

# 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 27/09/2016

## SBAS Messages

**start:** 08:23:34.129 01.09.2016 ( week: 1912 sec: 375814.129 )  
**end:** 15:21:17.129 01.09.2016 ( week: 1912 sec: 400877.129 )  
**duration:** 06:57:43 ..

### quality

**valid samples** 50128  
**total samples** 50128  
**number of SBAS PRNs** 2

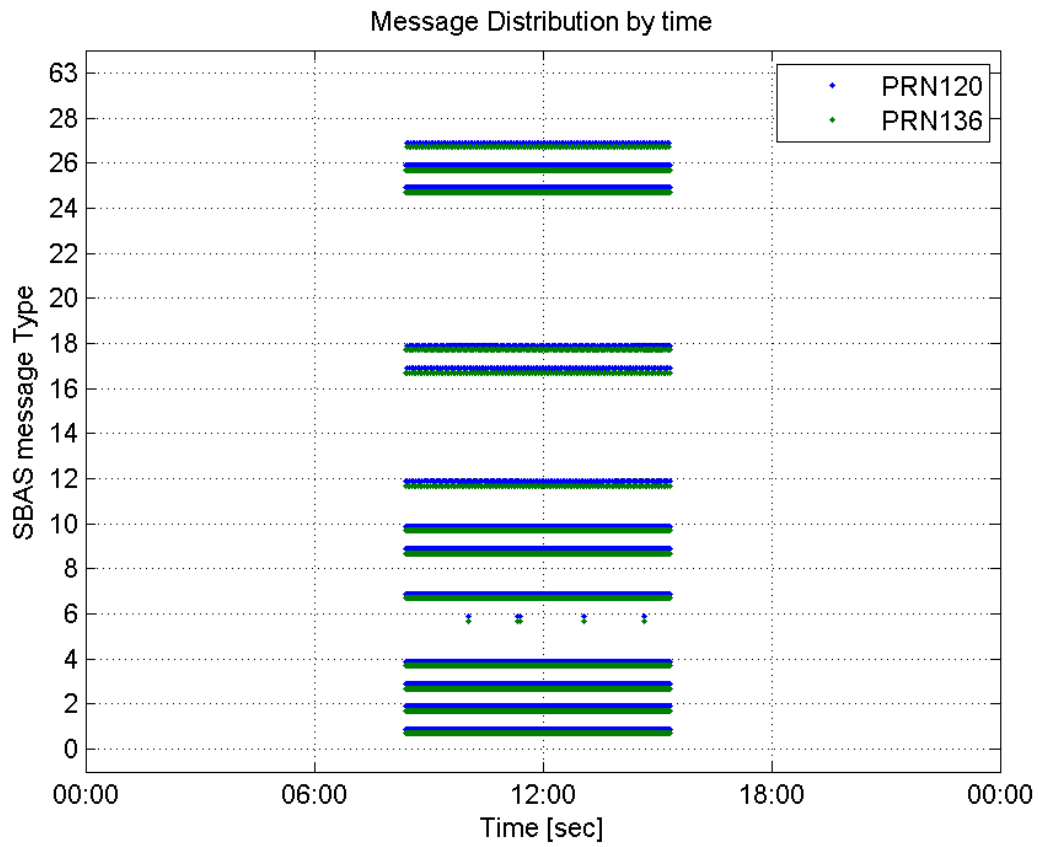
### SBAS SIS Overview

#### Message Type 6 repetitions :

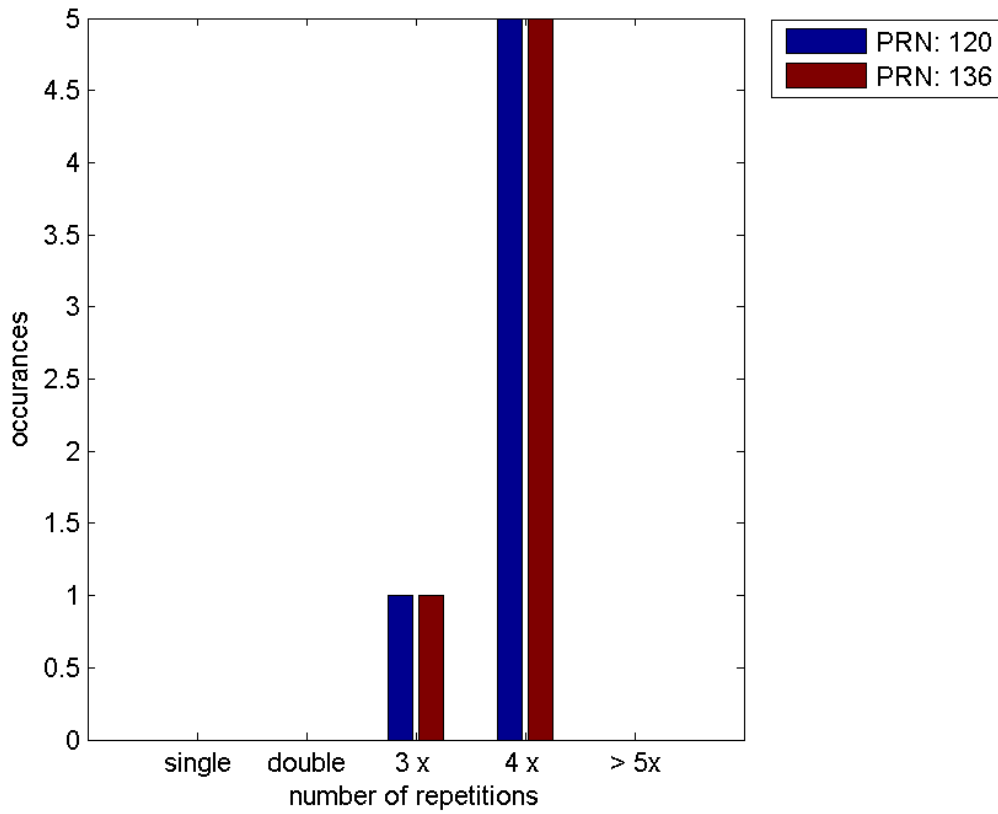
	single	double	3 x	4 x	> 5x
<b>PRN 120</b>	0	0	1	5	0
<b>PRN 136</b>	0	0	1	5	0

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#### Message Distribution by time:



**Message Type 6 repetitions:**



## Broadcast SBAS Messages :

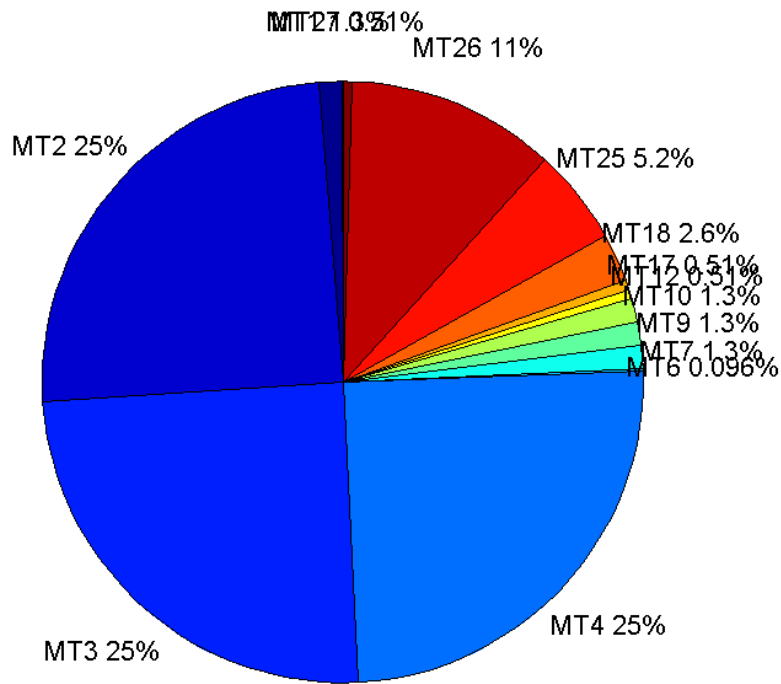
	number of messages	%
MT 0	0	0
MT 1	315	1.25678
MT 2	6212	24.7846
MT 3	6212	24.7846
MT 4	6212	24.7846
MT 5	0	0
MT 6	24	0.0957549
MT 7	315	1.25678
MT 9	315	1.25678
MT 10	315	1.25678
MT 12	129	0.514682
MT 17	128	0.510693
MT 18	640	2.55346
MT 24	0	0
MT 25	1296	5.17076
MT 26	2823	11.2632
MT 27	128	0.510693
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	25064	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	83	79.6401	0	0	0
MT 2	4	8	4.03478	6	0	0
MT 3	4	9	4.03494	6	0	0
MT 4	4	8	4.03494	6	0	0
MT 5	--	--	--	--	--	--
MT 6	1	5957	719.261	5	5	5
MT 7	76	85	79.6369	0	0	0
MT 9	76	82	79.6624	0	0	0
MT 10	75	81	79.6497	0	0	0
MT 12	188	201	195.484	128	0	0
MT 17	188	201	195.417	0	0	0
MT 18	4	164	38.9061	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	64	19.2958	0	0	0
MT	1	36	8.87952	0	0	0

26						
MT 27	188	206	195.386	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	314	1.25279
MT 2	6218	24.8085
MT 3	6219	24.8125
MT 4	6219	24.8125
MT 5	0	0
MT 6	24	0.0957549
MT 7	315	1.25678
MT 9	315	1.25678
MT 10	315	1.25678

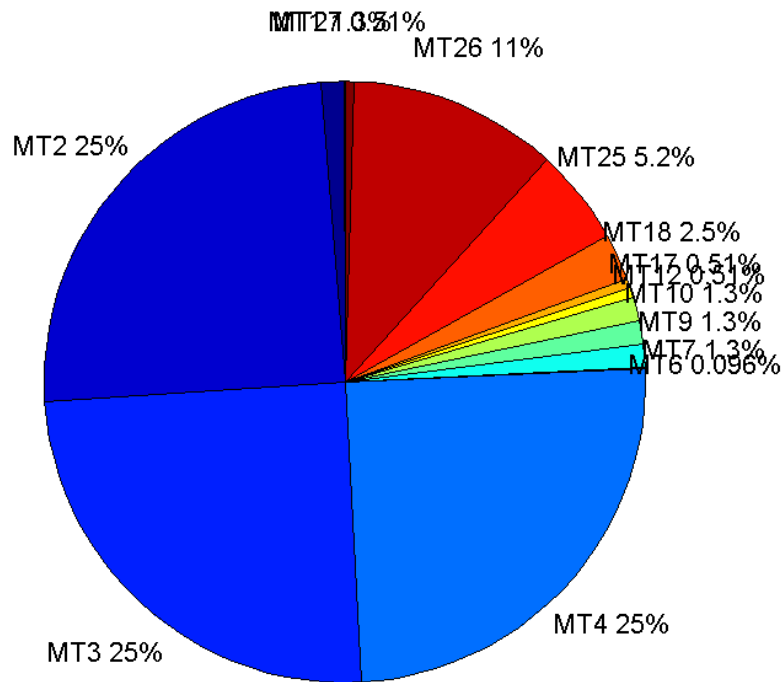
MT 12	128	0.510693
MT 17	128	0.510693
MT 18	636	2.5375
MT 24	0	0
MT 25	1296	5.17076
MT 26	2810	11.2113
MT 27	127	0.506703
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	25064	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	74	86	79.7061	0	0	0
MT 2	4	8	4.0304	6	0	0
MT 3	4	8	4.0304	6	0	0
MT 4	4	8	4.03023	6	0	0
MT 5	--	--	--	--	--	--
MT 6	1	5959	719.261	5	5	5
MT 7	75	82	79.6624	0	0	0
MT 9	75	81	79.6433	0	0	0
MT 10	75	81	79.6879	0	0	0
MT 12	188	202	196.409	127	0	0
MT 17	188	201	196.409	0	0	0
MT 18	4	165	39.2756	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	53	19.3375	0	0	0
MT 26	2	36	8.92061	0	0	0
MT 27	185	202	196.405	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_09_01_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_09_01_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:** 08:23:35 01.09.2016 ( week: 1912 sec: 375815 )  
**end:** 15:21:18 01.09.2016 ( week: 1912 sec: 400878 )  
**duration:** 06:57:44 ..

