

Global View

site Laboratory satellite systems
 abbreviation NAU
 country Ukraine
 city Kiev
 comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,
 P.50 - 54
 program Pegasus
 version 4.8.4
 date 28/09/2016

SBAS Messages

start: 08:16:44.129 13.09.2016 (week: 1914 sec: 202604.129)
end: 10:30:26.129 13.09.2016 (week: 1914 sec: 210626.129)
duration: 02:13:42 ..

quality

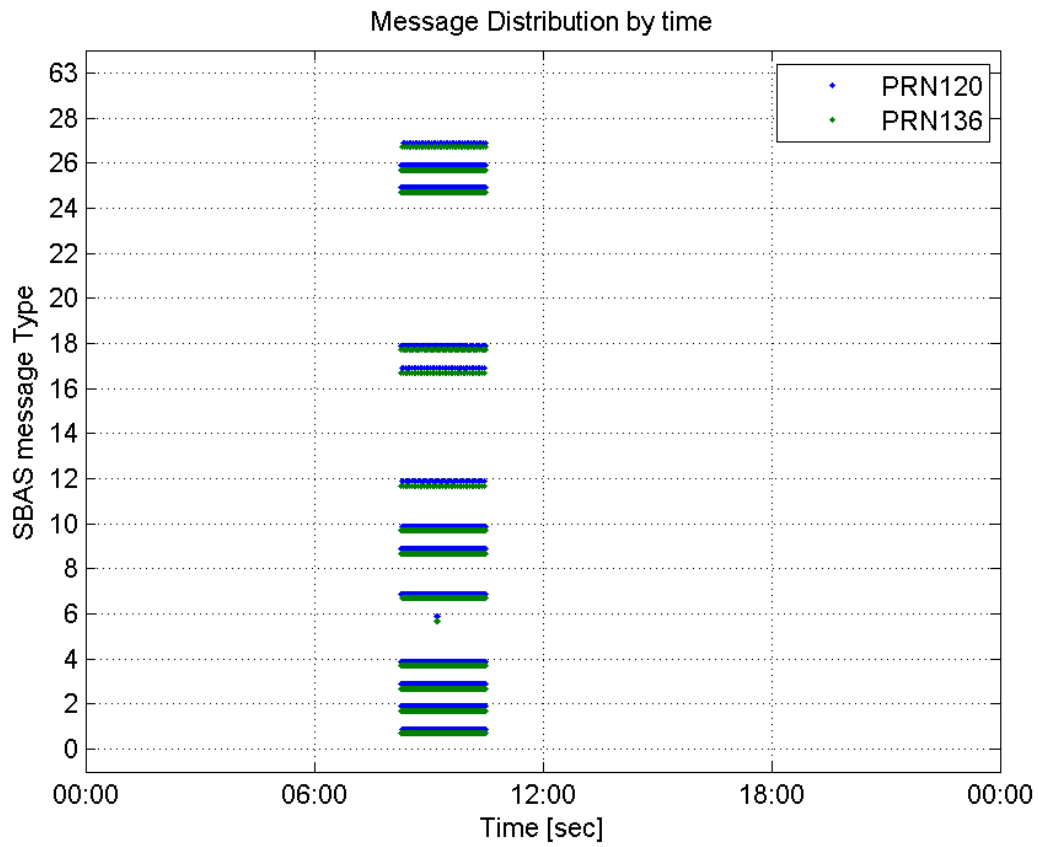
valid samples 16046
total samples 16046
number of SBAS PRNs 2

SBAS SIS Overview

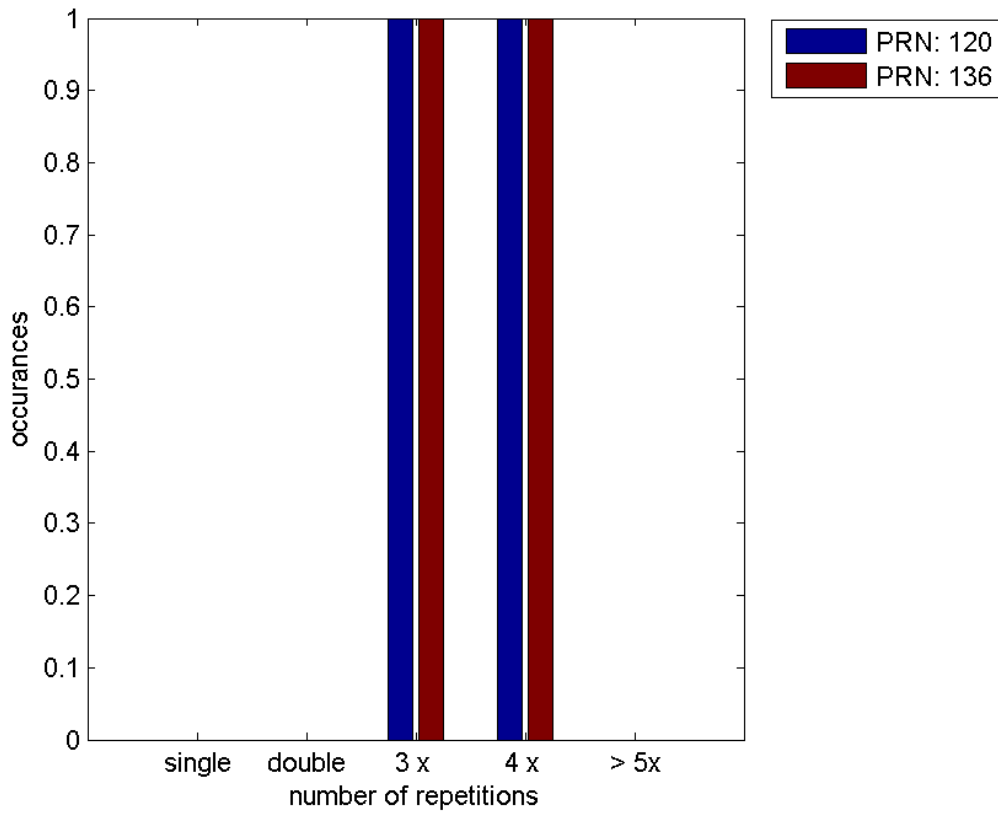
Message Type 6 repetitions :

	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 :

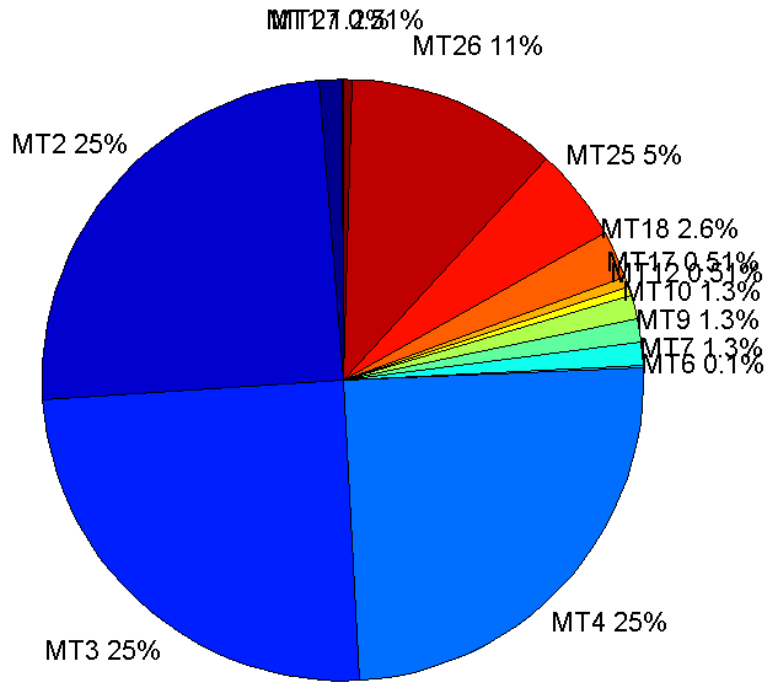
	number of messages	%
MT 0	0	0
MT 1	100	1.24642
MT 2	1990	24.8037
MT 3	1990	24.8037
MT 4	1991	24.8162
MT 5	0	0
MT 6	8	0.0997133
MT 7	101	1.25888
MT 9	101	1.25888
MT 10	101	1.25888
MT 12	41	0.511031
MT 17	41	0.511031
MT 18	209	2.60501
MT 24	0	0
MT 25	404	5.03552
MT 26	905	11.2801
MT 27	41	0.511031
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	8023	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.7778	0	0	0
MT 2	4	8	4.03117	2	0	0
MT 3	4	7	4.03117	2	0	0
MT 4	4	7	4.03116	2	0	0
MT 5	--	--	--	--	--	--
MT 6	1	105	15.8571	1	1	1
MT 7	74	81	79.62	0	0	0
MT 9	75	81	79.42	0	0	0
MT 10	75	81	79.69	0	0	0
MT 12	184	202	194.6	40	0	0
MT 17	188	201	194.675	0	0	0
MT 18	4	164	38.4904	0	0	0
MT 24	--	--	--	--	--	--
MT 25	3	59	19.8462	0	0	0
MT	3	33	8.86504	0	0	0

26						
MT 27	187	201	194.55	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

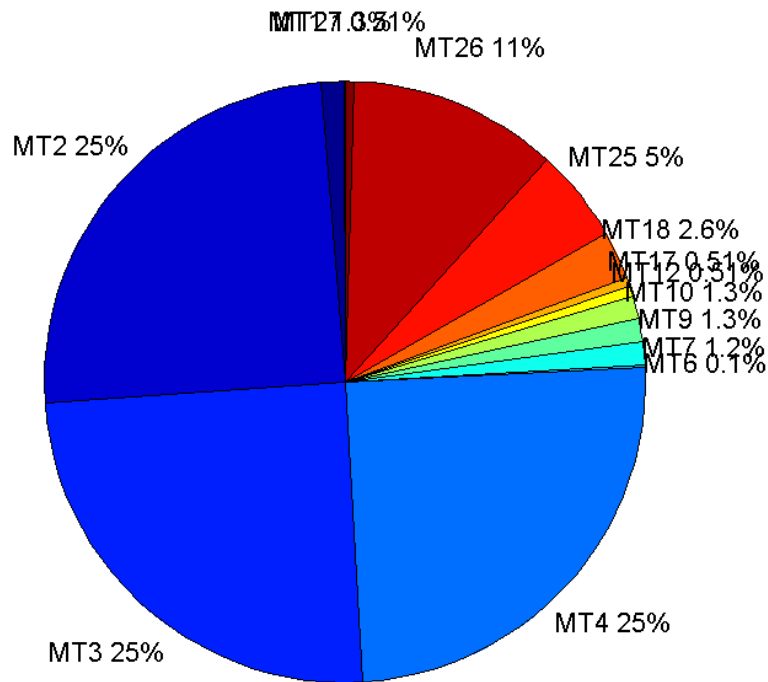
	number of messages	%
MT 0	0	0
MT 1	101	1.25888
MT 2	1993	24.8411
MT 3	1993	24.8411
MT 4	1993	24.8411
MT 5	0	0
MT 6	8	0.0997133
MT 7	100	1.24642
MT 9	101	1.25888
MT 10	101	1.25888

MT 12	41	0.511031
MT 17	41	0.511031
MT 18	205	2.55515
MT 24	0	0
MT 25	403	5.02306
MT 26	902	11.2427
MT 27	41	0.511031
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	8023	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	80	79.63	0	0	0
MT 2	4	8	4.0256	2	0	0
MT 3	4	8	4.0256	2	0	0
MT 4	4	8	4.0256	2	0	0
MT 5	--	--	--	--	--	--
MT 6	1	105	15.8571	1	1	1
MT 7	76	81	79.7879	0	0	0
MT 9	76	81	79.63	0	0	0
MT 10	76	81	79.47	0	0	0
MT 12	188	201	195.875	40	0	0
MT 17	189	201	195.775	0	0	0
MT 18	4	160	39.2696	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	40	19.8881	0	0	0
MT 26	4	32	8.88235	0	0	0
MT 27	189	201	195.775	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_13_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_09_13_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: 08:16:45 13.09.2016 (week: 1914 sec: 202605)
end: 10:30:27 13.09.2016 (week: 1914 sec: 210627)
duration: 02:13:43 ..

quality

valid samples 7662
total samples 8023

Event tables

Position discontinuity events type no (0)
 APV-I discontinuity events type no (0)
 APV-35m discontinuity events type no (0)
 LPV-200 discontinuity events type no (0)
 CAT-I discontinuity events type nothing

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	210121	1.4794	9.22286	0.160406	1.19982	19.5448	0.0613884
max normVer	210584	1.30988	11.6298	0.112632	1.85547	21.1002	0.0879362
max HPE	207275	1.90222	23.1061	0.0823253	-0.110183	23.485	0.00469165
max VPE	210584	1.30988	11.6298	0.112632	1.85547	21.1002	0.0879362
min HPL	210017	1.04002	8.54783	0.12167	1.01582	18.1044	0.0561092
min VPL	204372	1.26589	10.687	0.118451	0.157377	14.9906	0.0104984

First Glance analysis

Duration 8023
 Number of Samples 8023
 Number of invalid sample 361
 Number of no position solution samples 0
 Number of missing sample 0
 Logging Loss 0
 Processing Loss 4.4996
 Number of Misleading Information 0
 Data gaps 0
 Discontinuities 0

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
7662	7662	7662	0	7662

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.50076	1.50076	1.50076	NaN	1.50076
HPEscale 95%	NaN	4.9283	4.9283	NaN	4.9283
VPE 95%	1.01566	1.01566	1.01566	NaN	1.01566
VPEscale 95%	NaN	2.60178	1.82124	NaN	1.82124

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	1	1	0	1
measurements	0.955004	0.955004	0.955004	0	0.955004
Operational	0.955004	0.955004	0.955004	0	0.955004

Discontinuity events :

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

Integrity events :

