

DLV3 -

DLV3 - Constellation

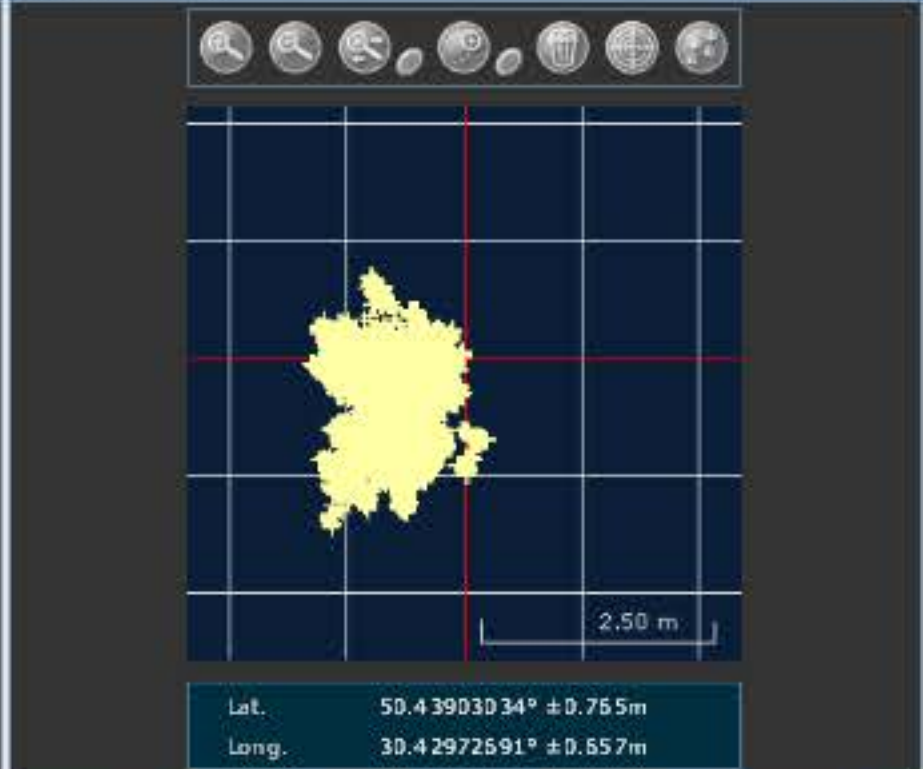


SV Details	Mask Angle Details				
PRN	AZ	ELEV	C/No	STATUS	No SV
[Empty table body]					

DLV3 - GPS Tracking Channel Status



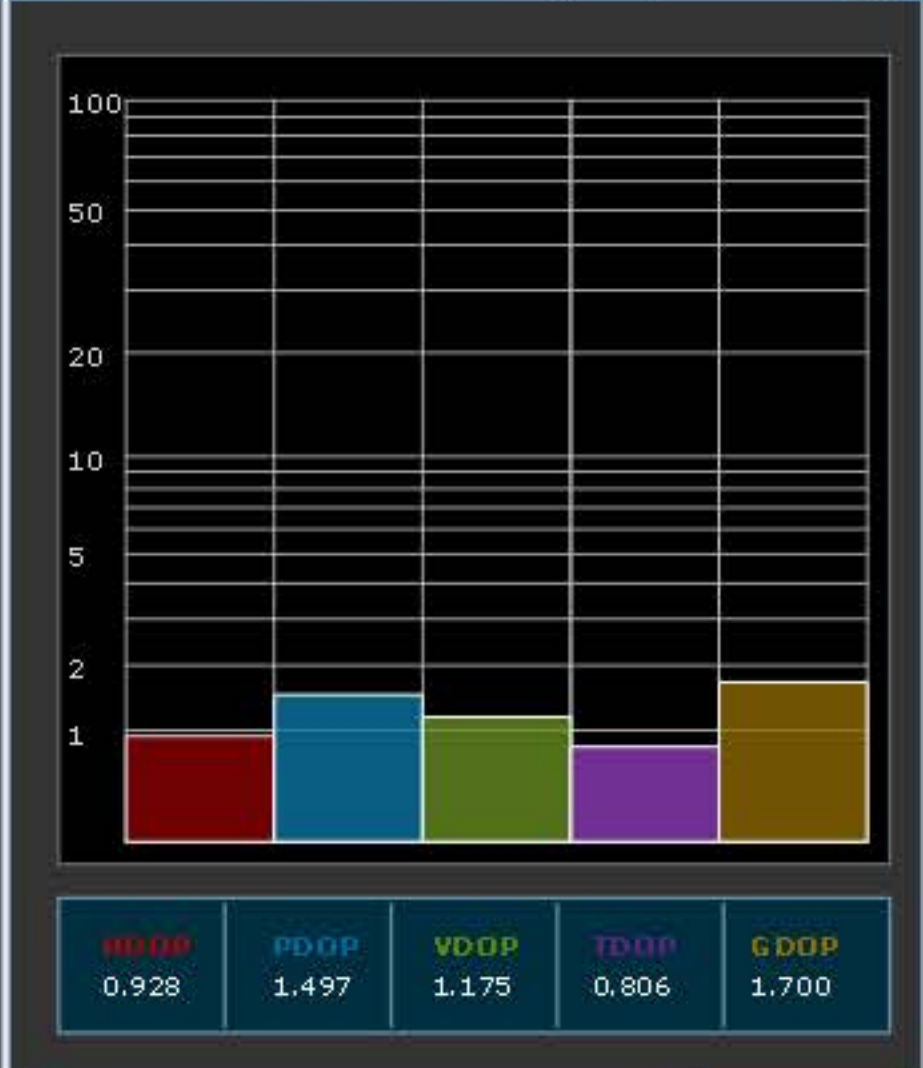
DLV3 - Plan



DLV3 - Position

Latitude	50.43903034°	+/- 0.76m
Longitude	30.42972691°	+/- 0.66m
Hgt. (MSL)	190.997m	+/- 1.30m
Solution type	SBAS	
Iono correction	Multi-frequency	
Advanced RTK status	N/A	
Solution age	0 second	
Differential age	5 seconds	
# of satellites	10	
Used in solution	GPS L1 L2 L5 GLO L1 L2	
Solution status	Computed	
Wed 11/11/2015 12:58:56 GMT Wed 11/11/2015 14:58:56 Local		

DLV3 - Dilution Of Precision (DOP)



```
DLV3 - Console Window
[COM1]
<OK
[COM1]
Command assign 15 active 120 0 100
ENTER
```

DLV3 - Logging Control Window 87 kb/s

# Global View

site Laboratory satellite systems  
 abbreviation NAU  
 city Kiev  
 version 4.8.2  
 country Ukraine  
 comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,  
 P.50 - 54  
 program Pegasus  
 date 11/11/2015

## SBAS Messages

**start:** 05:53:58.129 11.11.2015 ( week: 1870 sec: 280438.129 )  
**end:** 13:08:34.129 11.11.2015 ( week: 1870 sec: 306514.129 )  
**duration:** 07:14:36 ..

### quality

**valid samples** 52154  
**total samples** 52154  
**number of SBAS PRNs** 2

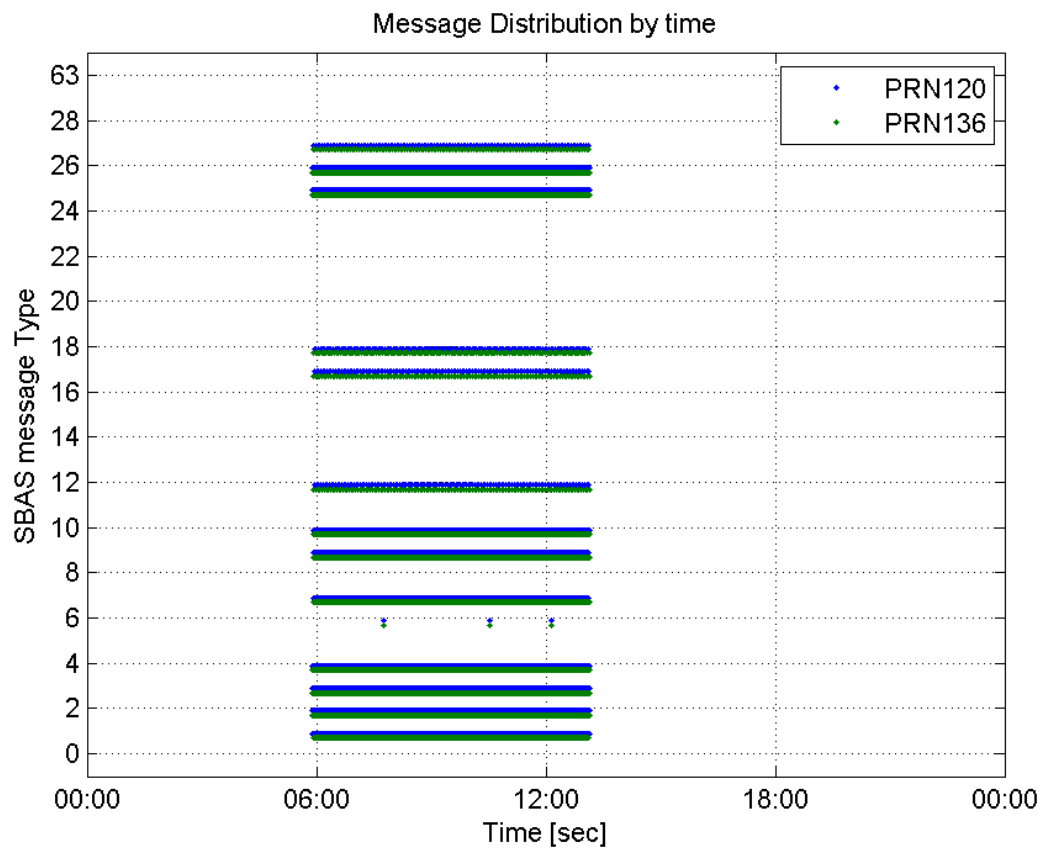
### SBAS SIS Overview

#### Message Type 6 repetitions :

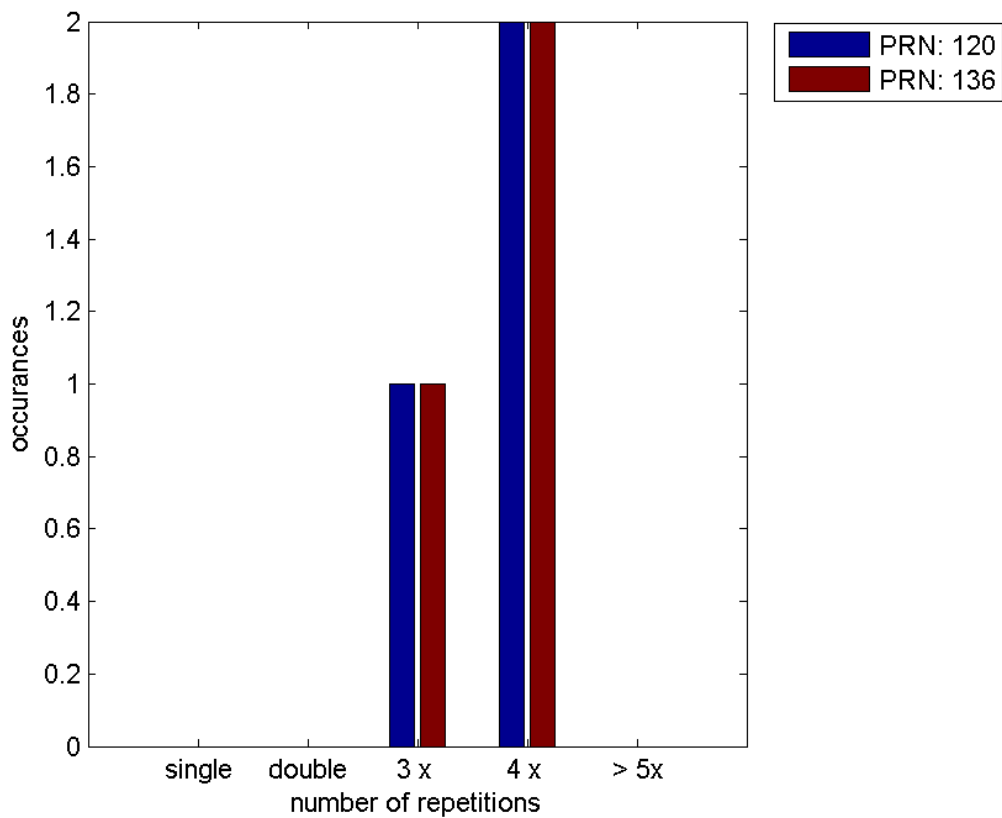
	single	double	3 x	4 x	> 5x
<b>PRN 120</b>	0	0	1	2	0
<b>PRN 136</b>	0	0	1	2	0

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#### Message Distribution by time:



**Message Type 6 repetitions:**



## Broadcast SBAS Messages :

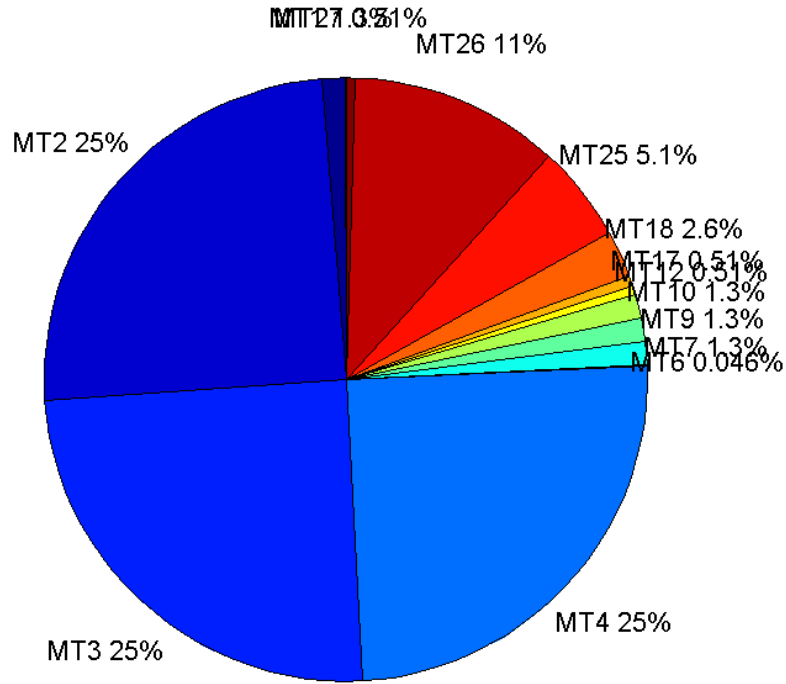
	number of messages	%
MT 0	0	0
MT 1	328	1.25781
MT 2	6474	24.8265
MT 3	6473	24.8226
MT 4	6473	24.8226
MT 5	0	0
MT 6	12	0.0460176
MT 7	327	1.25398
MT 9	327	1.25398
MT 10	327	1.25398
MT 12	133	0.510028
MT 17	133	0.510028
MT 18	665	2.55014
MT 24	0	0
MT 25	1337	5.12712
MT 26	2935	11.2551
MT 27	133	0.510028
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	26077	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	85	79.6972	0	0	0
MT 2	4	8	4.02843	3	0	0
MT 3	4	7	4.02828	3	0	0
MT 4	4	8	4.02843	3	0	0
MT 5	--	--	--	--	--	--
MT 6	1	9962	1436.64	2	2	2
MT 7	76	81	79.681	0	0	0
MT 9	76	81	79.7086	0	0	0
MT 10	76	82	79.6933	0	0	0
MT 12	188	202	195.636	132	0	0
MT 17	185	201	195.606	0	0	0
MT 18	3	169	38.9413	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	44	19.5067	0	0	0
MT						

