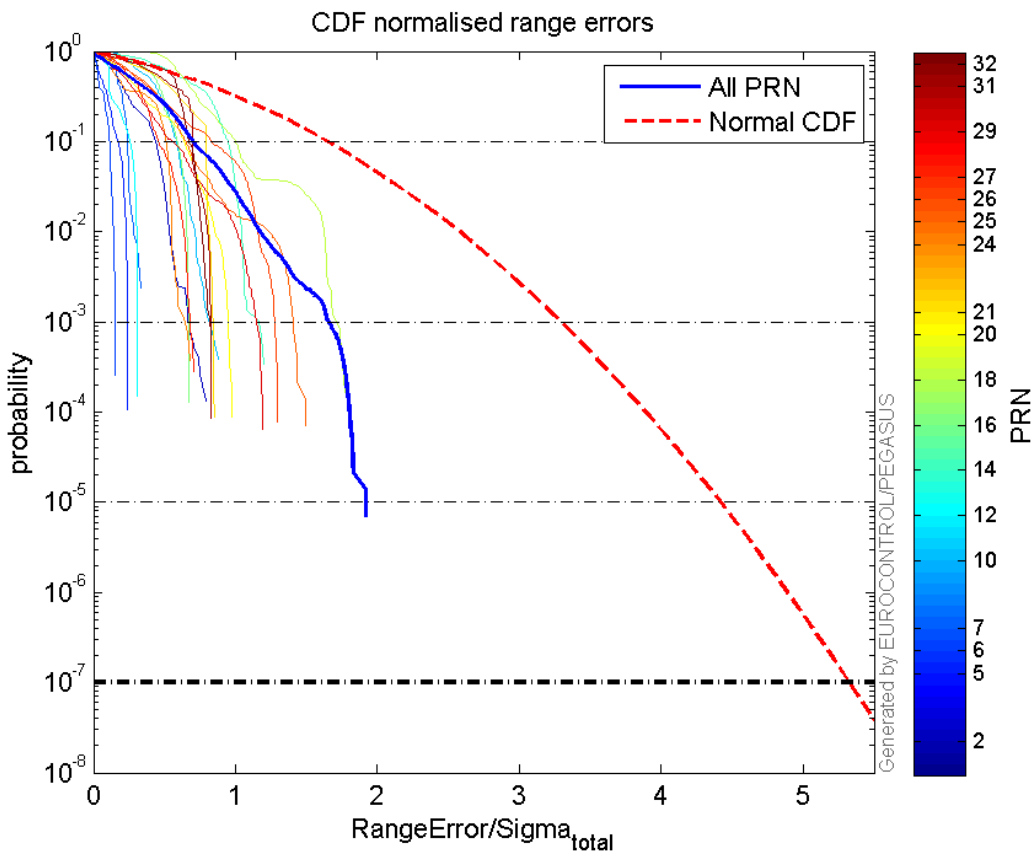
Normalised Range errors (median):



