

# Global View

site Laboratory satellite systems  
 abbreviation NAU  
 country Ukraine  
 city Kiev  
 comment  
 program Pegasus  
 version 4.8.2  
 date 27/10/2015

## SBAS Messages

**start:** 08:50:50.129 26.10.2015 ( week: 1868 sec: 118250.129 )  
**end:** 13:38:29.129 26.10.2015 ( week: 1868 sec: 135509.129 )  
**duration:** 04:47:39 ..

### quality

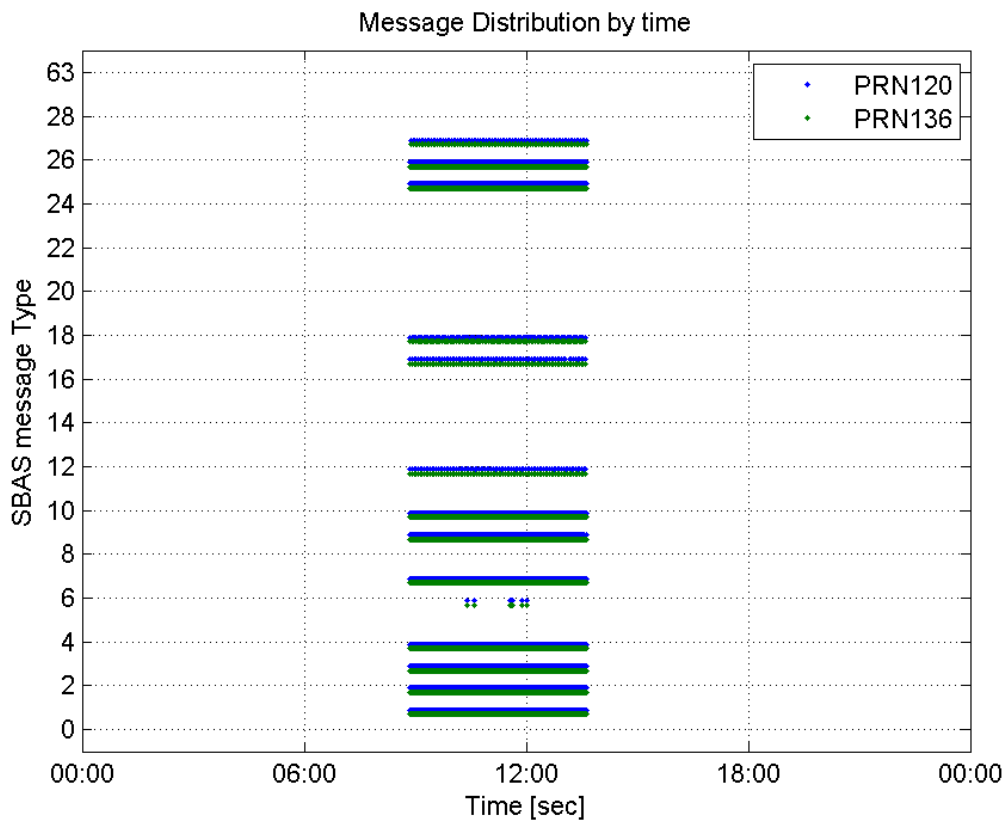
**valid samples** 34511  
**total samples** 34511  
**number of SBAS PRNs** 2

### SBAS SIS Overview

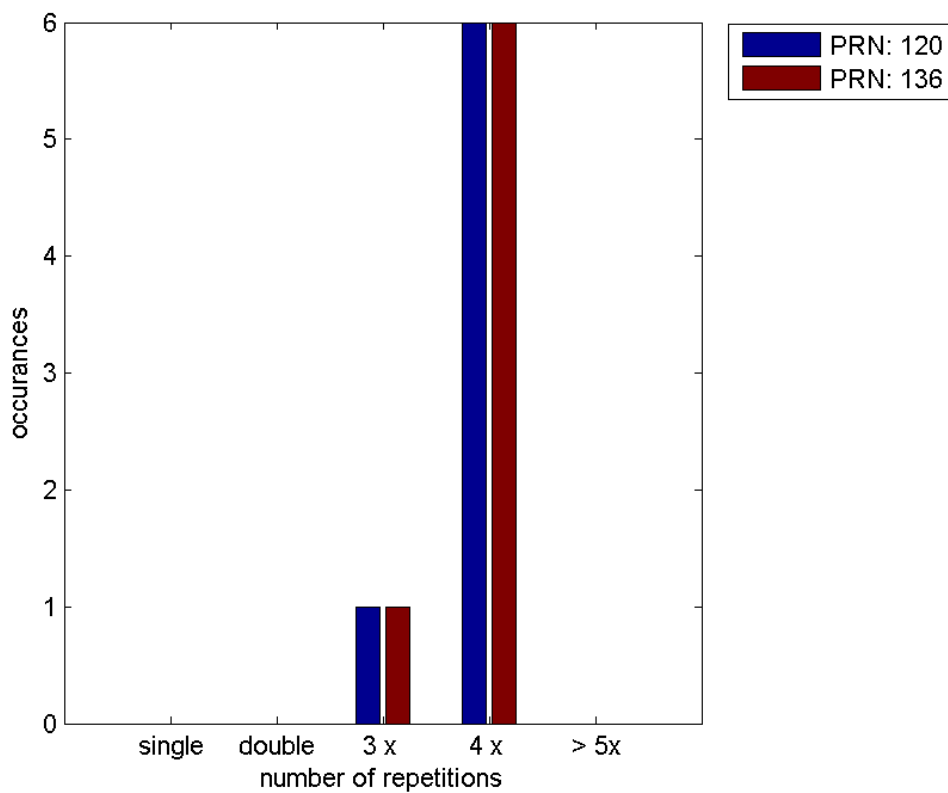
#### Message Type 6 repetitions :

	single	double	3 x	4 x	> 5x
PRN 120	0	0	1	6	0
PRN 136	0	0	1	6	0

#### Message Distribution by time:



**Message Type 6 repetitions:**



**SBAS SIS Analysis**

**PRN 120**

**Broadcast SBAS Messages :**

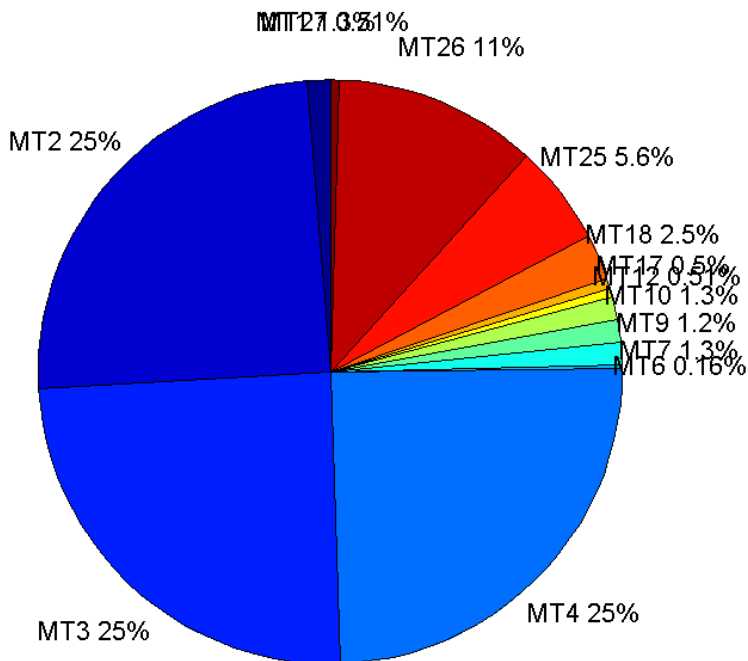
	number of messages	%
MT 0	0	0
MT 1	216	1.25174
MT 2	4255	24.6581
MT 3	4254	24.6523
MT 4	4253	24.6465
MT 5	0	0
MT 6	28	0.162262
MT 7	216	1.25174
MT 9	215	1.24594
MT 10	216	1.25174
MT 12	88	0.509968
MT 17	87	0.504172
MT 18	440	2.54984
MT 24	0	0
MT 25	964	5.58646
MT 26	1936	11.2193
MT 27	88	0.509968
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	17256	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	87	80.0233	0	0	0
MT 2	4	8	4.05665	7	0	0
MT 3	4	8	4.05761	8	0	0
MT 4	4	8	4.05762	8	0	0
MT 5	--	--	--	--	--	--
MT 6	1	3499	215.481	6	6	6
MT 7	76	86	79.893	0	0	0
MT 9	76	160	80.3224	0	0	0
MT 10	76	84	80	0	0	0
MT 12	187	201	196.287	87	0	0
MT 17	186	384	198.523	0	0	0
MT 18	1	168	38.9613	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	52	17.9076	0	0	0
MT 26	3	41	8.91628	0	0	0
MT 27	190	202	196.149	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	216	1.25181
MT 2	4253	24.6479
MT 3	4253	24.6479
MT 4	4252	24.6421
MT 5	0	0
MT 6	28	0.162272
MT 7	216	1.25181
MT 9	216	1.25181
MT 10	216	1.25181
MT 12	88	0.509997
MT 17	88	0.509997
MT 18	440	2.54999
MT 24	0	0