26	4	40	8.88514	0	0	0
MT 27	188	201	195.614	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	327	1.25398
MT 2	6479	24.8456
MT 3	6479	24.8456
MT 4	6479	24.8456
MT 5	0	0
MT 6	12	0.0460176
MT 7	328	1.25781
MT 9	327	1.25398



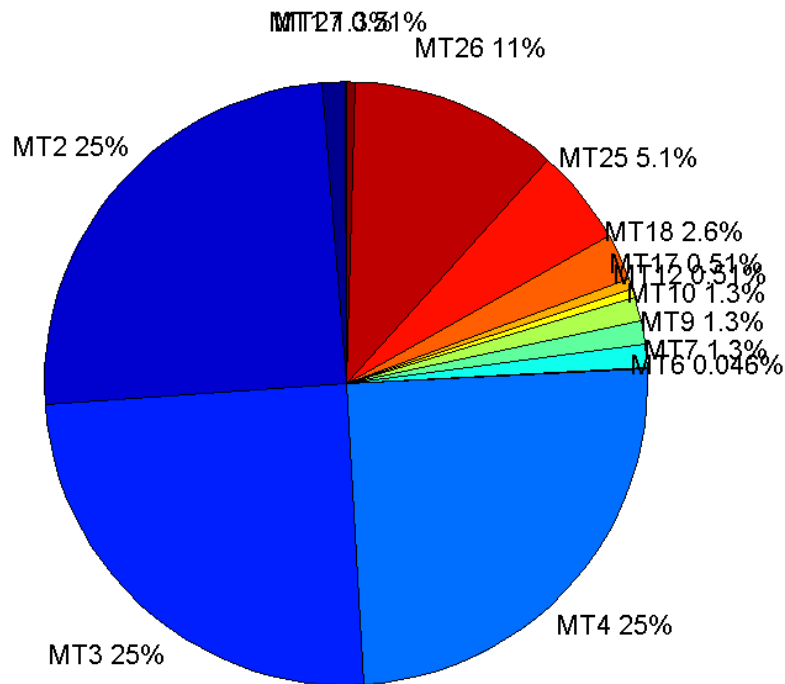
MT 10	327	1.25398
MT 12	133	0.510028
MT 17	133	0.510028
MT 18	665	2.55014
MT 24	0	0
MT 25	1338	5.13096
MT 26	2917	11.1861
MT 27	133	0.510028
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	<b>26077</b>	<b>100</b>

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	82	79.684	0	0	0
MT 2	4	8	4.02485	3	0	0
MT 3	4	7	4.02485	3	0	0
MT 4	4	8	4.0247	3	0	0
MT 5	--	--	--	--	--	--
MT 6	1	9956	1436	2	2	2
MT 7	76	81	79.6636	0	0	0
MT 9	76	81	79.6871	0	0	0
MT 10	76	81	79.684	0	0	0
MT 12	188	201	196.576	132	0	0
MT 17	188	201	196.576	0	0	0
MT 18	4	174	39.1175	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	60	19.4839	0	0	0
MT 26	4	56	8.9417	0	0	0
MT 27	184	202	196.614	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:/PegasusDateGob/job/2015_11_11EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2015_11_11EGNOS/02_Convertor/02_Convertor

#### Configuration

Name	Section	Value
Receiver	Configuration	Novatel OEM4
Leap_Seconds	Configuration	15
Correction_mode	Configuration	SBAS MODE 0
Dual_Frequency	Configuration	no

### Position Domain

**start:** 05:53:58 11.11.2015 ( week: 1870 sec: 280438 )  
**end:** 13:08:35 11.11.2015 ( week: 1870 sec: 306515 )  
**duration:** 07:14:38 ..

### quality

**valid samples** 25715  
**total samples** 26078

## 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** no (0)

## extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
<b>max normHor</b>	295187	1.71715	9.77103	0.175739	1.72204	14.486	0.118876
<b>max normVer</b>	295251	1.89042	15.1791	0.124541	2.7519	16.6437	0.165342
<b>max HPE</b>	294352	5.21721	85.5723	0.0609685	-3.40504	49.5129	0.0687707
<b>max VPE</b>	294352	5.21721	85.5723	0.0609685	-3.40504	49.5129	0.0687707
<b>min HPL</b>	287163	0.642363	8.50646	0.0755148	0.0107642	15.2824	0.000704353
<b>min VPL</b>	293986	0.533837	9.76754	0.0546542	-	11.7135	0.0001946

## APV-I discontinuity events :

#	Epoch	duration	stable period
1	290652	66	9851
2	294251	105	3533
3	294569	278	213

## APV-35m discontinuity events :

#	Epoch	duration	stable period
1	285013	2	4212
2	285016	3	1
3	285020	3	1
4	285024	3	1
5	285028	3	1
6	285032	3	1
7	285036	3	1
8	285040	3	1
9	285044	12	1
10	290652	66	5596
11	294251	105	3533
12	294569	278	213

## LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	285013	2	4212
2	285016	3	1



3	285020	3	1
4	285024	3	1
5	285028	3	1
6	285032	3	1
7	285036	3	1
8	285040	3	1
9	285044	12	1
10	290652	66	5596
11	294251	105	3533
12	294569	278	213

### First Glance analysis

<b>Duration</b>	26078
<b>Number of Samples</b>	26078
<b>Number of invalid sample</b>	363
<b>Number of no position solution samples</b>	0
<b>Number of missing sample</b>	0
<b>Logging Loss</b>	0
<b>Processing Loss</b>	1.392
<b>Number of Misleading Information</b>	0
<b>Data gaps</b>	0
<b>Discontinuities</b>	0

#### Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
25715	25266	25231	3	25231

#### Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>HPE 95%</b>	1.55765	1.4964	1.49689	0.568146	1.49689
<b>HPEScale 95%</b>	NaN	4.44868	4.44878	2.33527	4.44878
<b>VPE 95%</b>	1.59447	1.57476	1.57498	0.0377595	1.57498
<b>VPEscale 95%</b>	NaN	4.09308	2.86549	0.0378033	2.86549

#### Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>Signal in Space</b>	1	0.982539	0.981178	0.000116663	0.981178
<b>measurements</b>	0.98608	0.968863	0.967521	0.000115039	0.967521
<b>Operational</b>	0.98608	0.968863	0.967521	0.000115039	0.967521

#### Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>All</b>	--	3	12	--	12
<b>Long</b>	--	3	4	--	4
<b>Independent</b>	--	3	3	--	3
<b>P(disc.)</b>	NaN	0.00178105	0.00178352	NaN	0.00178352
<b>P(slide)</b>	NaN	0.00178105	0.0026951	NaN	0.0026951

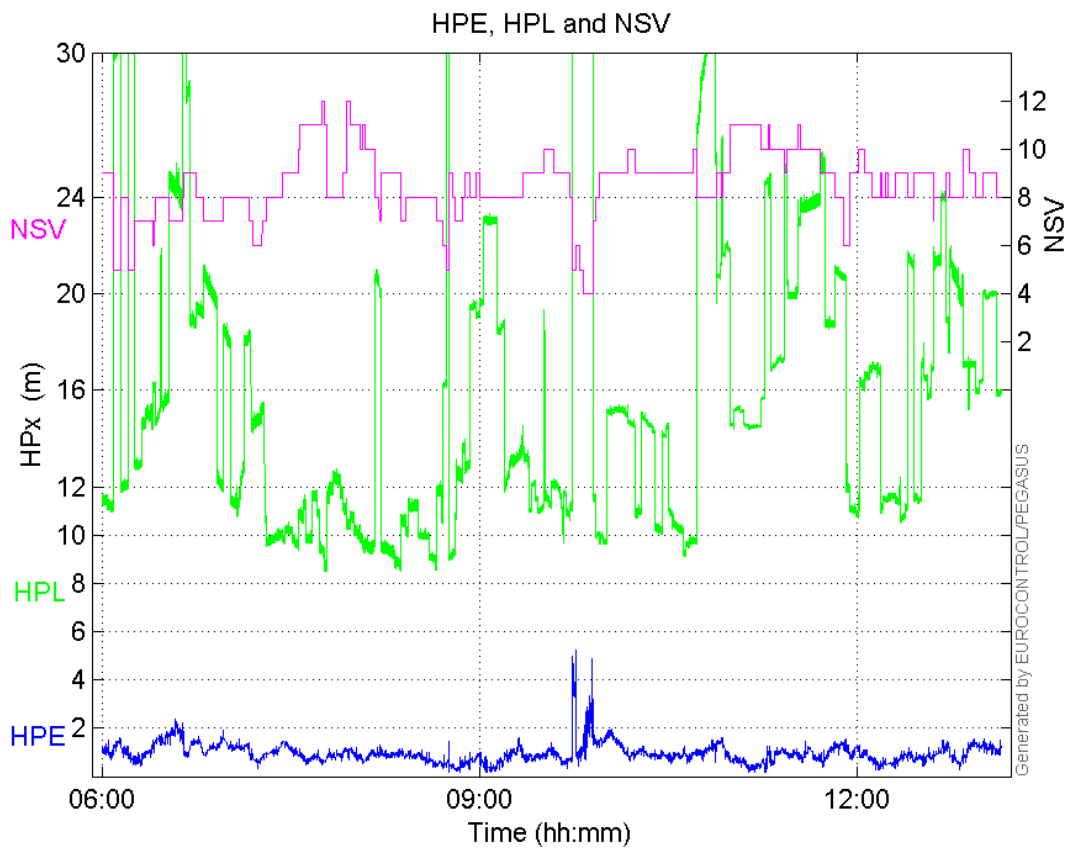
**Integrity events :**

	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
<b>Total</b>	0	0	0	0	0
<b>Horizontal</b>	0	0	0	0	0
<b>Vertical</b>	0	0	0	0	0

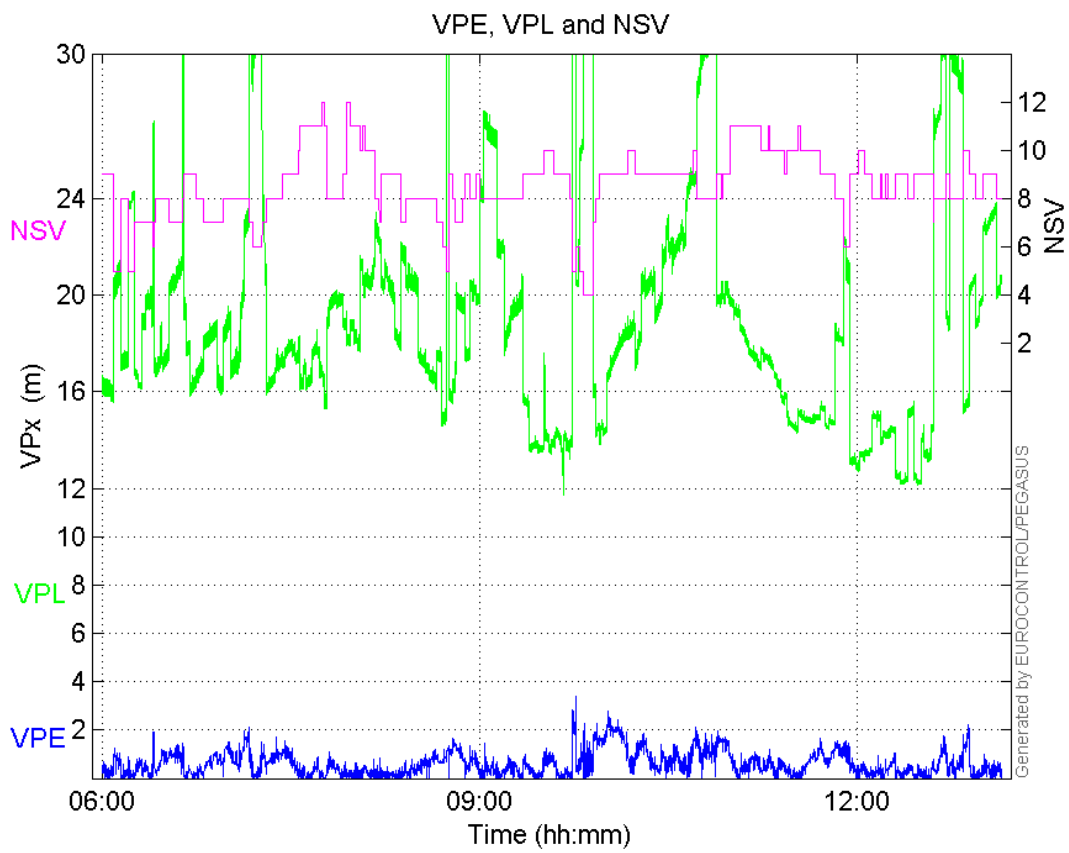
**Performance Summary :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>Samples</b>	25715	25266	25231	3	25231
<b>SIS Availability</b>	1	0.982539	0.981178	0.000116663	0.981178
<b>Local Availability</b>	0.98608	0.968863	0.967521	0.000115039	0.967521
<b>Operational Availability</b>	0.98608	0.968863	0.967521	0.000115039	0.967521
<b>HPE 95%</b>	1.55765	1.4964	1.49689	0.568146	1.49689
<b>HPEScale 95%</b>	NaN	4.44868	4.44878	2.33527	4.44878
<b>VPE 95%</b>	1.59447	1.57476	1.57498	0.0377595	1.57498
<b>VPEscale 95%</b>	NaN	4.09308	2.86549	0.0378033	2.86549
<b>All Discontinuity Events</b>	--	3	12	--	12
<b>Long Discontinuity Events</b>	--	3	4	--	4
<b>Independent Discontinuity Events</b>	--	3	3	--	3
<b>P(discontinuity)</b>	NaN	0.00178105	0.00178352	NaN	0.00178352
<b>P(sliding window)</b>	NaN	0.00178105	0.0026951	NaN	0.0026951
<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:**

