

# 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 15/05/2016

## SBAS Messages

**start:** 08:07:57.129 12.05.2016 ( week: 1896 sec: 374877.129 )  
**end:** 12:44:48.129 12.05.2016 ( week: 1896 sec: 391488.129 )  
**duration:** 04:36:51 ..

### quality

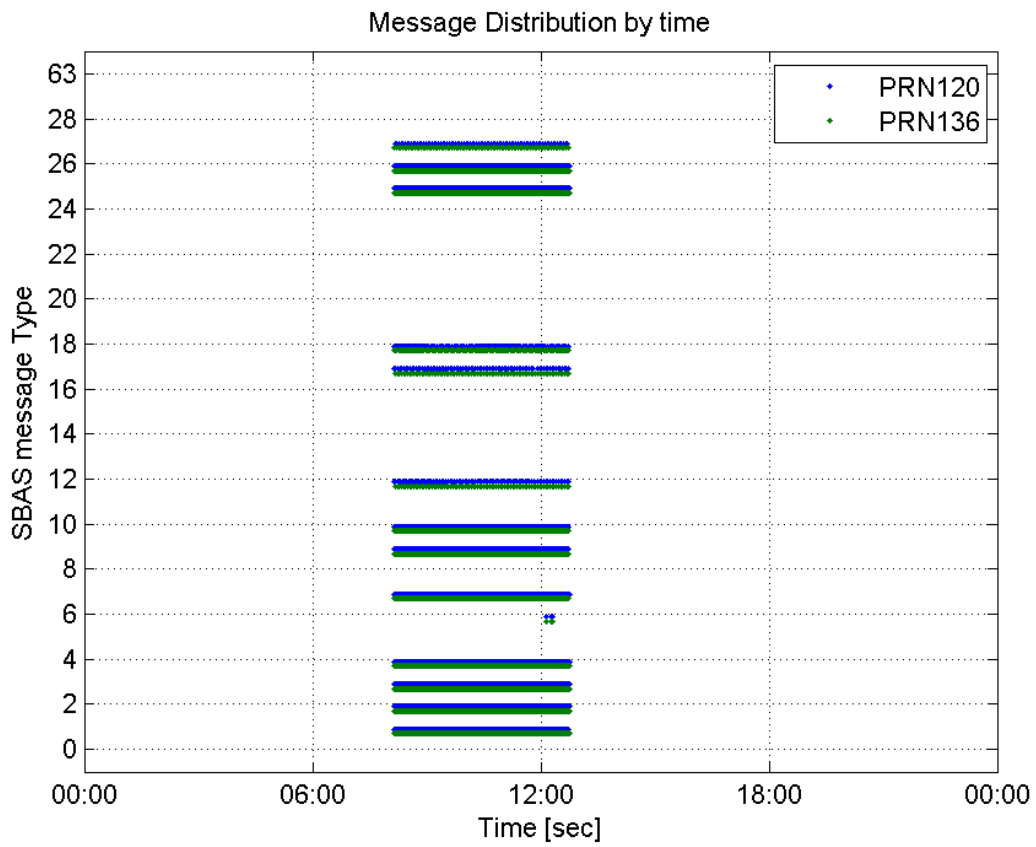
**valid samples** 33170  
**total samples** 33170  
**number of SBAS PRNs** 2

### SBAS SIS Overview

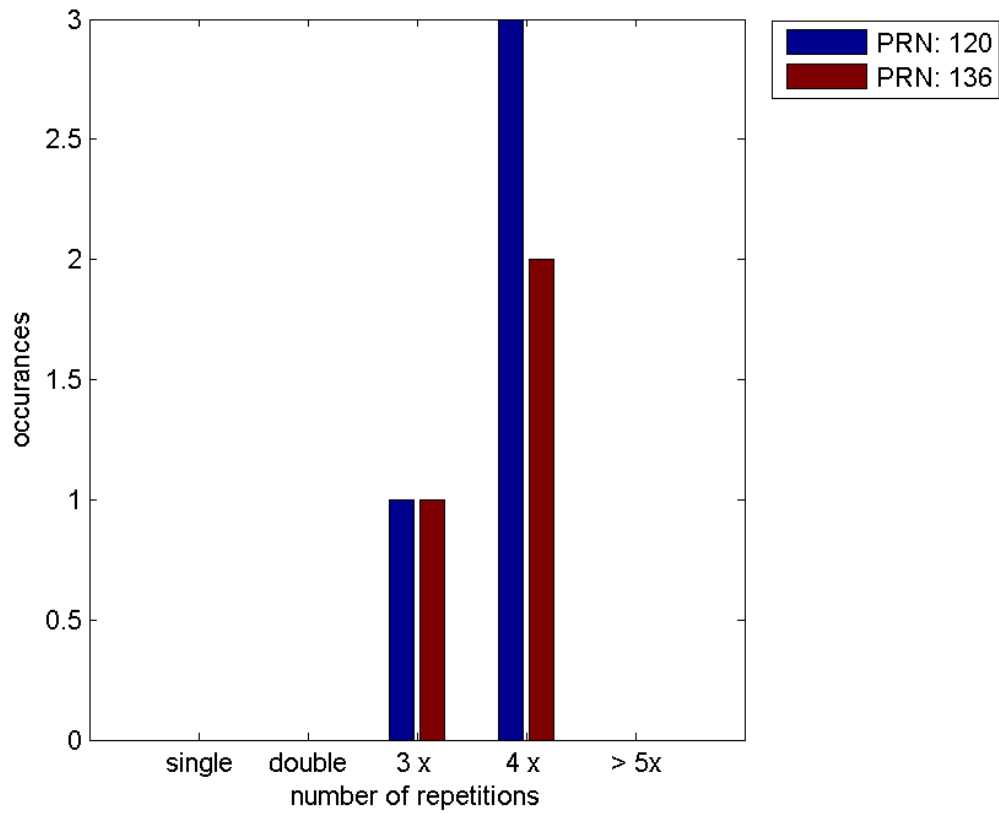
#### Message Type 6 repetitions :

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

#### Message Distribution by time:



**Message Type 6 repetitions:**



## Broadcast SBAS Messages :

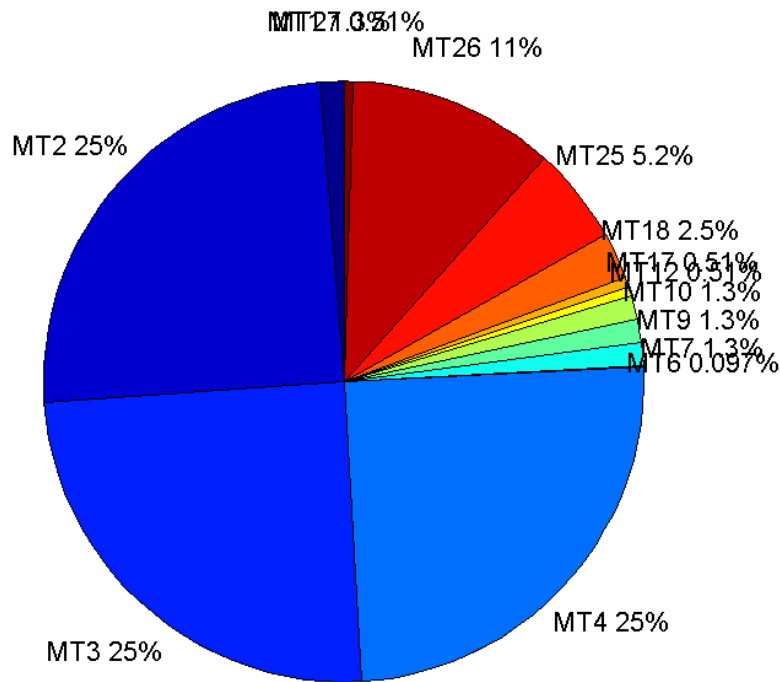
	number of messages	%
MT 0	0	0
MT 1	208	1.25619
MT 2	4112	24.8339
MT 3	4110	24.8218
MT 4	4114	24.846
MT 5	0	0
MT 6	16	0.09663
MT 7	208	1.25619
MT 9	209	1.26223
MT 10	207	1.25015
MT 12	84	0.507308
MT 17	84	0.507308
MT 18	420	2.53654
MT 24	0	0
MT 25	853	5.15159
MT 26	1849	11.1668
MT 27	84	0.507308
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	16558	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	80	79.8357	0	0	0
MT 2	4	43	4.03941	6	2	2
MT 3	4	66	4.04137	5	1	1
MT 4	4	27	4.03841	7	2	3
MT 5	--	--	--	--	--	--
MT 6	1	459	35.3333	3	2	2
MT 7	75	161	80.1063	1	0	0
MT 9	76	81	79.7596	0	0	0
MT 10	76	162	80.2476	1	0	0
MT 12	188	399	199.253	83	1	1
MT 17	191	396	199.253	0	0	0
MT 18	4	171	39.4702	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	48	19.4718	0	0	0
MT	3	64	8.97727	0	0	0

26						
MT 27	190	201	196.88	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	209	1.25813
MT 2	4122	24.8134
MT 3	4122	24.8134
MT 4	4121	24.8074
MT 5	0	0
MT 6	12	0.0722369
MT 7	208	1.25211
MT 9	208	1.25211
MT 10	208	1.25211

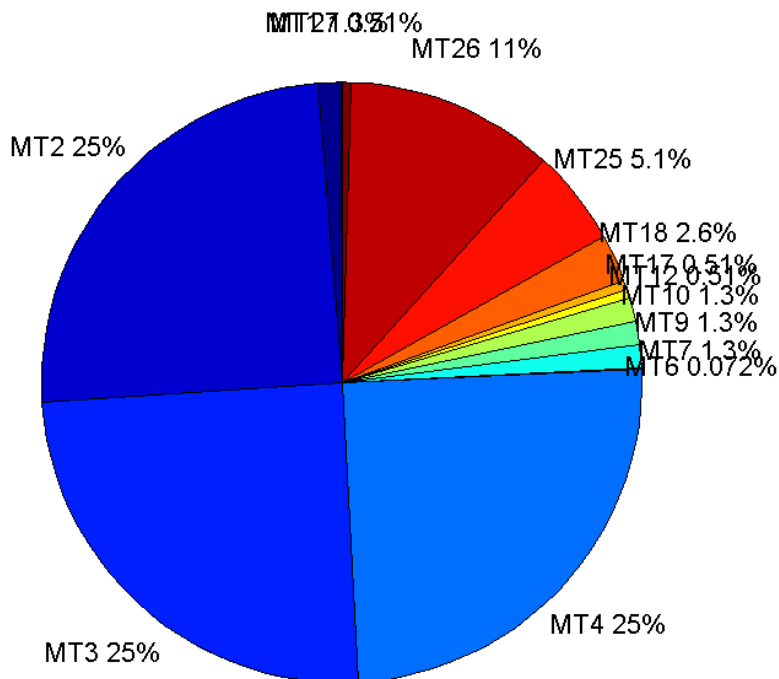
MT 12	85	0.511678
MT 17	85	0.511678
MT 18	425	2.55839
MT 24	0	0
MT 25	854	5.14086
MT 26	1868	11.2449
MT 27	85	0.511678
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	16612	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.774	0	0	0
MT 2	4	8	4.03033	3	0	0
MT 3	4	8	4.03033	3	0	0
MT 4	4	7	4.03034	3	0	0
MT 5	--	--	--	--	--	--
MT 6	1	458	48	2	2	2
MT 7	76	81	79.8841	0	0	0
MT 9	76	81	79.8647	0	0	0
MT 10	76	81	79.8647	0	0	0
MT 12	188	201	195.631	84	0	0
MT 17	190	201	195.583	0	0	0
MT 18	4	159	38.8703	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	48	19.4572	0	0	0
MT 26	3	32	8.89395	0	0	0
MT 27	190	201	195.702	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

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Message Distribution PRN 136:



### Parameters

#### System

Name	Section	Value
Name	System	Convertor
Version	System	4.3
Inputfile	System	D:/PegasusDateJob/job/2016_05_12_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_05_12_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:** 08:07:58 12.05.2016 ( week: 1896 sec: 374878 )  
**end:** 12:44:49 12.05.2016 ( week: 1896 sec: 391489 )  
**duration:** 04:36:52 ..

