

# Global View

site Laboratory satellite systems  
 abbreviation NAU  
 country Ukraine  
 comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,  
 P.50 - 54  
 program Pegasus  
 version 4.8.4  
 city Kiev  
 date 02/02/2016

## SBAS Messages

**start:** 08:41:54.129 01.02.2016 ( week: 1882 sec: 117714.129 )  
**end:** 14:11:39.129 01.02.2016 ( week: 1882 sec: 137499.129 )  
**duration:** 05:29:45 ..

### quality

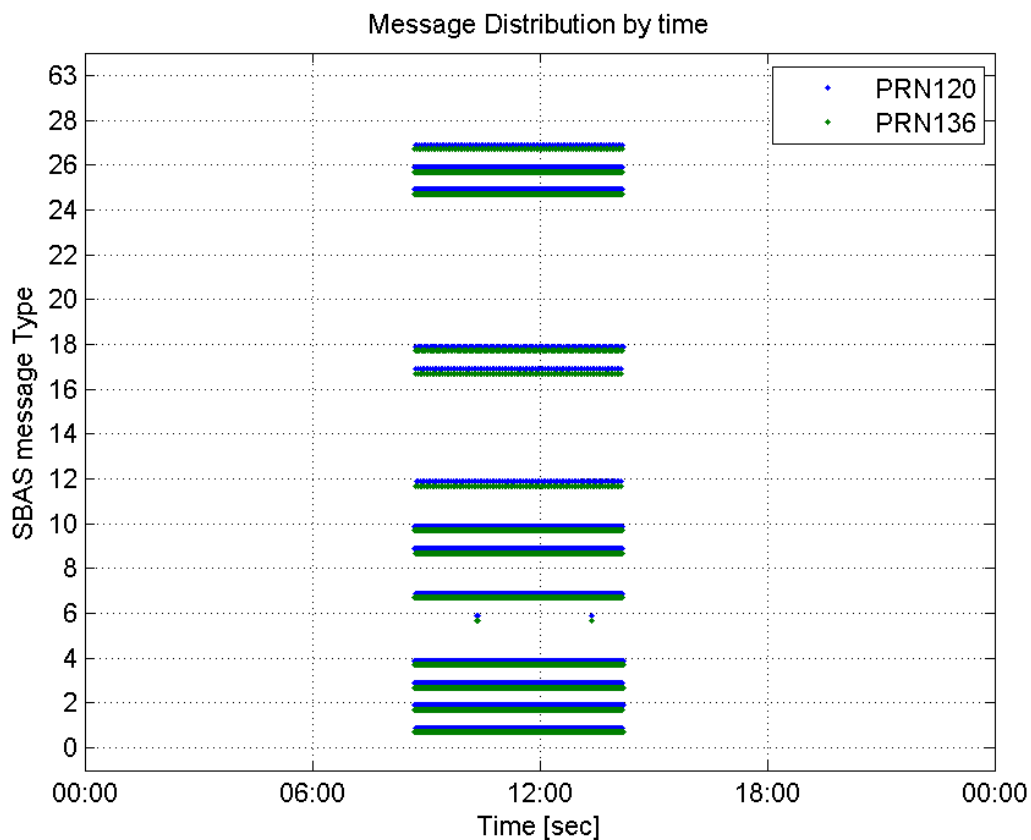
**valid samples** 39572  
**total samples** 39572  
**number of SBAS PRNs** 2

### SBAS SIS Overview

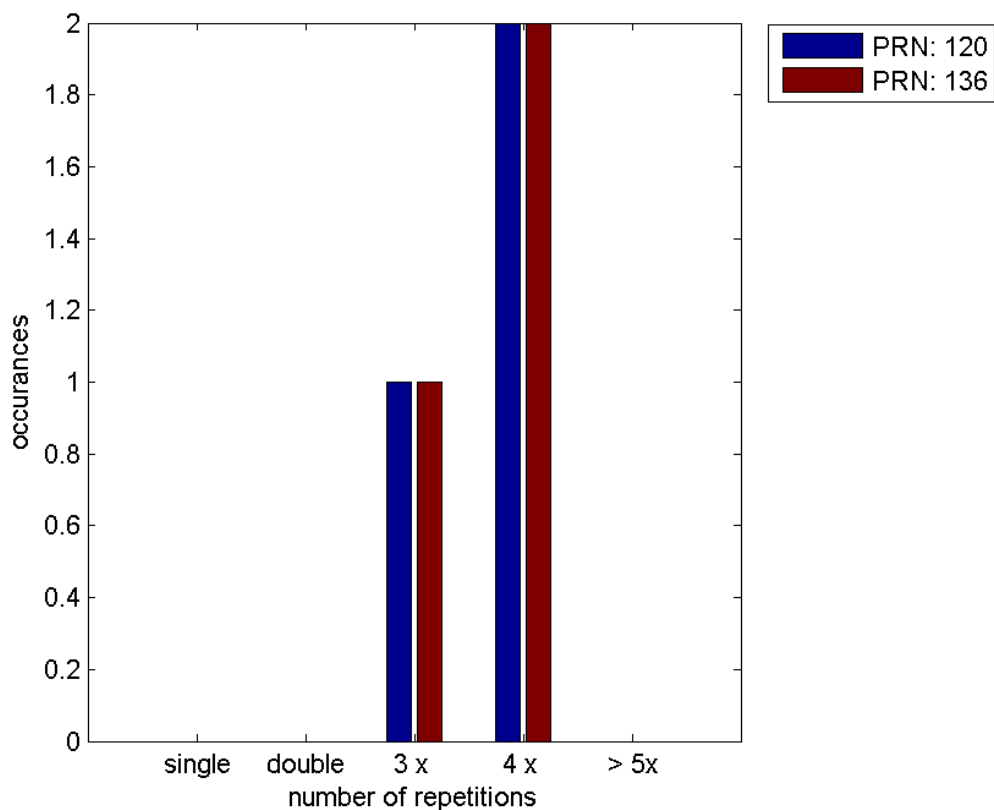
#### Message Type 6 repetitions :

	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

#### Message Distribution by time:



**Message Type 6 repetitions:**



## Broadcast SBAS Messages :

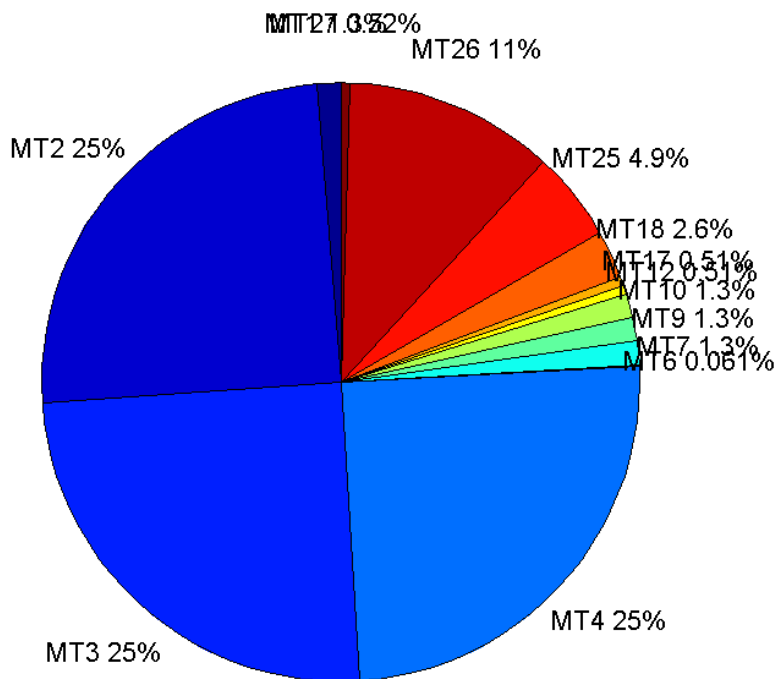
	number of messages	%
MT 0	0	0
MT 1	250	1.26352
MT 2	4921	24.8711
MT 3	4920	24.8661
MT 4	4921	24.8711
MT 5	0	0
MT 6	12	0.0606489
MT 7	250	1.26352
MT 9	250	1.26352
MT 10	250	1.26352
MT 12	101	0.510462
MT 17	101	0.510462
MT 18	508	2.56747
MT 24	0	0
MT 25	961	4.85697
MT 26	2239	11.3161
MT 27	102	0.515516
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	19786	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	84	79.1526	0	0	0
MT 2	4	8	4.02073	3	0	0
MT 3	4	8	4.02094	3	0	0
MT 4	4	8	4.02073	3	0	0
MT 5	--	--	--	--	--	--
MT 6	1	10815	996.273	2	2	2
MT 7	76	81	79.1526	0	0	0
MT 9	76	84	79.2169	0	0	0
MT 10	75	81	79.1044	0	0	0
MT 12	188	201	194.65	100	0	0
MT 17	188	201	194.65	0	0	0
MT 18	4	160	38.8028	0	0	0
MT 24	--	--	--	--	--	--
MT 25	2	48	20.5719	0	0	0
MT	4	32	8.83691	0	0	0

26						
MT 27	188	202	194.584	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	251	1.26857
MT 2	4921	24.8711
MT 3	4921	24.8711
MT 4	4922	24.8762
MT 5	0	0
MT 6	12	0.0606489
MT 7	250	1.26352
MT 9	250	1.26352
MT 10	250	1.26352

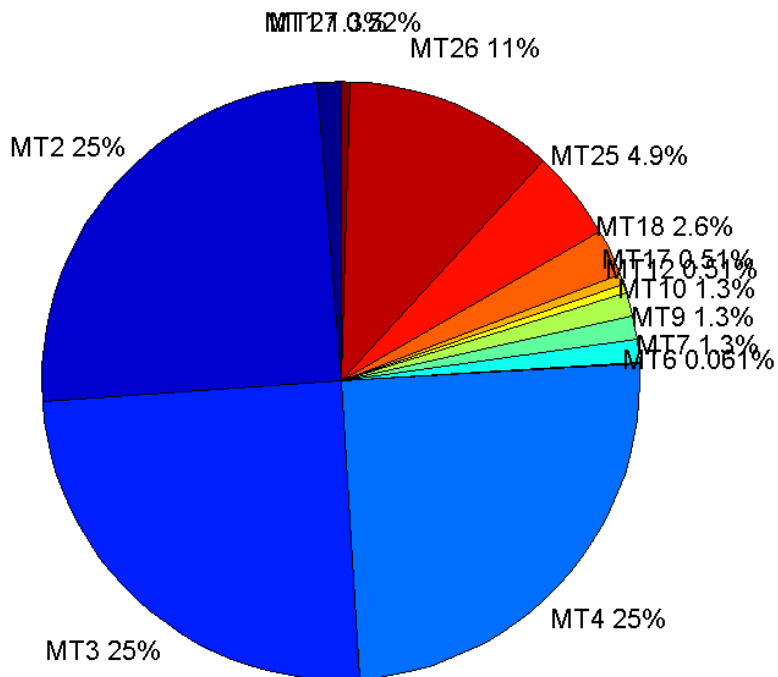
MT 12	101	0.510462
MT 17	101	0.510462
MT 18	509	2.57253
MT 24	0	0
MT 25	963	4.86708
MT 26	2233	11.2858
MT 27	102	0.515516
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	19786	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.132	0	0	0
MT 2	4	8	4.02053	3	0	0
MT 3	4	8	4.02033	3	0	0
MT 4	4	8	4.02032	3	0	0
MT 5	--	--	--	--	--	--
MT 6	1	10815	996.273	2	2	2
MT 7	76	81	79.1084	0	0	0
MT 9	75	88	79.1928	0	0	0
MT 10	76	84	79.2088	0	0	0
MT 12	188	201	194.83	100	0	0
MT 17	188	201	194.83	0	0	0
MT 18	4	161	38.7933	0	0	0
MT 24	--	--	--	--	--	--
MT 25	2	48	20.5478	0	0	0
MT 26	4	36	8.85081	0	0	0
MT 27	188	200	194.832	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:/PegasusDateGob/job/2016_02_01_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2016_02_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:** 08:41:55 01.02.2016 ( week: 1882 sec: 117715 )  
**end:** 14:11:40 01.02.2016 ( week: 1882 sec: 137500 )  
**duration:** 05:29:46 ..