#### quality

**valid samples** 24703  
**total samples** 25064

## 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
<b>max normHor</b>	389472	1.53691	9.41692	0.163207	-0.0572017	19.1371	0.00298905
<b>max normVer</b>	396659	1.41993	11.2156	0.126603	3.48361	18.2309	0.191083
<b>max HPE</b>	377675	2.14858	40.0449	0.0536543	0.828284	46.3387	0.0178746
<b>max VPE</b>	396659	1.41993	11.2156	0.126603	3.48361	18.2309	0.191083
<b>min HPL</b>	385640	1.13975	8.76531	0.13003	0.735817	18.1691	0.0404982
<b>min VPL</b>	393871	1.39649	9.54182	0.146354	0.529155	13.2819	0.0398403

## APV-I discontinuity events :

#	Epoch	duration	stable period
1	377094	483	918
2	377648	1	71
3	377652	1	3
4	377656	1	3
5	377660	1	3
6	377664	1	3
7	377668	1	3
8	377672	1	3
9	377674	1	1
10	377676	1	1
11	377680	1	3

## APV-35m discontinuity events :

#	Epoch	duration	stable period
1	377094	588	918

## LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	377094	588	918

## First Glance analysis

**Duration** 25064  
**Number of Samples** 25064  
**Number of invalid sample** 361  
**Number of no position solution samples** 0  
**Number of missing sample** 0  
**Logging Loss** 0  
**Processing Loss** 1.4403

Number of Misleading Information	0
Data gaps	0
Discontinuities	0

**Number of Samples :**

Valid	APV-1	LPV-200	CAT-1	APV-35m
24703	24210	24115	0	24115

**Accuracy statistics :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.56251	1.56365	1.56221	NaN	1.56221
HPEscale 95%	NaN	5.11055	5.11228	NaN	5.11228
VPE 95%	2.06408	2.0499	2.05052	NaN	2.05052
VPEscale 95%	NaN	5.81273	4.07289	NaN	4.07289

**Availability :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.980043	0.976197	0	0.976197
measurements	0.985597	0.965927	0.962137	0	0.962137
Operational	0.985597	0.965927	0.962137	0	0.962137

**Discontinuity events :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	11	1	--	1
Long	--	1	1	--	1
Independent	--	1	1	--	1
P(disc.)	NaN	0.000619579	0.000622019	NaN	0.000622019
P(slide)	NaN	0.00218918	0.000622019	NaN	0.000622019

**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 :**

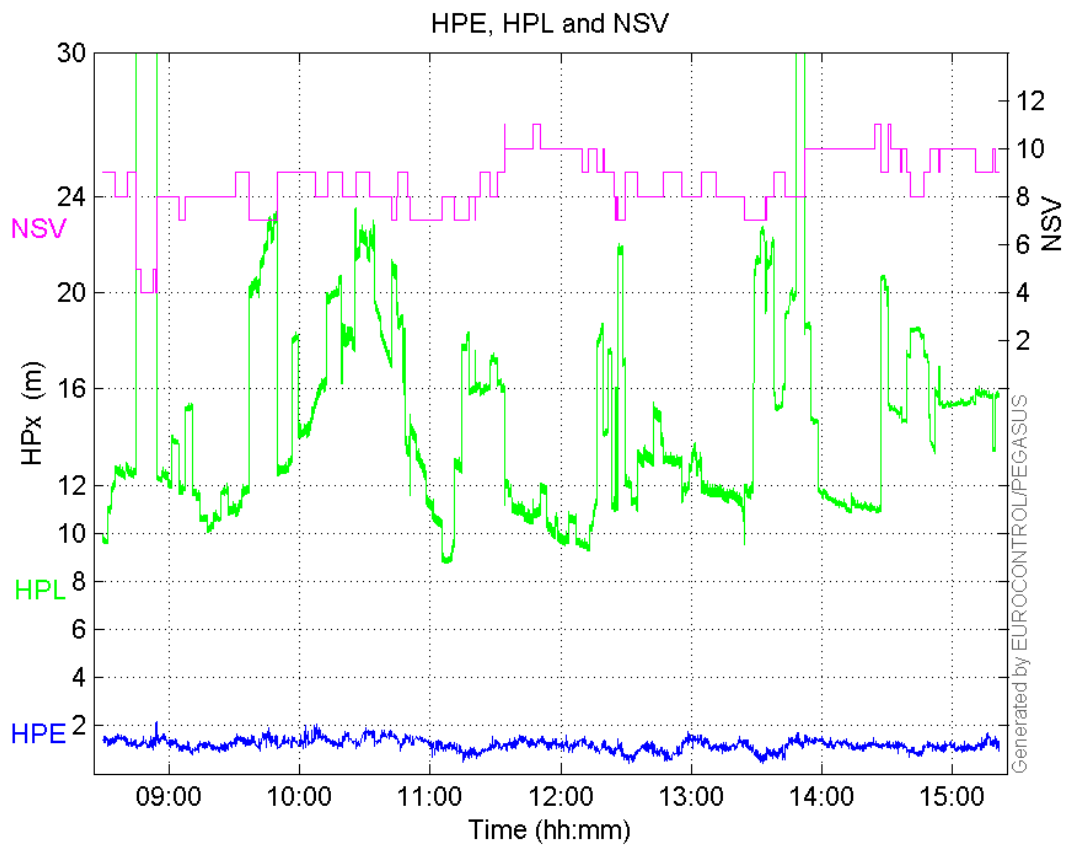
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	24703	24210	24115	0	24115
SIS Availability	1	0.980043	0.976197	0	0.976197
Local Availability	0.985597	0.965927	0.962137	0	0.962137
Operational Availability	0.985597	0.965927	0.962137	0	0.962137
HPE 95%	1.56251	1.56365	1.56221	NaN	1.56221
HPEscale 95%	NaN	5.11055	5.11228	NaN	5.11228
VPE 95%	2.06408	2.0499	2.05052	NaN	2.05052
VPEscale 95%	NaN	5.81273	4.07289	NaN	4.07289
All Discontinuity Events	--	11	1	--	1



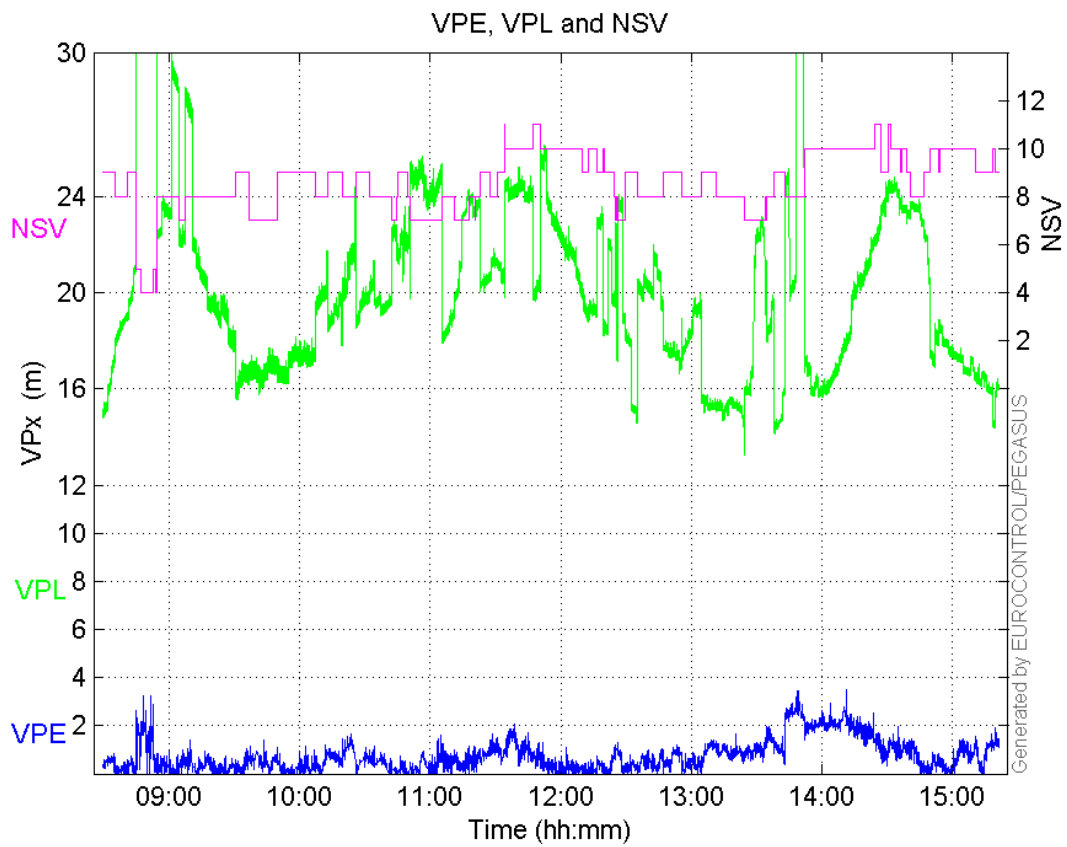
<b>Long Discontinuity Events</b>	--	1	1	--	1
<b>Independent Discontinuity Events</b>	--	1	1	--	1
<b>P(discontinuity)</b>	NaN	0.000619579	0.000622019	NaN	0.000622019
<b>P(sliding window)</b>	NaN	0.00218918	0.000622019	NaN	0.000622019
<b>All Integrity Events</b>	0	0	0	0	0
<b>Horizontal Integrity Events</b>	0	0	0	0	0
<b>Vertical Integrity Events</b>	0	0	0	0	0

**Time Series**

**HPE, HPL and NSV:**

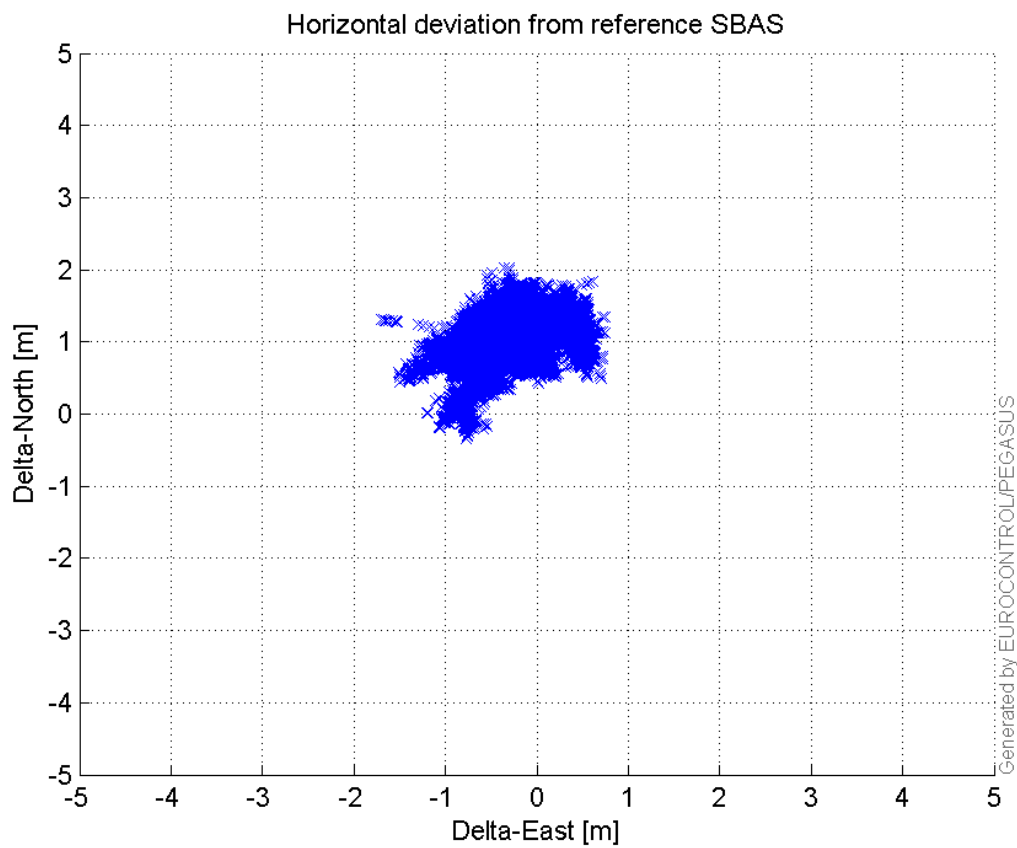


**VPE, VPL and NSV:**



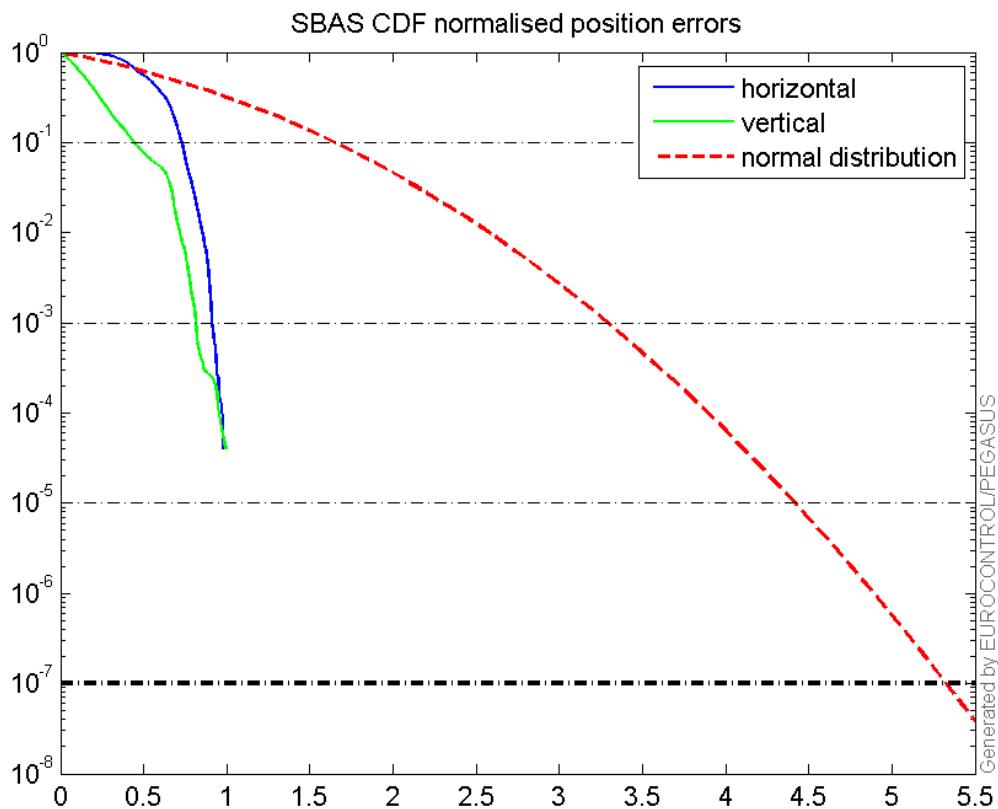
### Horizontal deviation

Horizontal deviation from reference SBAS:



## CDF position

SBAS CDF position domain:



## Statistics

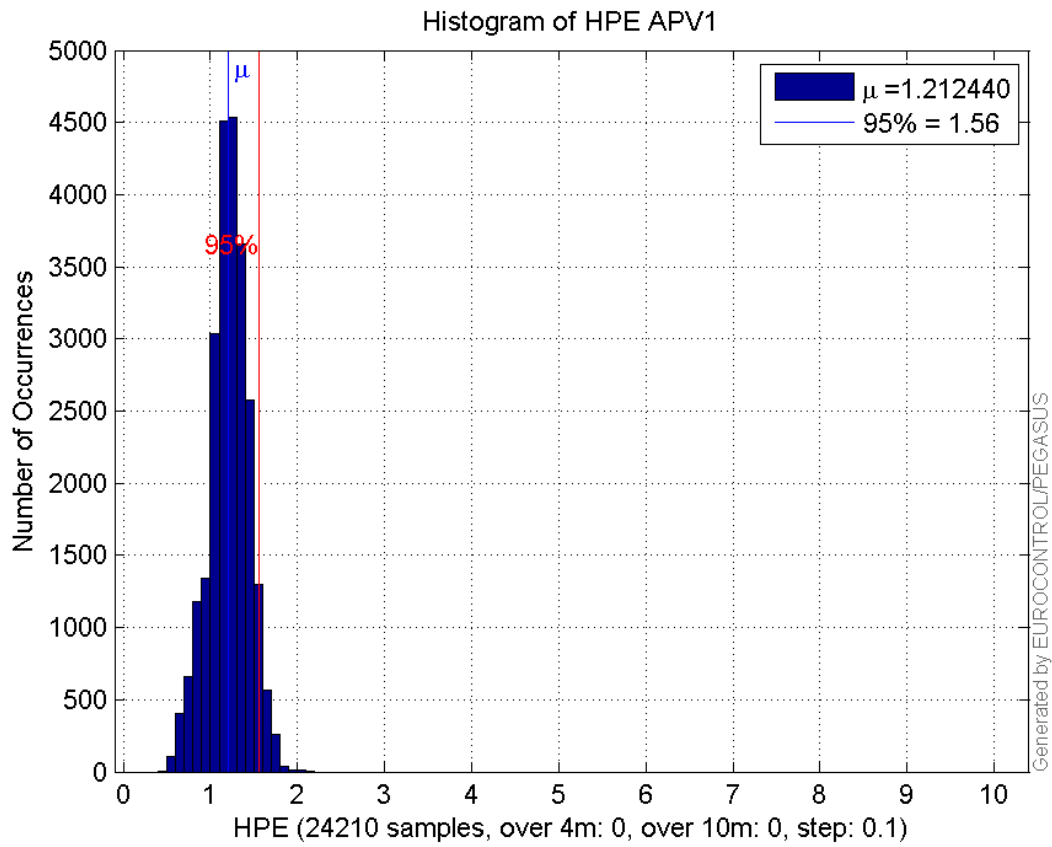
<b>number</b>	24210
<b>sum</b>	29353.164
<b>sum2</b>	36827.321
<b>prctile95</b>	1.5636476
<b>prctile99</b>	1.7217173
<b>number</b>	24210
<b>sum</b>	17795.742
<b>sum2</b>	22031.554
<b>prctile95</b>	2.0498993
<b>prctile99</b>	2.6186511
<b>number</b>	24210
<b>sum</b>	352009.56
<b>sum2</b>	5518165.1
<b>prctile95</b>	21.8996
<b>prctile99</b>	30.50822
<b>number</b>	24210
<b>sum</b>	482927.28
<b>sum2</b>	9925646.9
<b>prctile95</b>	24.8132
<b>prctile99</b>	31.23434
<b>number</b>	24210
<b>sum</b>	2150.2295
<b>sum2</b>	207.1229

**prctile95** 0.12776382  
**prctile99** 0.1421771  
**number** 24210  
**sum** 924.20294  
**sum2** 60.743706  
**prctile95** 0.11625452  
**prctile99** 0.13479711  
**number** 24115  
**sum** 29205.58  
**sum2** 36589.492  
**prctile95** 1.5622075  
**prctile99** 1.7147136  
**number** 24115  
**sum** 17755.052  
**sum2** 22009.958  
**prctile95** 2.0505237  
**prctile99** 2.6189189  
**number** 24115  
**sum** 348874.81  
**sum2** 5413356.2  
**prctile95** 21.782225  
**prctile99** 23.312055  
**number** 24115  
**sum** 479213.91  
**sum2** 9779308.5  
**prctile95** 24.72745  
**prctile99** 29.28225  
**number** 24115  
**sum** 2145.7847  
**sum2** 206.91295  
**prctile95** 0.12780704  
**prctile99** 0.14226025  
**number** 24115  
**sum** 923.17032  
**sum2** 60.729892  
**prctile95** 0.11636827  
**prctile99** 0.13491281

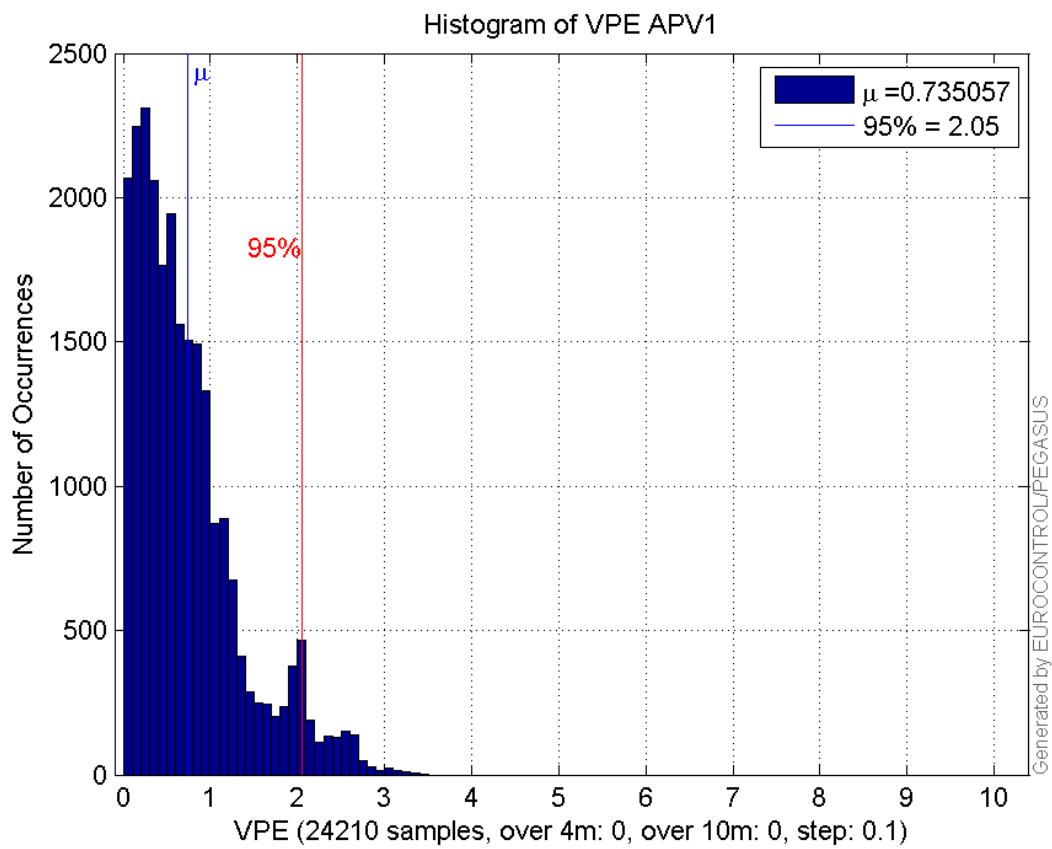
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	1.21244	0.226172	1.21627	1.56365	1.72172	1.23335
<b>HPL</b>	14.5398	4.06483	13.187	21.8996	30.5082	15.0973
<b>VPE</b>	0.735057	0.60805	0.586536	2.0499	2.61865	0.953949
<b>VPL</b>	19.9474	3.47589	19.5618	24.8132	31.2343	20.248