#### quality

**valid samples** 16249  
**total samples** 16612

## Event tables

Position discontinuity events type all  
 APV-I discontinuity events type all  
 APV-35m discontinuity events type all  
 LPV-200 discontinuity events type all  
 CAT-I discontinuity events type long

## extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	384164	1.7424	10.0816	0.17283	1.19889	19.2085	0.0624147
max normVer	380046	0.958536	11.8271	0.0810457	1.81168	15.0122	0.12068
max HPE	391400	20.0357	389.98	0.0513762	-11.2137	190.425	0.0588877
max VPE	391222	14.507	345.198	0.0420251	-47.5939	989.489	0.0480994
min HPL	377262	0.85368	8.49412	0.100502	0.483186	11.5712	0.0417577
min VPL	377263	0.880301	8.54809	0.102982	0.491953	11.5641	0.0425414

## Position discontinuity events :

#	Epoch	duration	stable period
1	388290	55	13049
2	391151	63	2806
3	391215	3	1
4	391343	36	125

## APV-I discontinuity events :

#	Epoch	duration	stable period
1	386839	131	11598
2	388290	59	1320

## APV-35m discontinuity events :

#	Epoch	duration	stable period
1	386839	131	11598
2	388290	59	1320

## LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	386839	131	11598
2	388290	59	1320

## CAT-I discontinuity events :

#	Epoch	duration	stable period
1	377156	4	1

## First Glance analysis

Duration 16612  
 Number of Samples 16612

Number of invalid sample	363
Number of no position solution samples	157
Number of missing sample	0
Logging Loss	0
Processing Loss	2.1852
Number of Misleading Information	0
Data gaps	0
Discontinuities	4

## Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
16092	15436	15436	154	15436

## Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.59403	1.50024	1.50024	0.892414	1.50024
HPEscale 95%	NaN	4.90405	4.90405	4.12681	4.90405
VPE 95%	1.31704	1.20069	1.20069	0.596576	1.20069
VPEscale 95%	NaN	4.05767	2.84037	0.604822	2.84037

## Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.990338	0.949966	0.949966	0.00947751	0.949966
measurements	0.968697	0.929208	0.929208	0.00927041	0.929208
Operational	0.968697	0.929208	0.929208	0.00927041	0.929208

## Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	4	2	2	37	2
Long	3	2	2	1	2
Independent	3	2	2	0	2
P(disc.)	0.00279642	0.00194351	0.00194351	0	0.00194351
P(slide)	0.00285856	0.00194351	0.00194351	0.733766	0.00194351

## 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 :

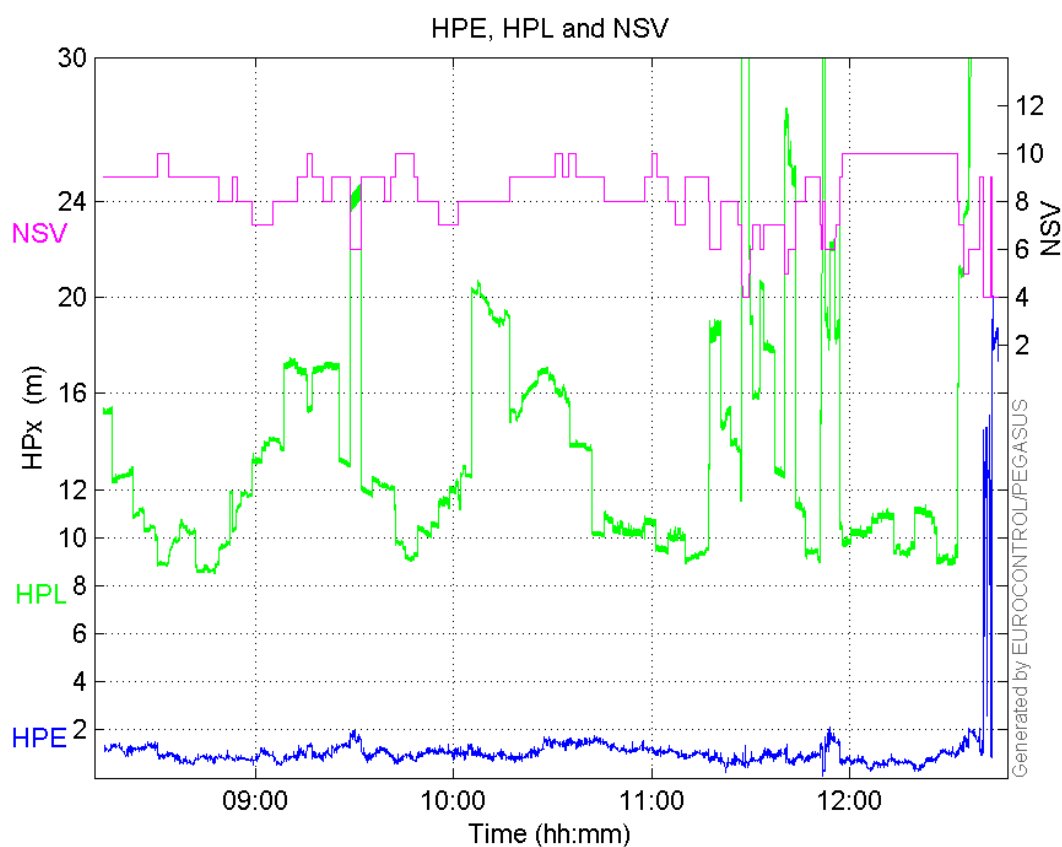
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	16092	15436	15436	154	15436
SIS Availability	0.990338	0.949966	0.949966	0.00947751	0.949966
Local Availability	0.968697	0.929208	0.929208	0.00927041	0.929208
Operational Availability	0.968697	0.929208	0.929208	0.00927041	0.929208
HPE 95%	1.59403	1.50024	1.50024	0.892414	1.50024



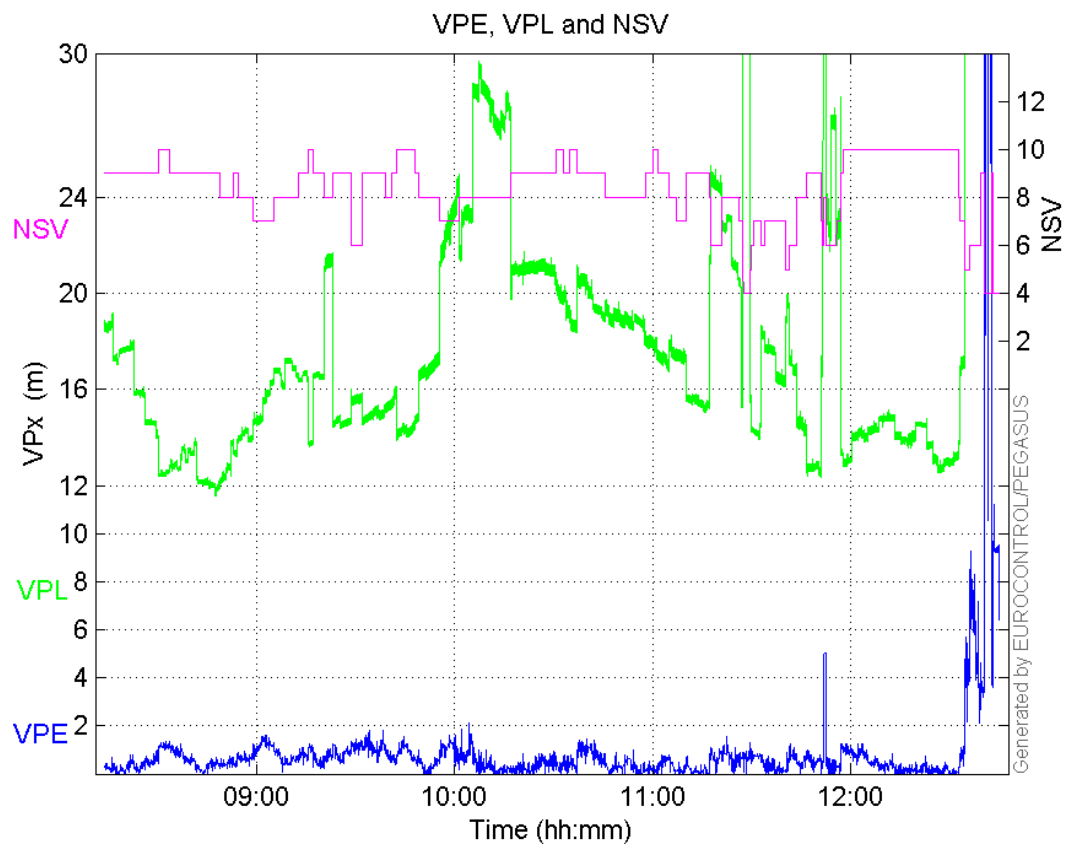
<b>HPEscale 95%</b>	NaN	4.90405	4.90405	4.12681	4.90405
<b>VPE 95%</b>	1.31704	1.20069	1.20069	0.596576	1.20069
<b>VPEScale 95%</b>	NaN	4.05767	2.84037	0.604822	2.84037
<b>All Discontinuity Events</b>	4	2	2	37	2
<b>Long Discontinuity Events</b>	3	2	2	1	2
<b>Independent Discontinuity Events</b>	3	2	2	0	2
<b>P(discontinuity)</b>	0.00279642	0.00194351	0.00194351	0	0.00194351
<b>P(sliding window)</b>	0.00285856	0.00194351	0.00194351	0.733766	0.00194351
<b>All Integrity Events</b>	0	0	0	0	0
<b>Horizontal Integrity Events</b>	0	0	0	0	0
<b>Vertical Integrity Events</b>	0	0	0	0	0

Time Series

HPE, HPL and NSV:

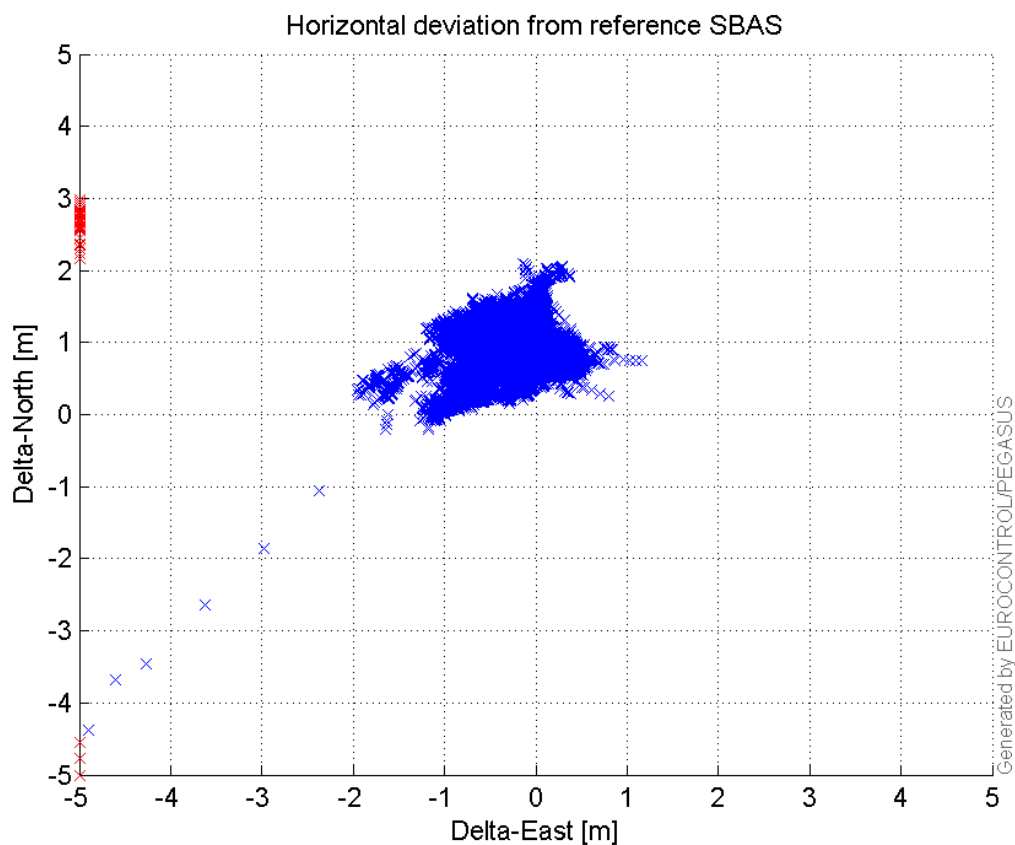


VPE, VPL and NSV:



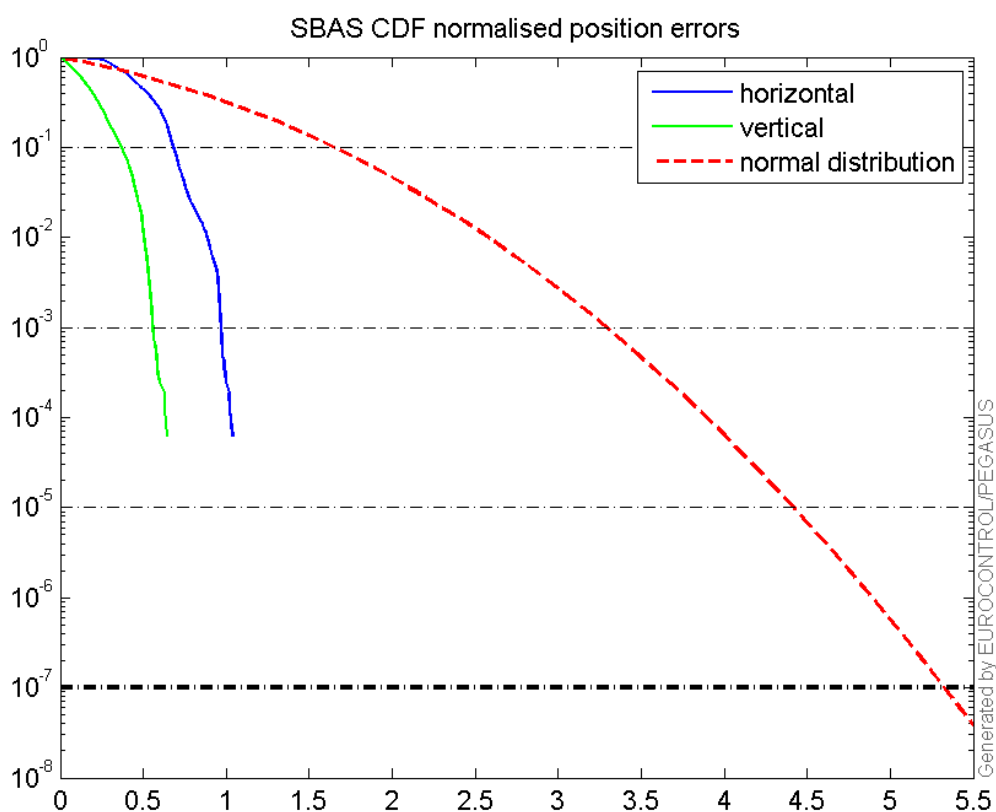
### Horizontal deviation

Horizontal deviation from reference SBAS:



### CDF position

SBAS CDF position domain:



### Statistics

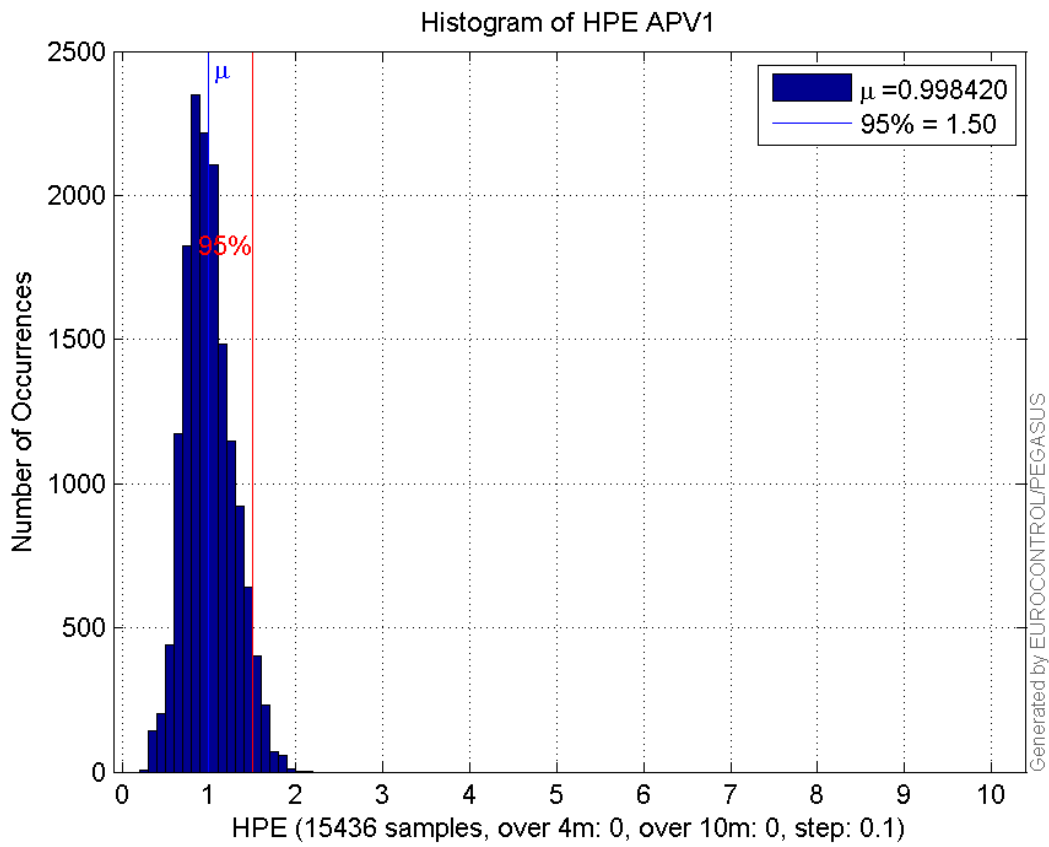
<b>number</b>	15436
<b>sum</b>	15411.618
<b>sum2</b>	16568.674
<b>prctile95</b>	1.5002421
<b>prctile99</b>	1.684171
<b>number</b>	15436
<b>sum</b>	8372.0258
<b>sum2</b>	6594.4613
<b>prctile95</b>	1.2006926
<b>prctile99</b>	1.387197
<b>number</b>	15436
<b>sum</b>	201175.46
<b>sum2</b>	2853101.2
<b>prctile95</b>	20.30827
<b>prctile99</b>	25.03685
<b>number</b>	15436
<b>sum</b>	265710.23
<b>sum2</b>	4812379.4
<b>prctile95</b>	26.70067
<b>prctile99</b>	28.428342
<b>number</b>	15436
<b>sum</b>	1251.6682
<b>sum2</b>	112.23279

**prctile95** 0.1226012  
**prctile99** 0.14814172  
**number** 15436  
**sum** 514.87266  
**sum2** 26.169238  
**prctile95** 0.081153441  
**prctile99** 0.094535913  
**number** 15436  
**sum** 15411.618  
**sum2** 16568.674  
**prctile95** 1.5002421  
**prctile99** 1.684171  
**number** 15436  
**sum** 8372.0258  
**sum2** 6594.4613  
**prctile95** 1.2006926  
**prctile99** 1.387197  
**number** 15436  
**sum** 201175.46  
**sum2** 2853101.2  
**prctile95** 20.30827  
**prctile99** 25.03685  
**number** 15436  
**sum** 265710.23  
**sum2** 4812379.4  
**prctile95** 26.70067  
**prctile99** 28.428342  
**number** 15436  
**sum** 1251.6682  
**sum2** 112.23279  
**prctile95** 0.1226012  
**prctile99** 0.14814172  
**number** 15436  
**sum** 514.87266  
**sum2** 26.169238  
**prctile95** 0.081153441  
**prctile99** 0.094535913

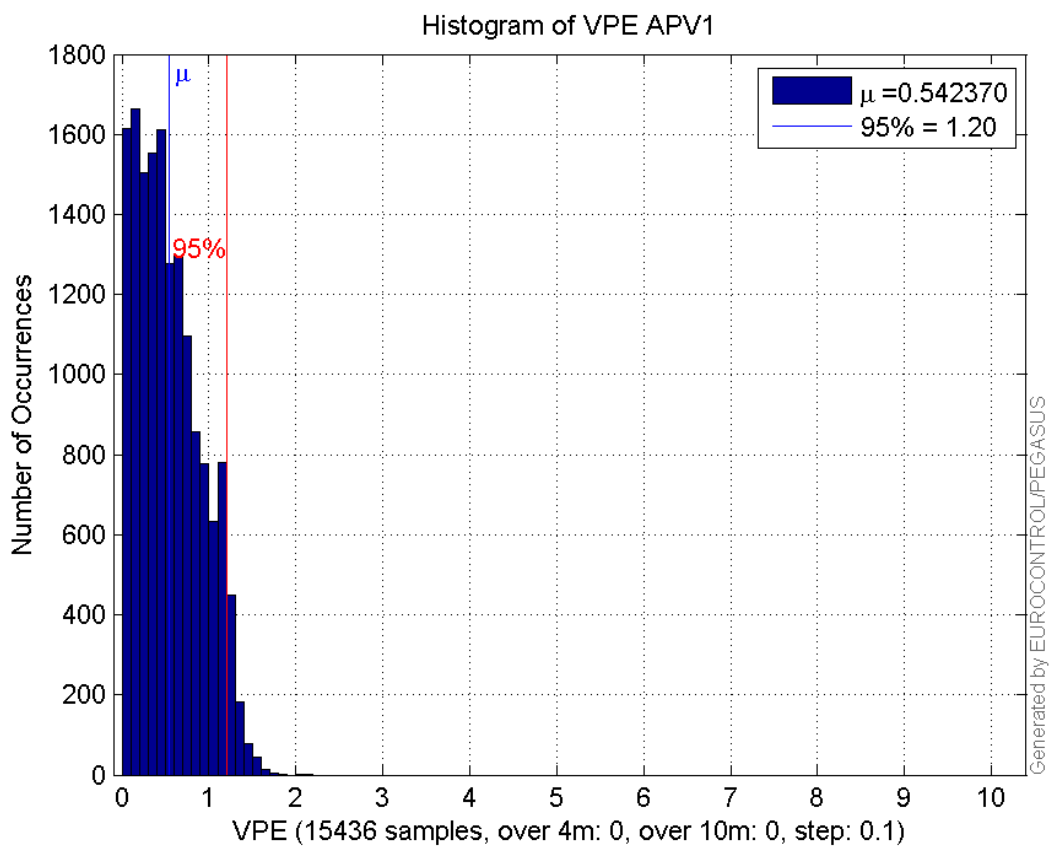
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	0.99842	0.276659	0.96938	1.50024	1.68417	1.03604
<b>HPL</b>	13.0329	3.87032	11.7423	20.3083	25.0369	13.5954
<b>VPE</b>	0.54237	0.364769	0.484769	1.20069	1.3872	0.653615
<b>VPL</b>	17.2137	3.93114	16.4277	26.7007	28.4283	17.6568