#### quality

**valid samples** 19075  
**total samples** 19786

## Event tables

**Position discontinuity events type** no (0)  
**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>	127102	2.17823	12.2865	0.177286	-0.640053	19.5418	0.032753
<b>max normVer</b>	135238	1.29868	21.6237	0.0600581	3.06187	19.0237	0.16095
<b>max HPE</b>	133958	2.55239	68.5406	0.0372391	2.20713	40.6713	0.0542675
<b>max VPE</b>	135238	1.29868	21.6237	0.0600581	3.06187	19.0237	0.16095
<b>min HPL</b>	137451	1.05276	9.6224	0.109407	0.256001	16.3972	0.0156125
<b>min VPL</b>	131637	1.29069	12.2231	0.105595	-0.0723683	15.06	0.00480533

APV-I discontinuity events :

#	Epoch	duration	stable period
1	121884	210	1
2	122290	303	196
3	122625	75	32
4	133294	1169	10594
5	134478	12	15
6	134548	4	1

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	121817	776	3736
2	122625	75	32
3	129593	272	1
4	133294	1169	3429
5	134478	12	15
6	134548	4	1

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	121817	776	3736
2	122625	75	32
3	129593	272	1
4	133294	1169	3429
5	134478	12	15
6	134548	4	1

## First Glance analysis

**Duration** 19786  
**Number of Samples** 19786

Number of invalid sample	711
Number of no position solution samples	16
Number of missing sample	0
Logging Loss	0
Processing Loss	3.5934
Number of Misleading Information	0
Data gaps	2
Discontinuities	1

## Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
19059	17596	17082	0	17082

## Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.7729	1.75644	1.75702	NaN	1.75702
HPEscale 95%	NaN	5.56715	5.58257	NaN	5.58257
VPE 95%	2.24702	2.27427	2.28484	NaN	2.28484
VPEscale 95%	NaN	5.63859	3.96336	NaN	3.96336

## Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.999161	0.922464	0.895518	0	0.895518
measurements	0.963257	0.889316	0.863338	0	0.863338
Operational	0.963257	0.889316	0.863338	0	0.863338

## Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	41	29	--	29
Long	--	6	6	--	6
Independent	--	3	3	--	3
P(disc.)	NaN	0.0025574	0.00263435	NaN	0.00263435
P(slide)	NaN	0.00829734	0.00632244	NaN	0.00632244

## 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 :

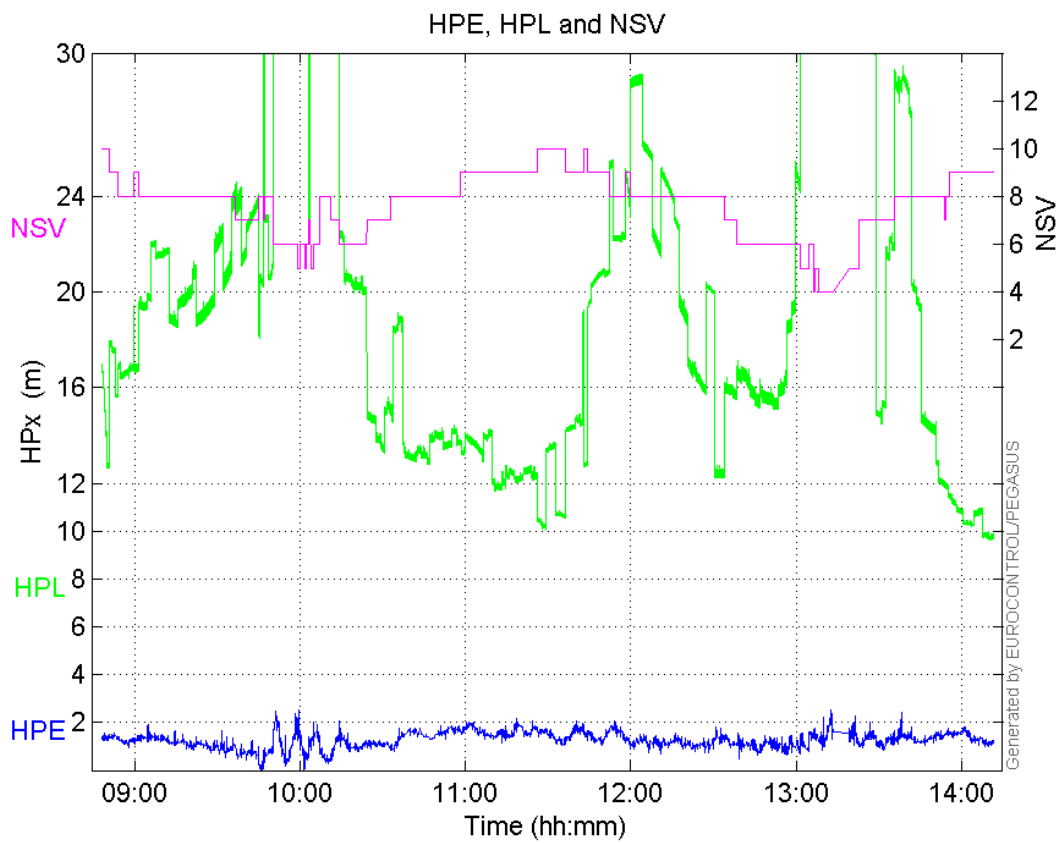
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	19059	17596	17082	0	17082
SIS Availability	0.999161	0.922464	0.895518	0	0.895518
Local Availability	0.963257	0.889316	0.863338	0	0.863338
Operational Availability	0.963257	0.889316	0.863338	0	0.863338
HPE 95%	1.7729	1.75644	1.75702	NaN	1.75702



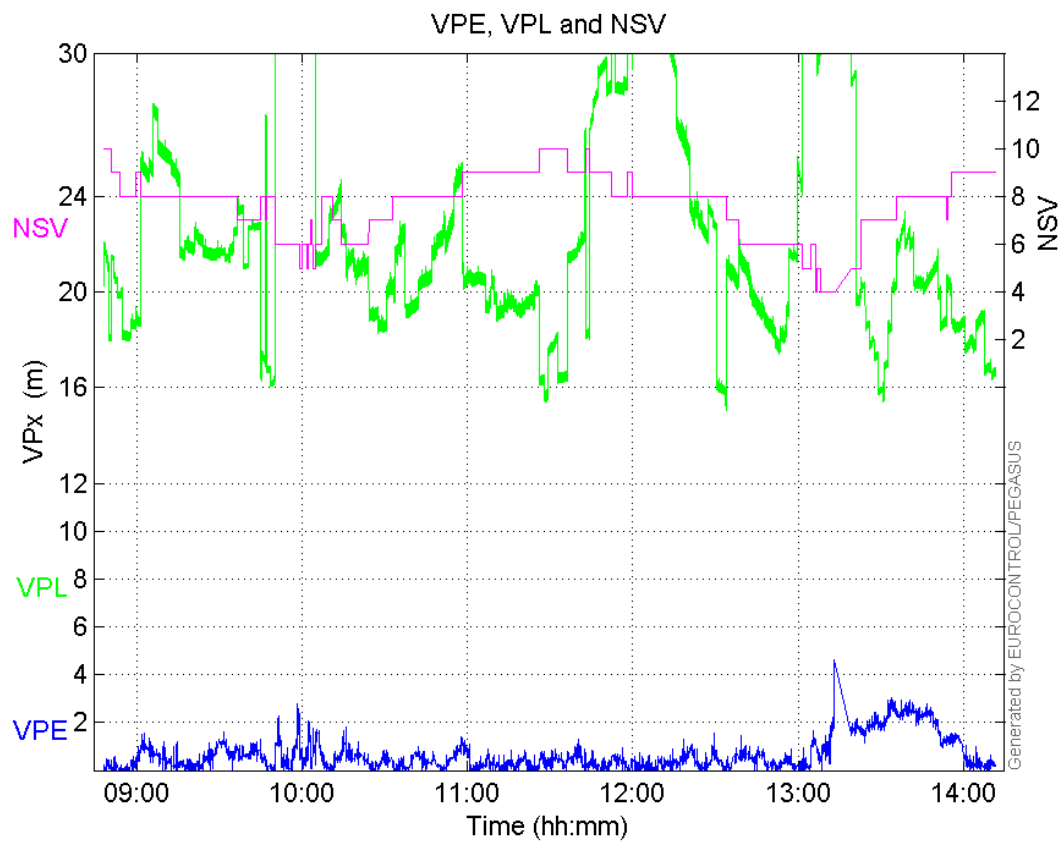
HPEscale 95%	NaN	5.56715	5.58257	NaN	5.58257
VPE 95%	2.24702	2.27427	2.28484	NaN	2.28484
VPEScale 95%	NaN	5.63859	3.96336	NaN	3.96336
All Discontinuity Events	--	41	29	--	29
Long Discontinuity Events	--	6	6	--	6
Independent Discontinuity Events	--	3	3	--	3
P(discontinuity)	NaN	0.0025574	0.00263435	NaN	0.00263435
P(sliding window)	NaN	0.00829734	0.00632244	NaN	0.00632244
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:

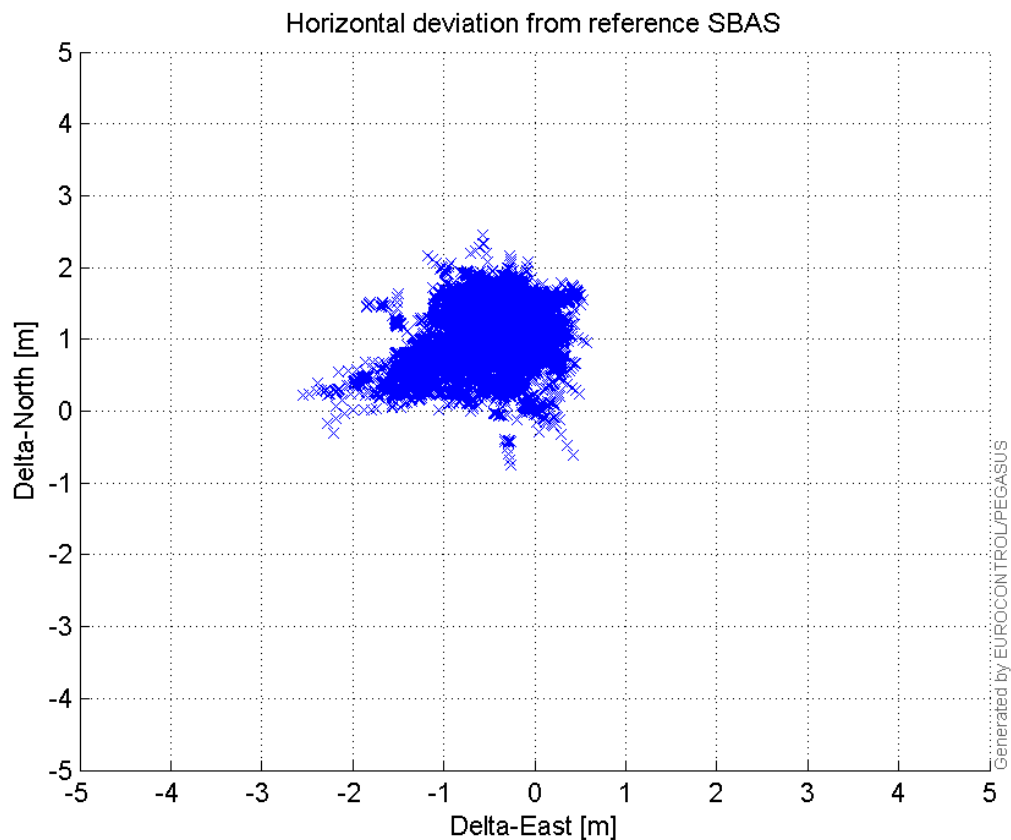


## VPE, VPL and NSV:



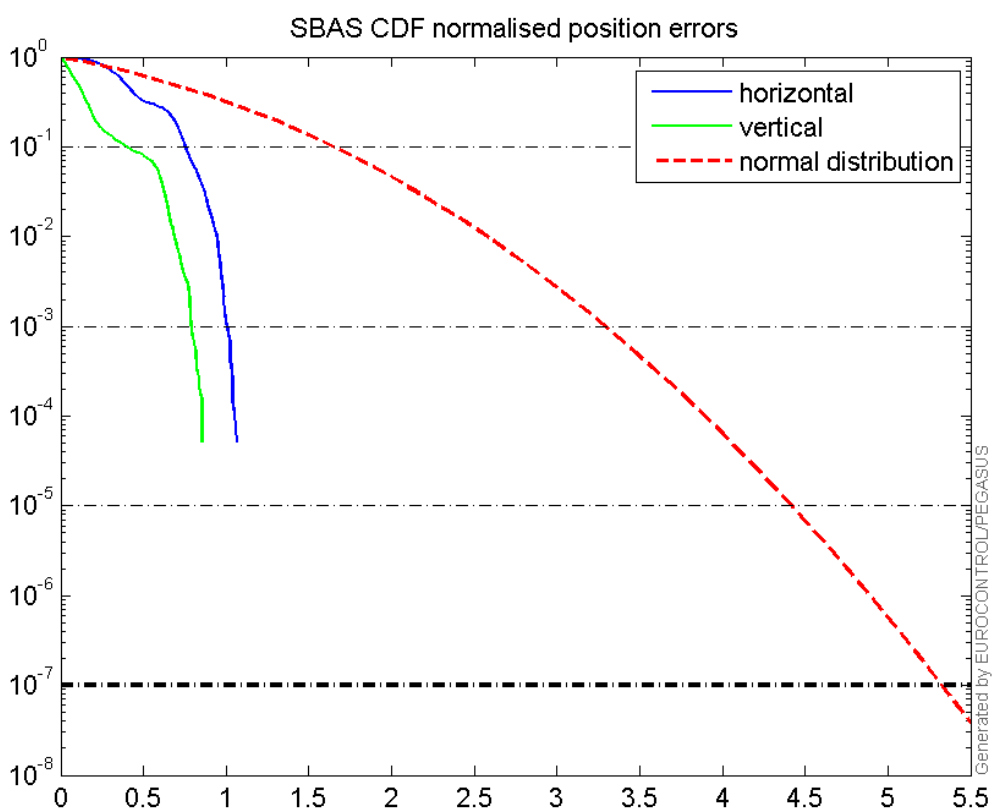
### Horizontal deviation

Horizontal deviation from reference SBAS:



### CDF position

SBAS CDF position domain:



### Statistics

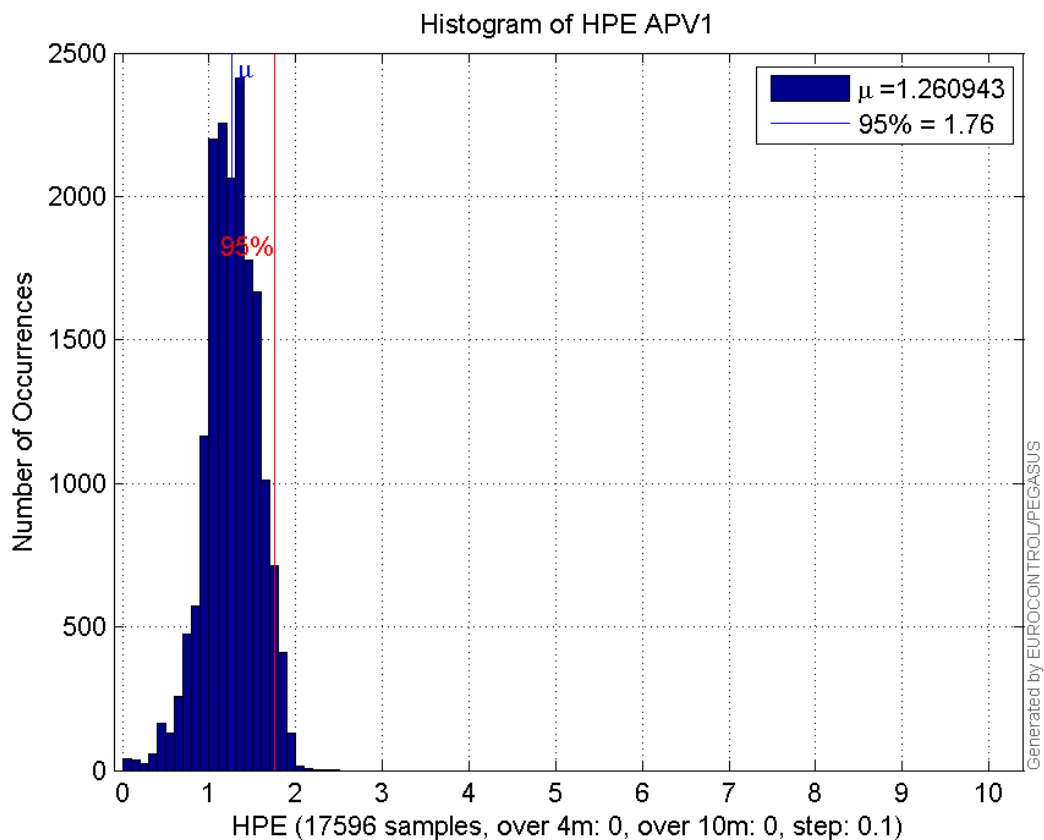
<b>number</b>	17596
<b>sum</b>	22187.552
<b>sum2</b>	29639.355
<b>prctile95</b>	1.7564422
<b>prctile99</b>	1.8902074
<b>number</b>	17596
<b>sum</b>	10723.141
<b>sum2</b>	13502.563
<b>prctile95</b>	2.2742735
<b>prctile99</b>	2.5950269
<b>number</b>	17596
<b>sum</b>	325991.46
<b>sum2</b>	6701125
<b>prctile95</b>	31.44627
<b>prctile99</b>	35.258906
<b>number</b>	17596
<b>sum</b>	388816.9
<b>sum2</b>	8979932.7
<b>prctile95</b>	31.33781
<b>prctile99</b>	41.584812
<b>number</b>	17596
<b>sum</b>	1361.9675
<b>sum2</b>	126.91408

**prctile95** 0.13917864  
**prctile99** 0.15771926  
**number** 17596  
**sum** 512.60495  
**sum2** 32.657479  
**prctile95** 0.1127719  
**prctile99** 0.13010856  
**number** 17082  
**sum** 21629.527  
**sum2** 28959.401  
**prctile95** 1.7570163  
**prctile99** 1.8865311  
**number** 17082  
**sum** 10500.632  
**sum2** 13325.088  
**prctile95** 2.2848358  
**prctile99** 2.598112  
**number** 17082  
**sum** 309772.99  
**sum2** 6183666.8  
**prctile95** 30.79272  
**prctile99** 34.94698  
**number** 17082  
**sum** 368761.7  
**sum2** 8191958.5  
**prctile95** 29.64478  
**prctile99** 32.433896  
**number** 17082  
**sum** 1344.1597  
**sum2** 126.23194  
**prctile95** 0.13956417  
**prctile99** 0.15790073  
**number** 17082  
**sum** 507.12179  
**sum2** 32.5568  
**prctile95** 0.11323875  
**prctile99** 0.13024005

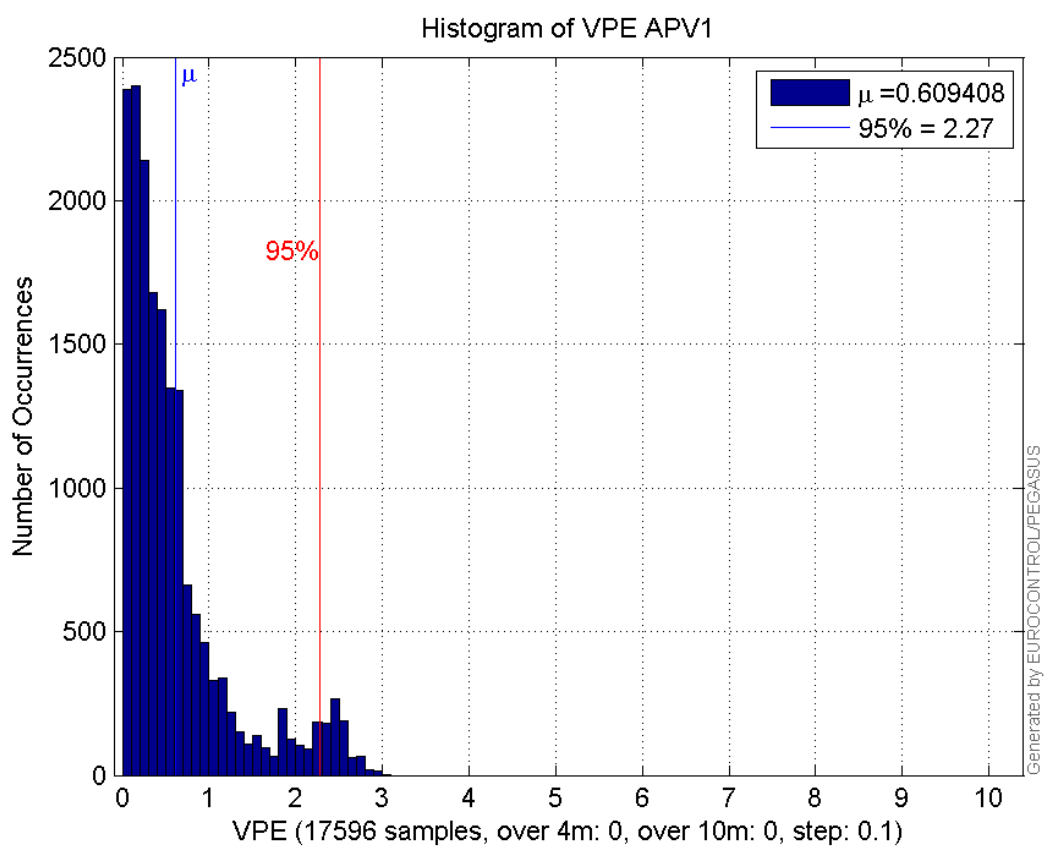
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	1.26094	0.307352	1.26916	1.75644	1.89021	1.29786
<b>HPL</b>	18.5265	6.13229	16.9149	31.4463	35.2589	19.5149
<b>VPE</b>	0.609408	0.629293	0.410857	2.27427	2.59503	0.875994
<b>VPL</b>	22.0969	4.69767	21.1535	31.3378	41.5848	22.5907