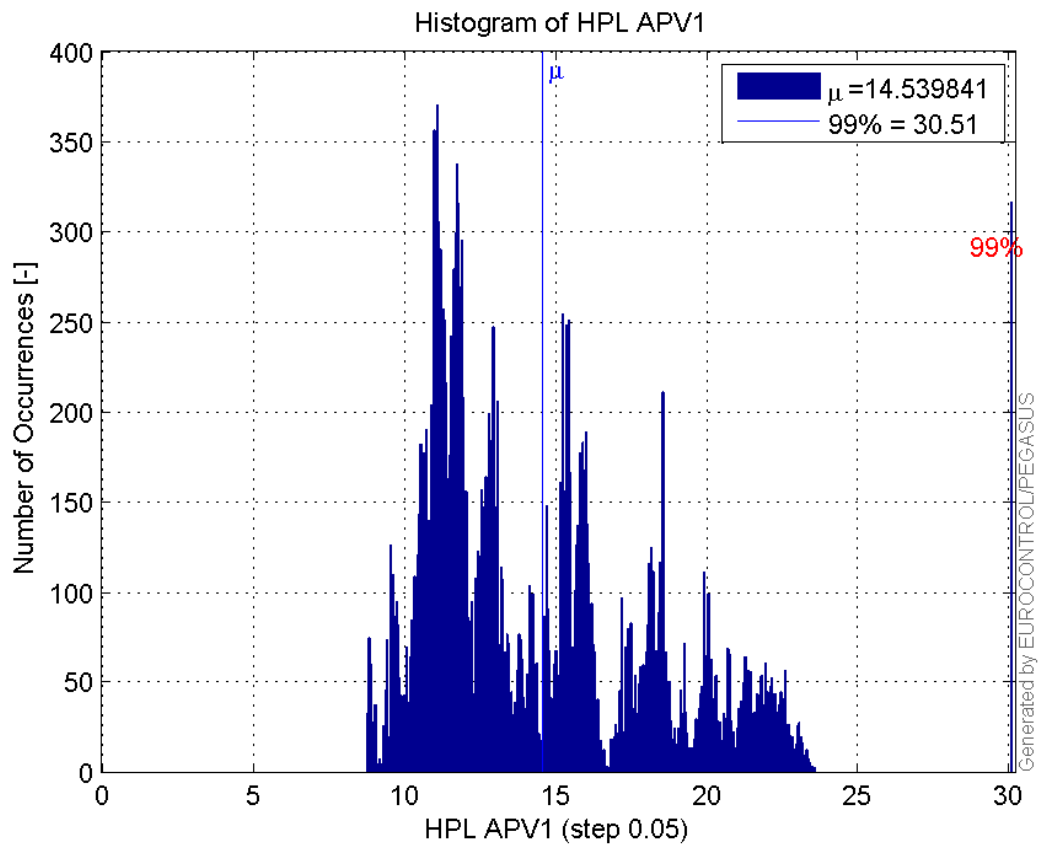
**Histogram of HPE APV1:**



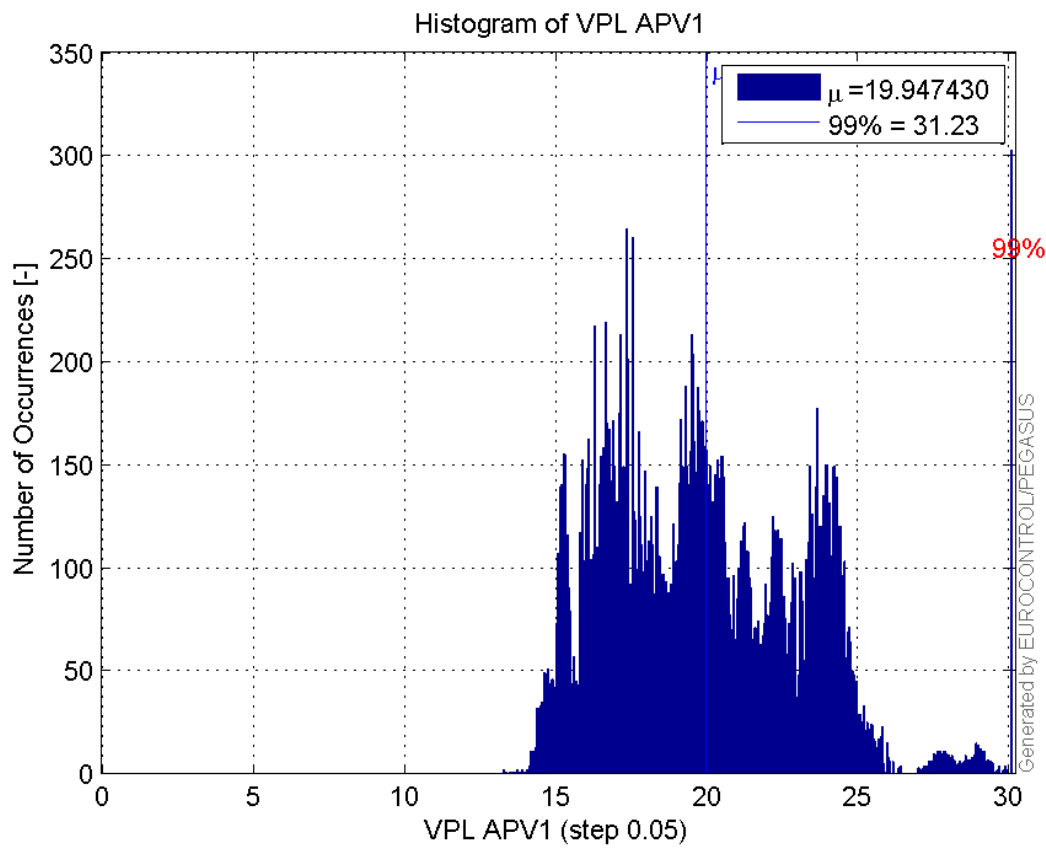
**Histogram of VPE APV1:**



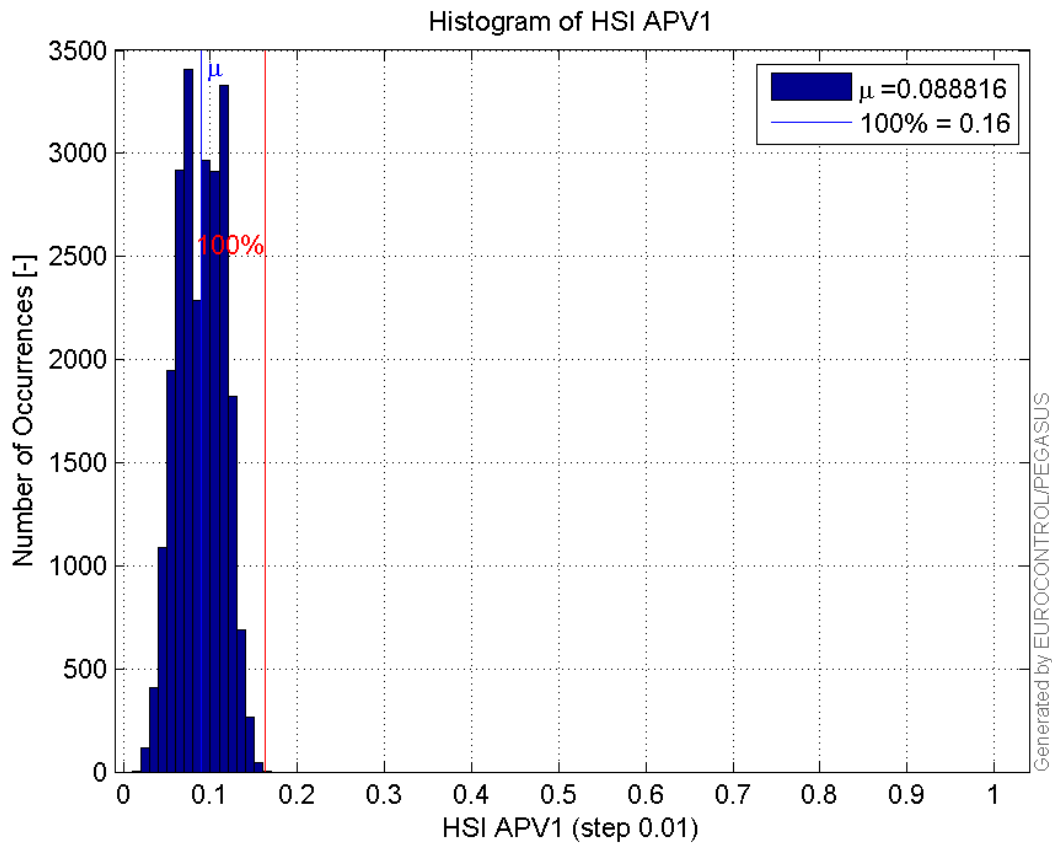
**Histogram of HPL APV1:**



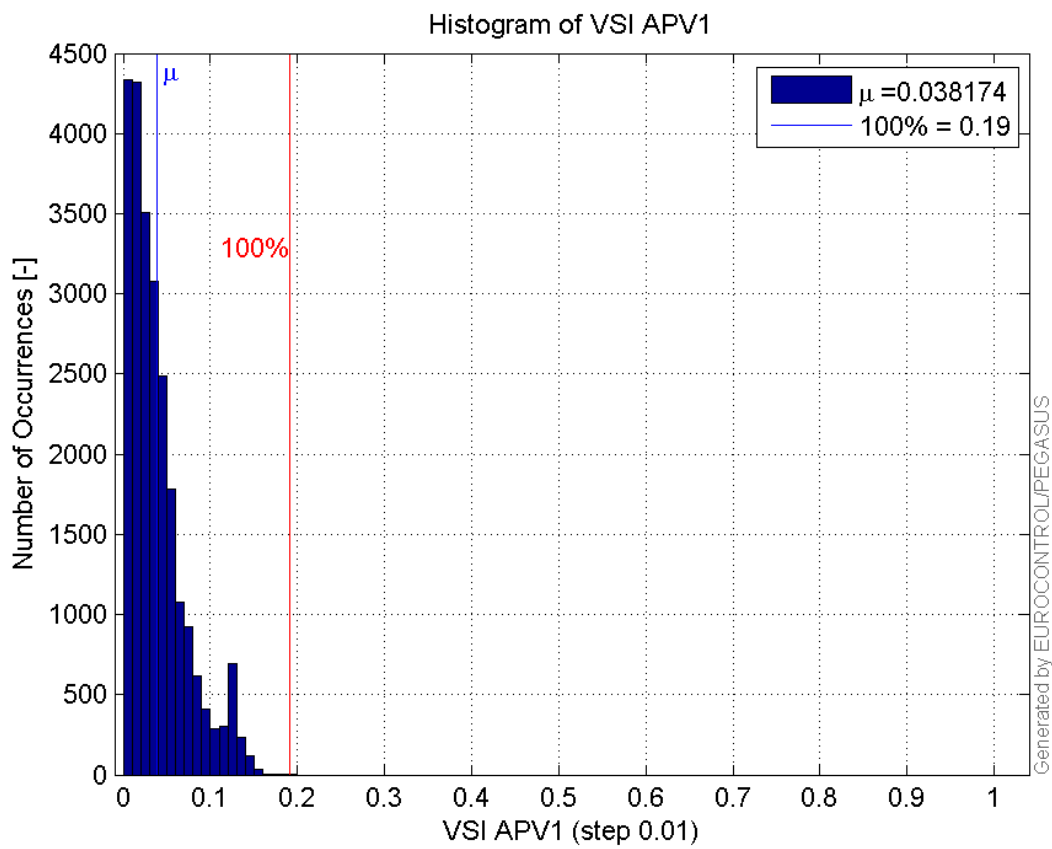
**Histogram of VPL APV1:**



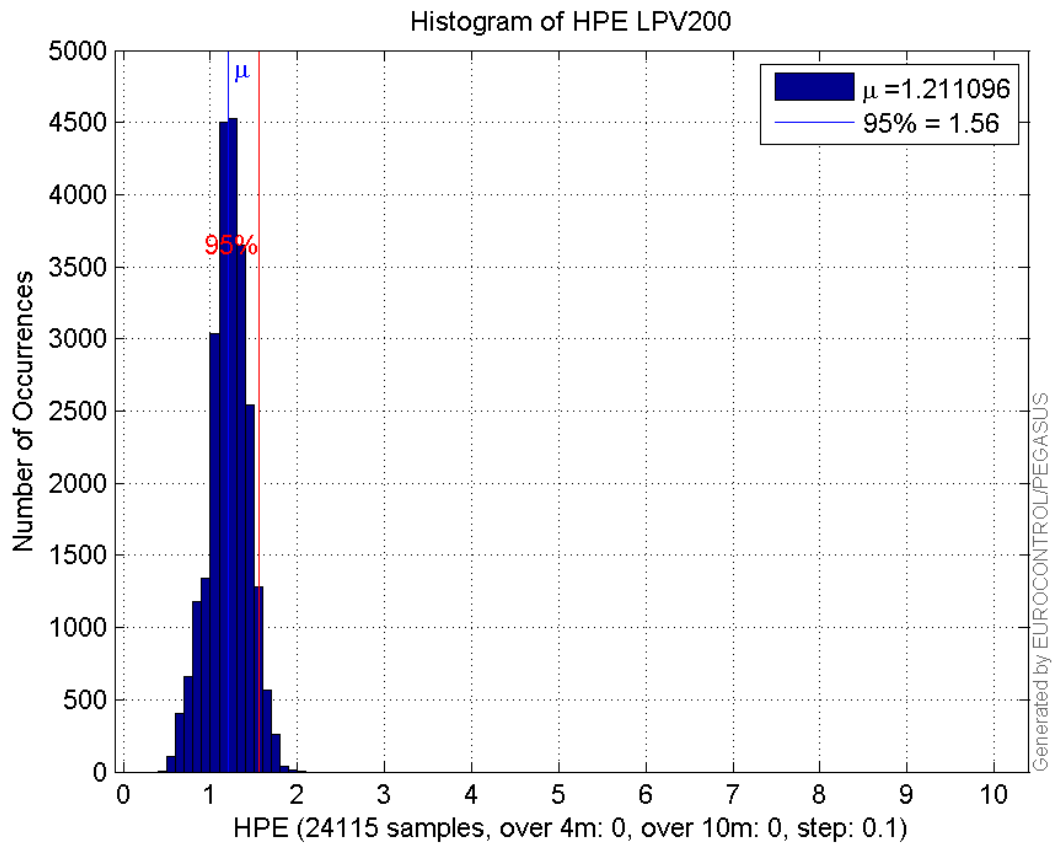
**Histogram of HSI APV1:**



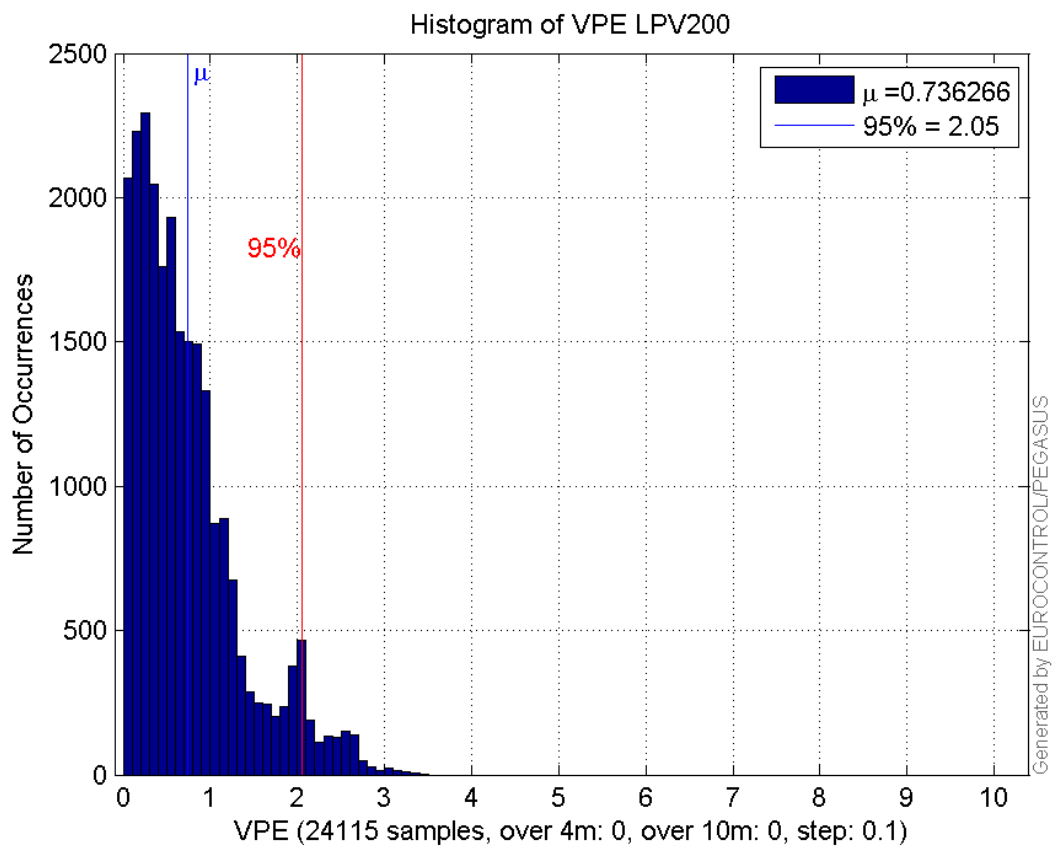
**Histogram of VSI APV1:**



**Histogram of HPE LPV200:**

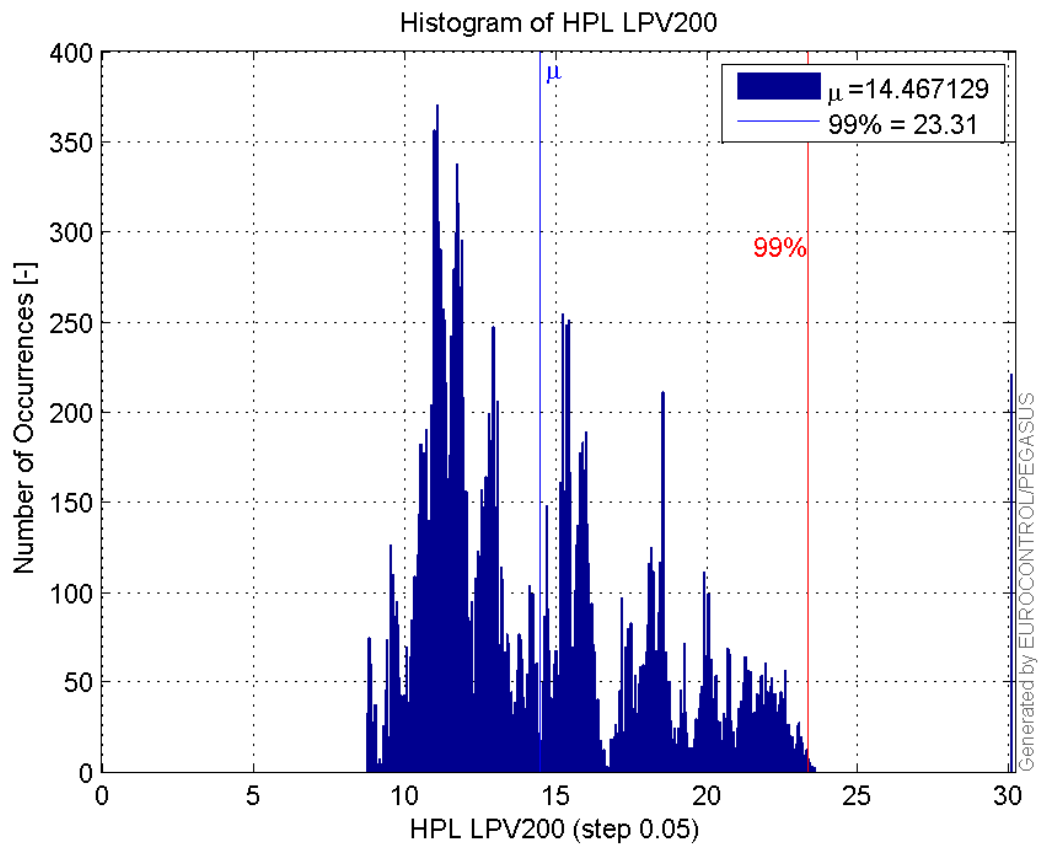


**Histogram of VPE LPV200:**

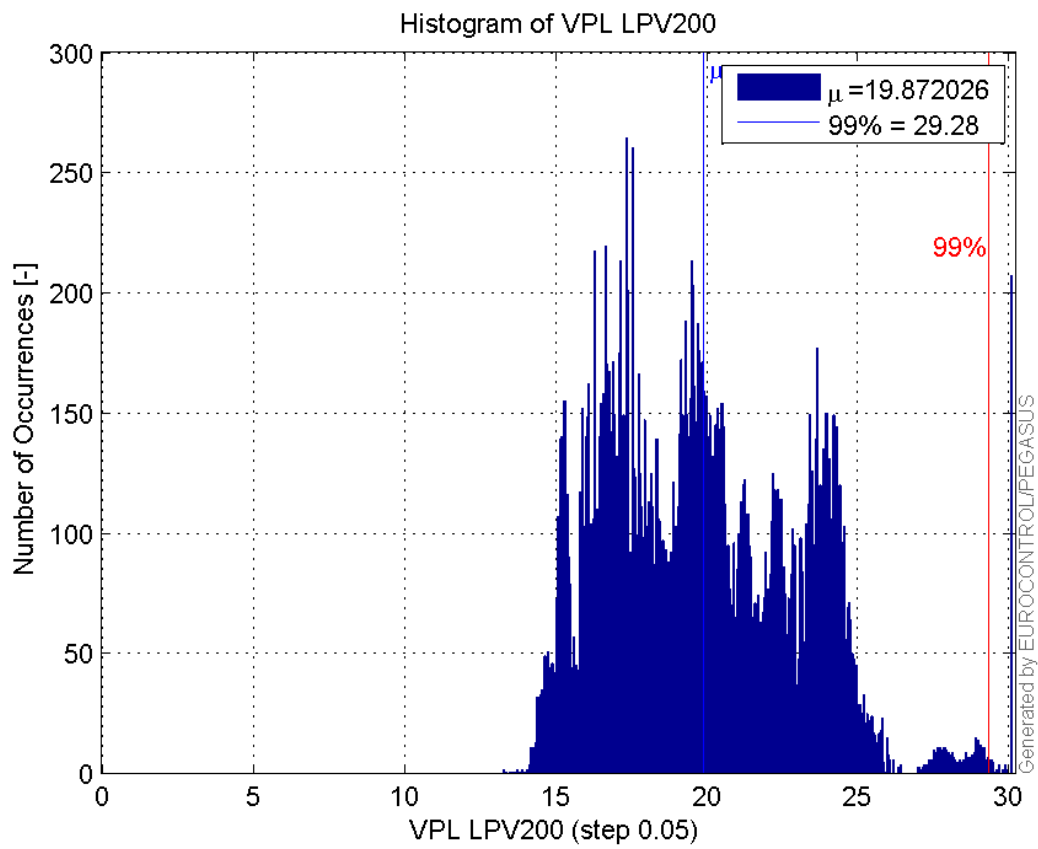


**Histogram of HPL LPV200:**

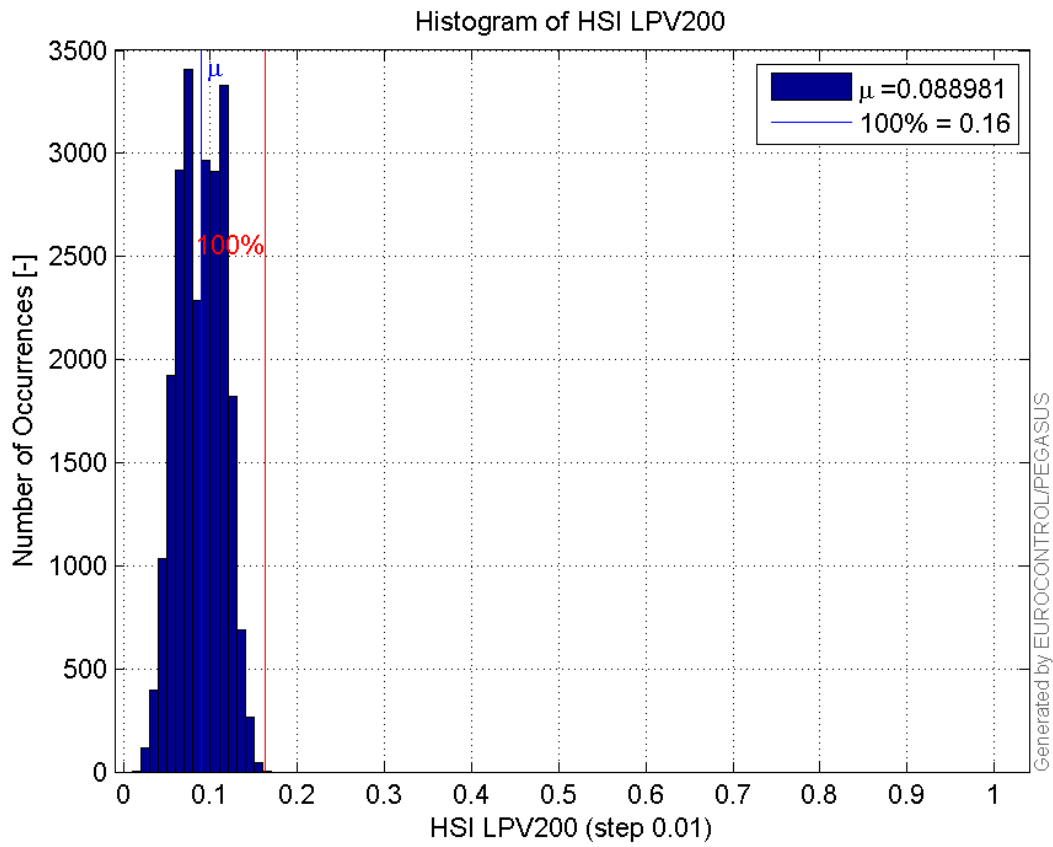




