

# 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:** 06:45:23.129 25.08.2016 ( week: 1911 sec: 369923.129 )  
**end:** 10:06:31.129 25.08.2016 ( week: 1911 sec: 381991.129 )  
**duration:** 03:21:7.99999 ..

### quality

**valid samples** 24138  
**total samples** 24138  
**number of SBAS PRNs** 2

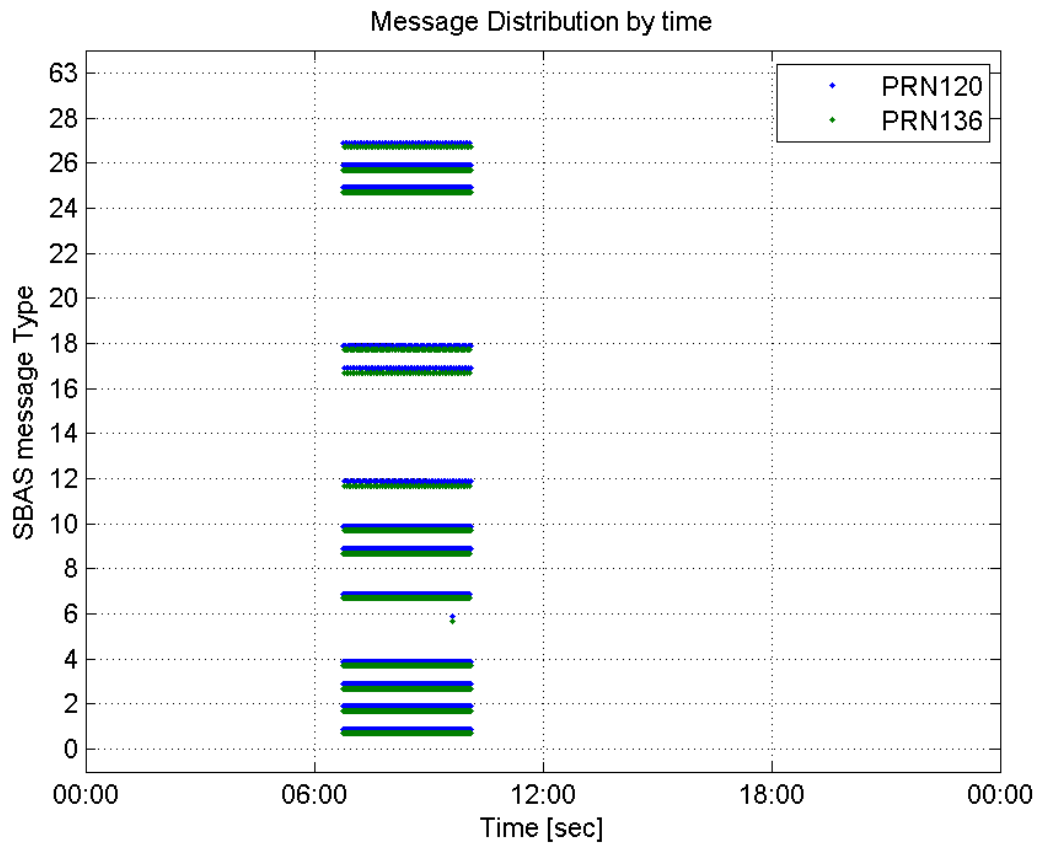
### SBAS SIS Overview

#### Message Type 6 repetitions :

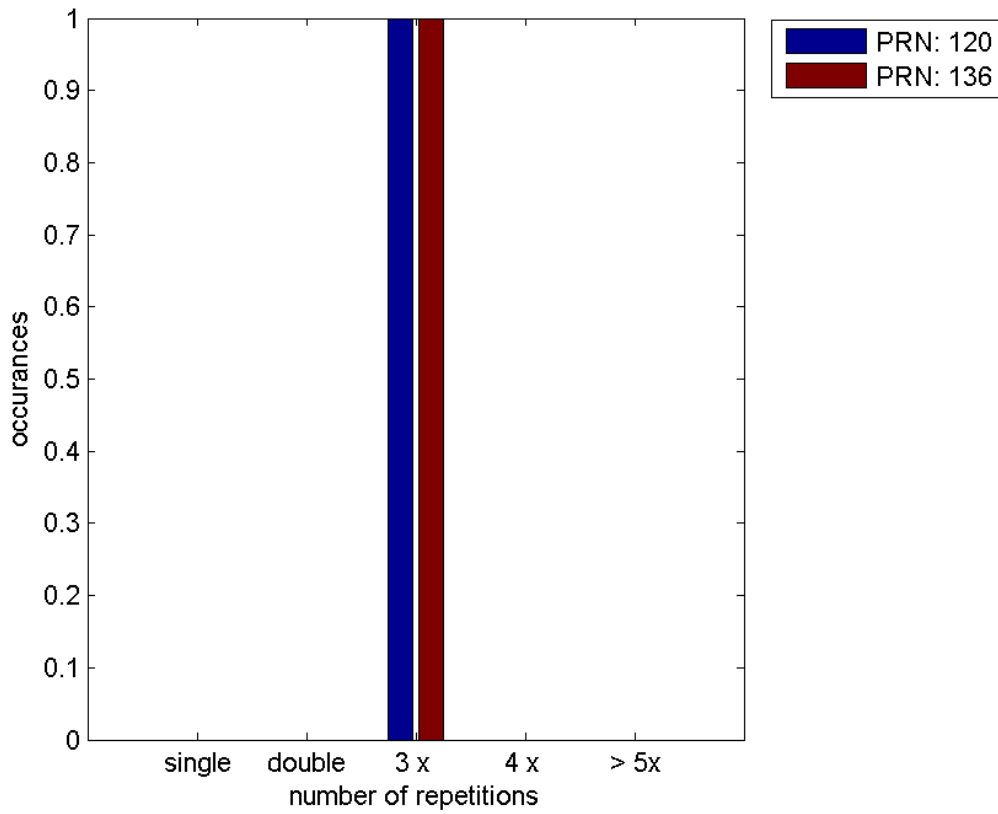
	single	double	3 x	4 x	> 5x
<b>PRN 120</b>	0	0	1	0	0
<b>PRN 136</b>	0	0	1	0	0

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#### Message Distribution by time:



**Message Type 6 repetitions:**



## Broadcast SBAS Messages :

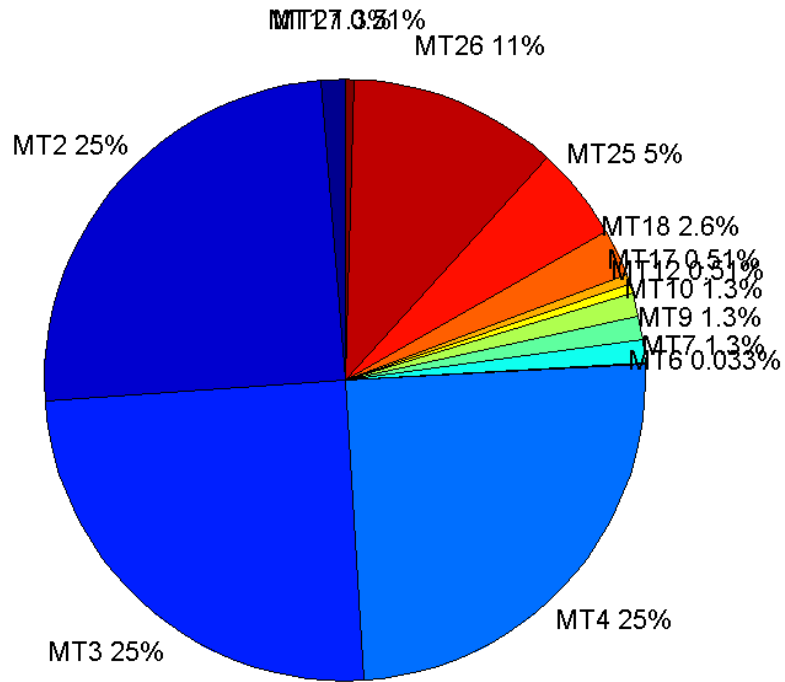
	number of messages	%
MT 0	0	0
MT 1	152	1.25942
MT 2	3001	24.8654
MT 3	3001	24.8654
MT 4	3002	24.8736
MT 5	0	0
MT 6	4	0.0331428
MT 7	151	1.25114
MT 9	152	1.25942
MT 10	152	1.25942
MT 12	62	0.513713
MT 17	62	0.513713
MT 18	310	2.56856
MT 24	0	0
MT 25	606	5.02113
MT 26	1352	11.2023
MT 27	62	0.513713
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	12069	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.7616	0	0	0
MT 2	4	7	4.021	1	0	0
MT 3	4	8	4.021	1	0	0
MT 4	4	8	4.02099	1	0	0
MT 5	--	--	--	--	--	--
MT 6	1	1	1	0	0	0
MT 7	76	81	79.7467	0	0	0
MT 9	76	81	79.6821	0	0	0
MT 10	76	81	79.7285	0	0	0
MT 12	189	200	195.967	61	0	0
MT 17	190	201	195.967	0	0	0
MT 18	4	163	38.822	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	52	19.8612	0	0	0
MT	3	32	8.92302	0	0	0

26						
MT 27	189	201	196	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	152	1.25942
MT 2	3003	24.8819
MT 3	3004	24.8902
MT 4	3004	24.8902
MT 5	0	0
MT 6	4	0.0331428
MT 7	151	1.25114
MT 9	151	1.25114
MT 10	151	1.25114

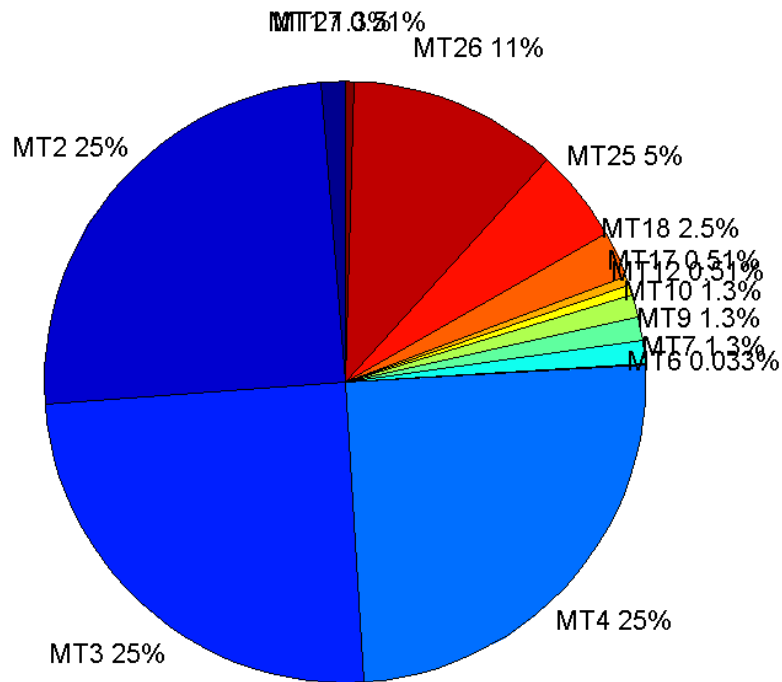
MT 12	61	0.505427
MT 17	61	0.505427
MT 18	305	2.52714
MT 24	0	0
MT 25	609	5.04599
MT 26	1351	11.194
MT 27	62	0.513713
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	12069	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	82	79.7682	0	0	0
MT 2	4	7	4.01832	1	0	0
MT 3	4	7	4.01798	1	0	0
MT 4	4	7	4.01798	1	0	0
MT 5	--	--	--	--	--	--
MT 6	1	1	1	0	0	0
MT 7	76	81	79.7467	0	0	0
MT 9	75	81	79.7133	0	0	0
MT 10	75	81	79.72	0	0	0
MT 12	190	201	196.7	60	0	0
MT 17	191	201	196.767	0	0	0
MT 18	4	161	38.9671	0	0	0
MT 24	--	--	--	--	--	--
MT 25	4	47	19.824	0	0	0
MT 26	4	32	8.92815	0	0	0
MT 27	188	201	196.689	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_08_25_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_08_25_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:** 06:45:23 25.08.2016 ( week: 1911 sec: 369923 )  
**end:** 10:06:32 25.08.2016 ( week: 1911 sec: 381992 )  
**duration:** 03:21:10 ..

