

# Global View

comment  
 abbreviation      NAU  
 country            Ukraine  
 site                Laboratory satellite systems  
 version            4.8.2  
 program            Pegasus  
 city                Kiev  
 date                20/10/2015

## SBAS Messages

**start:** 07:03:35.129 17.09.2015 ( week: 1862 sec: 371015.129 )  
**end:** 13:15:3.129 17.09.2015 ( week: 1862 sec: 393303.129 )  
**duration:** 06:11:28 ..

### quality

**valid samples**      44578  
**total samples**      44578  
**number of SBAS PRNs** 2

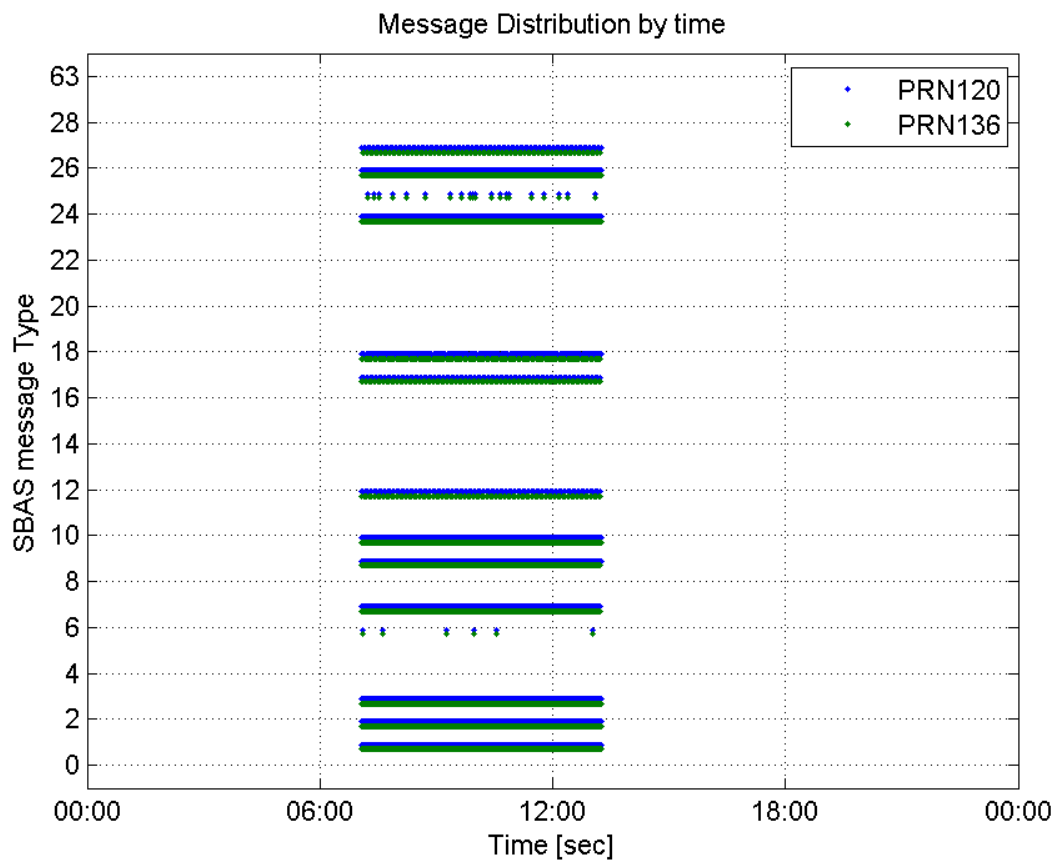
### SBAS SIS Overview

#### Message Type 6 repetitions :

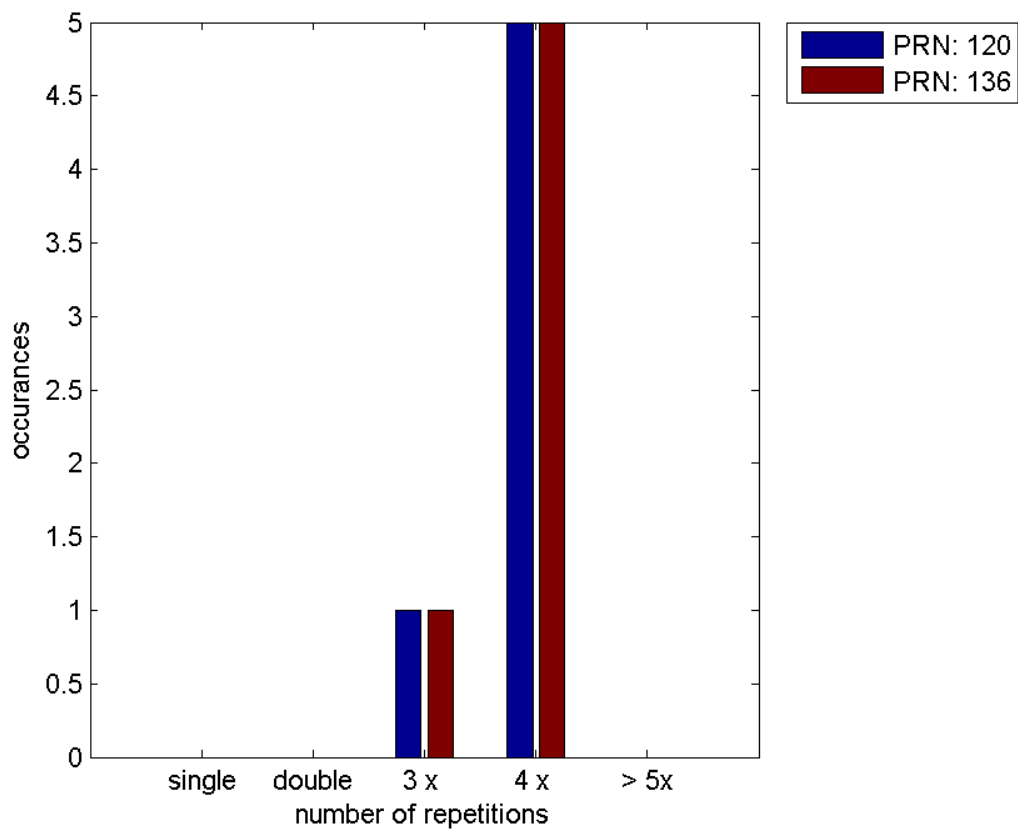
	single	double	3 x	4 x	> 5x
<b>PRN 120</b>	0	0	1	5	0
<b>PRN 136</b>	0	0	1	5	0

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#### Message Distribution by time:



**Message Type 6 repetitions:**



PRN 120

**Broadcast SBAS Messages :**

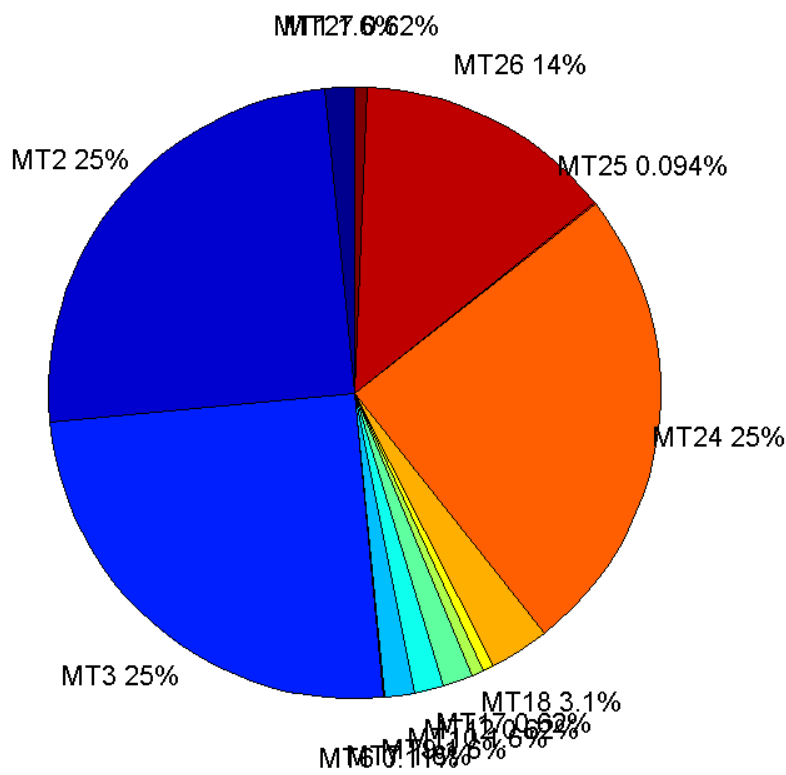
	number of messages	%
MT 0	0	0
MT 1	347	1.55682
MT 2	5564	24.963
MT 3	5564	24.963
MT 4	0	0
MT 5	0	0
MT 6	24	0.107676
MT 7	346	1.55234
MT 9	347	1.55682
MT 10	347	1.55682
MT 12	139	0.623626
MT 17	139	0.623626
MT 18	693	3.10916
MT 24	5564	24.963
MT 25	21	0.0942169
MT 26	3055	13.7063
MT 27	139	0.623626
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	22289	100

**Update intervals :**

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	69	64.2861	0	0	0
MT 2	4	8	4.00575	6	0	0
MT 3	4	8	4.00575	6	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	8891	924.739	5	5	5
MT 7	64	69	64.3101	0	0	0
MT 9	64	69	64.2861	0	0	0
MT 10	64	69	64.3092	0	0	0
MT 12	152	171	160.543	138	0	0
MT 17	160	167	160.572	0	0	0
MT 18	4	129	32.2066	0	0	0
MT 24	4	8	4.00593	0	0	0
MT						

25	20	2508	1055.45	0	0	0
MT 26	4	28	7.28978	0	0	0
MT 27	156	167	160.572	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

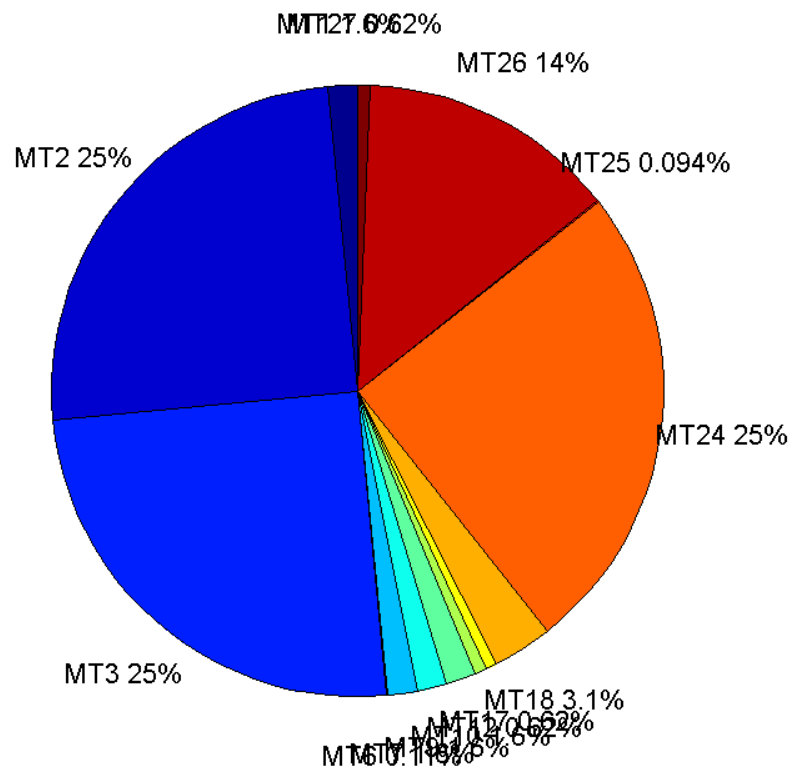
	number of messages	%
MT 0	0	0
MT 1	347	1.55682
MT 2	5564	24.963
MT 3	5564	24.963
MT 4	0	0
MT 5	0	0
MT 6	24	0.107676

MT 7	346	1.55234
MT 9	346	1.55234
MT 10	347	1.55682
MT 12	139	0.623626
MT 17	139	0.623626
MT 18	695	3.11813
MT 24	5564	24.963
MT 25	21	0.0942169
MT 26	3055	13.7063
MT 27	138	0.619139
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	22289	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	69	64.3208	0	0	0
MT 2	4	8	4.00575	6	0	0
MT 3	4	8	4.00593	6	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	8891	924.739	5	5	5
MT 7	64	71	64.3217	0	0	0
MT 9	64	69	64.3217	0	0	0
MT 10	64	69	64.3208	0	0	0
MT 12	156	171	160.543	138	0	0
MT 17	156	167	160.543	0	0	0
MT 18	4	147	31.9524	0	0	0
MT 24	4	8	4.00575	0	0	0
MT 25	20	2508	1055.45	0	0	0
MT 26	4	51	7.29764	0	0	0
MT 27	157	167	160.518	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:/PegasusDat/Jobs/2015_09_17EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDat/Jobs/2015_09_17EGNOS/02_Convertor/02_Convertor

Configuration

Name	Section	Value
Receiver	Configuration	Novatel OEM4
Leap_Seconds	Configuration	15
Correction_mode	Configuration	SBAS MODE 0/2
Dual_Frequency	Configuration	no

Position Domain

start: 07:03:35 17.09.2015 ( week: 1862 sec: 371015 )  
 end: 13:15:03 17.09.2015 ( week: 1862 sec: 393303 )  
 duration: 06:11:29 ..