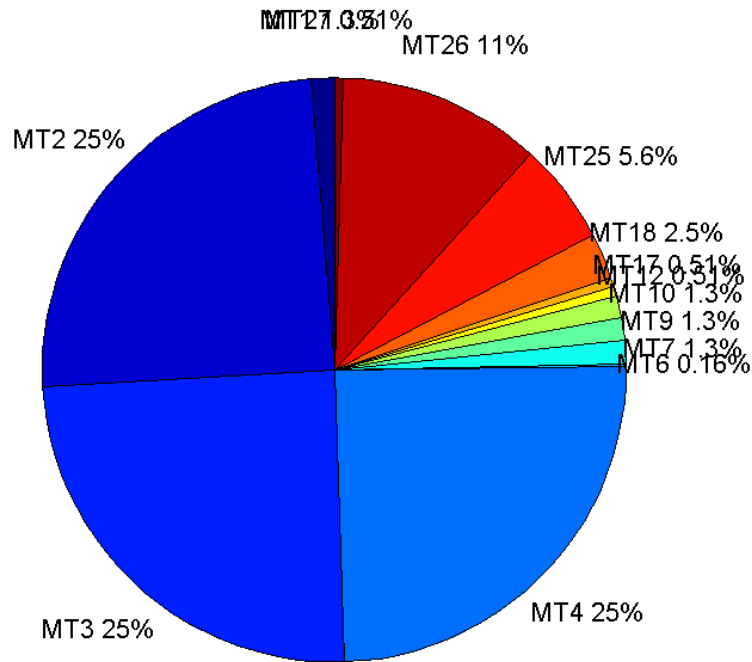
MT 25	964	5.58679
MT 26	1937	11.2257
MT 27	88	0.509997
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	17255	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	84	80.0512	0	0	0
MT 2	4	8	4.05856	8	0	0
MT 3	4	8	4.05833	8	0	0
MT 4	4	12	4.05928	8	0	0
MT 5	--	--	--	--	--	--
MT 6	1	3500	215.481	6	6	6
MT 7	76	84	80.0512	0	0	0
MT 9	74	82	80.0512	0	0	0
MT 10	76	82	80.0512	0	0	0
MT 12	188	202	195.943	87	0	0
MT 17	188	205	195.989	0	0	0
MT 18	4	180	38.8861	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	60	17.918	0	0	0
MT 26	1	61	8.90651	0	0	0
MT 27	188	201	195.989	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:/PEGASUS_DAT_job/JOB/2015_10_26EGNOS/01_User/01_User
Outputfile	System	D:/PEGASUS_DAT_job/JOB/2015_10_26EGNOS/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:** 08:50:50 26.10.2015 ( week: 1868 sec: 118250 )  
**end:** 13:38:29 26.10.2015 ( week: 1868 sec: 135509 )  
**duration:** 04:47:40 ..

#### quality

**valid samples** 16889  
**total samples** 17260

## Event tables

**Position discontinuity events type** no (0)  
**APV-I discontinuity events type** long  
**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>	128298	1.8091	9.49094	0.190613	1.30569	20.082	0.0650178
<b>max normVer</b>	132809	2.73005	21.595	0.12642	-3.42402	15.8093	0.216582
<b>max HPE</b>	132585	2.86763	28.0459	0.102248	-3.38427	26.787	0.12634
<b>max VPE</b>	132809	2.73005	21.595	0.12642	-3.42402	15.8093	0.216582
<b>min HPL</b>	121679	0.906345	9.20732	0.0984375	-0.0938163	13.2863	0.00706113
<b>min VPL</b>	135015	1.38044	10.3535	0.133331	-0.910351	12.2415	0.074366

## APV-I discontinuity events :

#	Epoch	duration	stable period
1	132828	54	14207
2	134469	208	1511

## APV-35m discontinuity events :

#	Epoch	duration	stable period
1	130034	208	11413
2	132828	131	2586
3	133237	90	278
4	133340	69	13
5	134469	238	1060

## LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	130034	208	11413
2	132828	131	2586
3	133237	90	278
4	133340	69	13
5	134469	238	1060

## First Glance analysis

**Duration** 17260  
**Number of Samples** 17260  
**Number of invalid sample** 371  
**Number of no position solution samples** 0  
**Number of missing sample** 0  
**Logging Loss** 0  
**Processing Loss** 2.1495  
**Number of Misleading Information** 0  
**Data gaps** 0  
**Discontinuities** 0

**Number of Samples :**

Valid	APV-1	LPV-200	CAT-1	APV-35m
16889	16554	16153	0	16153

**Accuracy statistics :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.7617	1.75053	1.75355	NaN	1.75355
HPEscale 95%	NaN	6.2371	6.25267	NaN	6.25267
VPE 95%	2.07266	2.08506	2.12237	NaN	2.12237
VPEscale 95%	NaN	4.706	3.31804	NaN	3.31804

**Availability :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.980165	0.956421	0	0.956421
measurements	0.978505	0.959096	0.935863	0	0.935863
Operational	0.978505	0.959096	0.935863	0	0.935863

**Discontinuity events :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	28	5	--	5
Long	--	2	5	--	5
Independent	--	2	4	--	4
P(disc.)	NaN	0.00181225	0.00371448	NaN	0.00371448
P(slide)	NaN	0.00368491	0.00451928	NaN	0.00451928

**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	16889	16554	16153	0	16153
SIS Availability	1	0.980165	0.956421	0	0.956421
Local Availability	0.978505	0.959096	0.935863	0	0.935863
Operational Availability	0.978505	0.959096	0.935863	0	0.935863
HPE 95%	1.7617	1.75053	1.75355	NaN	1.75355
HPEscale 95%	NaN	6.2371	6.25267	NaN	6.25267
VPE 95%	2.07266	2.08506	2.12237	NaN	2.12237
VPEscale 95%	NaN	4.706	3.31804	NaN	3.31804
All Discontinuity Events	--	28	5	--	5
Long Discontinuity Events	--	2	5	--	5
Independent Discontinuity Events	--	2	4	--	4
P(discontinuity)	NaN	0.00181225	0.00371448	NaN	0.00371448
P(sliding window)	NaN	0.00368491	0.00451928	NaN	0.00451928
All Integrity Events	0	0	0	0	0
Horizontal Integrity Events	0	0	0	0	0



Vertical Integrity Events

0

0

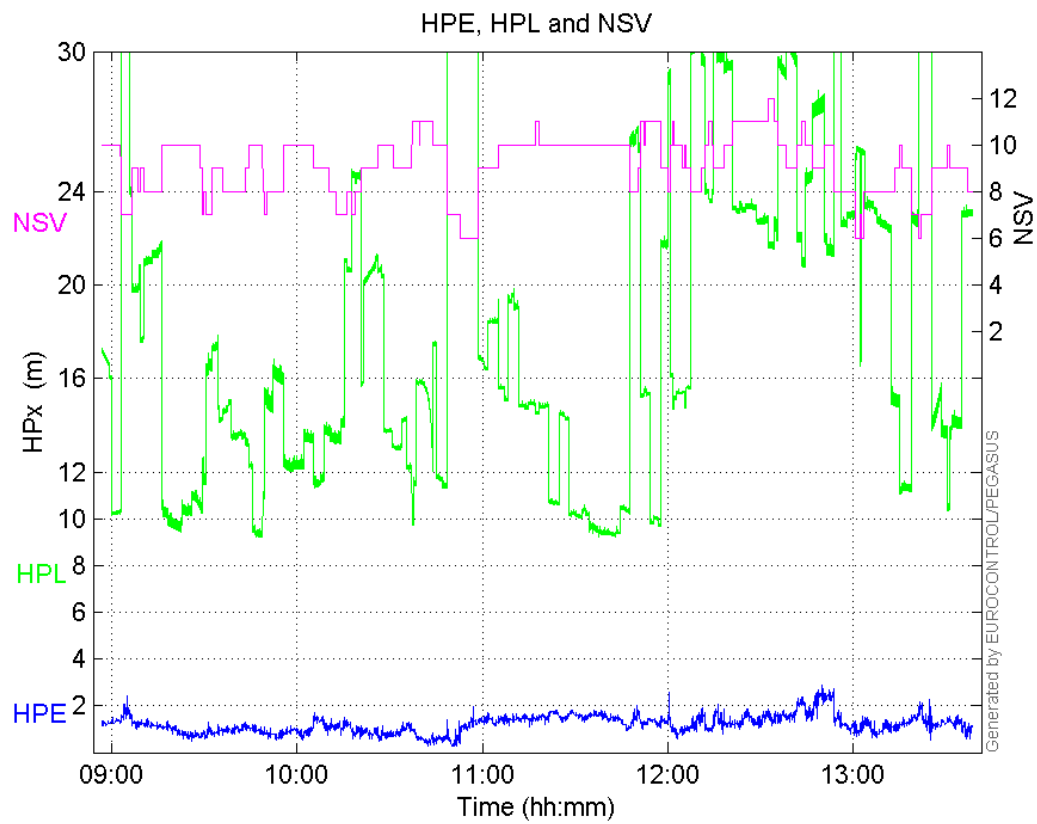
0

0

0

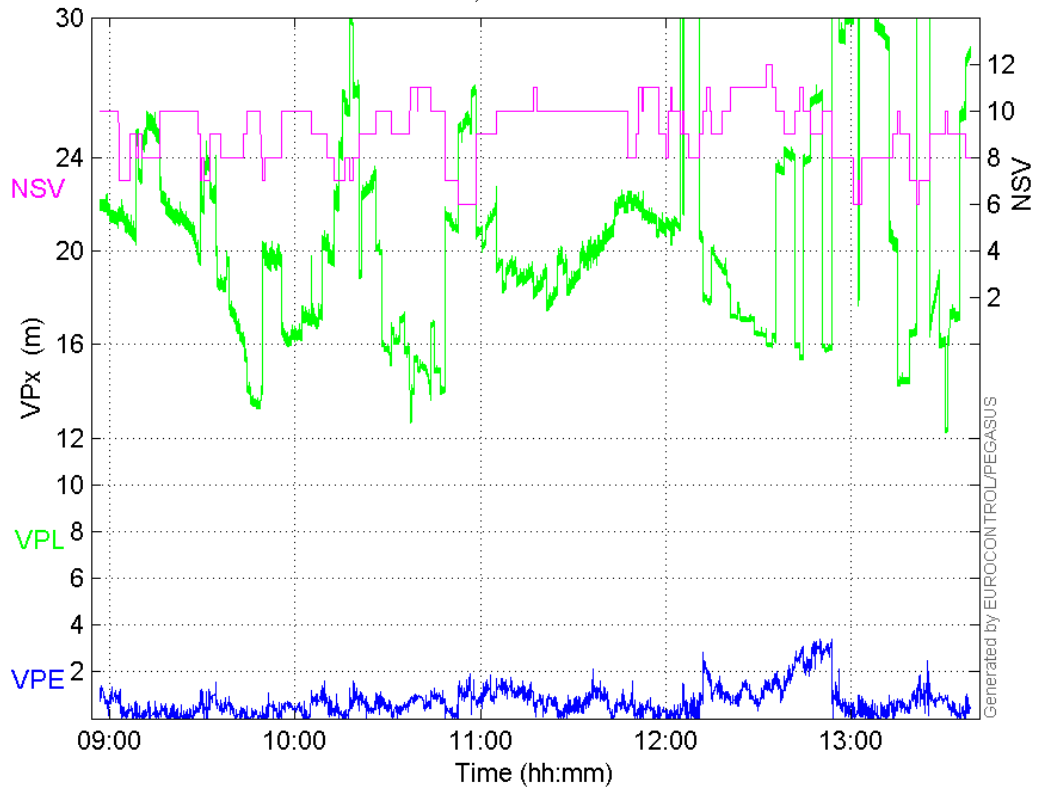
## Time Series

HPE, HPL and NSV:



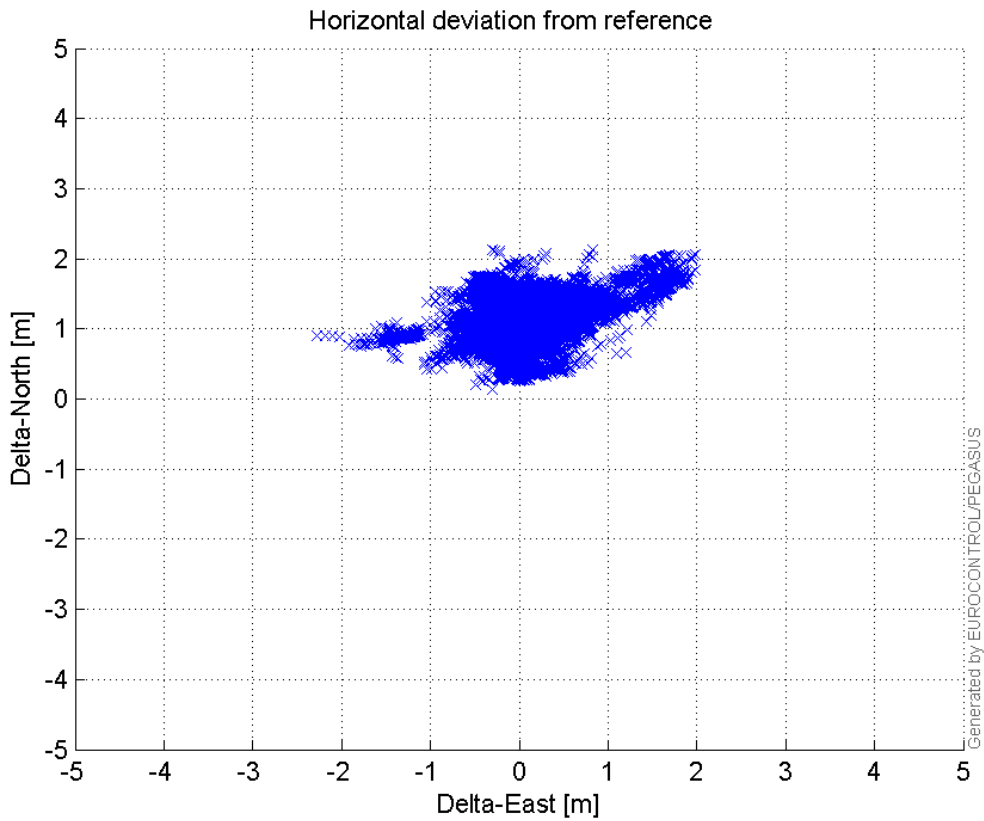
VPE, VPL and NSV:

VPE, VPL and NSV



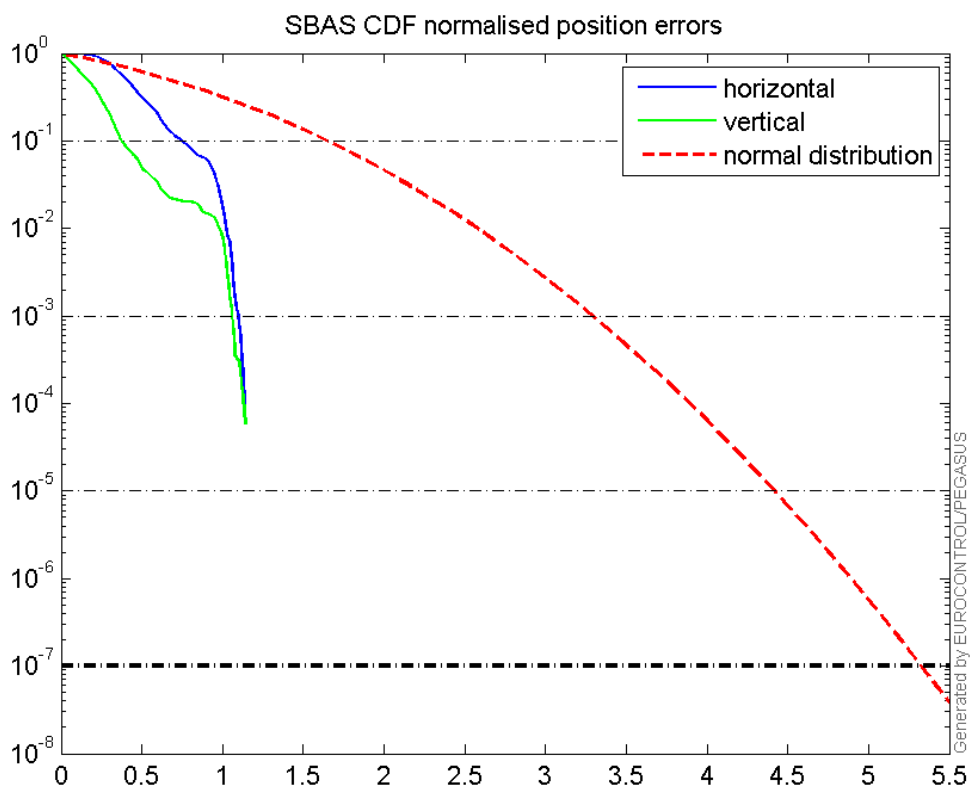
Horizontal deviation

Horizontal deviation from reference :



CDF position

## SBAS CDF position domain:



## Statistics

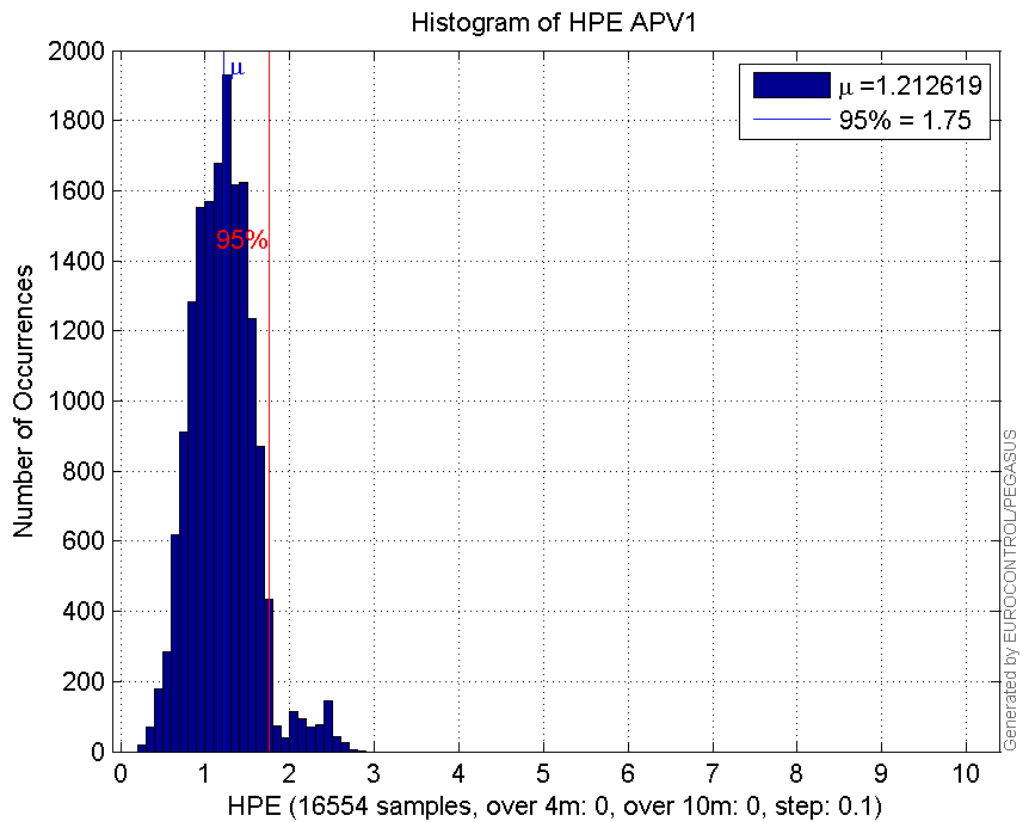
<b>number</b>	16554
<b>sum</b>	20073.695
<b>sum2</b>	26658.092
<b>prctile95</b>	1.75053
<b>prctile99</b>	2.453847
<b>number</b>	16554
<b>sum</b>	12100.161
<b>sum2</b>	15162.79
<b>prctile95</b>	2.0850561
<b>prctile99</b>	3.0144117
<b>number</b>	16554
<b>sum</b>	300711.5
<b>sum2</b>	6288495.7
<b>prctile95</b>	30.4512
<b>prctile99</b>	37.186676
<b>number</b>	16554
<b>sum</b>	344200.12
<b>sum2</b>	7541526.6
<b>prctile95</b>	30.1203
<b>prctile99</b>	37.679496
<b>number</b>	16554
<b>sum</b>	1251.8414
<b>sum2</b>	114.32824
<b>prctile95</b>	0.15592745
<b>prctile99</b>	0.17045152
<b>number</b>	16554