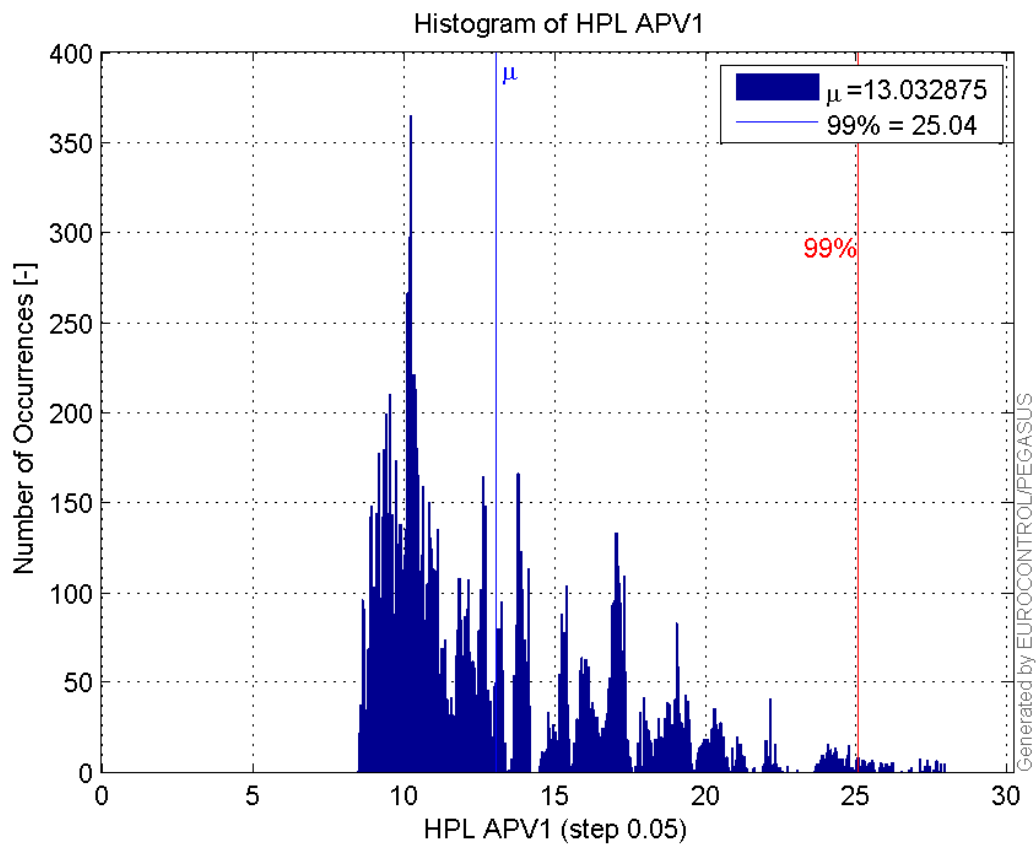
**Histogram of HPE APV1:**



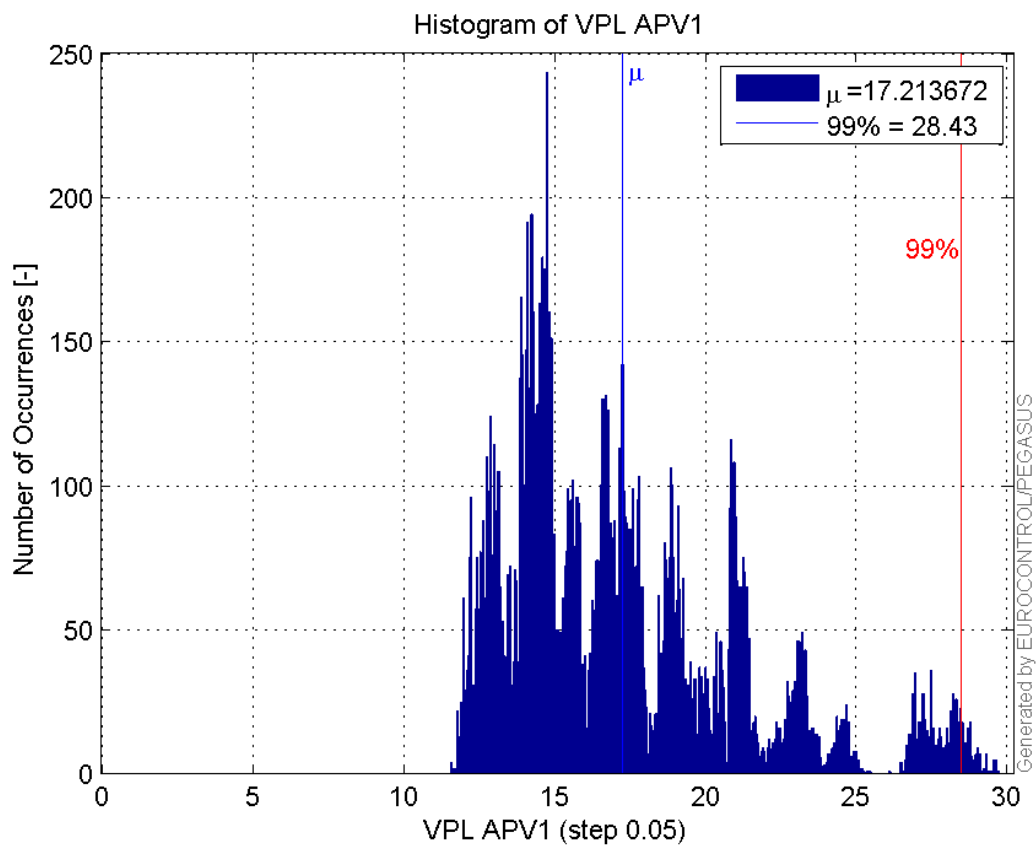
**Histogram of VPE APV1:**



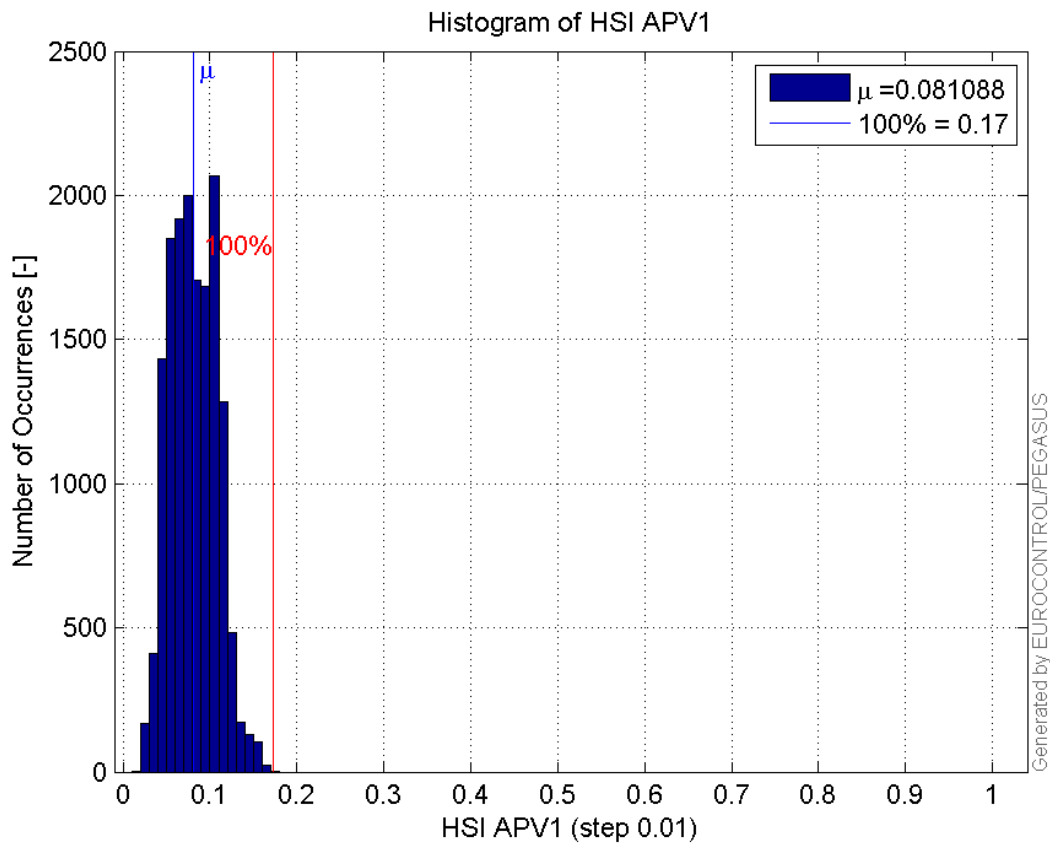
**Histogram of HPL APV1:**



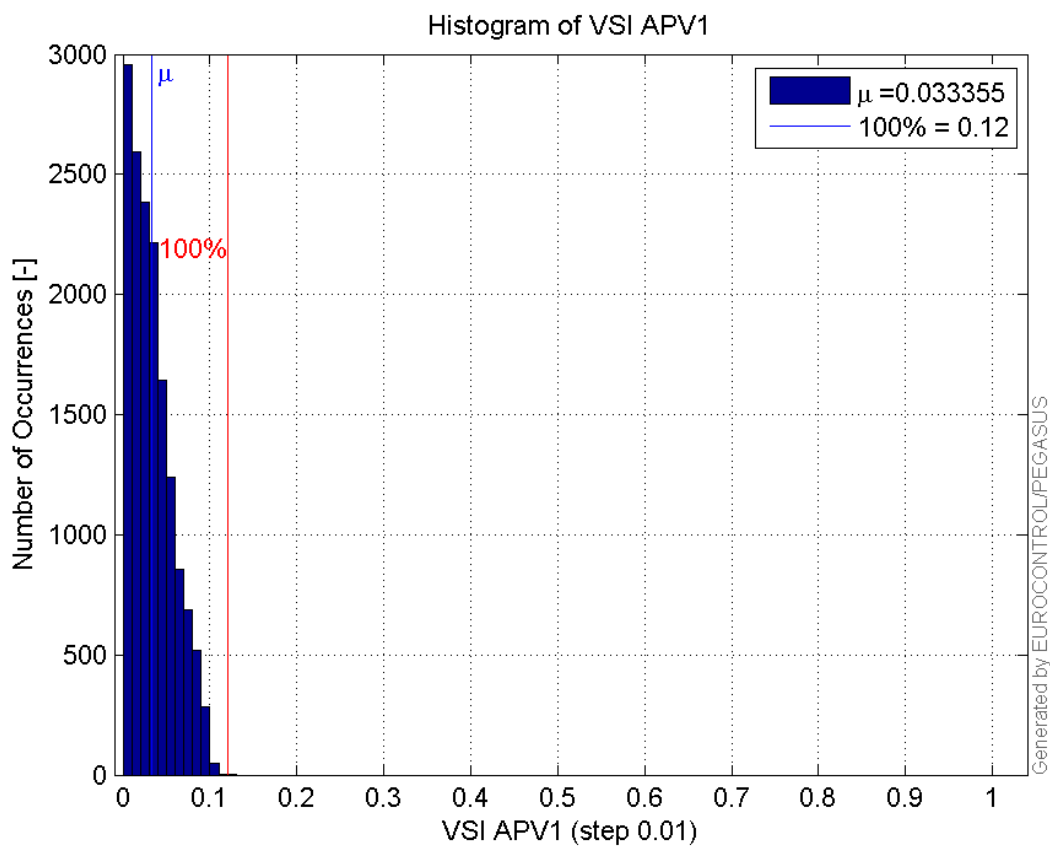
**Histogram of VPL APV1:**



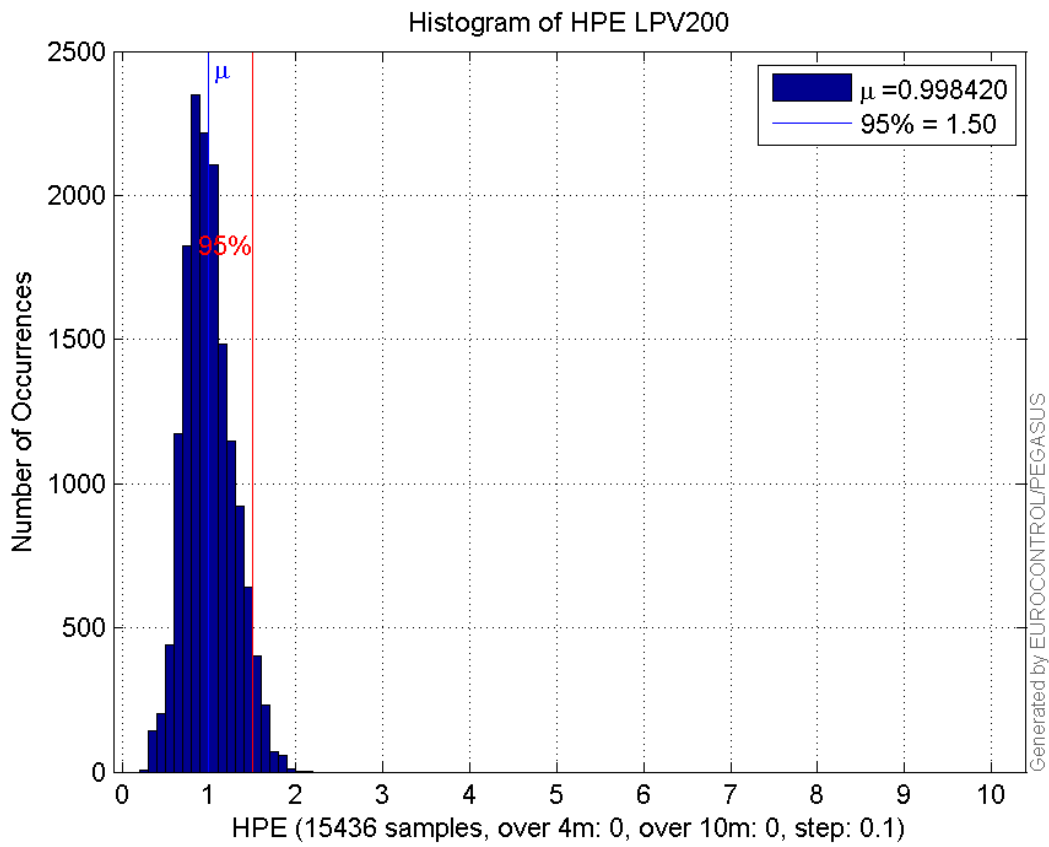
**Histogram of HSI APV1:**



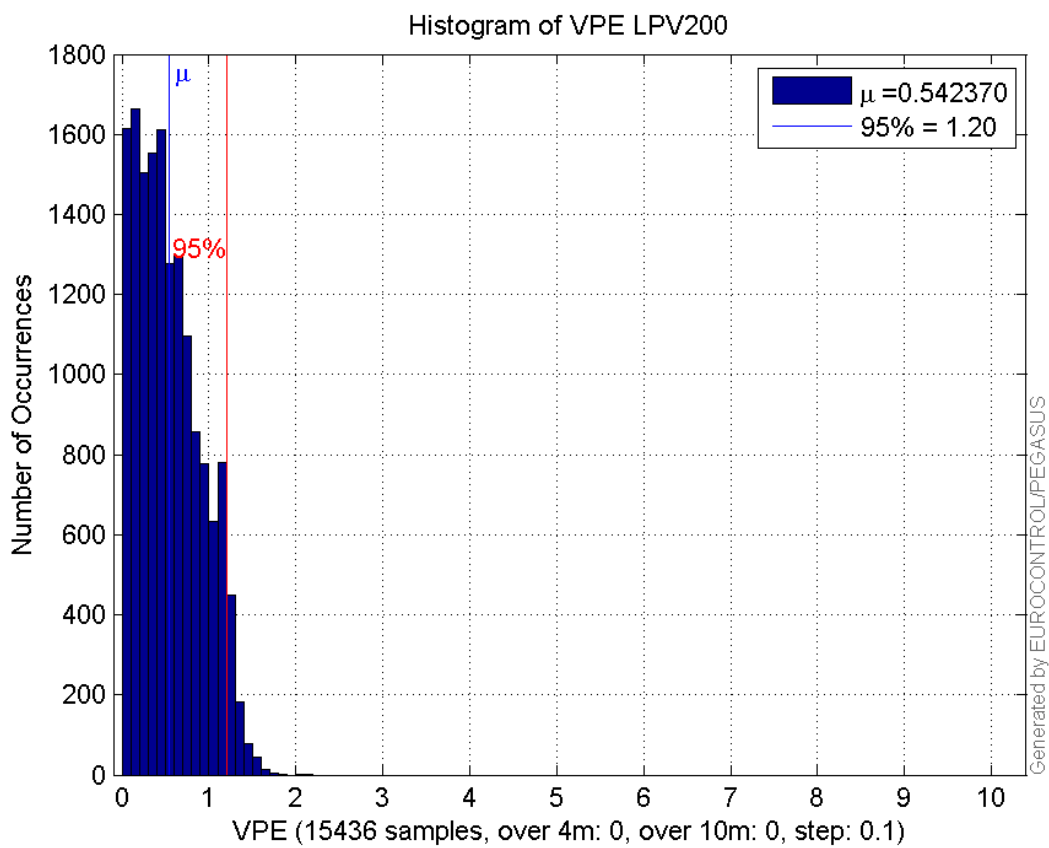
**Histogram of VSI APV1:**



**Histogram of HPE LPV200:**

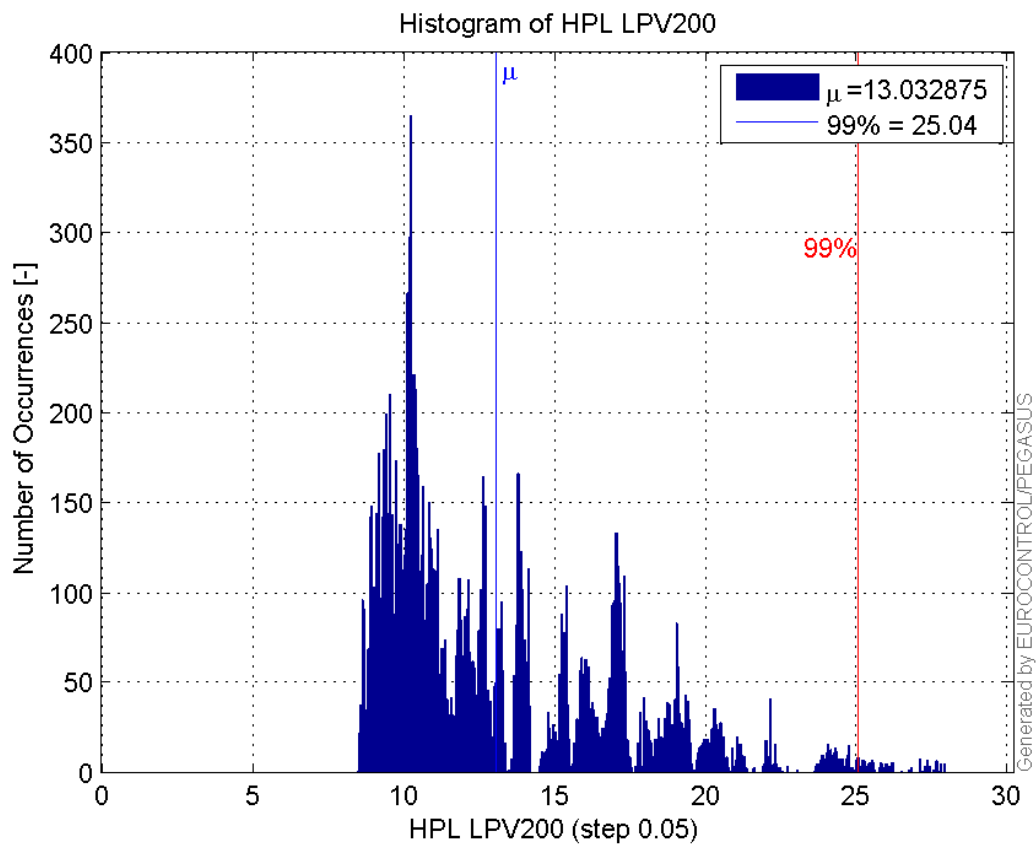


**Histogram of VPE LPV200:**

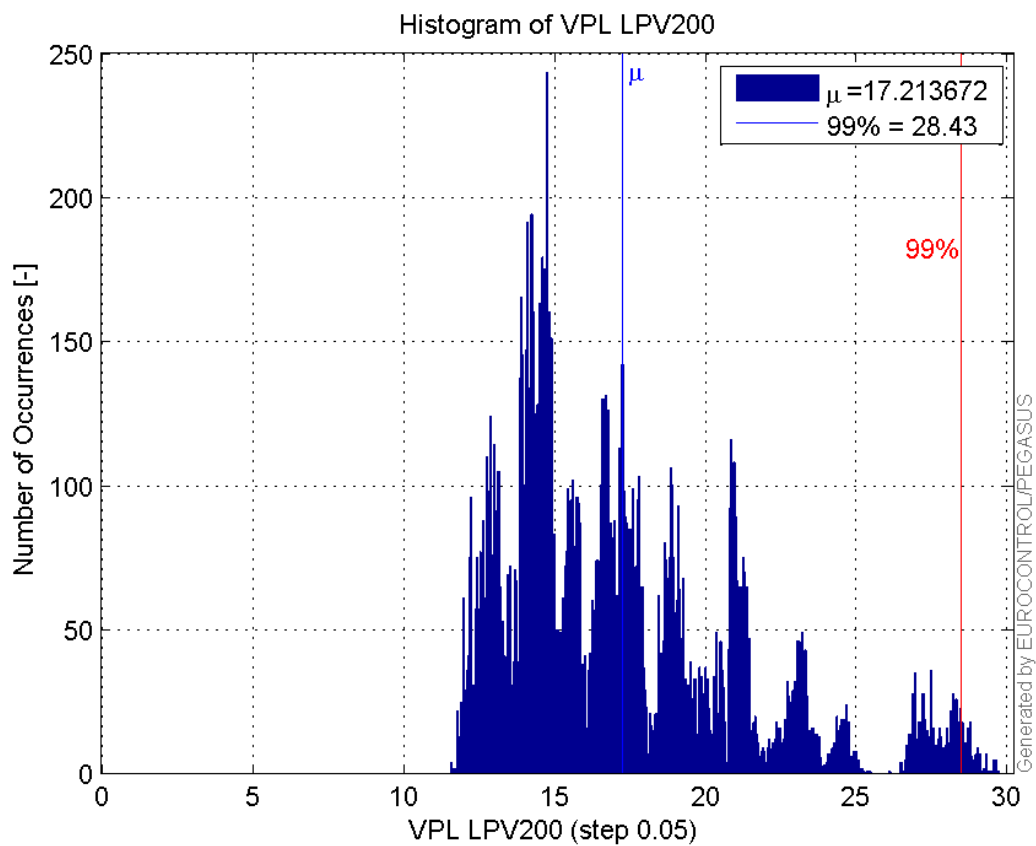


**Histogram of HPL LPV200:**

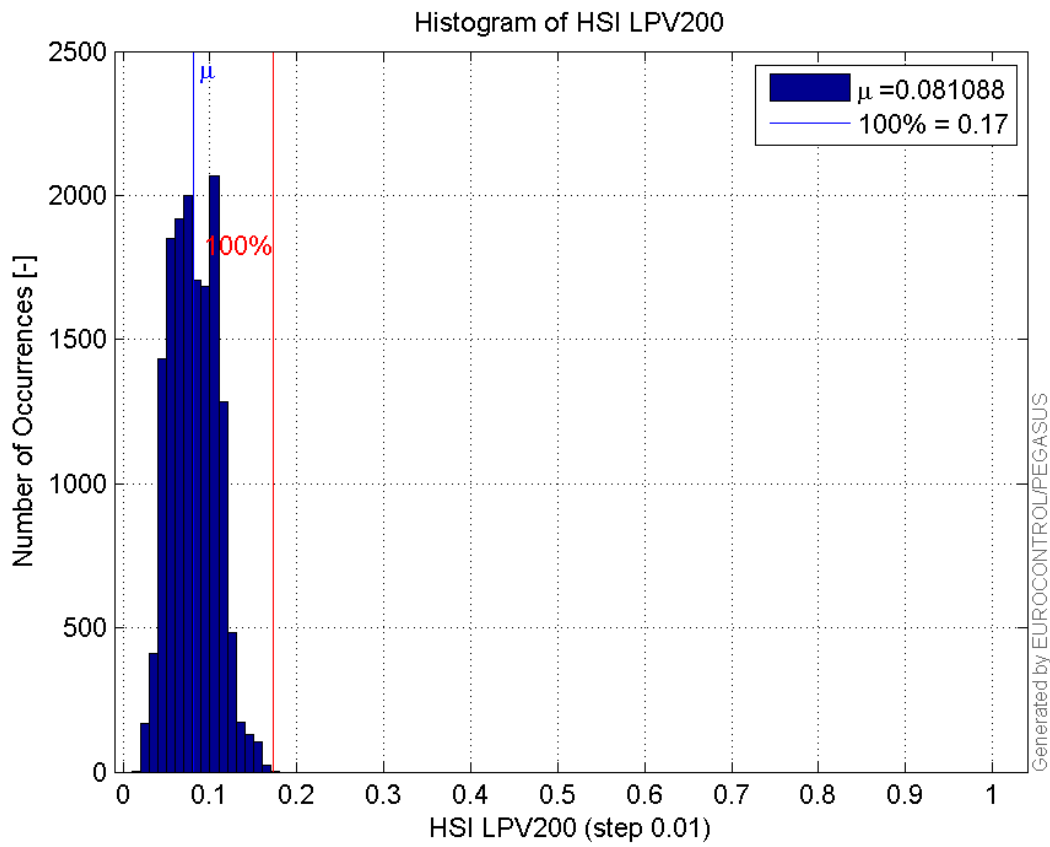




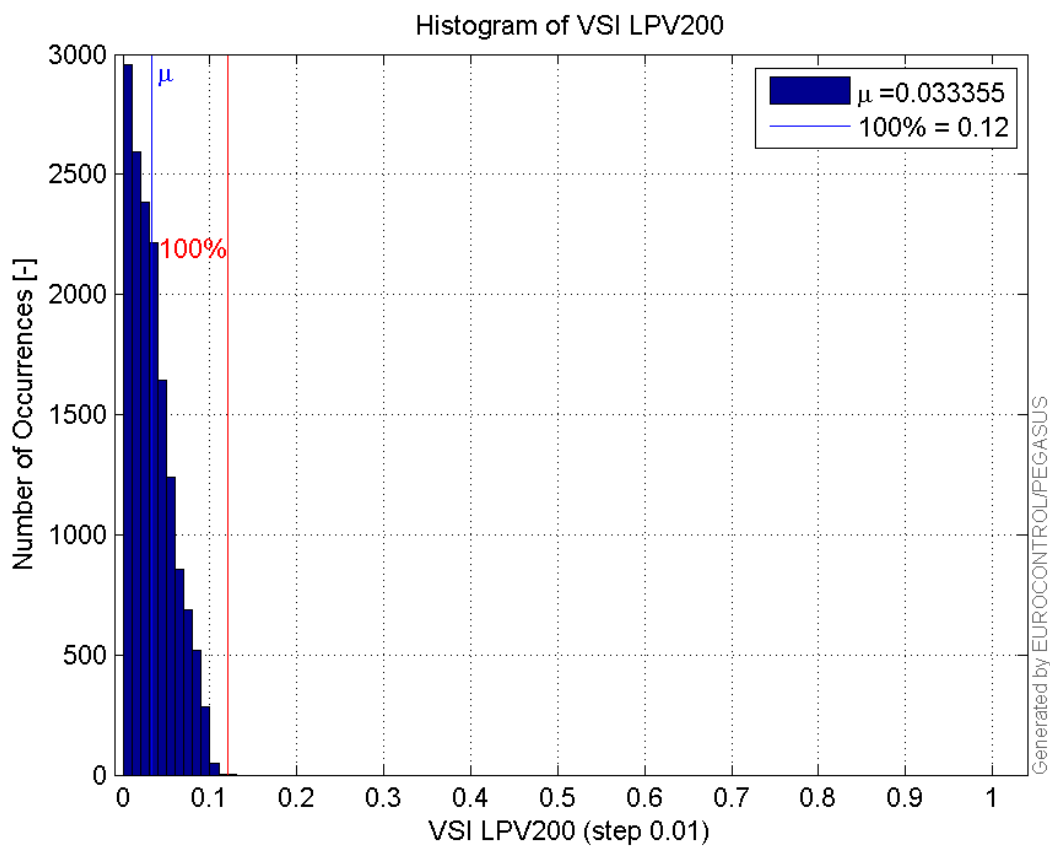