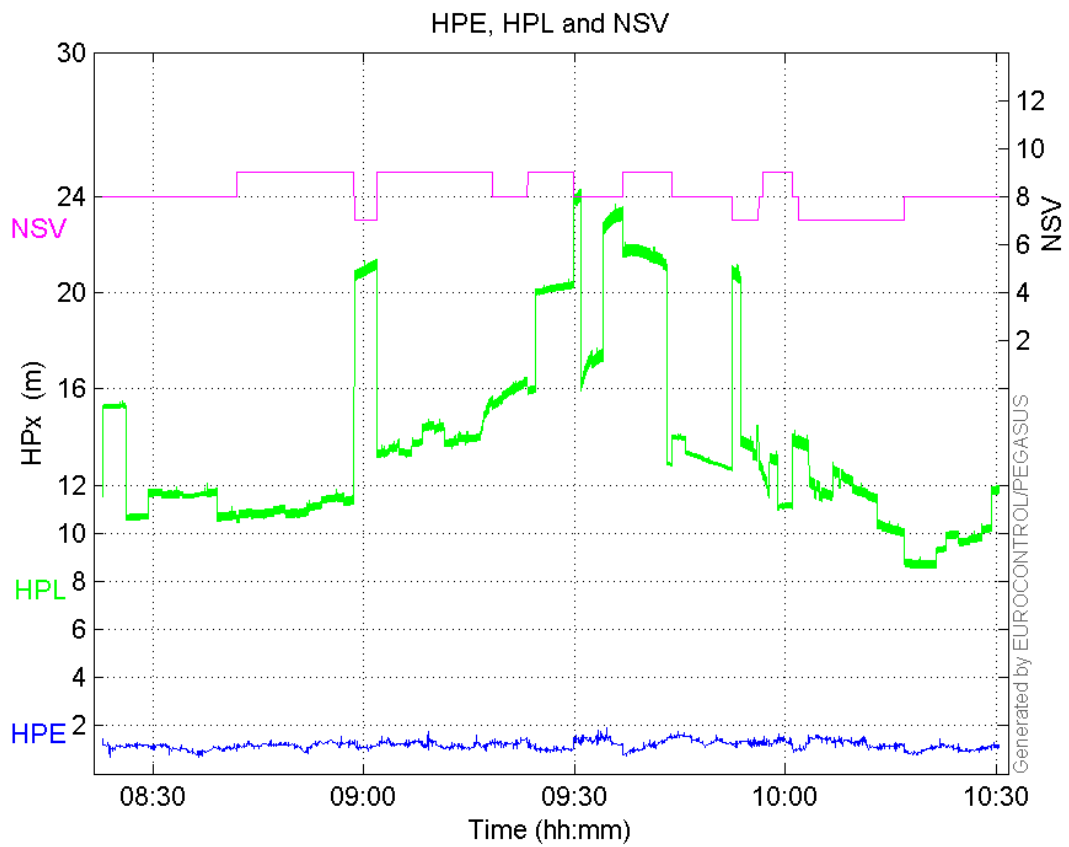
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

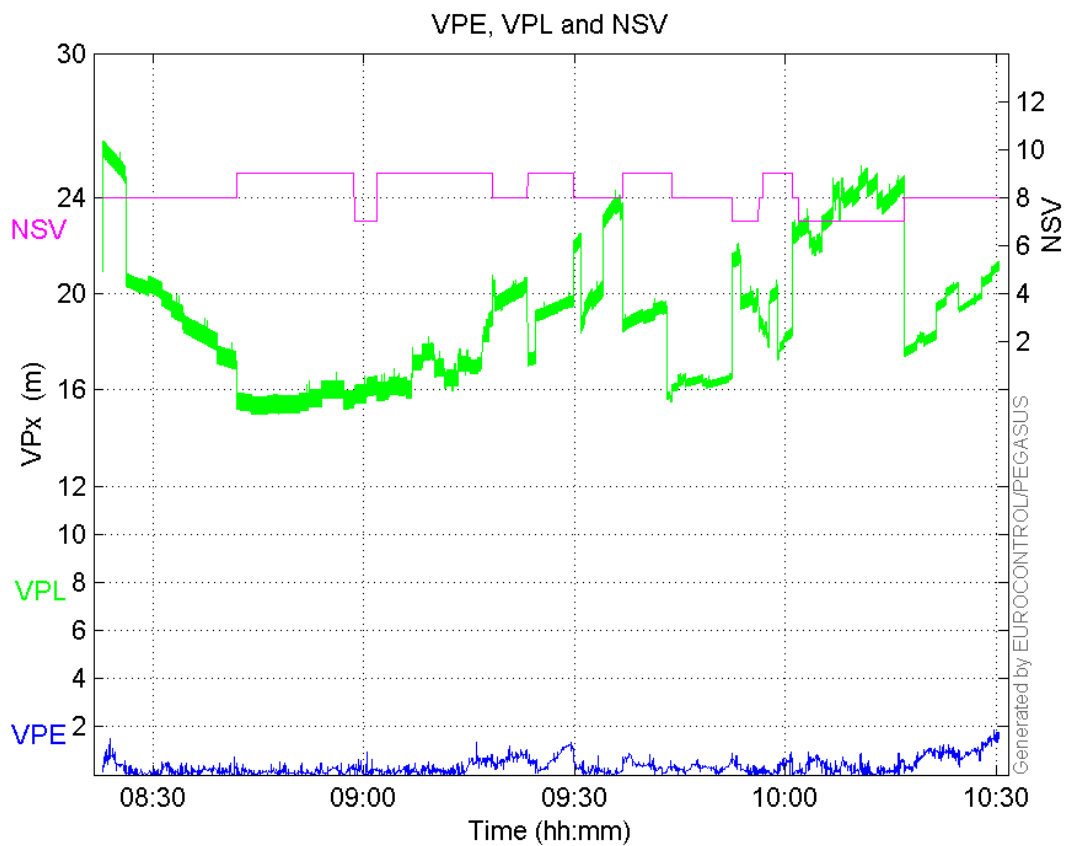
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	7662	7662	7662	0	7662
SIS Availability	1	1	1	0	1
Local Availability	0.955004	0.955004	0.955004	0	0.955004
Operational Availability	0.955004	0.955004	0.955004	0	0.955004
HPE 95%	1.50076	1.50076	1.50076	NaN	1.50076
HPEScale 95%	NaN	4.9283	4.9283	NaN	4.9283
VPE 95%	1.01566	1.01566	1.01566	NaN	1.01566
VPEscale 95%	NaN	2.60178	1.82124	NaN	1.82124
All Discontinuity Events	--	--	--	--	--
Long Discontinuity Events	--	--	--	--	--
Independent Discontinuity Events	--	--	--	--	--
P(discontinuity)	--	--	--	--	--
P(sliding window)	--	--	--	--	--
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:

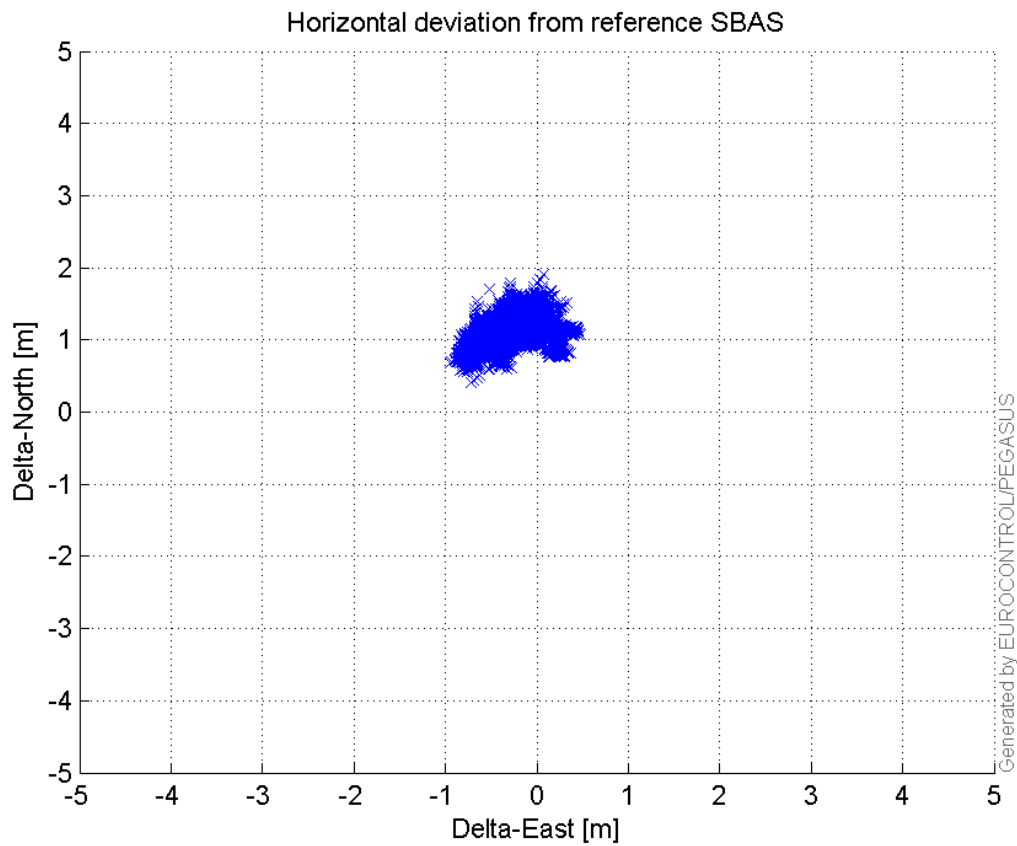


VPE, VPL and NSV:



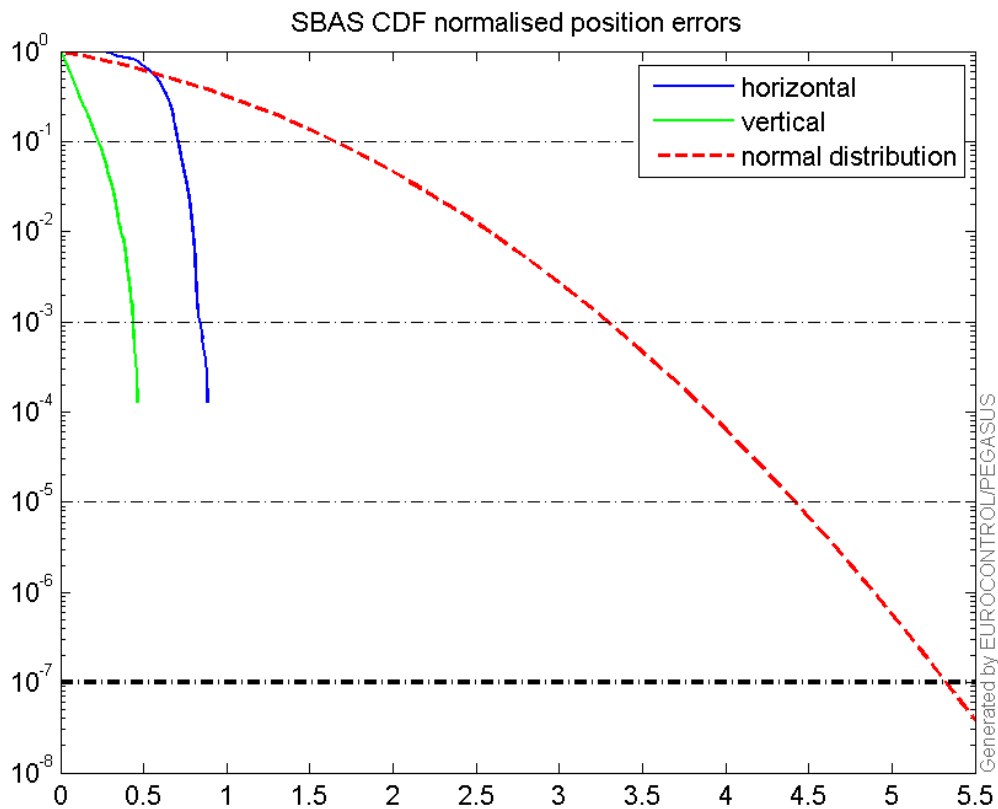
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

number	7662
sum	9192.9328
sum2	11251.399
prctile95	1.5007625
prctile99	1.5959609
number	7662
sum	2699.3341
sum2	1751.8715
prctile95	1.0156638
prctile99	1.4176785
number	7662
sum	105200.97
sum2	1554308.6
prctile95	21.6723
prctile99	23.446528
number	7662
sum	145486.11
sum2	2822269.9
prctile95	24.3724
prctile99	25.604328
number	7662
sum	709.80875
sum2	69.621027
prctile95	0.12320761
prctile99	0.13243281
number	7662
sum	140.36163
sum2	4.5636586
prctile95	0.052035565
prctile99	0.067757346
number	7662
sum	9192.9328
sum2	11251.399
prctile95	1.5007625
prctile99	1.5959609
number	7662
sum	2699.3341
sum2	1751.8715
prctile95	1.0156638
prctile99	1.4176785
number	7662
sum	105200.97
sum2	1554308.6
prctile95	21.6723
prctile99	23.446528
number	7662
sum	145486.11
sum2	2822269.9
prctile95	24.3724
prctile99	25.604328