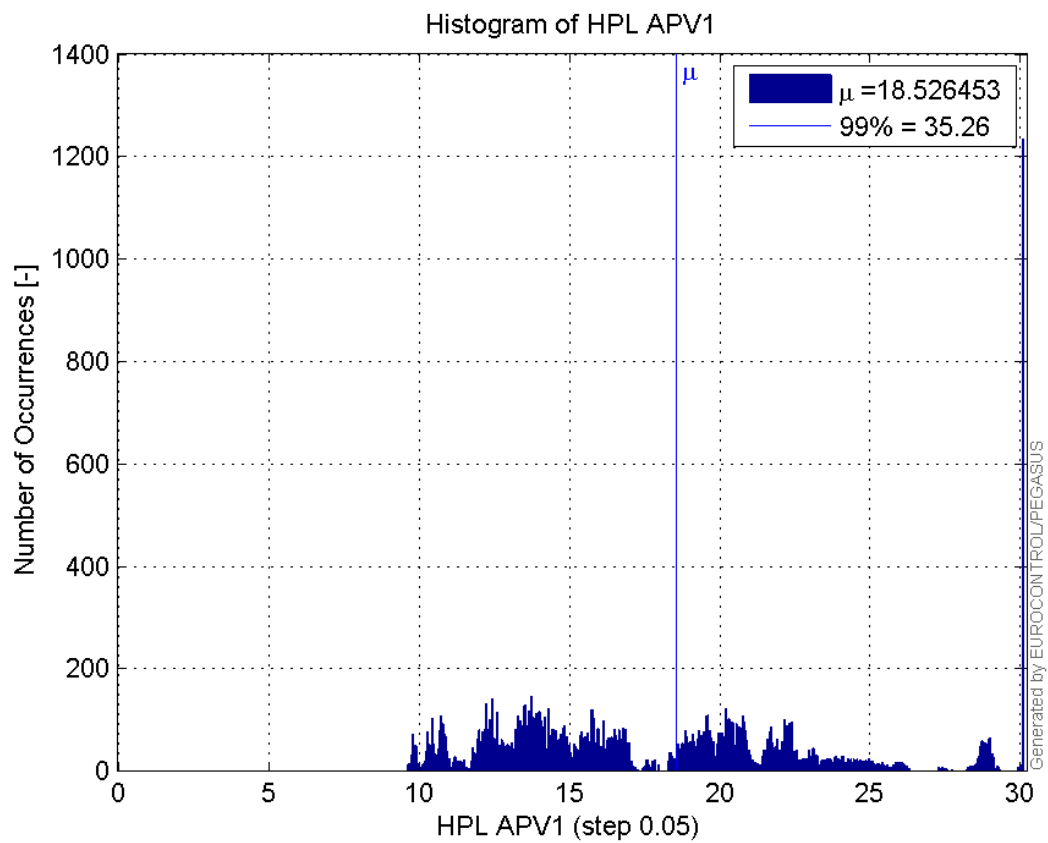
**Histogram of HPE APV1:**



**Histogram of VPE APV1:**

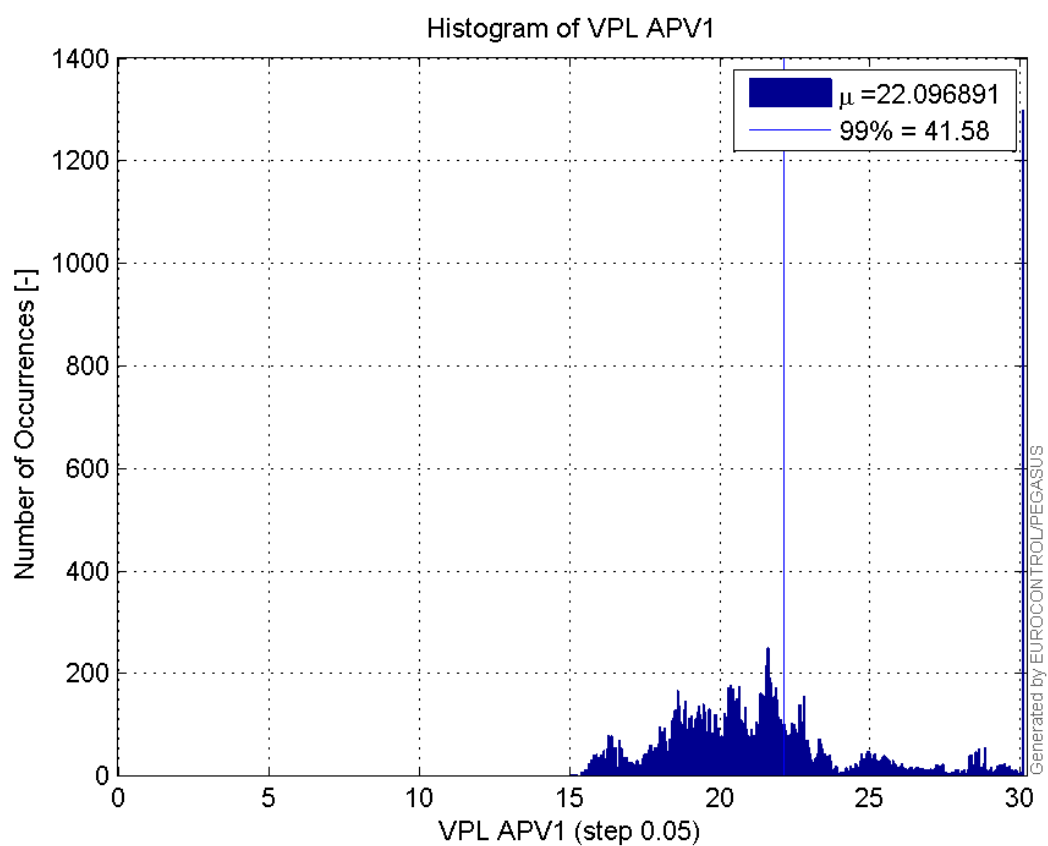


**Histogram of HPL APV1:**

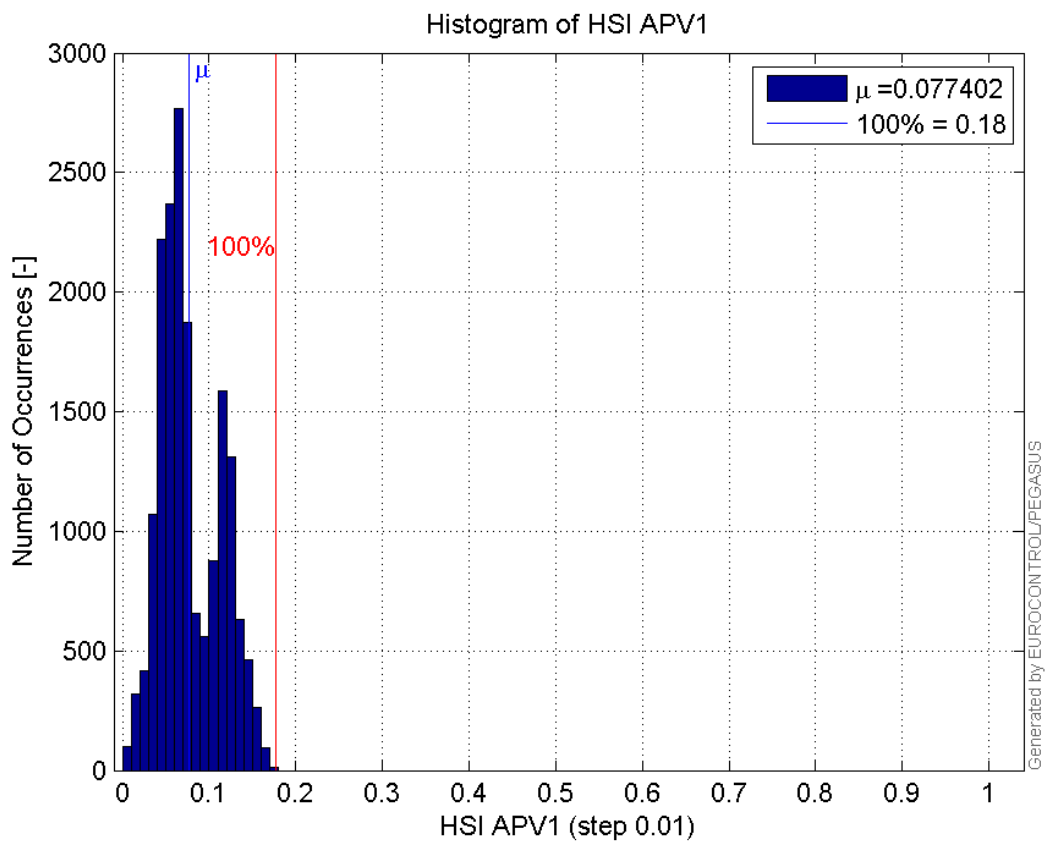
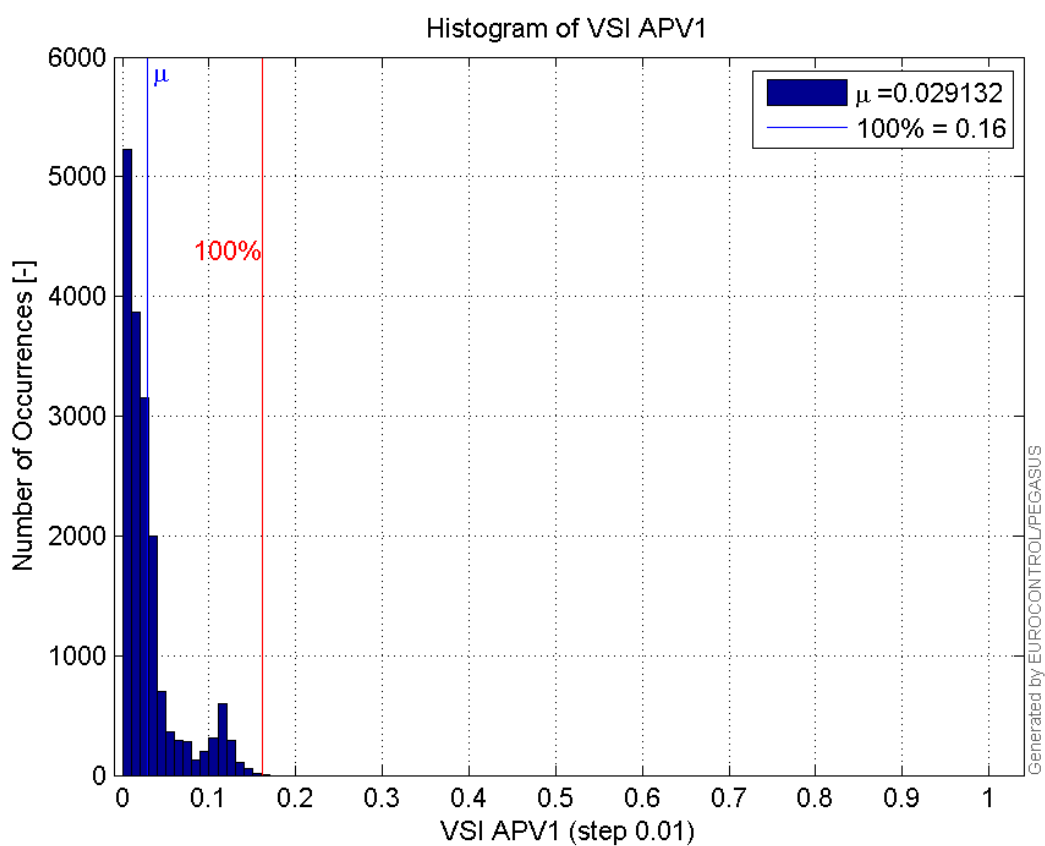


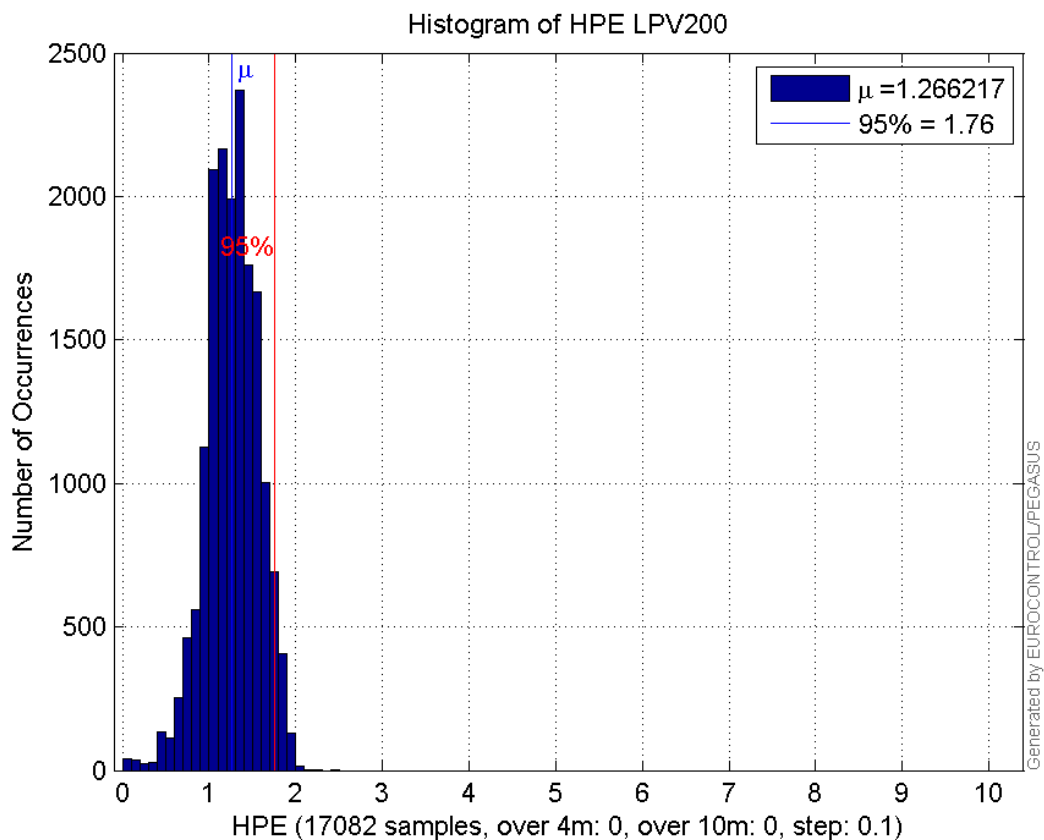
9

Histogram of VPL APV1:

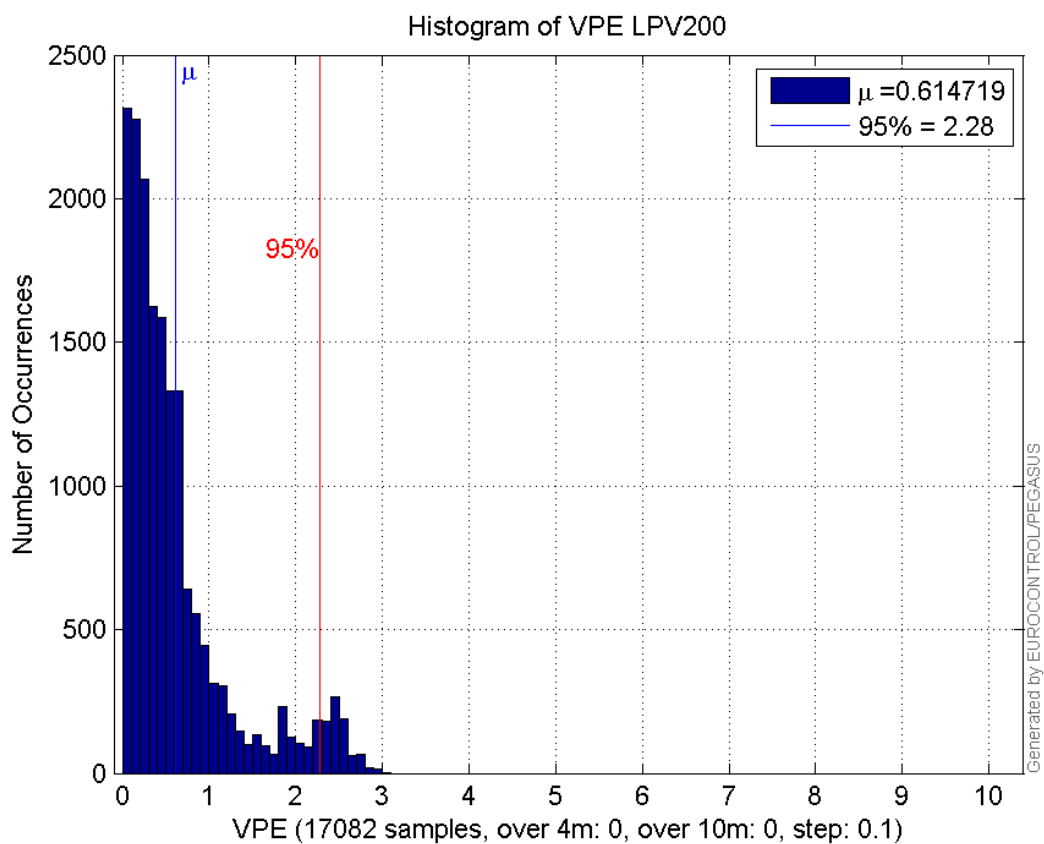


Histogram of HSI APV1:

**Histogram of VSI APV1:****Histogram of HPE LPV200:**

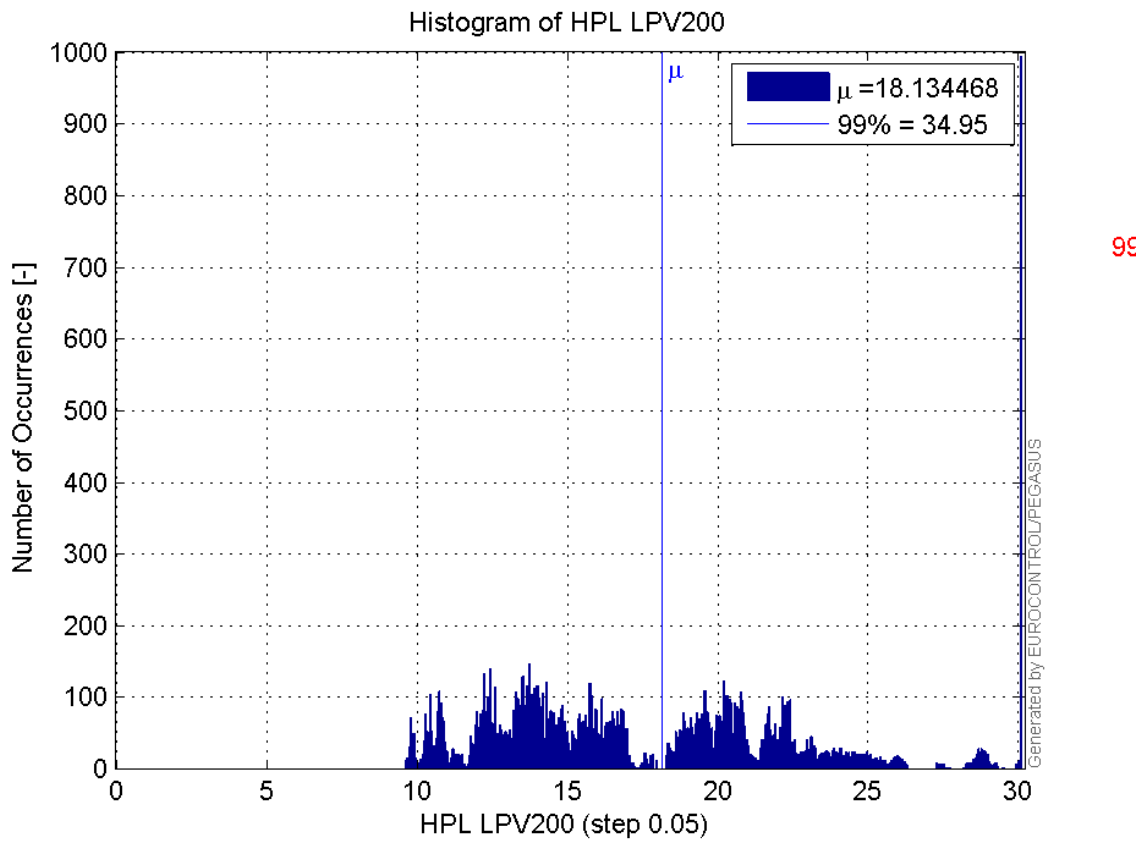


**Histogram of VPE LPV200:**

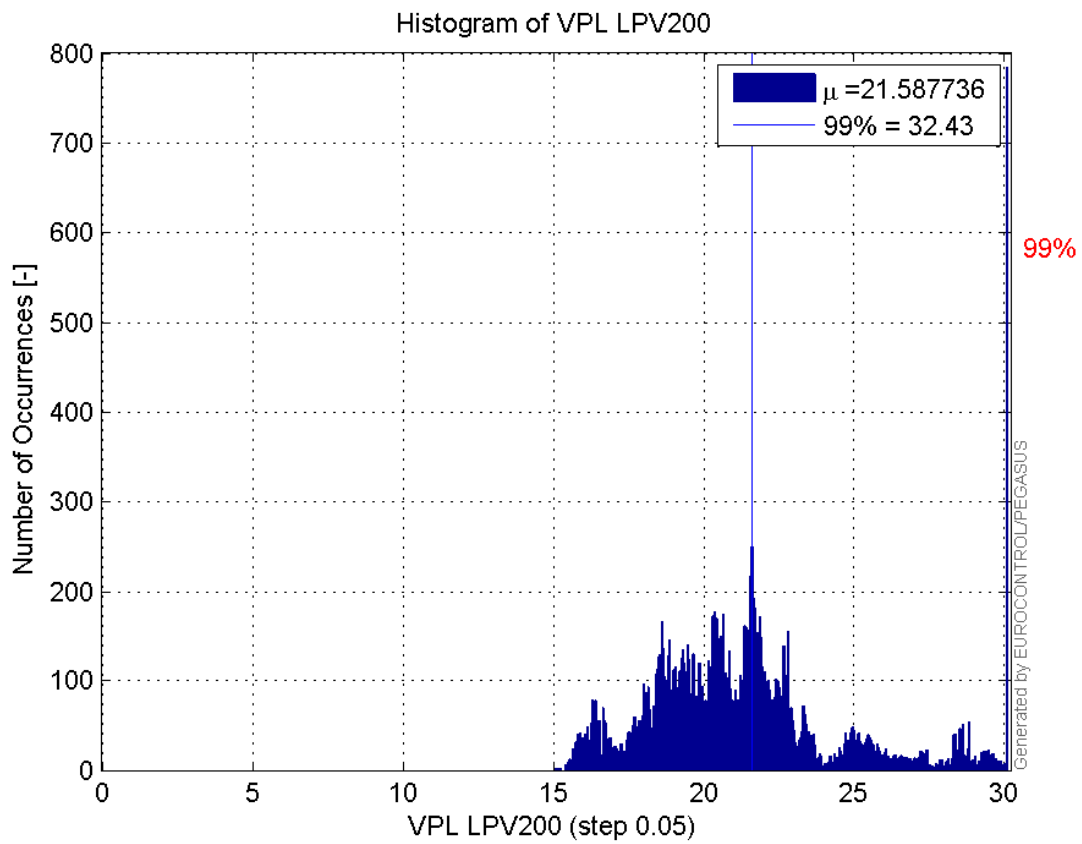


**Histogram of HPL LPV200:**

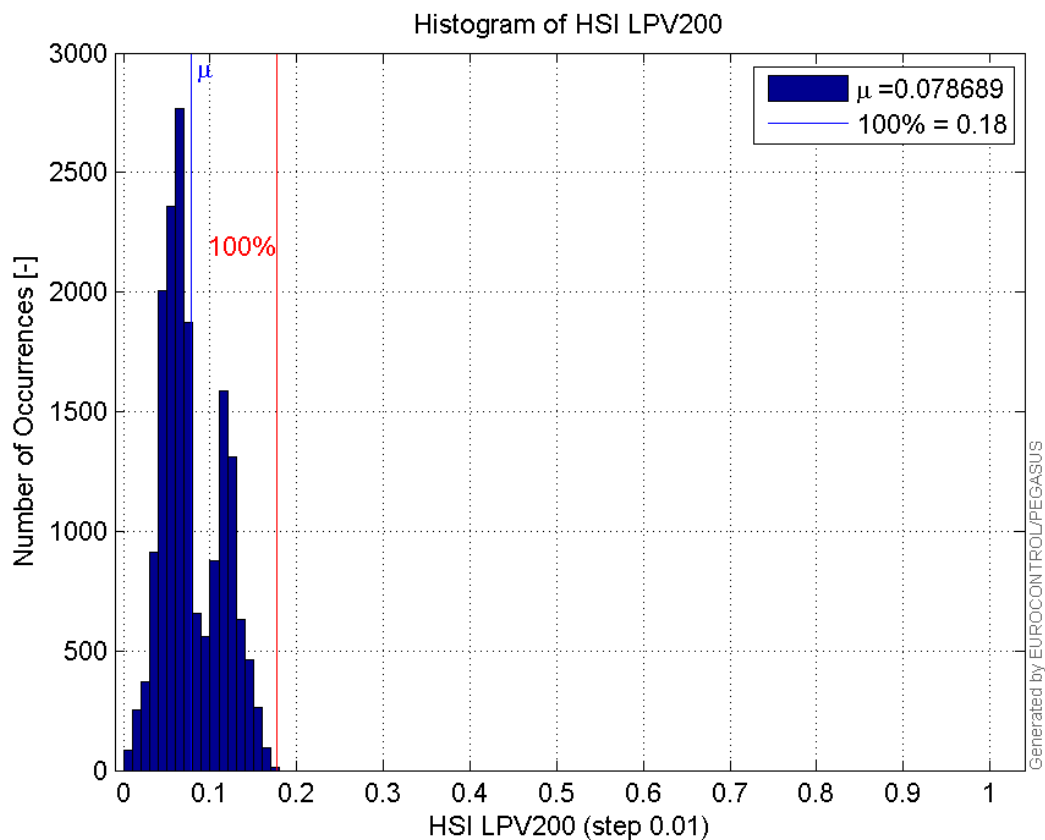




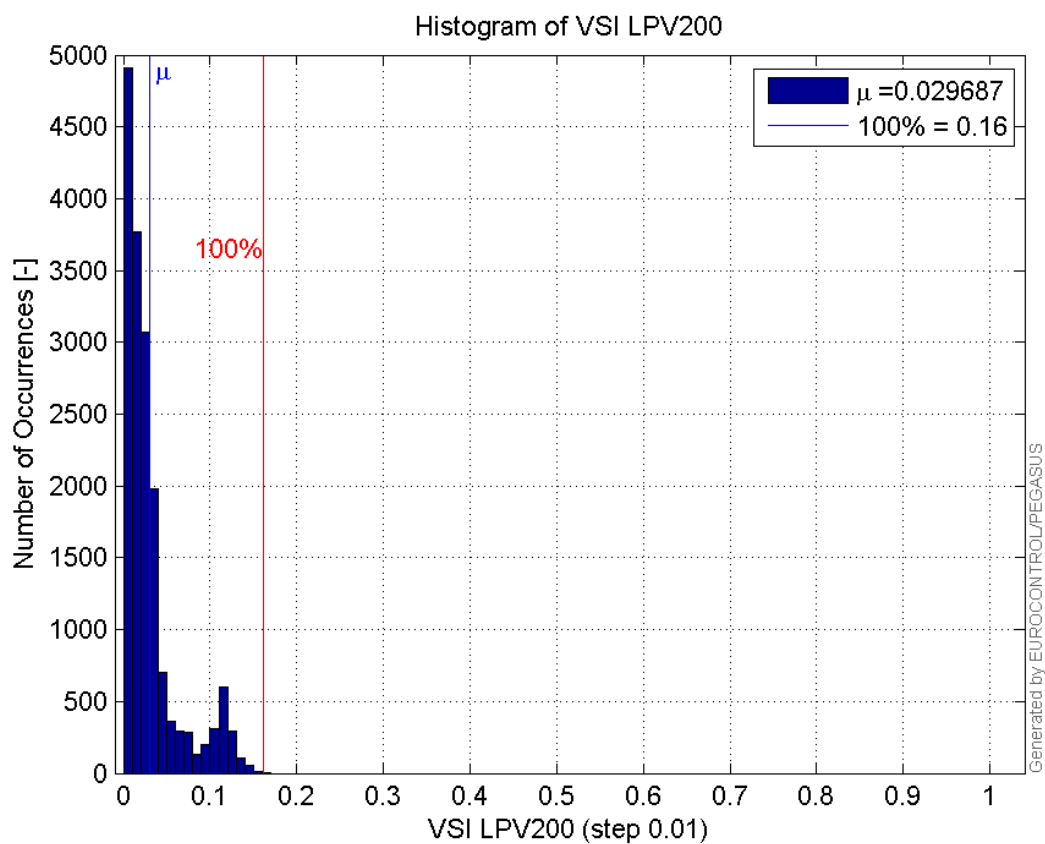
**Histogram of VPL LPV200:**



**Histogram of HSI LPV200:**

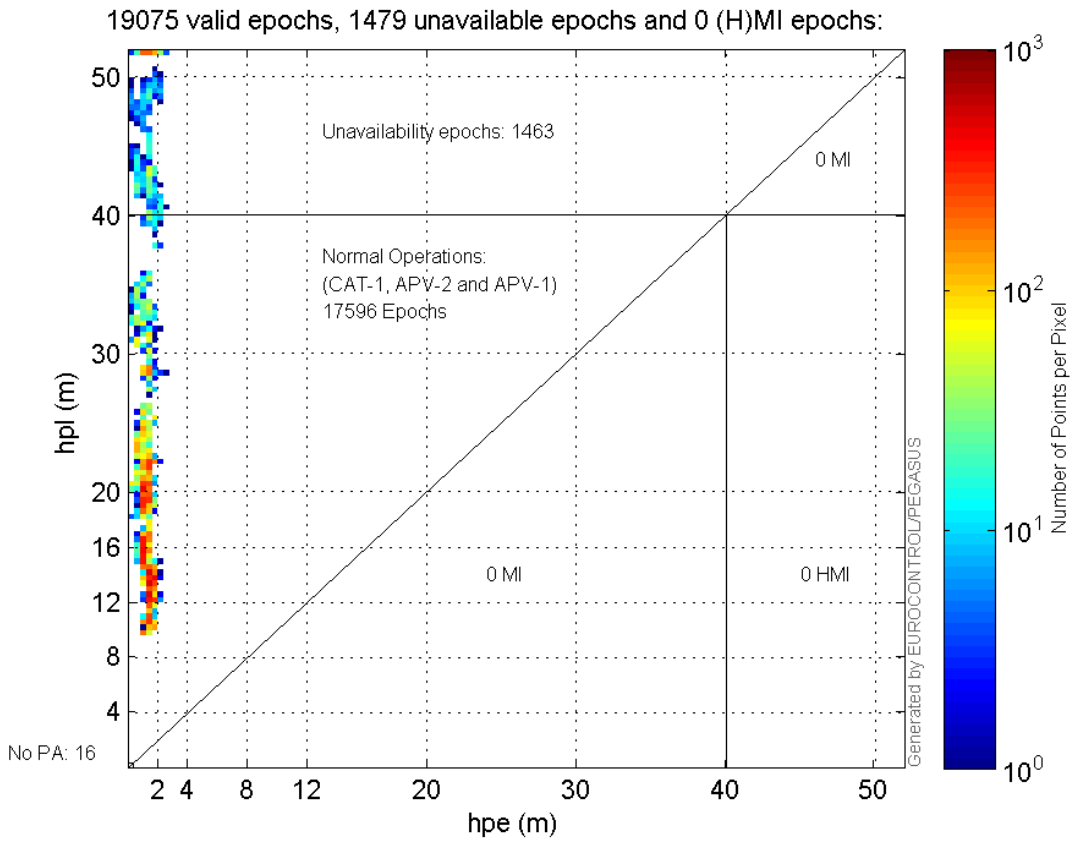


**Histogram of VSI LPV200:**

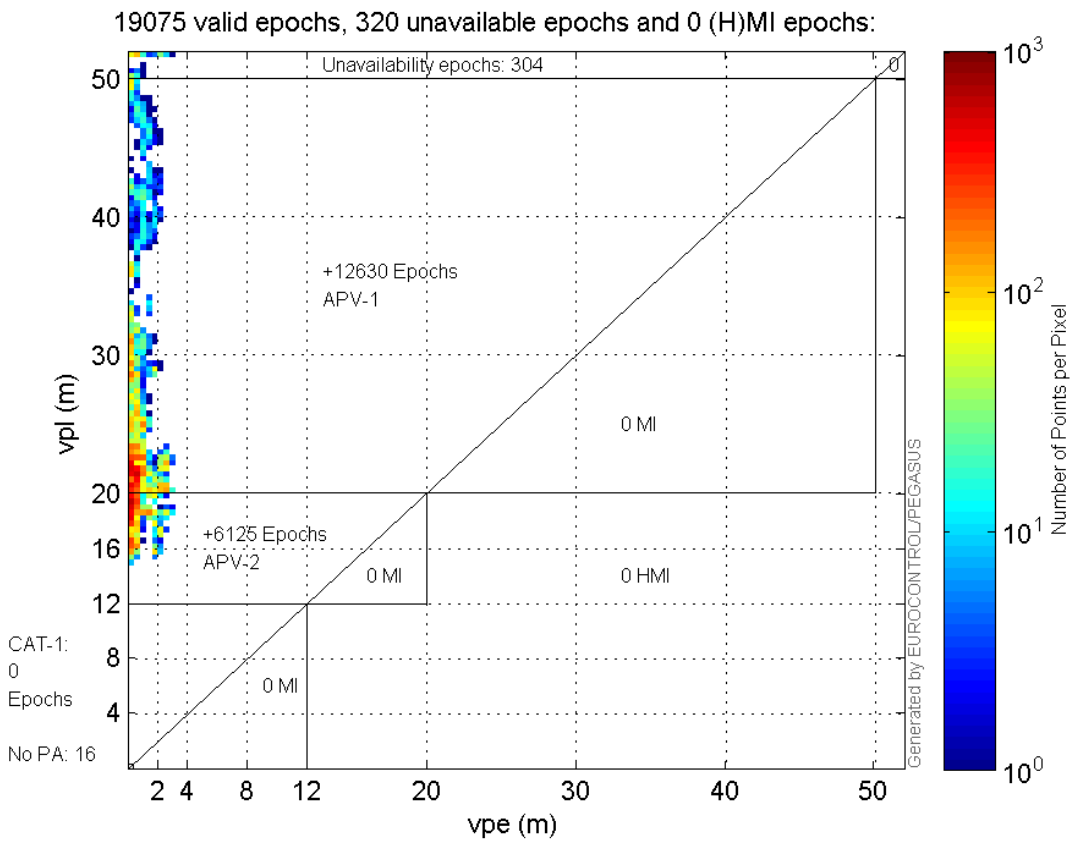


Stanford Plots

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



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



**system**

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateGob/job/2016_02_01_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_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	227.541
mi_numbers	results	0

**Range Domain**

**start:** 08:41:55 01.02.2016 ( week: 1882 sec: 117715 )  
**end:** 14:11:40 01.02.2016 ( week: 1882 sec: 137500 )  
**duration:** 05:29:46 ..