**sum** 618.58244  
**sum2** 41.136473  
**prctile95** 0.094119977  
**prctile99** 0.18417302  
**number** 16153  
**sum** 19593.397  
**sum2** 26062.849  
**prctile95** 1.7535491  
**prctile99** 2.4551958  
**number** 16153  
**sum** 11921.827  
**sum2** 15036.277  
**prctile95** 2.1223742  
**prctile99** 3.0169266  
**number** 16153  
**sum** 289005.3  
**sum2** 5940833.6  
**prctile95** 30.395375  
**prctile99** 37.112495  
**number** 16153  
**sum** 329065.71  
**sum2** 6968809.7  
**prctile95** 29.2006  
**prctile99** 30.916996  
**number** 16153  
**sum** 1235.3891  
**sum2** 113.64071  
**prctile95** 0.15631673  
**prctile99** 0.17070165  
**number** 16153  
**sum** 613.91518  
**sum2** 41.053154  
**prctile95** 0.094801008  
**prctile99** 0.18491161

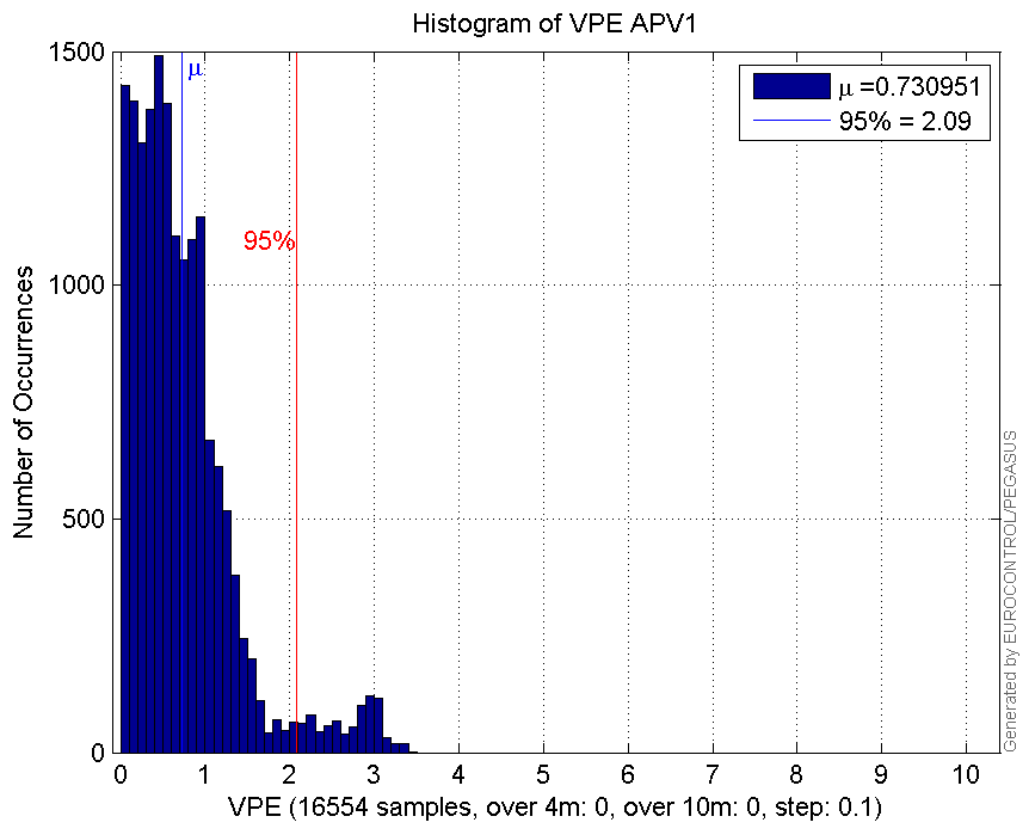
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	1.21262	0.374079	1.20519	1.75053	2.45385	1.269
<b>HPL</b>	18.1655	7.06369	15.6515	30.4512	37.1867	19.4905
<b>VPE</b>	0.730951	0.617813	0.592507	2.08506	3.01441	0.957058
<b>VPL</b>	20.7926	4.82099	20.0952	30.1203	37.6795	21.3441

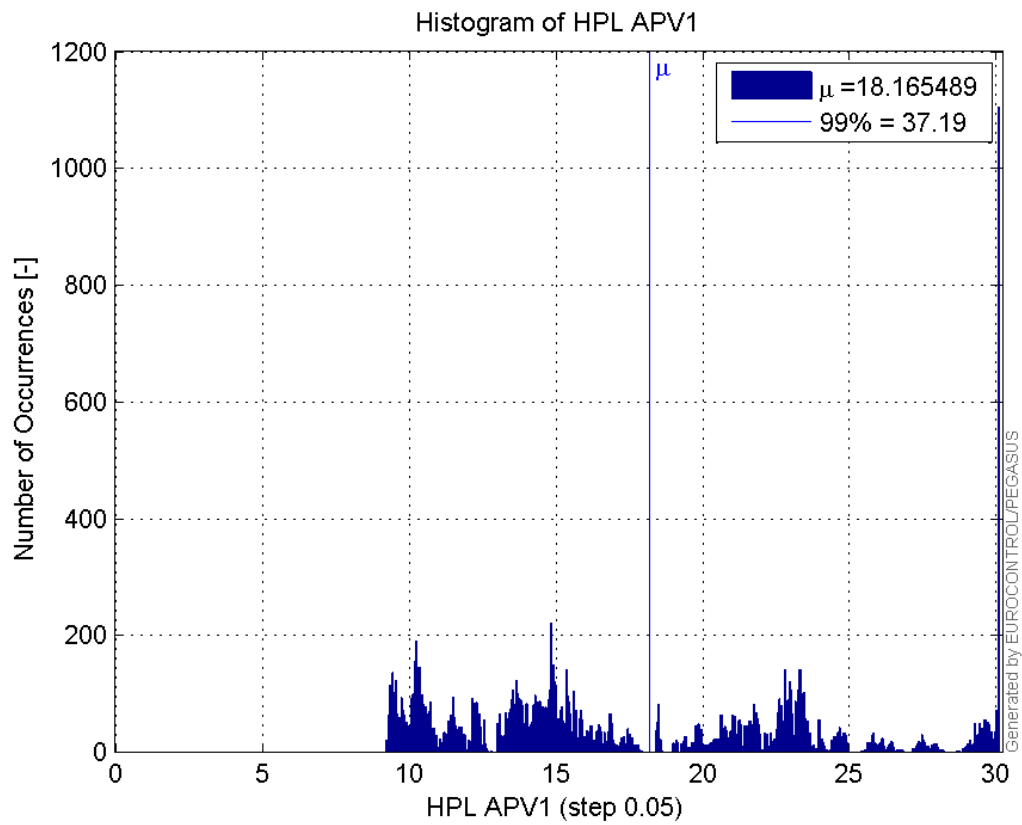
**Histogram of HPE APV1:**



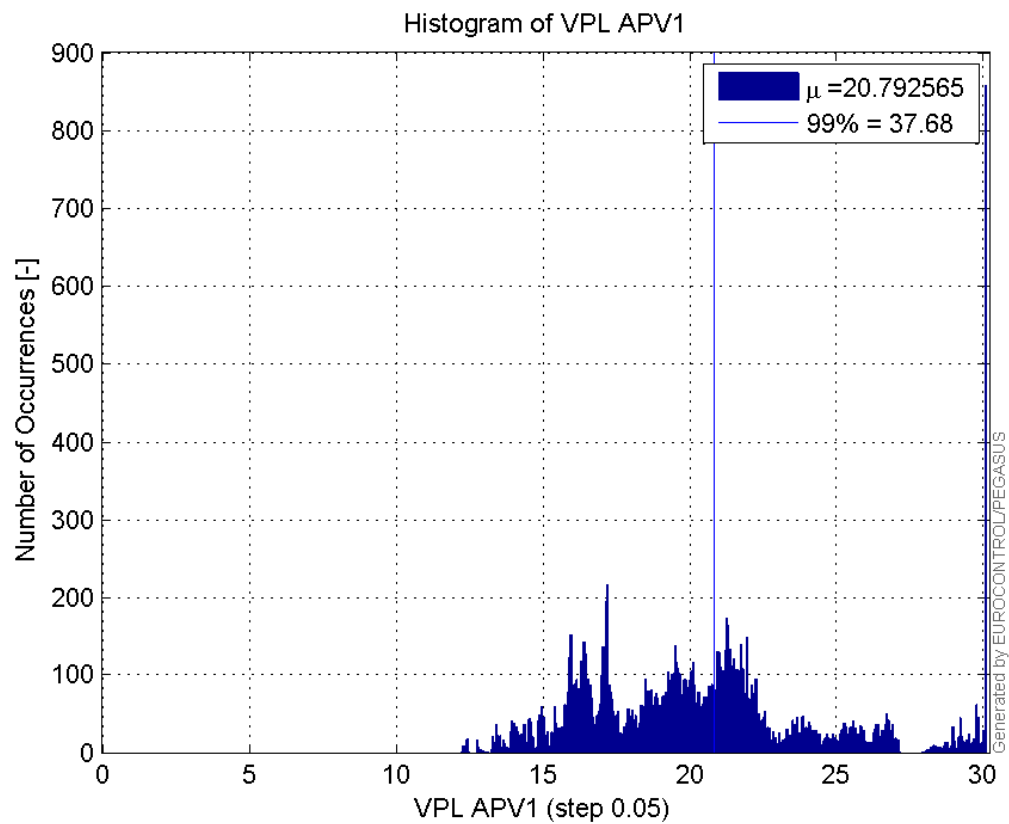
Histogram of VPE APV1:



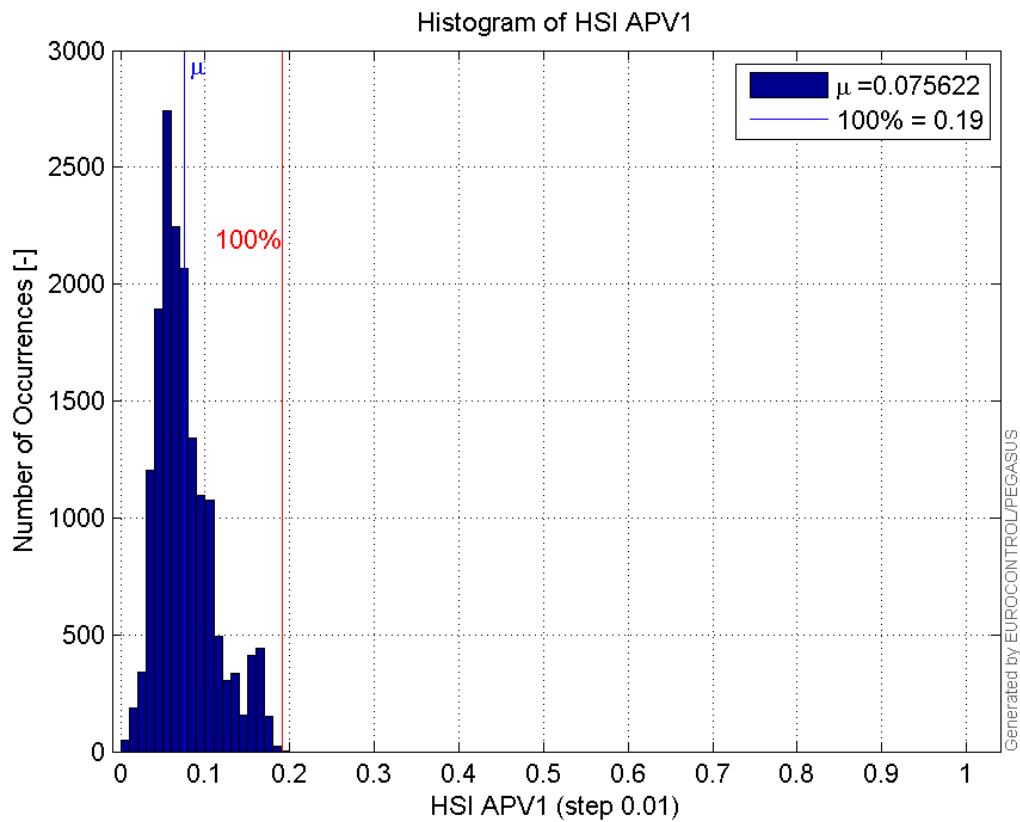
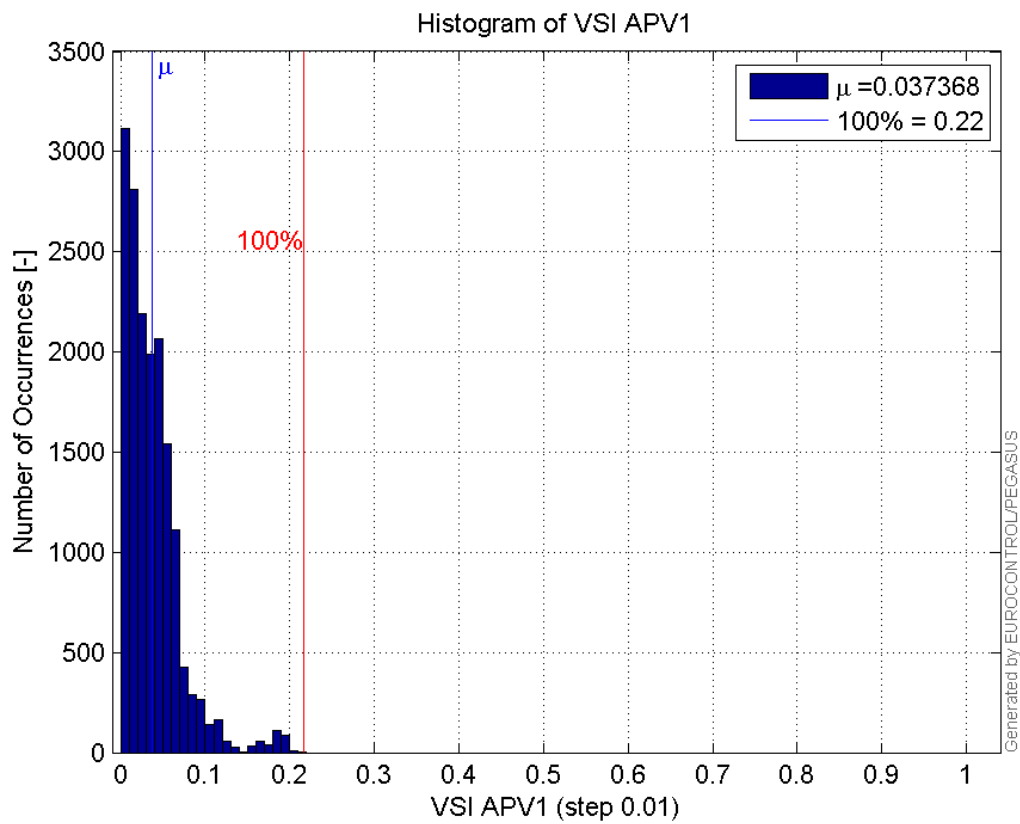
Histogram of HPL APV1:

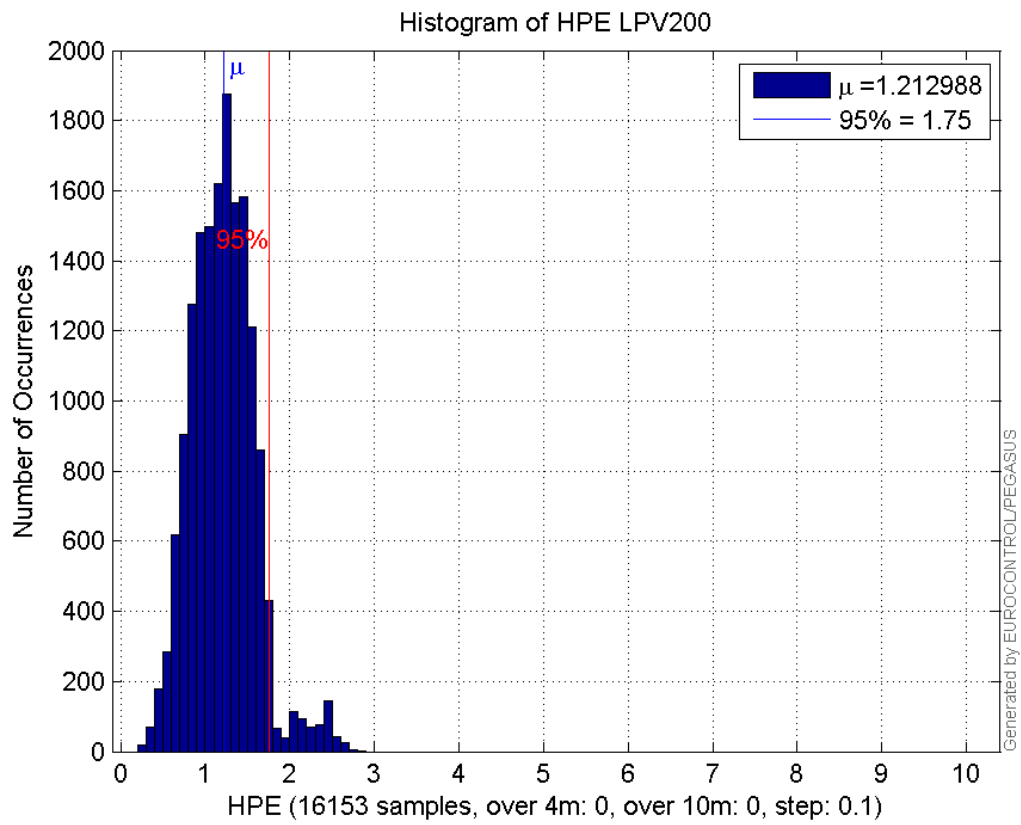


Histogram of VPL APV1:

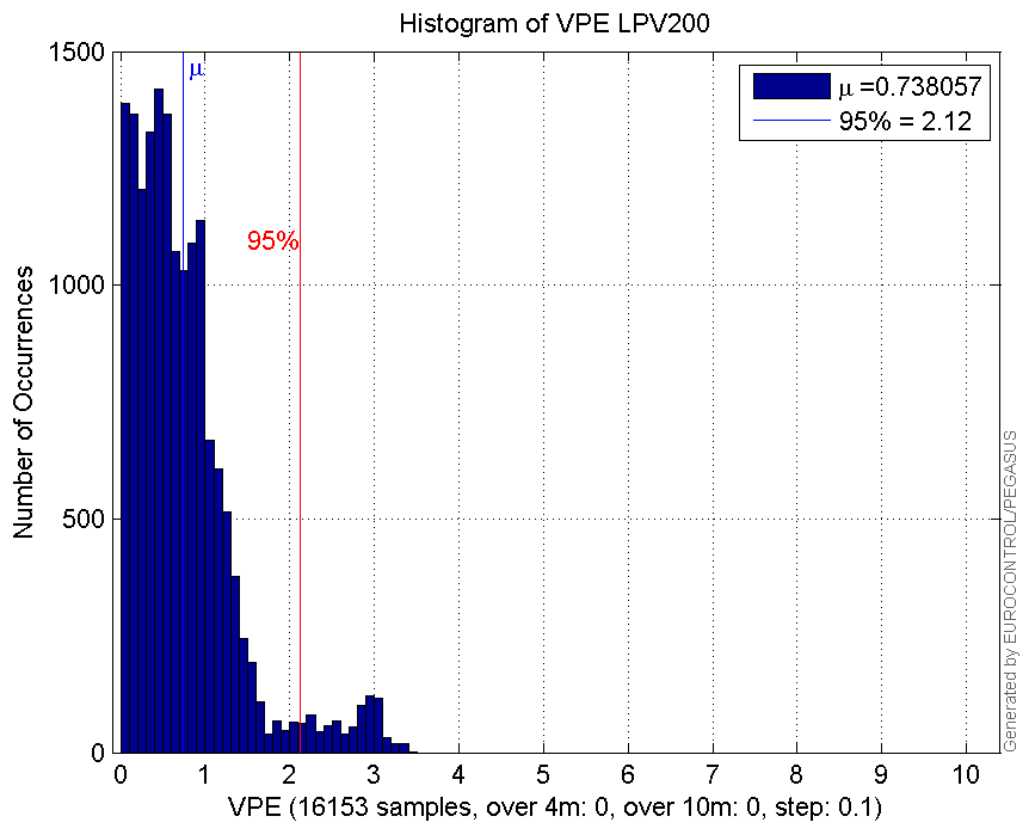


Histogram of HSI APV1:

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

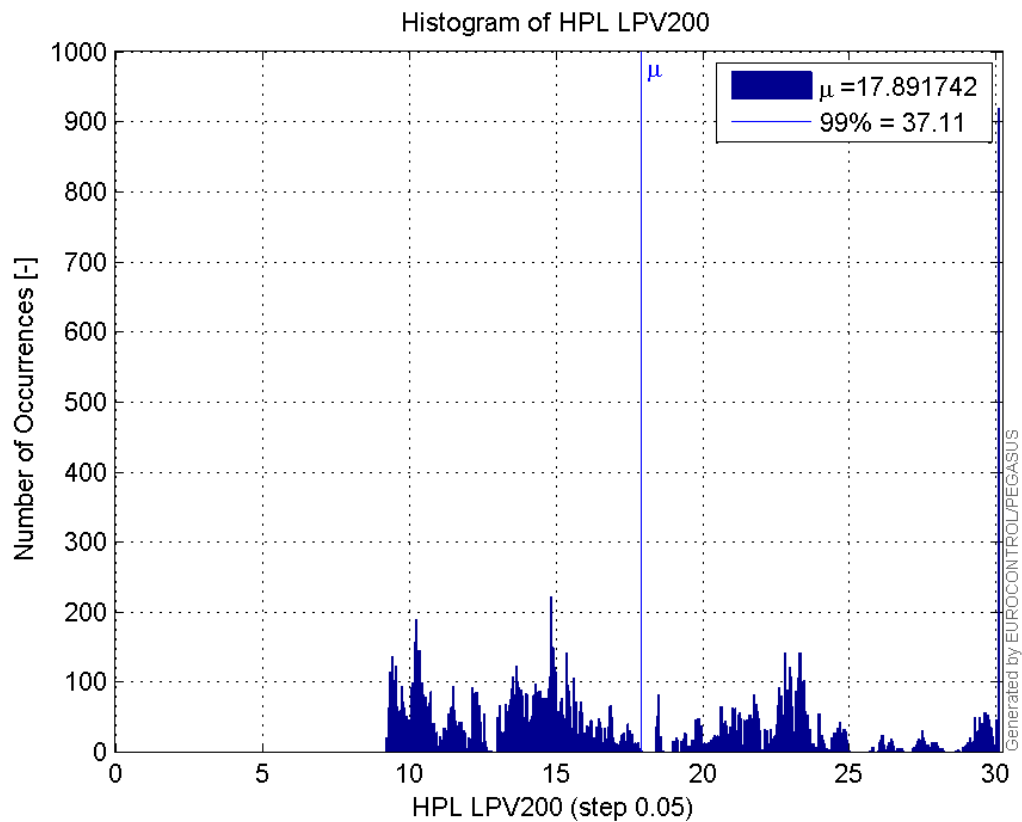


Histogram of VPE LPV200:

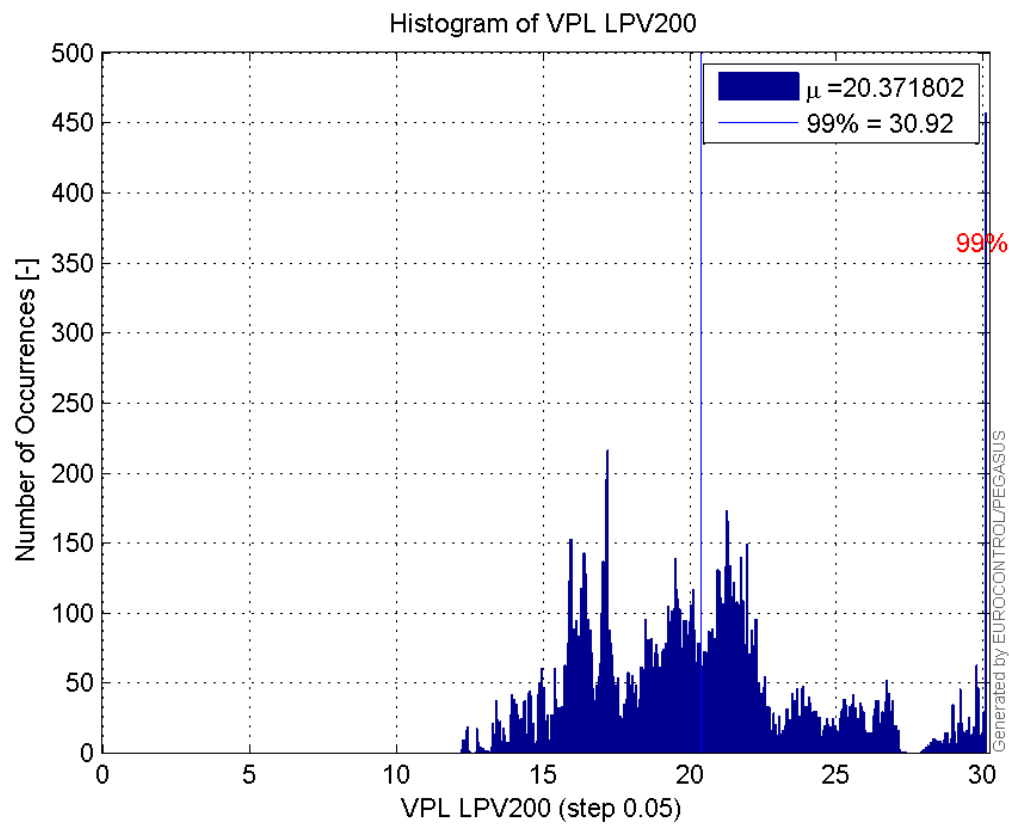


Histogram of HPL LPV200:

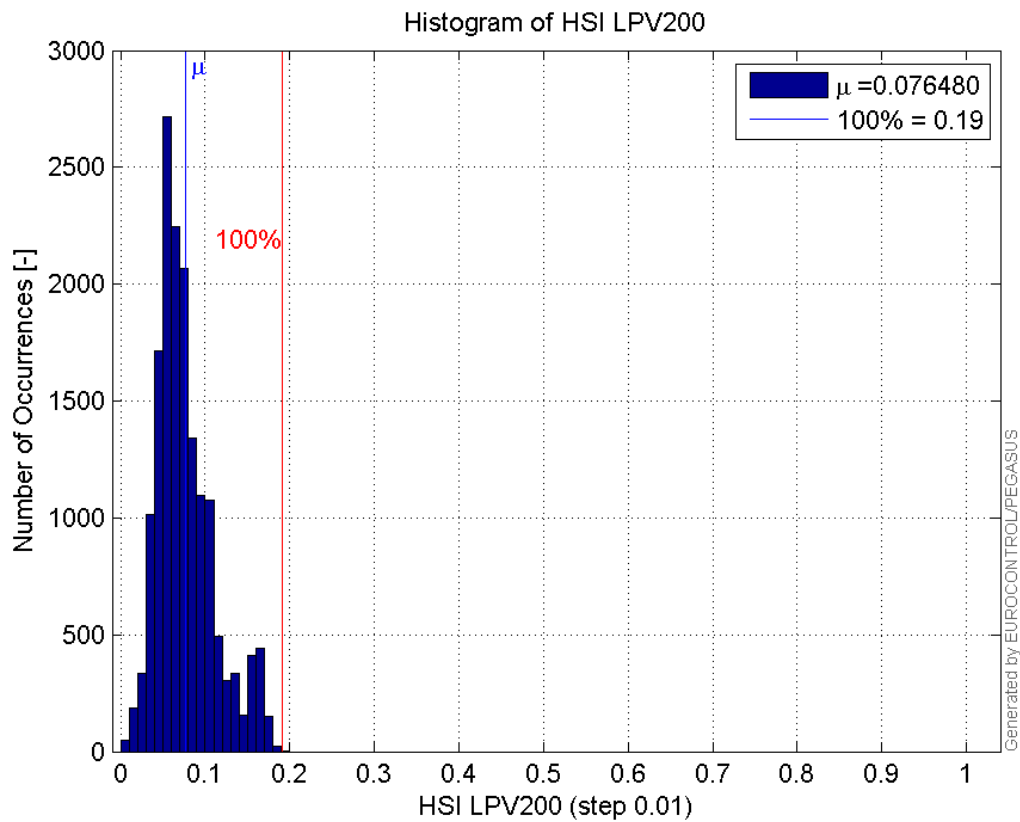




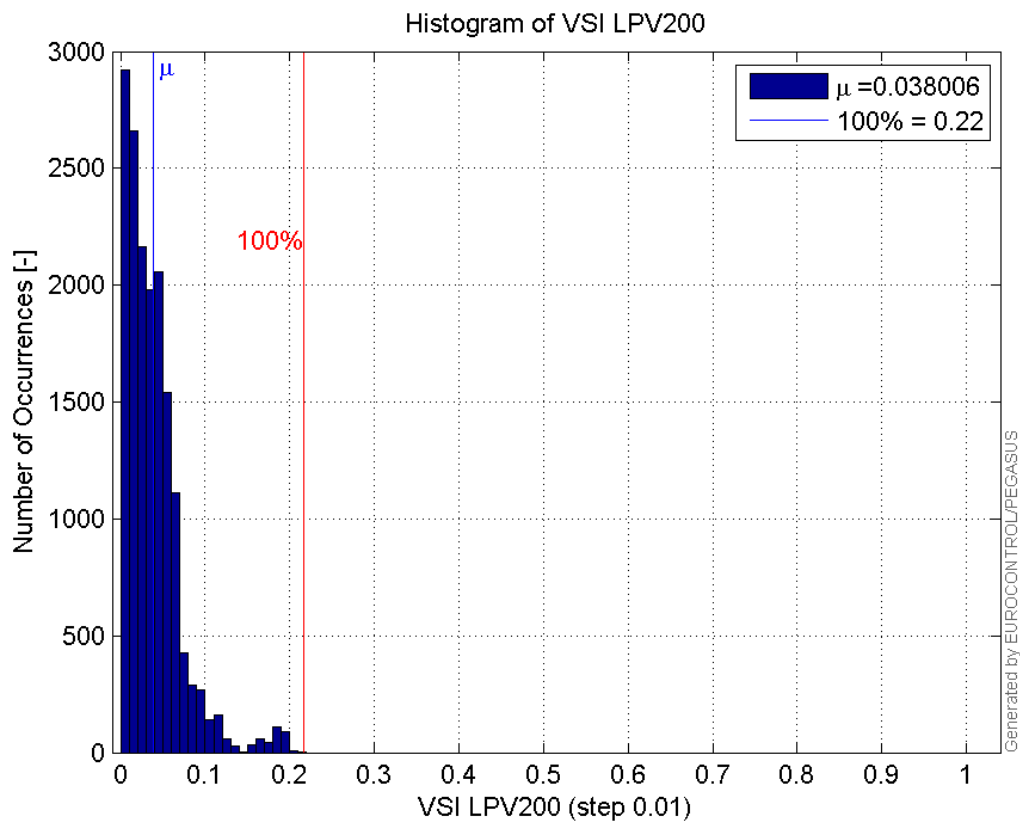
Histogram of VPL LPV200:



Histogram of HSI LPV200:

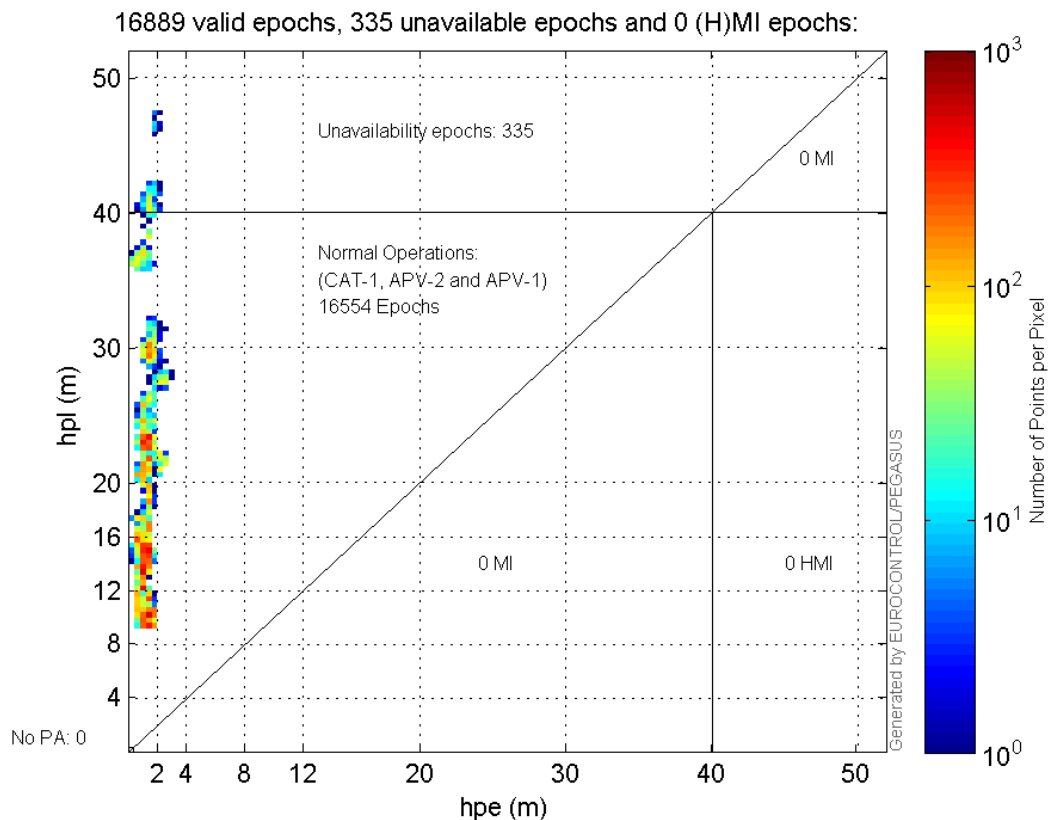


Histogram of VSI LPV200:

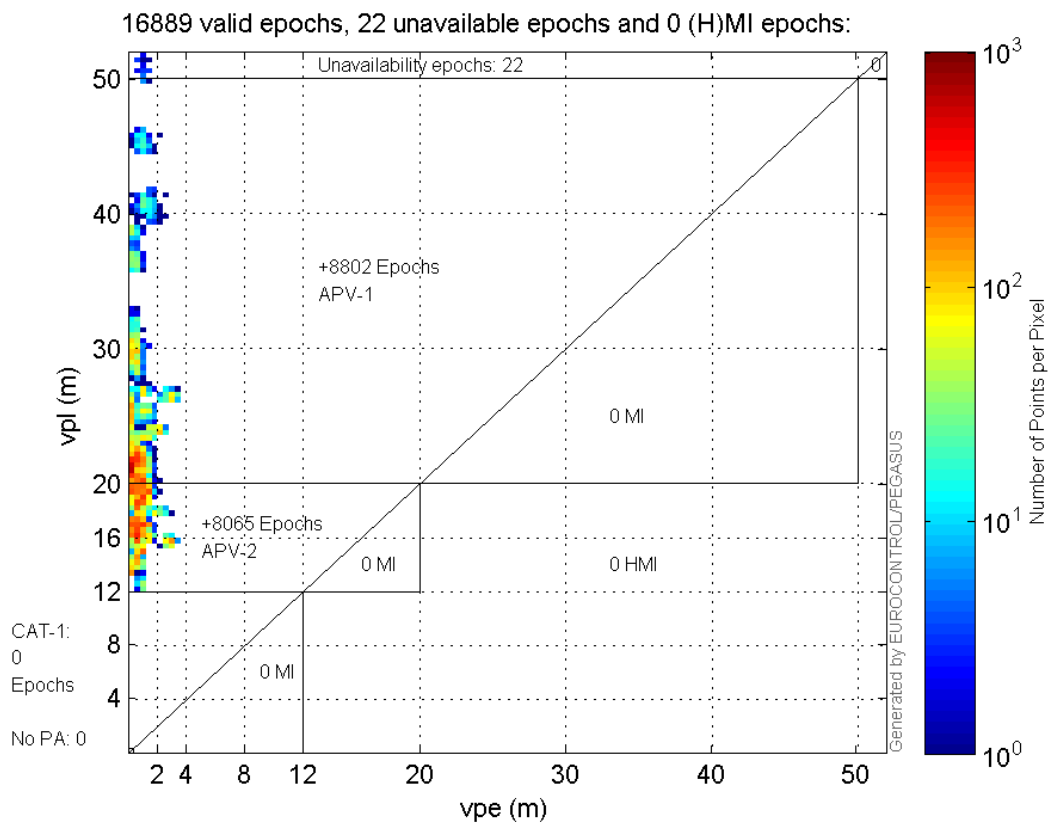


## Stanford Plots

Horizontal\_Stanford\_Plot\_SBAS:



Vertical\_Stanford\_Plot\_SBAS:



Parameters

system

Name	Section	Value
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<b>name</b>	system	GNSS_Solution
<b>version</b>	system	4.8.2.1
<b>input_prefix</b>	system	D:/PEGASUS_DAT_job/JOB/2015_10_26EGNOS/02_Convertor/02_Convertor
<b>output_prefix</b>	system	D:/PEGASUS_DAT_job/JOB/2015_10_26EGNOS/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	228.4208
mi_numbers	results	0

## Range Domain

**start:** 08:50:50 26.10.2015 ( week: 1868 sec: 118250 )  
**end:** 13:38:29 26.10.2015 ( week: 1868 sec: 135509 )  
**duration:** 04:47:40 ..

### quality

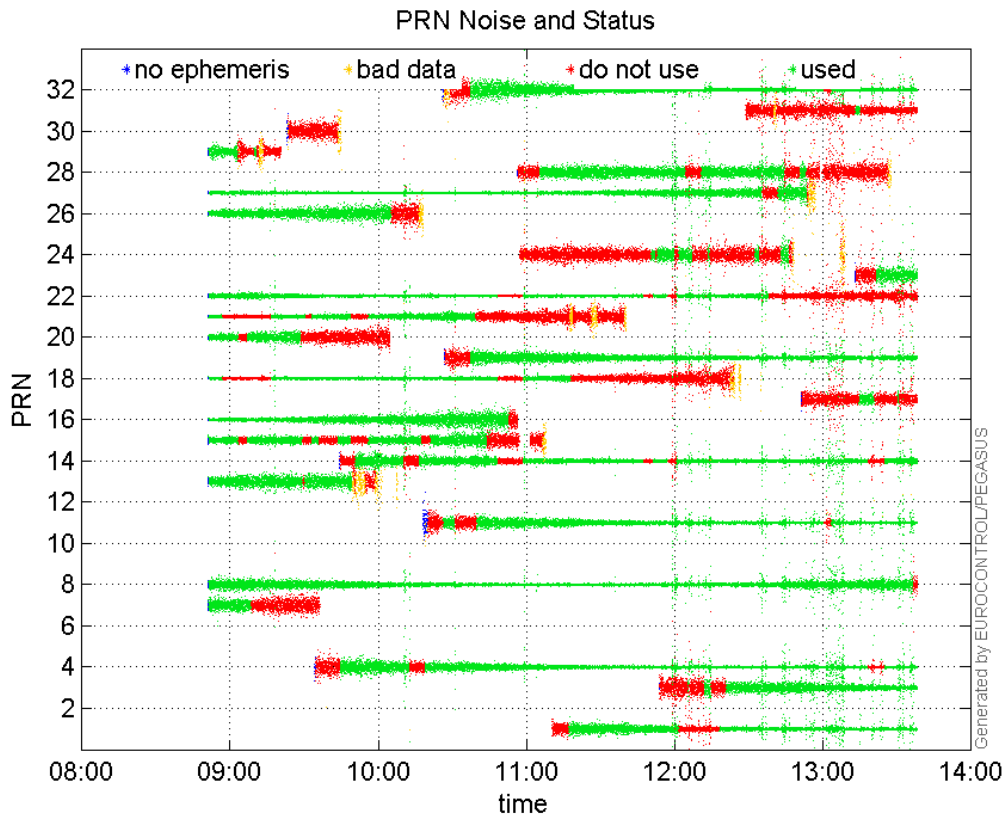
**valid samples** 17260  
**total samples** 17260