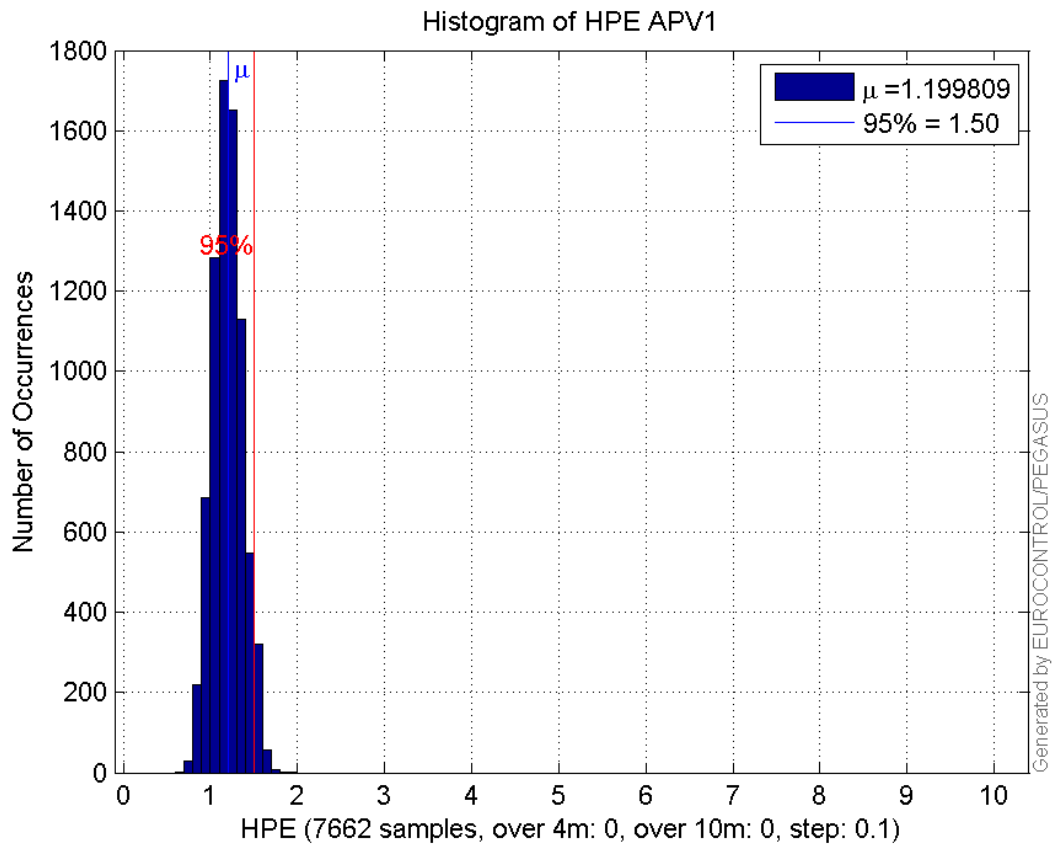
```

number 7662
sum 709.80875
sum2 69.621027
prctile95 0.12320761
prctile99 0.13243281
number 7662
sum 140.36163
sum2 4.5636586
prctile95 0.052035565
prctile99 0.067757346
    
```

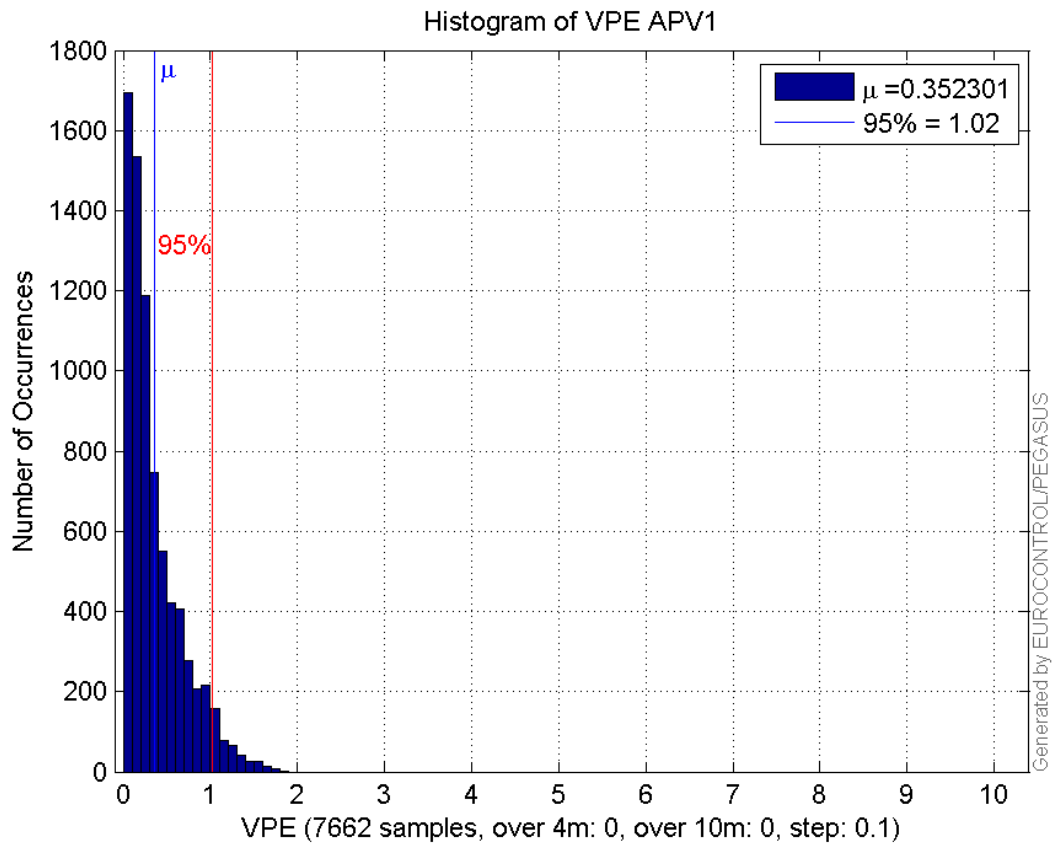
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.19981	0.170091	1.19312	1.50076	1.59596	1.2118
HPL	13.7302	3.78711	12.7633	21.6723	23.4465	14.2429
VPE	0.352301	0.323329	0.243411	1.01566	1.41768	0.478167
VPL	18.988	2.79338	18.8789	24.3724	25.6043	19.1924

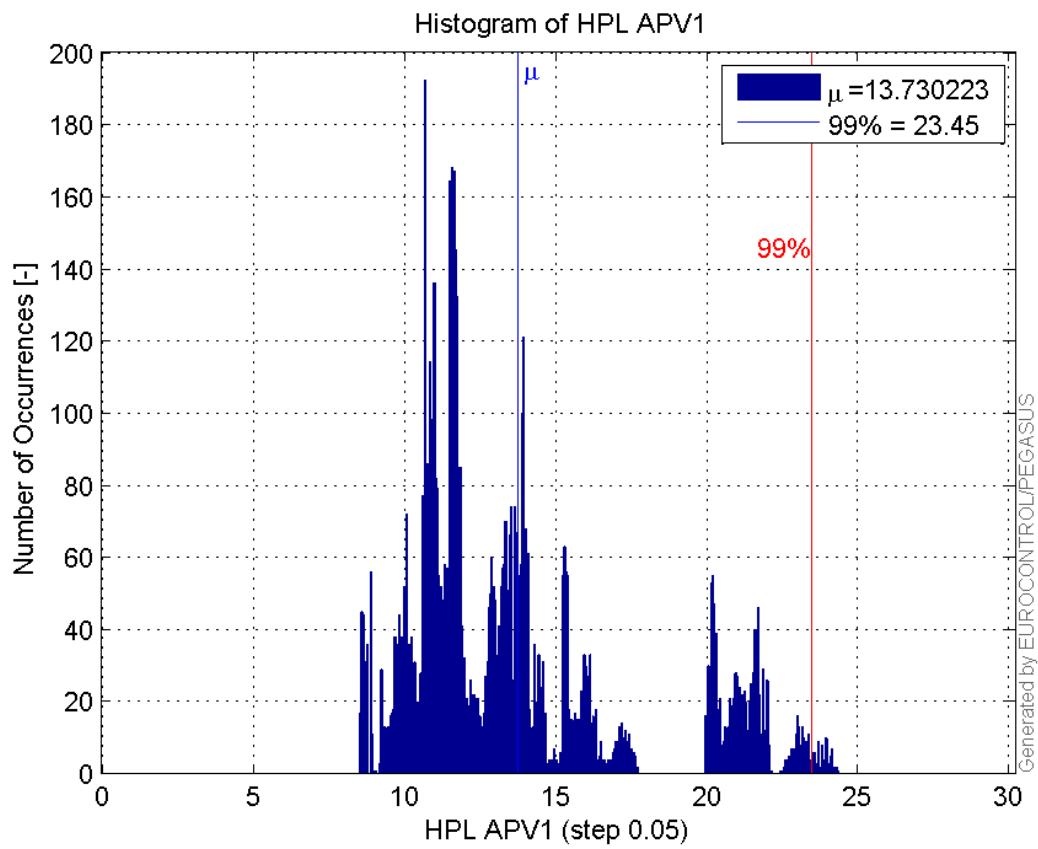
Histogram of HPE APV1:



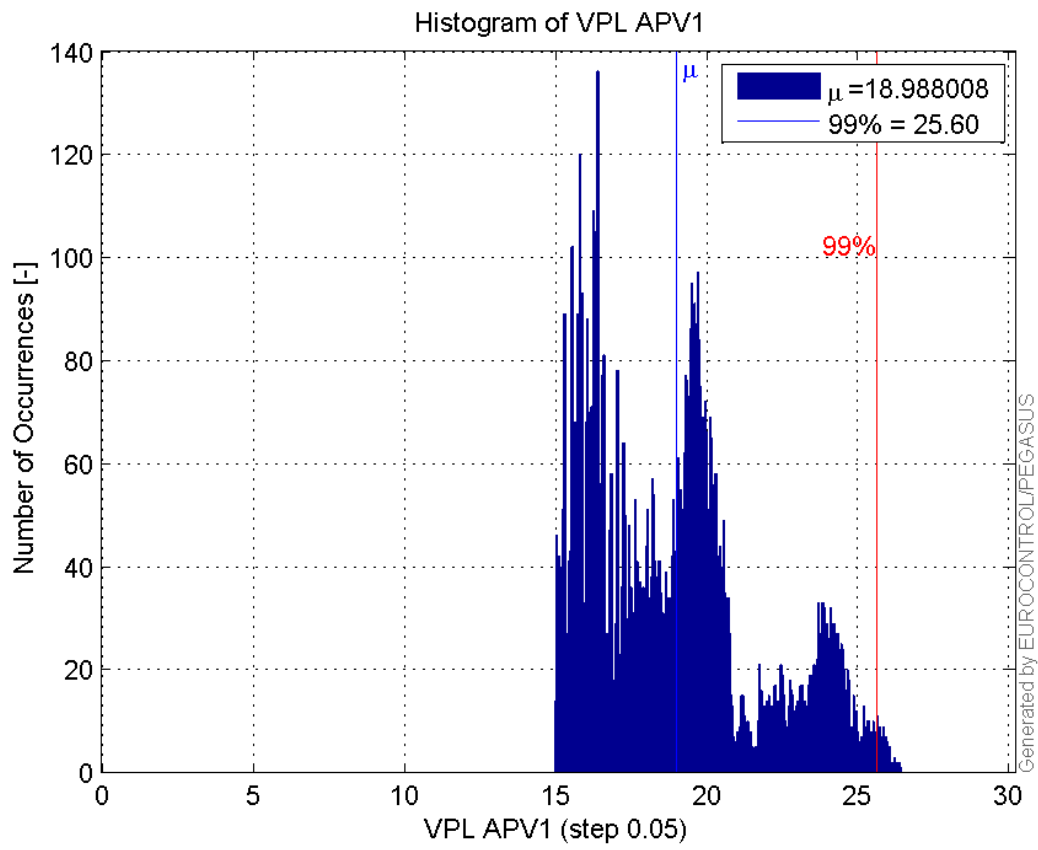
Histogram of VPE APV1:



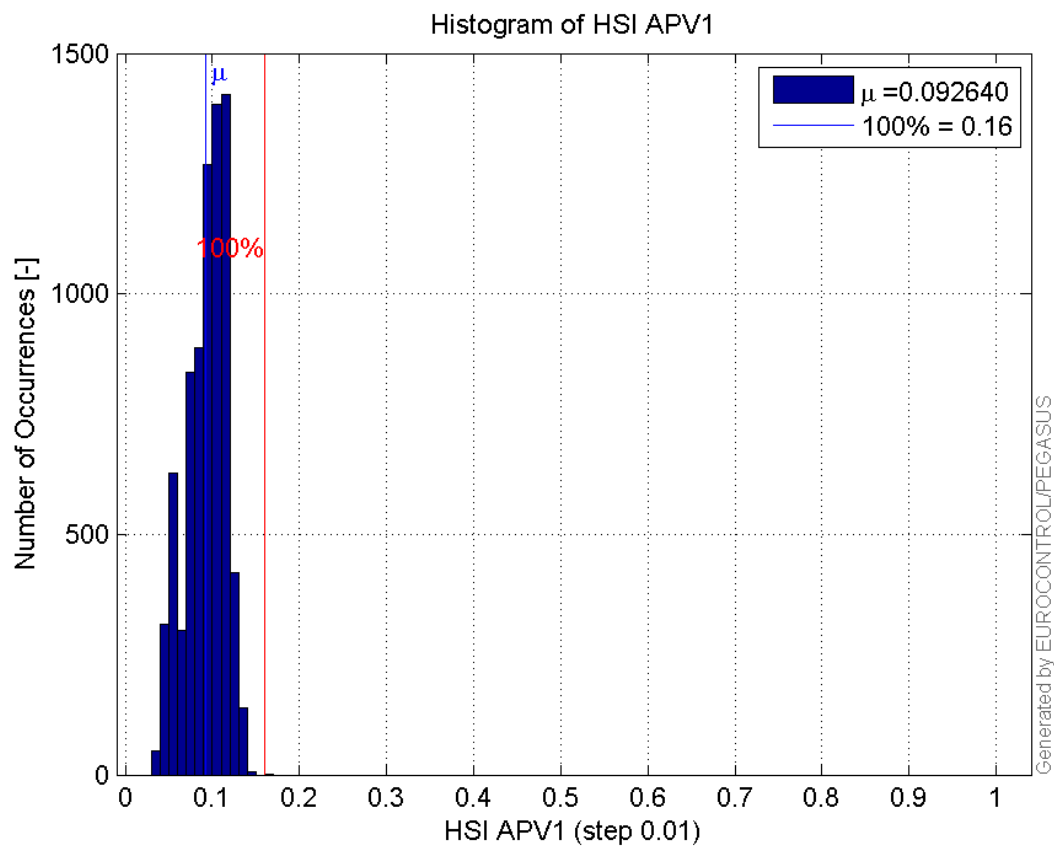
Histogram of HPL APV1:



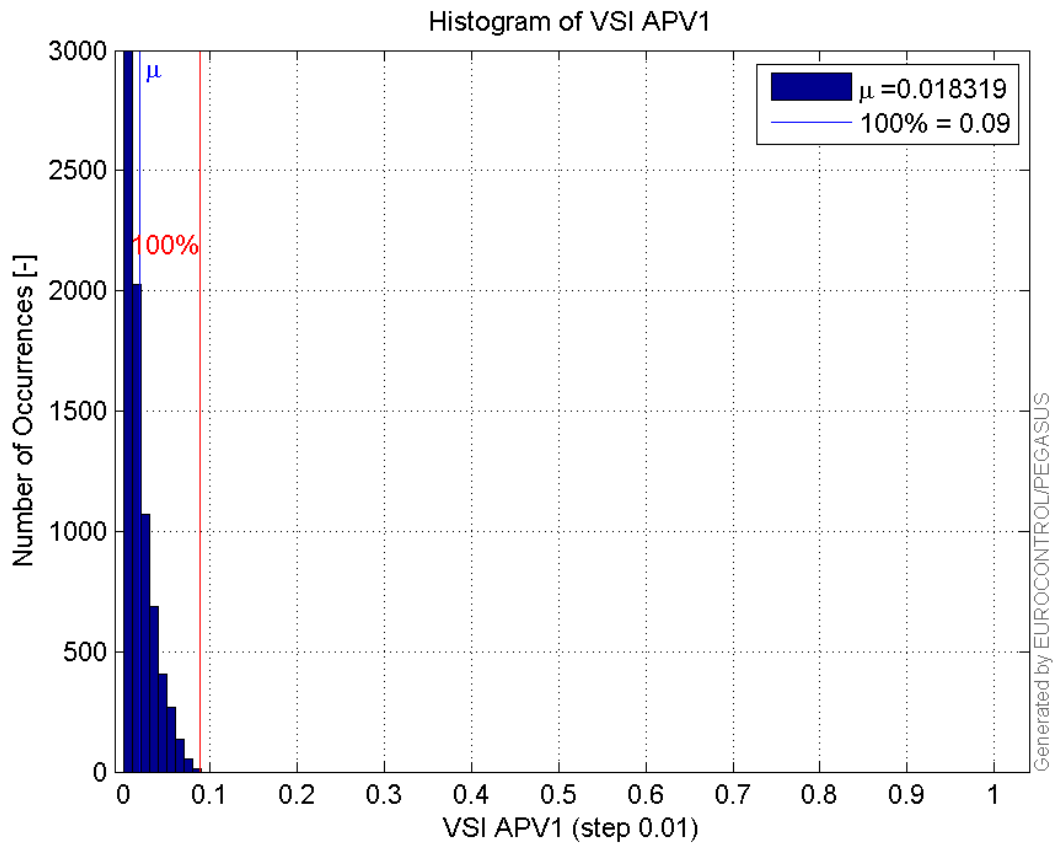
Histogram of VPL APV1:



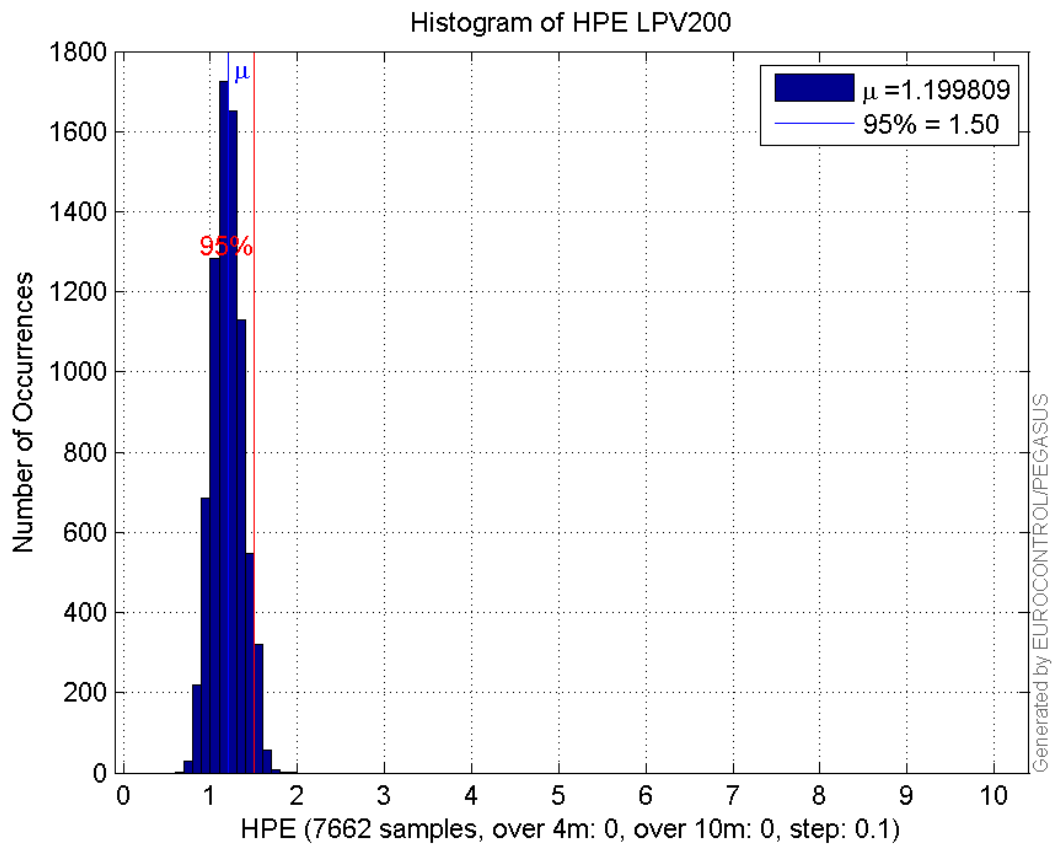
Histogram of HSI APV1:



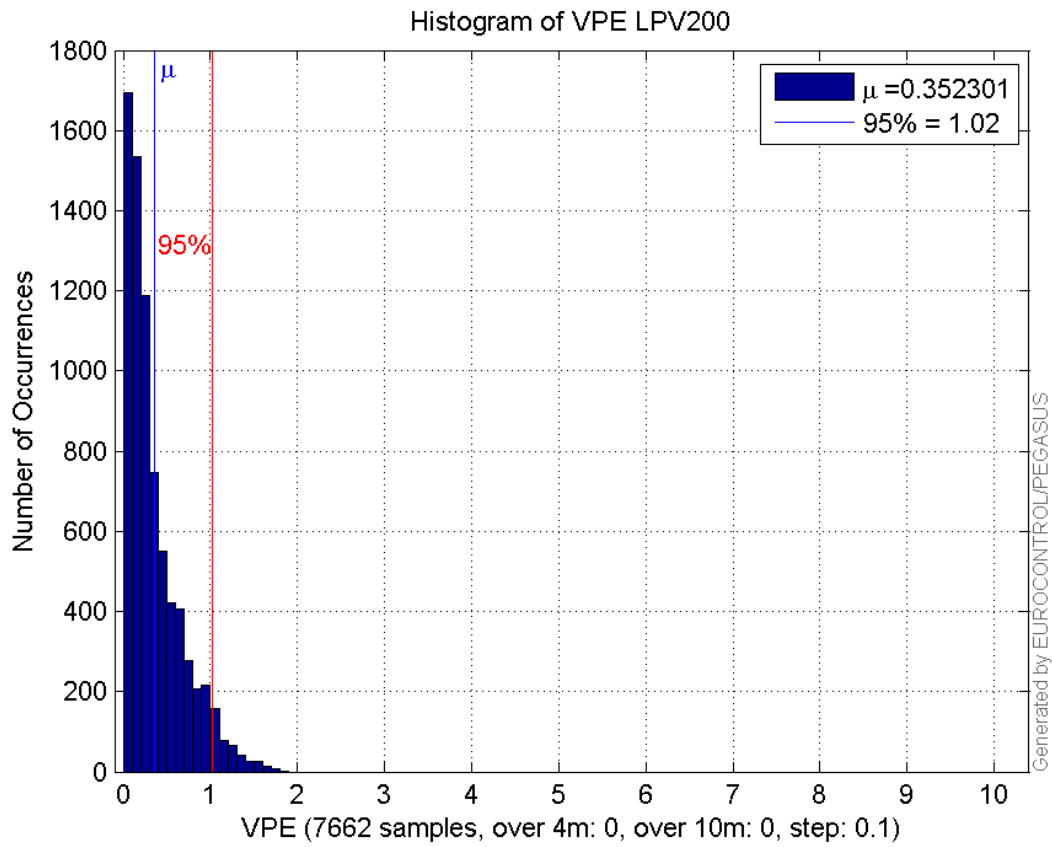
Histogram of VSI APV1:



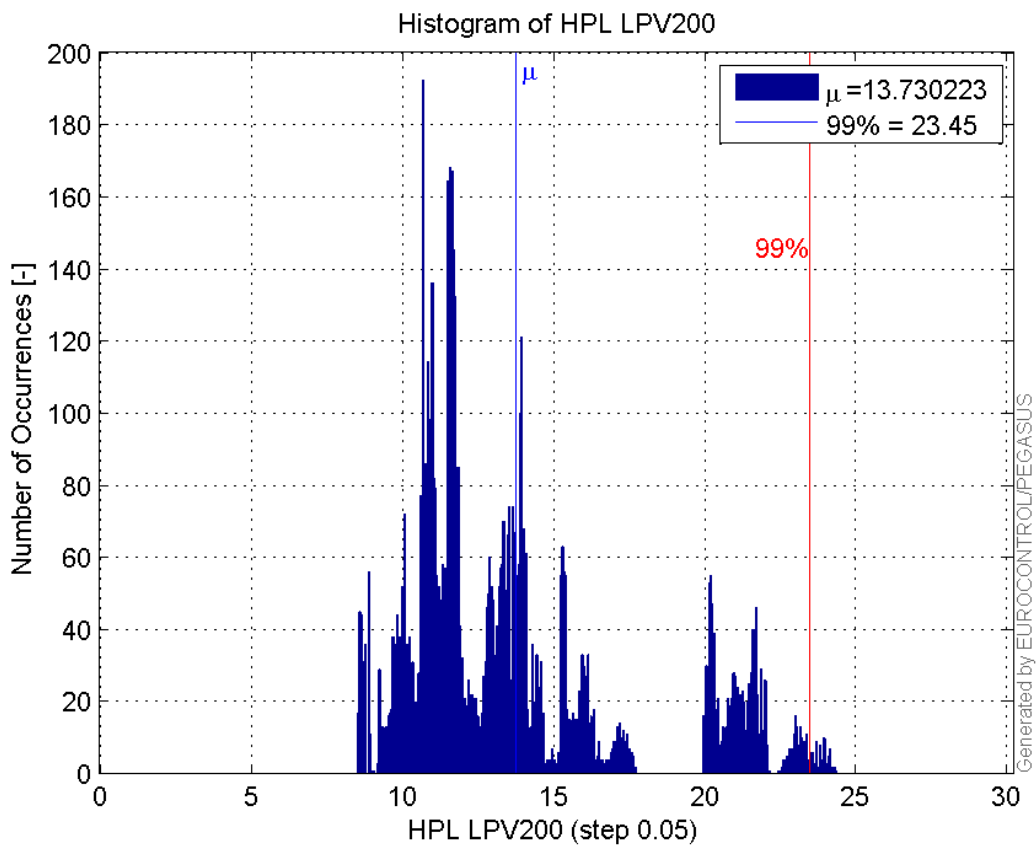
Histogram of HPE LPV200:



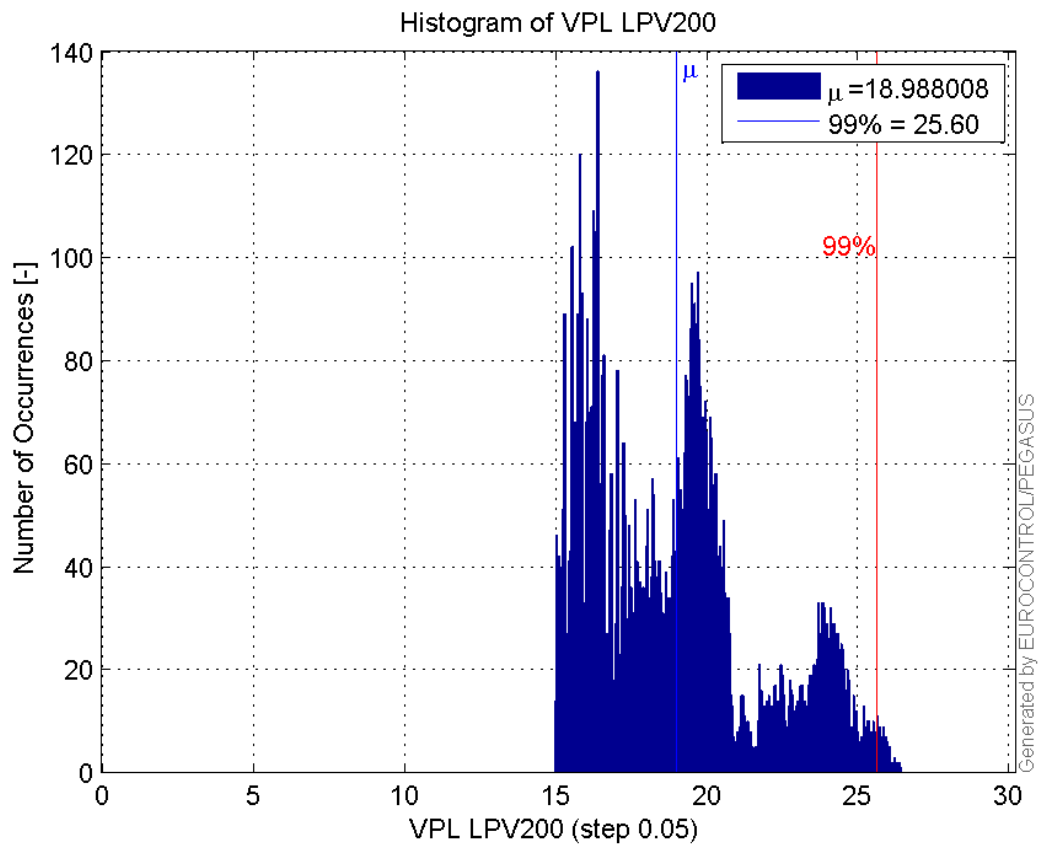
Histogram of VPE LPV200:



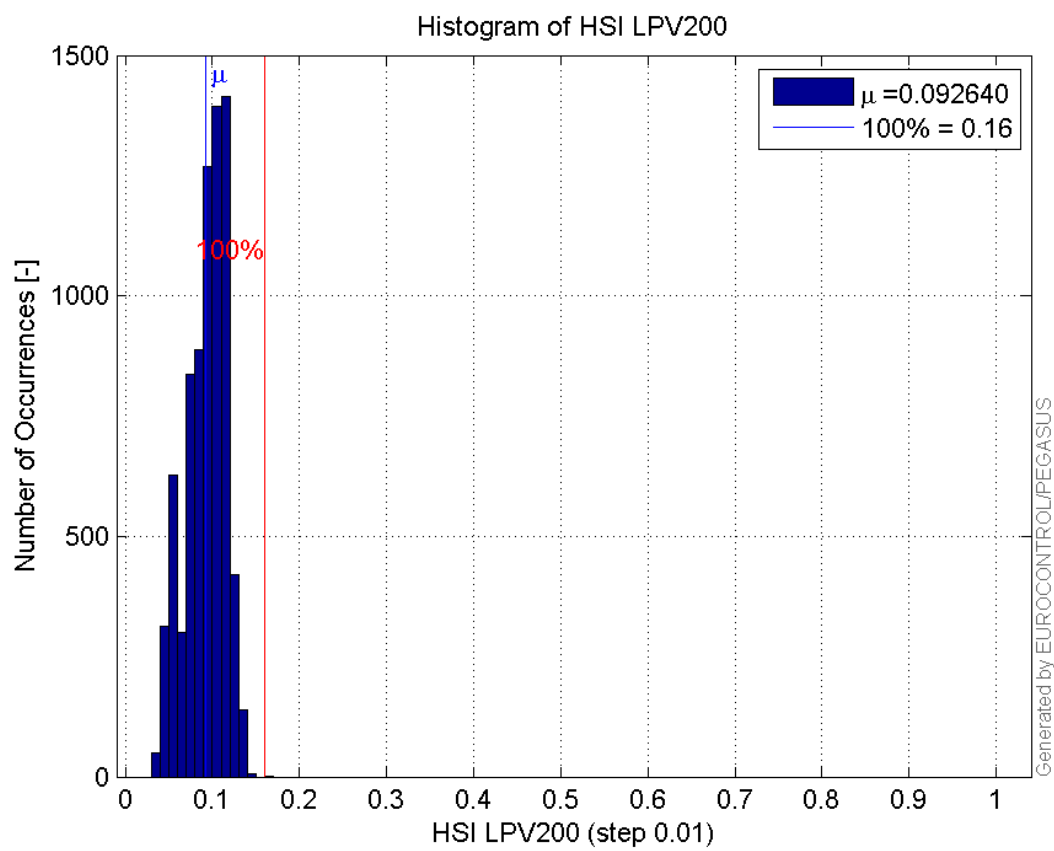
Histogram of HPL LPV200:



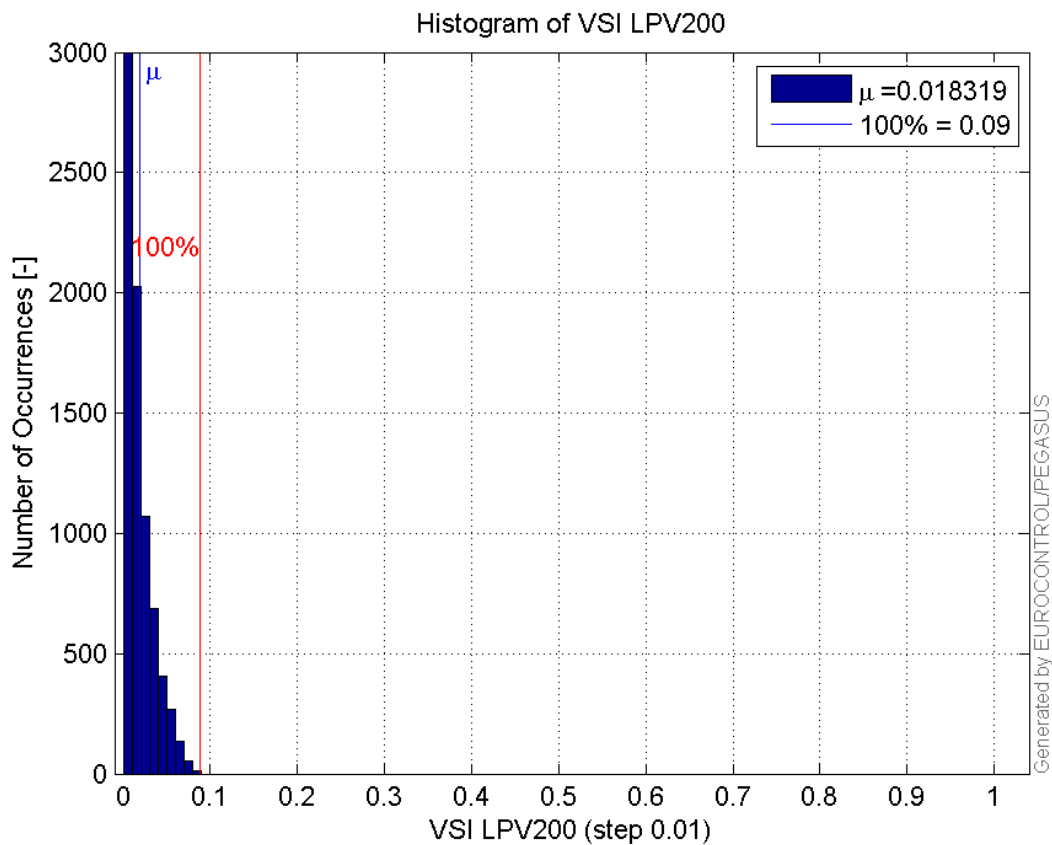
Histogram of VPL LPV200:



Histogram of HSI LPV200:

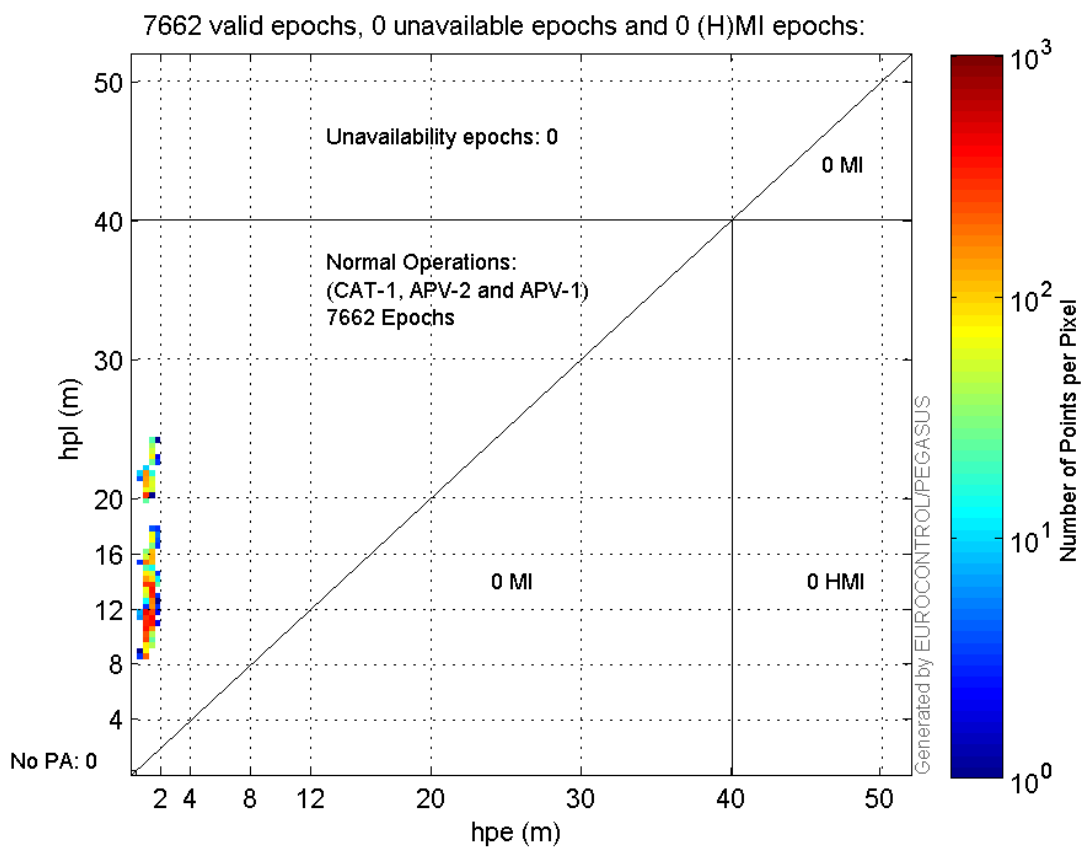


Histogram of VSI LPV200:

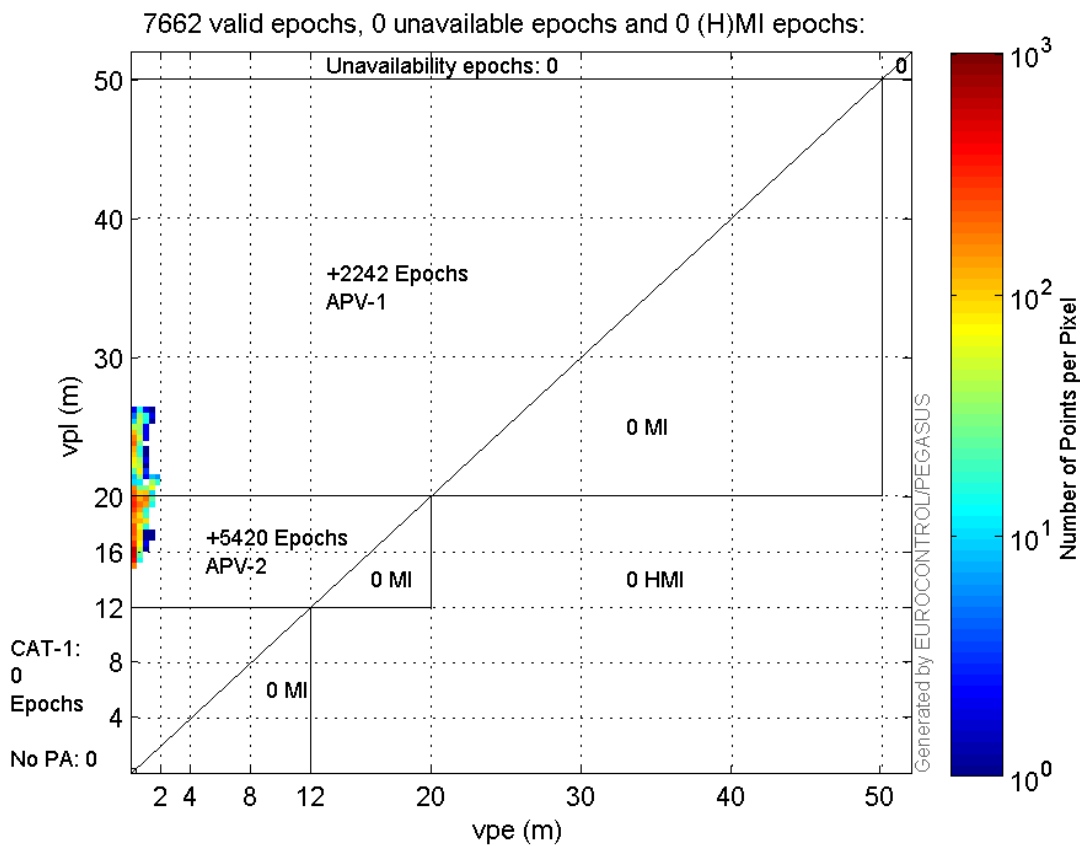


Stanford Plots

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/2016_09_13_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_09_13_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	30.4296
init_alt	results	238.571
mi_numbers	results	0

Range Domain

start: 08:16:45 13.09.2016 (week: 1914 sec: 202605)
end: 10:30:27 13.09.2016 (week: 1914 sec: 210627)
duration: 02:13:43 ..