## quality

valid samples 21928

total samples 22289

## 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
max normHor	378630	1.35705	10.6137	0.127858	1.06777	20.4831	0.0521295
max normVer	385280	0.468946	11.2308	0.0417554	1.85471	16.0124	0.11583
max HPE	372088	1.75393	41.9339	0.0418261	-1.31863	55.1051	0.0239293
max VPE	389280	0.399528	15.4929	0.0257878	-2.05213	31.6312	0.0648769
min HPL	378898	0.725802	8.19839	0.0885298	-0.00608372	16.797	0.000362191
min VPL	373350	0.346645	10.3399	0.033525	0.432814	12.2489	0.0353349

## APV-I discontinuity events :

#	Epoch	duration	stable period
1	372082	76	706

## APV-35m discontinuity events :

#	Epoch	duration	stable period
1	371615	1	13
2	371619	1	3
3	371623	1	3
4	371626	2	2
5	371630	3	2
6	371634	3	1
7	371638	3	1
8	371642	3	1
9	371646	3	1
10	371650	3	1
11	371654	3	1
12	371658	76	1
13	371762	396	28

14	377267	19	5109
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**LPV-200 discontinuity events :**

#	Epoch	duration	stable period
1	371615	1	13
2	371619	1	3
3	371623	1	3
4	371626	2	2
5	371630	3	2
6	371634	3	1
7	371638	3	1
8	371642	3	1
9	371646	3	1
10	371650	3	1
11	371654	3	1
12	371658	76	1
13	371762	396	28
14	377267	19	5109

**First Glance analysis**

<b>Duration</b>	22289
<b>Number of Samples</b>	22289
<b>Number of invalid sample</b>	361
<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>	1.6196
<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
21928	21852	21185	0	21185

**Accuracy statistics :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>HPE 95%</b>	1.13571	1.12942	1.13128	NaN	1.13128
<b>HPEScale 95%</b>	NaN	3.75722	3.76952	NaN	3.76952
<b>VPE 95%</b>	1.1858	1.1852	1.16936	NaN	1.16936



VPEscale 95%	NaN	3.29807	2.31833	NaN	2.31833
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## Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.996534	0.966116	0	0.966116
measurements	0.983804	0.980394	0.950469	0	0.950469
Operational	0.983804	0.980394	0.950469	0	0.950469

## Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	1	14	--	14
Long	--	1	3	--	3
Independent	--	1	2	--	2
P(disc.)	NaN	0.000686436	0.0014161	NaN	0.0014161
P(slide)	NaN	0.000686436	0.00283219	NaN	0.00283219

## 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

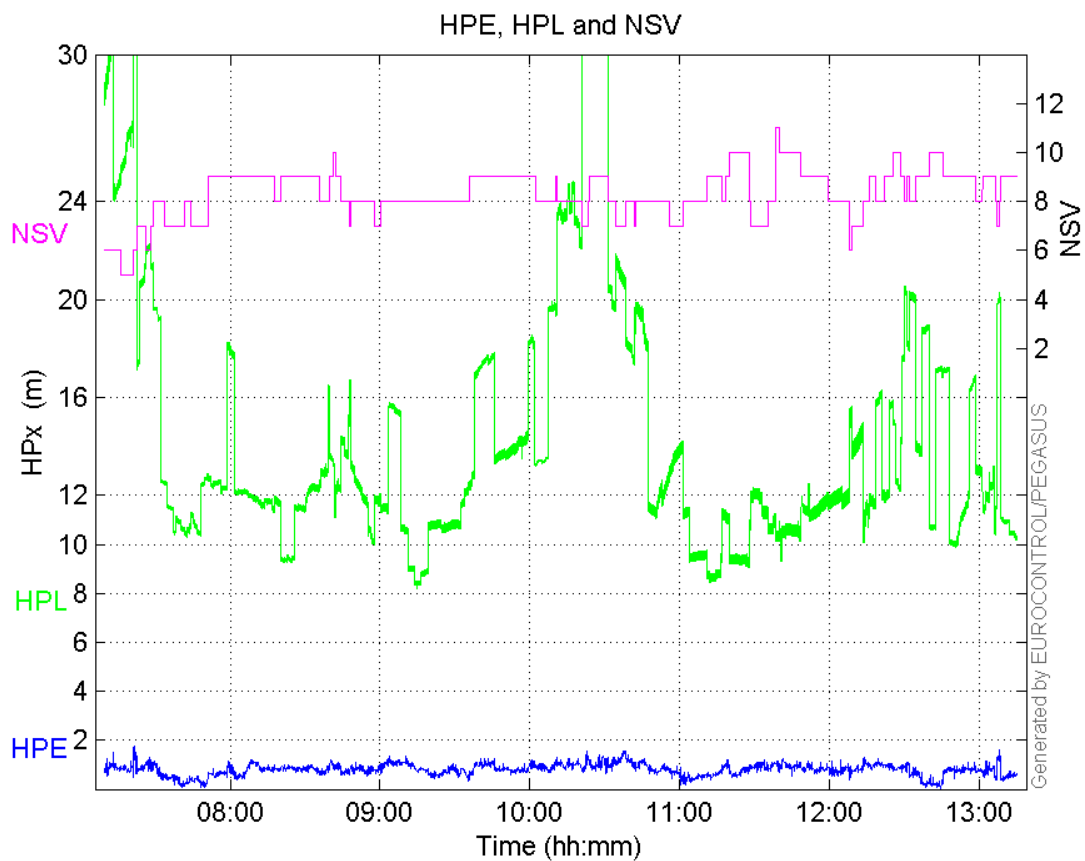
## Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	21928	21852	21185	0	21185
SIS Availability	1	0.996534	0.966116	0	0.966116
Local Availability	0.983804	0.980394	0.950469	0	0.950469
Operational Availability	0.983804	0.980394	0.950469	0	0.950469
HPE 95%	1.13571	1.12942	1.13128	NaN	1.13128
HPEScale 95%	NaN	3.75722	3.76952	NaN	3.76952
VPE 95%	1.1858	1.1852	1.16936	NaN	1.16936
VPEscale 95%	NaN	3.29807	2.31833	NaN	2.31833
All Discontinuity Events	--	1	14	--	14
Long Discontinuity Events	--	1	3	--	3
Independent Discontinuity Events	--	1	2	--	2
P(discontinuity)	NaN	0.000686436	0.0014161	NaN	0.0014161
P(sliding window)	NaN	0.000686436	0.00283219	NaN	0.00283219
All Integrity Events	0	0	0	0	0

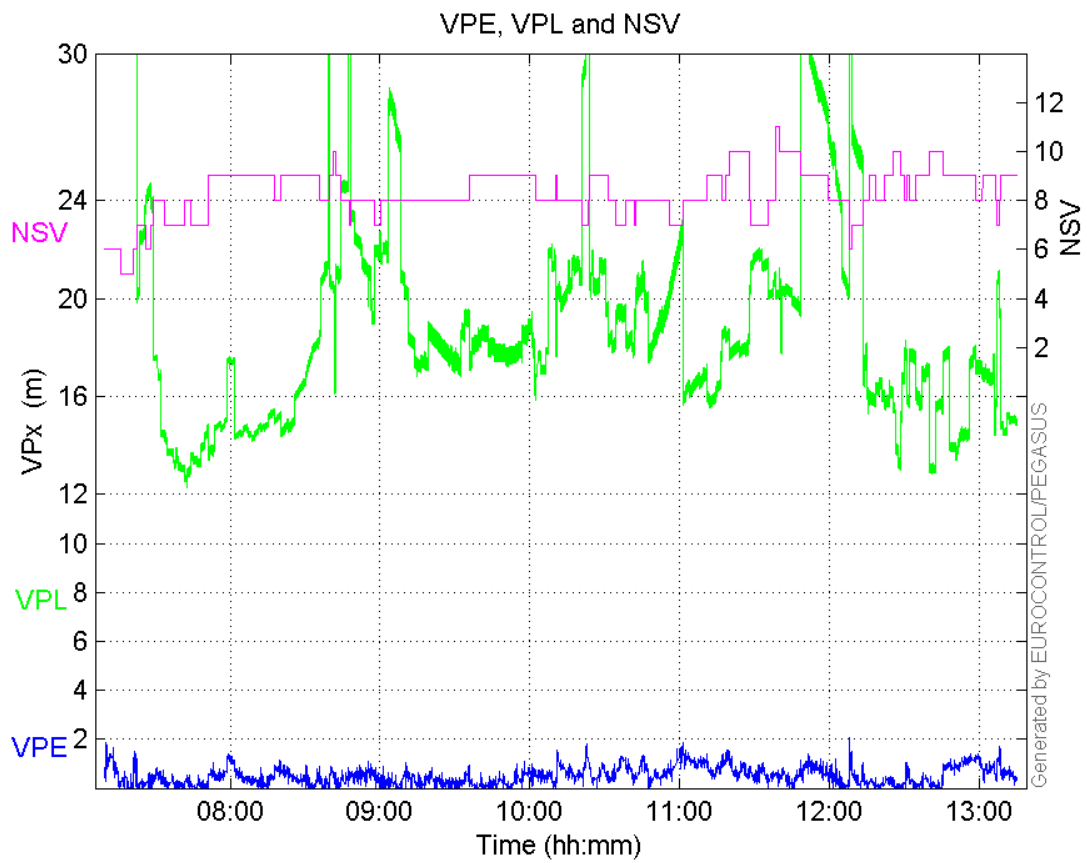
<b>Horizontal Integrity Events</b>	0	0	0	0	0
<b>Vertical Integrity Events</b>	0	0	0	0	0

Time Series

HPE, HPL and NSV:

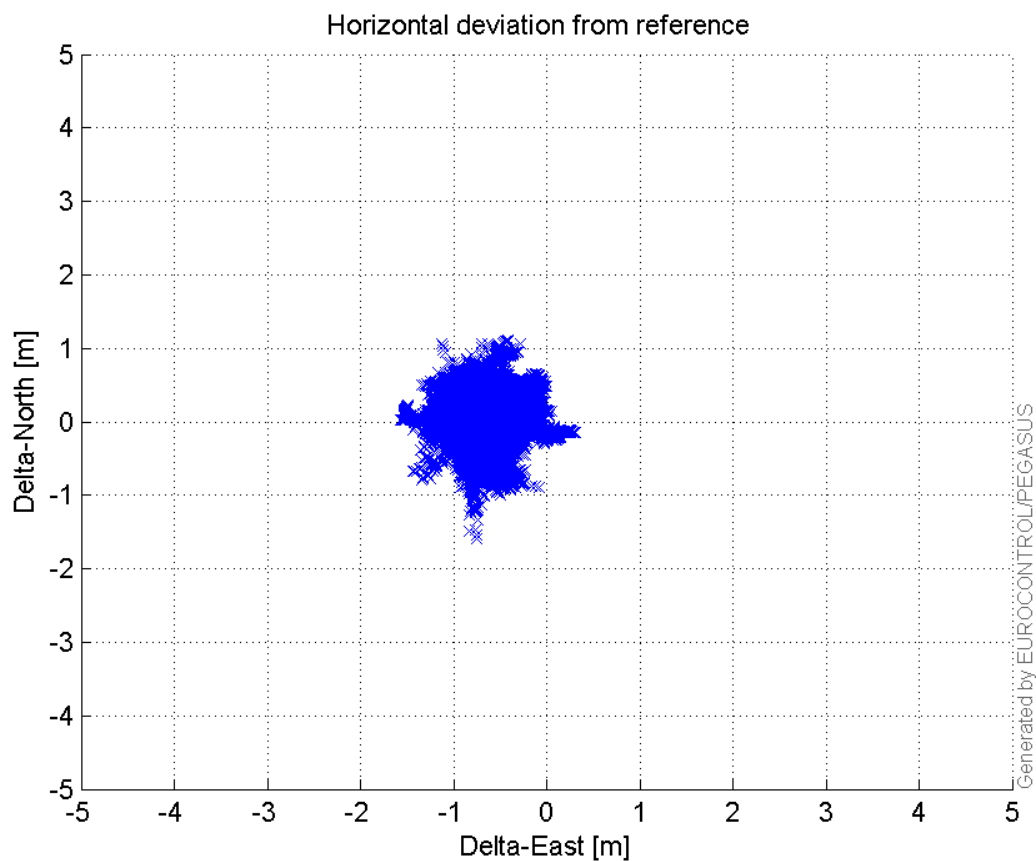


VPE, VPL and NSV:



### Horizontal deviation

**Horizontal deviation from reference :**



## CDF position

SBAS CDF position domain:



## Statistics

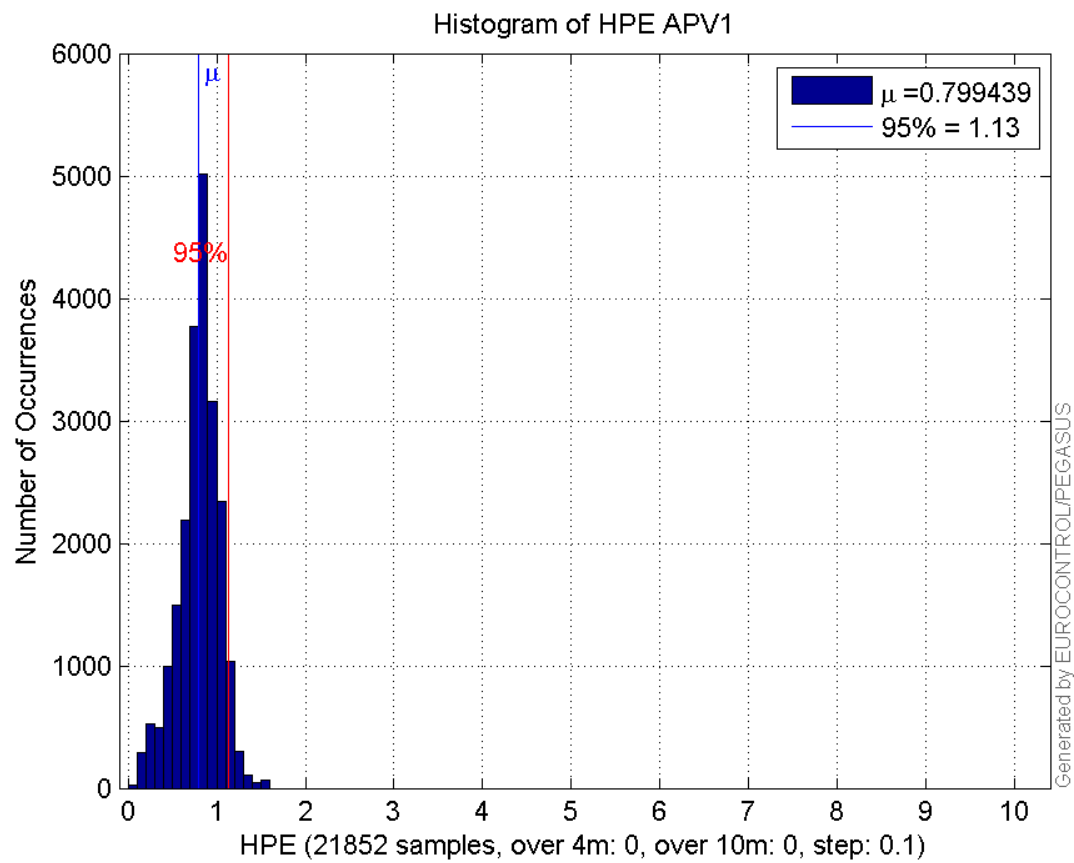
<b>number</b>	21852
<b>sum</b>	17469.347
<b>sum2</b>	15114.095
<b>prctile95</b>	1.1294164
<b>prctile99</b>	1.3003378
<b>number</b>	21852
<b>sum</b>	11047.202
<b>sum2</b>	8259.0548
<b>prctile95</b>	1.1852041
<b>prctile99</b>	1.399732
<b>number</b>	21852
<b>sum</b>	314964.37
<b>sum2</b>	5238203.2
<b>prctile95</b>	25.58862
<b>prctile99</b>	37.490958
<b>number</b>	21852
<b>sum</b>	424213.51
<b>sum2</b>	8852770.3
<b>prctile95</b>	30.47675
<b>prctile99</b>	39.430158
<b>number</b>	21852