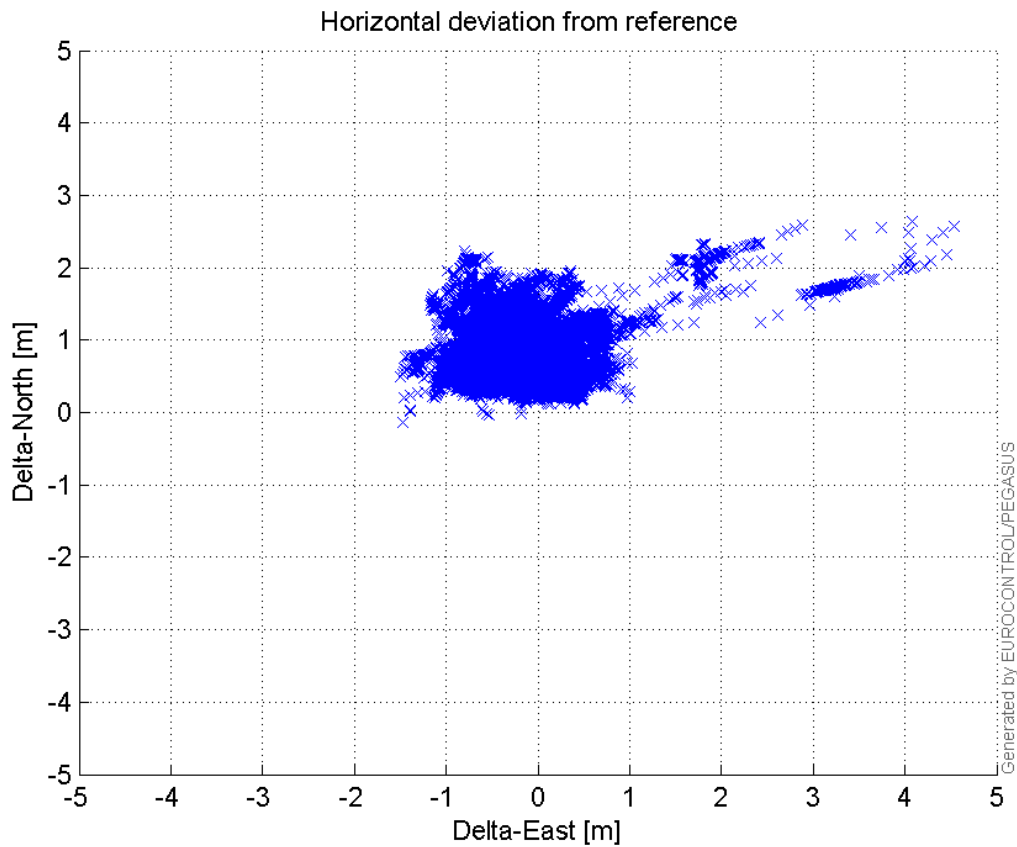


**VPE, VPL and NSV:**



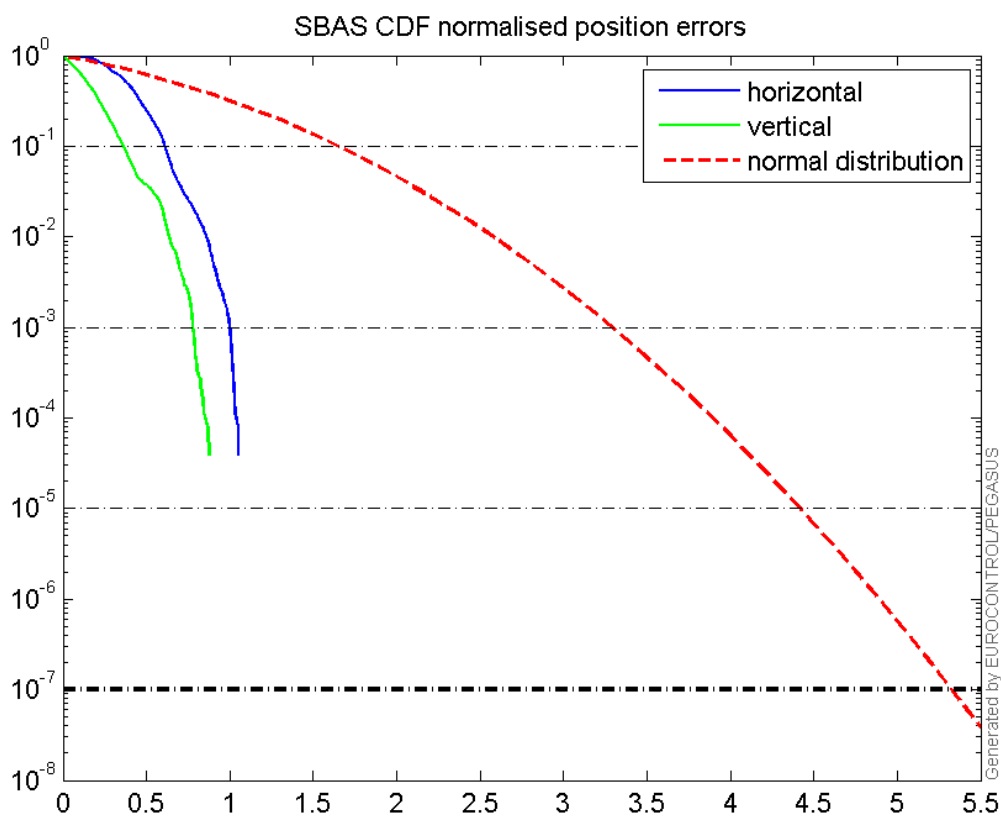
**Horizontal deviation**

## Horizontal deviation from reference :



## CDF position

## SBAS CDF position domain:



## Statistics

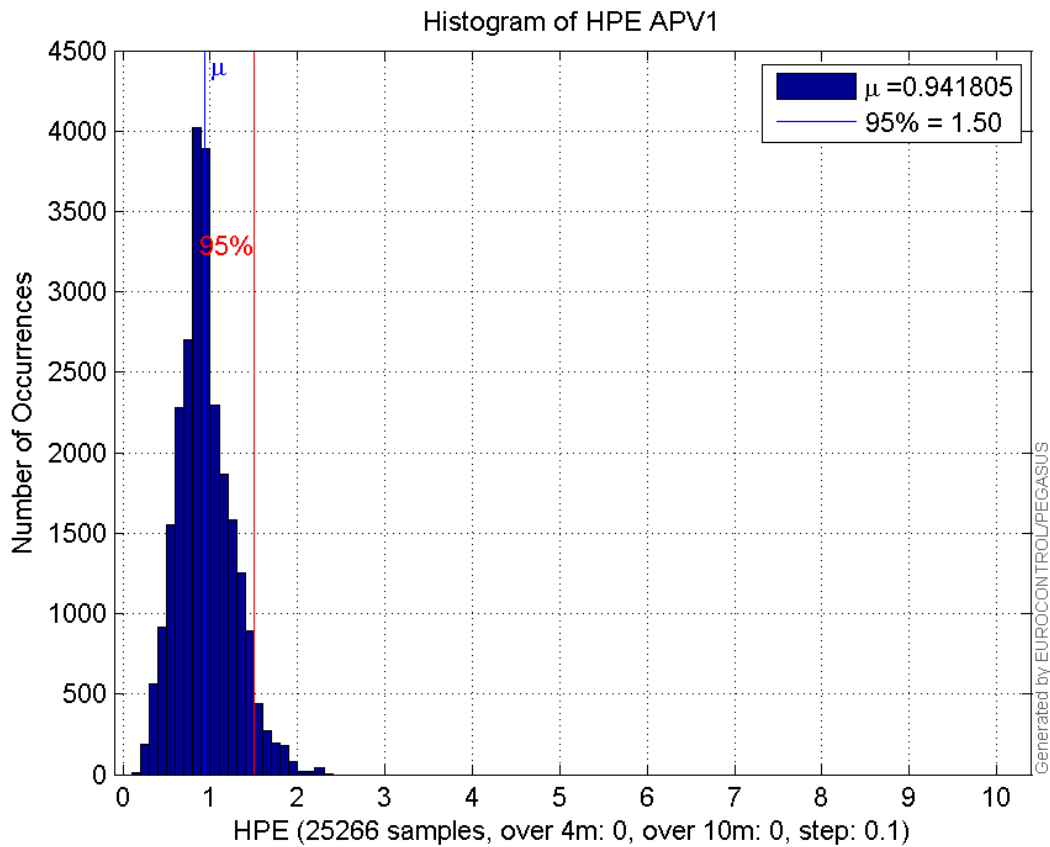
<b>number</b>	25266
<b>sum</b>	23795.64
<b>sum2</b>	24954.363
<b>prctile95</b>	1.4964045
<b>prctile99</b>	1.8585778
<b>number</b>	25266
<b>sum</b>	15442.737
<b>sum2</b>	15187.648
<b>prctile95</b>	1.5747621
<b>prctile99</b>	2.0044516
<b>number</b>	25266
<b>sum</b>	397577.29
<b>sum2</b>	7095580.9
<b>prctile95</b>	27.39402
<b>prctile99</b>	32.66698
<b>number</b>	25266
<b>sum</b>	475654.97
<b>sum2</b>	9415839.5
<b>prctile95</b>	29.18498
<b>prctile99</b>	31.035068
<b>number</b>	25266
<b>sum</b>	1664.2702
<b>sum2</b>	128.58268
<b>prctile95</b>	0.11121693
<b>prctile99</b>	0.14370371
<b>number</b>	25266
<b>sum</b>	838.16487
<b>sum2</b>	45.718387
<b>prctile95</b>	0.081861649
<b>prctile99</b>	0.11948611
<b>number</b>	25231
<b>sum</b>	23765.676
<b>sum2</b>	24928.559
<b>prctile95</b>	1.4968936
<b>prctile99</b>	1.8589598
<b>number</b>	25231
<b>sum</b>	15415.919
<b>sum2</b>	15165.579
<b>prctile95</b>	1.574978
<b>prctile99</b>	2.0044987
<b>number</b>	25231
<b>sum</b>	396936.63
<b>sum2</b>	7083853.1
<b>prctile95</b>	27.40928
<b>prctile99</b>	32.670211
<b>number</b>	25231
<b>sum</b>	474410.93
<b>sum2</b>	9371616.5
<b>prctile95</b>	29.10724

**prctile99** 30.97535  
**number** 25231  
**sum** 1662.6332  
**sum2** 128.50567  
**prctile95** 0.11121944  
**prctile99** 0.1437129  
**number** 25231  
**sum** 837.41029  
**sum2** 45.700916  
**prctile95** 0.081871192  
**prctile99** 0.11949969

**Error and XPL Statistics :**

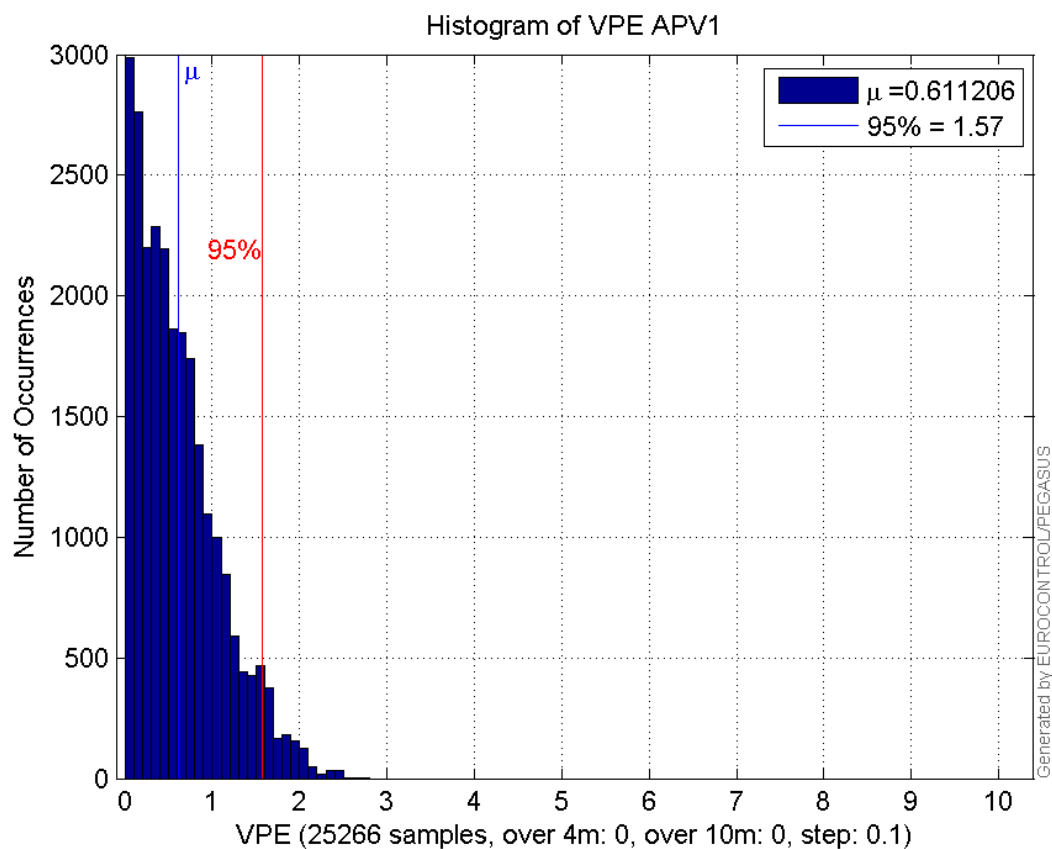
	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	0.941805	0.317291	0.90843	1.4964	1.85858	0.993814
<b>HPL</b>	15.7357	5.76414	14.5595	27.394	32.667	16.7581
<b>VPE</b>	0.611206	0.477018	0.509936	1.57476	2.00445	0.775313
<b>VPL</b>	18.8259	4.27258	18.0354	29.185	31.0351	19.3046