#### quality

**valid samples** 11702  
**total samples** 12070

## Event tables

**Position discontinuity events type** all  
**APV-I discontinuity events type** long  
**APV-35m discontinuity events type** long  
**LPV-200 discontinuity events type** long  
**CAT-I discontinuity events type** nothing

## extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
<b>max normHor</b>	376235	2.18422	12.3273	0.177186	1.0655	19.9724	0.0533487
<b>max normVer</b>	376512	2.0758	12.2477	0.169485	1.67121	17.5438	0.0952592
<b>max HPE</b>	373360	3.24656	82.4909	0.0393566	1.97635	62.5356	0.0316036
<b>max VPE</b>	379262	1.03824	32.7633	0.0316891	-2.27135	65.1173	0.0348809
<b>min HPL</b>	375416	1.28536	10.4054	0.123529	-0.335629	17.1691	0.0195485
<b>min VPL</b>	381896	1.17374	13.1307	0.0893891	0.366862	15.0263	0.0244146

## Position discontinuity events :

#	Epoch	duration	stable period
1	372582	104	2291
2	373074	193	388
3	375133	7	1866

## APV-I discontinuity events :

#	Epoch	duration	stable period
1	372370	120	2079
2	372582	1085	92
3	375133	7	1466
4	378818	4	1
5	378835	88	1
6	379123	217	85

## APV-35m discontinuity events :

#	Epoch	duration	stable period
1	372370	120	2079
2	372582	1085	92
3	374590	156	1
4	374759	78	1
5	375133	7	296
6	378727	615	3587
7	379363	511	1
8	380293	31	395

## LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	372370	120	2079
2	372582	1085	92

3	374590	156	1
4	374759	78	1
5	375133	7	296
6	378727	615	3587
7	379363	511	1
8	380293	31	395

### First Glance analysis

<b>Duration</b>	12070
<b>Number of Samples</b>	12070
<b>Number of invalid sample</b>	368
<b>Number of no position solution samples</b>	304
<b>Number of missing sample</b>	0
<b>Logging Loss</b>	0
<b>Processing Loss</b>	3.0489
<b>Number of Misleading Information</b>	0
<b>Data gaps</b>	0
<b>Discontinuities</b>	3

#### Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
11398	10110	9030	0	9030

#### Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>HPE 95%</b>	1.81583	1.78962	1.80849	NaN	1.80849
<b>HPEscale 95%</b>	NaN	5.77115	5.84878	NaN	5.84878
<b>VPE 95%</b>	1.2968	1.19909	1.13525	NaN	1.13525
<b>VPEscale 95%</b>	NaN	2.57473	1.8613	NaN	1.8613

#### Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>Signal in Space</b>	0.974022	0.863955	0.771663	0	0.771663
<b>measurements</b>	0.944325	0.837614	0.748136	0	0.748136
<b>Operational</b>	0.944325	0.837614	0.748136	0	0.748136

#### Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>All</b>	3	54	42	--	42
<b>Long</b>	3	6	8	--	8
<b>Independent</b>	3	4	5	--	5
<b>P(disc.)</b>	0.00394806	0.00593472	0.00830565	NaN	0.00830565
<b>P(slide)</b>	0.00394806	0.0191889	0.0187154	NaN	0.0187154

#### Integrity events :

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



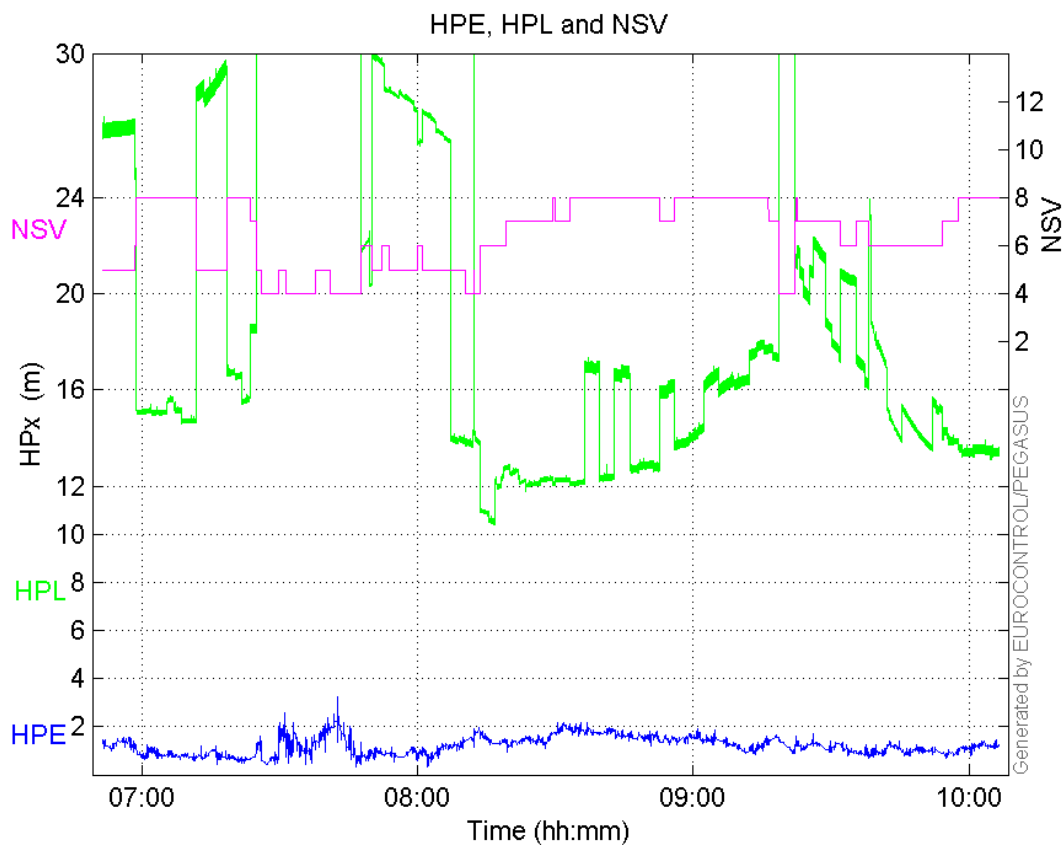
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

**Performance Summary :**

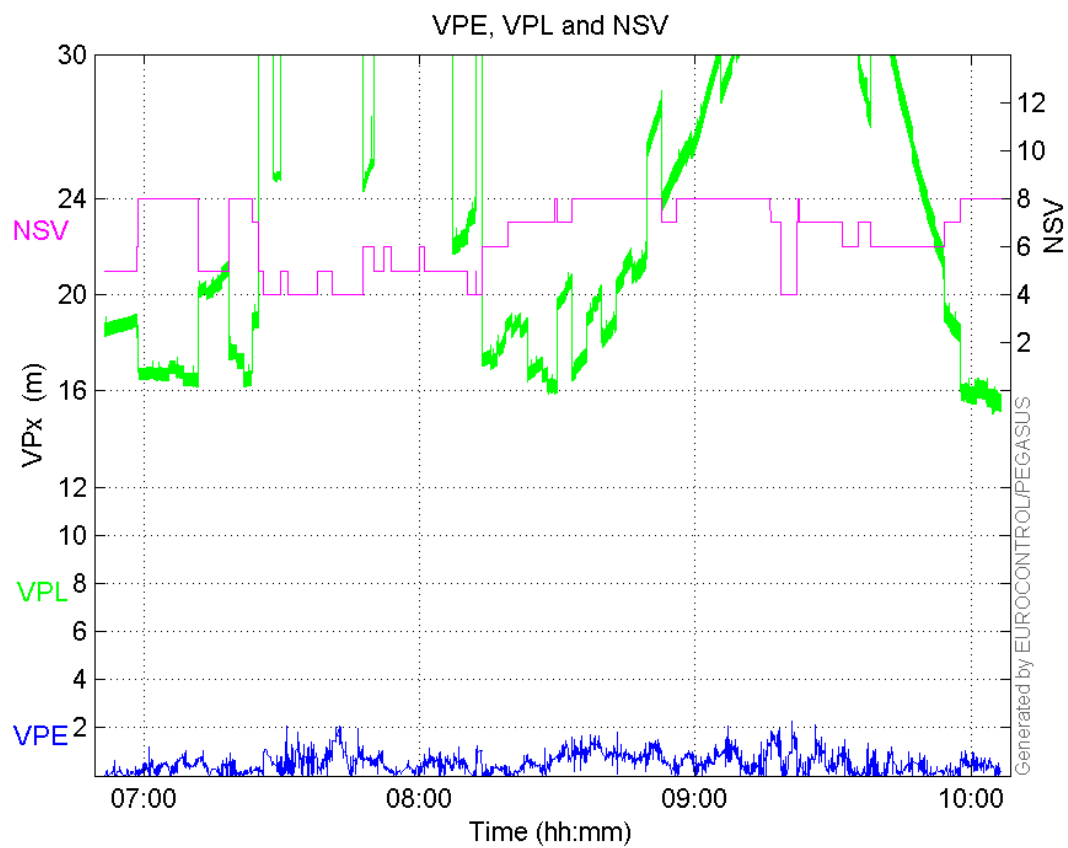
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	11398	10110	9030	0	9030
SIS Availability	0.974022	0.863955	0.771663	0	0.771663
Local Availability	0.944325	0.837614	0.748136	0	0.748136
Operational Availability	0.944325	0.837614	0.748136	0	0.748136
HPE 95%	1.81583	1.78962	1.80849	NaN	1.80849
HPEscale 95%	NaN	5.77115	5.84878	NaN	5.84878
VPE 95%	1.2968	1.19909	1.13525	NaN	1.13525
VPEscale 95%	NaN	2.57473	1.8613	NaN	1.8613
All Discontinuity Events	3	54	42	--	42
Long Discontinuity Events	3	6	8	--	8
Independent Discontinuity Events	3	4	5	--	5
P(discontinuity)	0.00394806	0.00593472	0.00830565	NaN	0.00830565
P(sliding window)	0.00394806	0.0191889	0.0187154	NaN	0.0187154
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:**

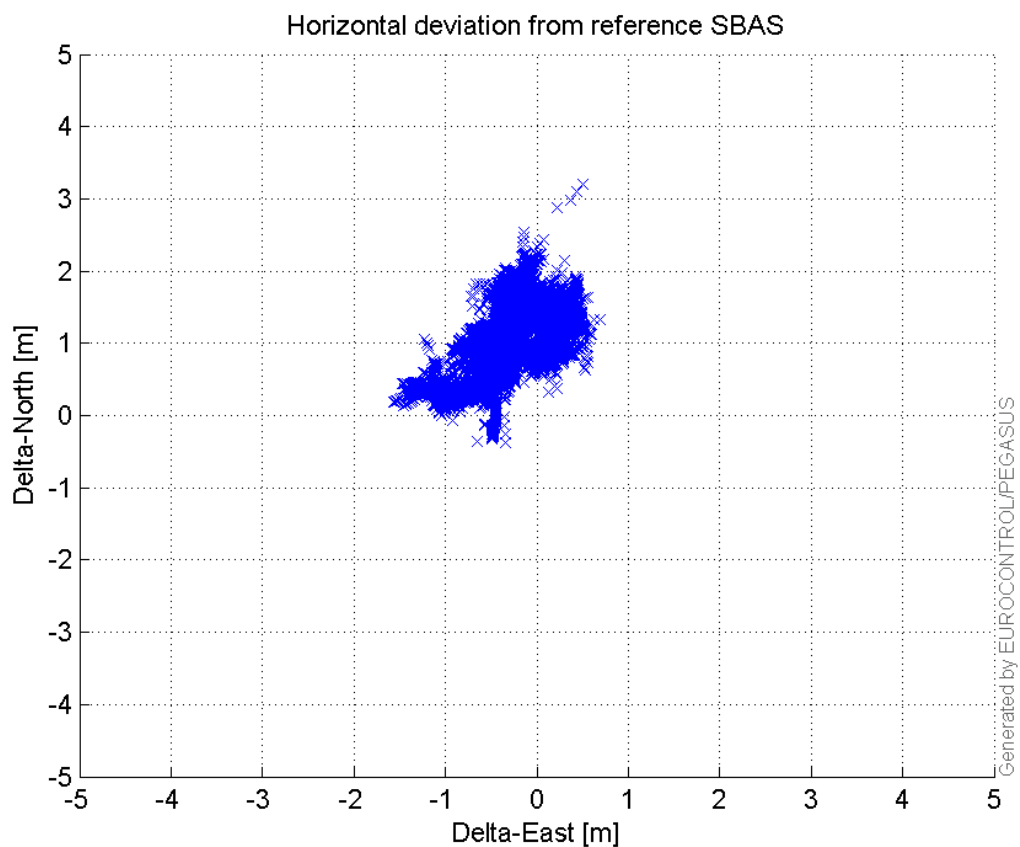


## VPE, VPL and NSV:



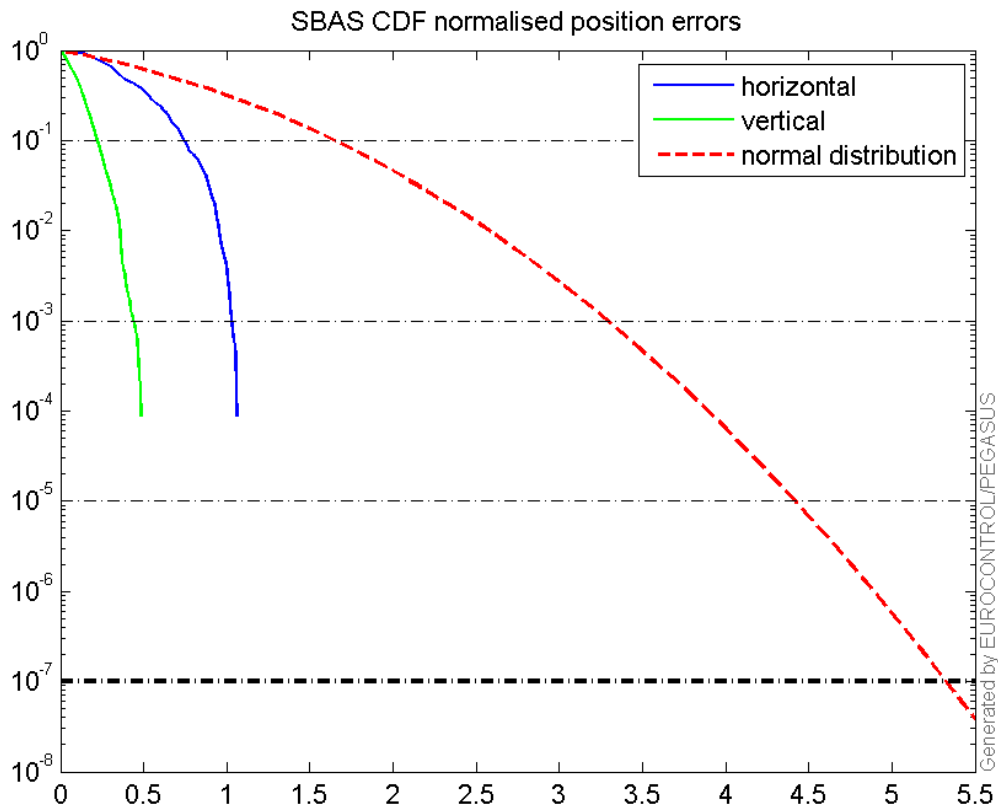
## Horizontal deviation

## Horizontal deviation from reference SBAS:



## CDF position

SBAS CDF position domain:



## Statistics

```

number 10110
sum 12090.291
sum2 15632.076
prctile95 1.789623
prctile99 1.940997
number 10110
sum 5023.4878
sum2 3802.1183
prctile95 1.1990944
prctile99 1.4789737
number 10110
sum 180277.55
sum2 3558849.6
prctile95 28.624
prctile99 32.58898
number 10110
sum 249684.19
sum2 6792765.6
prctile95 37.9858
prctile99 49.56988
number 10110

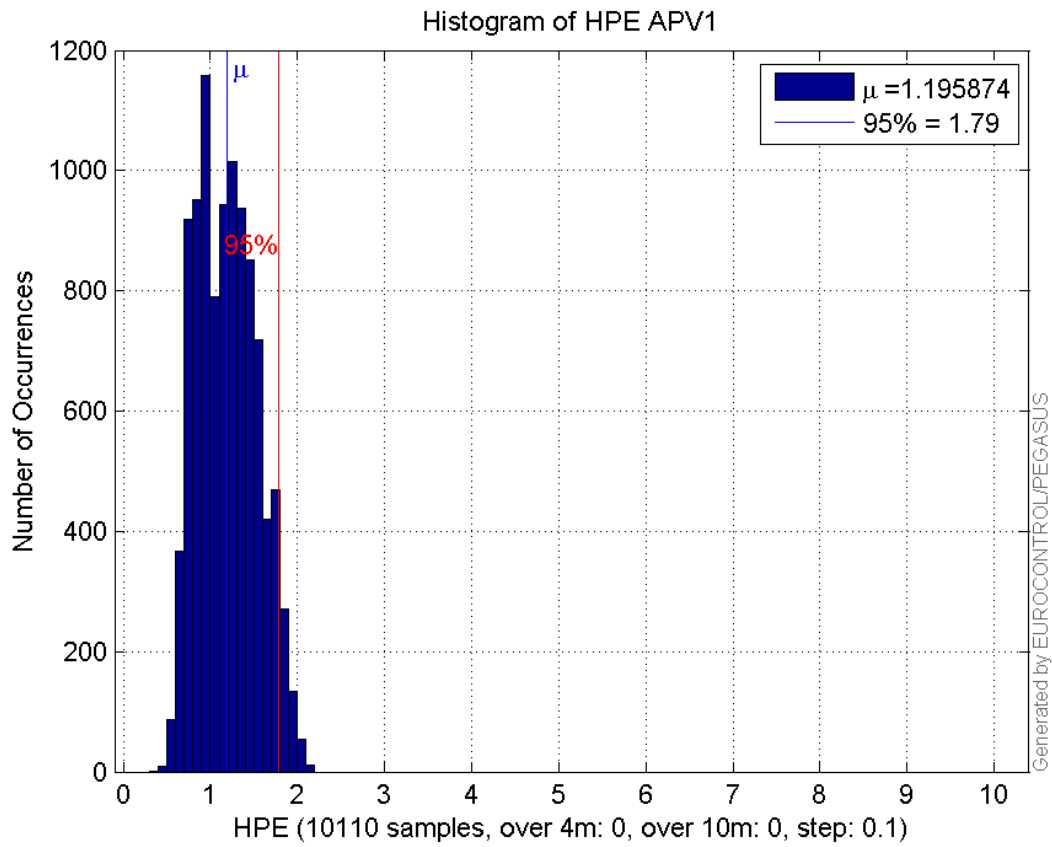
```

**sum** 767.72822  
**sum2** 71.227679  
**prctile95** 0.14427886  
**prctile99** 0.15946403  
**number** 10110  
**sum** 214.7922  
**sum2** 7.0886769  
**prctile95** 0.051494559  
**prctile99** 0.067036571  
**number** 9030  
**sum** 10818.328  
**sum2** 14083.519  
**prctile95** 1.8084866  
**prctile99** 1.9513409  
**number** 9030  
**sum** 4277.337  
**sum2** 3089.8731  
**prctile95** 1.1352453  
**prctile99** 1.3519446  
**number** 9030  
**sum** 157175.99  
**sum2** 3051021  
**prctile95** 28.7802  
**prctile99** 32.71392  
**number** 9030  
**sum** 206746.31  
**sum2** 5055180.8  
**prctile95** 33.921  
**prctile99** 34.7366  
**number** 9030  
**sum** 705.73107  
**sum2** 67.370075  
**prctile95** 0.14621954  
**prctile99** 0.16015712  
**number** 9030  
**sum** 196.47724  
**sum2** 6.6865763  
**prctile95** 0.053180088  
**prctile99** 0.067475812

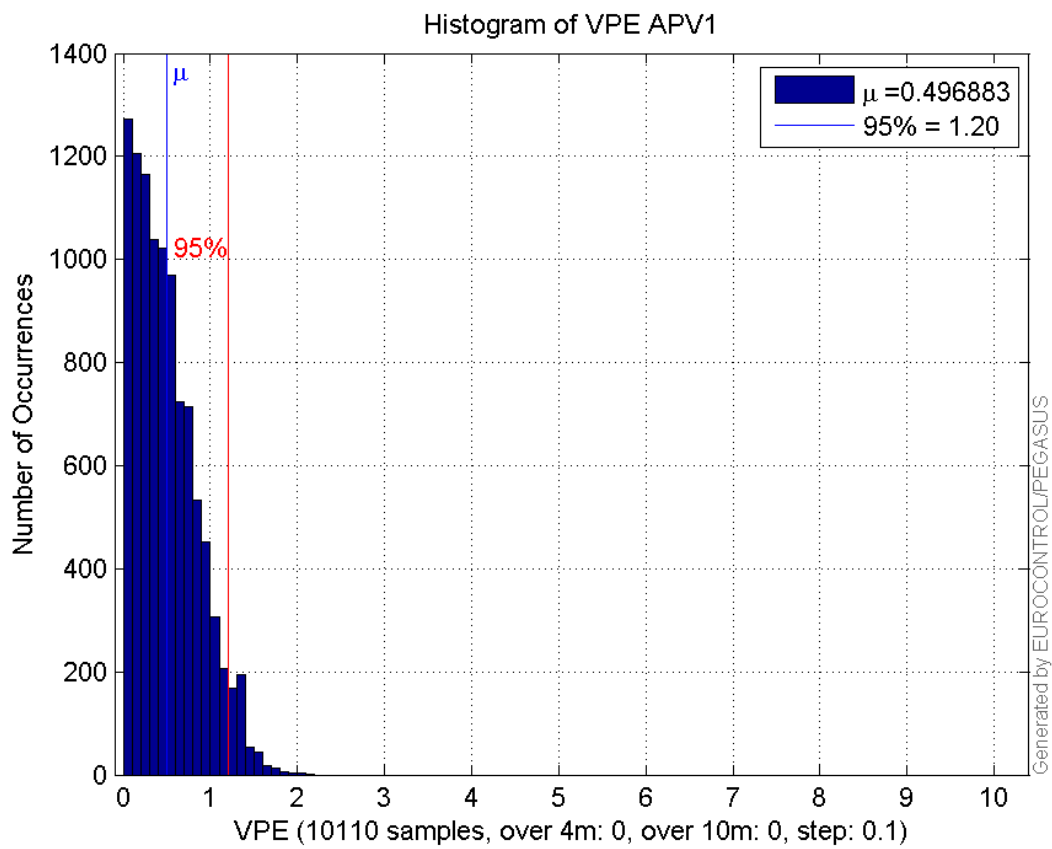
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	1.19587	0.340727	1.18139	1.78962	1.941	1.24346
<b>HPL</b>	17.8316	5.83523	15.6801	28.624	32.589	18.762
<b>VPE</b>	0.496883	0.359437	0.4378	1.19909	1.47897	0.61325
<b>VPL</b>	24.6968	7.87161	22.1106	37.9858	49.5699	25.9208