**sum** 1304.3342  
**sum2** 86.802108  
**prctile95** 0.093930465  
**prctile99** 0.10709306  
**number** 21852  
**sum** 589.08907  
**sum2** 23.953245  
**prctile95** 0.065961327  
**prctile99** 0.078141866  
**number** 21185  
**sum** 16892.372  
**sum2** 14605.72  
**prctile95** 1.1312789  
**prctile99** 1.3033127  
**number** 21185  
**sum** 10639.945  
**sum2** 7862.4025  
**prctile95** 1.1693627  
**prctile99** 1.3851881  
**number** 21185  
**sum** 297007.06  
**sum2** 4749278.6  
**prctile95** 23.34155  
**prctile99** 37.620185  
**number** 21185  
**sum** 398328.29  
**sum2** 7842626.2  
**prctile95** 27.9718  
**prctile99** 31.874155  
**number** 21185  
**sum** 1282.7581  
**sum2** 86.091053  
**prctile95** 0.094237952  
**prctile99** 0.10743921  
**number** 21185  
**sum** 578.89593  
**sum2** 23.714591  
**prctile95** 0.066237858  
**prctile99** 0.078369866

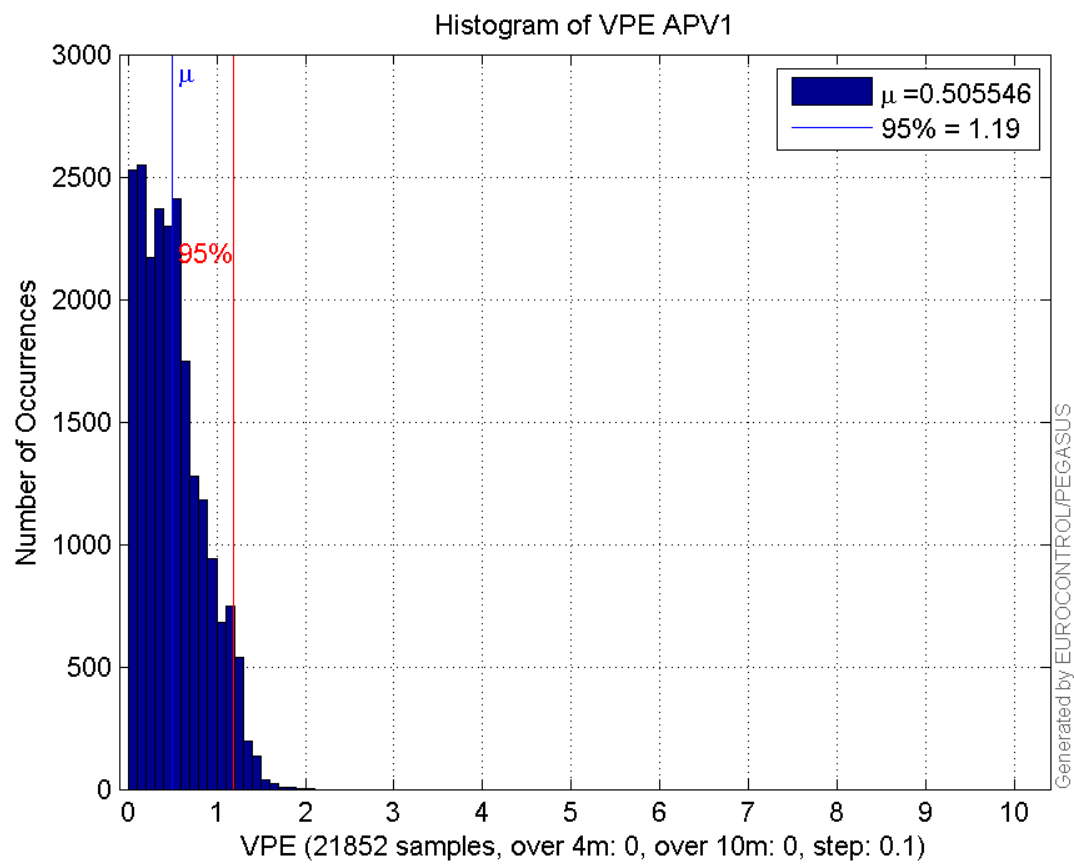
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	0.799439	0.229252	0.818613	1.12942	1.30034	0.831659
<b>HPL</b>	14.4135	5.65371	12.2172	25.5886	37.491	15.4827
<b>VPE</b>	0.505546	0.349832	0.455157	1.1852	1.39973	0.61478
<b>VPL</b>	19.413	5.31598	18.0348	30.4768	39.4302	20.1277