**Histogram of HPE APV1:**

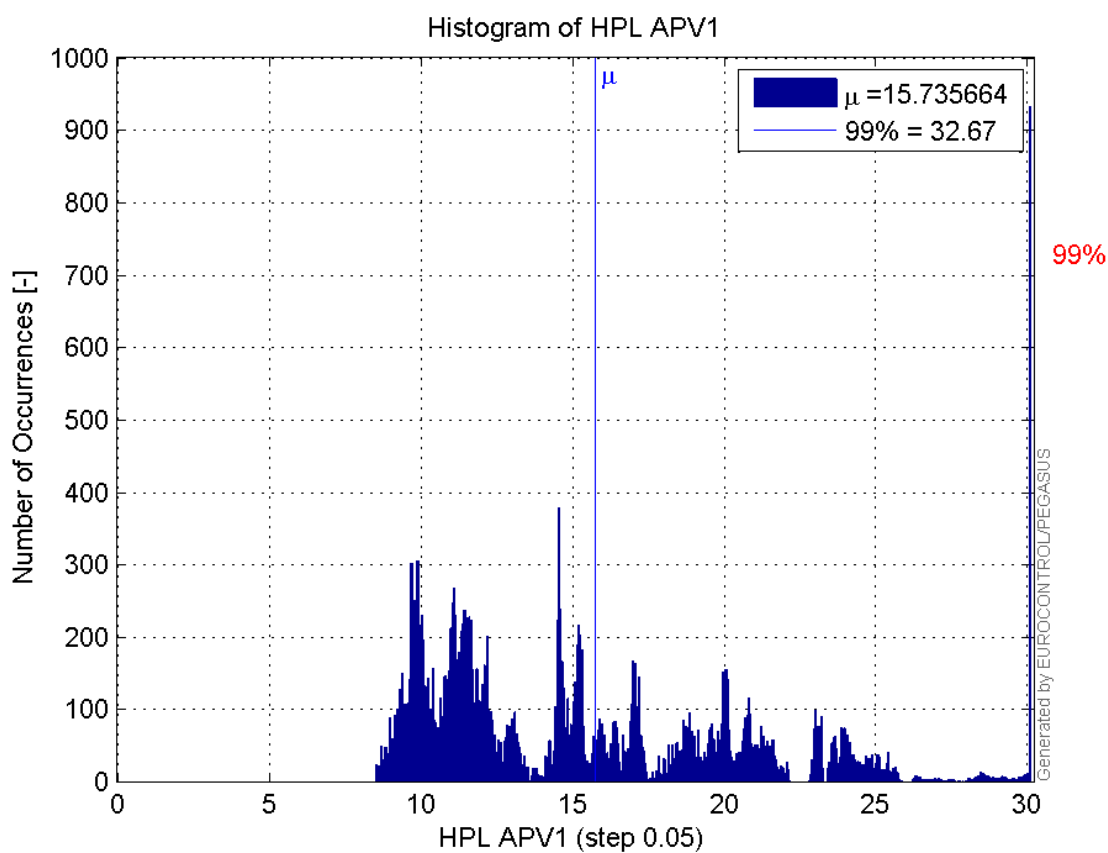


**Histogram of VPE APV1:**

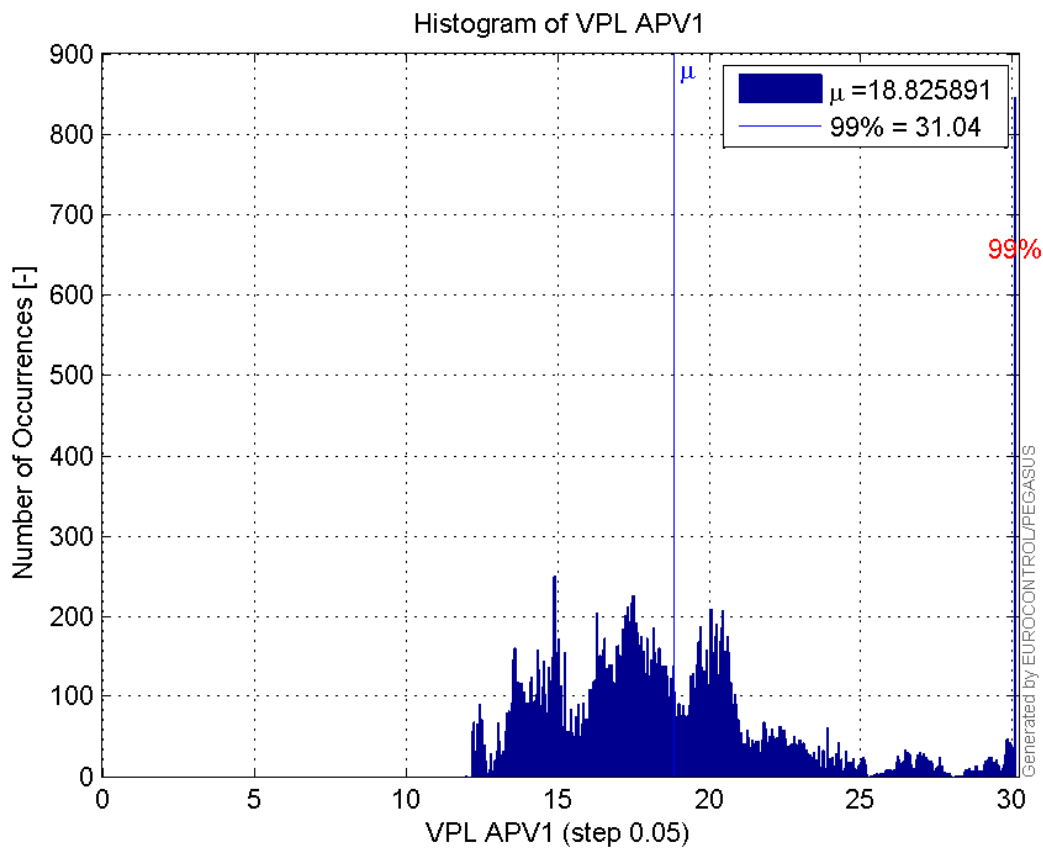




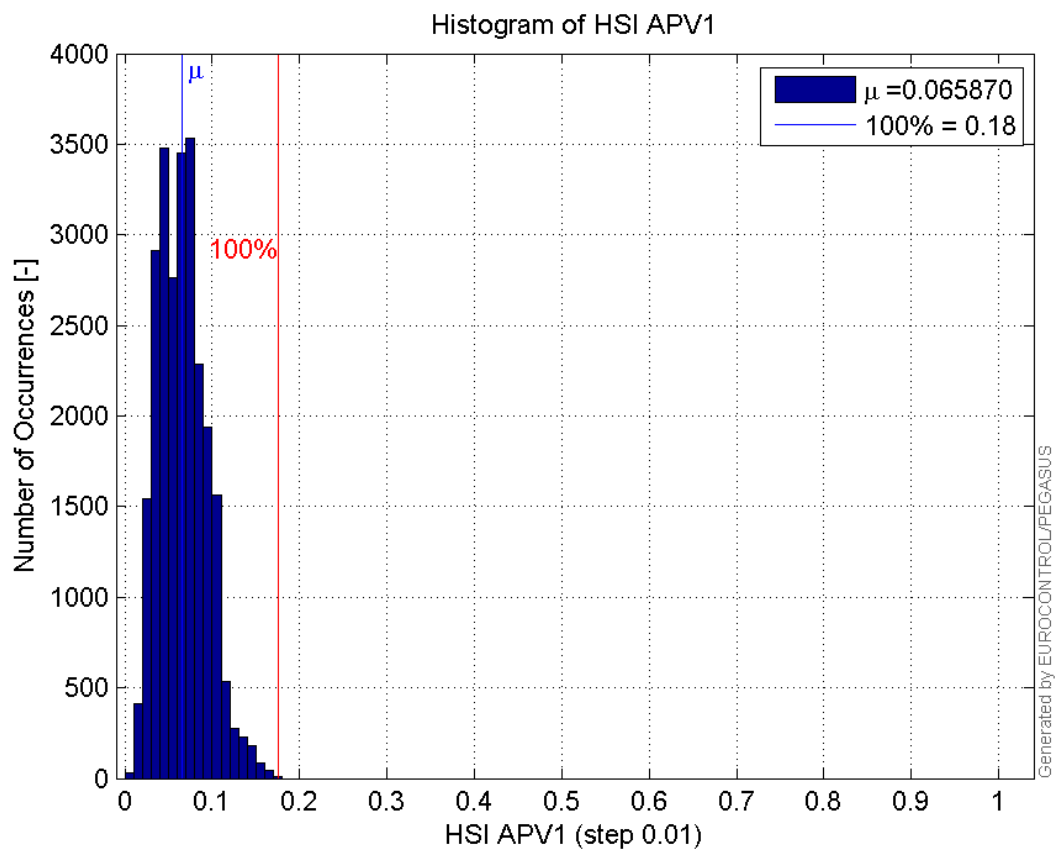
Histogram of HPL APV1:



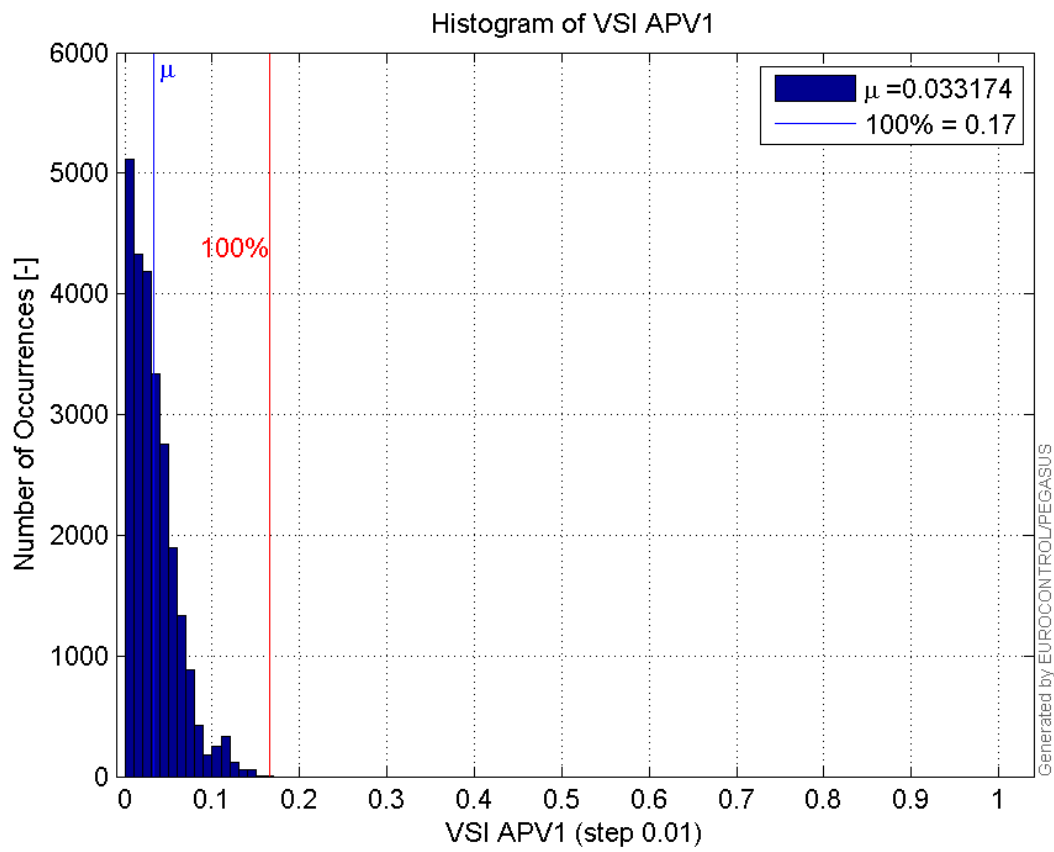
Histogram of VPL APV1:



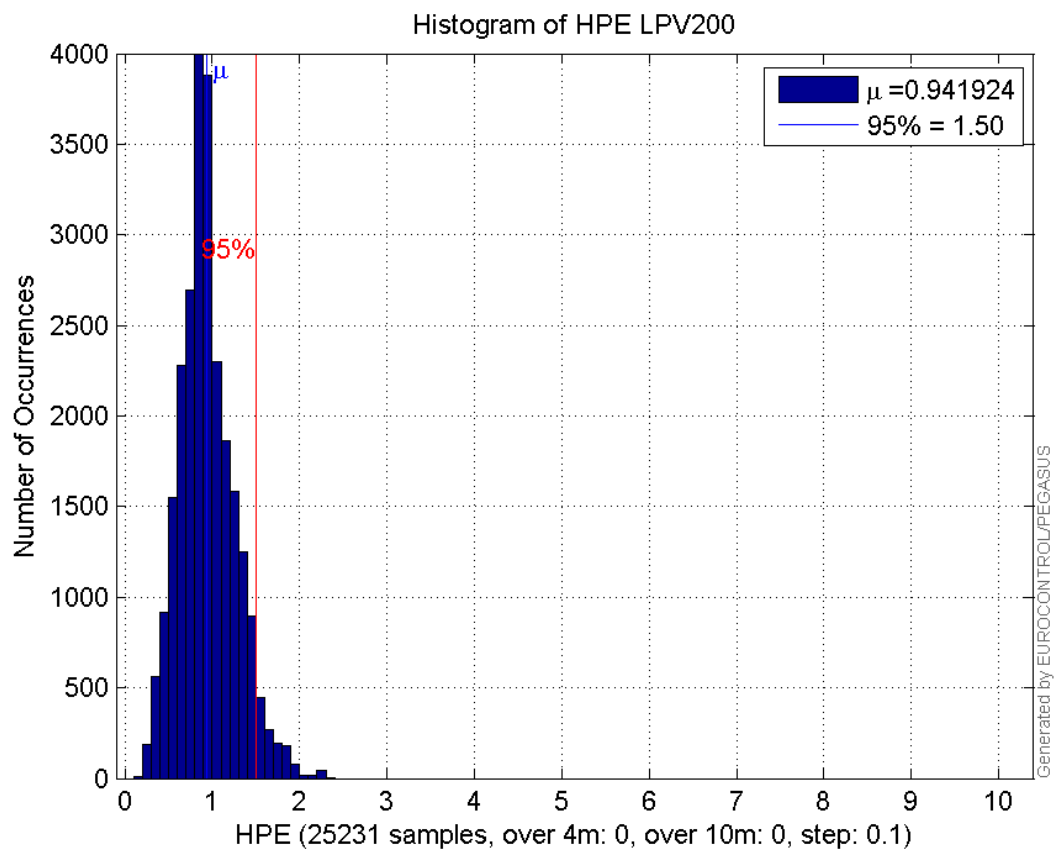
**Histogram of HSI APV1:**



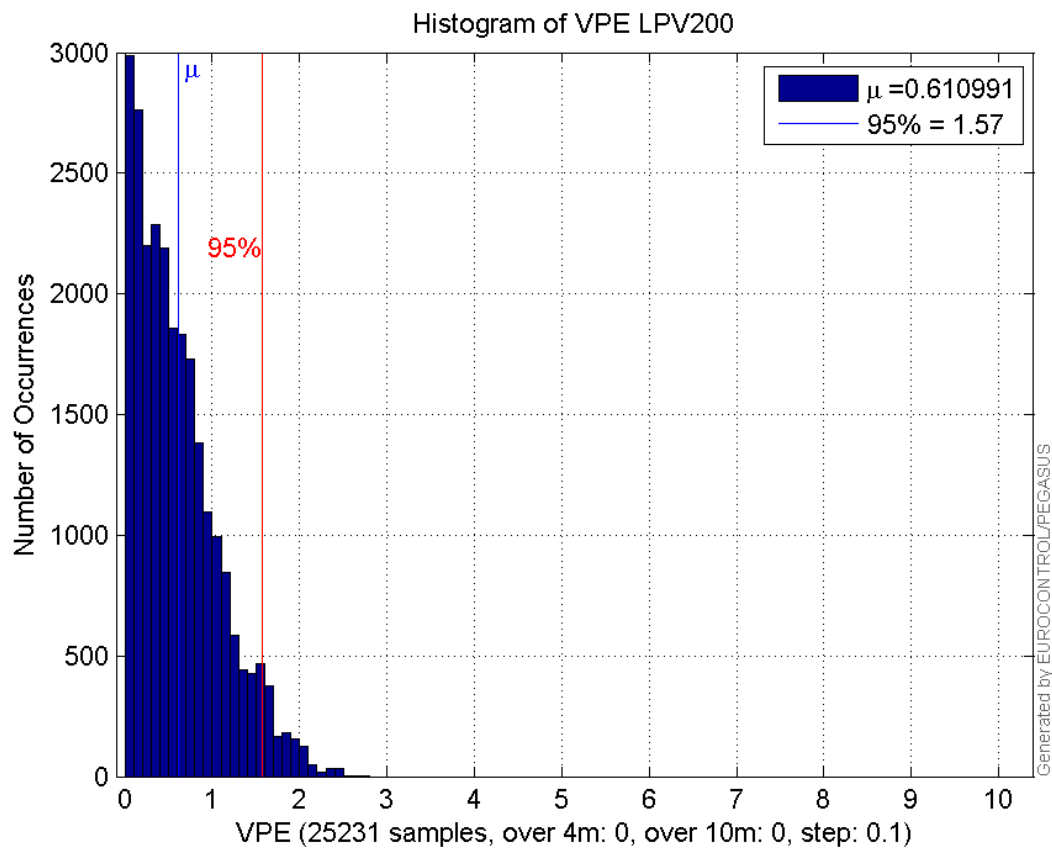
**Histogram of VSI APV1:**



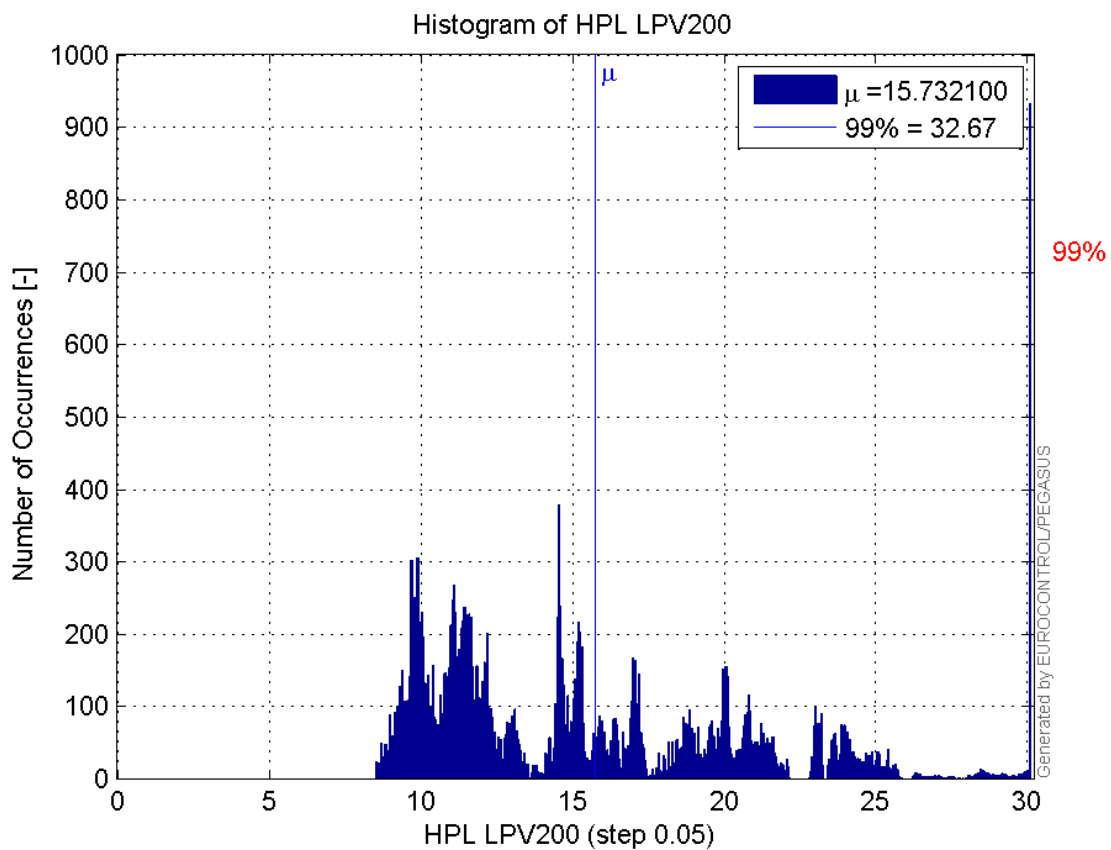
**Histogram of HPE LPV200:**



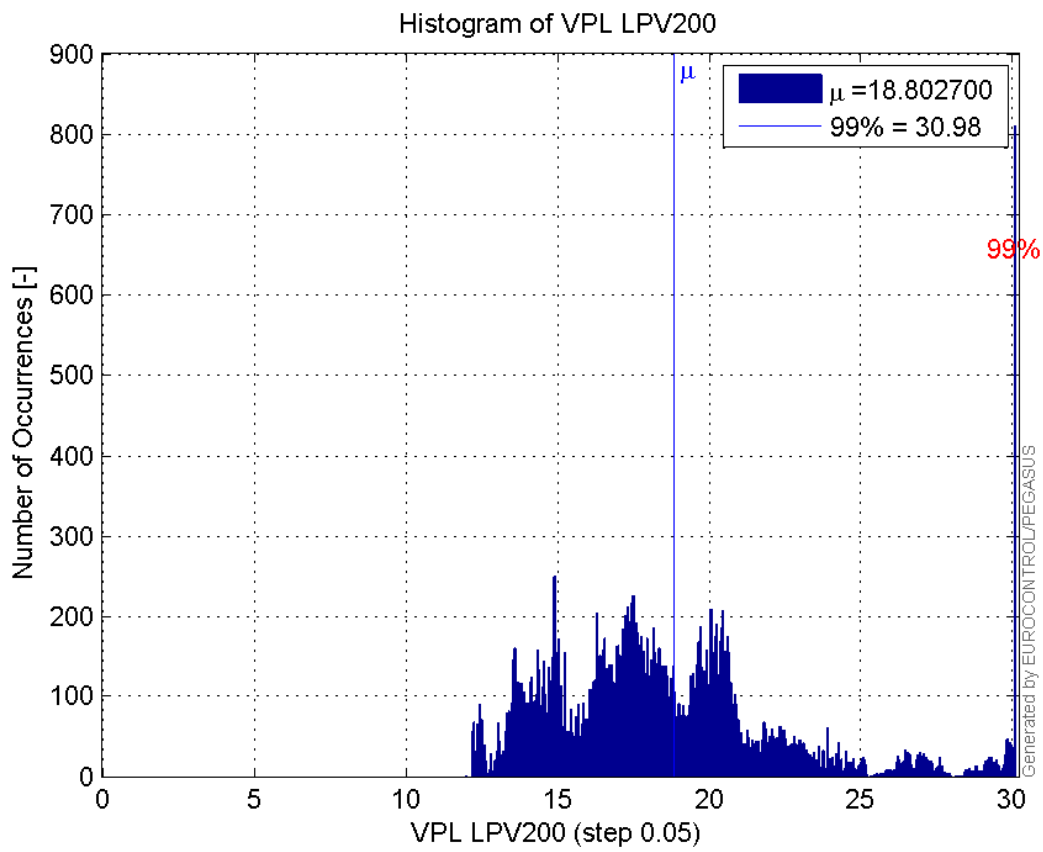
**Histogram of VPE LPV200:**



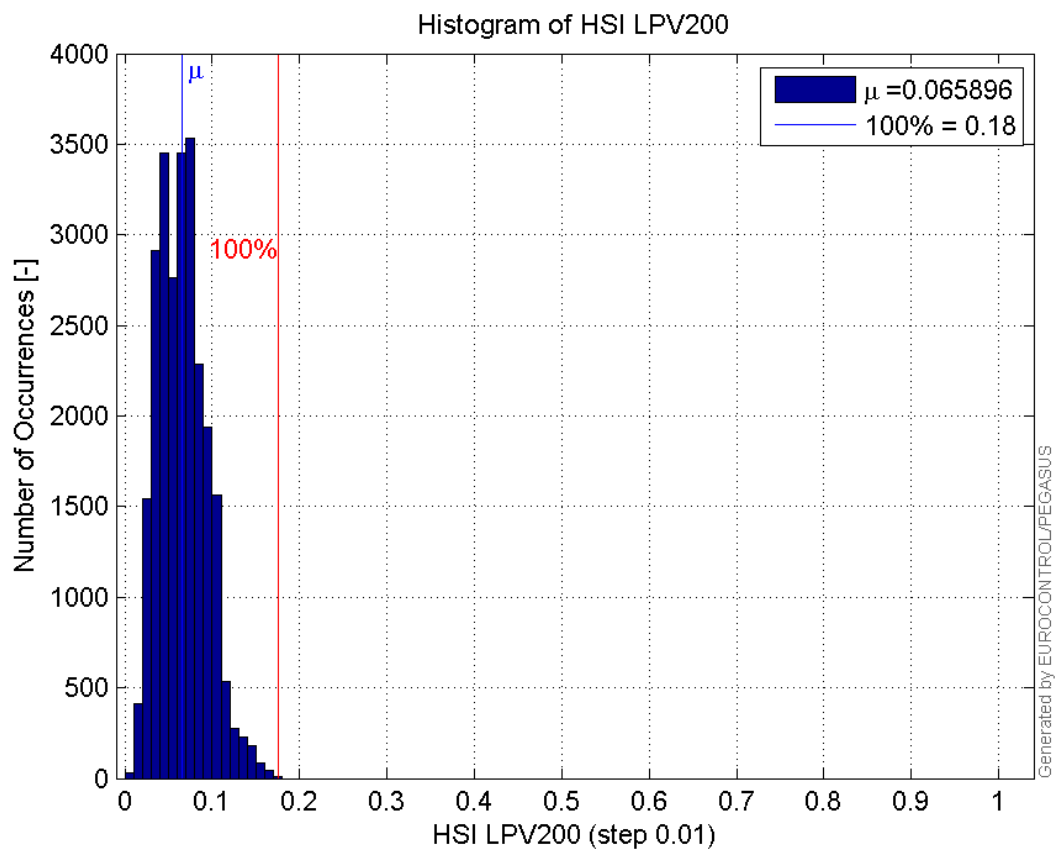
Histogram of HPL LPV200:



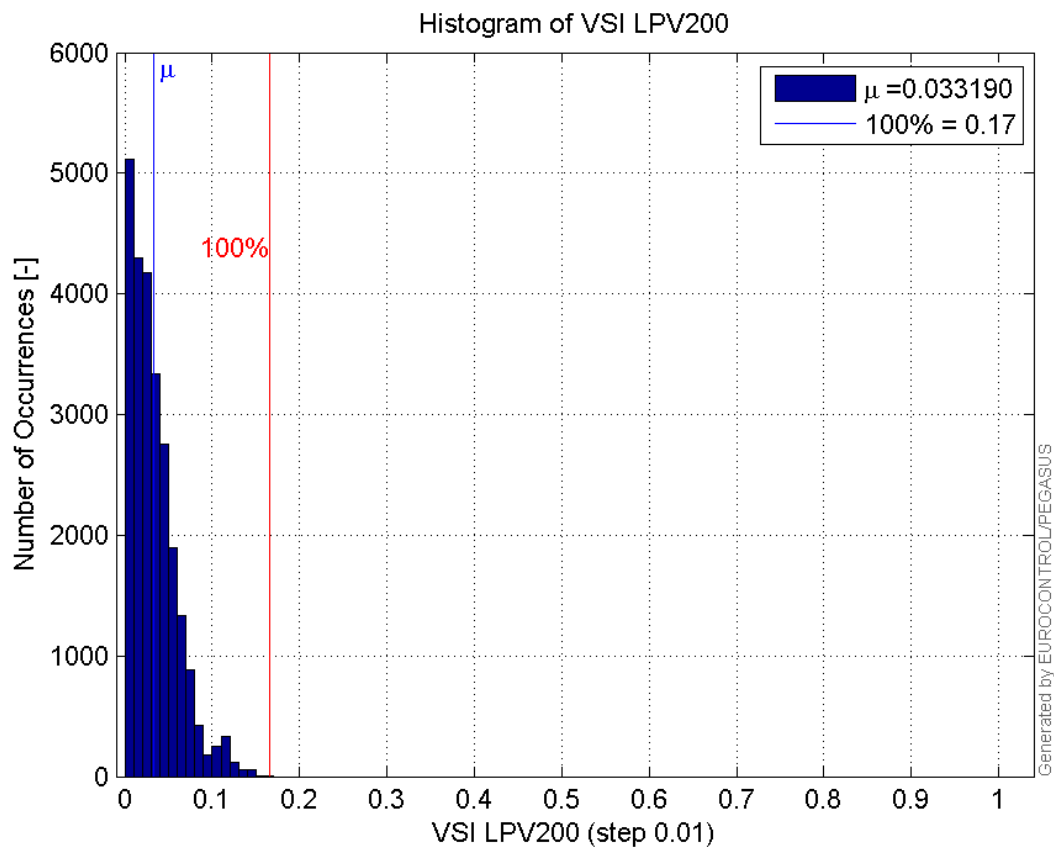
Histogram of VPL LPV200:



**Histogram of HSI LPV200:**

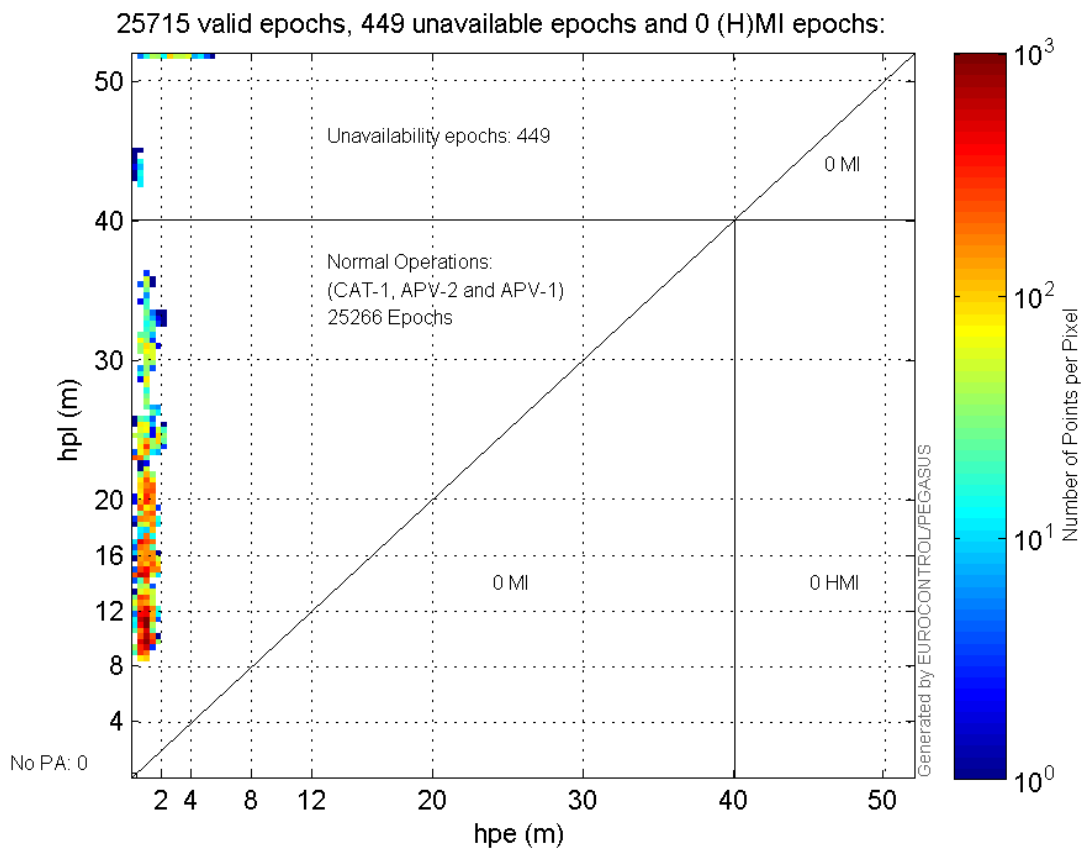


**Histogram of VSI LPV200:**



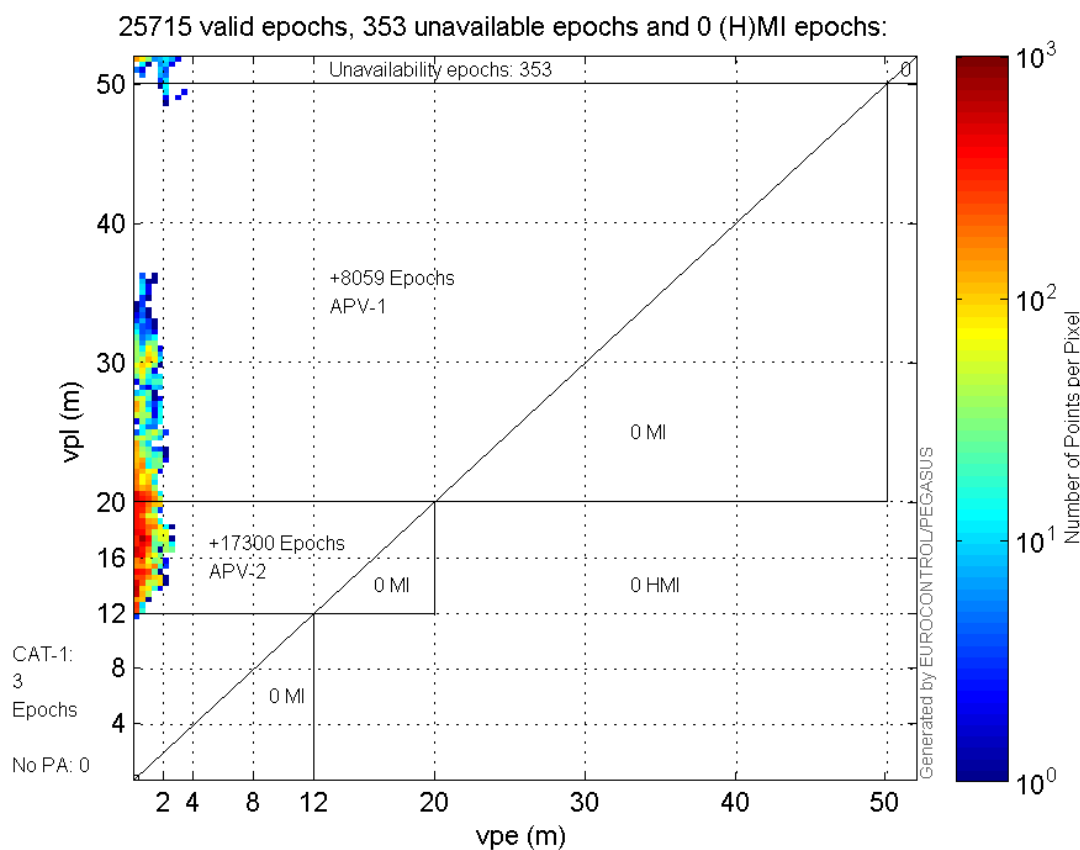
### Stanford Plots

#### Horizontal\_Stanford\_Plot\_SBAS:





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



**Parameters**

**system**

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDateGob/job/2015_11_11EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_11_11EGNOS/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	223.4683
mi_numbers	results	0