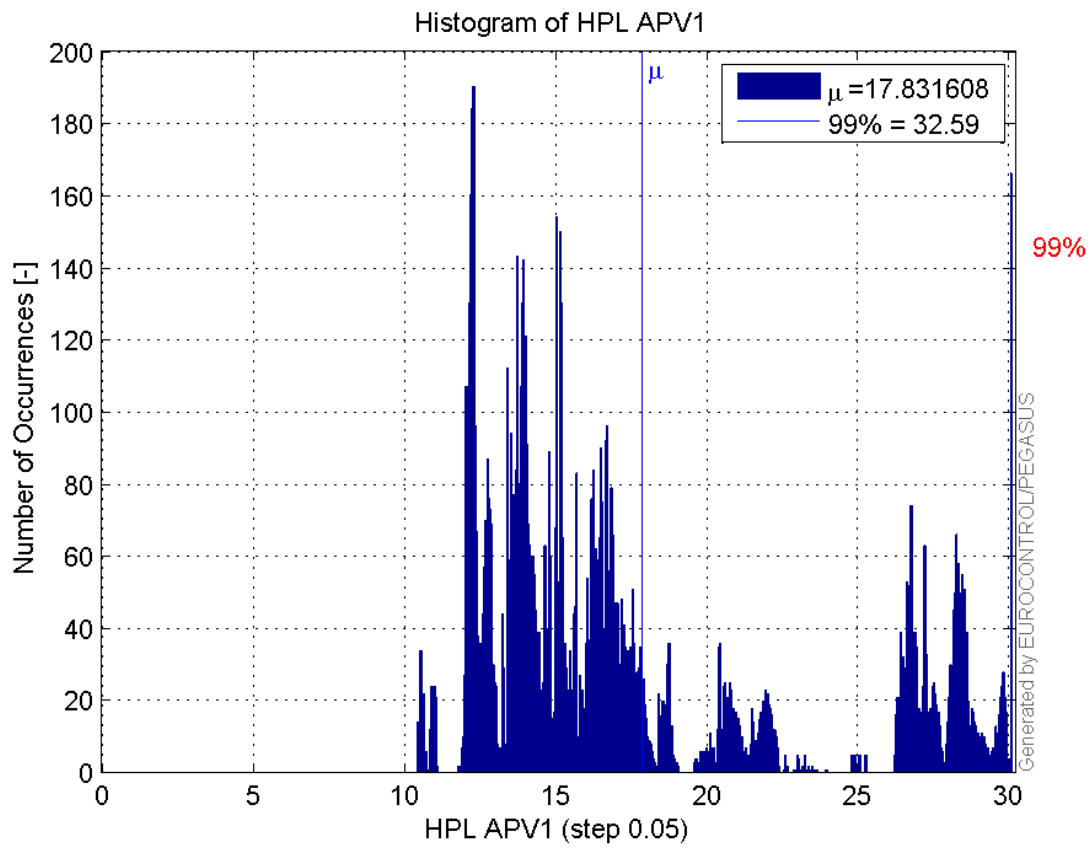
**Histogram of HPE APV1:**



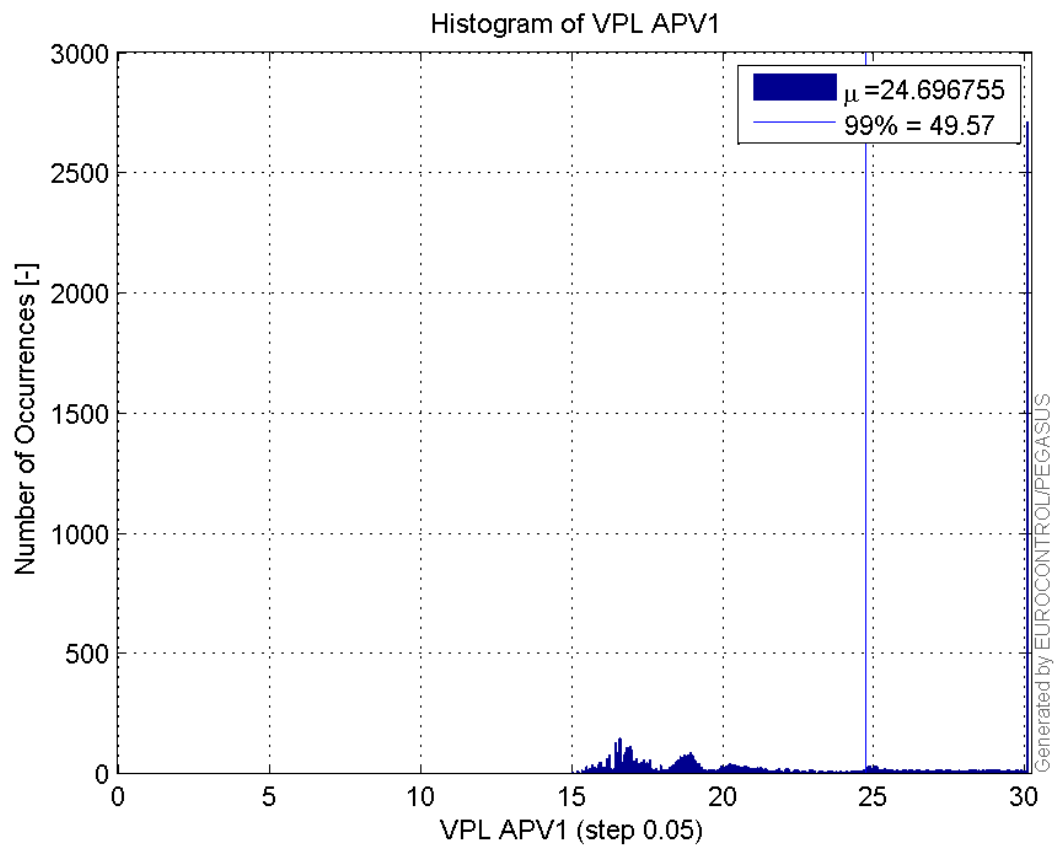
**Histogram of VPE APV1:**



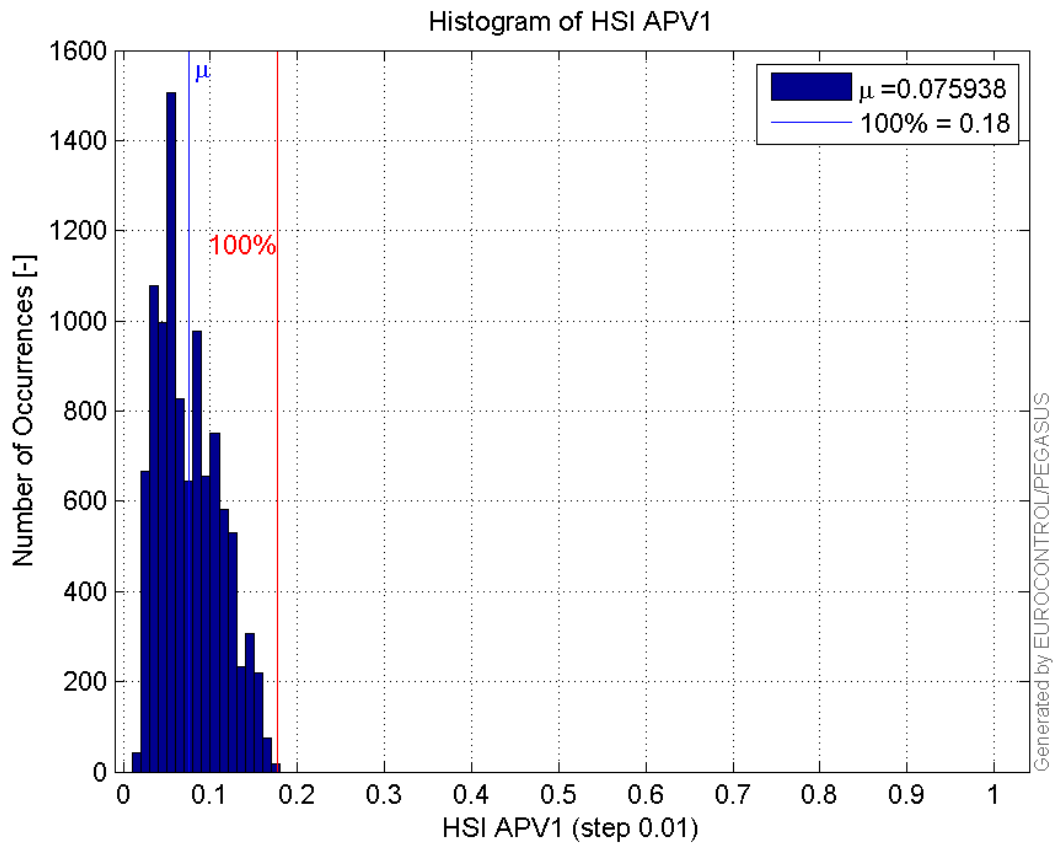
**Histogram of HPL APV1:**



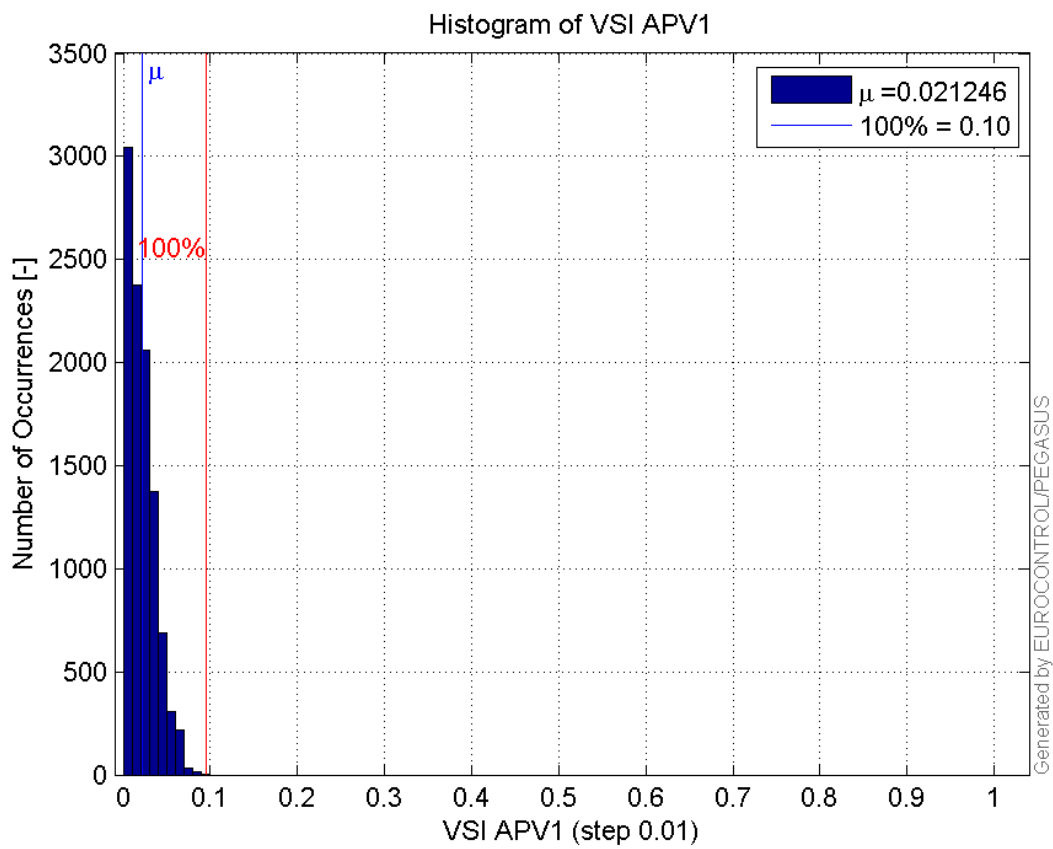
**Histogram of VPL APV1:**



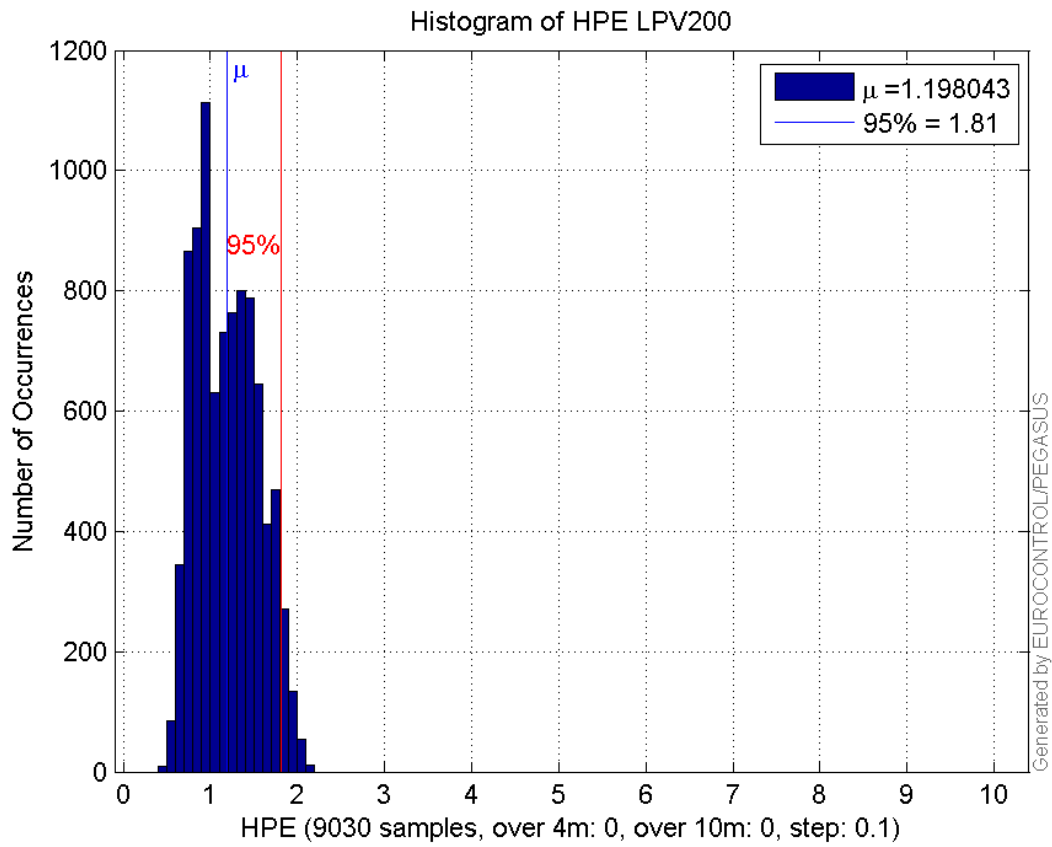
**Histogram of HSI APV1:**



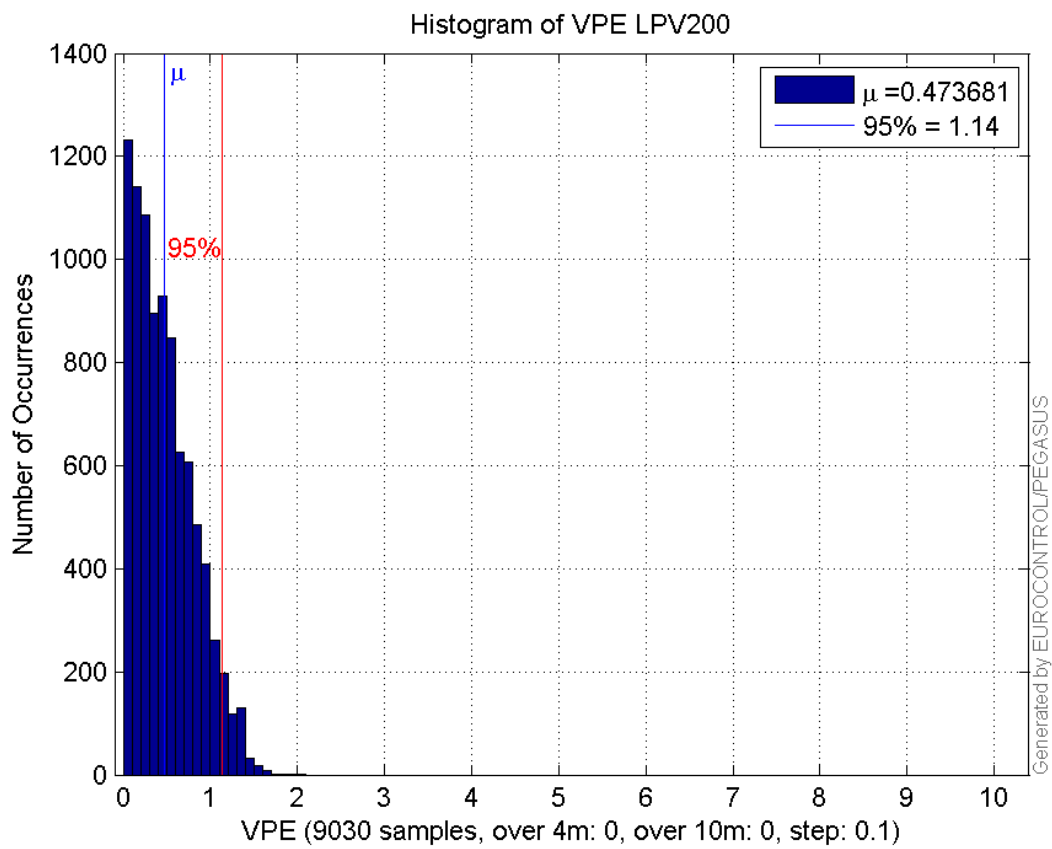
**Histogram of VSI APV1:**



**Histogram of HPE LPV200:**

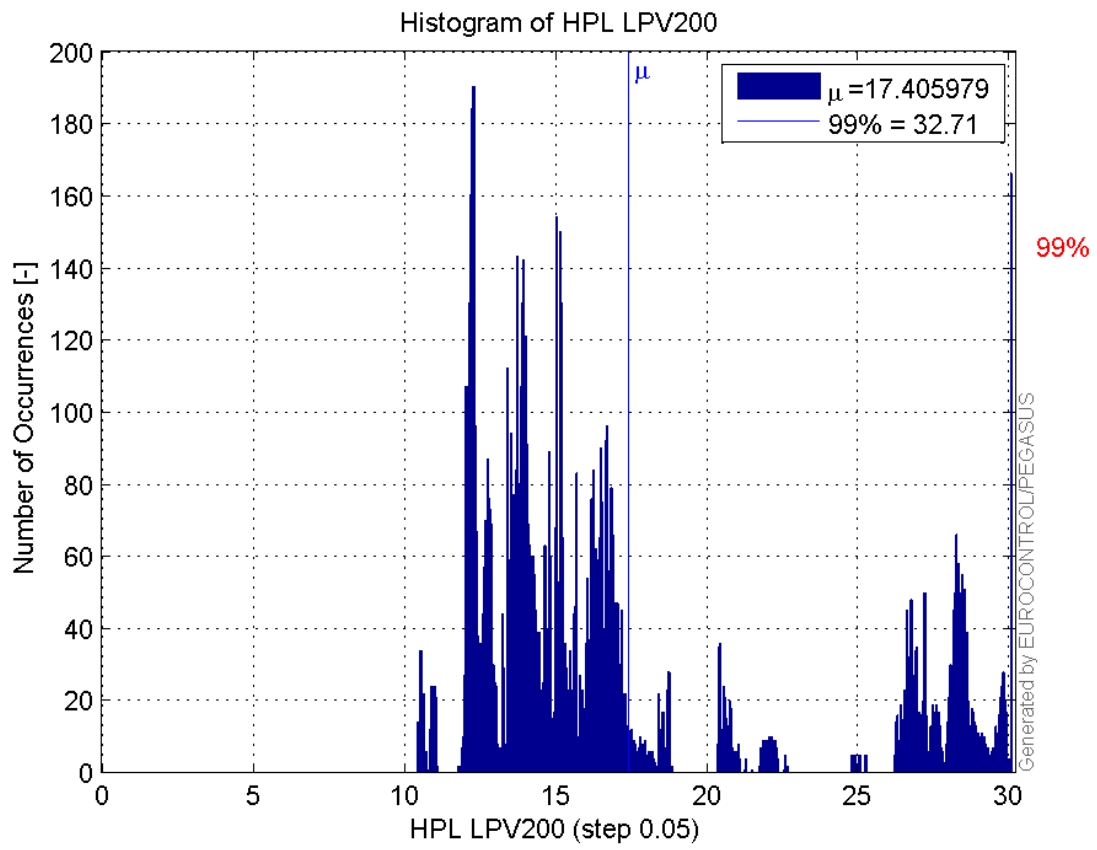


**Histogram of VPE LPV200:**

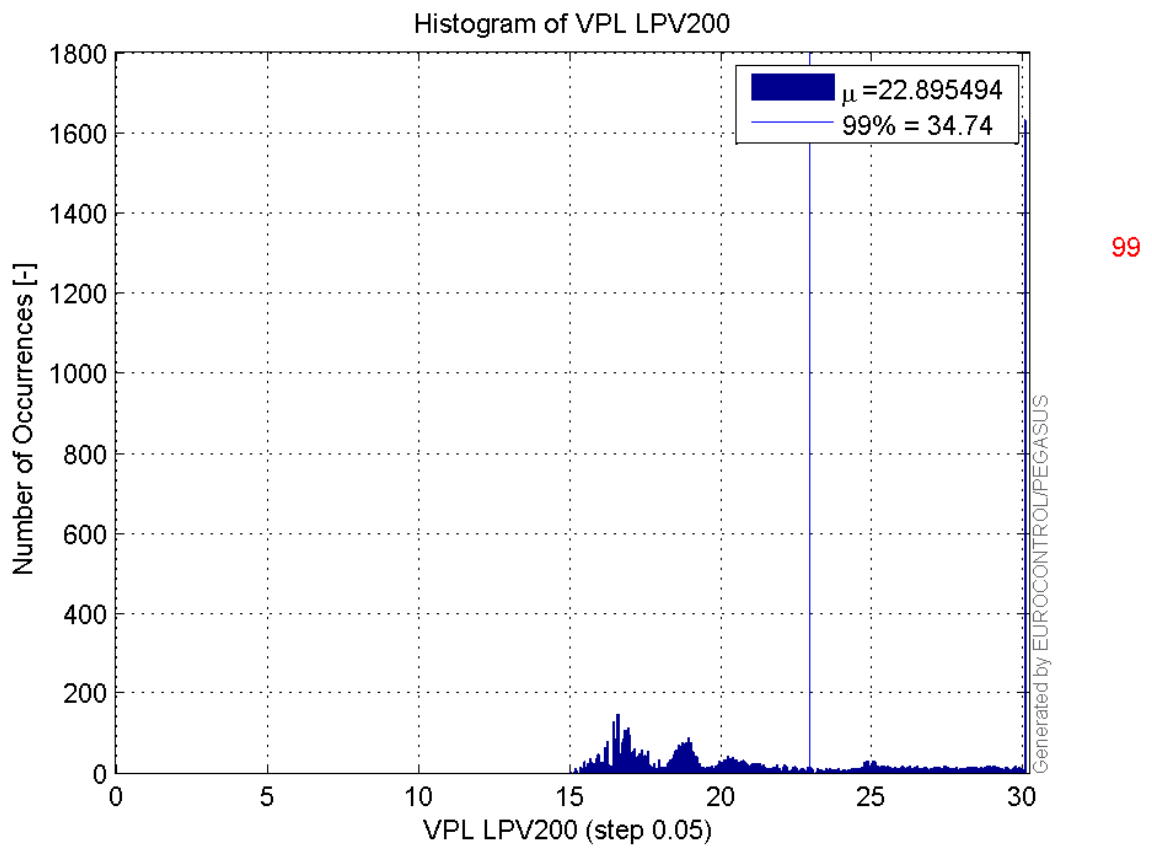


**Histogram of HPL LPV200:**

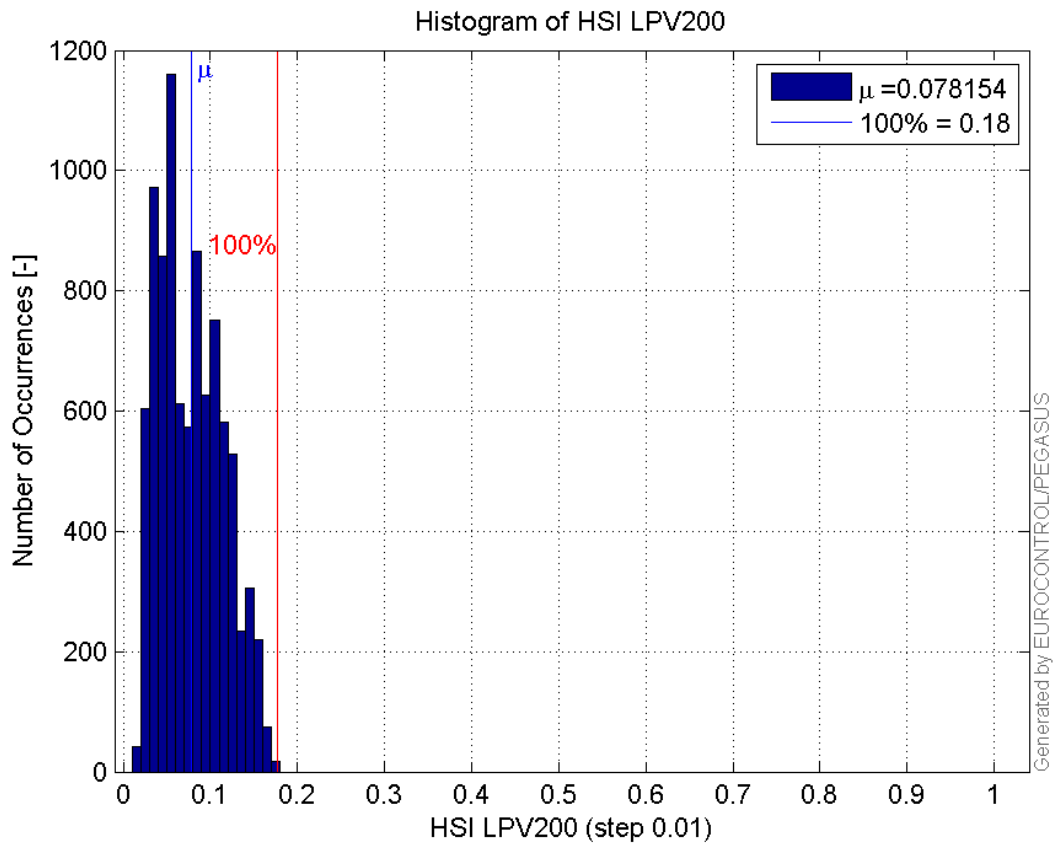