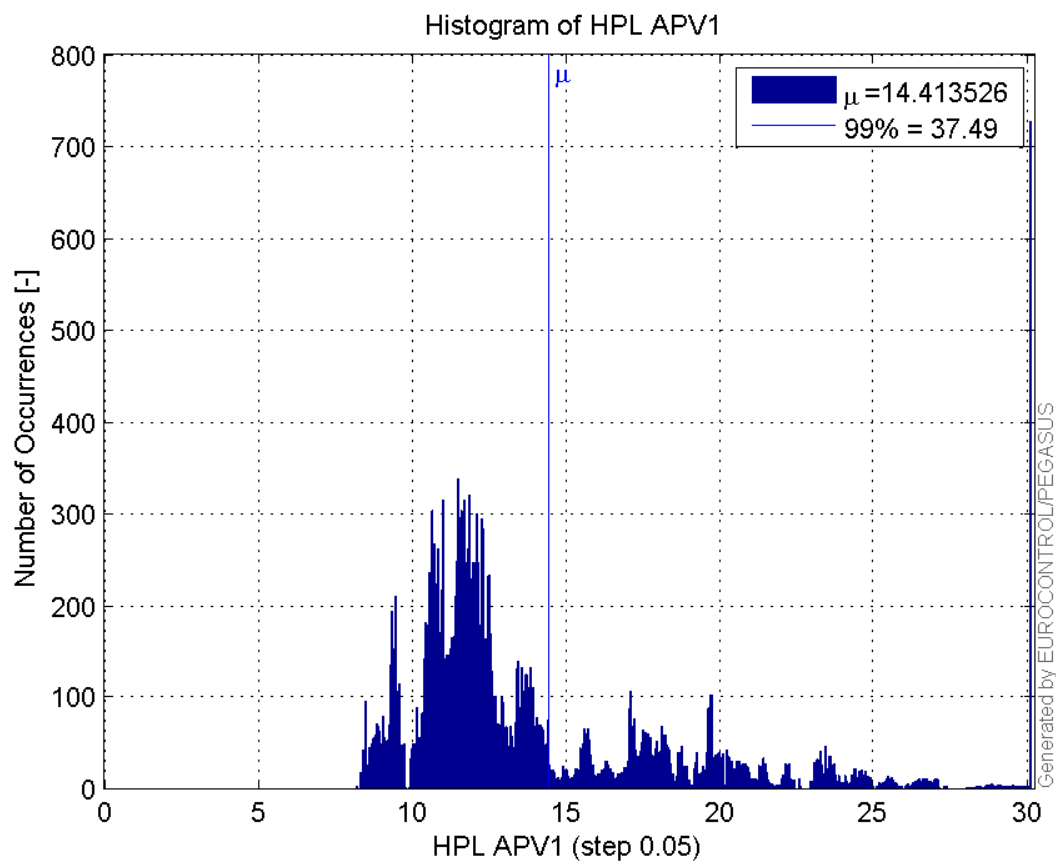
**Histogram of HPE APV1:**



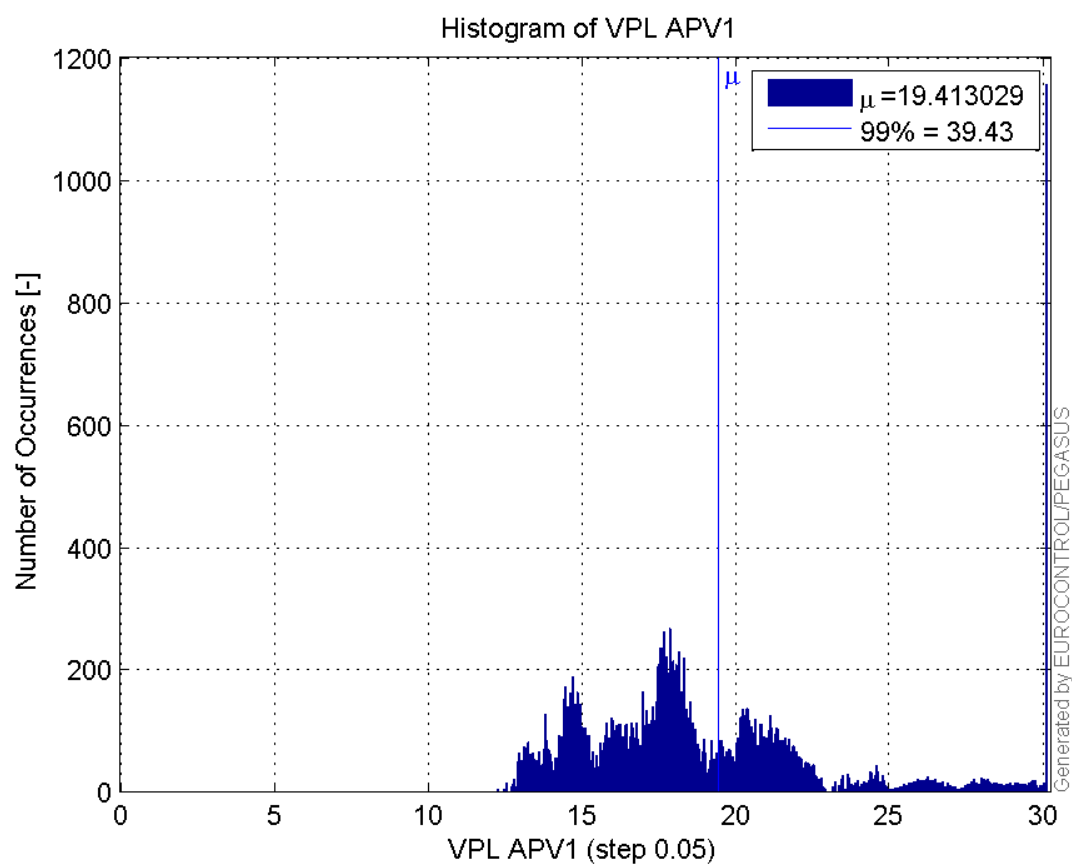
**Histogram of VPE APV1:**



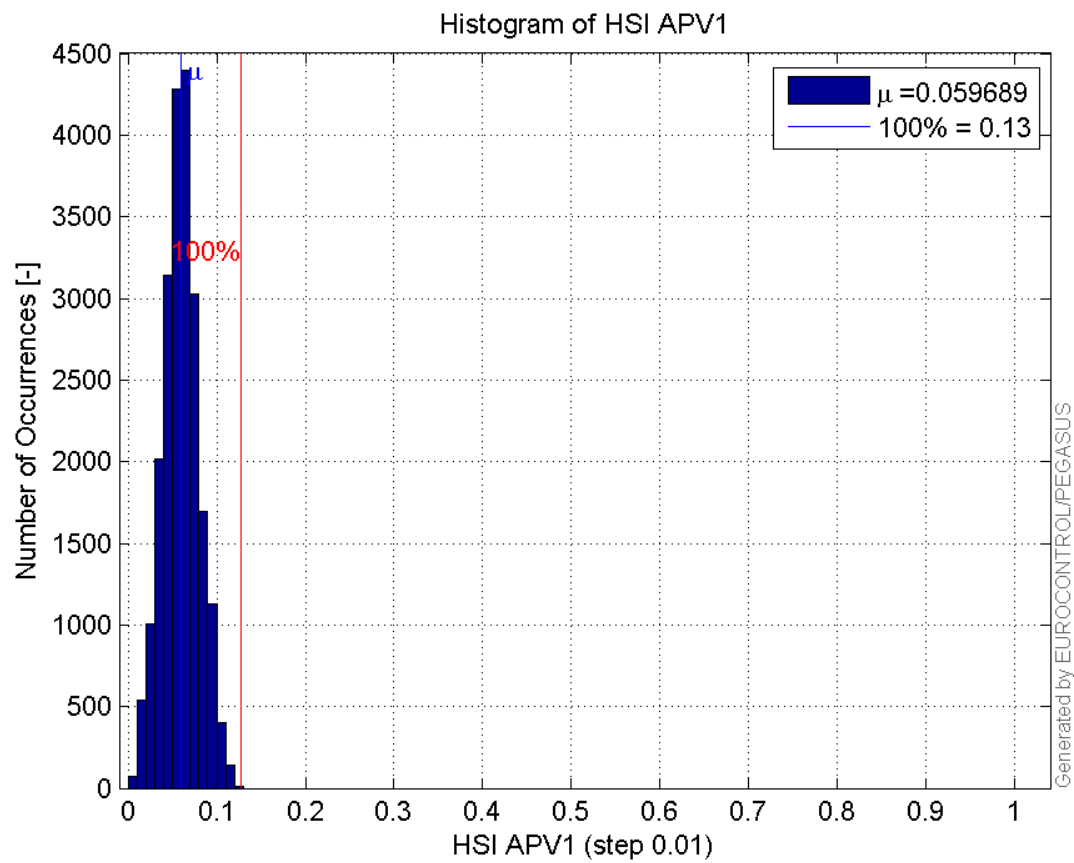
**Histogram of HPL APV1:**



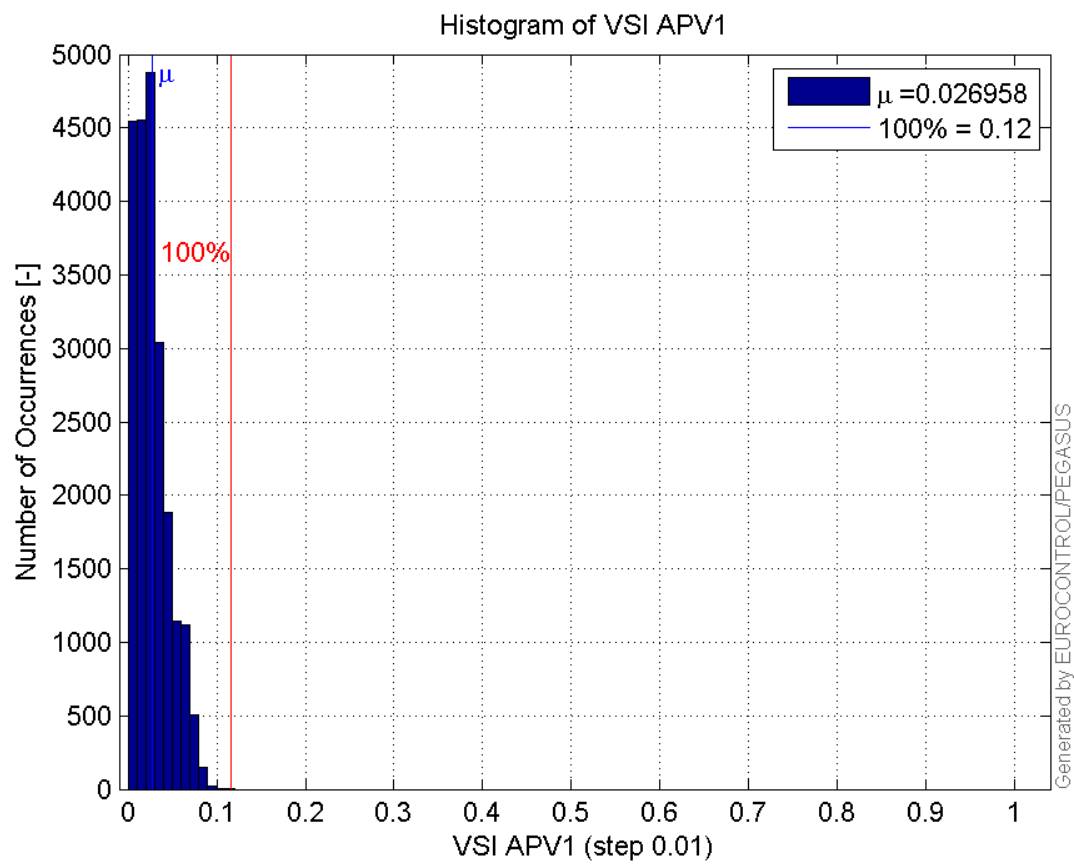
**Histogram of VPL APV1:**



**Histogram of HSI APV1:**

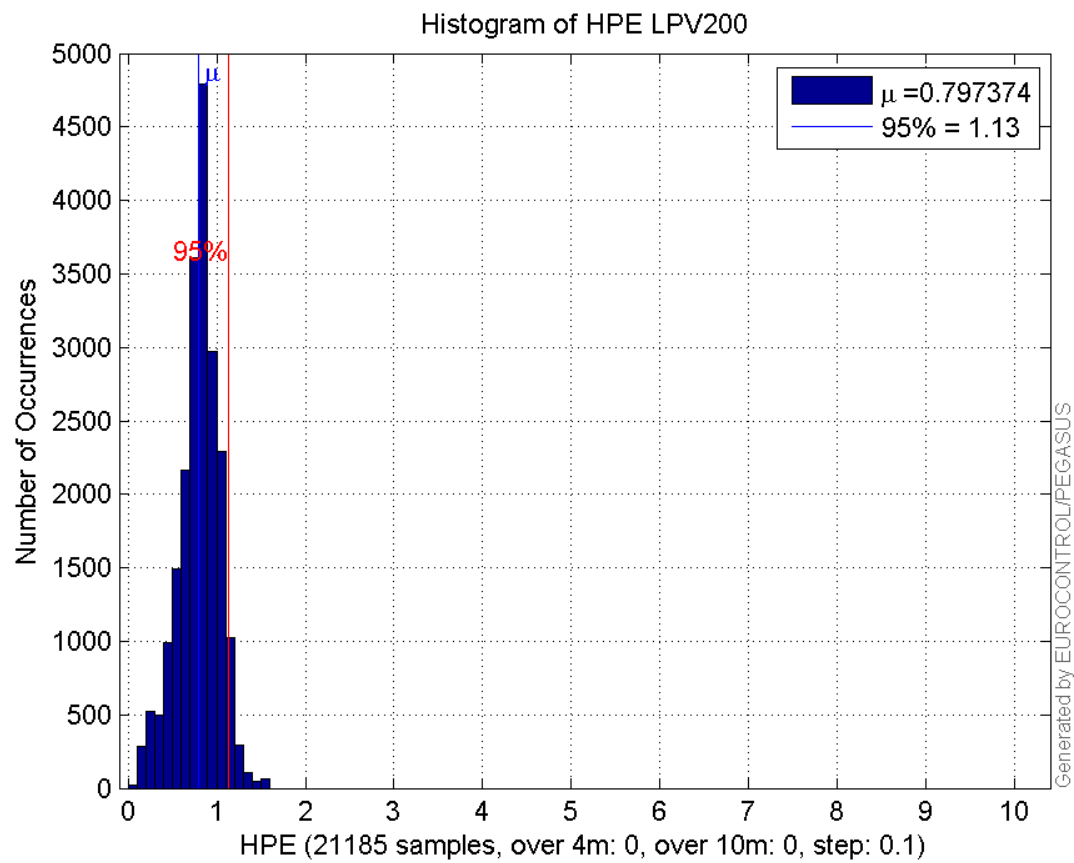


**Histogram of VSI APV1:**

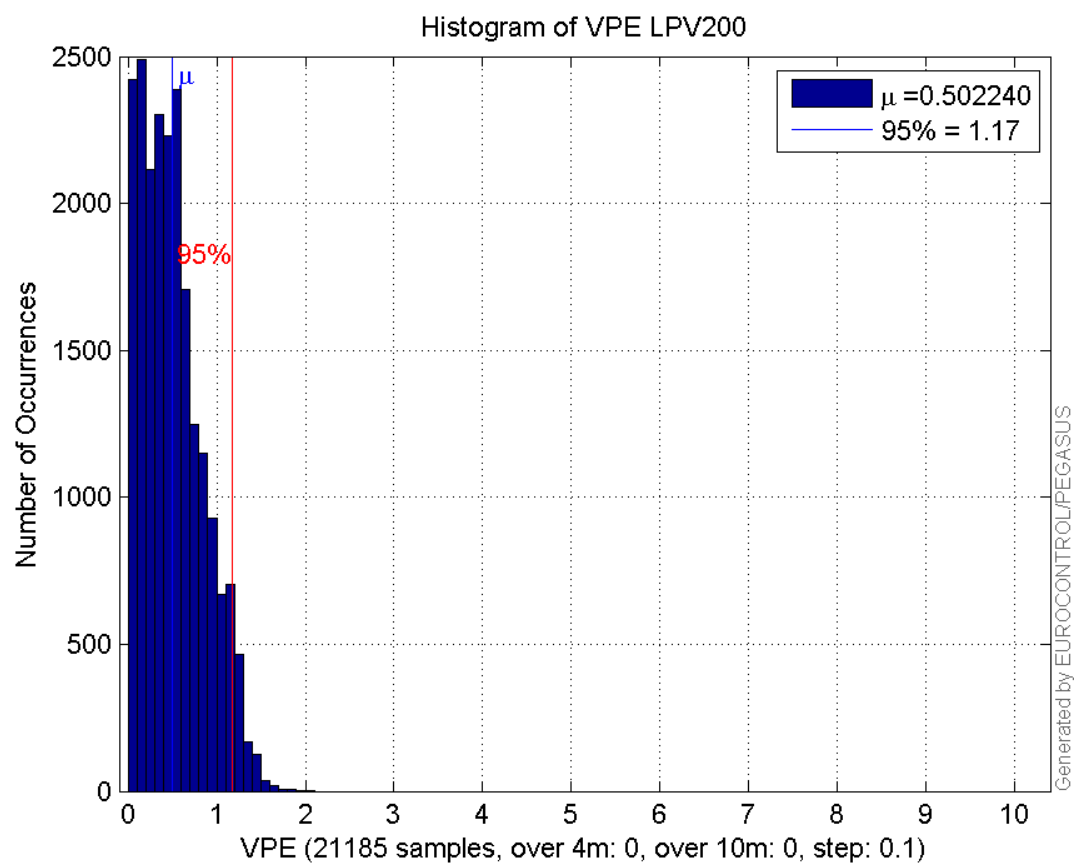


**Histogram of HPE LPV200:**

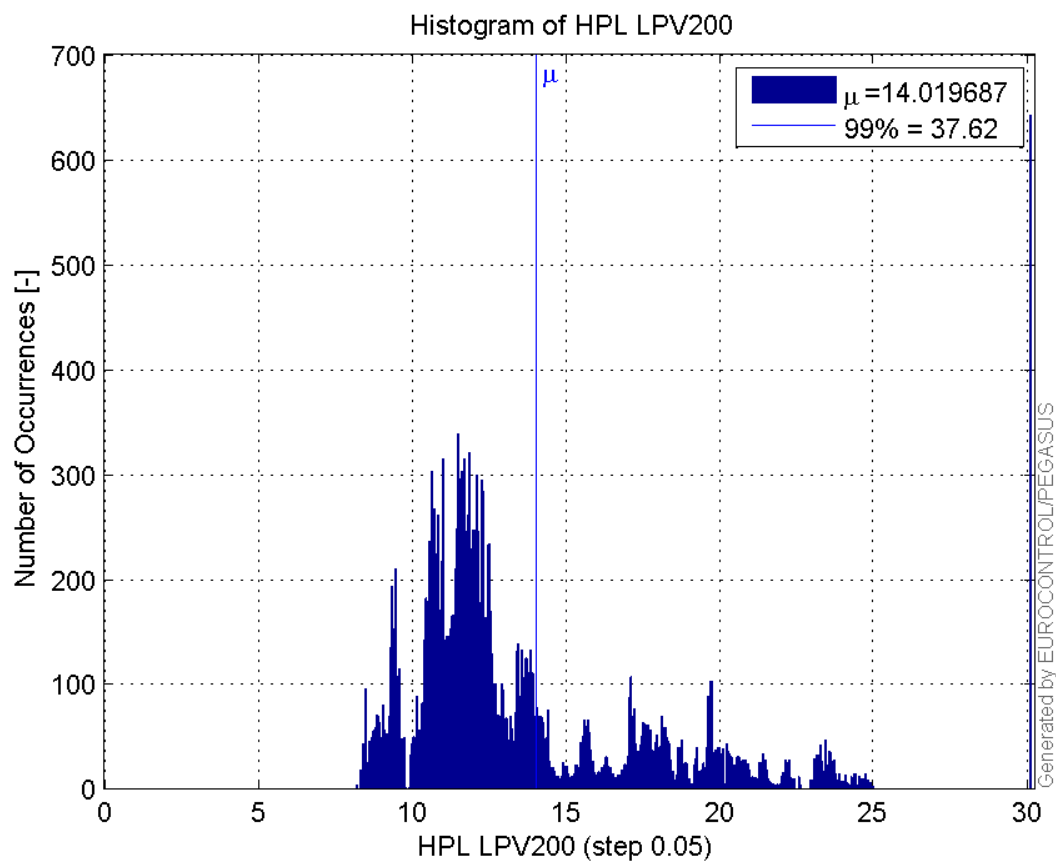




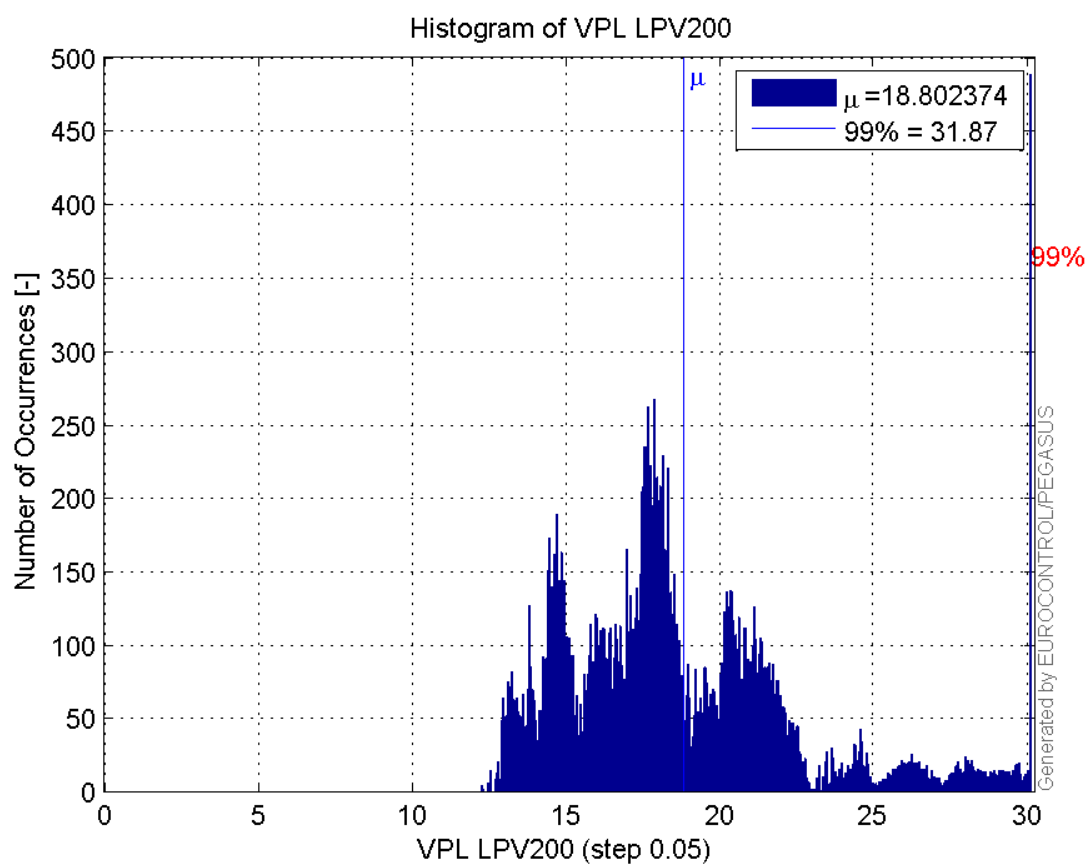
**Histogram of VPE LPV200:**



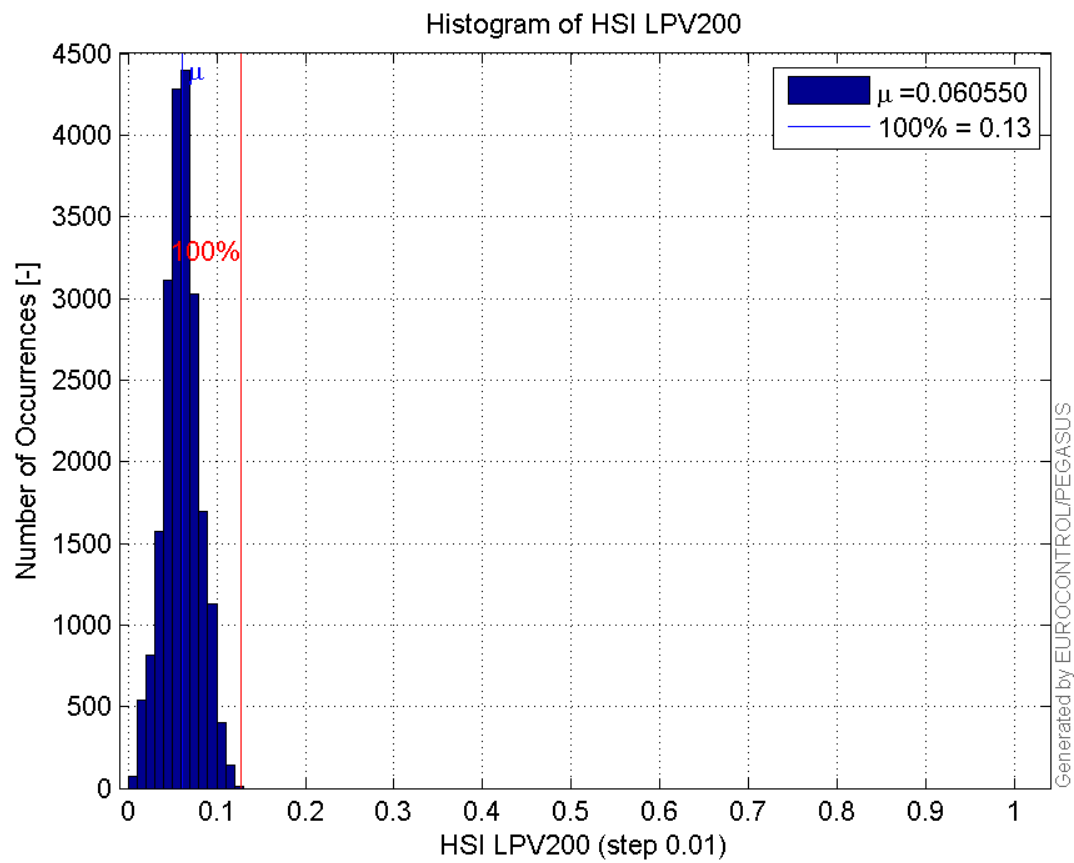
**Histogram of HPL LPV200:**



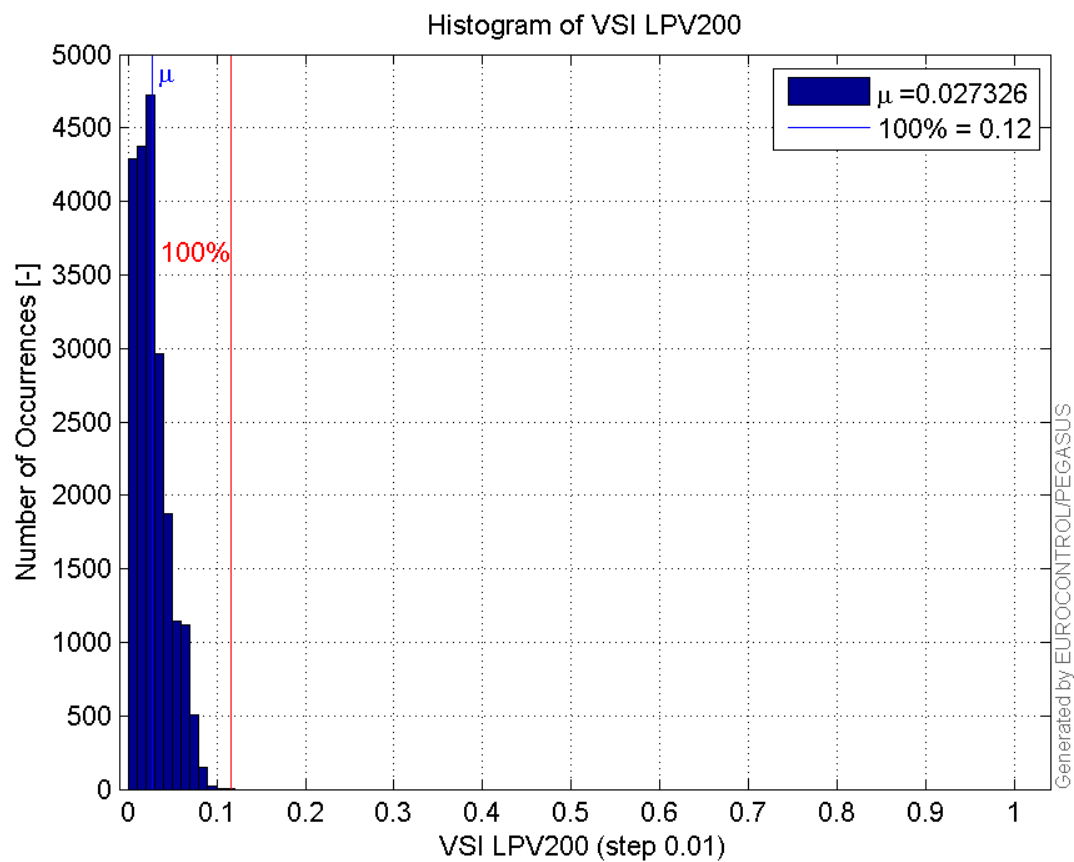