quality

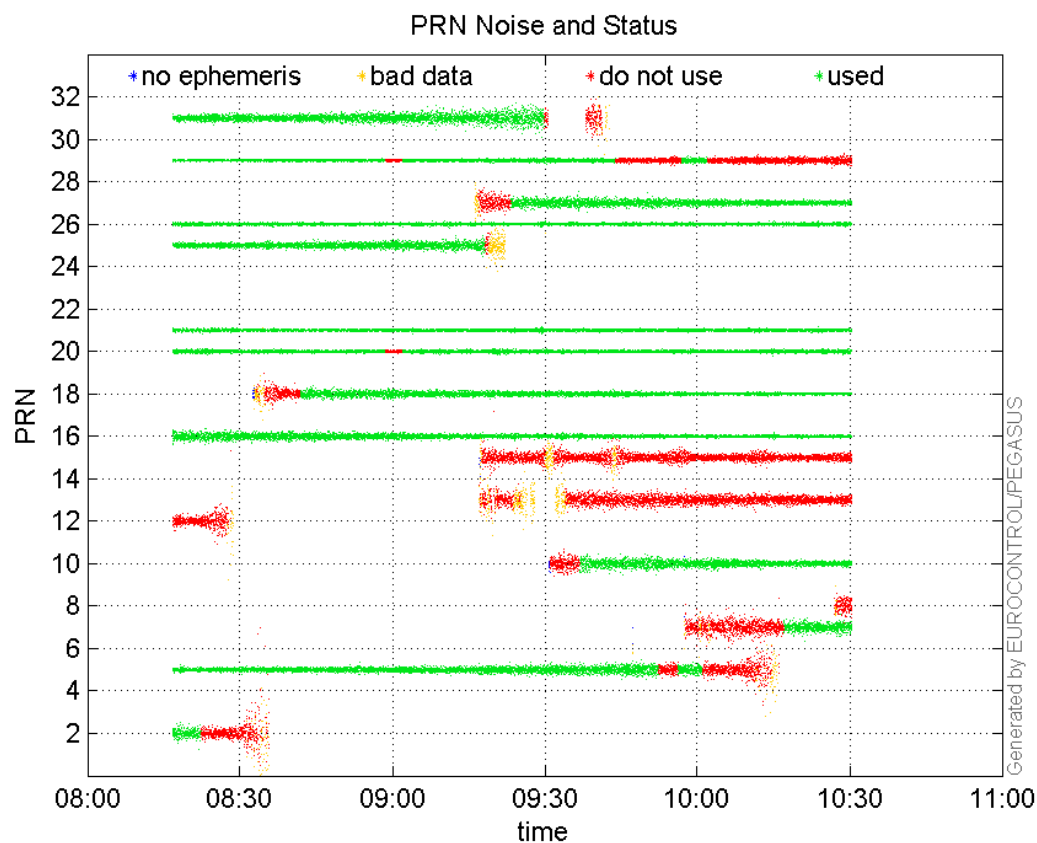
valid samples 8023
total samples 8023

PRN overview

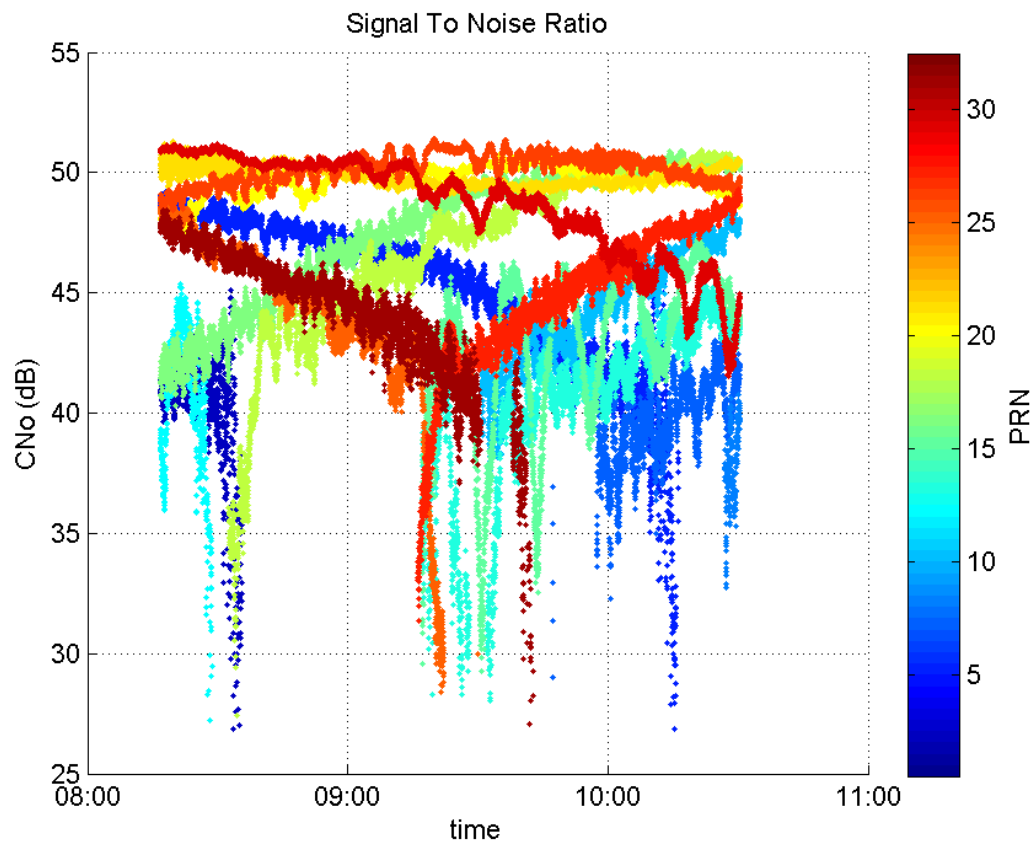
Number of Visible GPS Satellites 17
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



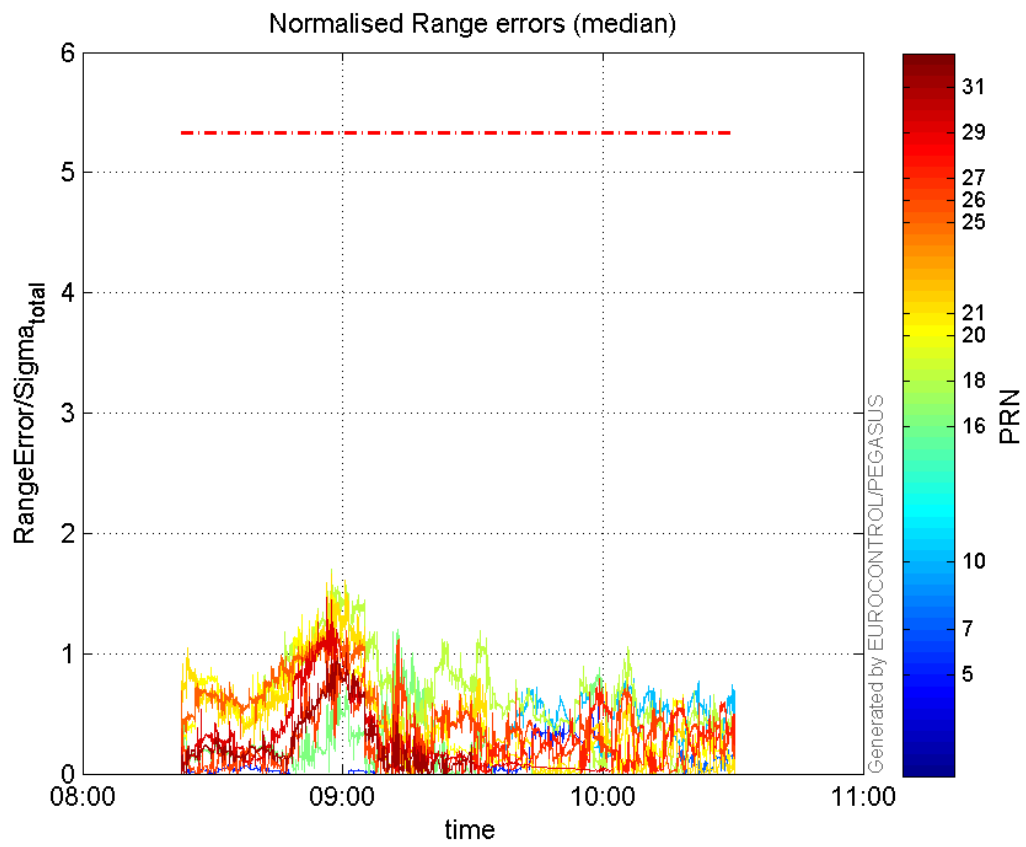
range errors

Number of Overbounding Norm Errors 0

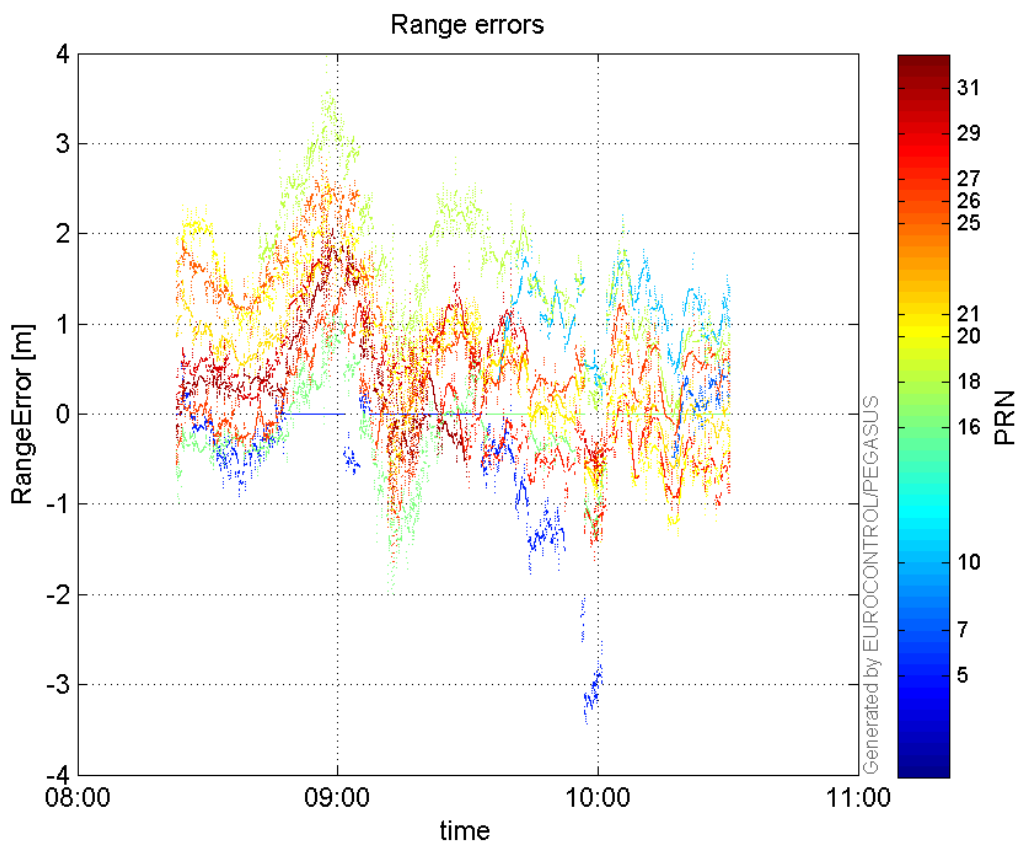
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1914	208794	5	0.667729	-3.2043	4.7988
1914	210607	7	0.208122	0.565767	2.71844
1914	209147	10	0.870697	2.20819	2.53611
1914	205967	16	1.20253	-1.98778	1.653
1914	205047	18	1.69952	3.87725	2.28138
1914	205047	20	1.64143	2.82342	1.7201
1914	205047	21	1.66424	2.18259	1.31146
1914	204979	25	1.27538	2.84176	2.22817
1914	205253	26	1.18716	1.6896	1.42323
1914	208749	27	0.787252	-1.62355	2.06231
1914	204979	29	1.46291	2.2551	1.54152
1914	205253	31	1.00661	2.19916	2.18472

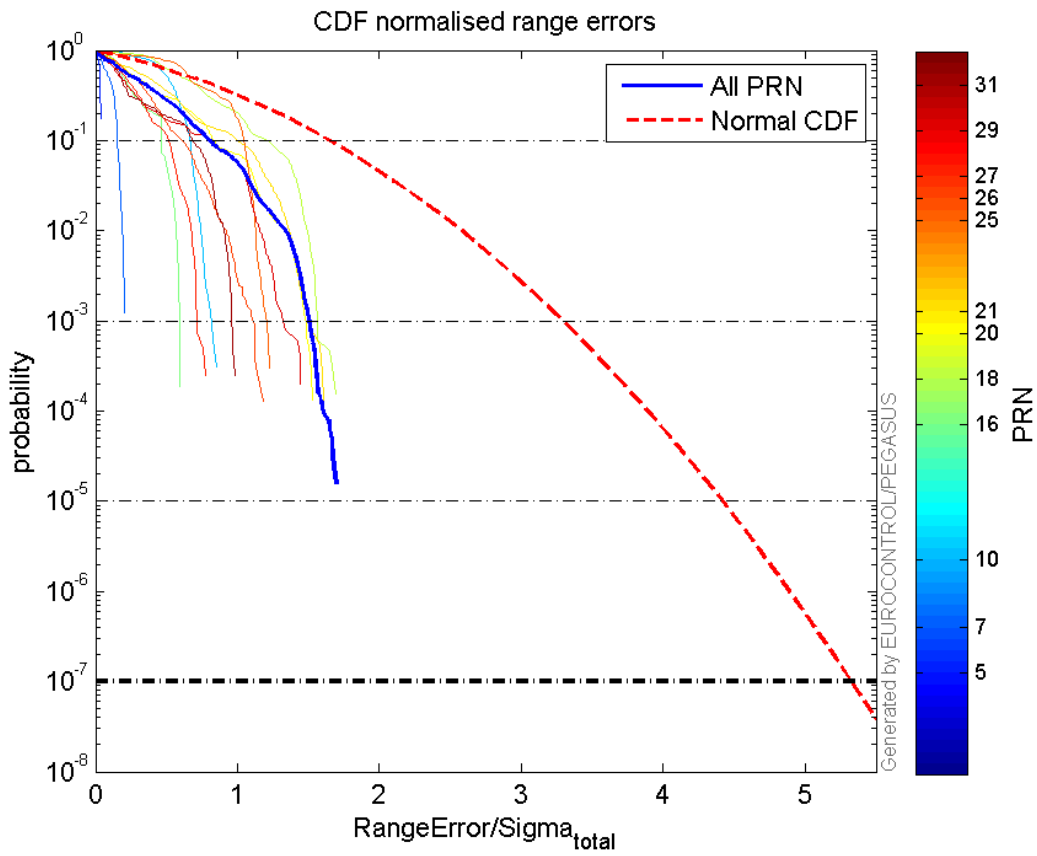
Normalised Range errors (median):