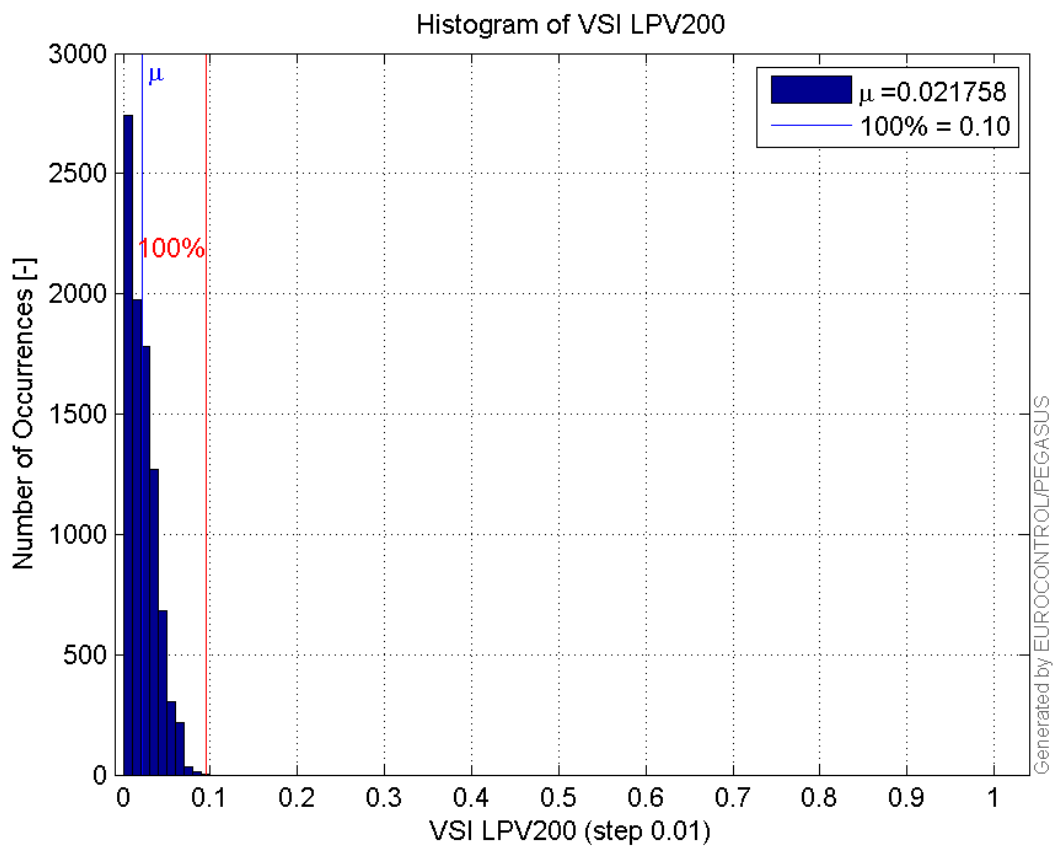
**Histogram of VPL LPV200:**



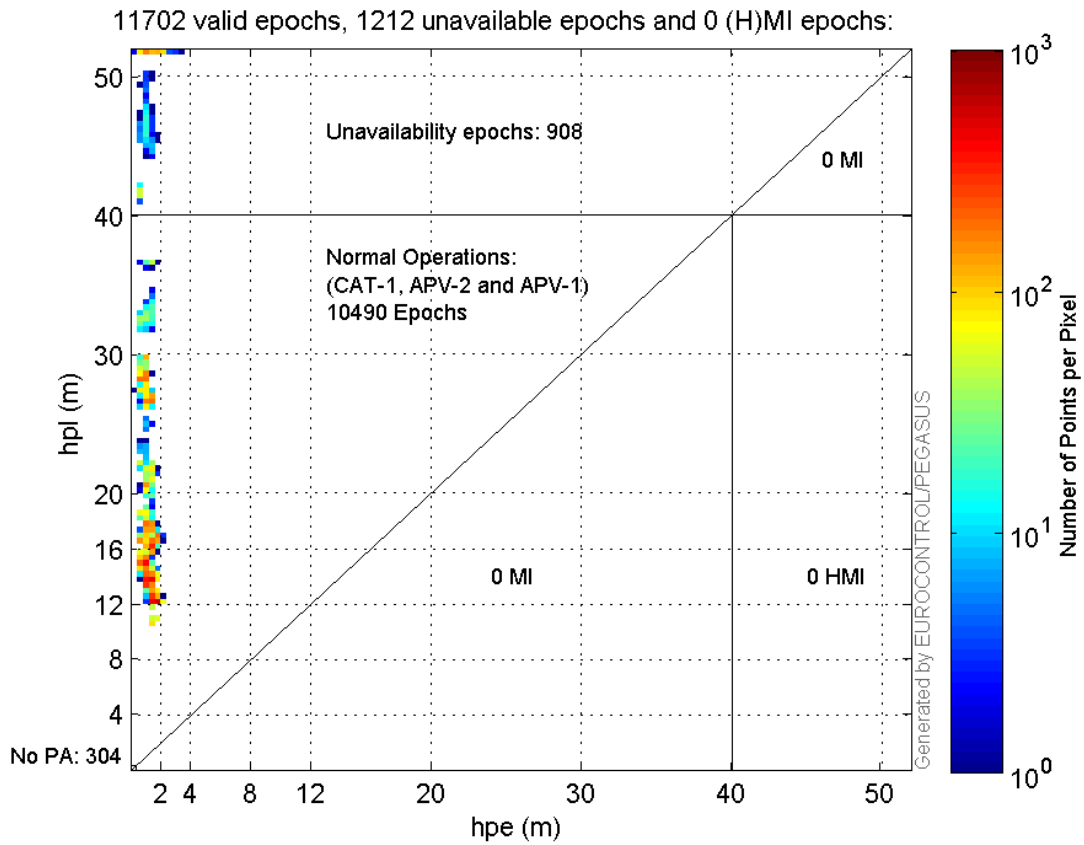
**Histogram of HSI LPV200:**



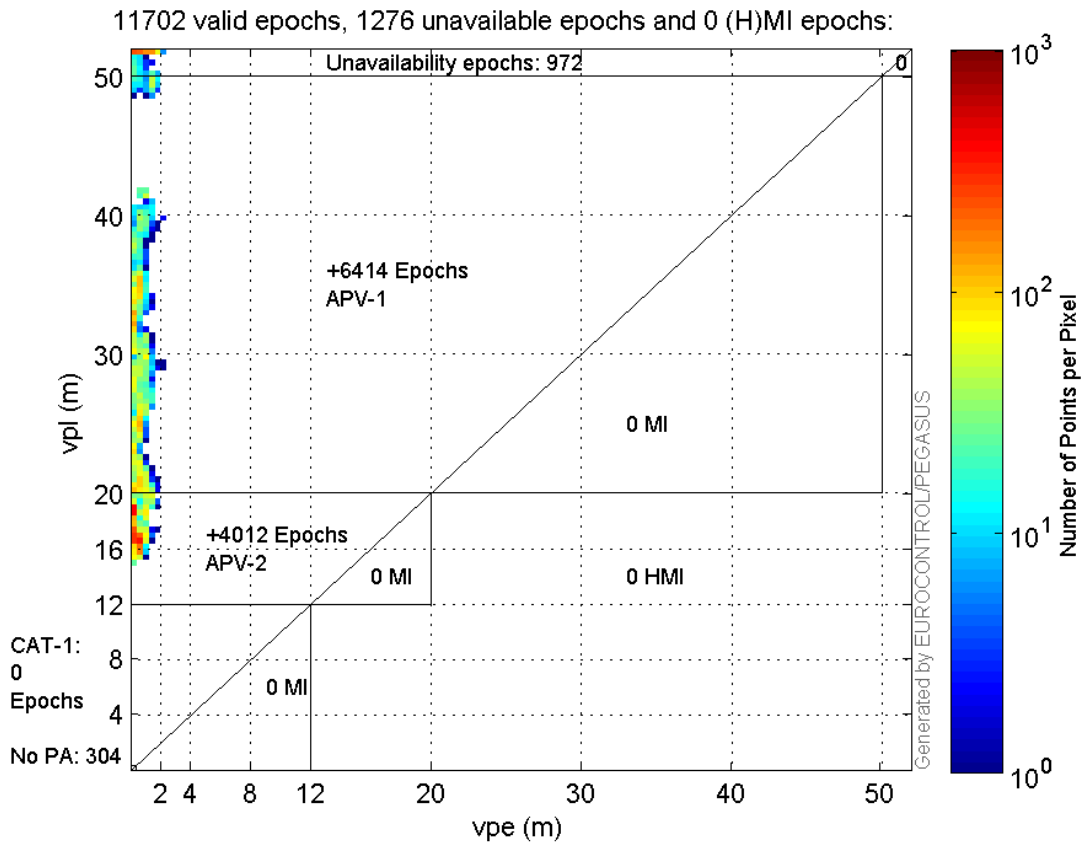
**Histogram of VSI LPV200:**



**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_08_25_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_08_25_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	226.1813
mi_numbers	results	0

## Range Domain

**start:** 06:45:23 25.08.2016 ( week: 1911 sec: 369923 )  
**end:** 10:06:32 25.08.2016 ( week: 1911 sec: 381992 )  
**duration:** 03:21:10 ..