**Histogram of VPL LPV200:**



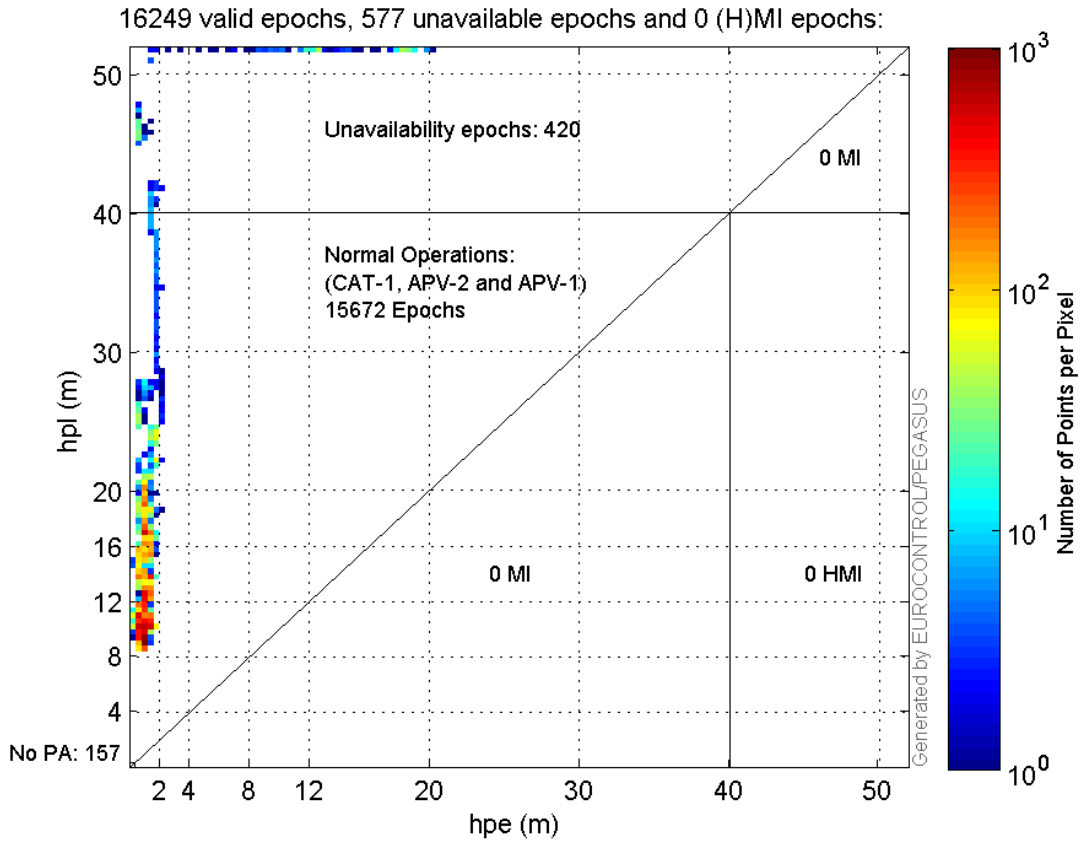
**Histogram of HSI LPV200:**



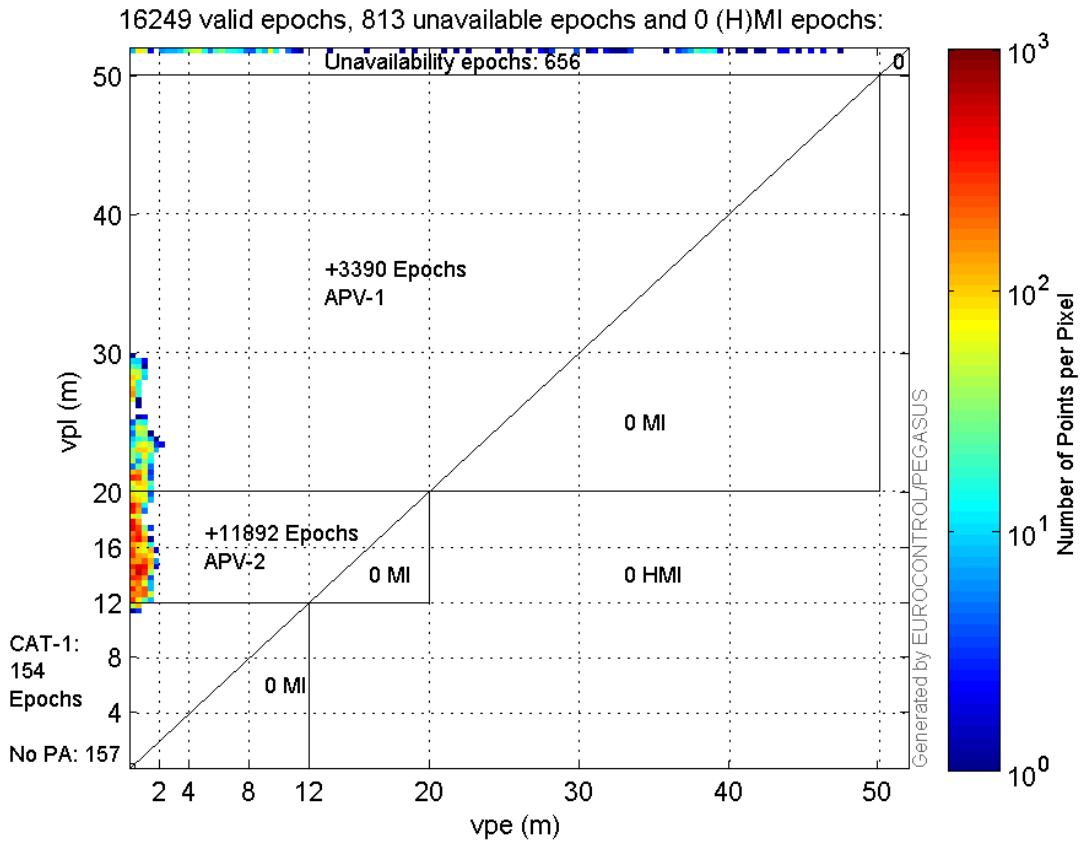
**Histogram of VSI LPV200:**



**Horizontal\_Stanford\_Plot\_SBAS:**



**Vertical\_Stanford\_Plot\_SBAS:**



**system**

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateJob/job/2016_05_12_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_05_12_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	228.6937
mi_numbers	results	0

**Range Domain**

**start:** 08:07:58 12.05.2016 ( week: 1896 sec: 374878 )  
**end:** 12:44:49 12.05.2016 ( week: 1896 sec: 391489 )  
**duration:** 04:36:52 ..