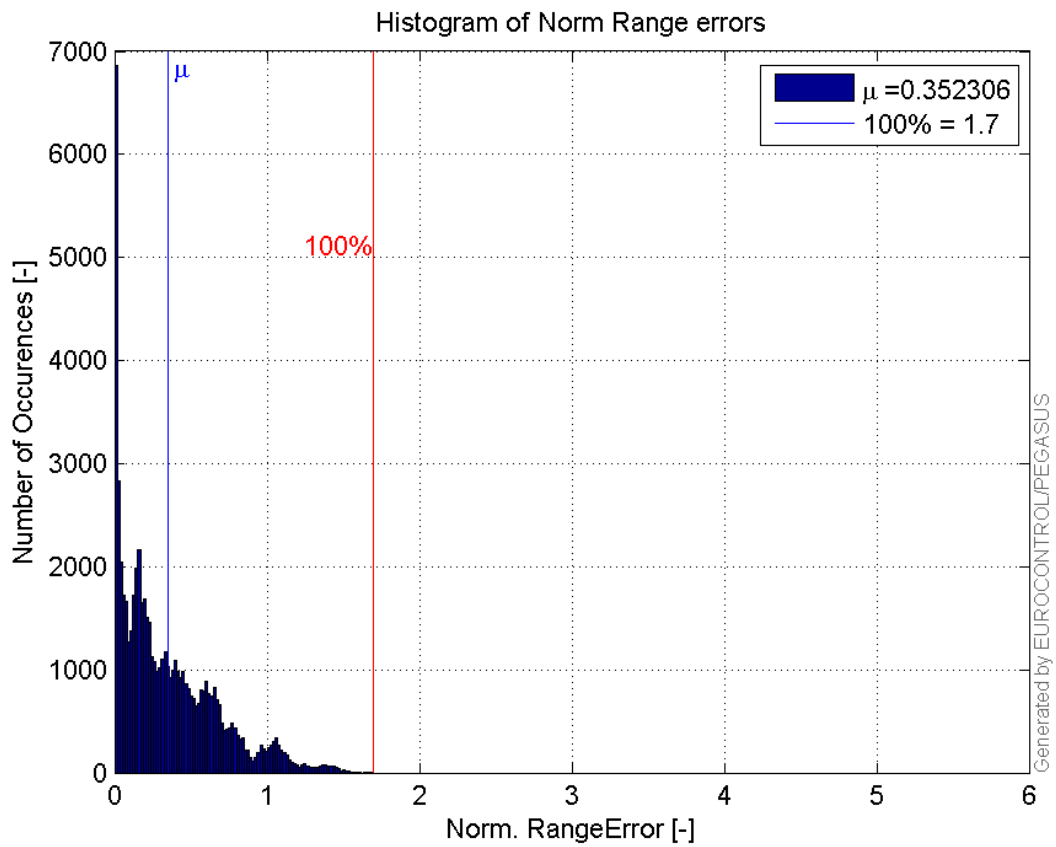
Range errors:



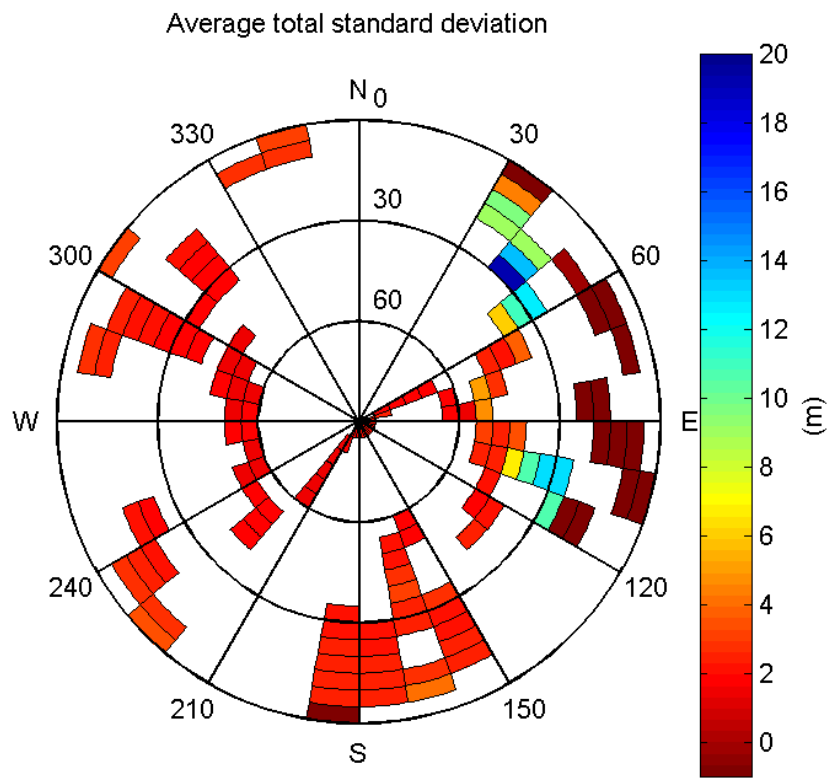
CDF normalised range errors:



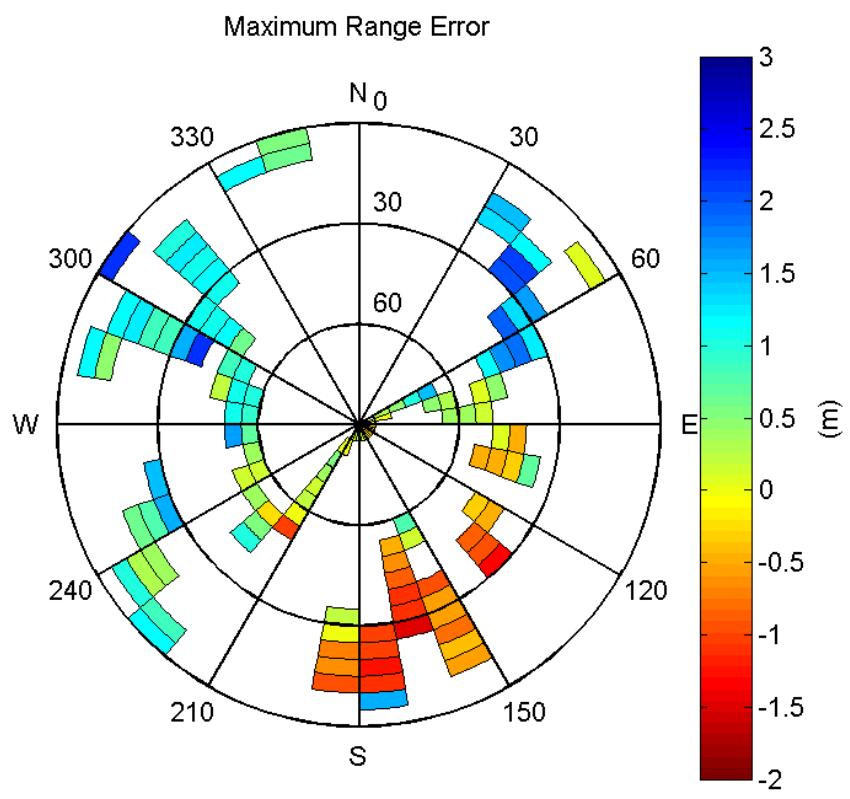
Histogram of Norm Range errors:



Sigma Sky Plot:

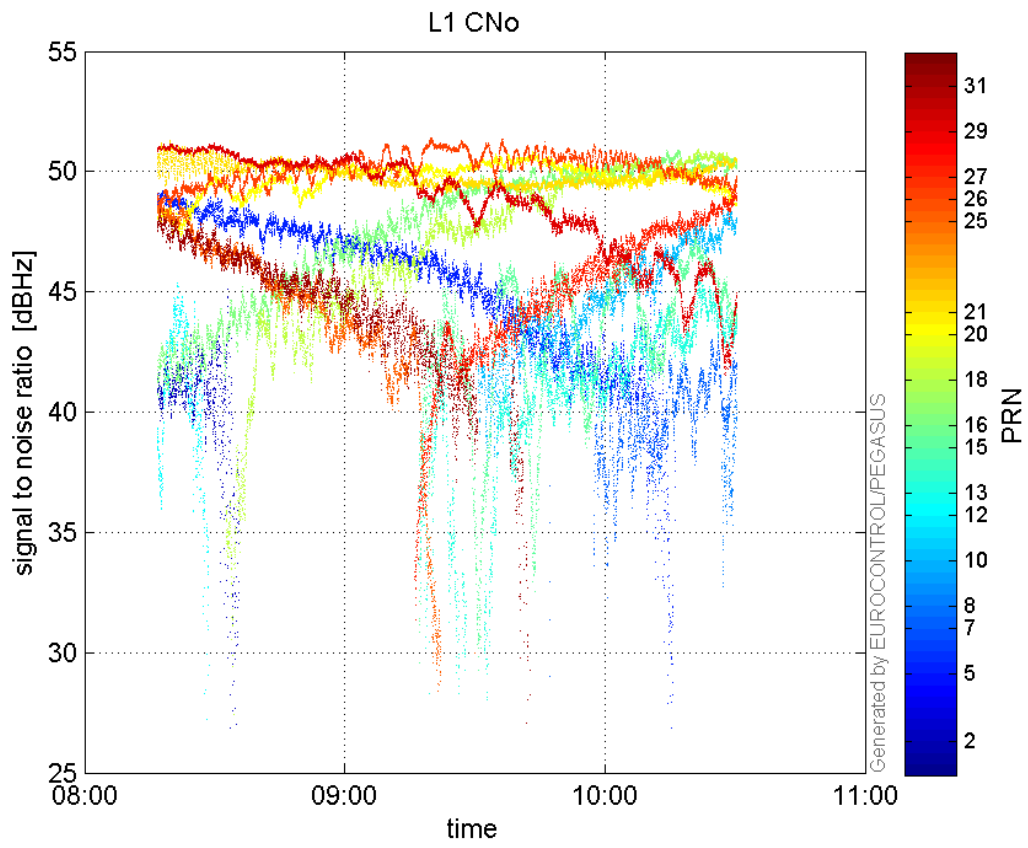


Norm Error Sky Plot:

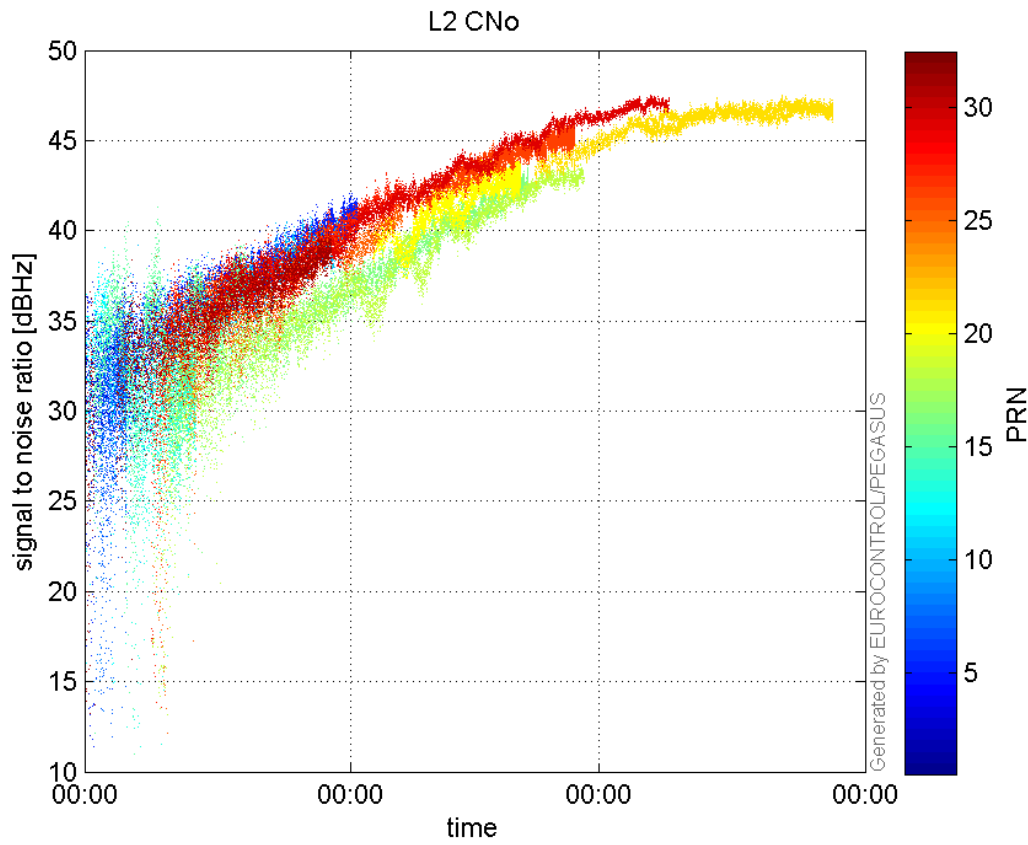


signal quality

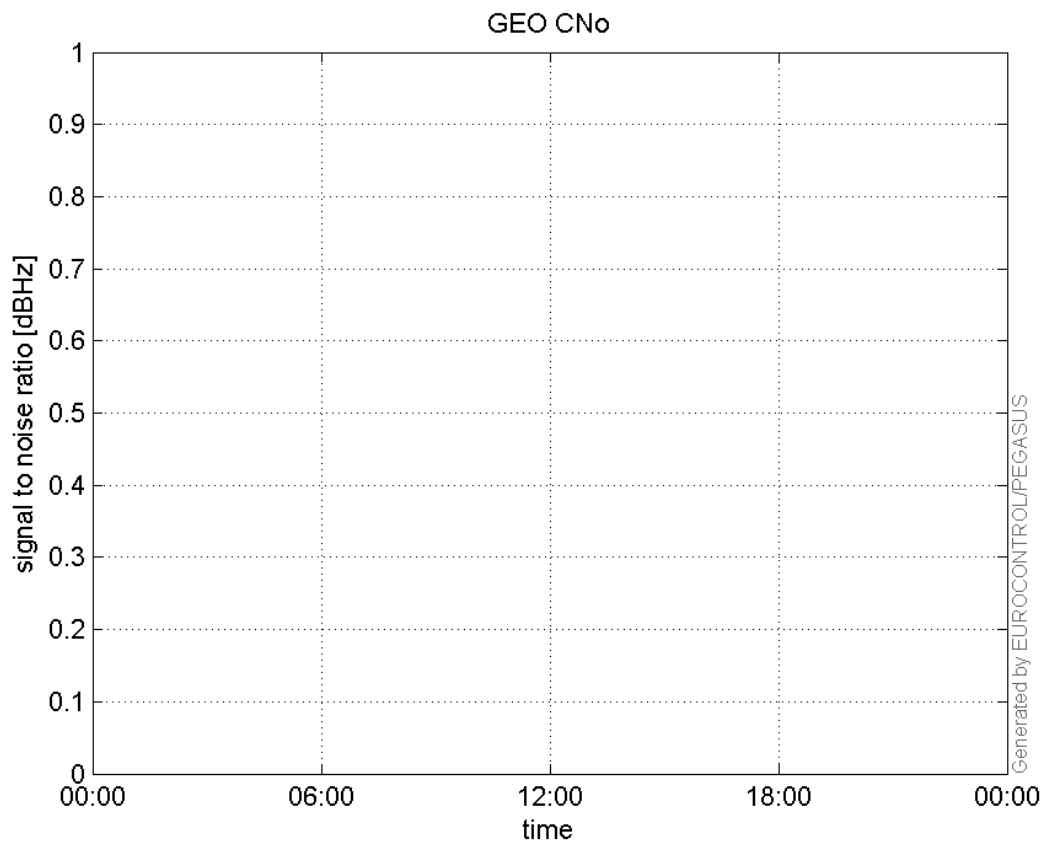
L1 CNo:



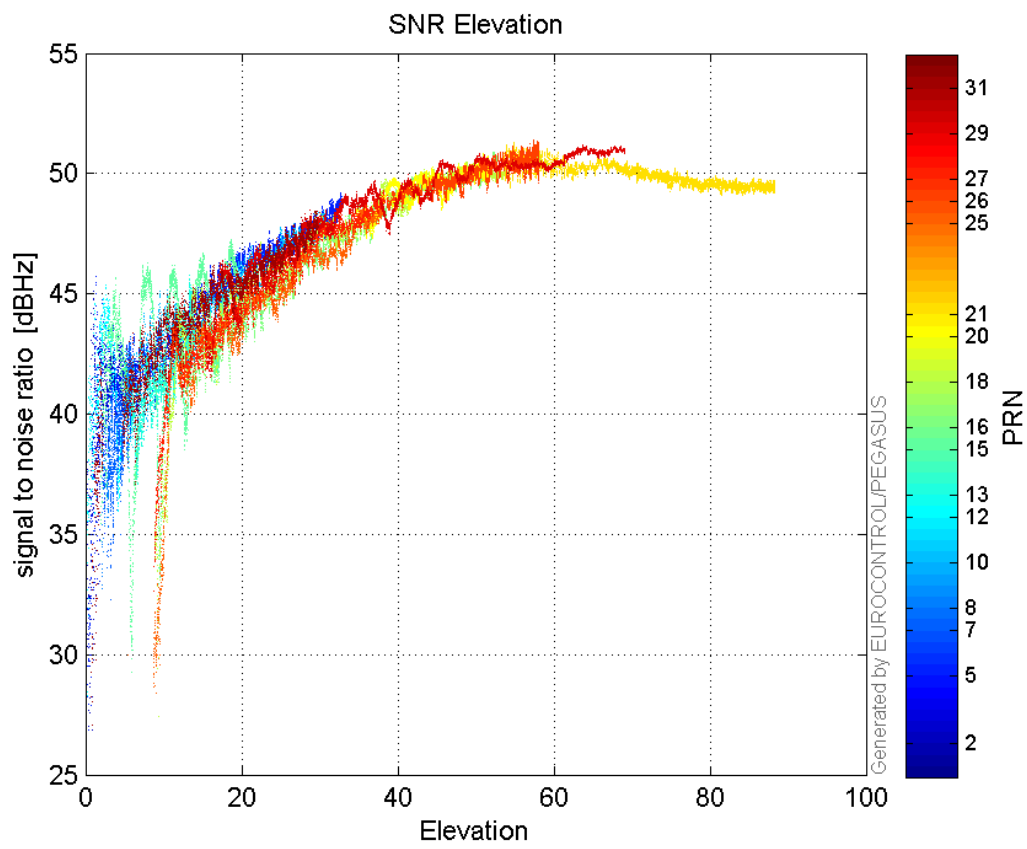
L2 CNo:



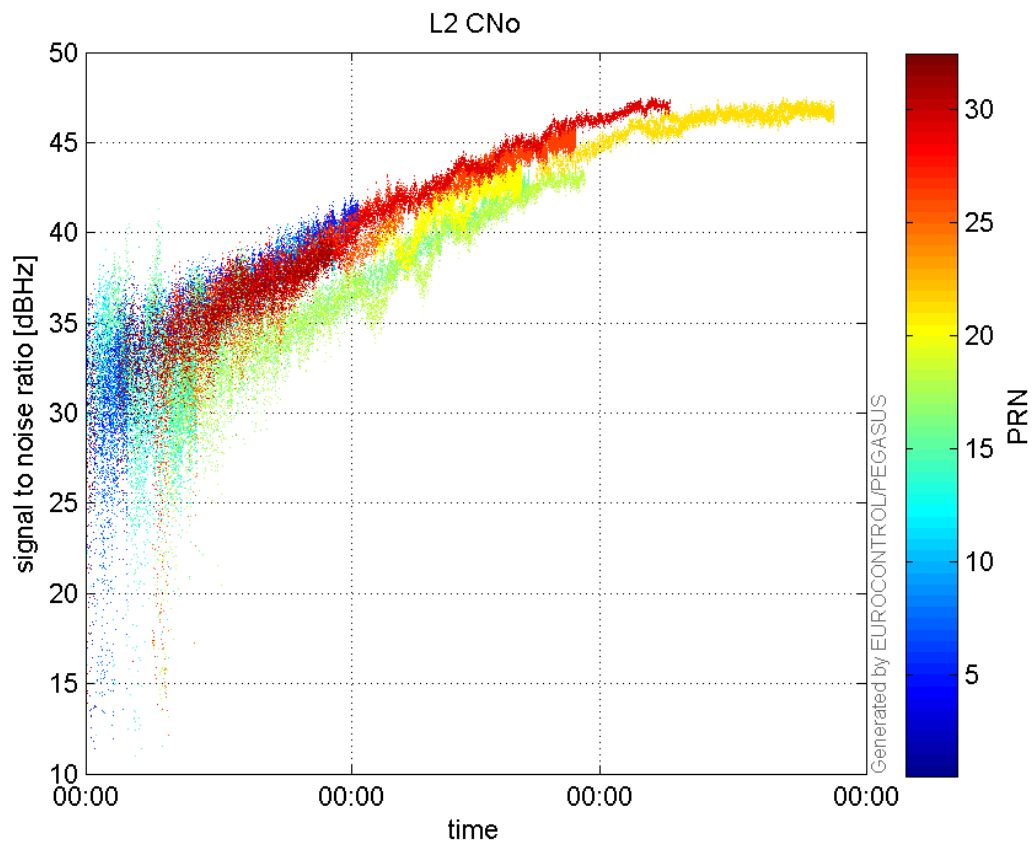
GEO CNo:



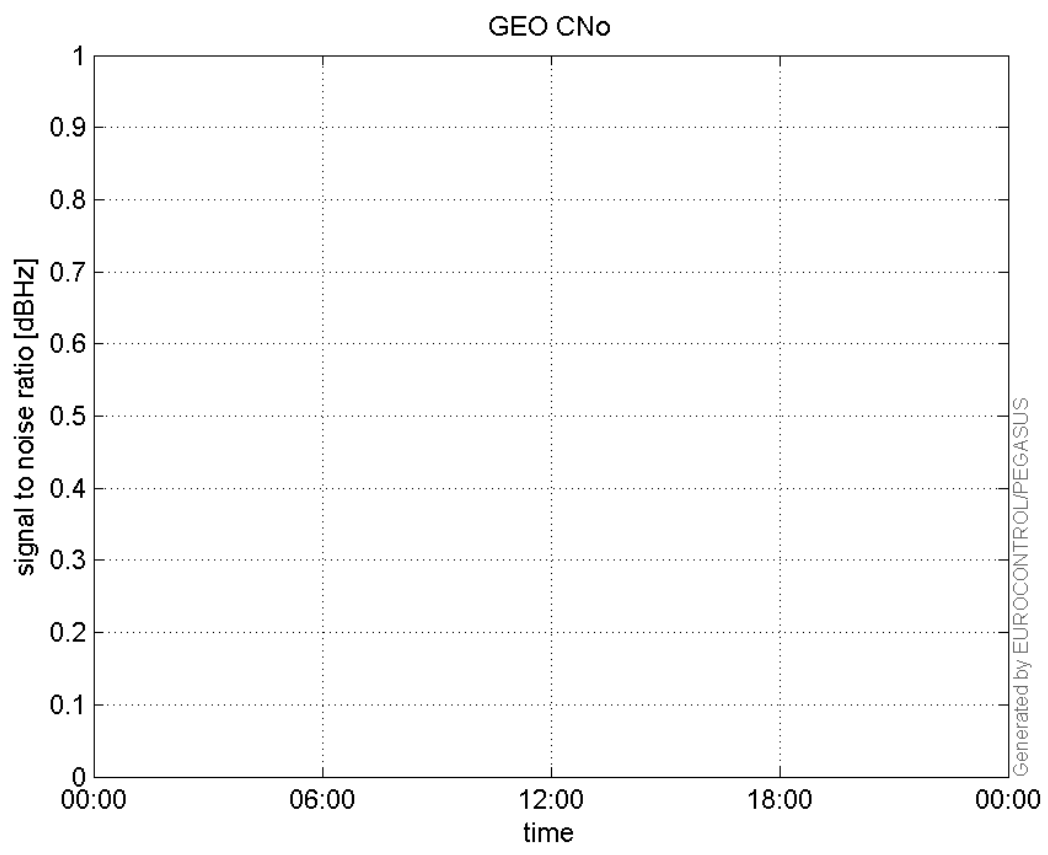
SNR Elevation:



L2 CNo:

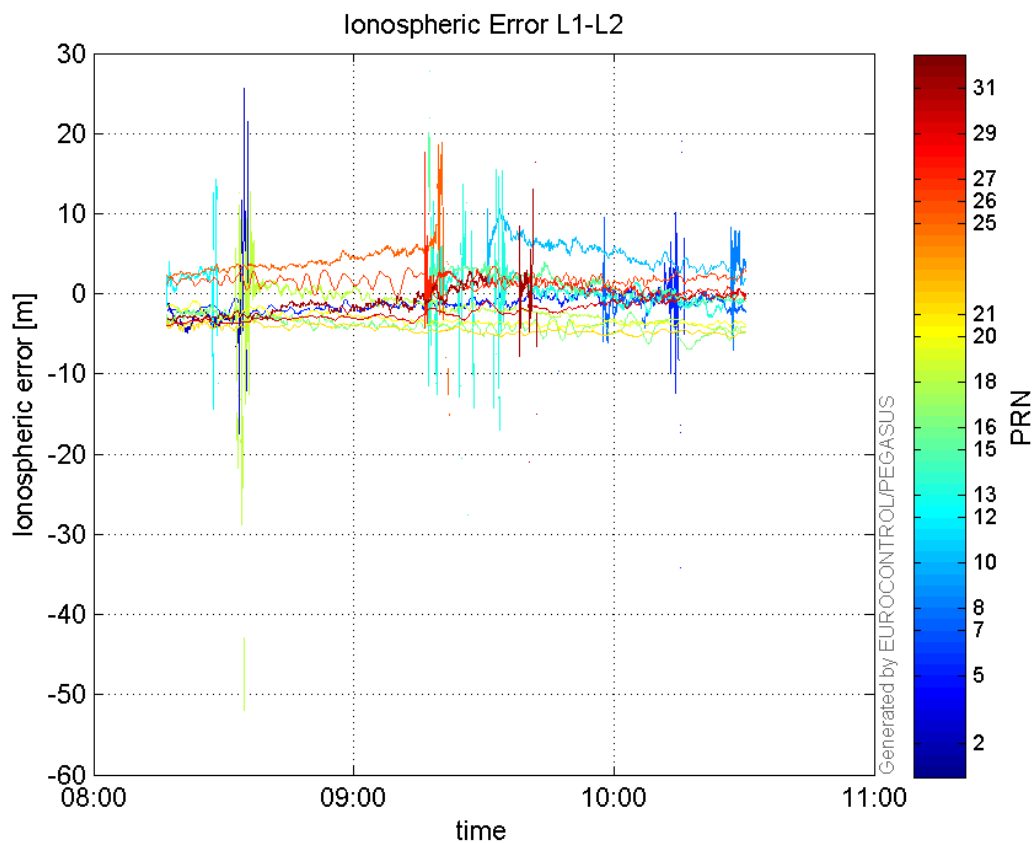


GEO CNo:



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_13_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_09_13_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	30.4296
init_alt	results	238.571
mi_numbers	results	0