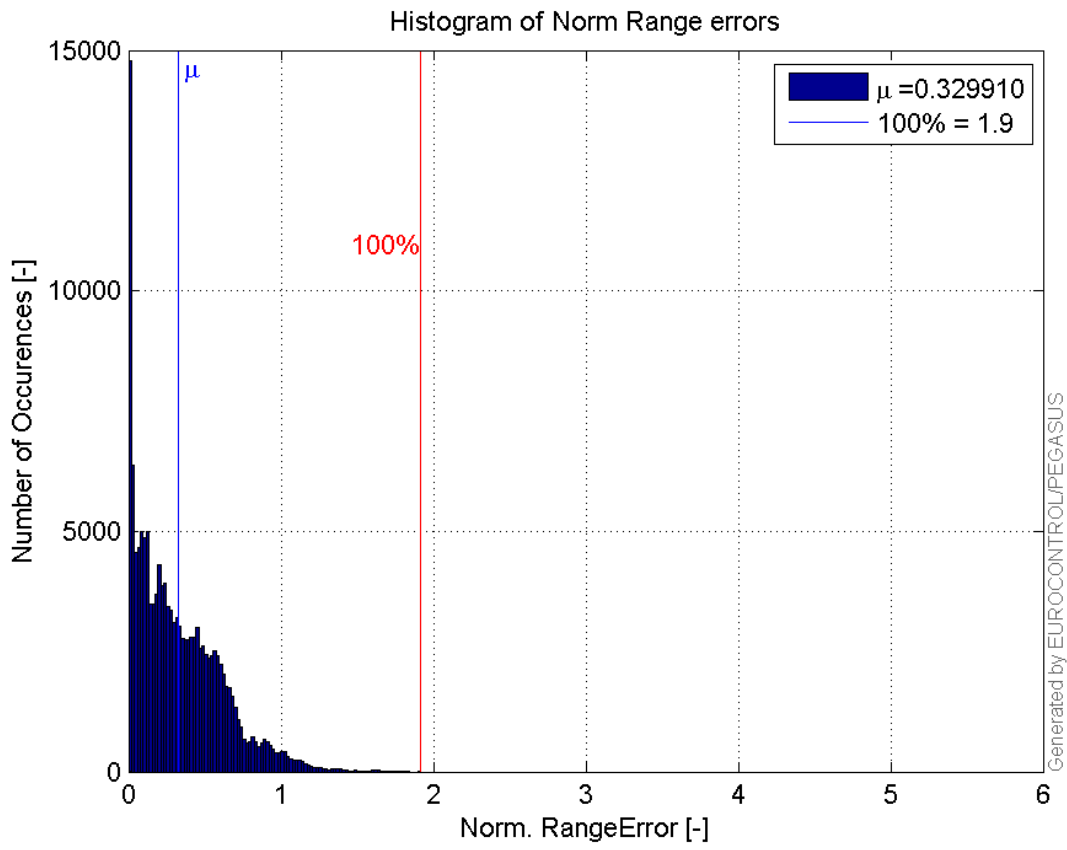
Range errors:



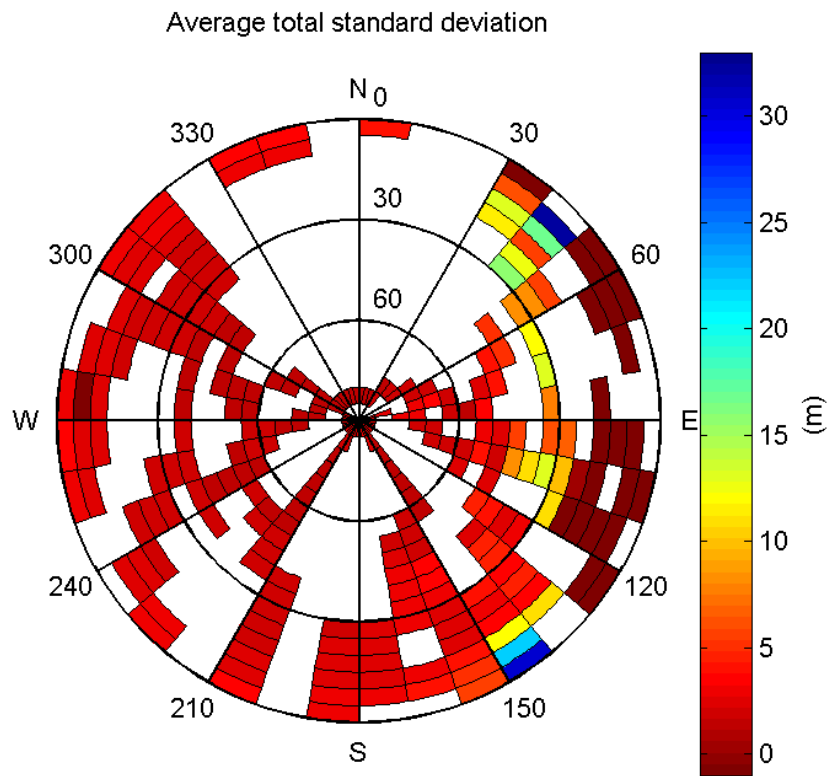
CDF normalised range errors:



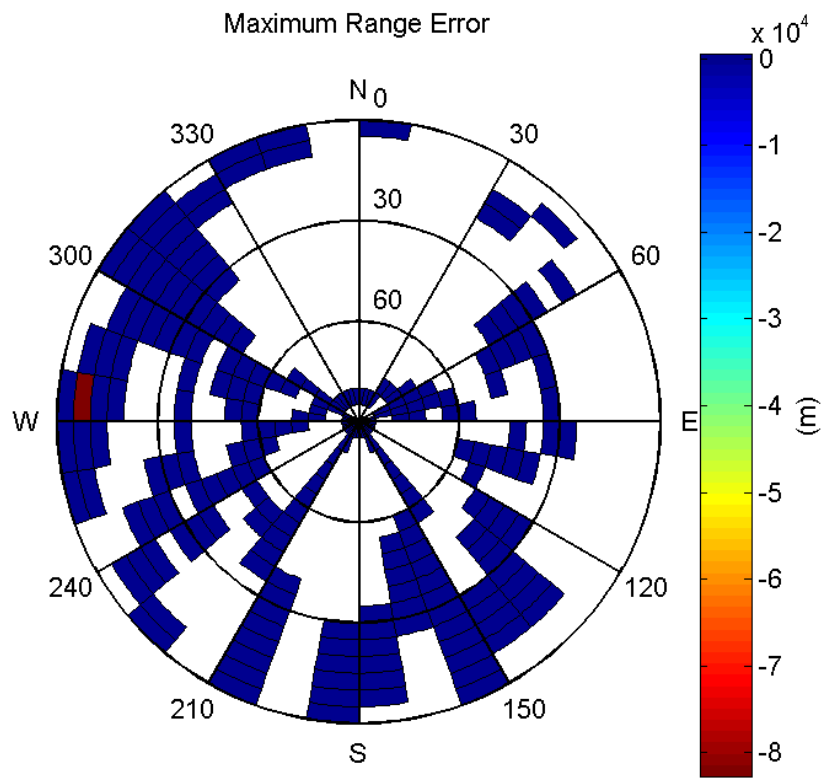
Histogram of Norm Range errors:



Sigma Sky Plot:

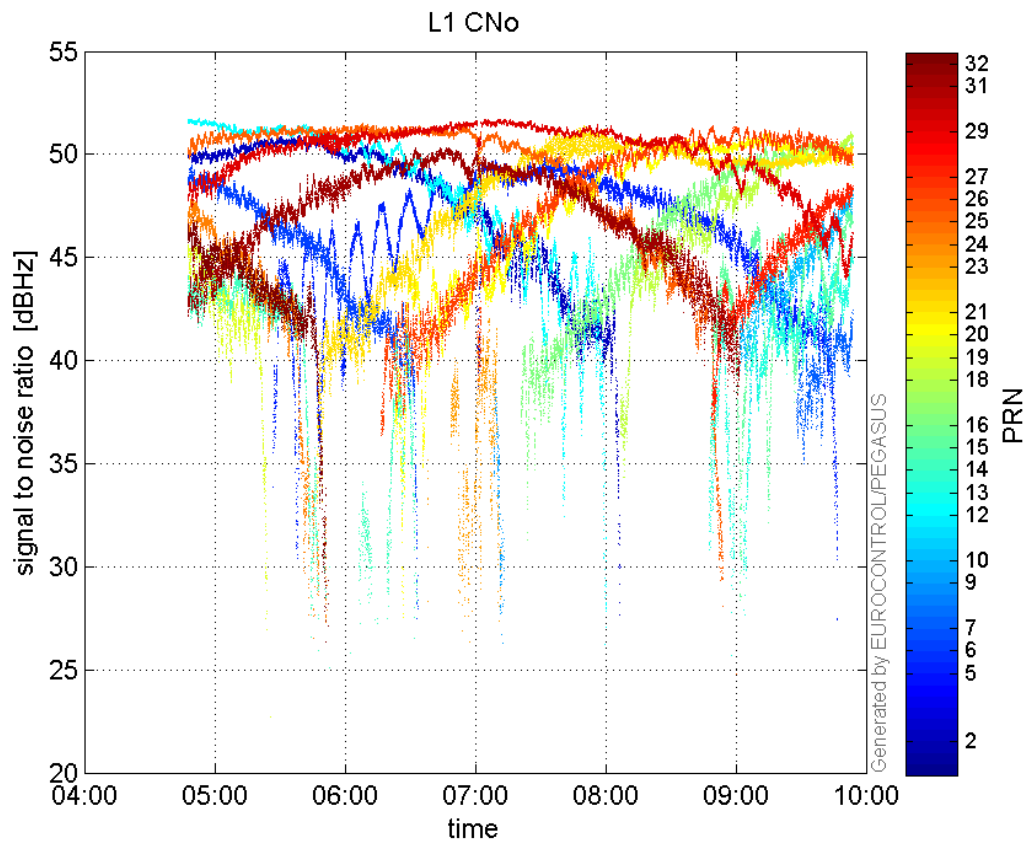


Norm Error Sky Plot:

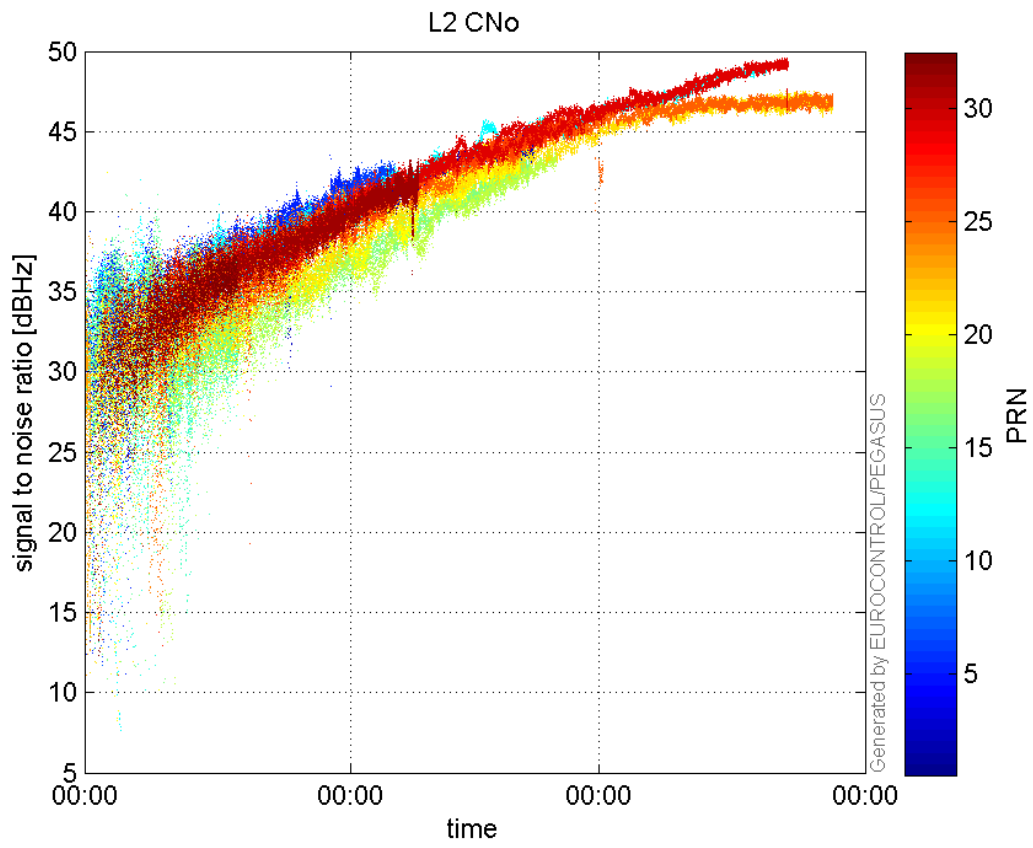


signal quality

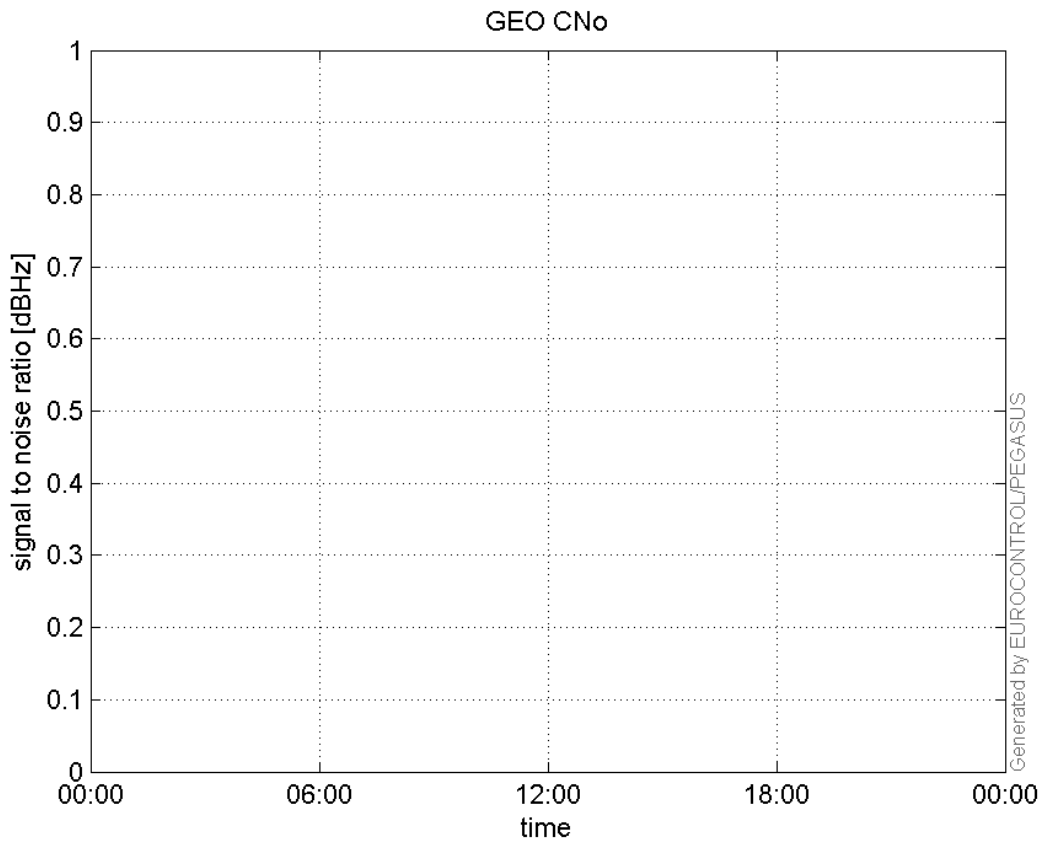
L1 CNo:



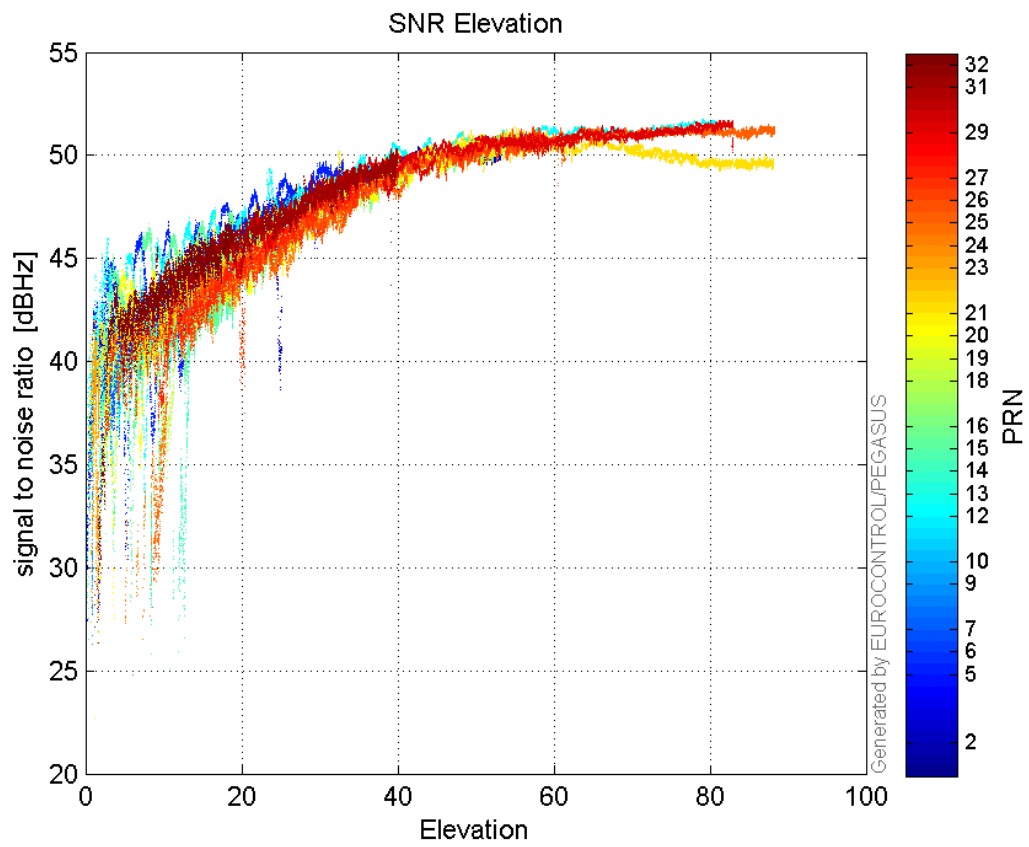
L2 CNo:



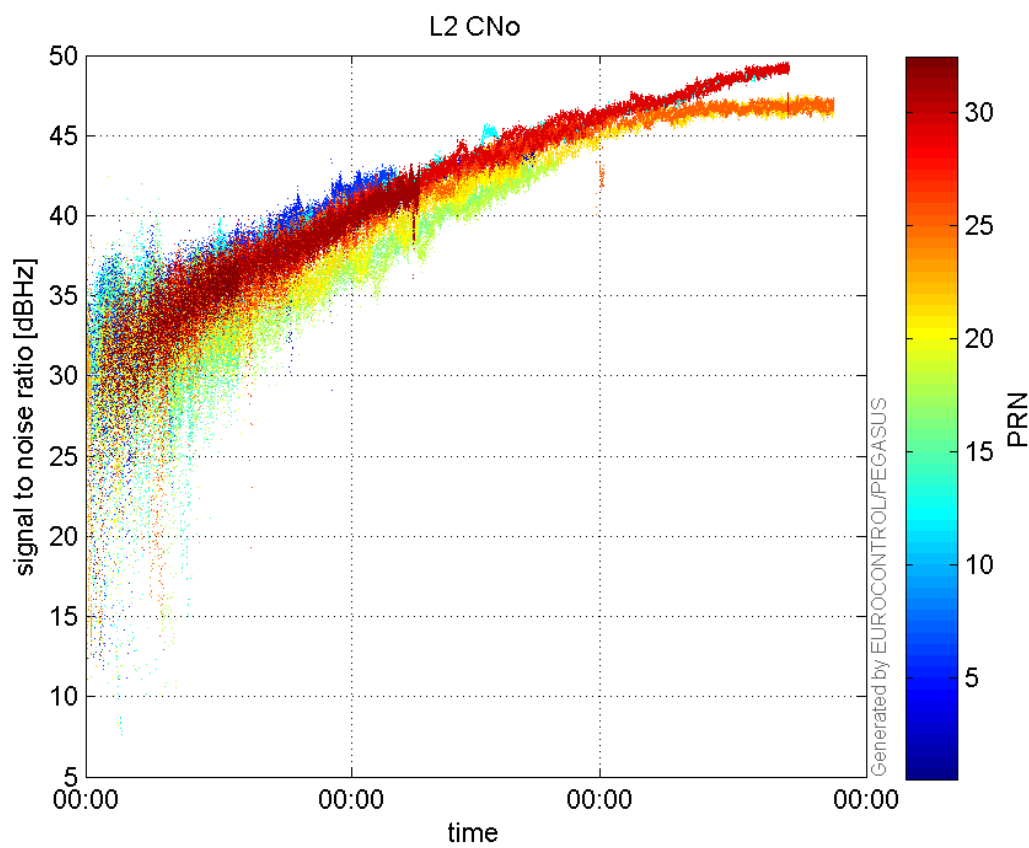
GEO CNo:



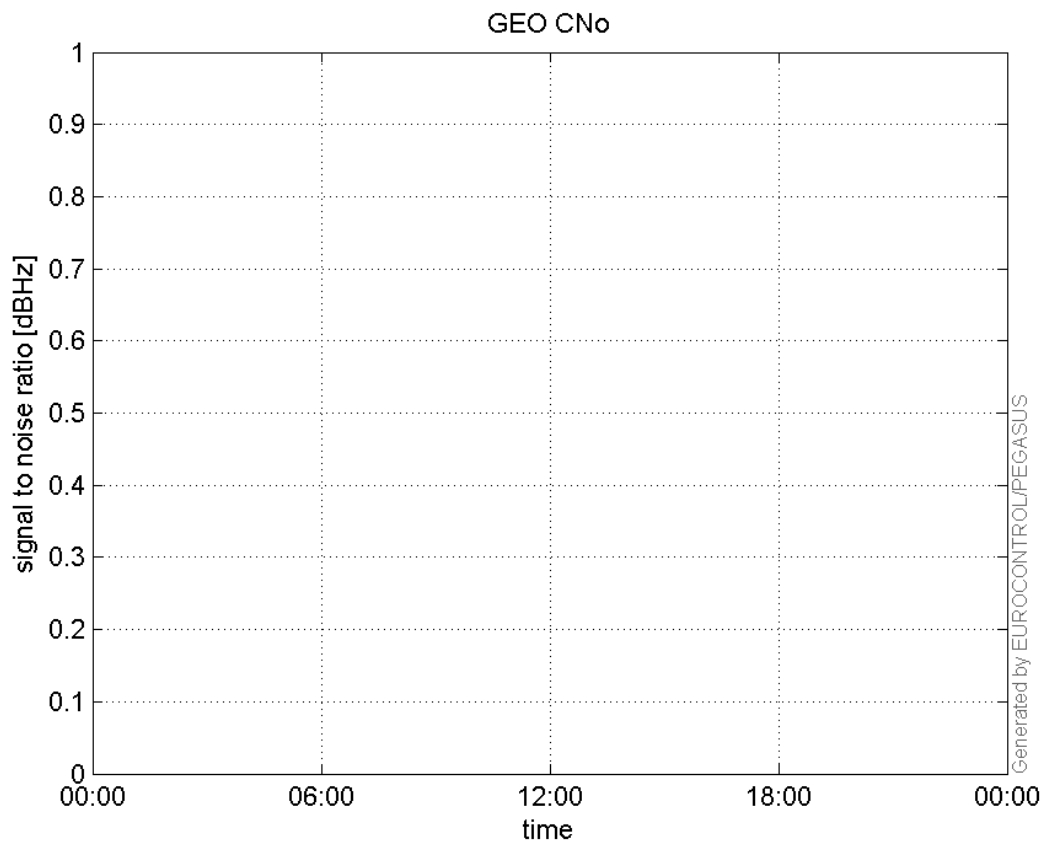
SNR Elevation:



L2 CNo:

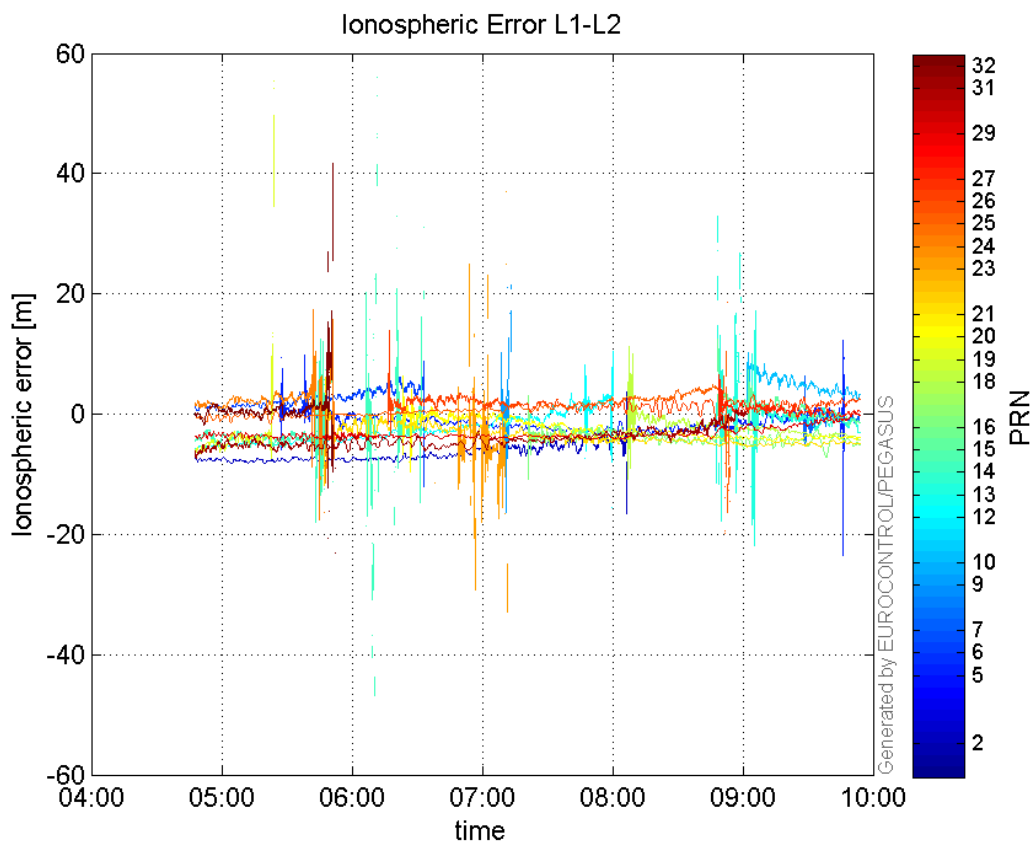


GEO CNo:



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_09_20_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_09_20_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	30.4297
init_alt	results	222.4408
mi_numbers	results	0