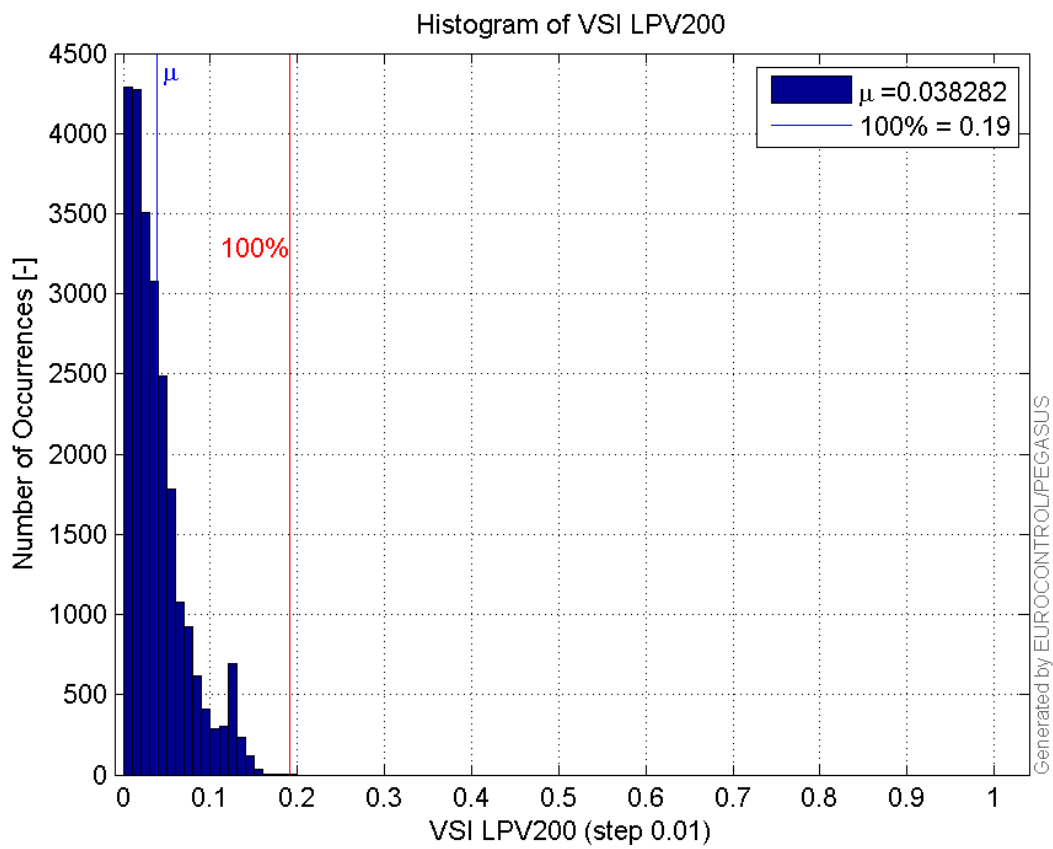
**Histogram of VPL LPV200:**



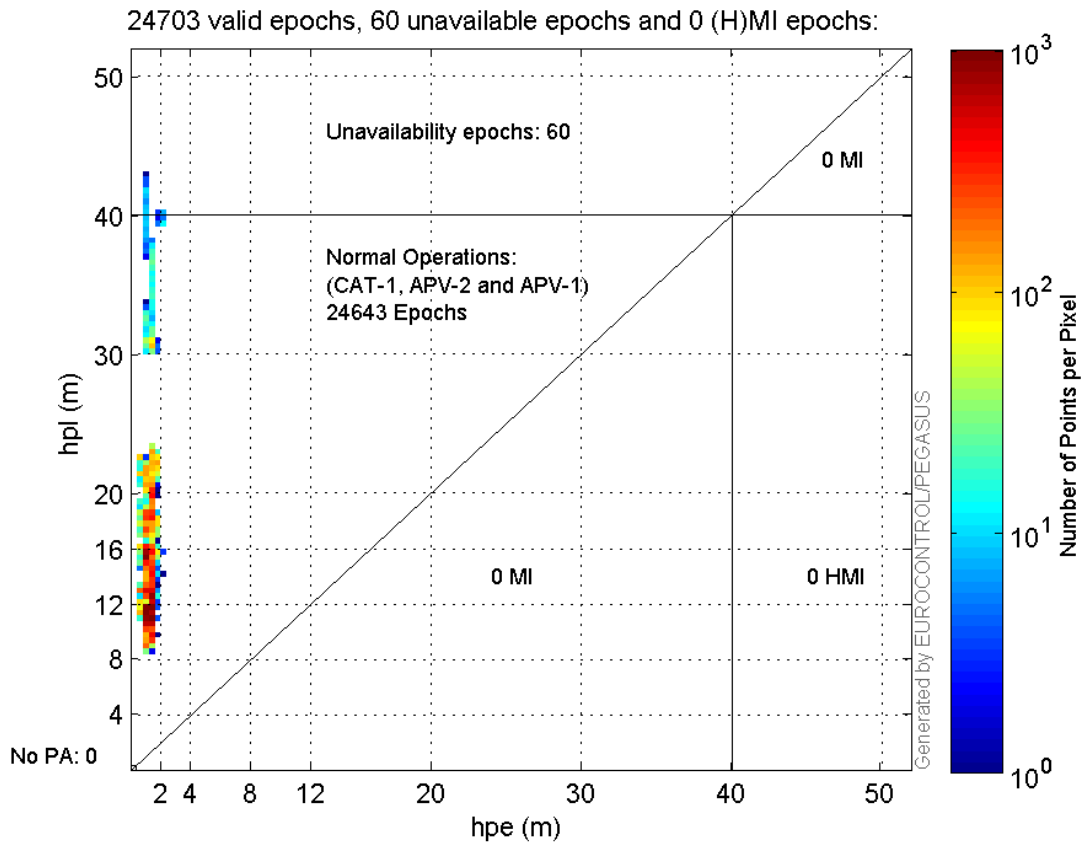
**Histogram of HSI LPV200:**



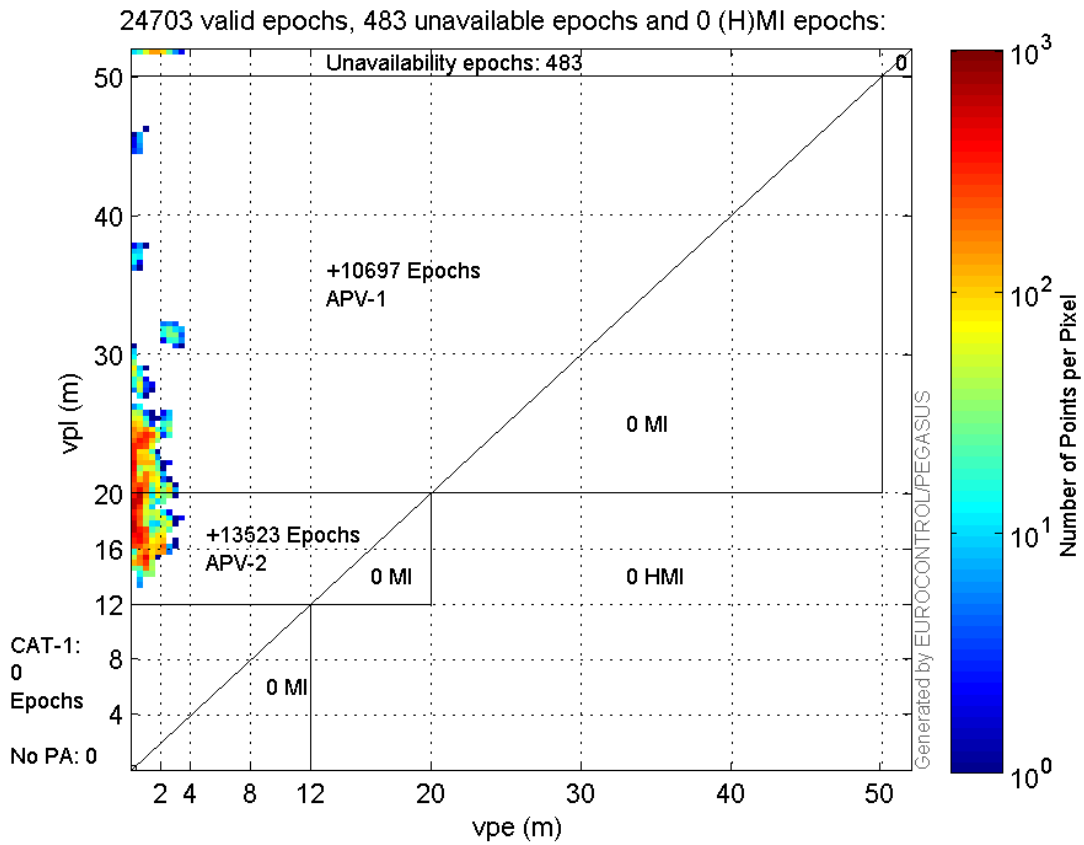
**Histogram of VSI LPV200:**



**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_01_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_09_01_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	247.1136
mi_numbers	results	0

## Range Domain

**start:** 08:23:35 01.09.2016 ( week: 1912 sec: 375815 )  
**end:** 15:21:18 01.09.2016 ( week: 1912 sec: 400878 )  
**duration:** 06:57:44 ..