## quality

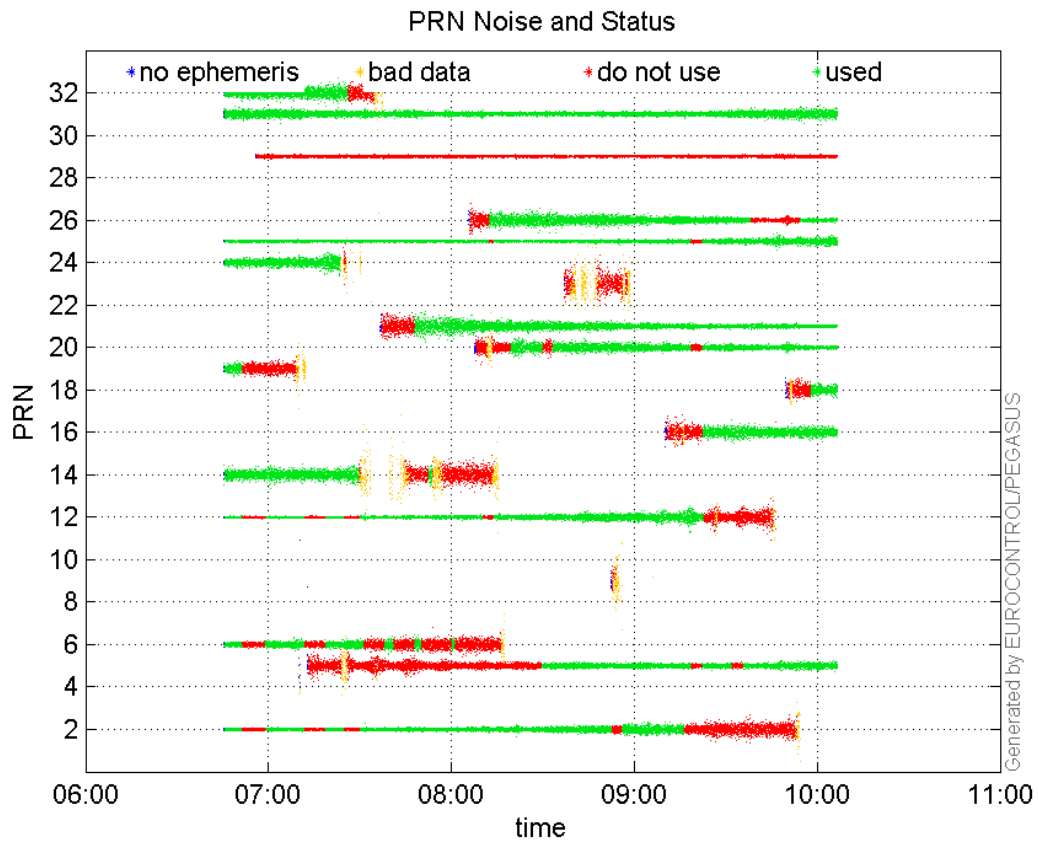
**valid samples** 12070  
**total samples** 12070

## PRN overview

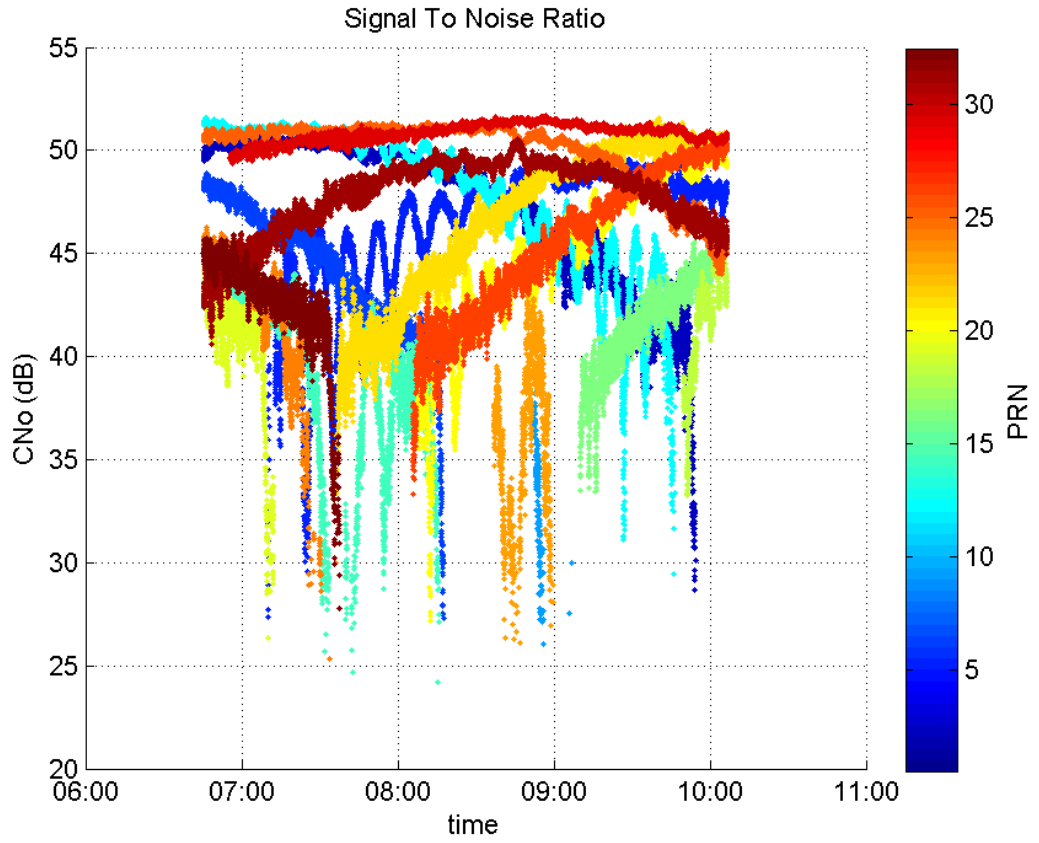
**Number of Visible GPS Satellites** 18  
**Number of Visible SBAS Satellites** 2

## signal quality and status

**PRN Noise and Status:**



**Signal To Noise Ratio:**



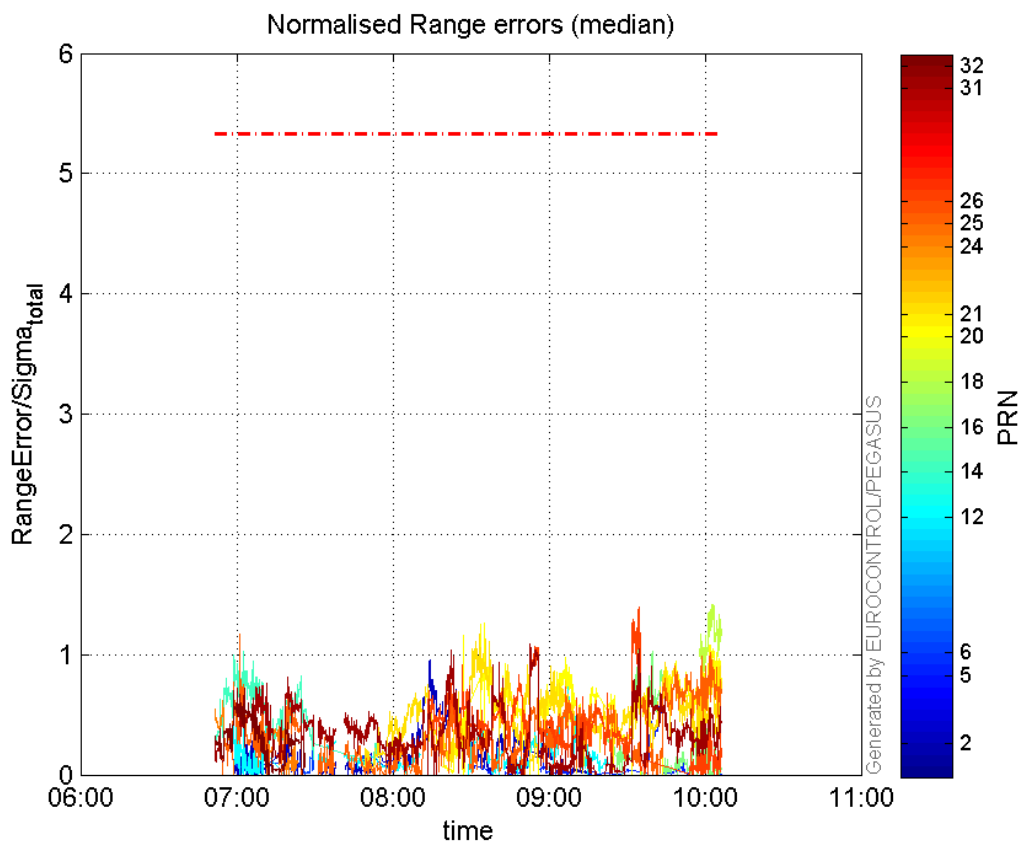
range errors

Number of Overbounding Norm Errors 0

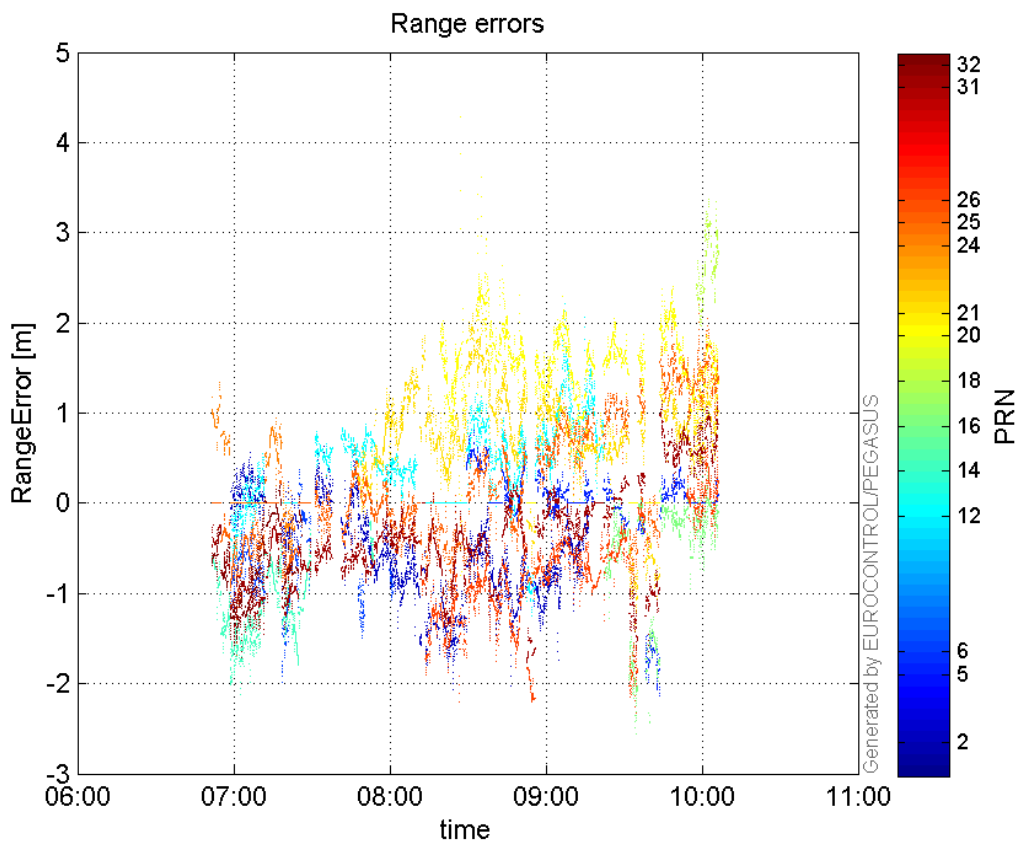
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1911	375254	2	0.953766	-1.78908	1.87581
1911	380630	5	0.665381	-2.13559	3.20957
1911	372548	6	0.311889	-0.967544	3.10221
1911	378432	12	0.837874	2.21937	2.64881
1911	370953	14	1.02809	-2.1193	2.06139
1911	380070	16	1.06569	-2.55065	2.39342
1911	381764	18	1.41975	3.34229	2.35415
1911	376512	20	1.26014	3.62107	2.87355
1911	376388	21	1.17221	2.20544	1.88144
1911	370484	24	0.613685	1.34354	2.1893
1911	370868	25	1.16803	-1.68231	1.4403
1911	380070	26	1.39354	-2.31975	1.66464
1911	377562	31	1.0866	-1.75379	1.61402
1911	370993	32	0.715707	-1.71395	2.39476

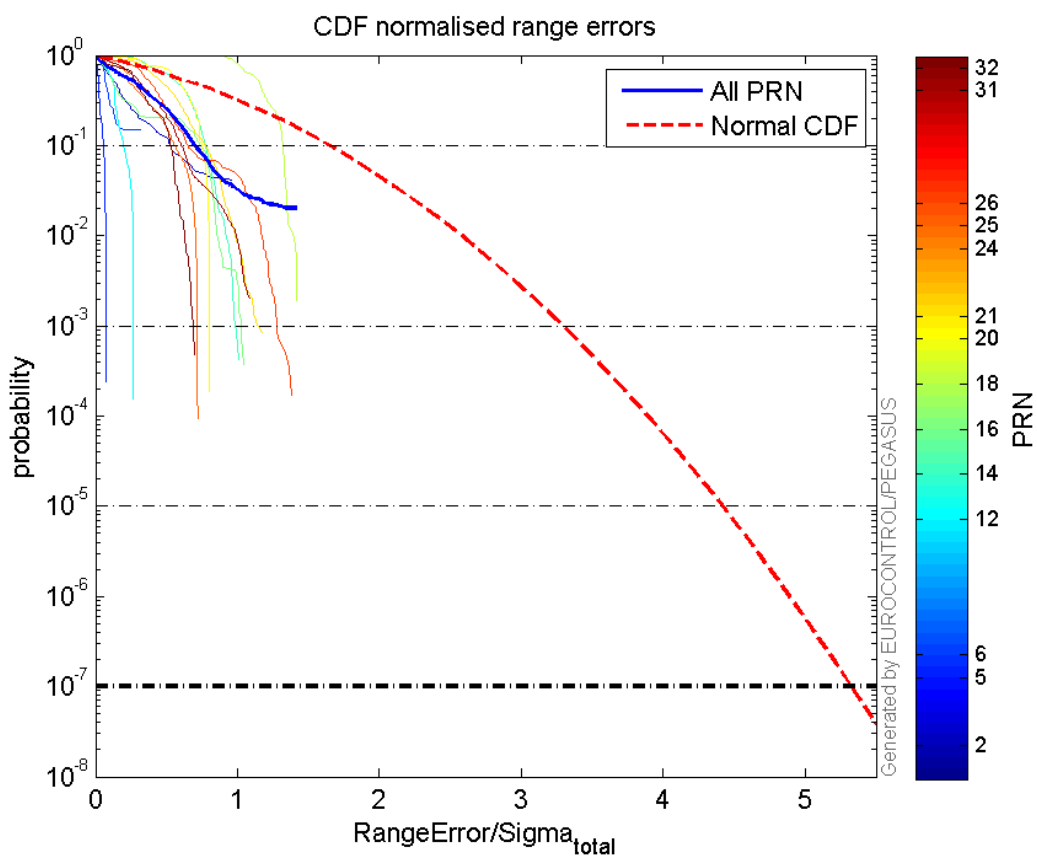
Normalised Range errors (median):