**Histogram of VPL LPV200:**



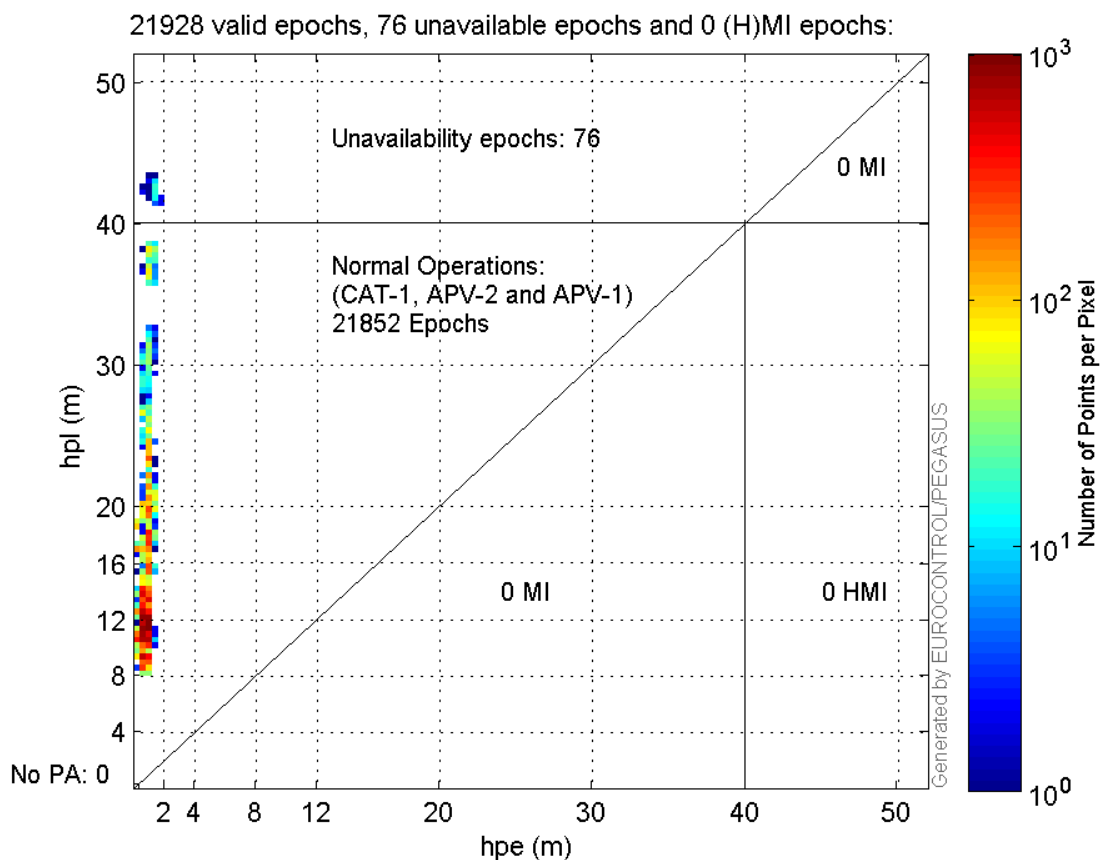
**Histogram of HSI LPV200:**



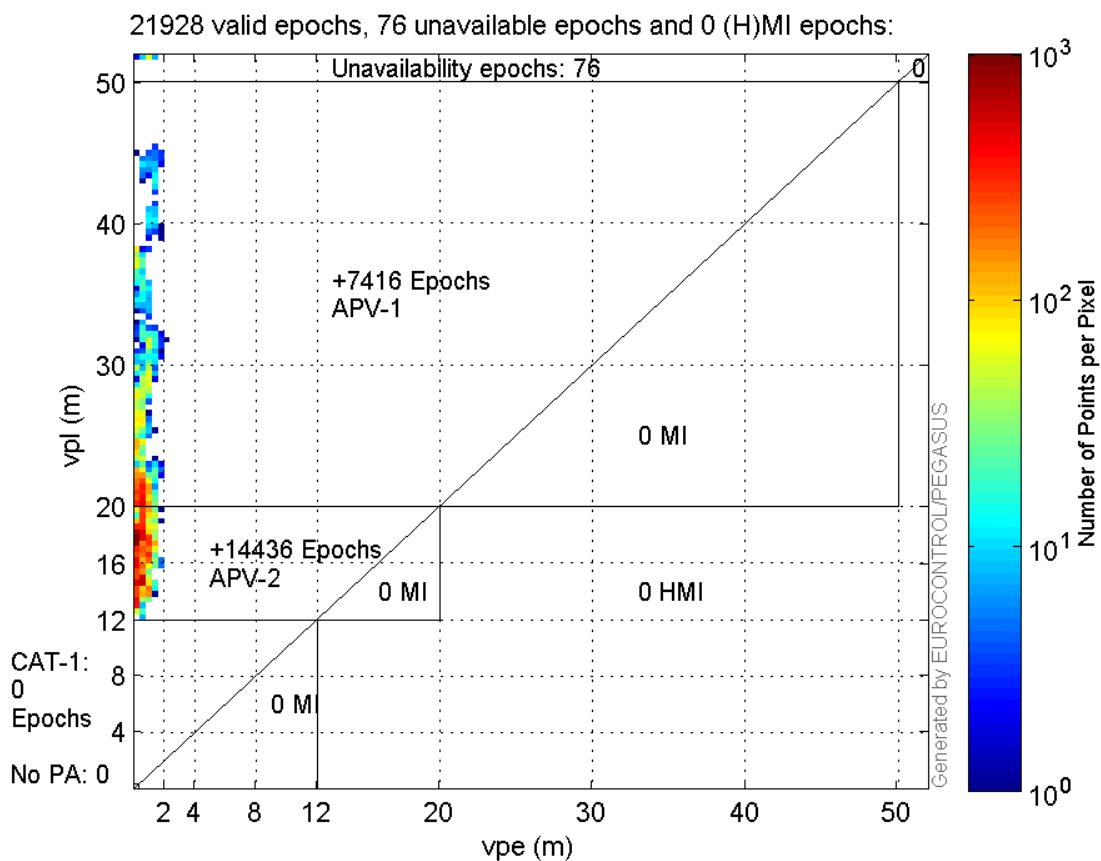
Histogram of VSI LPV200:



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



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



## Parameters

## system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDat/Jobs/2015_09_17EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDat/Jobs/2015_09_17EGNOS/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	232.3351
mi_numbers	results	0

## Range Domain

**start:** 07:03:35 17.09.2015 ( week: 1862 sec: 371015 )  
**end:** 13:15:03 17.09.2015 ( week: 1862 sec: 393303 )  
**duration:** 06:11:29 ..