## Range Domain

**start:** 05:53:58 11.11.2015 ( week: 1870 sec: 280438 )  
**end:** 13:08:35 11.11.2015 ( week: 1870 sec: 306515 )  
**duration:** 07:14:38 ..

## quality

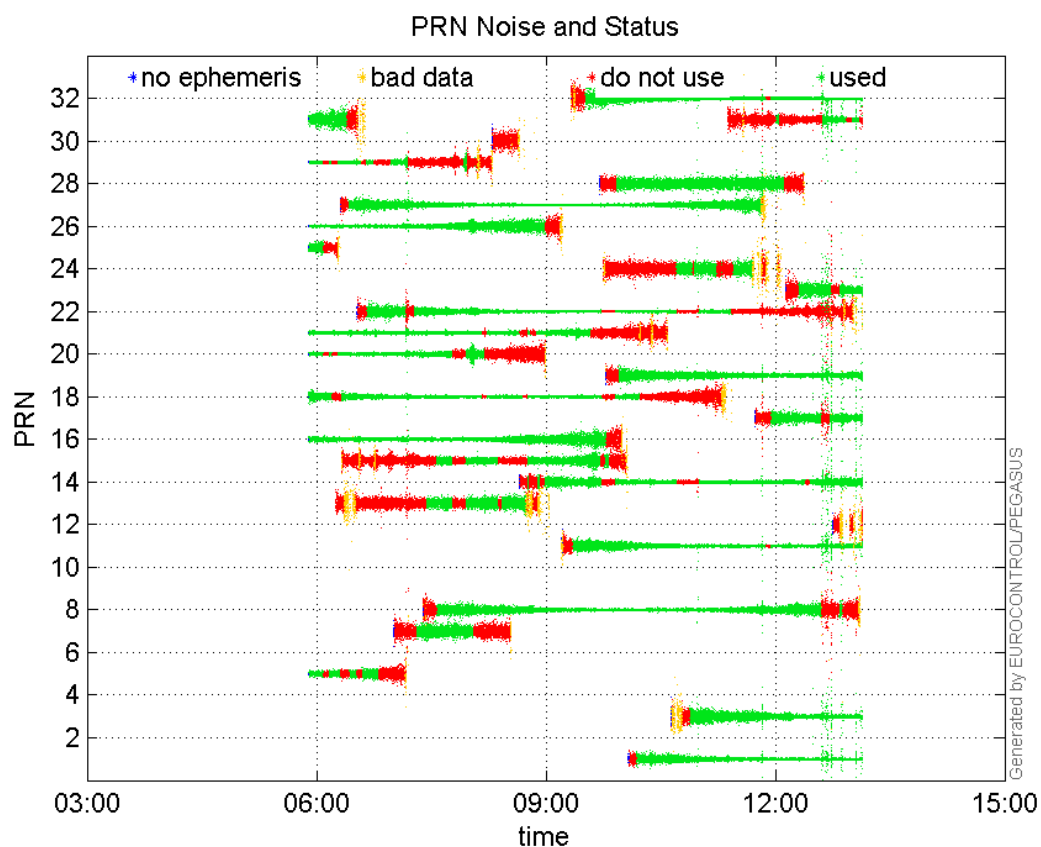
**valid samples** 26078  
**total samples** 26078

## PRN overview

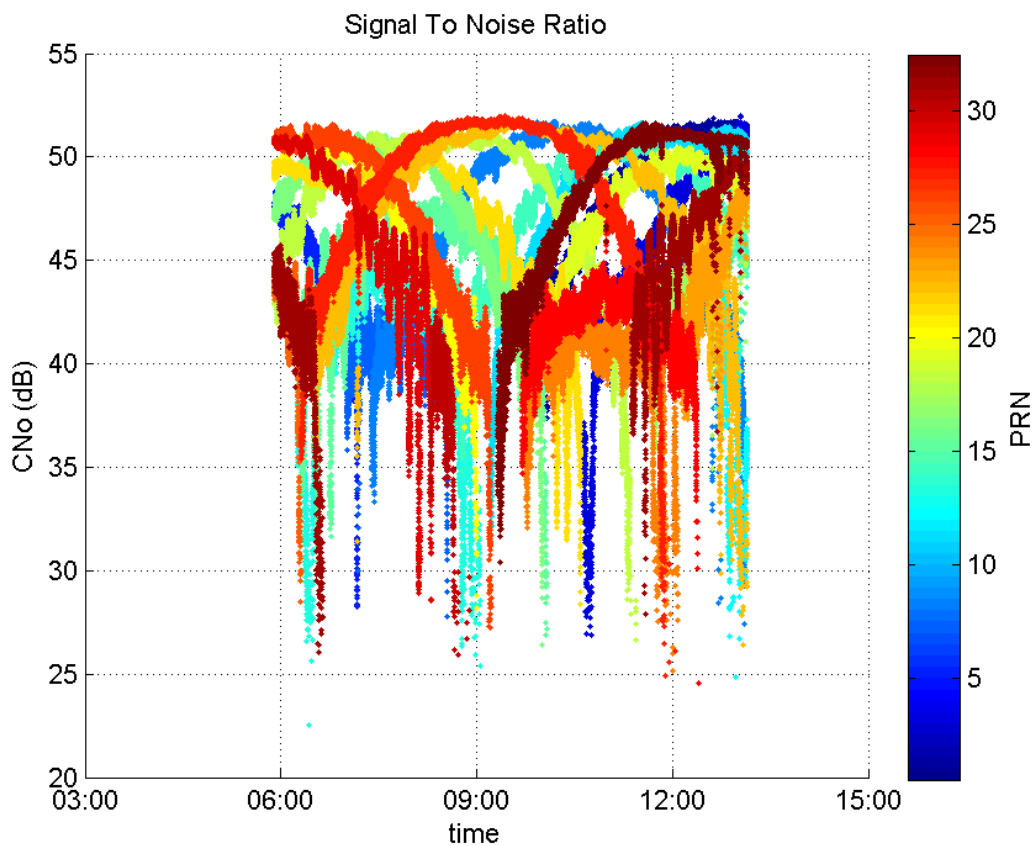
**Number of Visible GPS Satellites** 27  
**Number of Visible SBAS Satellites** 2

## signal quality and status

## PRN Noise and Status:



**Signal To Noise Ratio:**



range errors

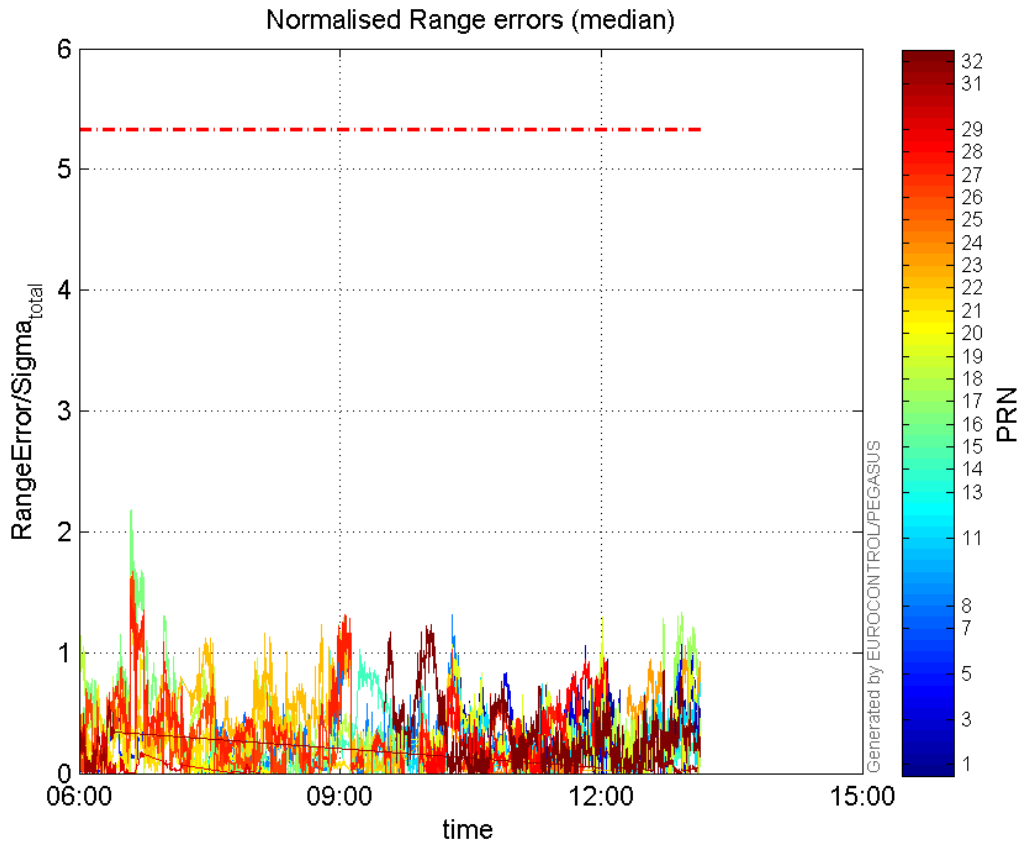
Number of Overbounding Norm Errors 0

**Max Norm Errors :**

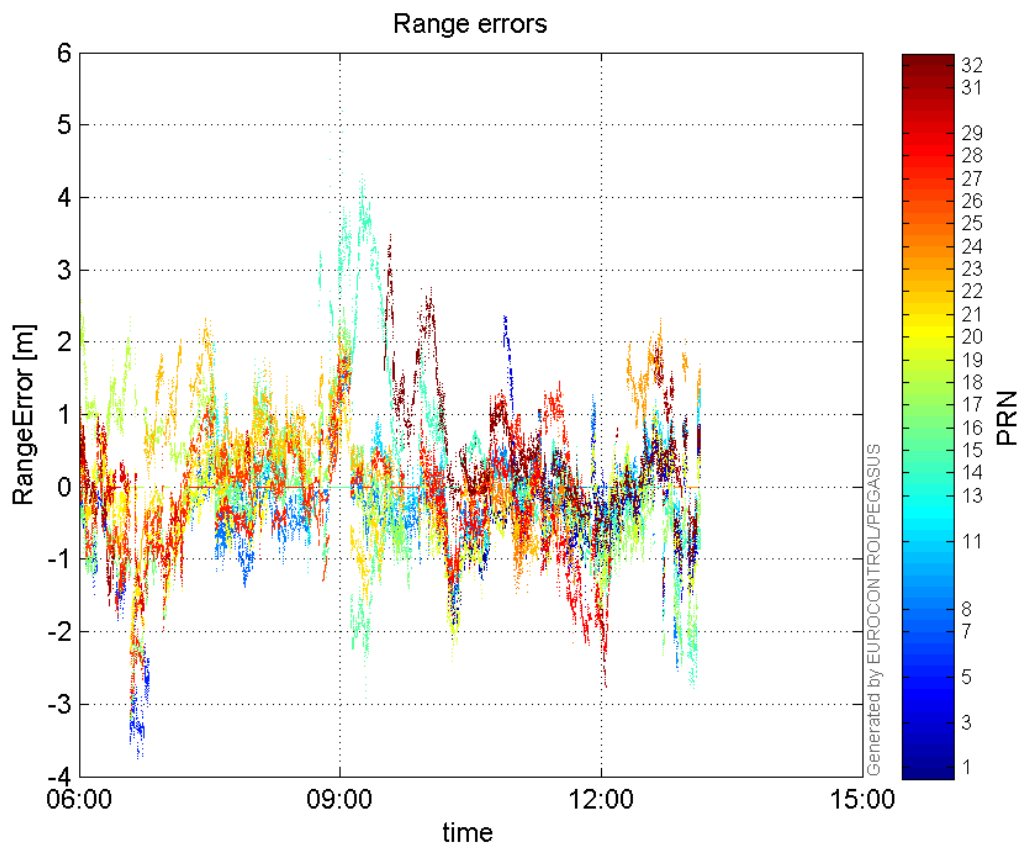
GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1870	304958	1	1.20244	-1.78511	1.48458
1870	304958	3	1.07571	-1.703	1.58314
1870	282422	5	0.545898	-1.83968	3.37
1870	287666	7	0.505498	-1.38659	2.74302
1870	296243	8	1.31061	-2.00324	1.52847
1870	296243	11	1.00492	-1.80665	1.79781
1870	290276	13	0.238407	-1.17806	4.94137
1870	292414	14	1.02577	4.21344	4.10757
1870	293264	15	0.424638	-1.34852	3.1757
1870	282945	16	2.17828	-3.21199	1.47455
1870	305747	17	1.33885	-2.43303	1.81726
1870	280887	18	1.14225	2.59085	2.26821
1870	302439	19	1.29735	-1.93245	1.48954
1870	284493	20	0.620403	-1.5185	2.4476
1870	282911	21	1.6329	-2.42115	1.48273
1870	290824	22	1.23673	1.7453	1.41122
1870	305882	23	1.05737	2.03937	1.92872
1870	300661	24	0.185312	-1.37943	7.44383
1870	280823	25	0.495816	1.12061	2.26014