**quality**

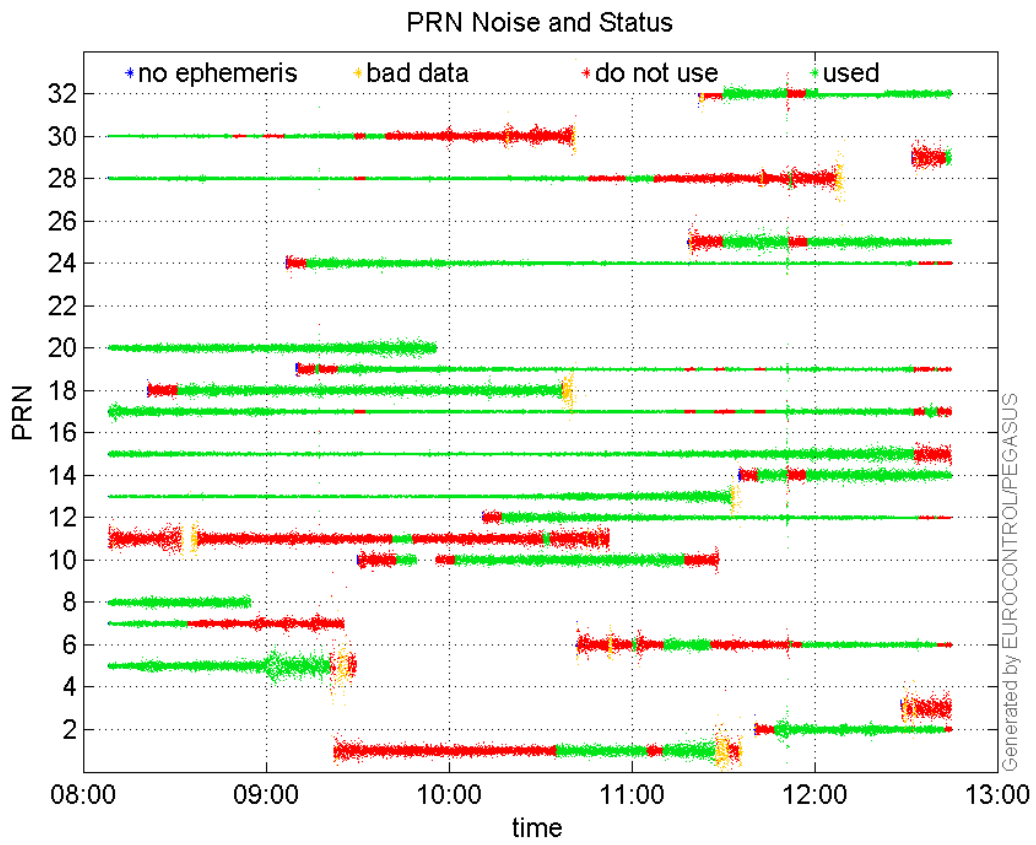
**valid samples** 16612  
**total samples** 16612

**PRN overview**

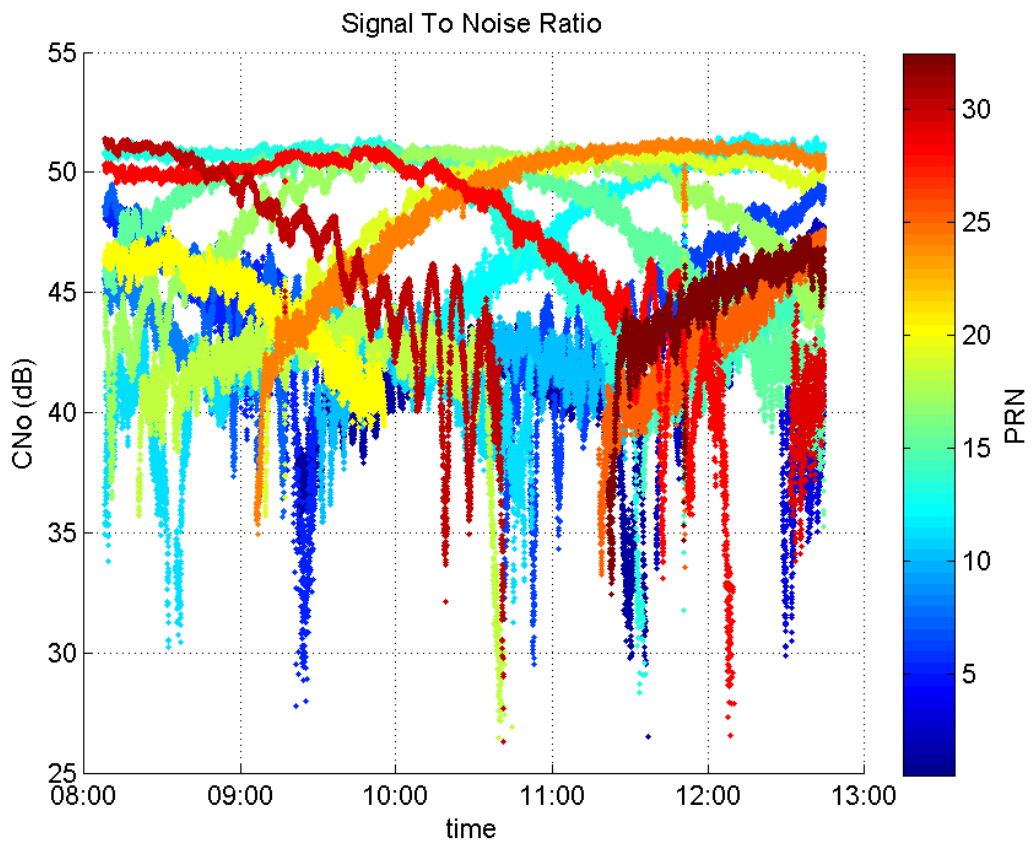
**Number of Visible GPS Satellites** 23  
**Number of Visible SBAS Satellites** 2

**signal quality and status**

**PRN Noise and Status:**



**Signal To Noise Ratio:**



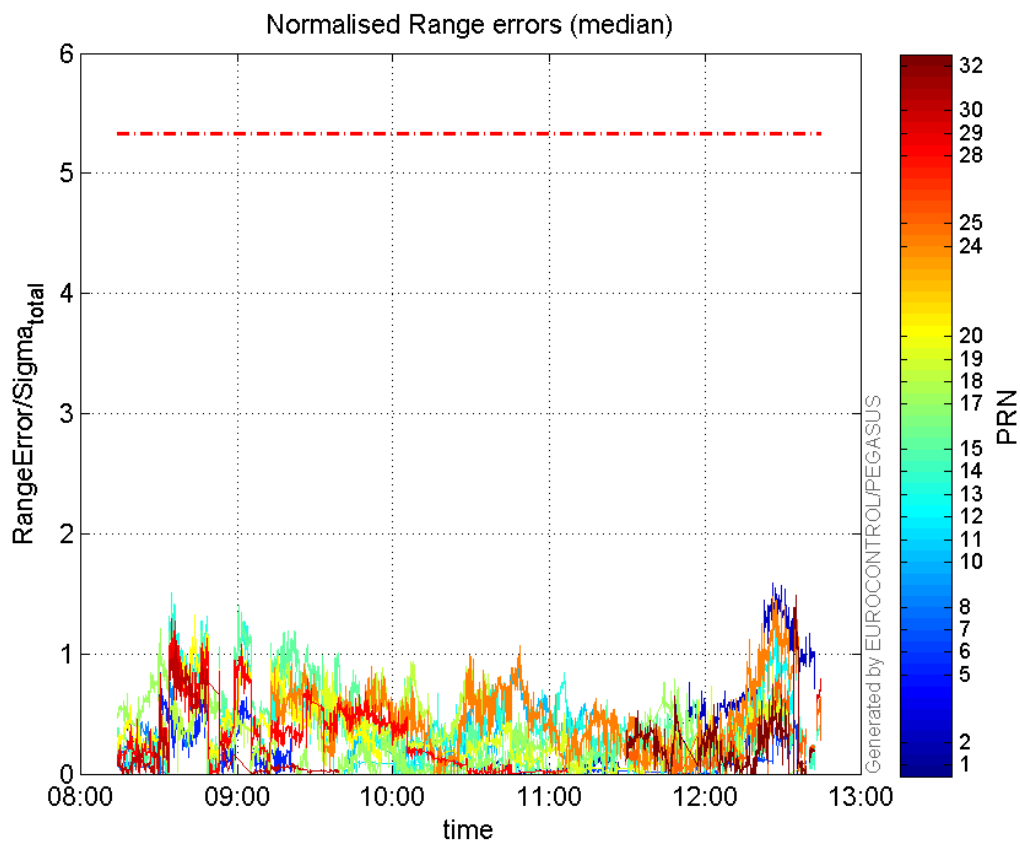
range errors

Number of Overbounding Norm Errors 0

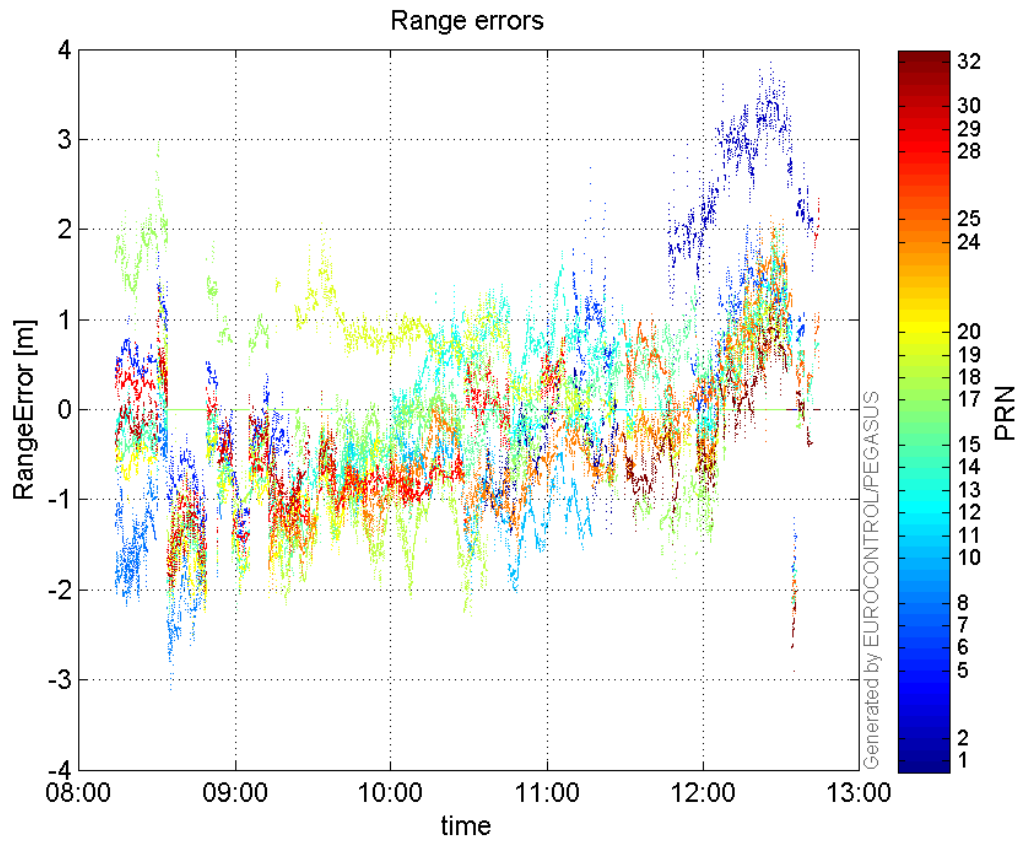
## Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1896	386534	1	0.314052	1.69456	5.39578
1896	390375	2	1.58637	3.85362	2.42921
1896	376220	5	0.848086	1.74344	2.05574
1896	390652	6	0.475541	2.03738	4.28433
1896	375463	7	0.0989122	-1.96175	19.8332
1896	376969	8	1.0137	-2.61204	2.57674
1896	384493	10	0.880781	-2.03005	2.30483
1896	380826	11	0.112112	-0.947902	8.45492
1896	390375	12	1.27364	1.82782	1.43511
1896	376480	13	1.50345	-2.11528	1.40695
1896	390888	14	1.12015	-2.15698	1.92562
1896	378030	15	1.4073	-2.21675	1.57518
1896	376220	17	1.20787	2.97486	2.46291
1896	382075	18	0.933023	-2.09209	2.24227
1896	390375	19	0.918872	1.53491	1.67043
1896	377013	20	1.31875	-2.48788	1.88655
1896	390375	24	1.4775	2.15024	1.45532
1896	390952	25	1.28156	-2.25964	1.76319
1896	376481	28	1.28941	-1.94159	1.50579
1896	391476	29	0.791193	2.34751	2.96705
1896	376578	30	1.14656	-1.96735	1.71587
1896	390904	32	1.48547	-2.90837	1.95787

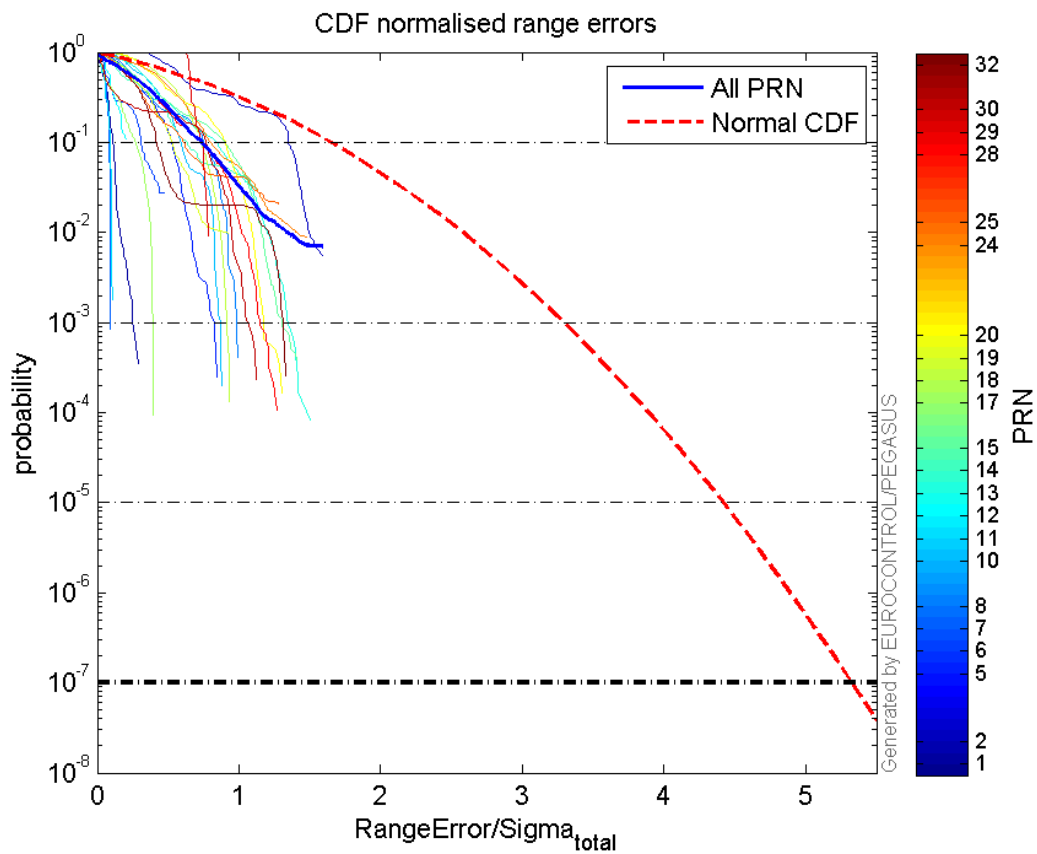
## Normalised Range errors (median):