## quality

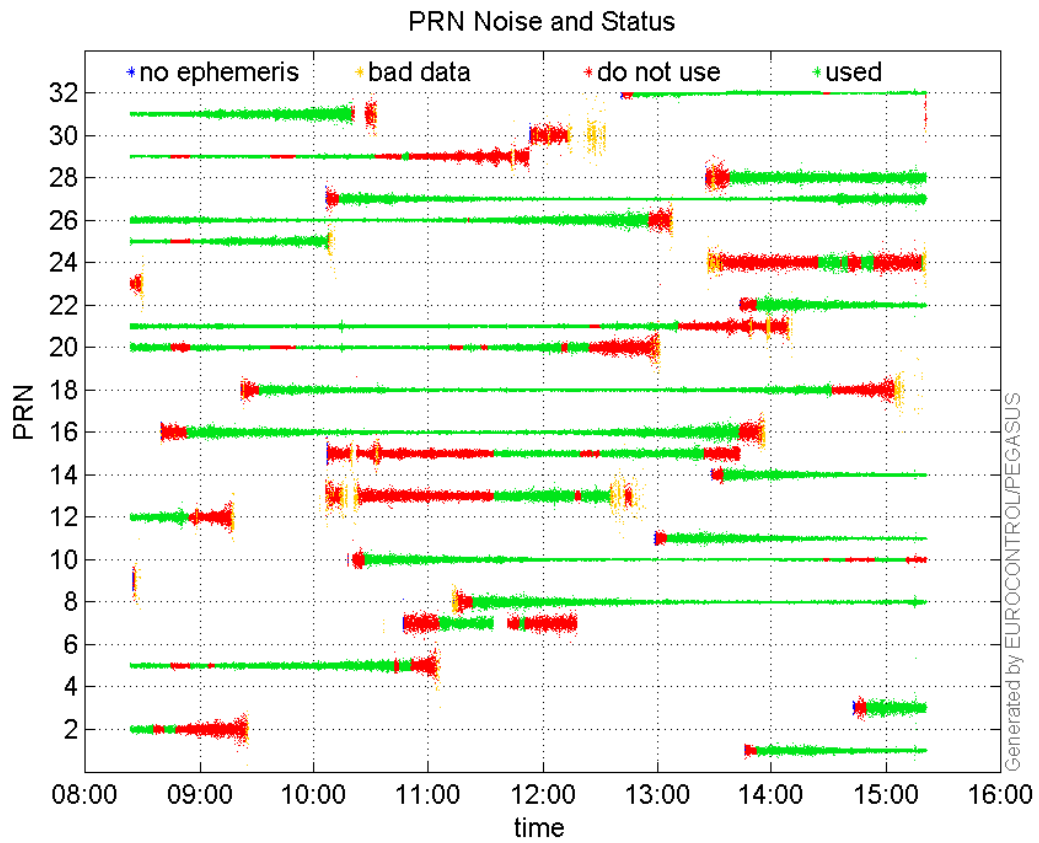
**valid samples** 25064  
**total samples** 25064

## PRN overview

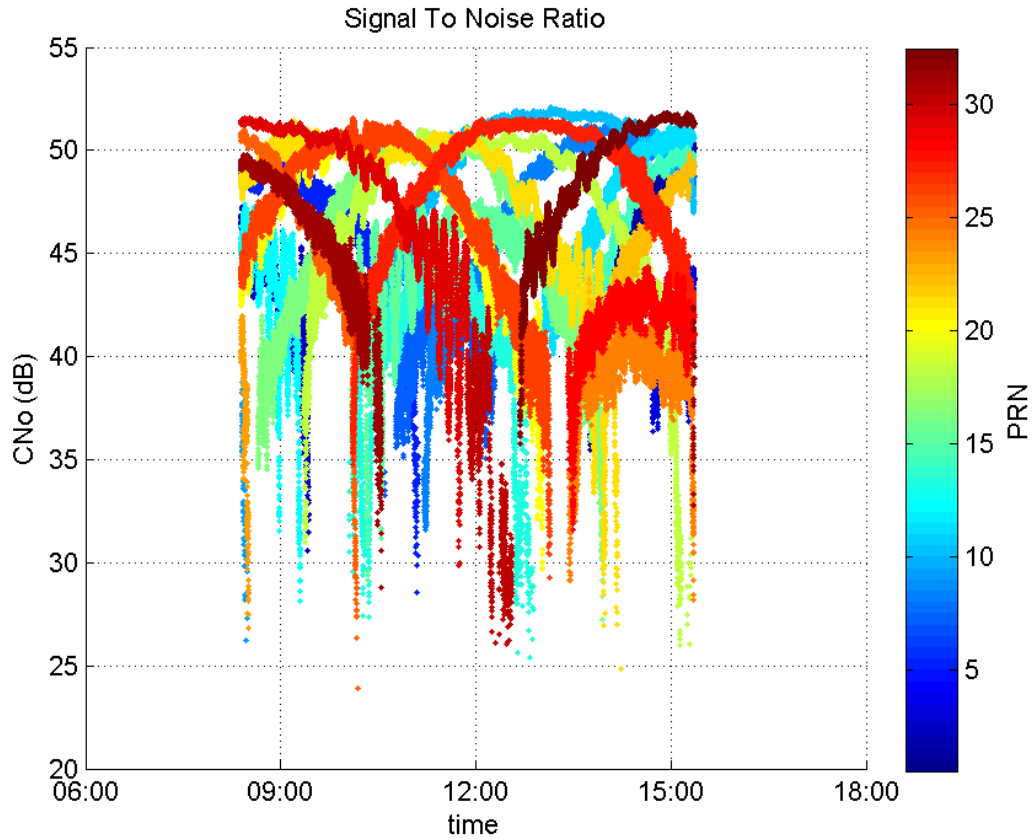
**Number of Visible GPS Satellites** 28  
**Number of Visible SBAS Satellites** 2

## signal quality and status

**PRN Noise and Status:**



**Signal To Noise Ratio:**



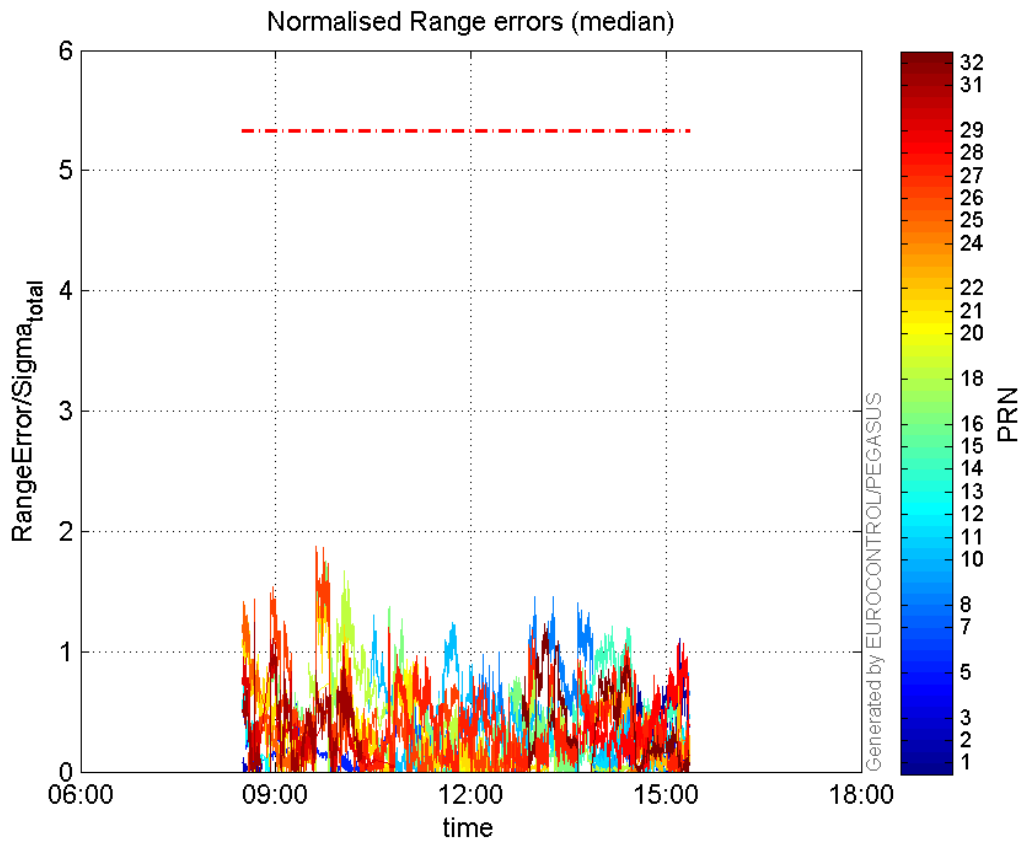
range errors

## Number of Overbounding Norm Errors 0

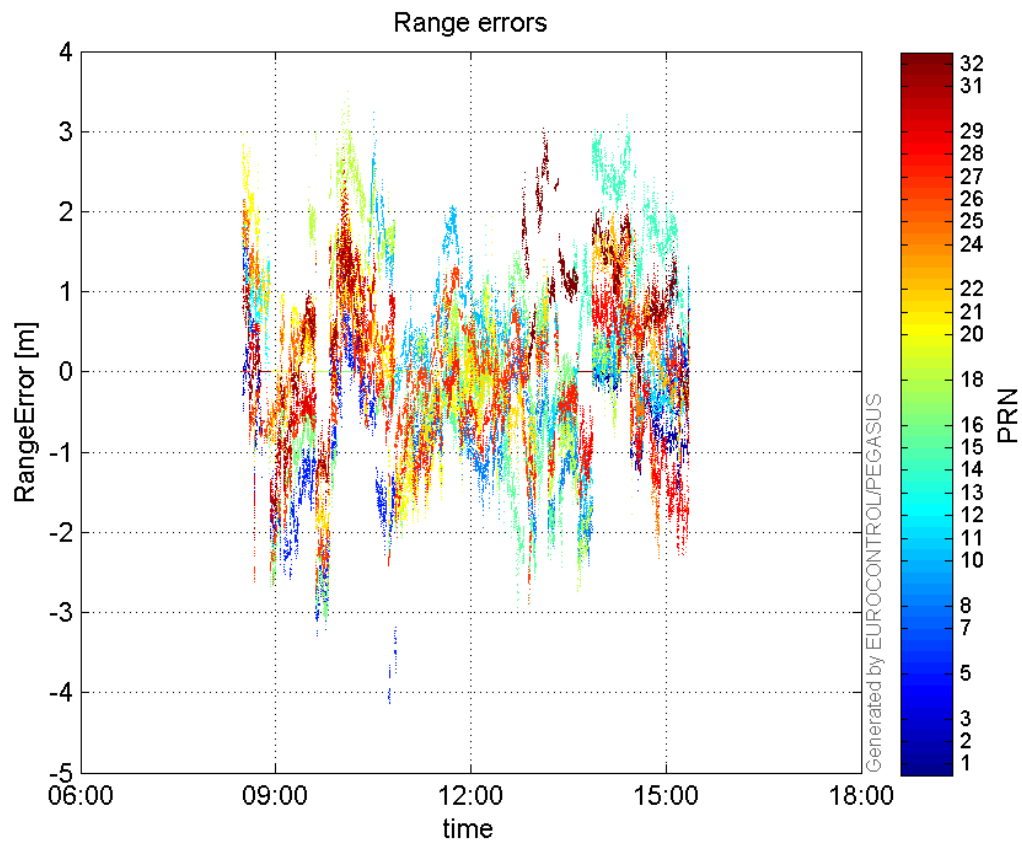
## Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1912	400385	1	1.10532	-1.66622	1.50745
1912	377243	2	0.142254	-1.31493	9.24349
1912	400854	3	0.448809	0.916979	2.04314
1912	384634	5	0.77392	-3.75563	4.85273
1912	385591	7	0.606382	-1.70478	2.8114
1912	393340	8	1.45729	-2.17049	1.4894
1912	383428	10	1.30024	3.24604	2.49649
1912	394849	11	0.852763	-1.71835	2.01504
1912	376243	12	0.736199	2.15575	2.92821
1912	390914	13	0.367274	-1.25037	3.40446
1912	396656	14	1.21436	2.73604	2.25308
1912	390383	15	0.481513	-1.61948	3.36332
1912	380757	16	1.75556	-3.08666	1.75822
1912	381777	18	1.6683	3.35989	2.01396
1912	376230	20	1.21985	2.96524	2.43082
1912	380257	21	1.65117	-2.40359	1.45569
1912	396659	22	0.797444	1.99132	2.49713
1912	399105	24	0.388566	-2.01395	5.18302
1912	376231	25	1.41916	2.09543	1.47653
1912	380254	26	1.87603	-2.6867	1.43212
1912	384227	27	1.1989	-2.42058	2.01901
1912	400281	28	1.07169	-2.27969	2.12719
1912	376856	29	1.20881	-1.72815	1.42963
1912	376833	31	1.24186	-2.09672	1.68838
1912	392909	32	1.22712	2.97885	2.42751

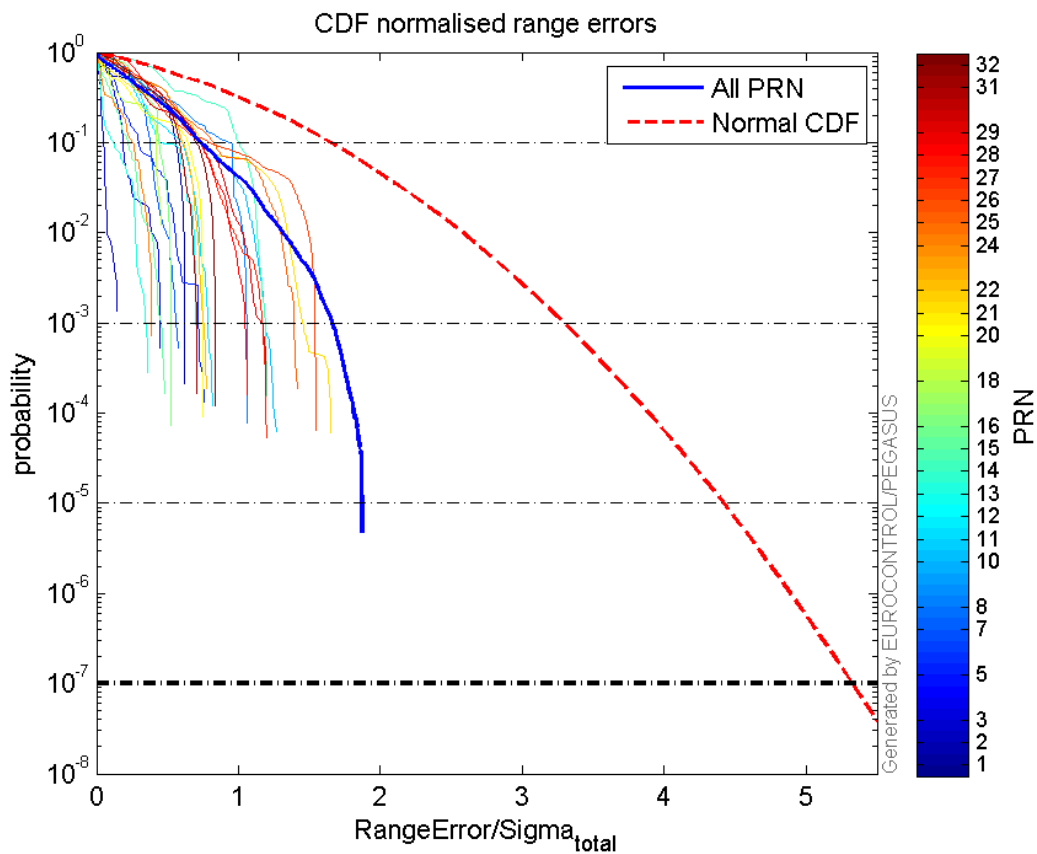
## Normalised Range errors (median):