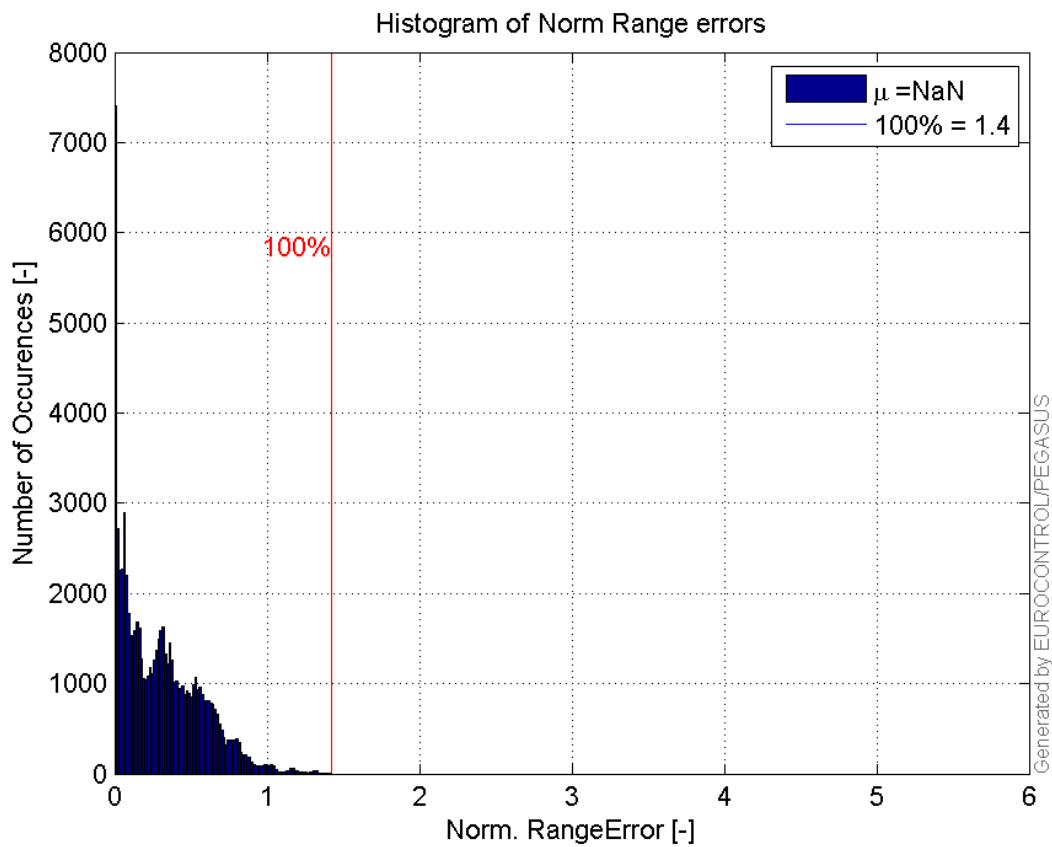
Range errors:



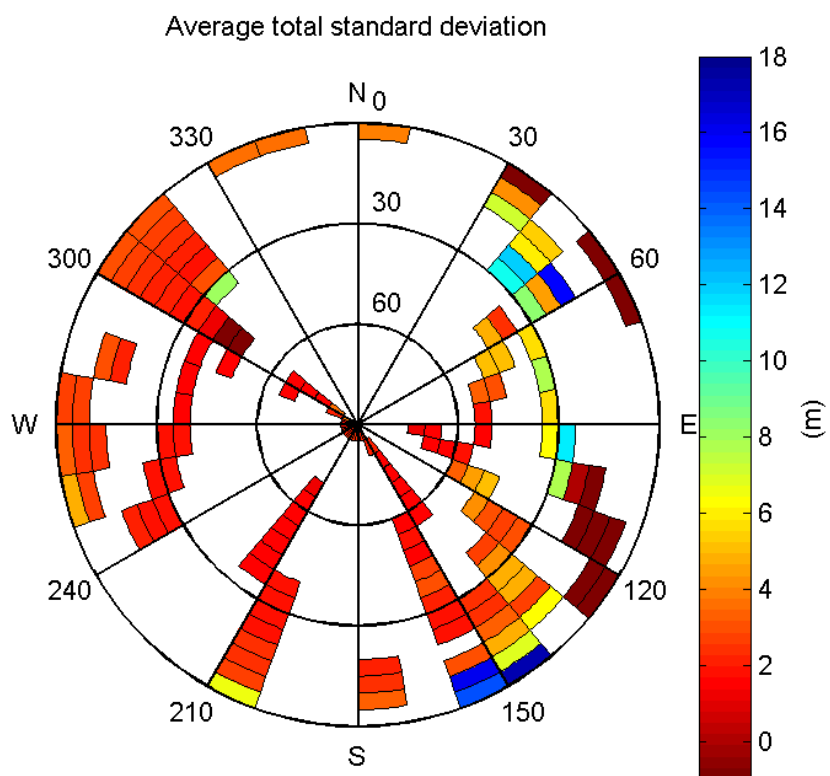
**CDF normalised range errors:**



**Histogram of Norm Range errors:**

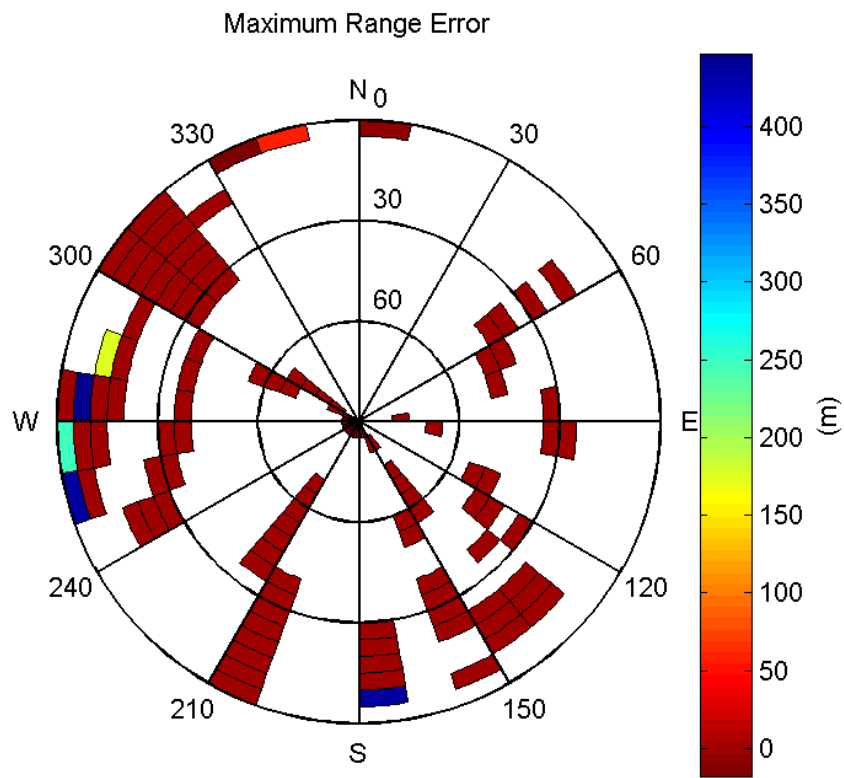


**Sigma Sky Plot:**



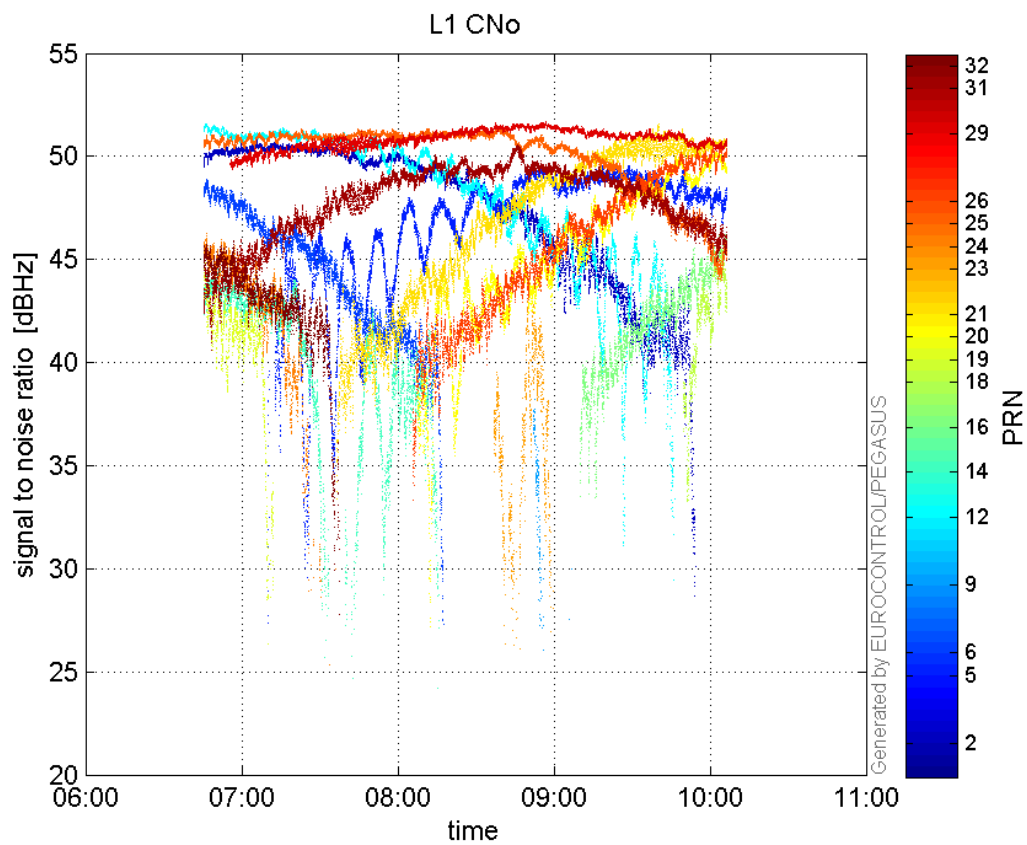
**Norm Error Sky Plot:**



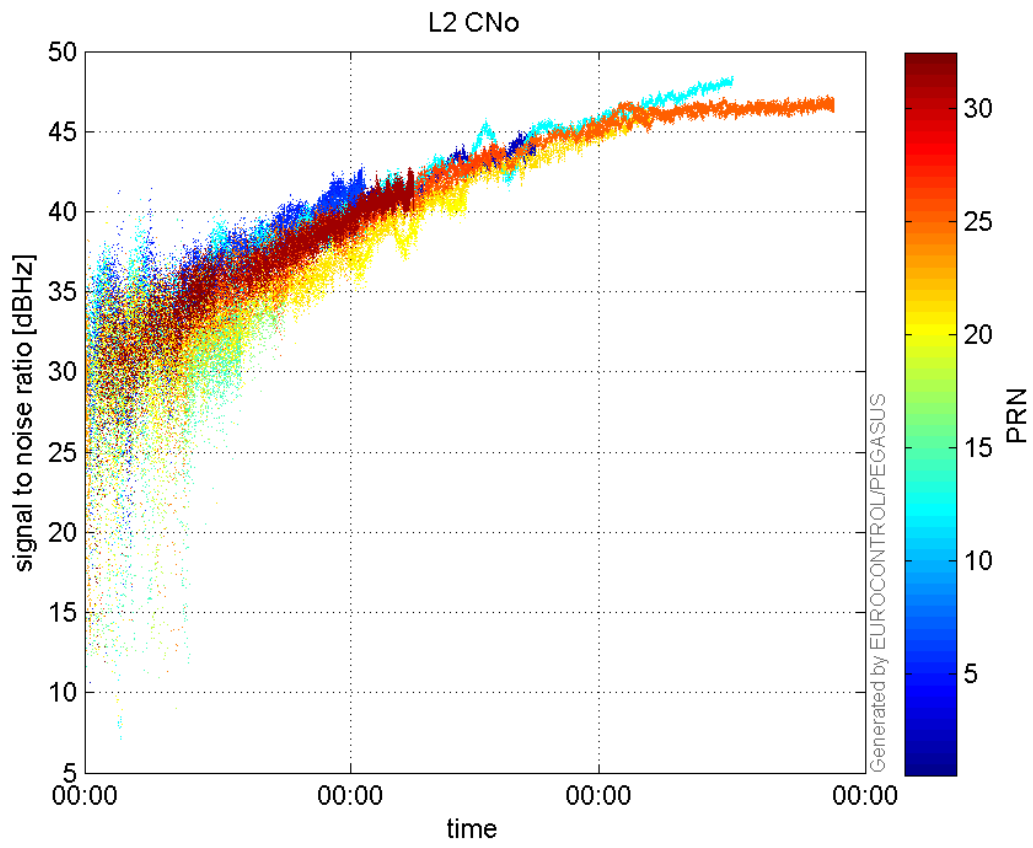


### signal quality

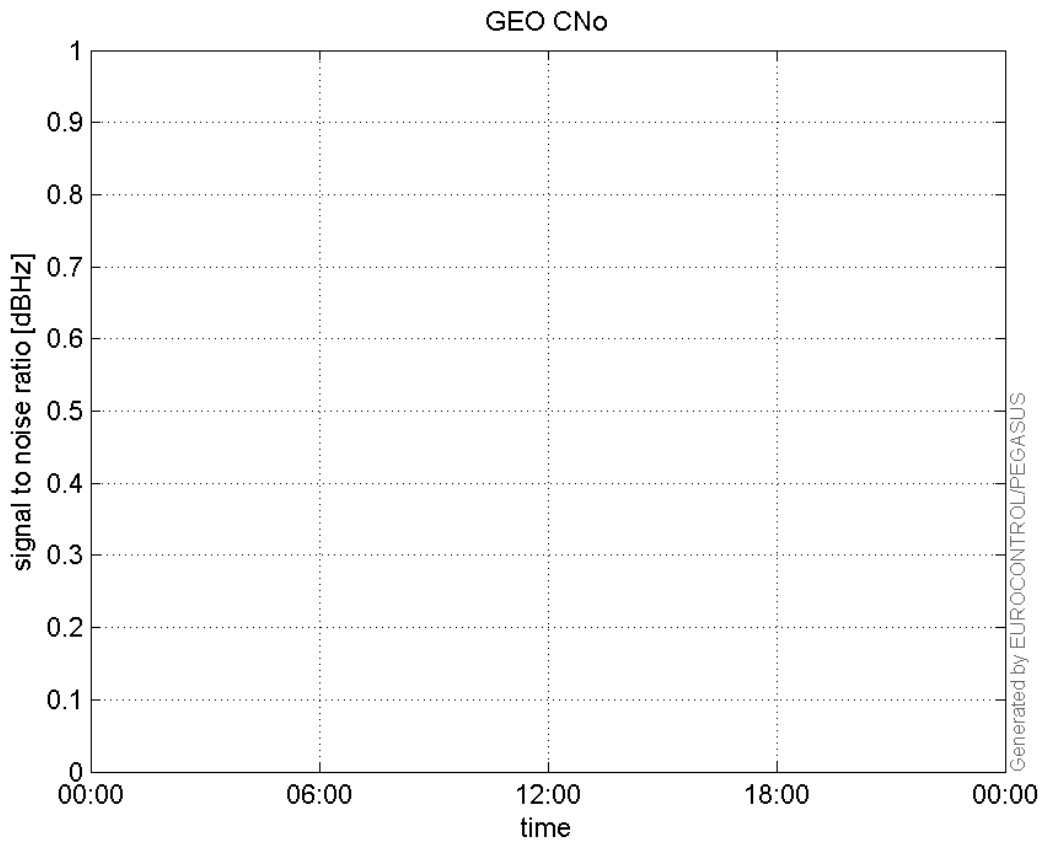
L1 CNo:



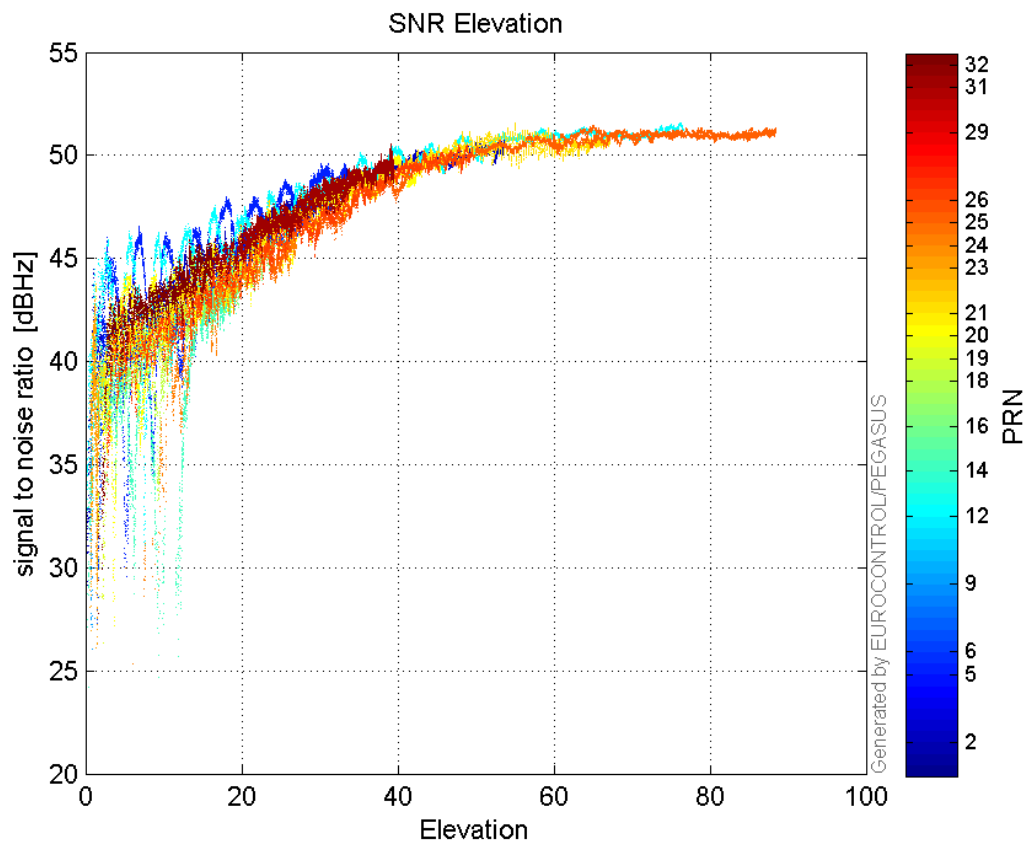
**L2 CNo:**



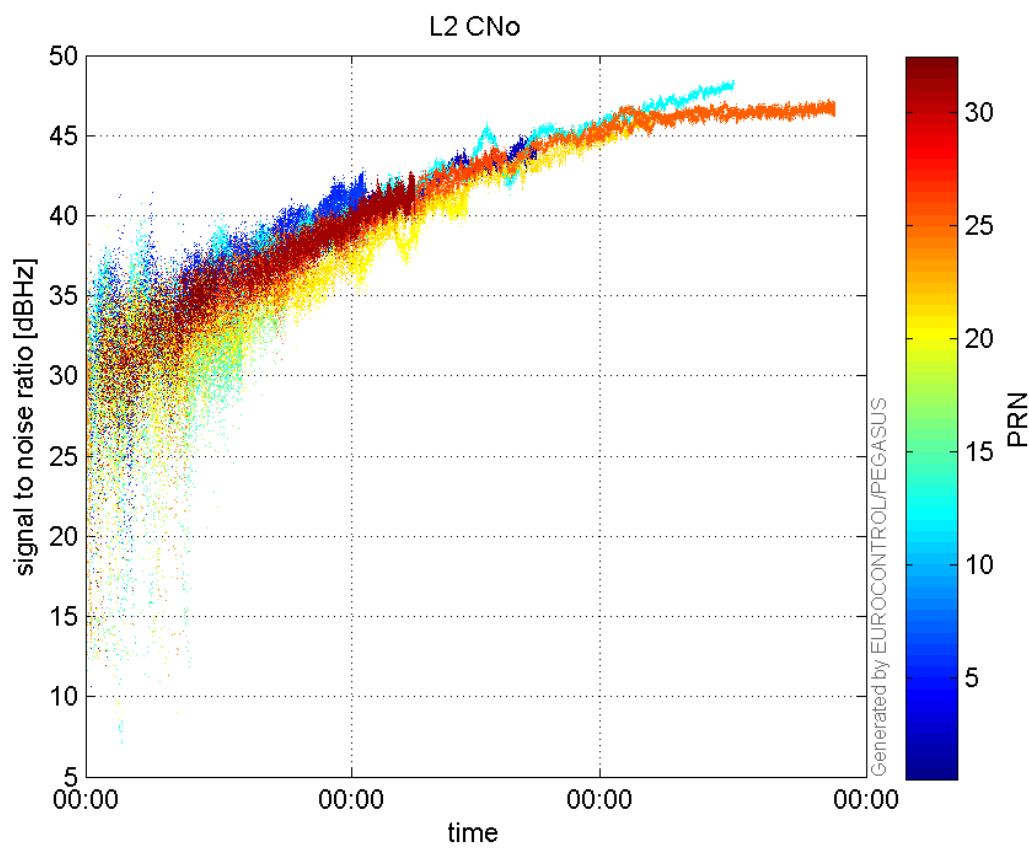
**GEO CNo:**



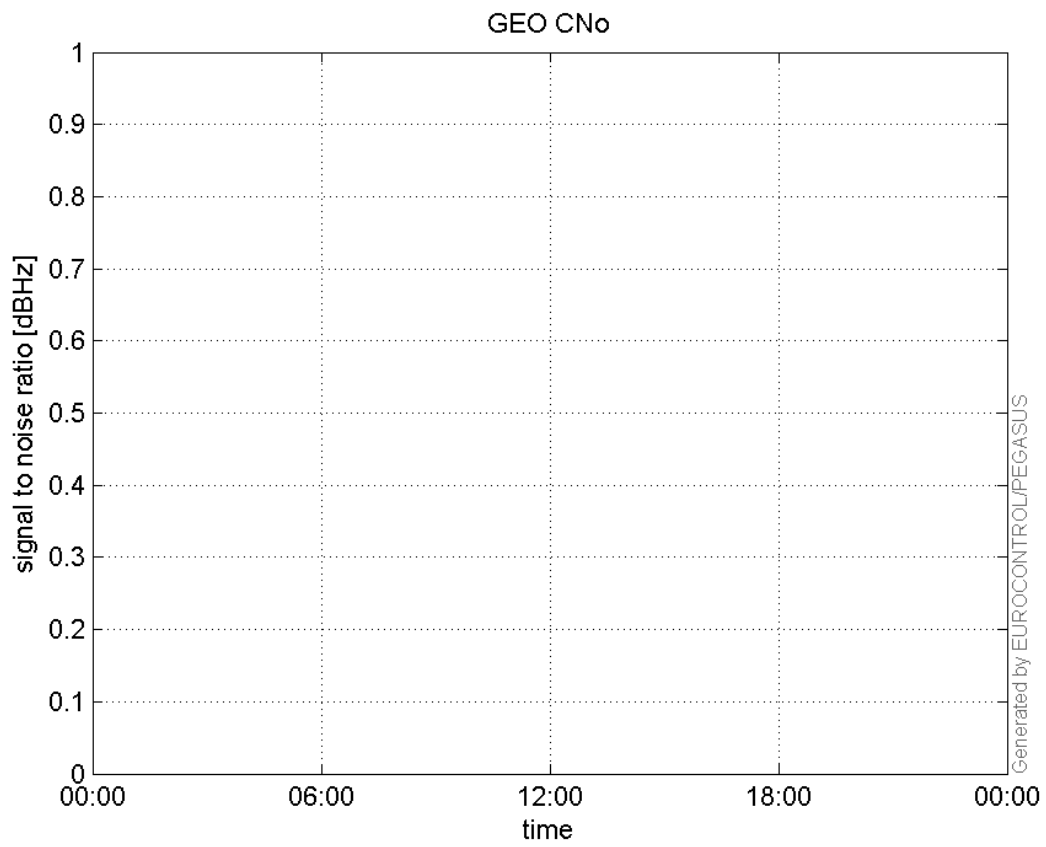
**SNR Elevation:**



**L2 CNo:**

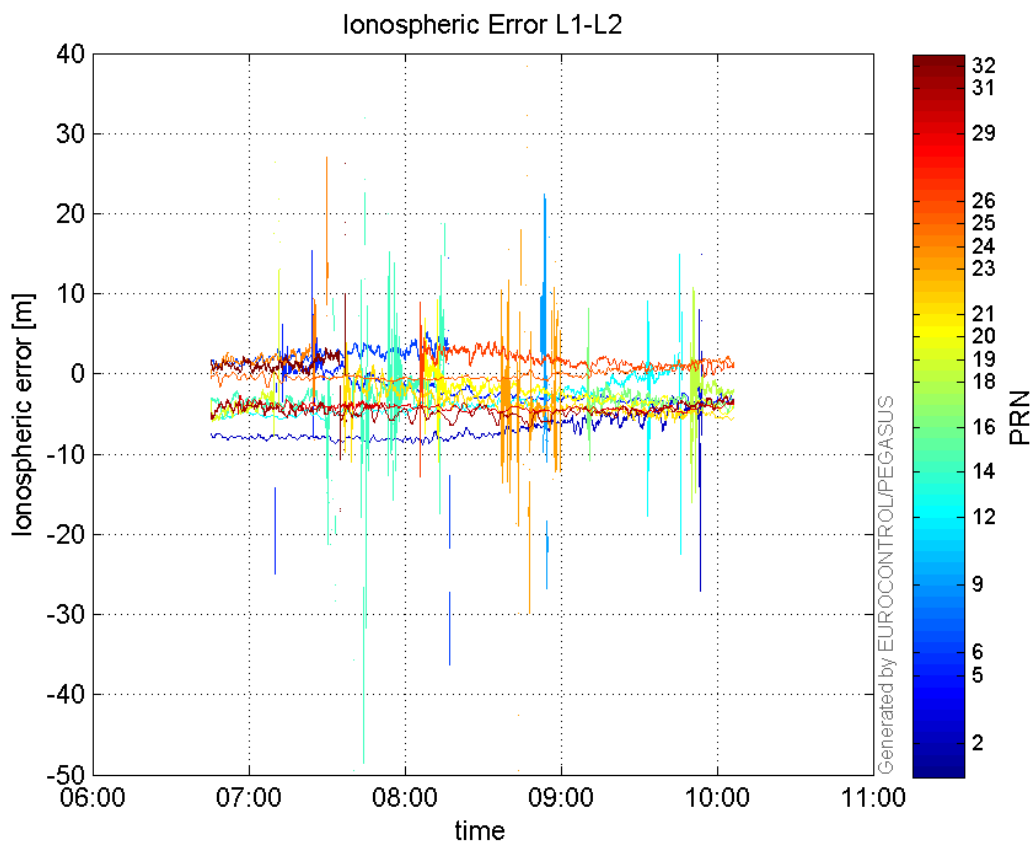


**GEO CNo:**



### 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_08_25_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_08_25_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	226.1813
mi_numbers	results	0