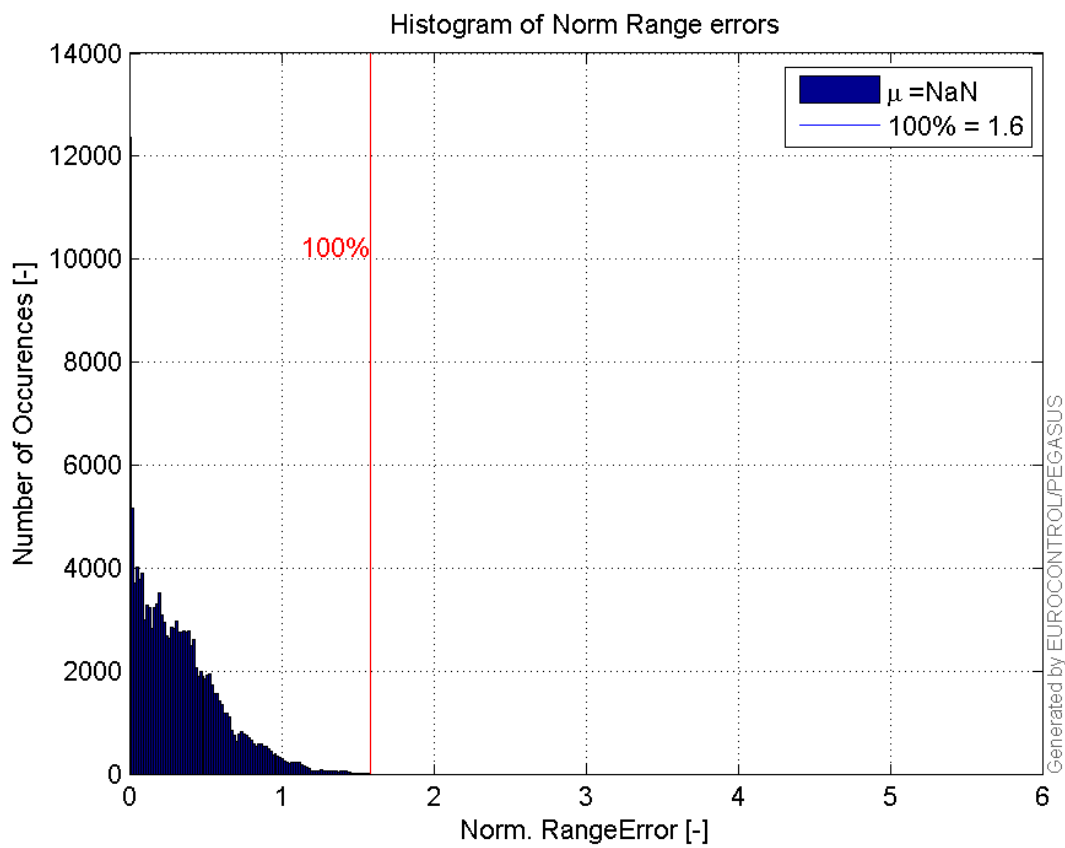
Range errors:



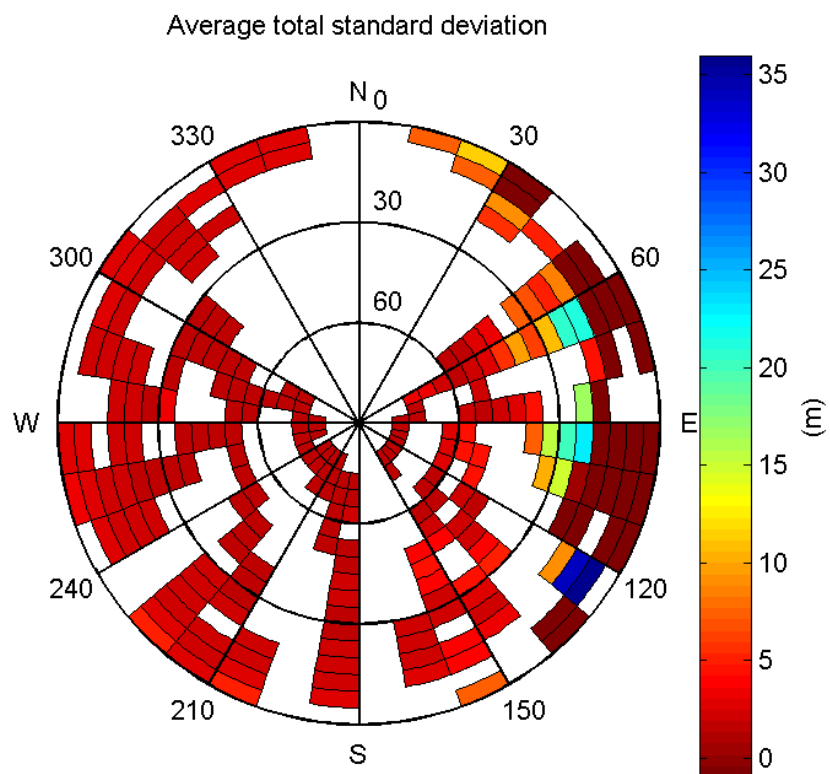
CDF normalised range errors:



## Histogram of Norm Range errors:

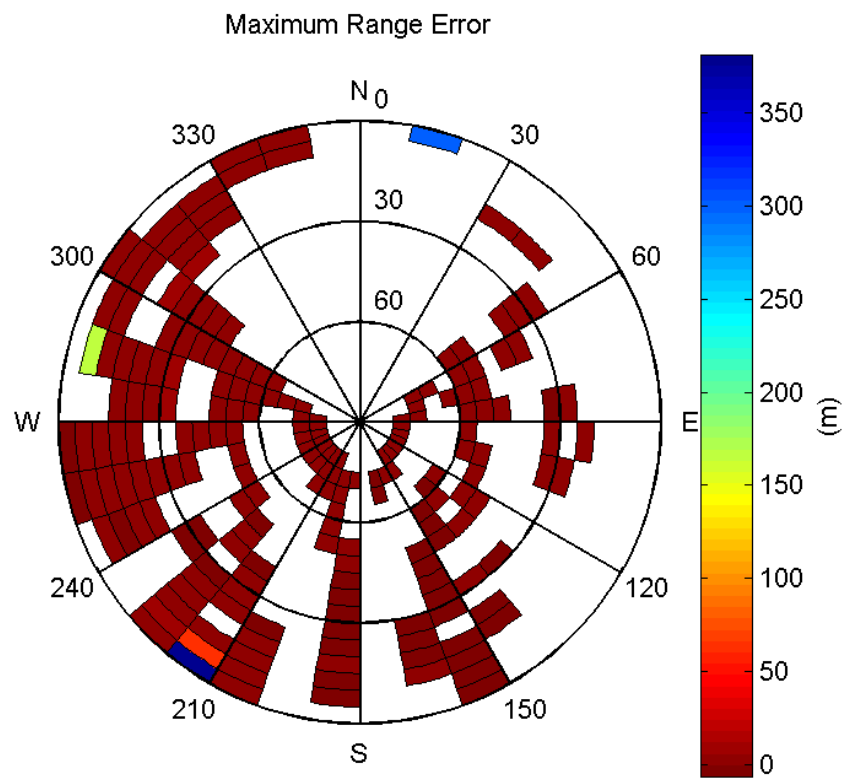


## Sigma Sky Plot:



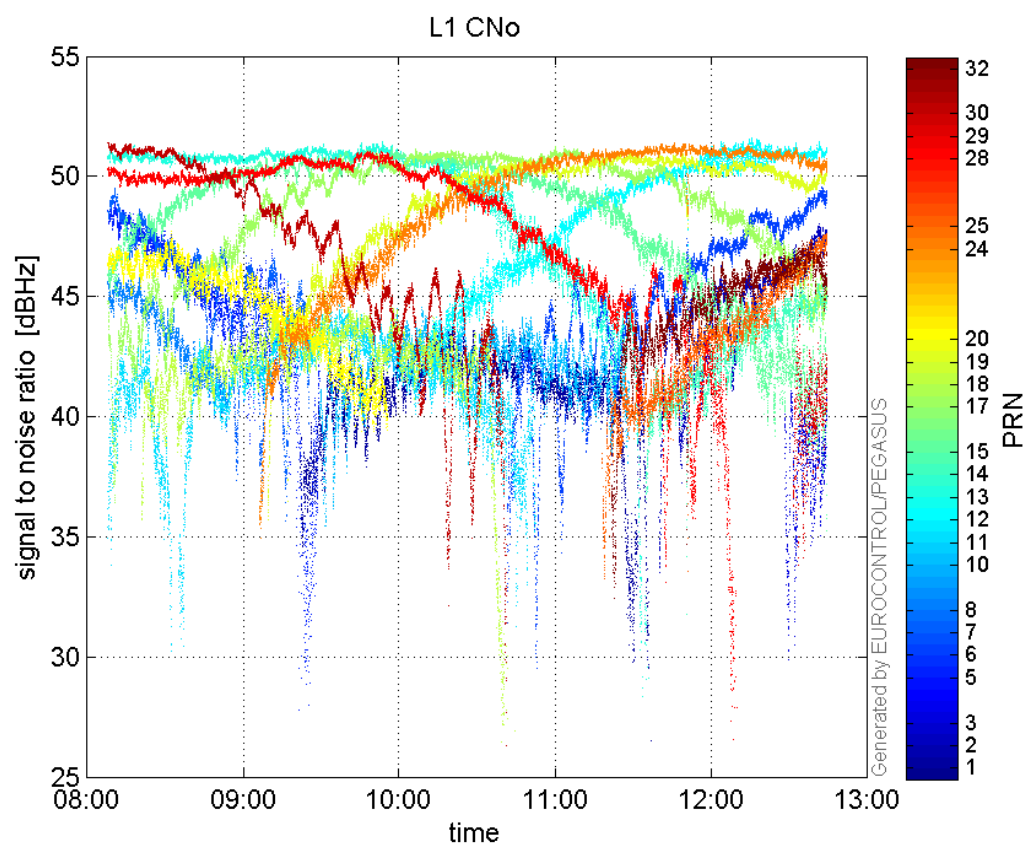
## Norm Error Sky Plot:



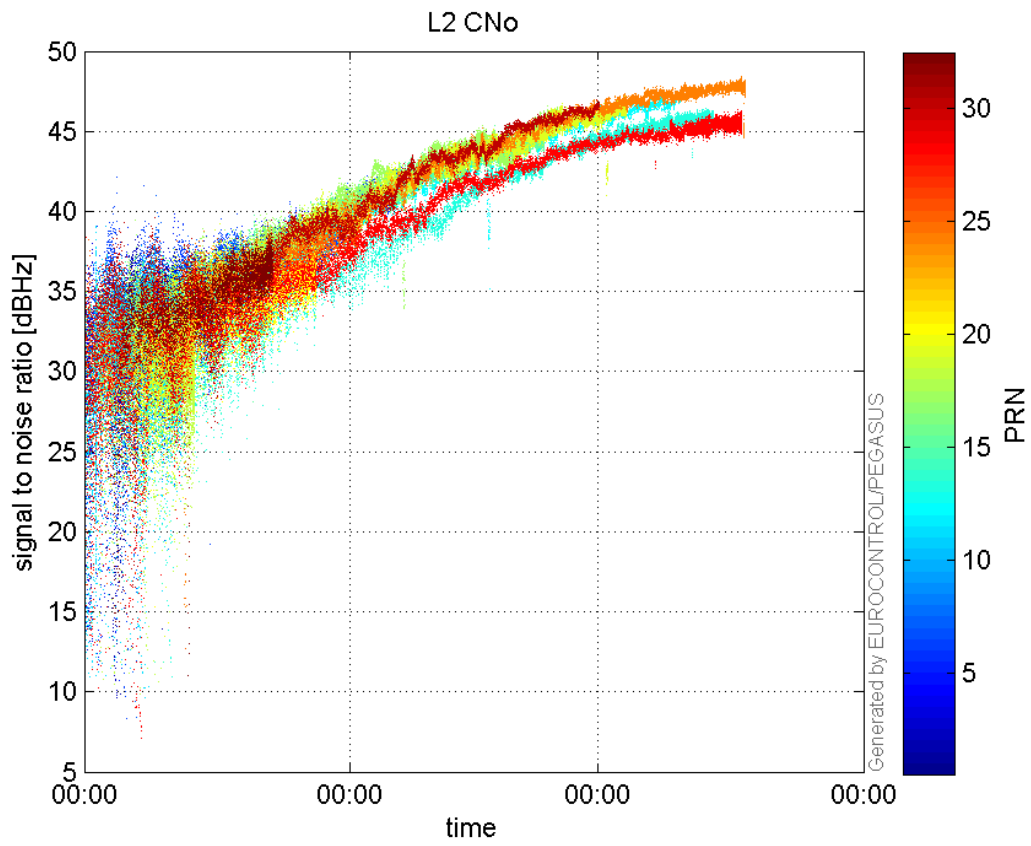


### signal quality

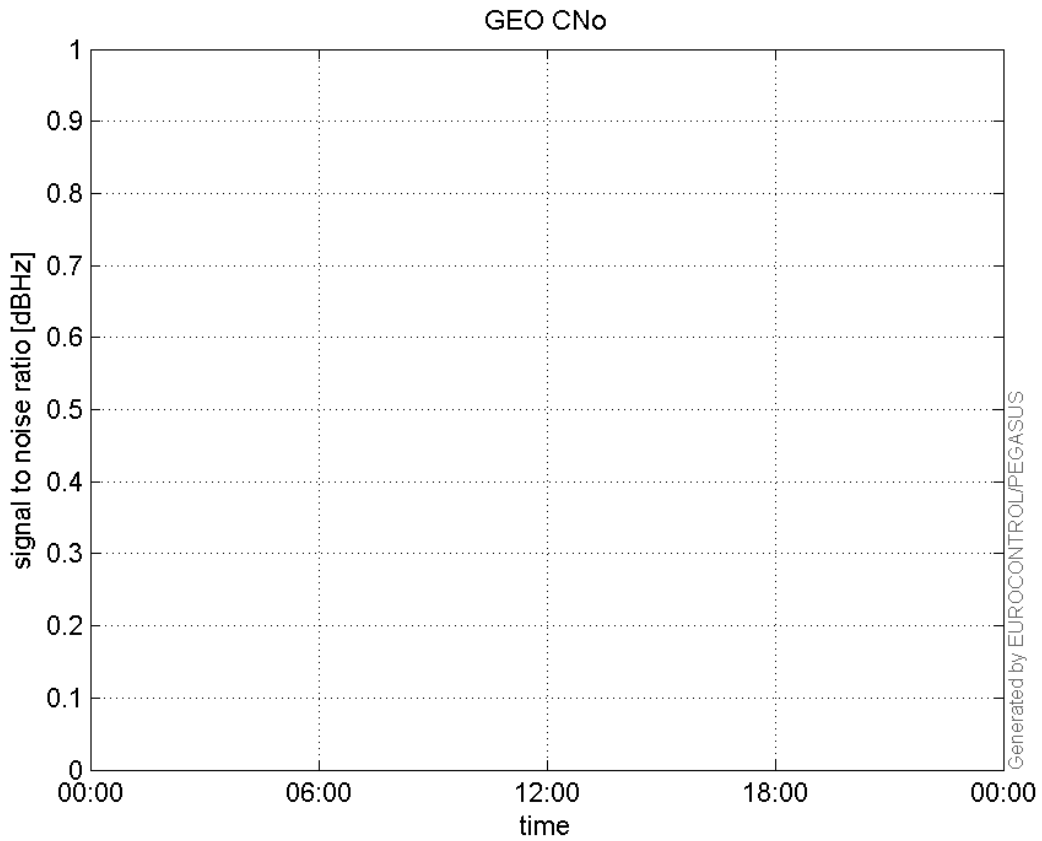
L1 CNo:



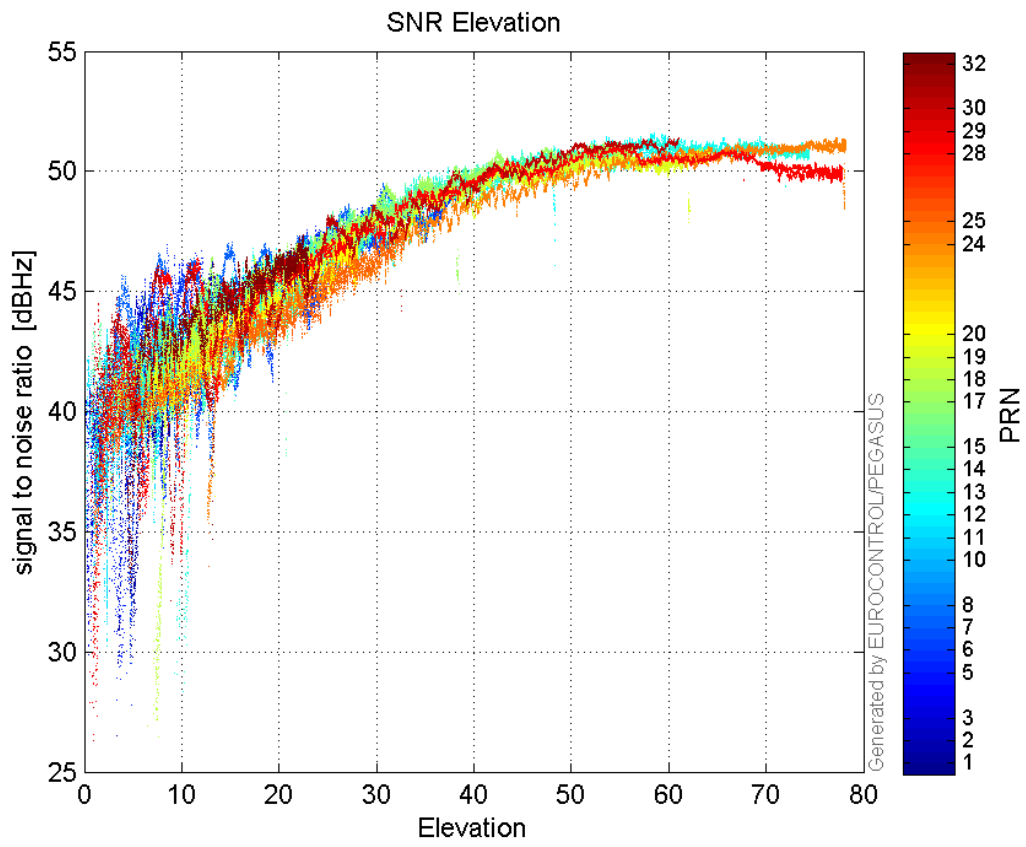
**L2 CNo:**



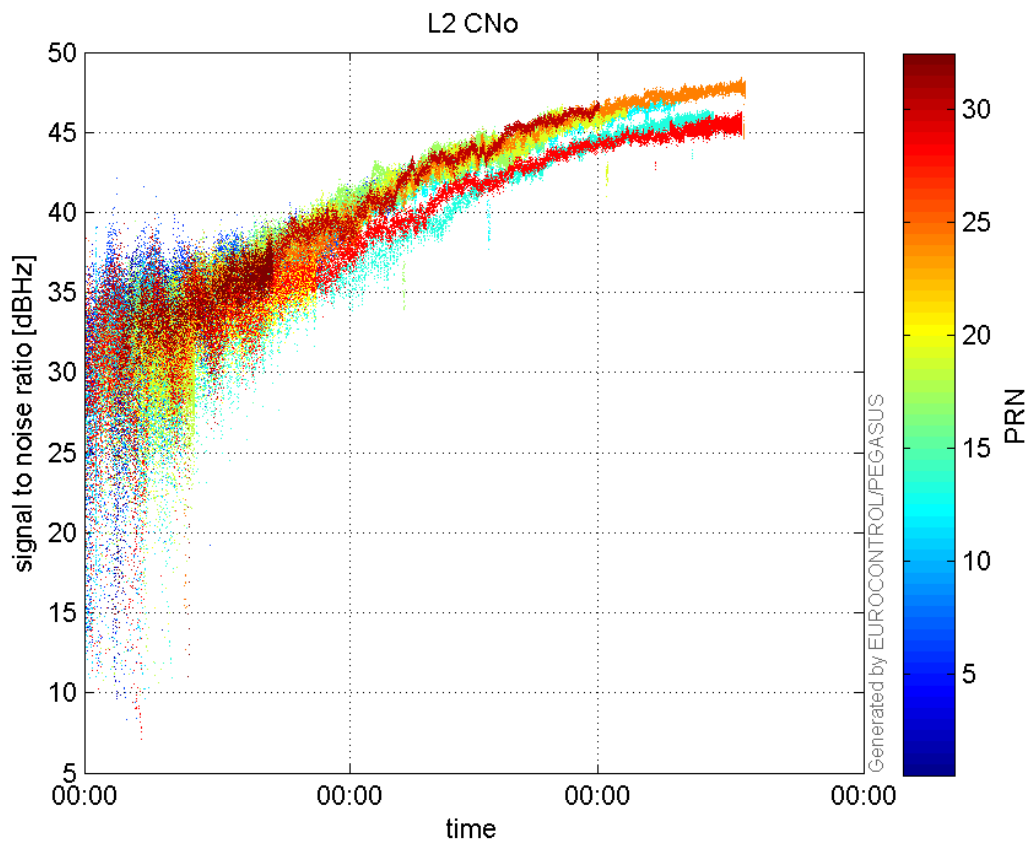
**GEO CNo:**



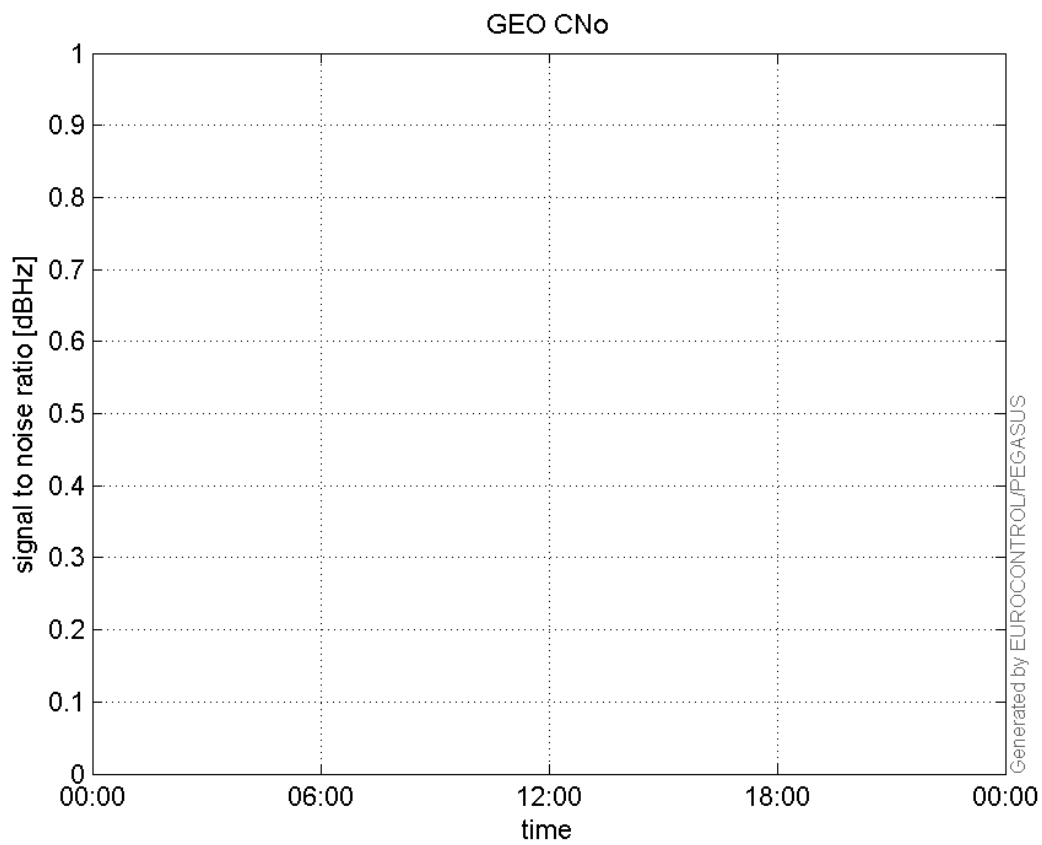
**SNR Elevation:**



**L2 CNo:**

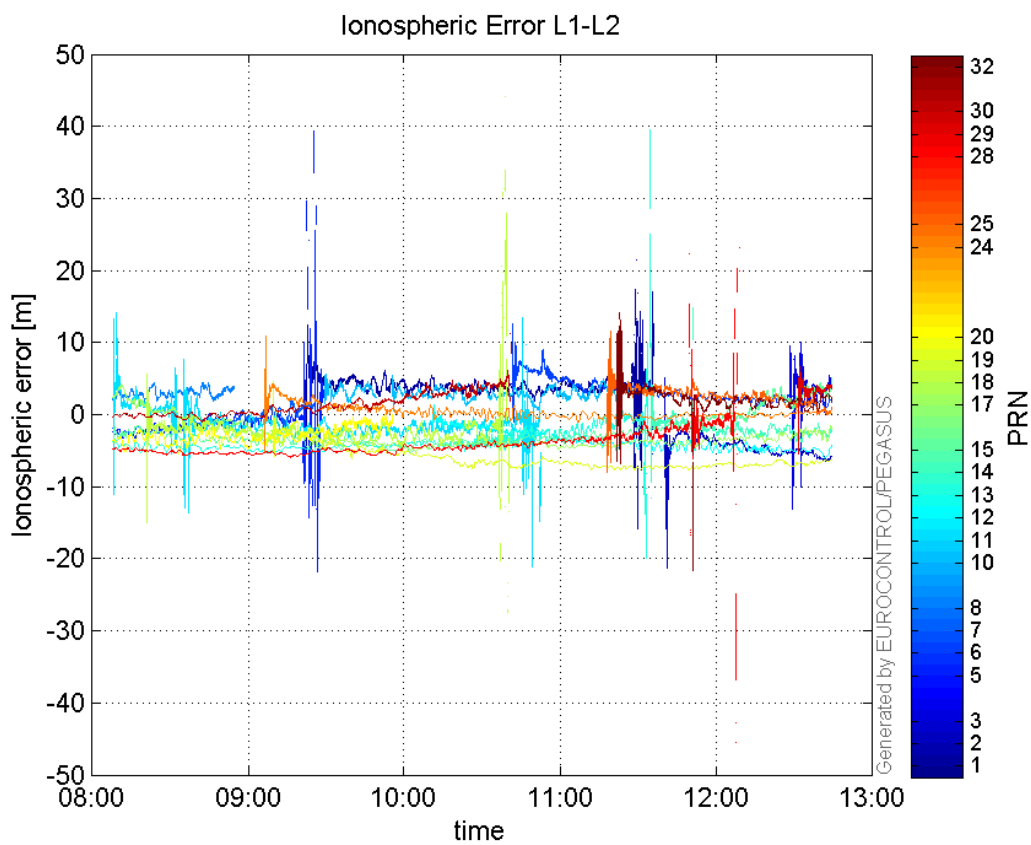


**GEO CNo:**



### 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_05_12_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_05_12_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	228.6937
mi_numbers	results	0