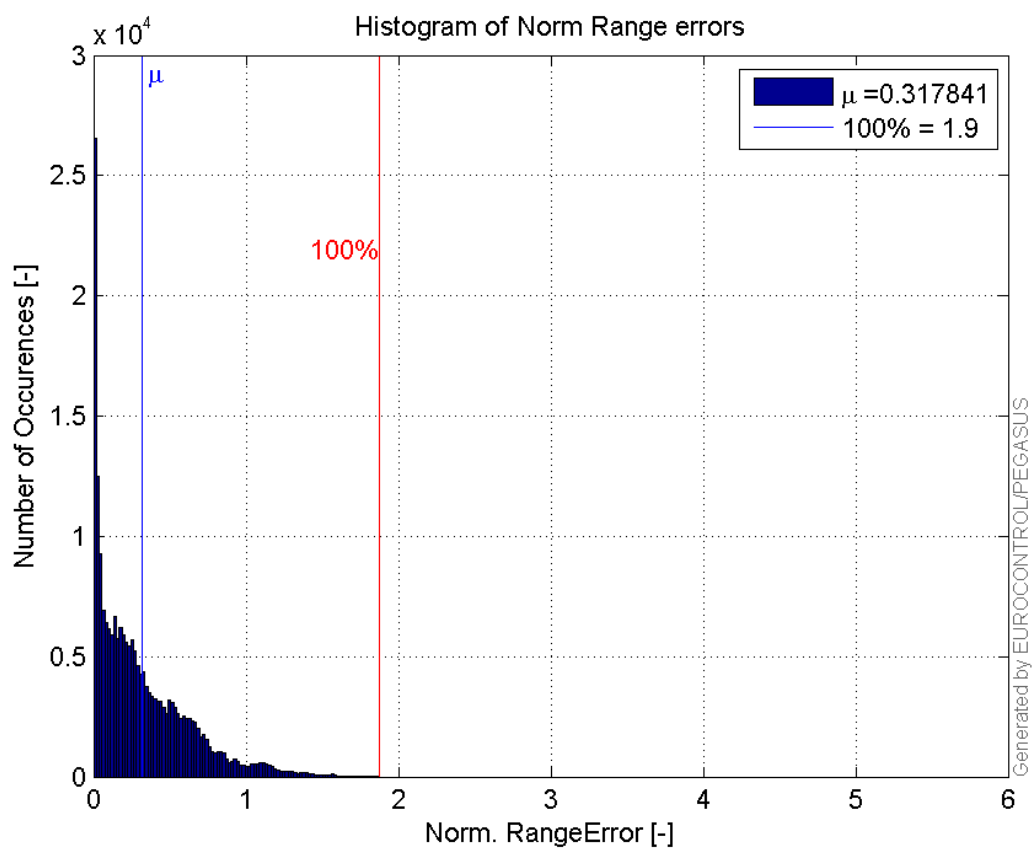
**Range errors:**



**CDF normalised range errors:**

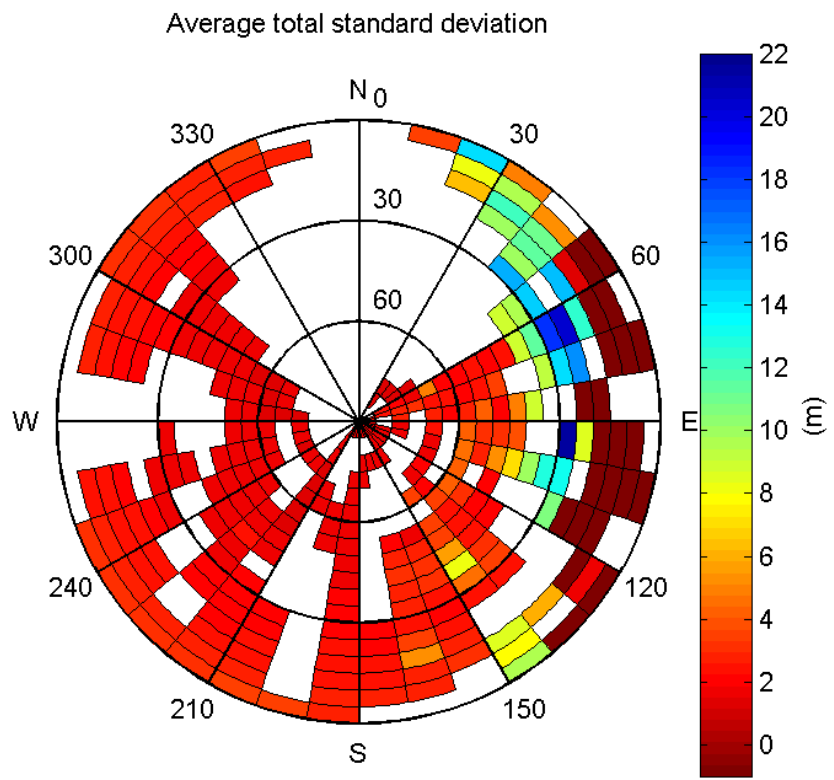


Histogram of Norm Range errors:

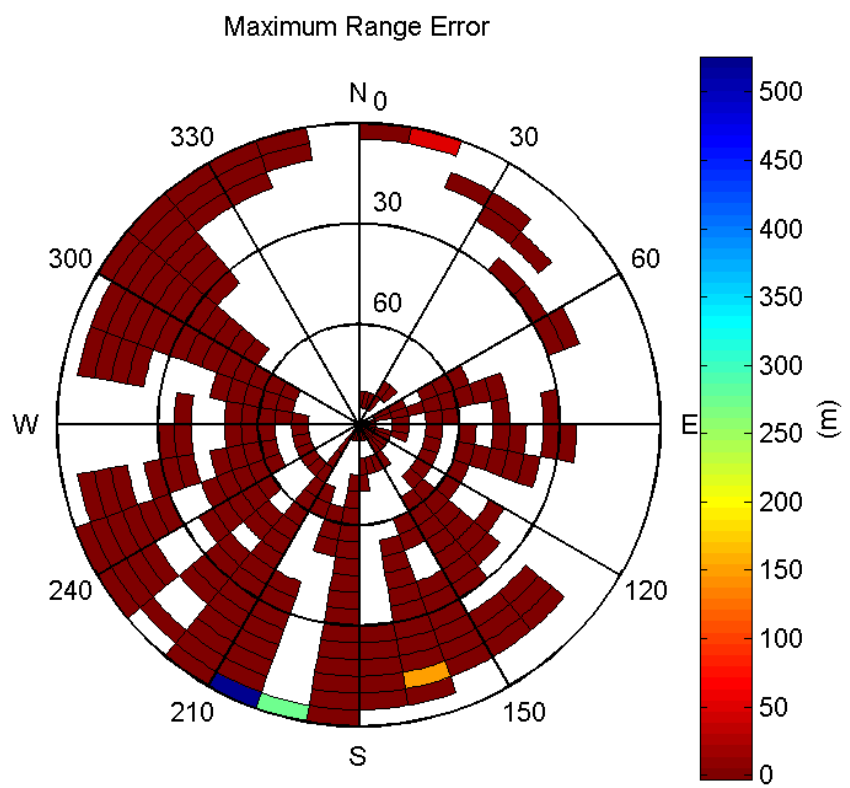


Sigma Sky Plot:



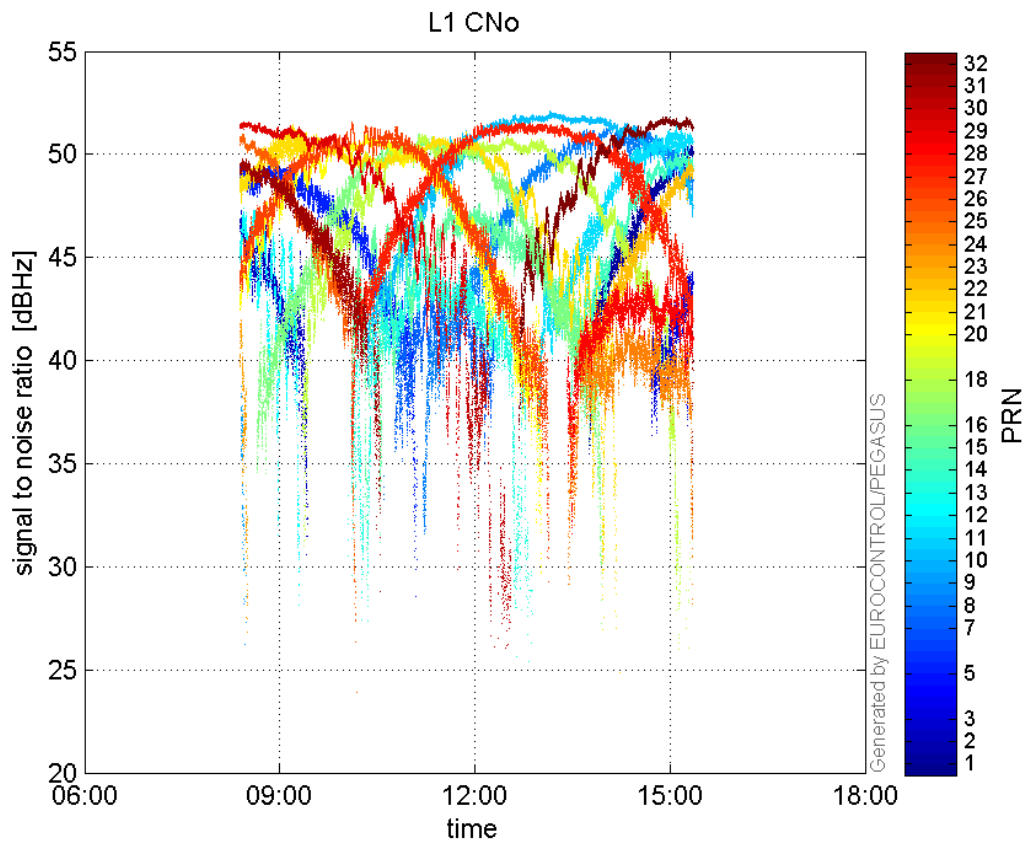


Norm Error Sky Plot:

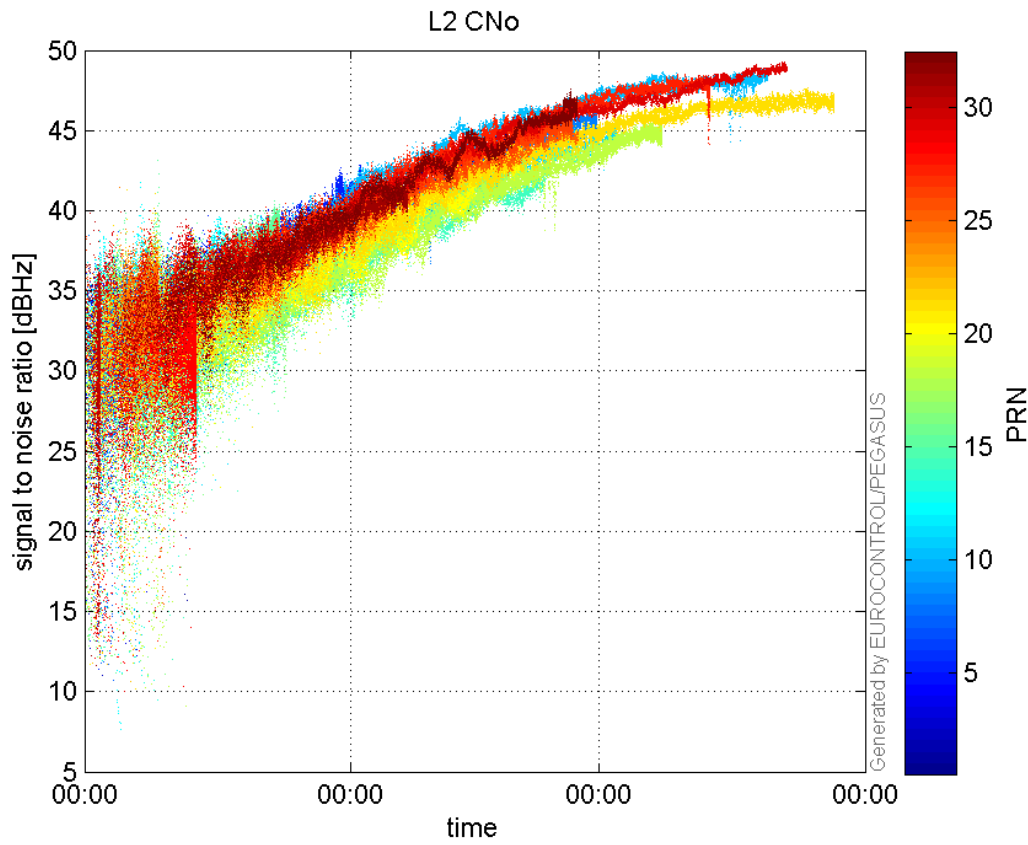


signal quality

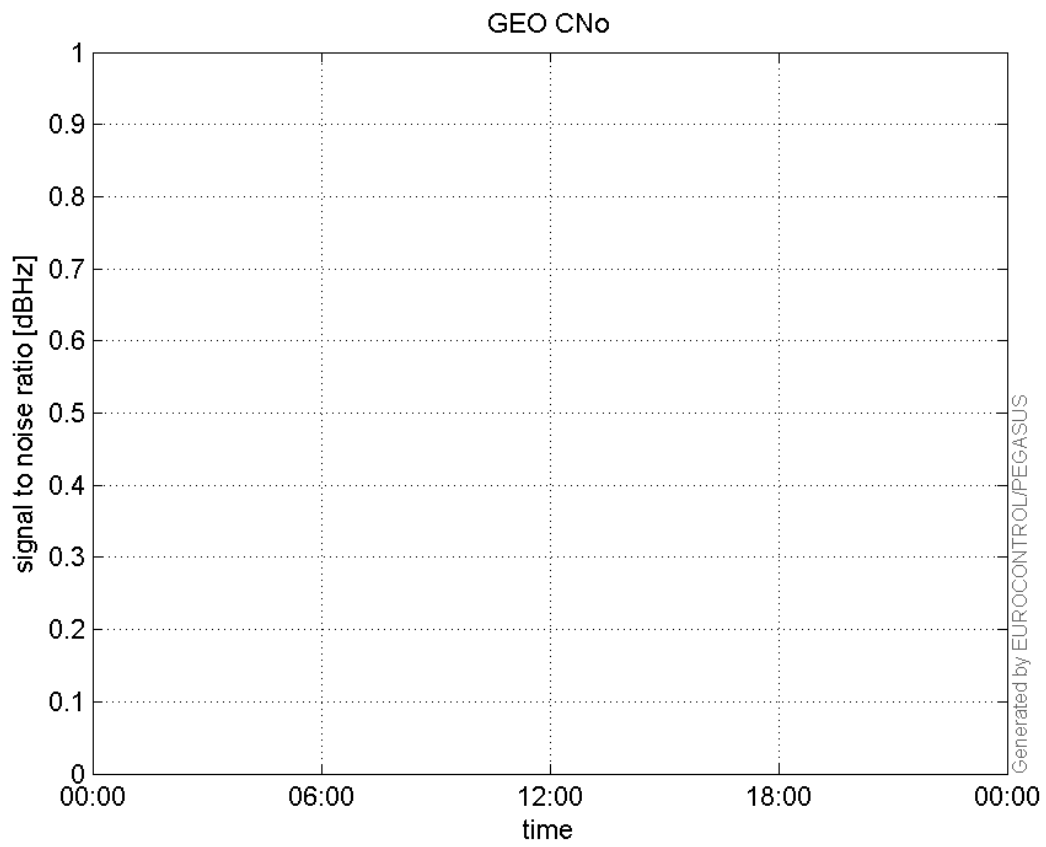
L1 CNo:



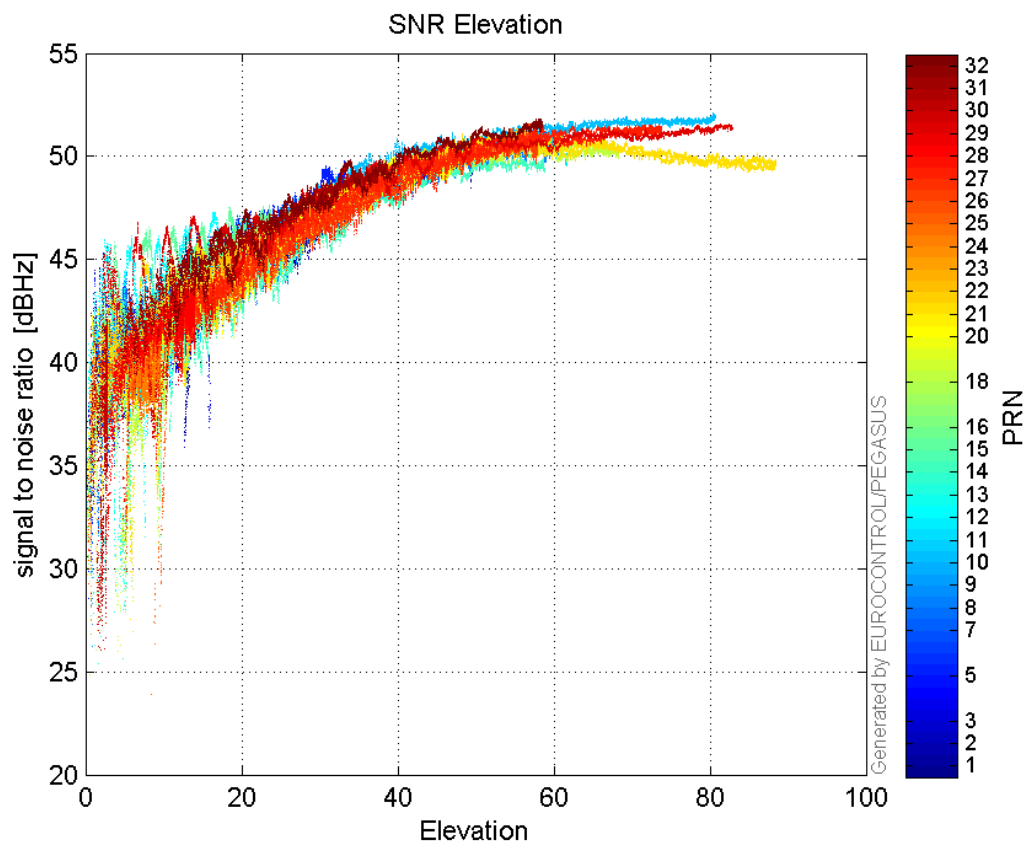
L2 CNo:



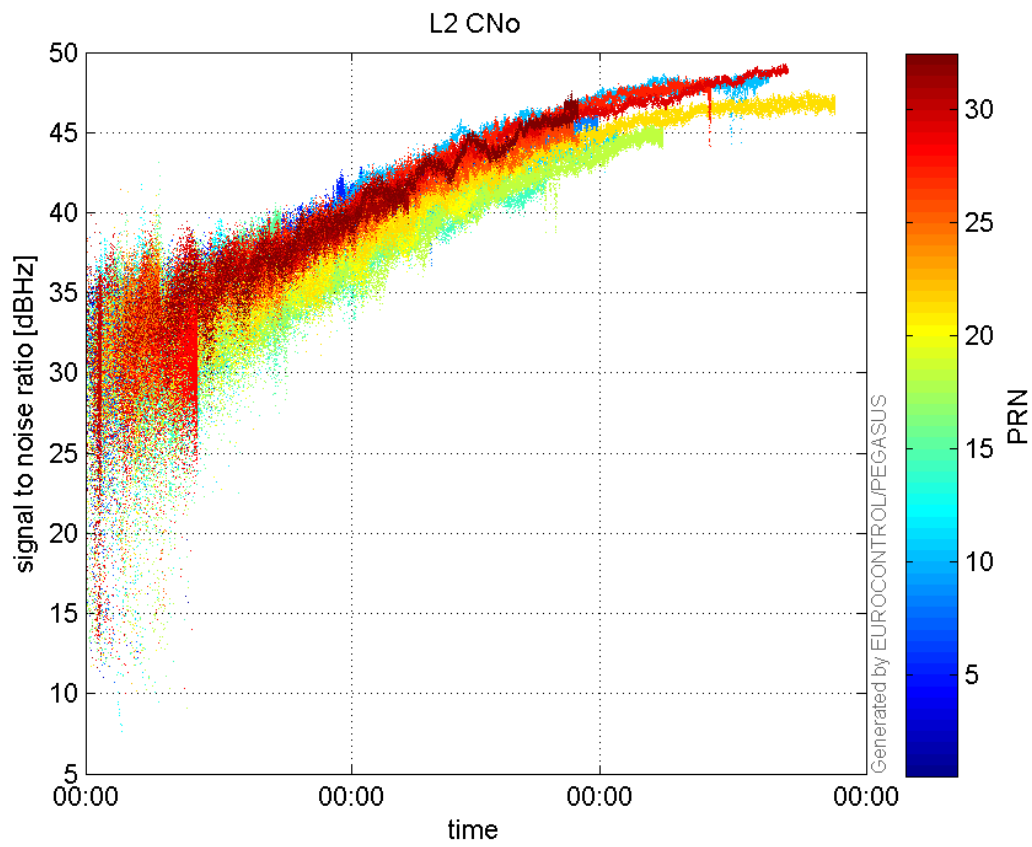
GEO CNo:



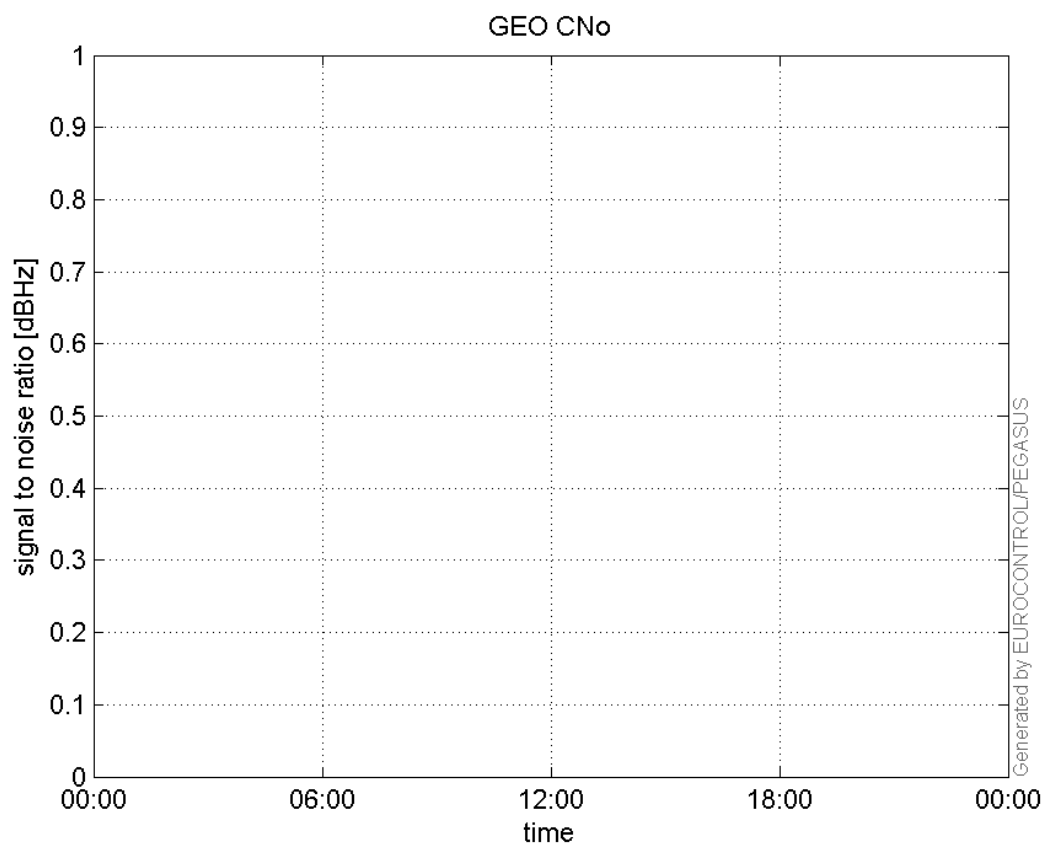
**SNR Elevation:**



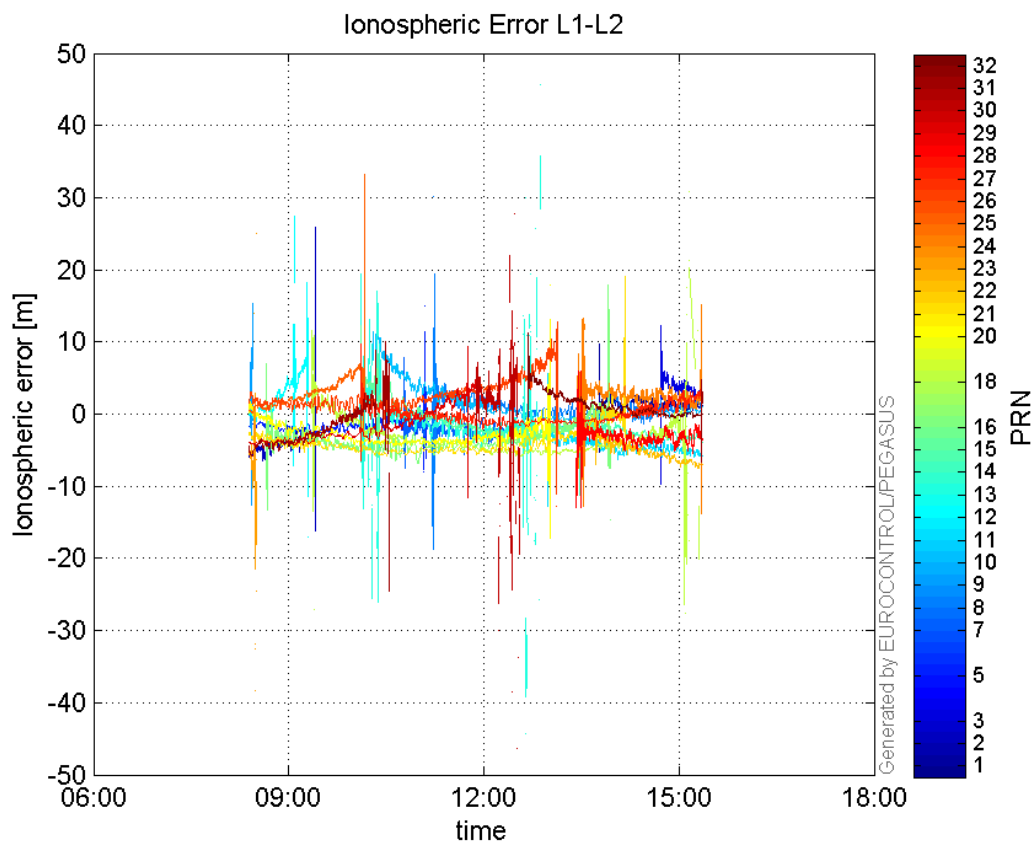
**L2 CNo:**



**GEO CNo:**



**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_01_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_09_01_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	247.1136
mi_numbers	results	0