**quality**

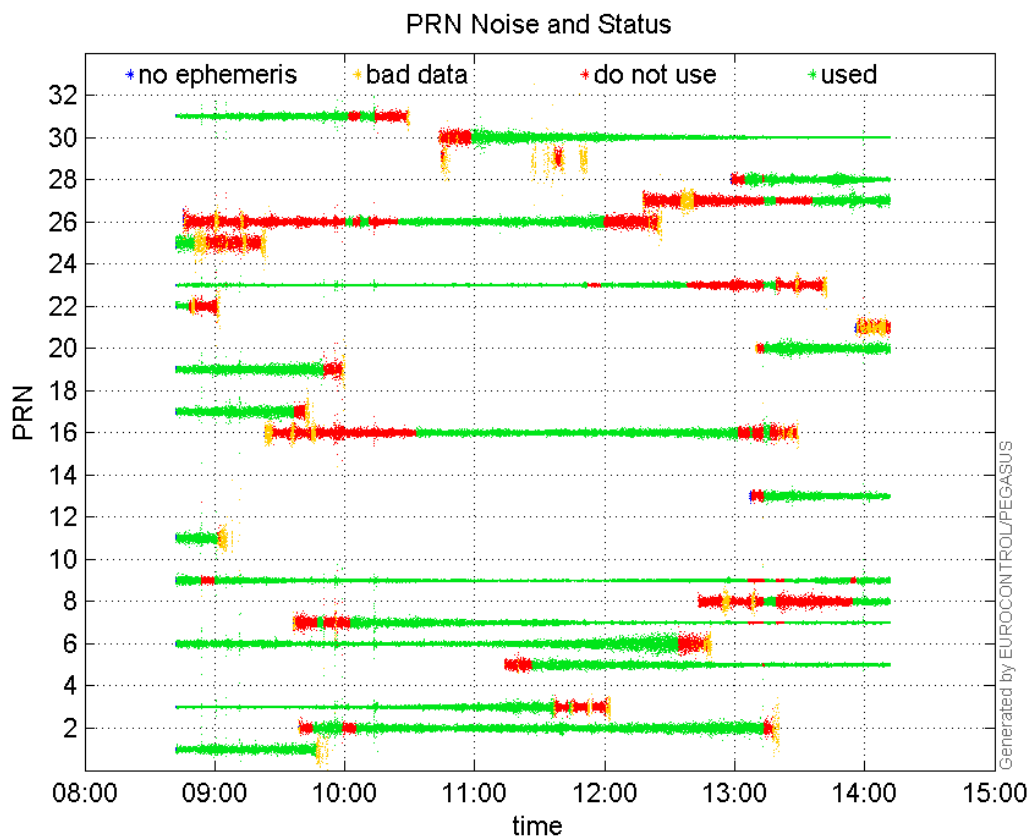
**valid samples** 19786  
**total samples** 19786

**PRN overview**

**Number of Visible GPS Satellites** 24  
**Number of Visible SBAS Satellites** 2

**signal quality and status**

**PRN Noise and Status:**



**Signal To Noise Ratio:**



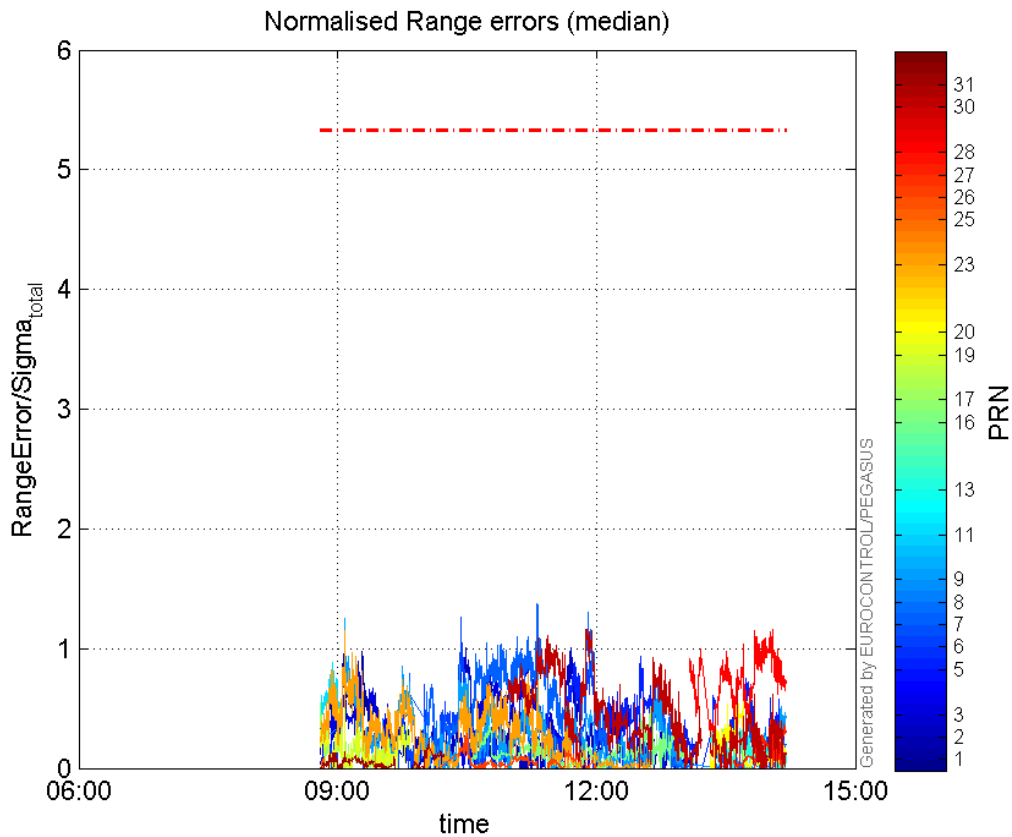
**range errors**

**Number of Overbounding Norm Errors 0**

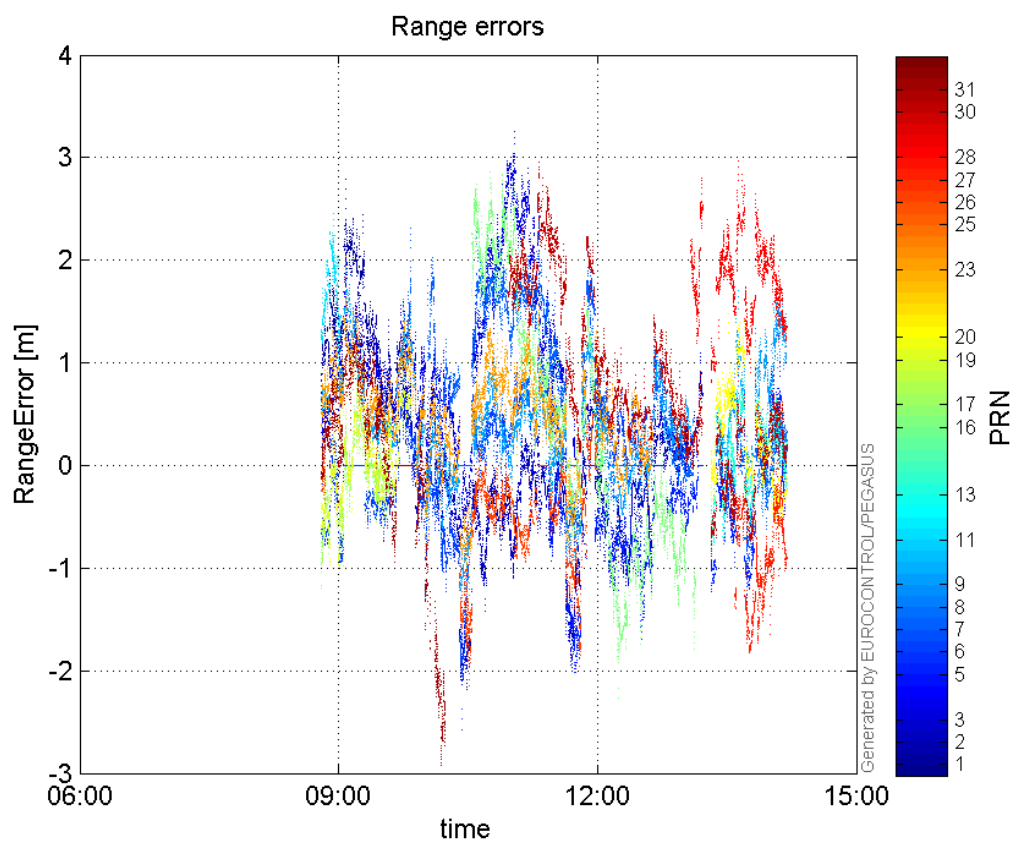
## Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1882	119085	1	1.06027	2.78717	2.62874
1882	128520	2	1.00872	-2.00078	1.98349
1882	126684	3	0.91974	2.8927	3.14512
1882	131458	5	0.937747	-1.6917	1.804
1882	123953	6	1.25935	-2.57205	2.04235
1882	127102	7	1.37269	2.575	1.87589
1882	137420	8	0.101977	0.375289	3.68013
1882	119085	9	1.25193	2.38962	1.90875
1882	118589	11	0.887963	2.45924	2.76953
1882	136950	13	0.394854	0.672579	1.70336
1882	131841	16	0.517571	-1.30385	2.51918
1882	118082	17	0.54787	-1.19784	2.18636
1882	118819	19	0.499214	-0.984314	1.97173
1882	135486	20	0.626466	1.60071	2.55514
1882	119084	23	1.14495	2.03403	1.77652
1882	118215	25	0.0943306	-0.374483	3.96989
1882	124177	26	0.287228	-1.90359	6.62747
1882	136870	27	0.406076	-1.27091	3.12973
1882	136950	28	1.16473	2.23875	1.92213
1882	129183	30	1.16211	2.22558	1.91512
1882	122609	31	0.244012	-1.78842	7.32925

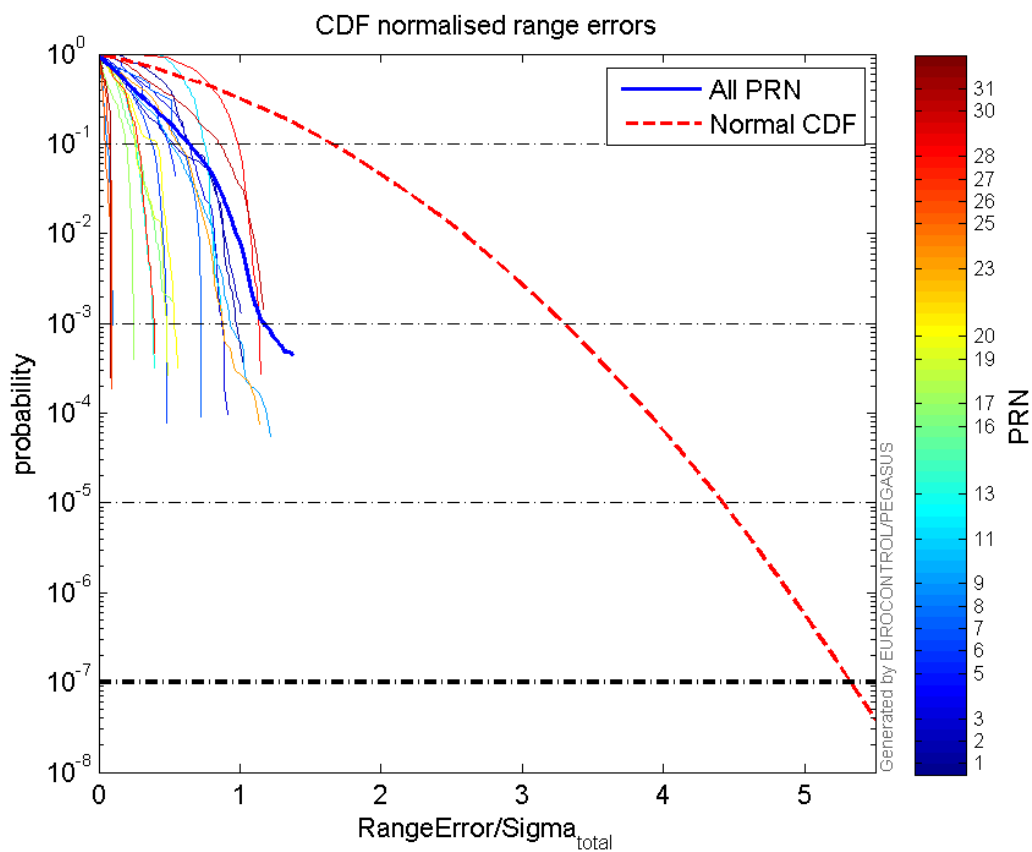
## Normalised Range errors (median):