## quality

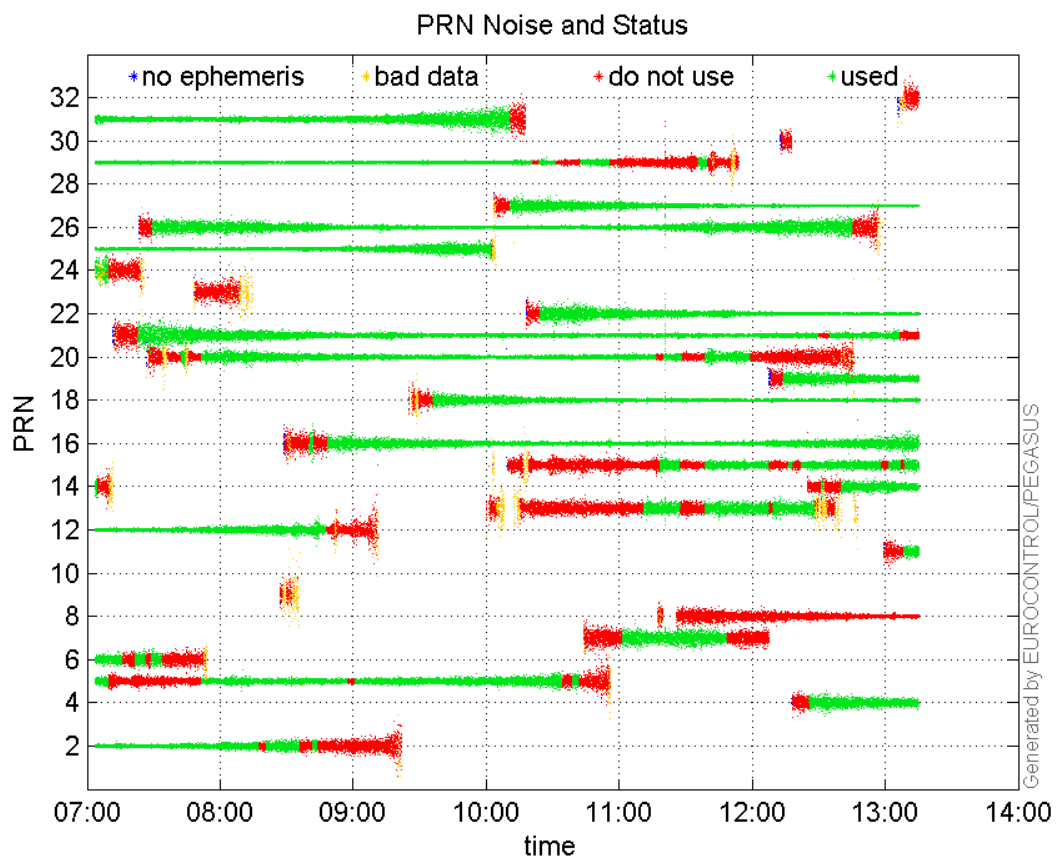
**valid samples** 22289  
**total samples** 22289

## PRN overview

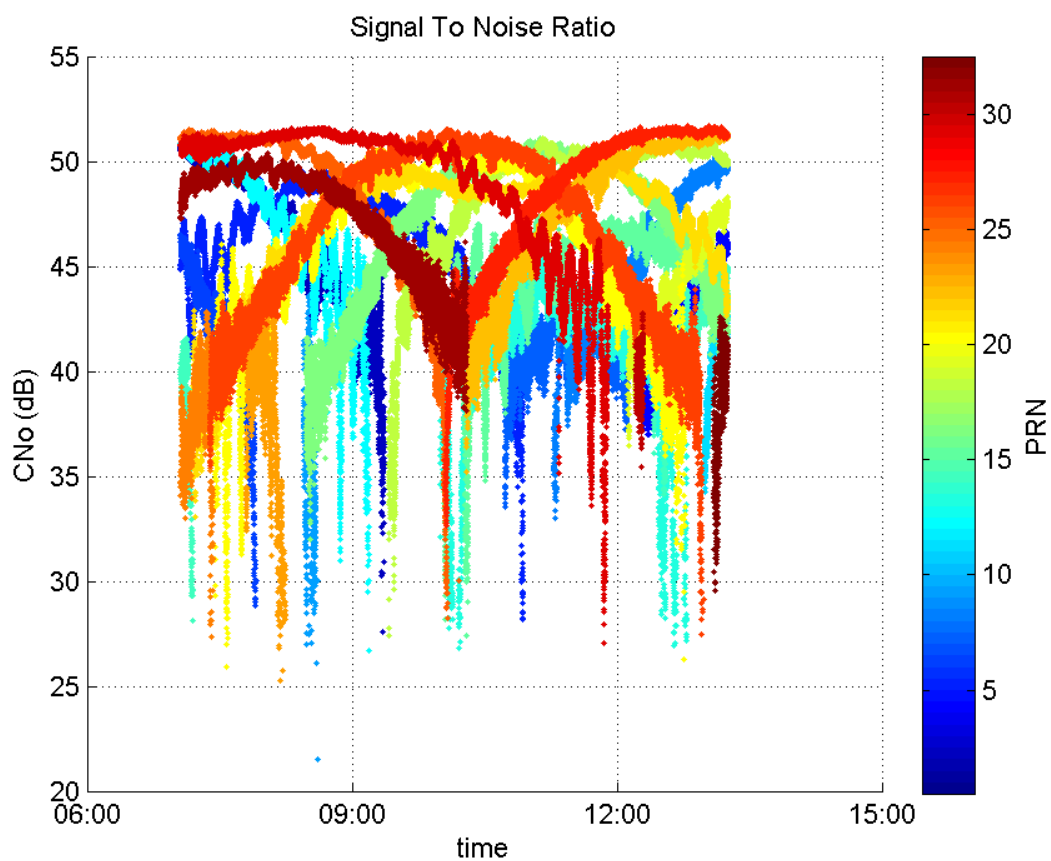
**Number of Visible GPS Satellites** 27  
**Number of Visible SBAS Satellites** 2

## signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



## range errors

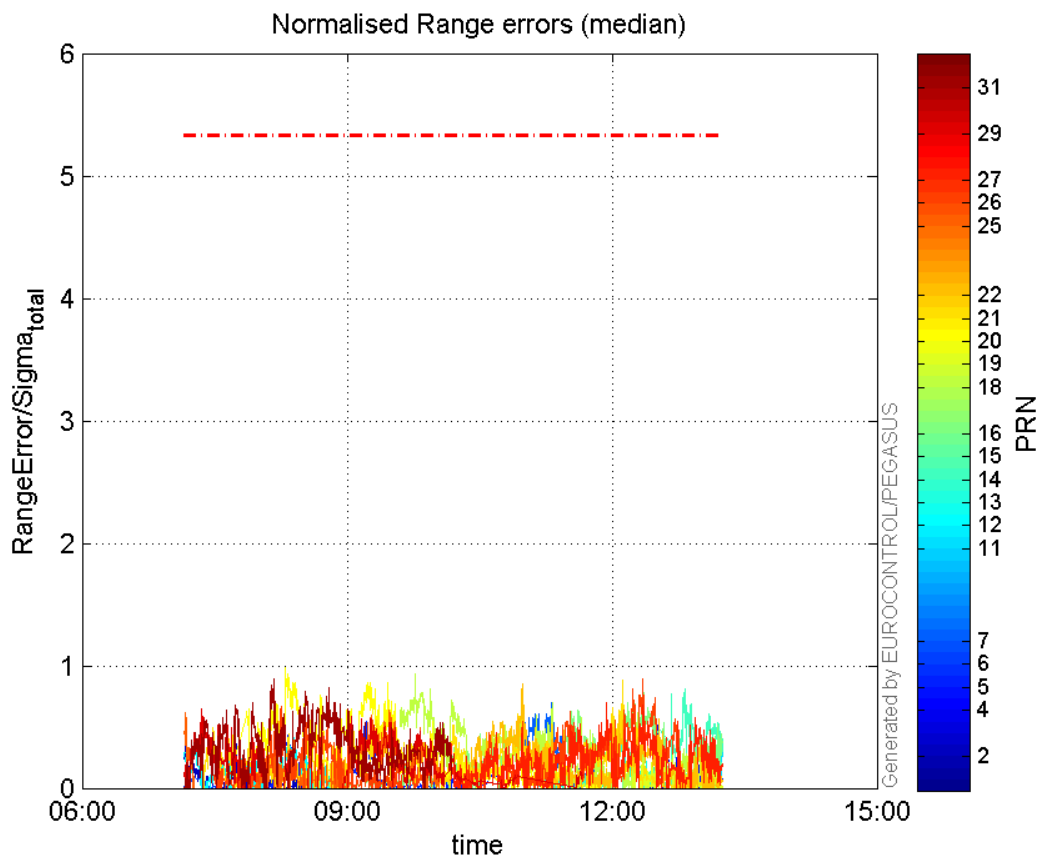
Number of Overbounding Norm Errors 0

Max Norm Errors :

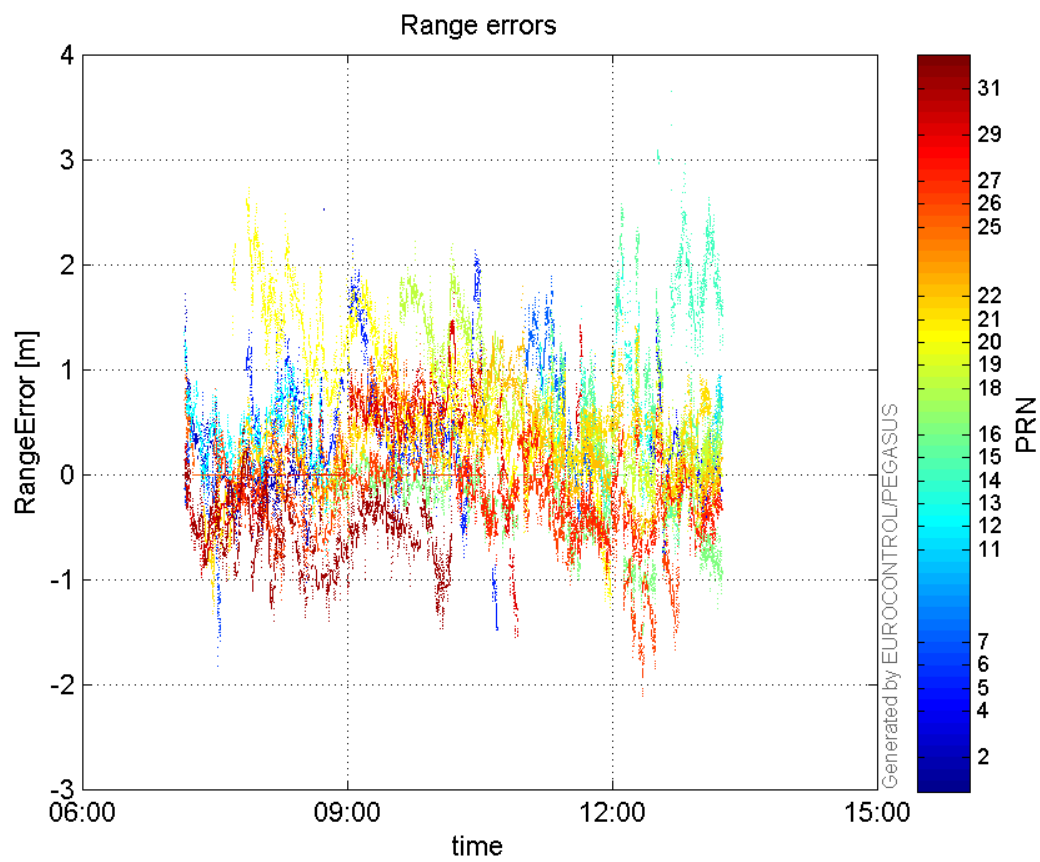
GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1862	373483	2	0.364904	-0.705137	1.93239
1862	390614	4	0.531853	1.53592	2.88787
1862	378780	5	0.550003	1.61174	2.93043
1862	372120	6	0.105606	0.778104	7.36798
1862	386338	7	0.703336	1.89177	2.68971
1862	393174	11	0.39328	0.948894	2.41277
1862	375800	12	0.432481	1.05238	2.43336
1862	389261	13	0.417353	2.15213	5.15663
1862	391802	14	0.813297	2.96113	3.6409
1862	389174	15	0.462219	2.57666	5.57455
1862	390033	16	0.828312	-1.52808	1.84481
1862	380783	18	0.929726	2.21508	2.38251
1862	390590	19	0.418556	0.888292	2.12228
1862	375474	20	0.98355	2.47947	2.52094
1862	389256	21	0.881516	1.53462	1.74089
1862	385134	22	0.85081	1.7906	2.10458
1862	379686	25	0.641486	1.34131	2.09094
1862	390056	26	0.895387	-2.11321	2.36011
1862	388588	27	0.701471	-1.0432	1.48716
1862	372065	29	0.644427	-0.976532	1.51535
1862	375044	31	0.889484	-1.39982	1.57374

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**Normalised Range errors (median):**

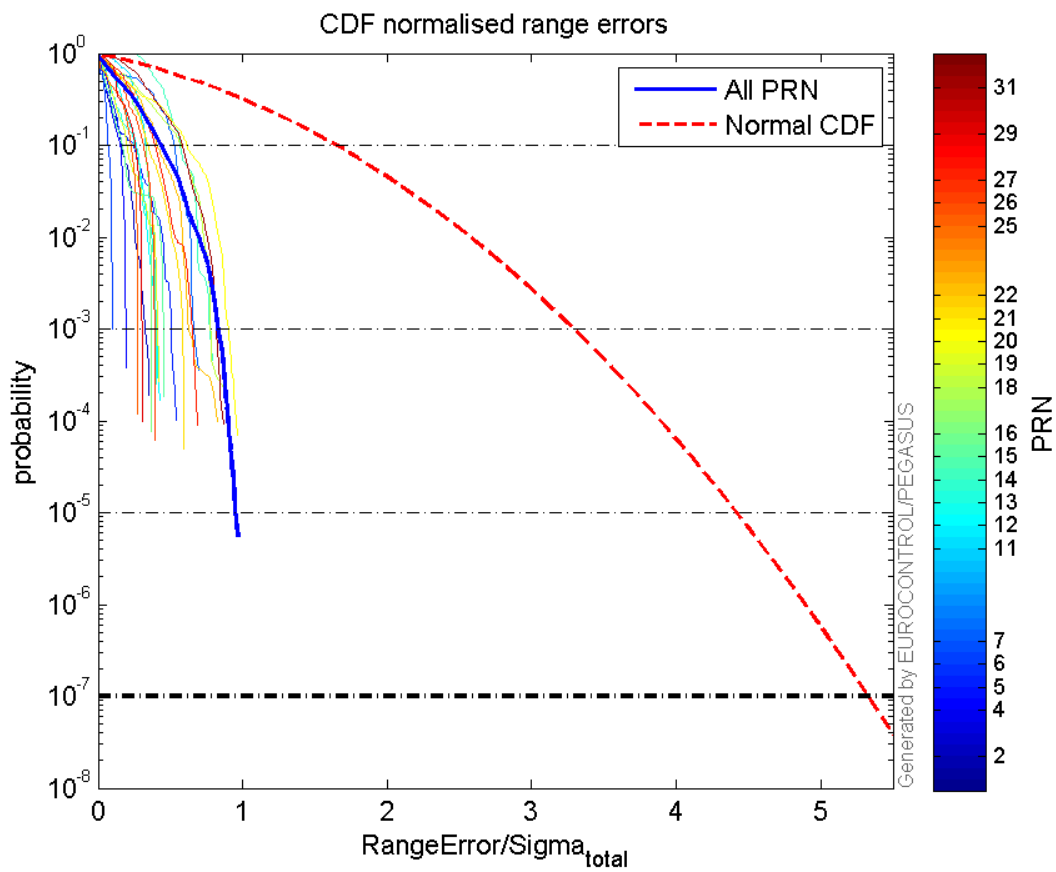


Range errors:

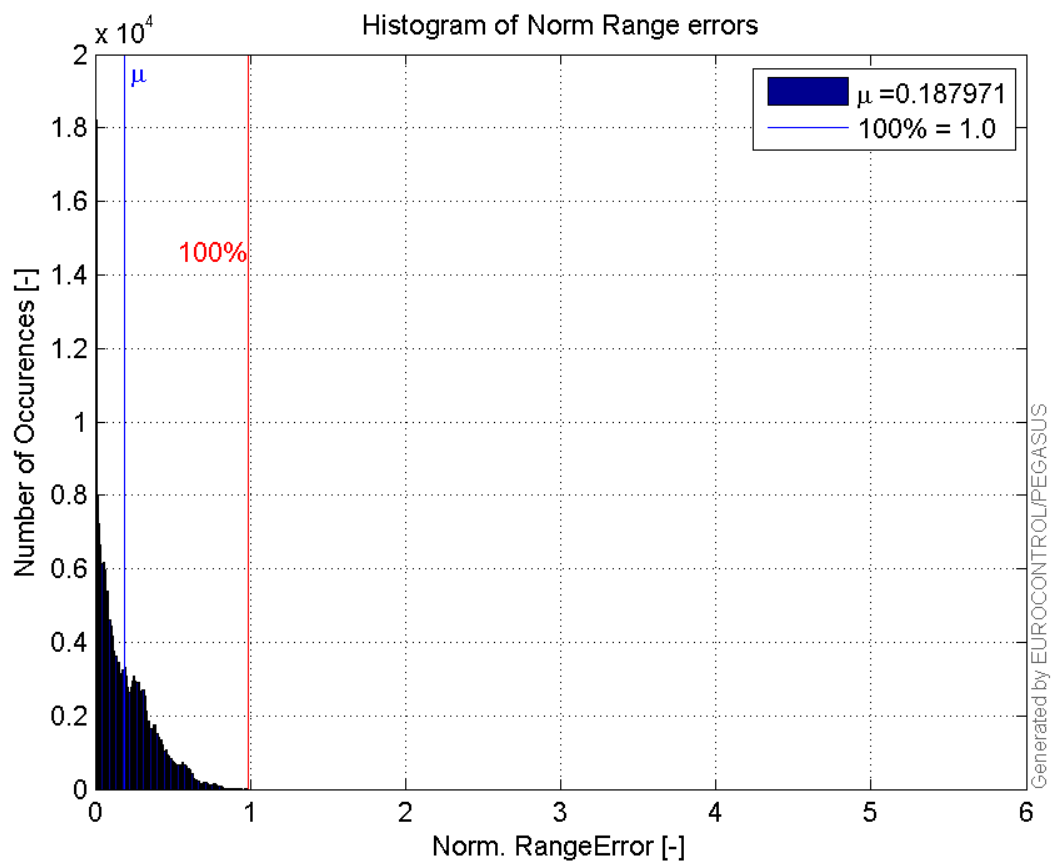


CDF normalised range errors:

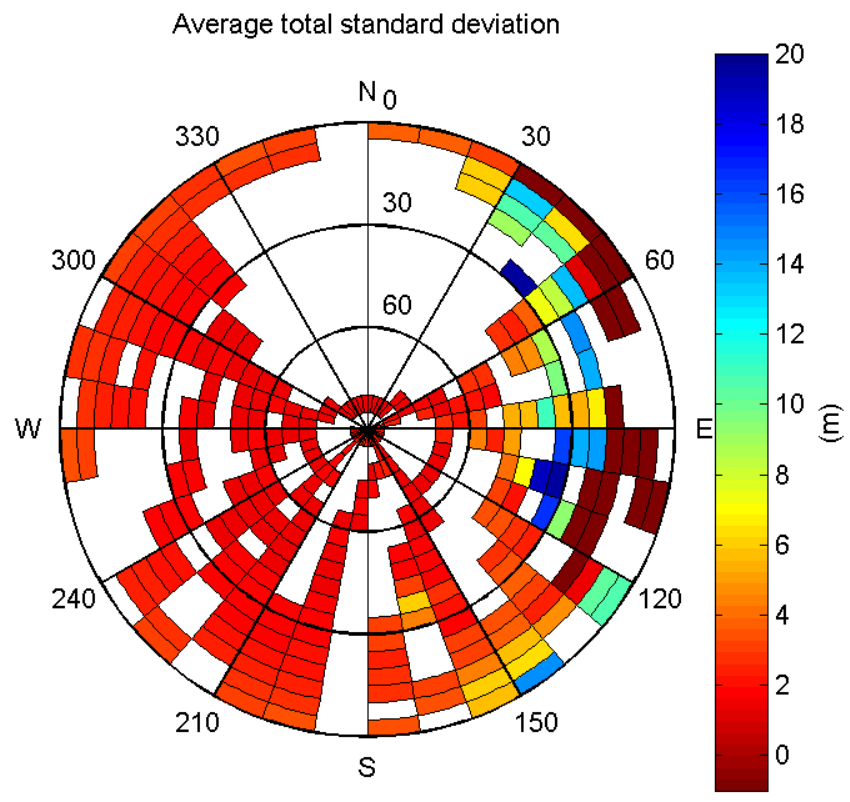




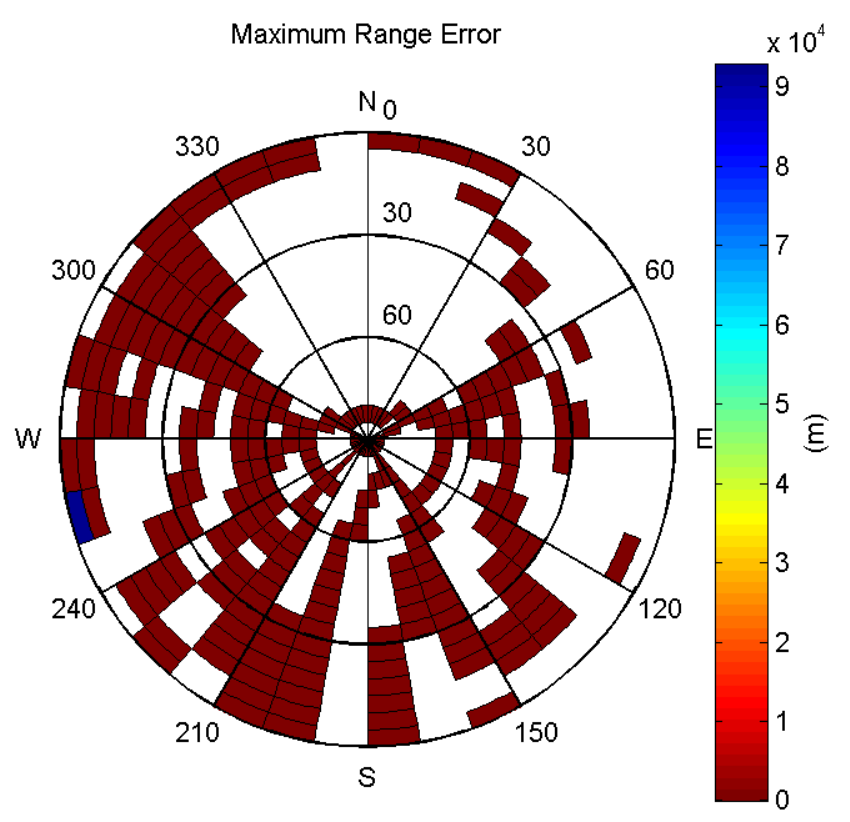
**Histogram of Norm Range errors:**



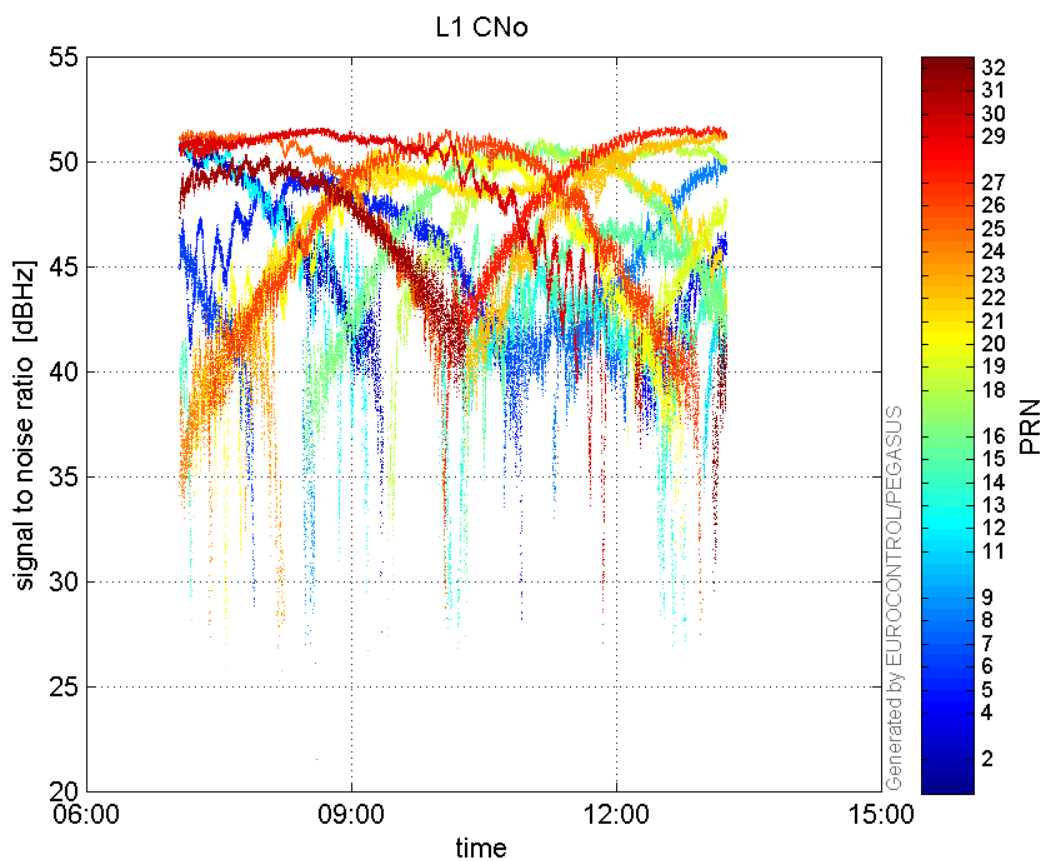
**Sigma Sky Plot:**



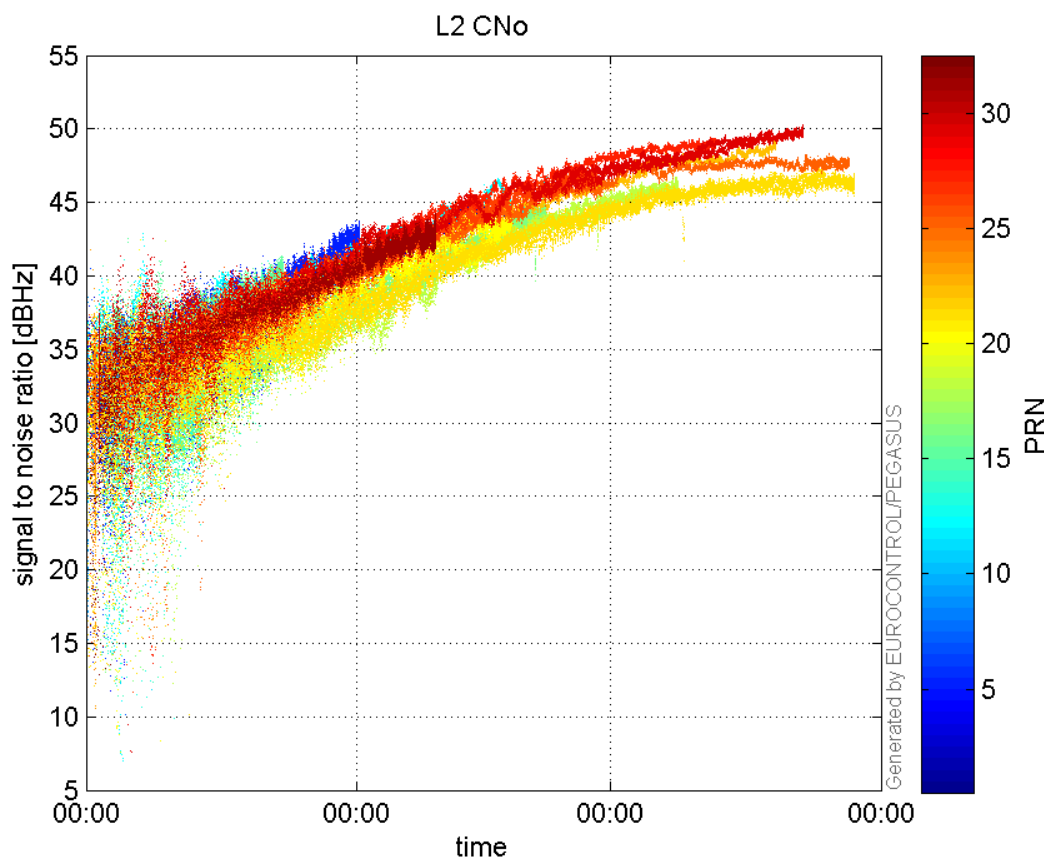
Norm Error Sky Plot:



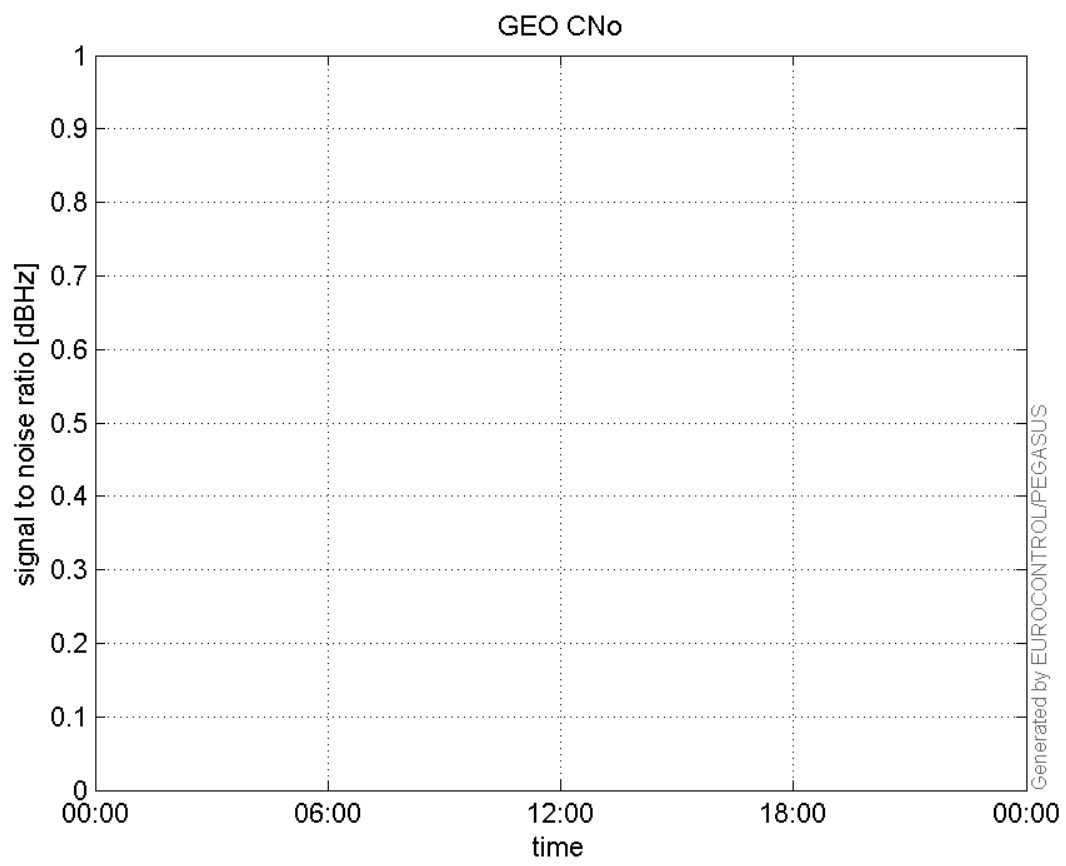
L1 CNo:



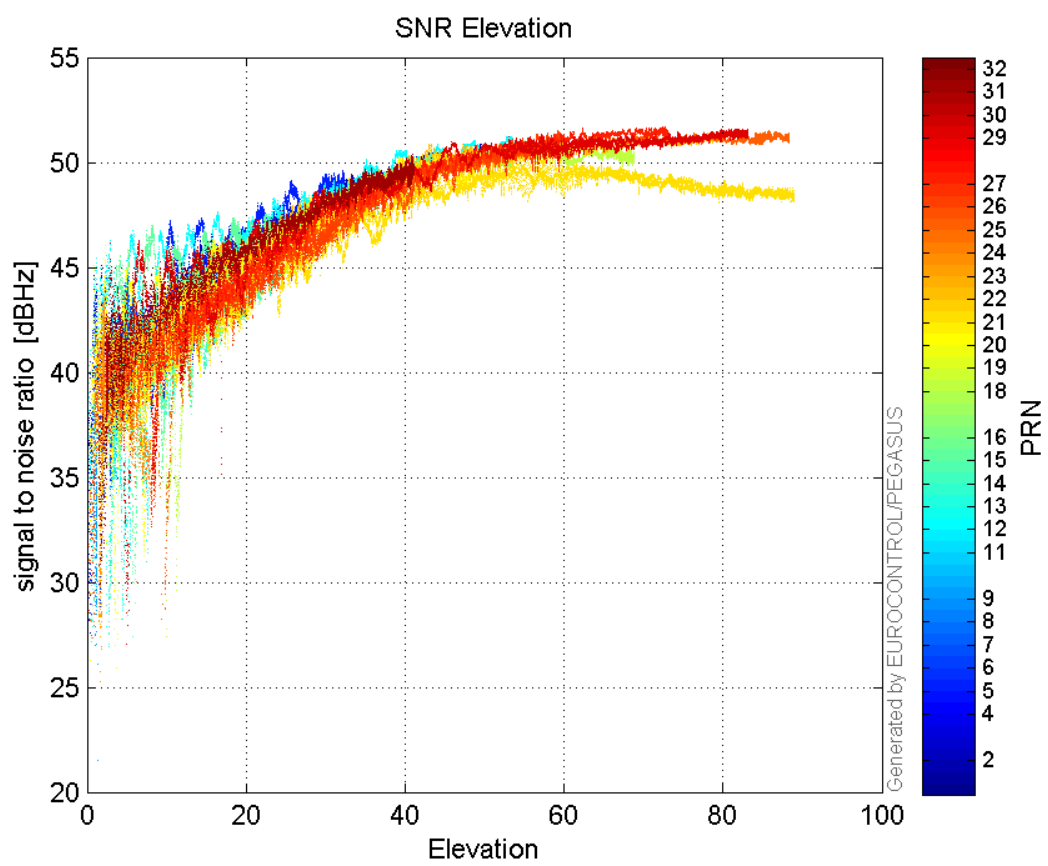
L2 CNo:



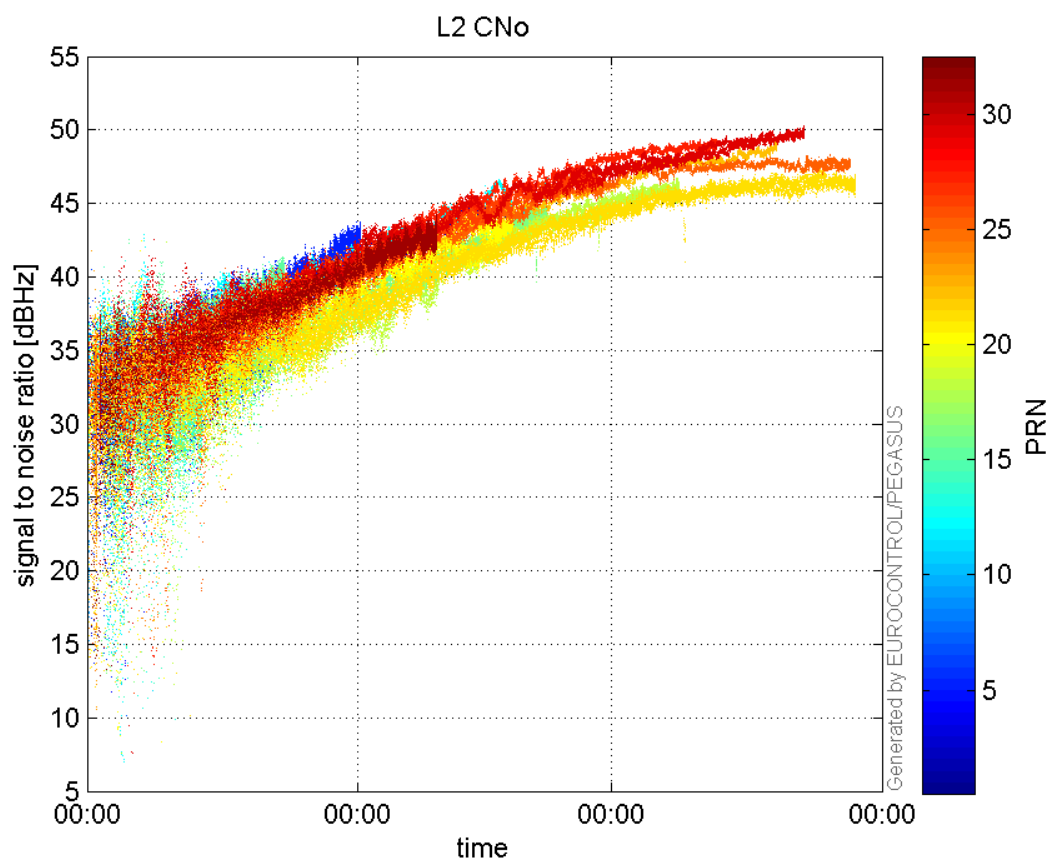
**GEO CNo:**



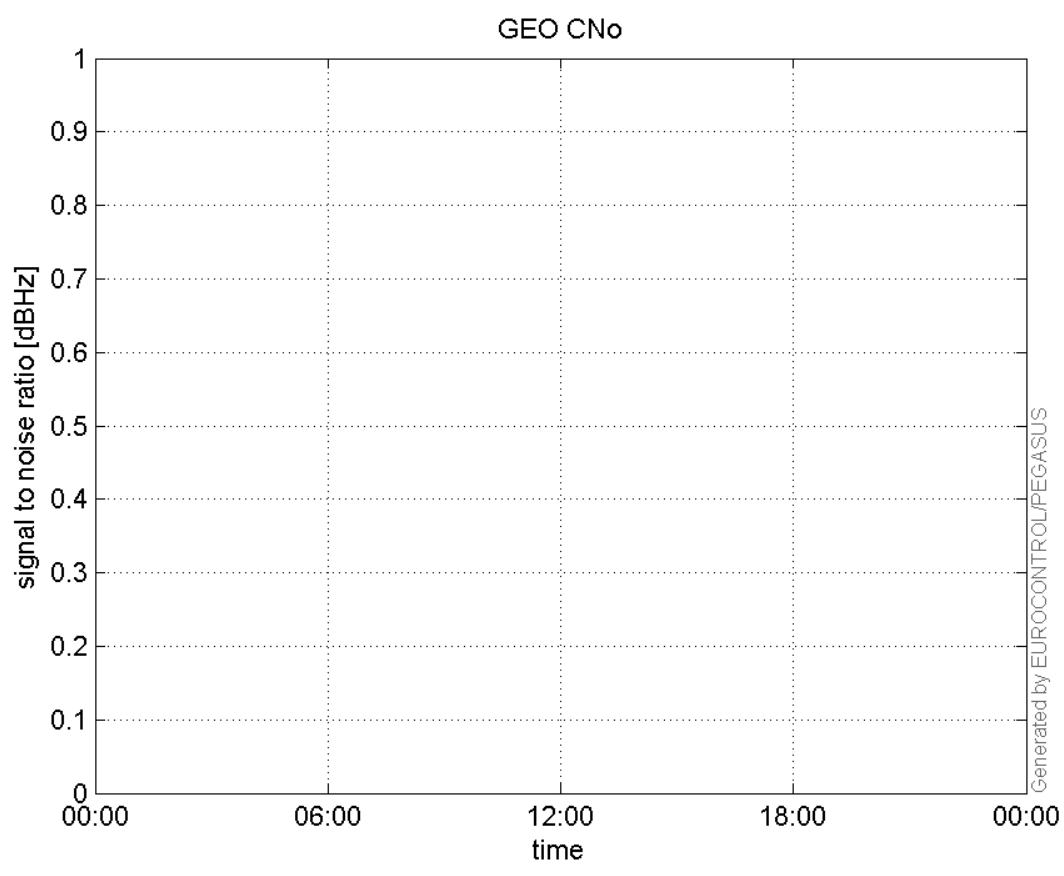
**SNR Elevation:**



**L2 CNo:**

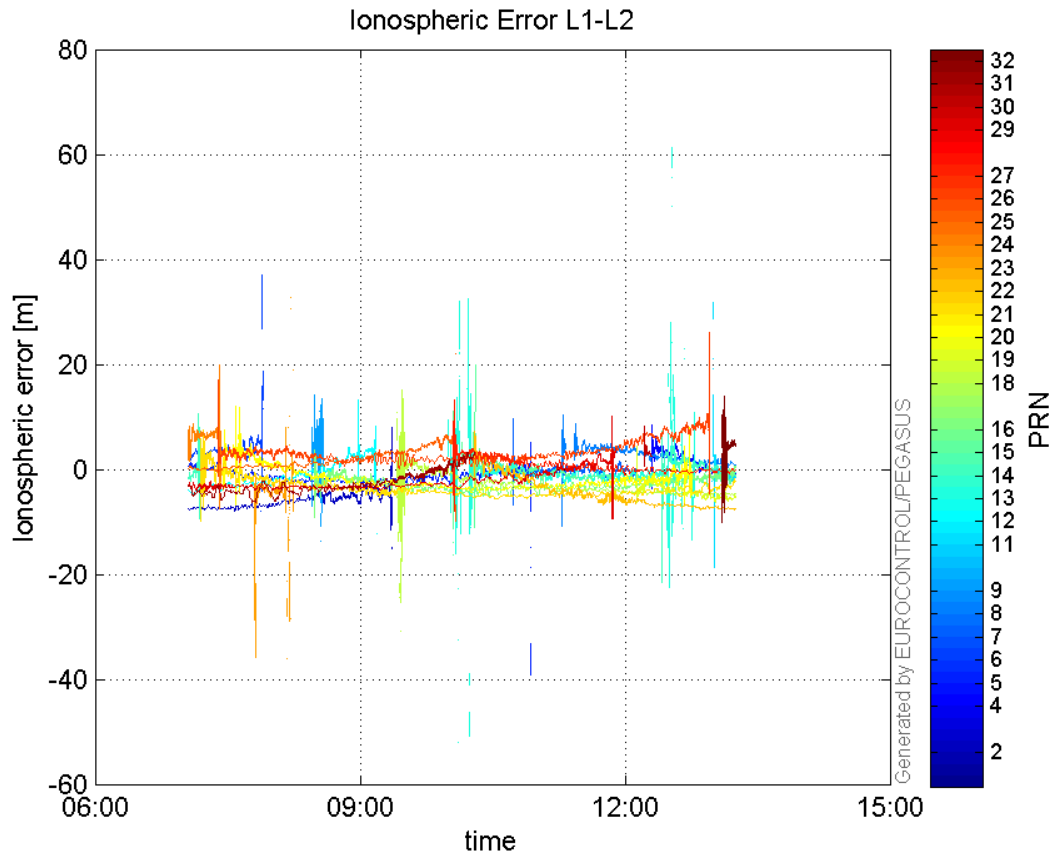


**GEO CNo:**



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:/PegasusDat/Jobs/2015_09_17EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDat/Jobs/2015_09_17EGNOS/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
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**results**

Name	Section	Value
init_lat	results	50.4391
init_lon	results	30.4297
init_alt	results	232.3351
mi_numbers	results	0