1870	283010	26	1.67421	-2.33388	1.39402
1870	282939	27	1.47174	-3.14609	2.13767
1870	302529	28	0.951143	-2.38238	2.50476
1870	280962	29	0.496995	0.755795	1.52073
1870	282064	31	0.600757	-1.64164	2.73261
1870	295363	32	1.2273	2.75355	2.24358

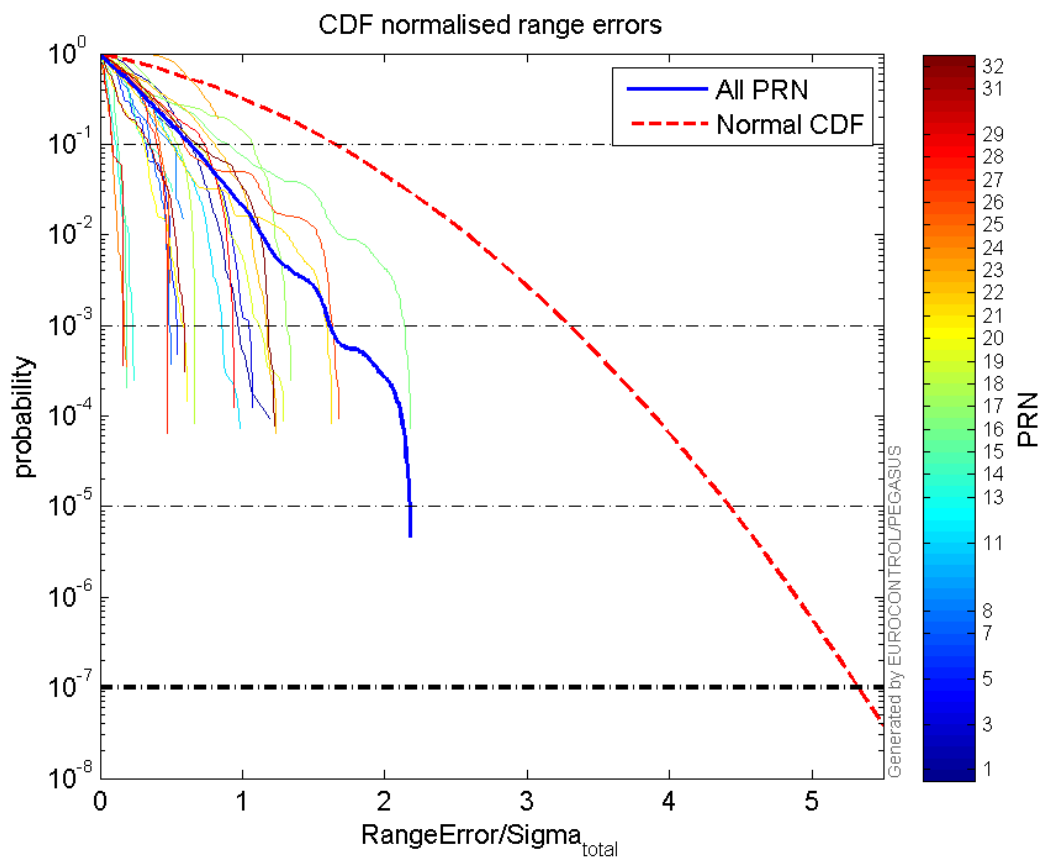
**Normalised Range errors (median):**



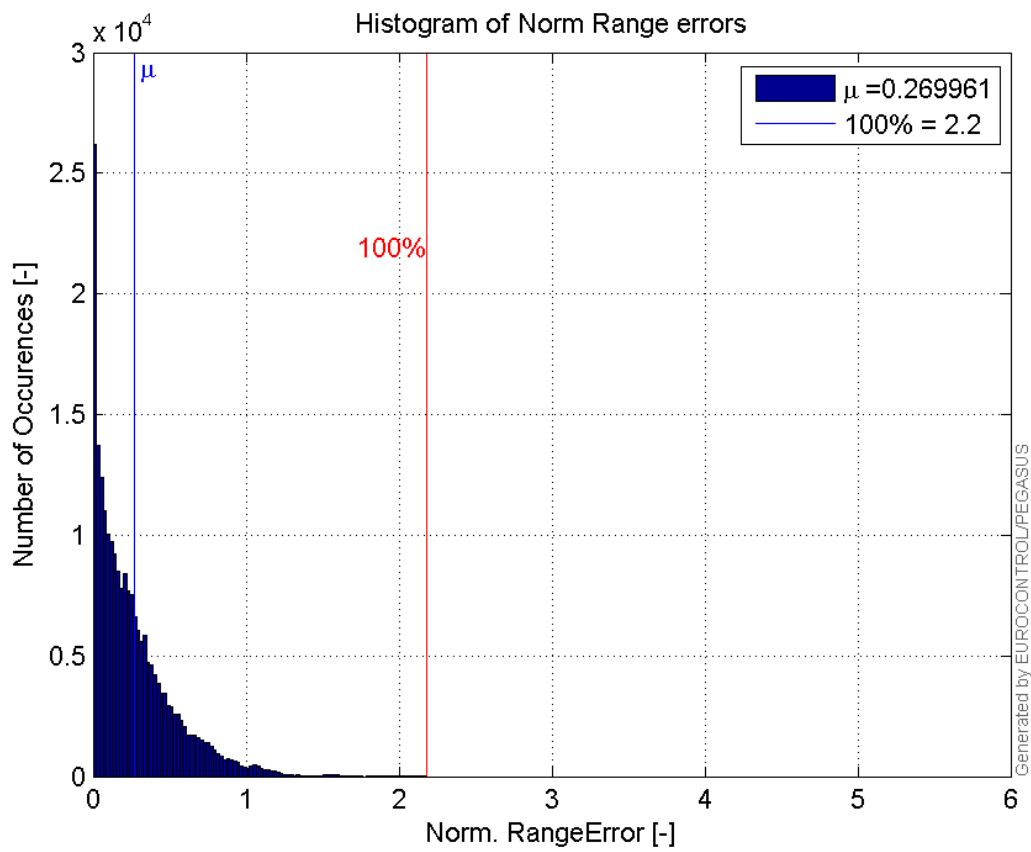
**Range errors:**



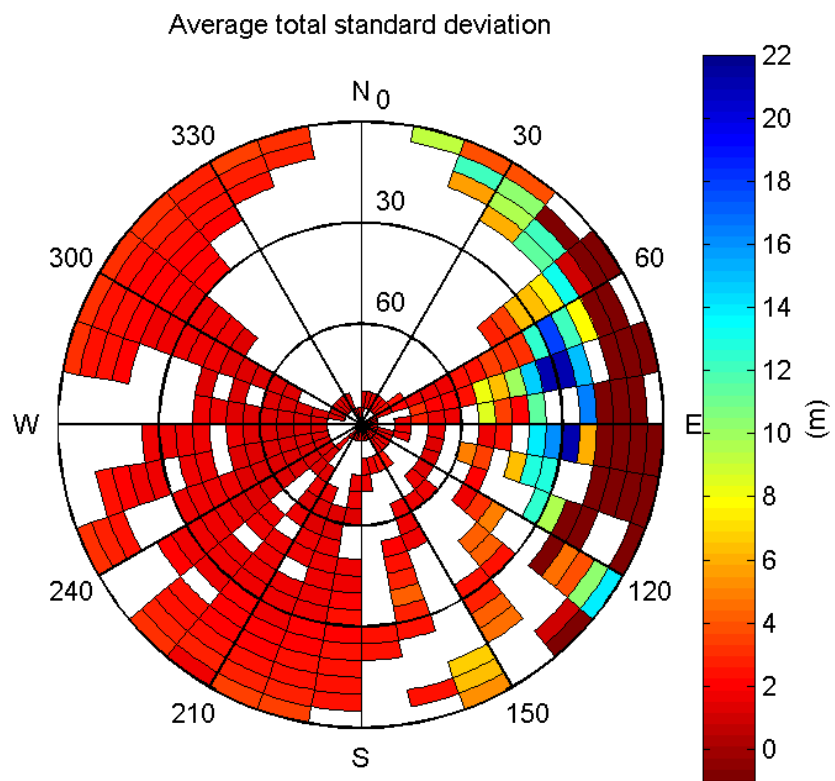
#### CDF normalised range errors:



#### Histogram of Norm Range errors:

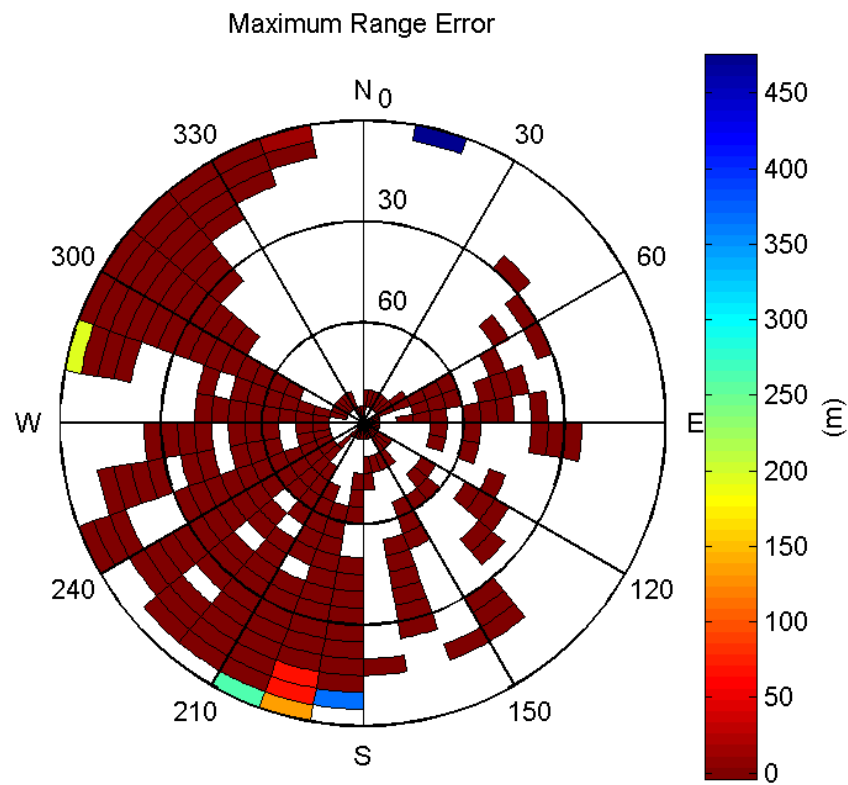


**Sigma Sky Plot:**



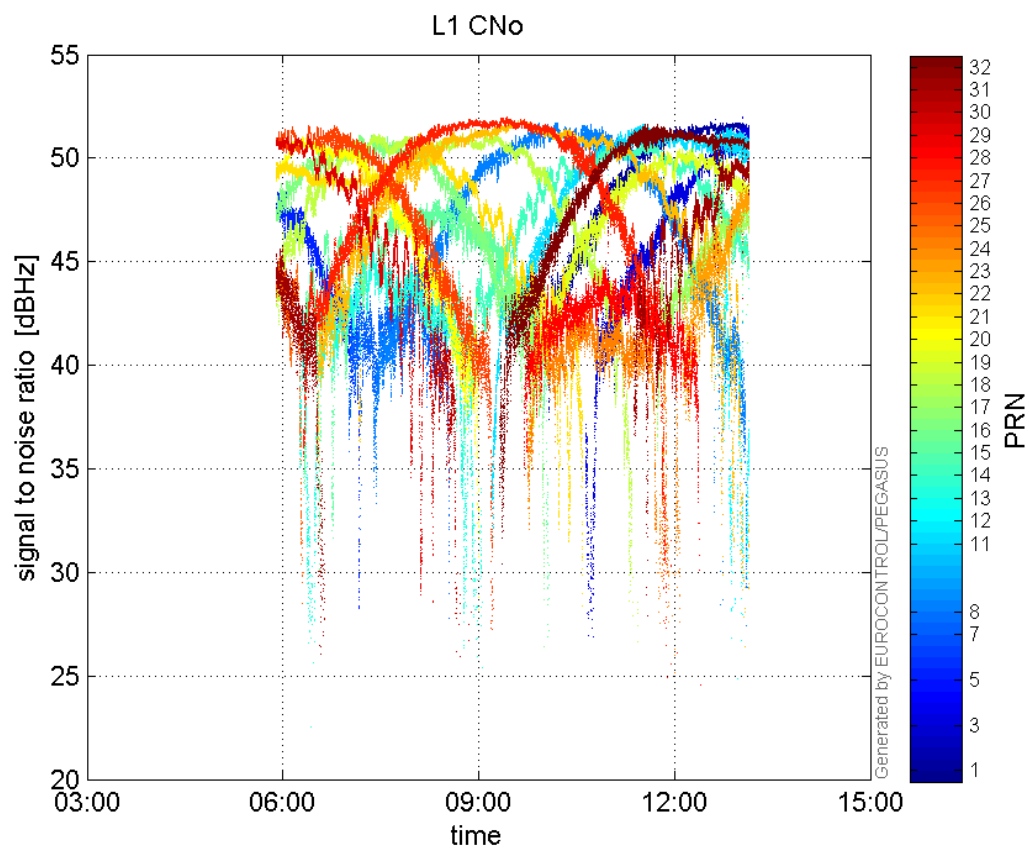
**Norm Error Sky Plot:**



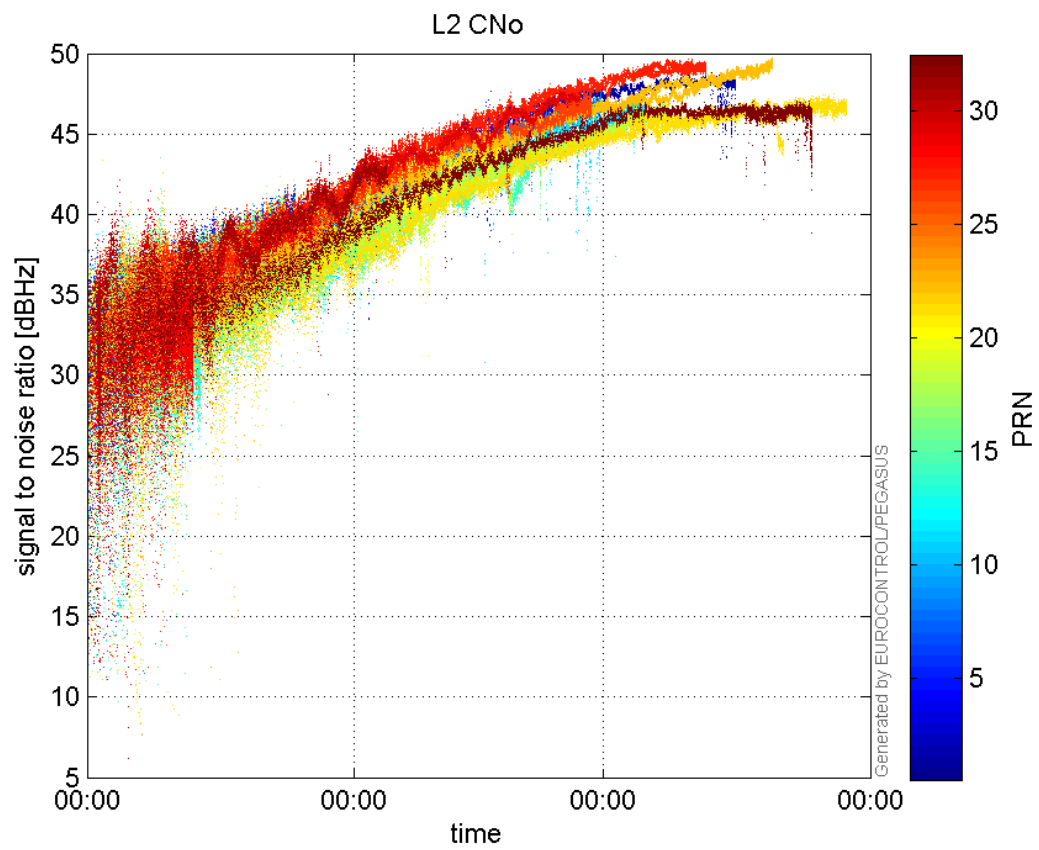


### signal quality

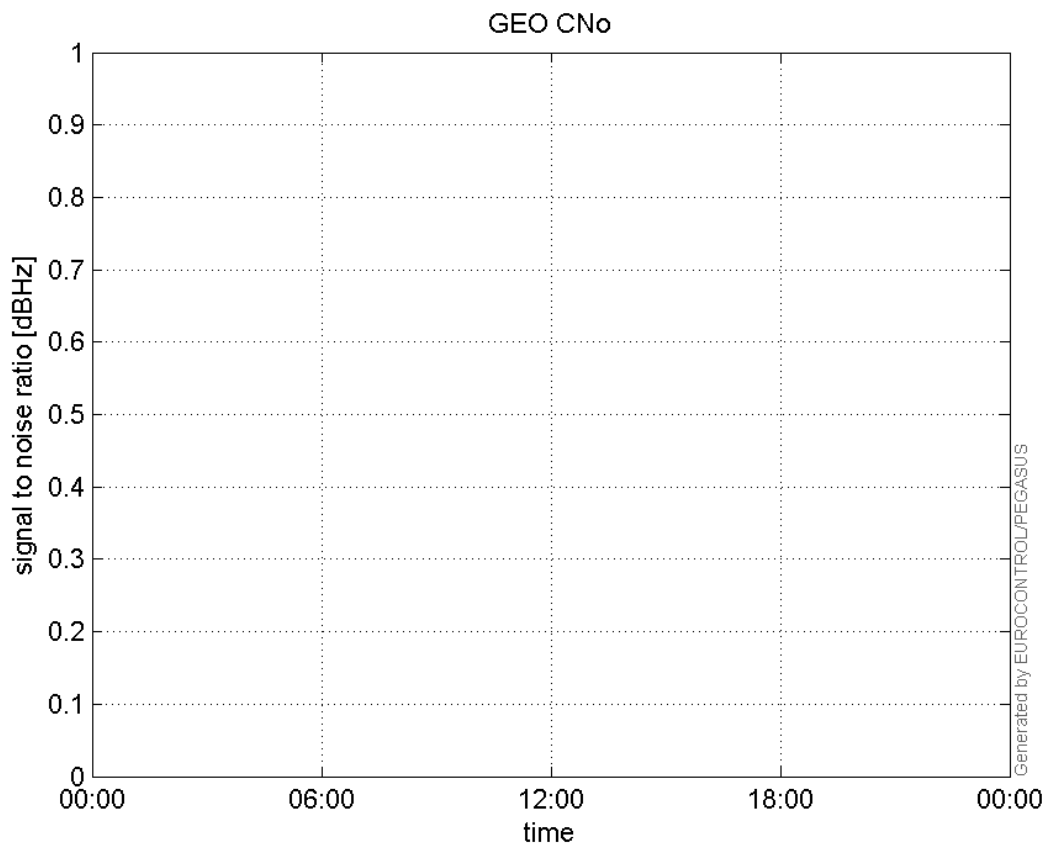
L1 CNo:



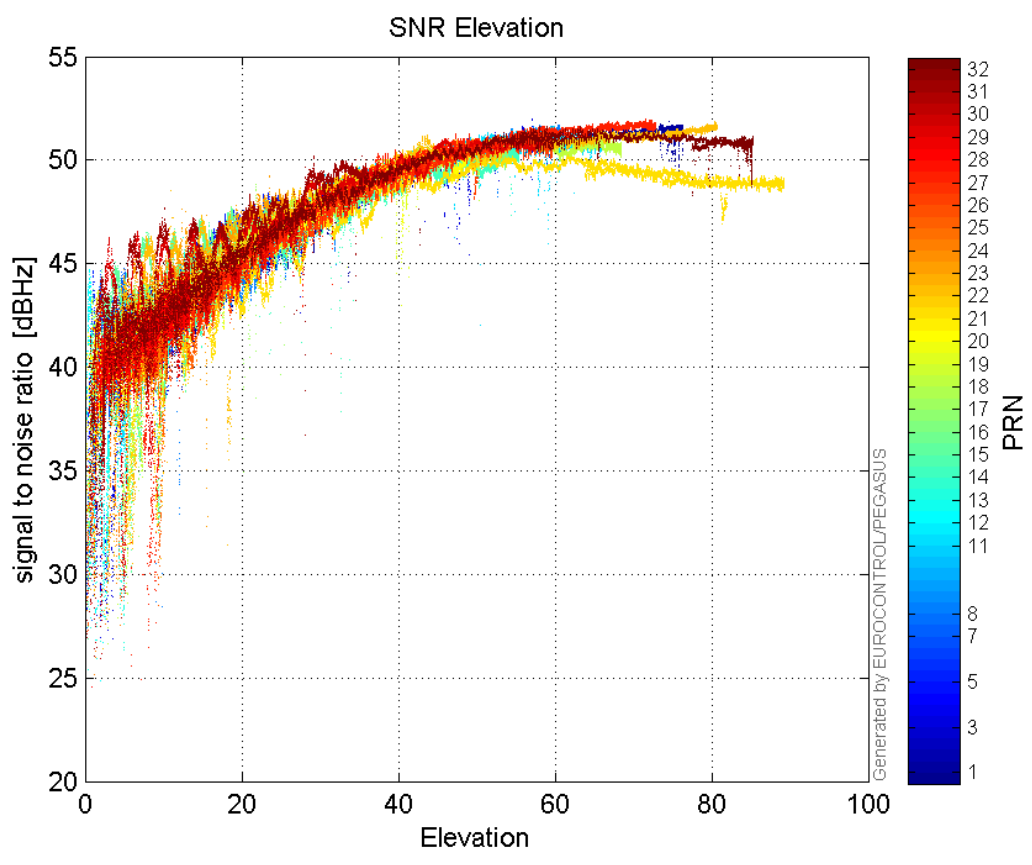
**L2 CNo:**



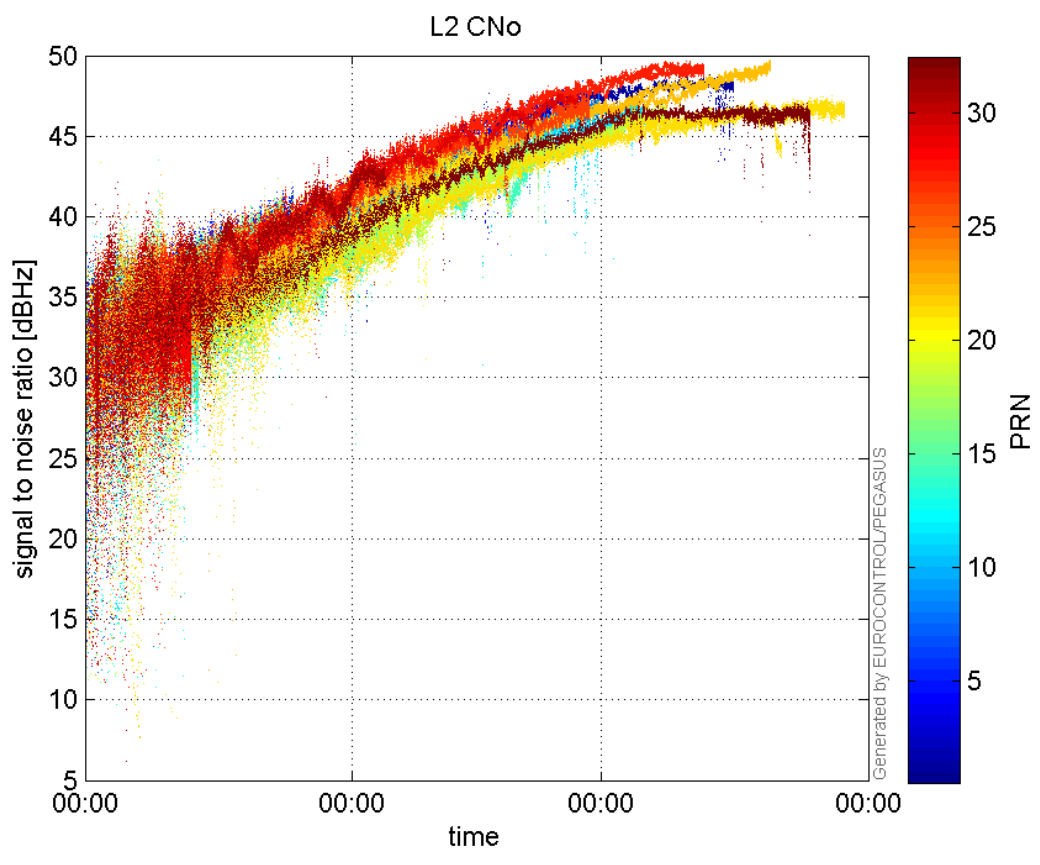
**GEO CNo:**



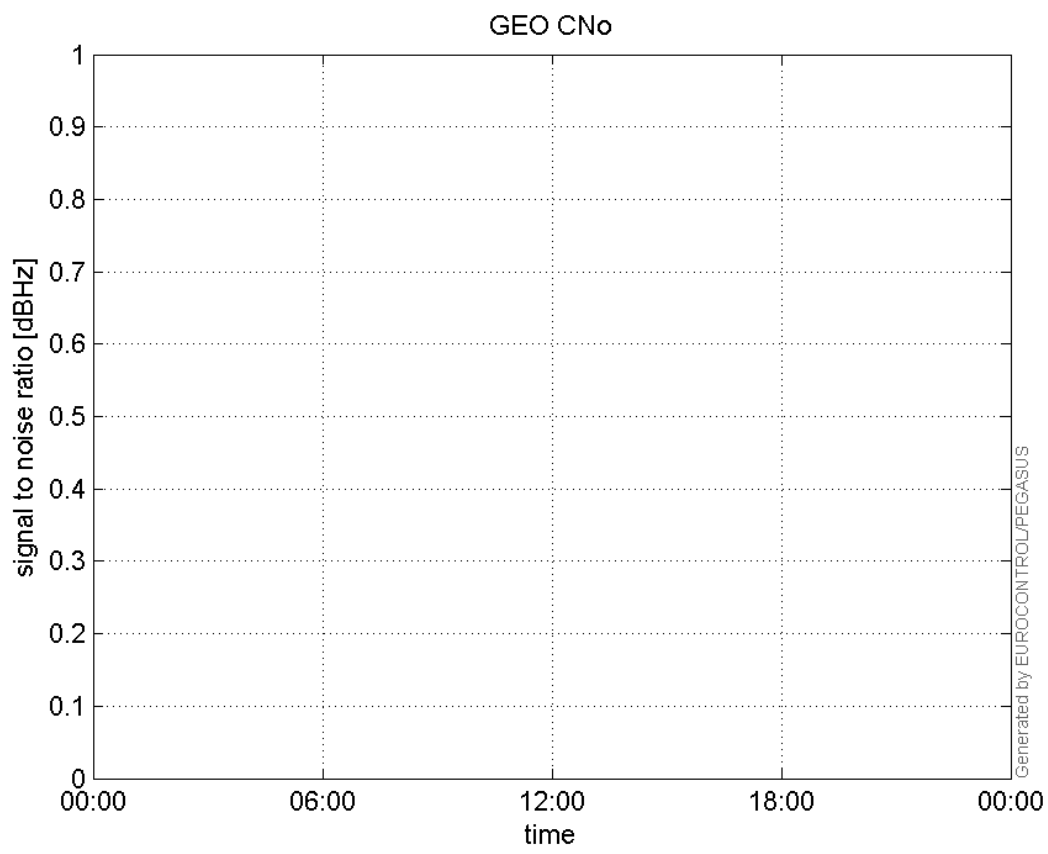
**SNR Elevation:**



**L2 CNo:**

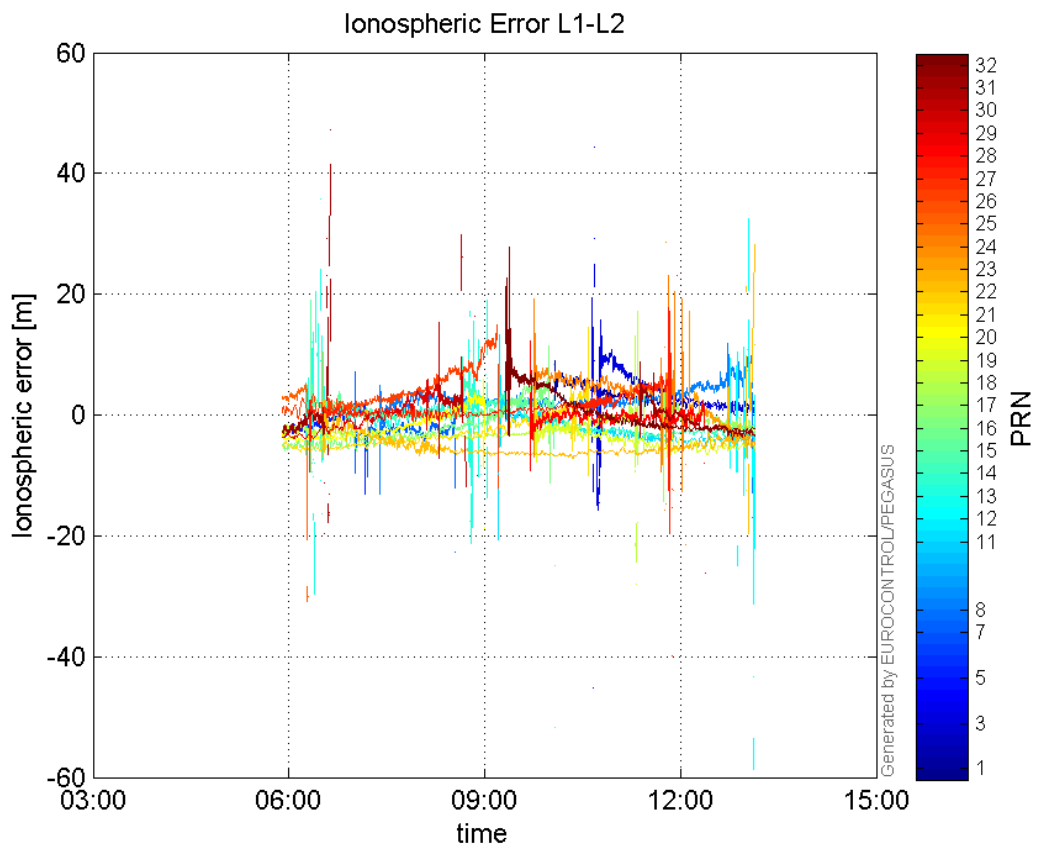


**GEO CNo:**



### dual frequency

#### Ionospheric Error L1-L2:



## Parameters

## system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDateGob/job/2015_11_11EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_11_11EGNOS/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	223.4683
mi_numbers	results	0