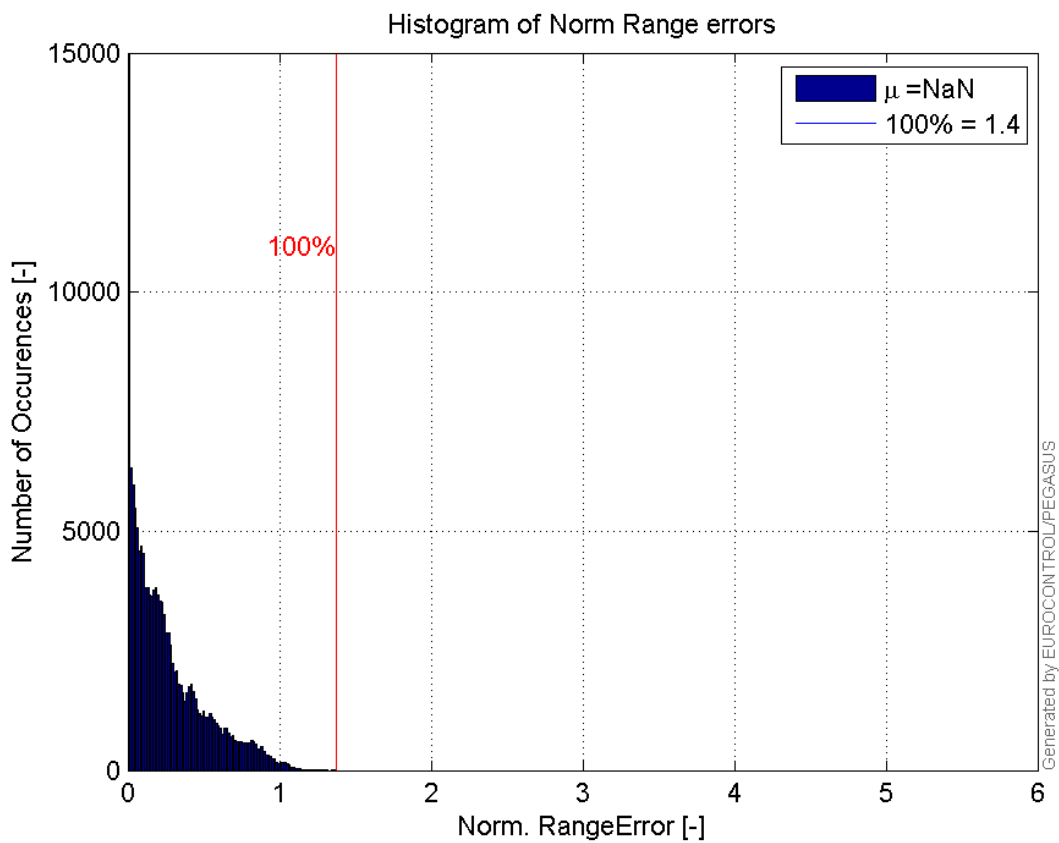
## Range errors:



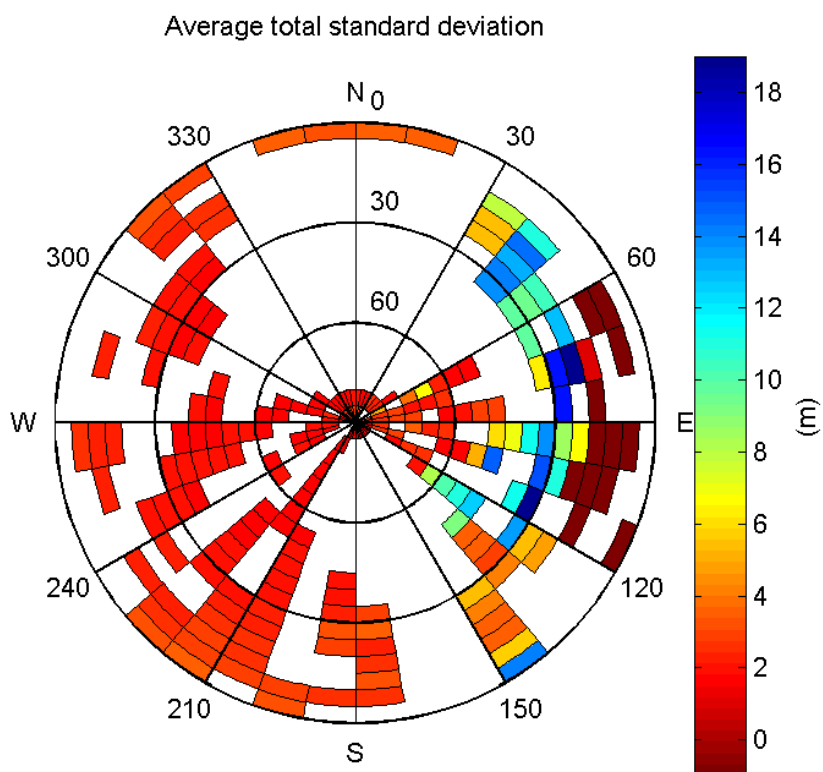
## CDF normalised range errors:



## Histogram of Norm Range errors:

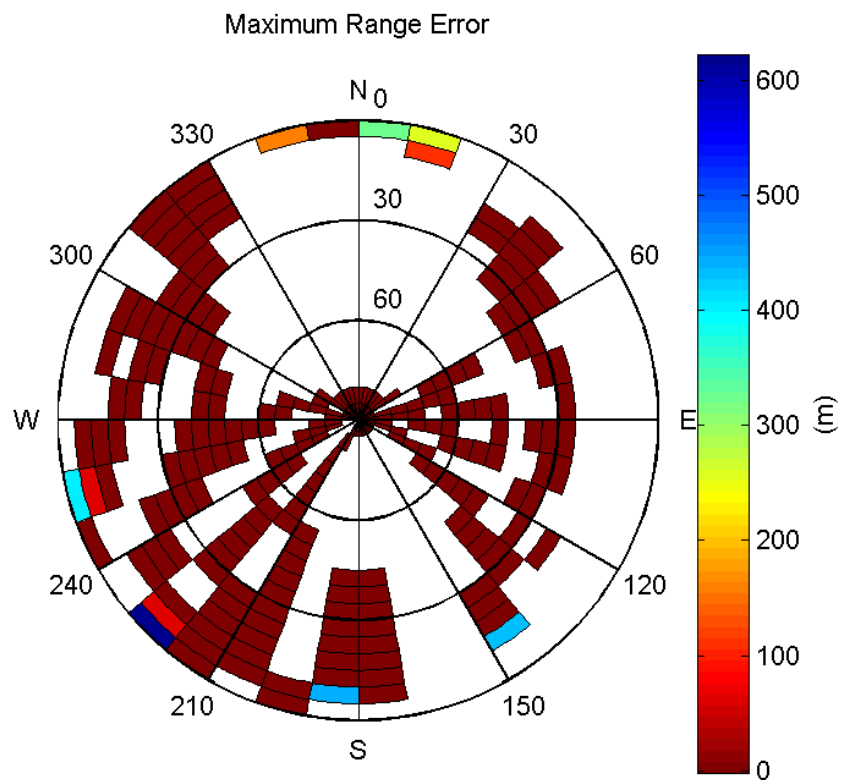


**Sigma Sky Plot:**



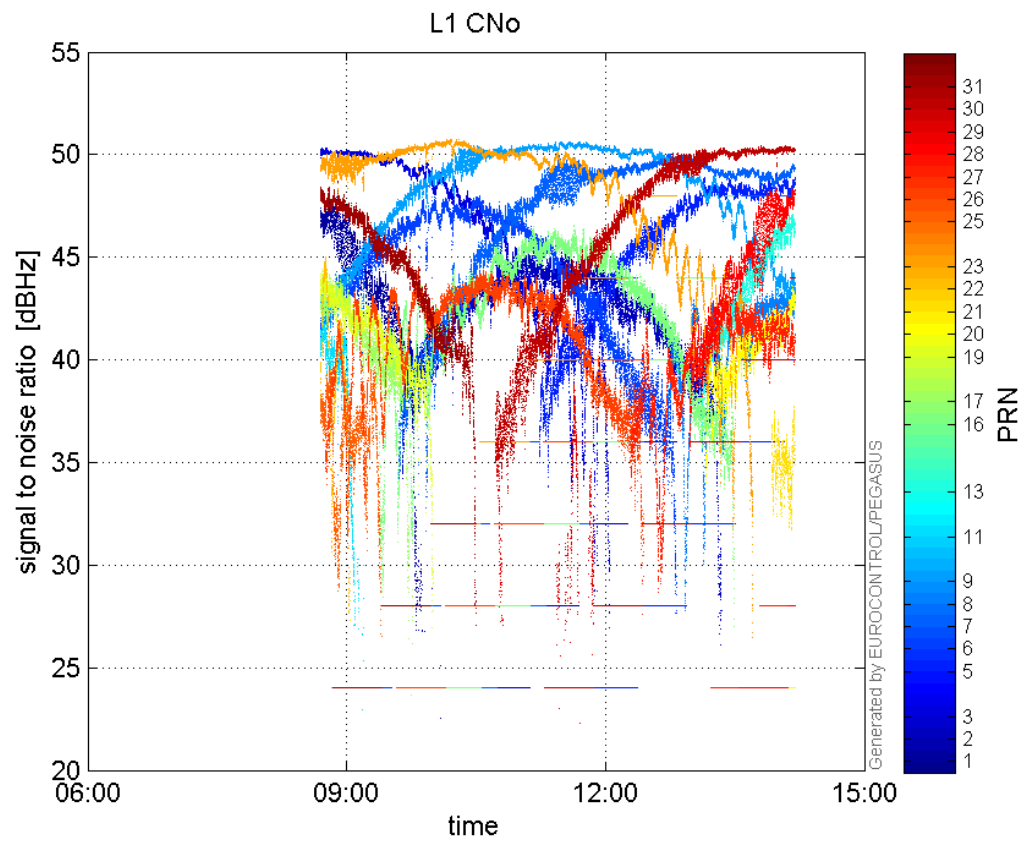
**Norm Error Sky Plot:**



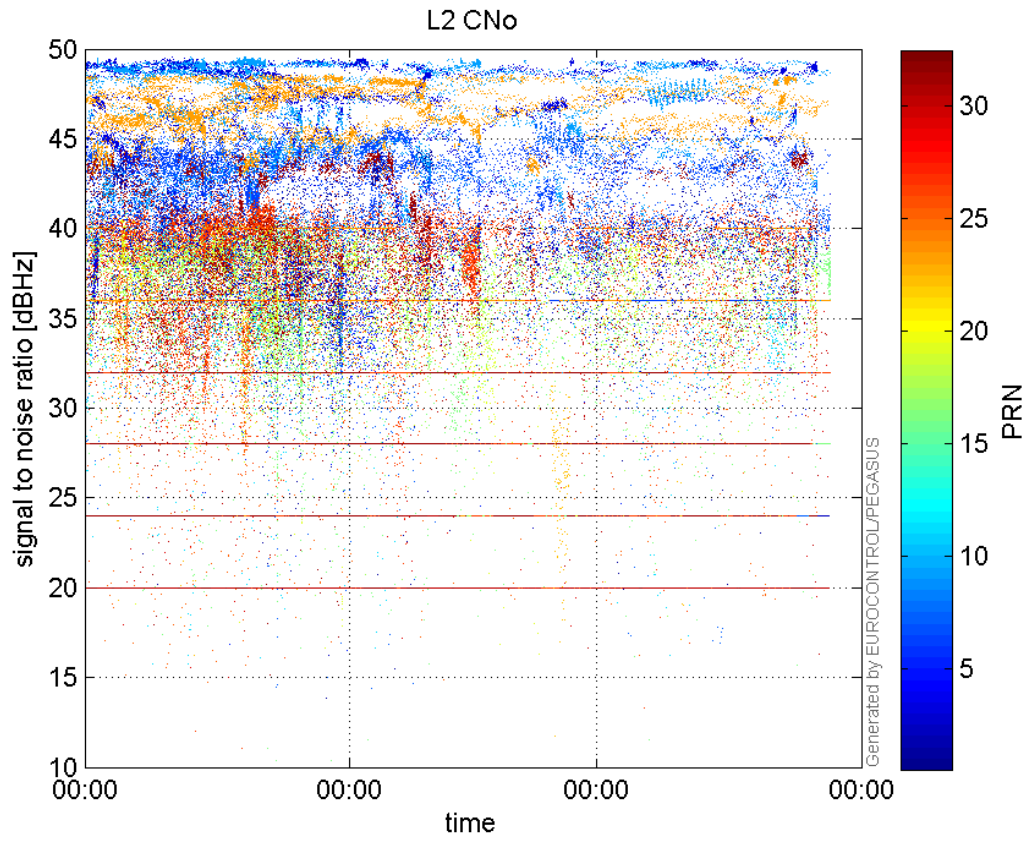


### signal quality

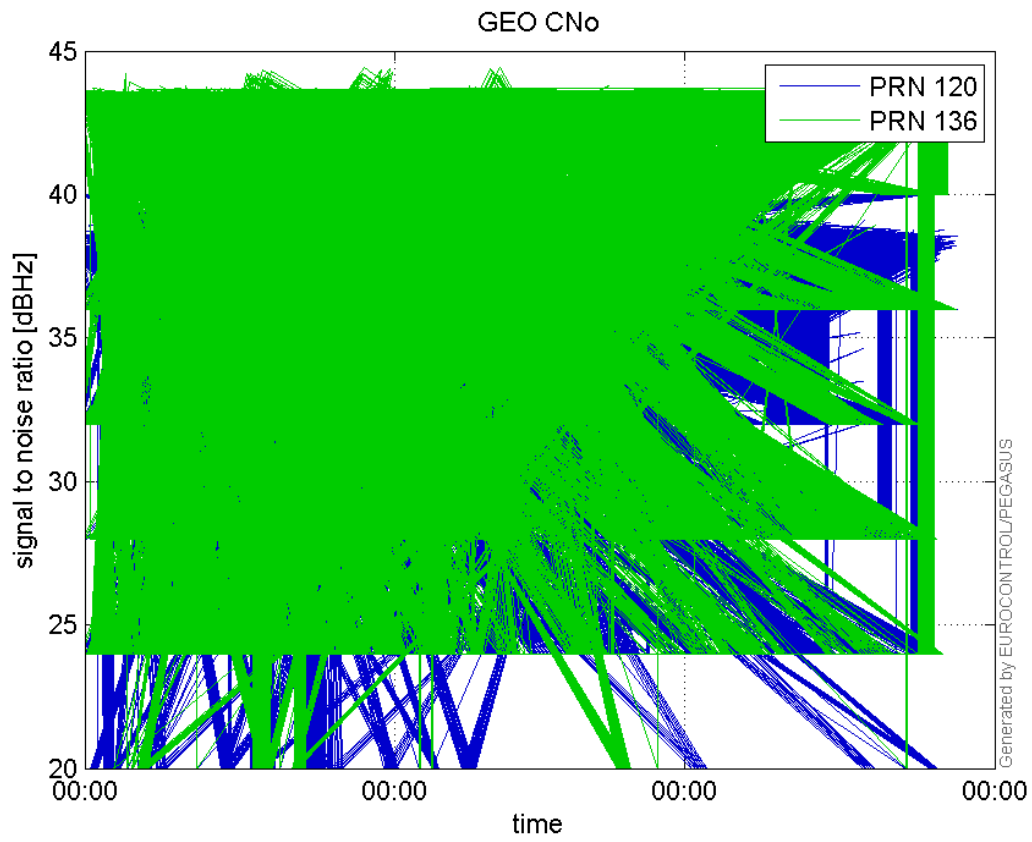
L1 CNo:



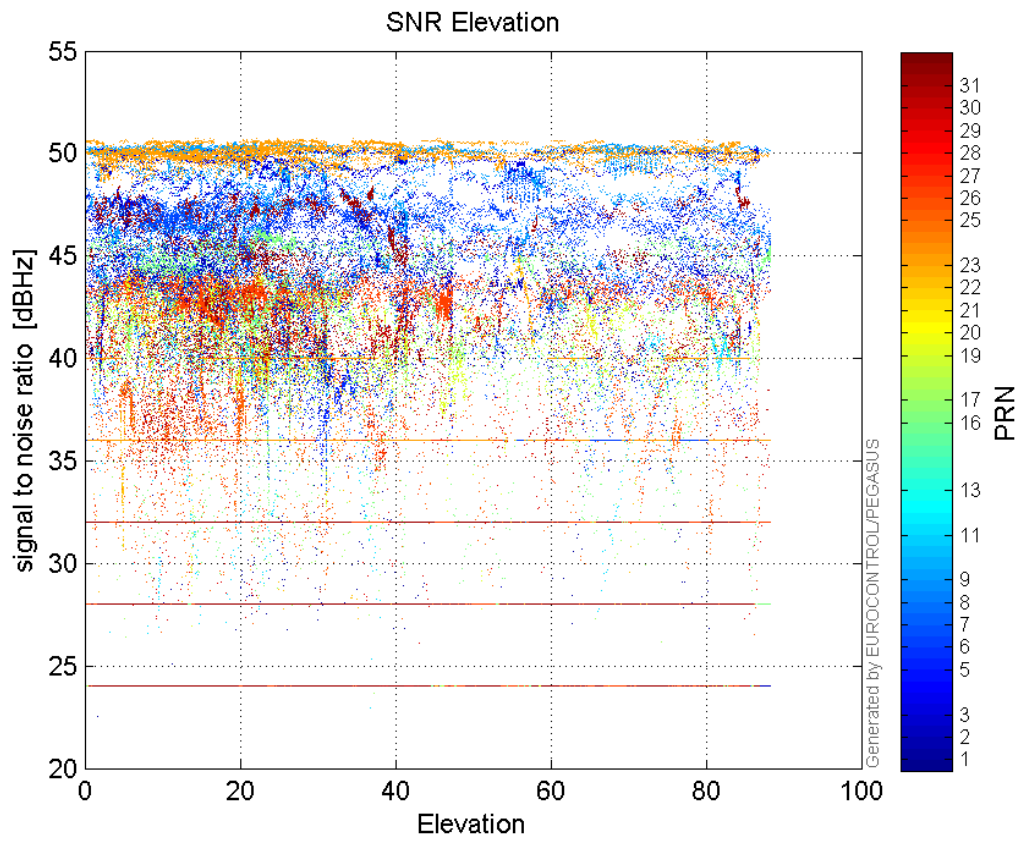
L2 CNo:



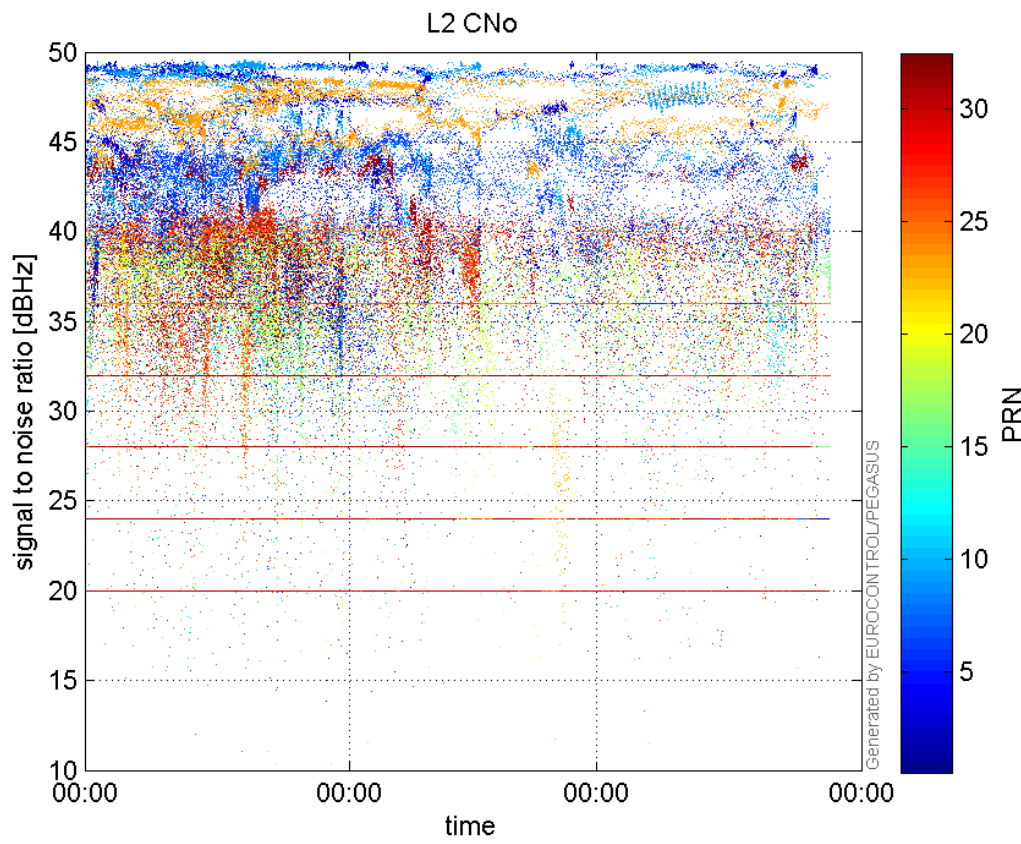
**GEO CNo:**



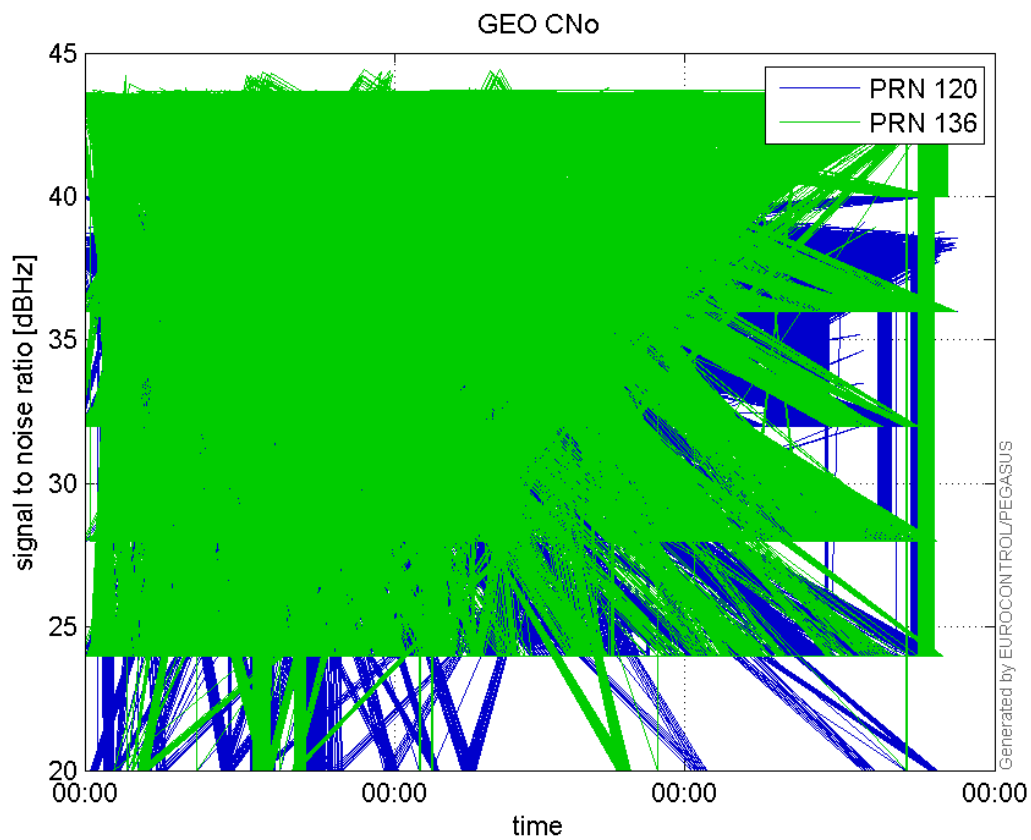
**SNR Elevation:**



**L2 CNo:**

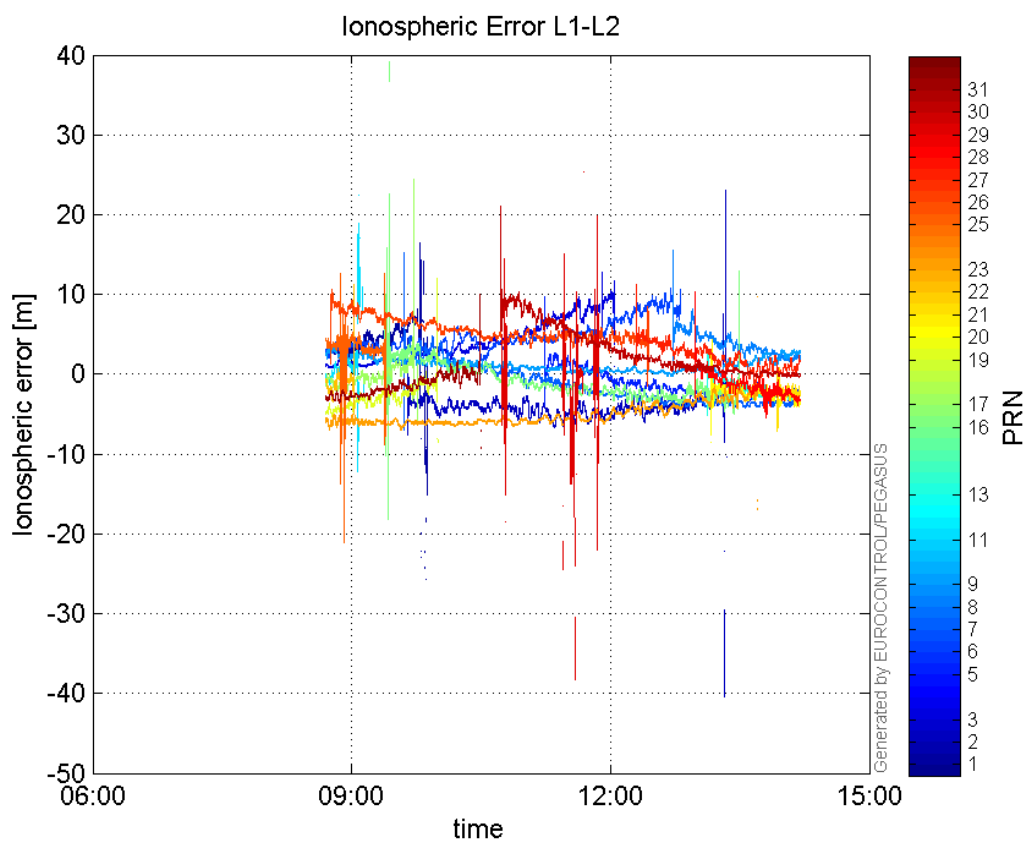


**GEO CNo:**



## 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:/PegasusDateGob/job/2016_02_01_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_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	227.541
mi_numbers	results	0