### PRN overview

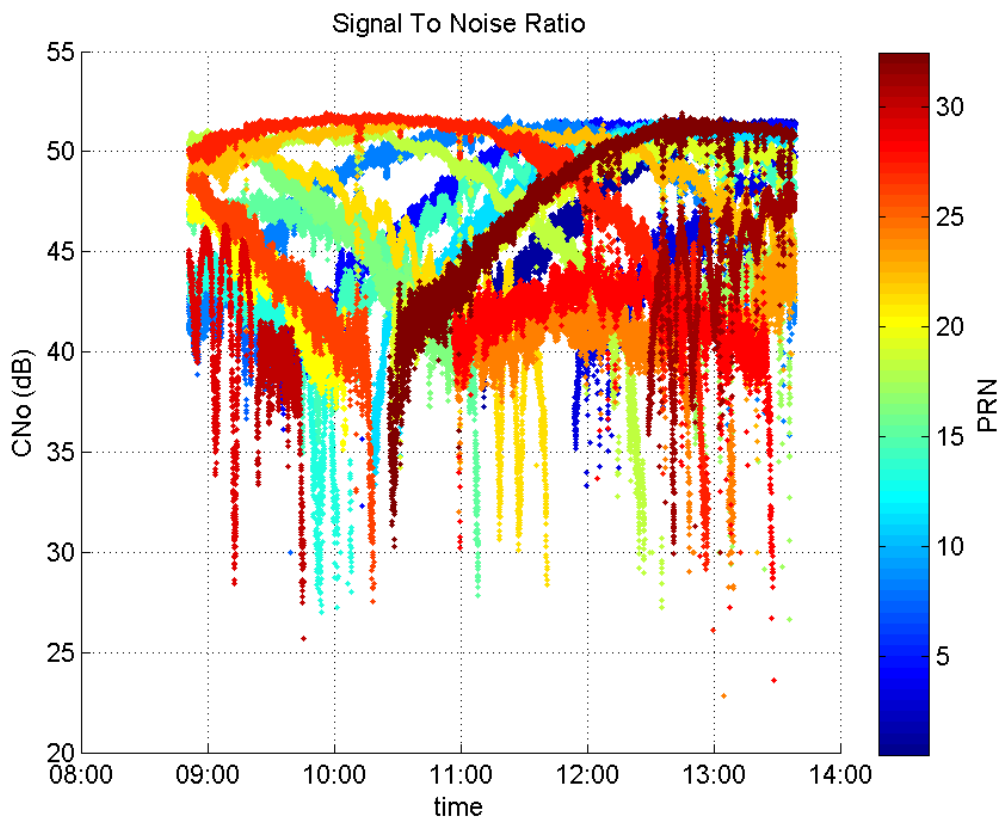
**Number of Visible GPS Satellites** 25  
**Number of Visible SBAS Satellites** 2

### signal quality and status

**PRN Noise and Status:**



**Signal To Noise Ratio:**



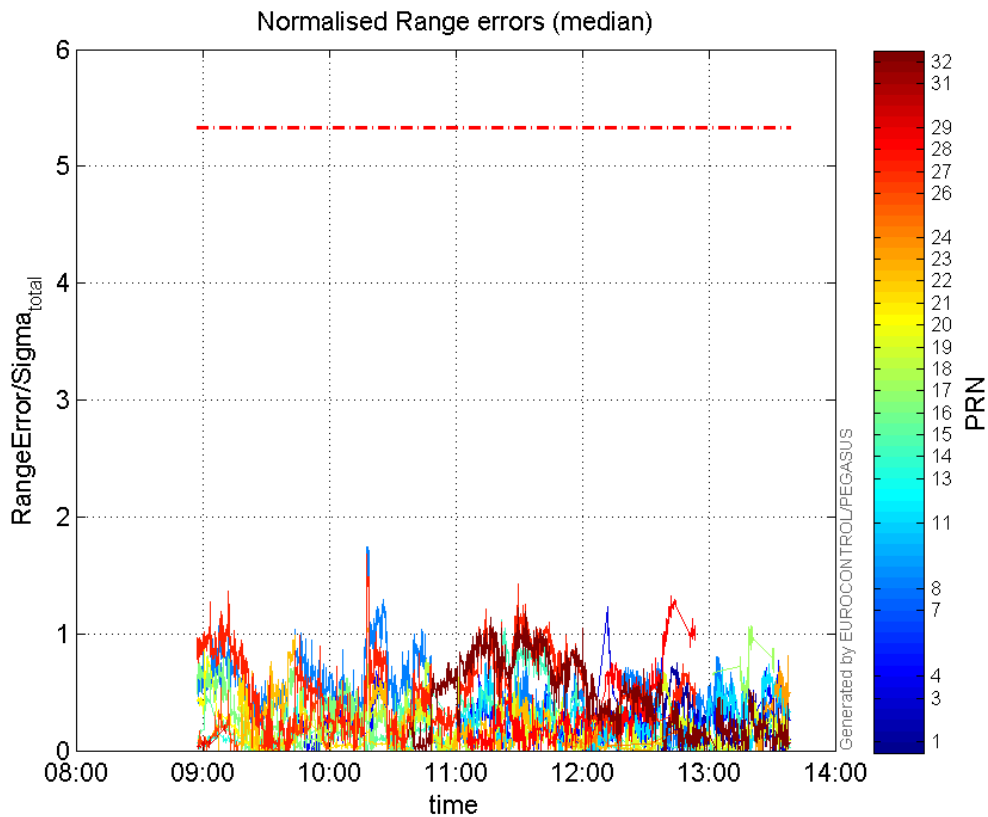
range errors

**Number of Overbounding Norm Errors** 0

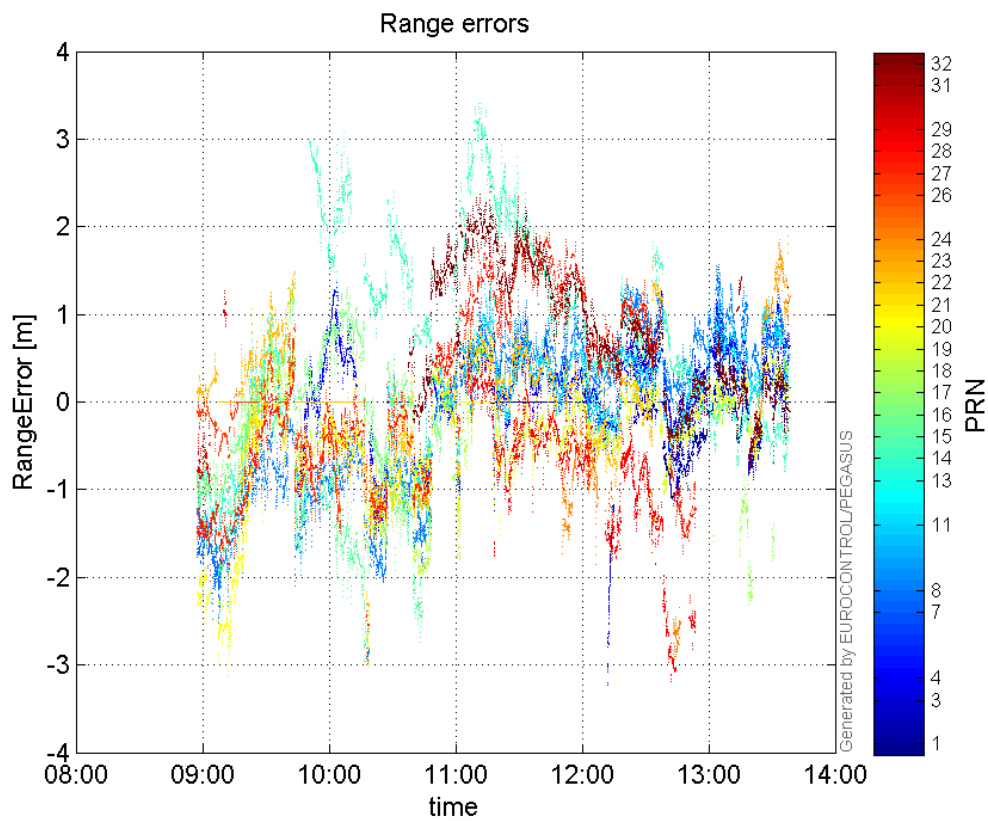
**Max Norm Errors :**

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1868	132278	1	0.756114	-1.1947	1.58005
1868	130320	3	1.2367	-3.22861	2.61066
1868	131849	4	0.794689	1.26879	1.59658
1868	119116	7	0.772044	-2.1433	2.77613
1868	123459	8	1.74576	-2.91573	1.67018
1868	135445	11	0.748526	1.21442	1.62242
1868	121572	13	0.612532	-1.91858	3.13221
1868	127307	14	1.1204	2.92799	2.61334
1868	125040	15	0.601083	-2.38782	3.97252
1868	119382	16	1.02312	-1.65784	1.62038
1868	134402	17	1.06409	-2.25818	2.12216
1868	125145	18	0.777487	-1.92089	2.47064
1868	127254	19	0.772086	-1.53018	1.98187
1868	118835	20	0.874369	-2.58411	2.9554
1868	119949	21	0.675225	-1.15326	1.70796
1868	123456	22	1.09593	-2.44411	2.23017
1868	135445	23	0.815069	1.98854	2.43972
1868	129974	24	0.230175	-1.85613	8.06398
1868	119286	26	0.538301	-0.996677	1.85152
1868	123461	27	1.68206	-2.99466	1.78035
1868	132128	28	1.31866	-3.194	2.42215
1868	119416	29	0.221186	1.27059	5.74443
1868	134124	31	0.0944429	1.42837	15.1242
1868	127759	32	1.22463	2.34483	1.91472

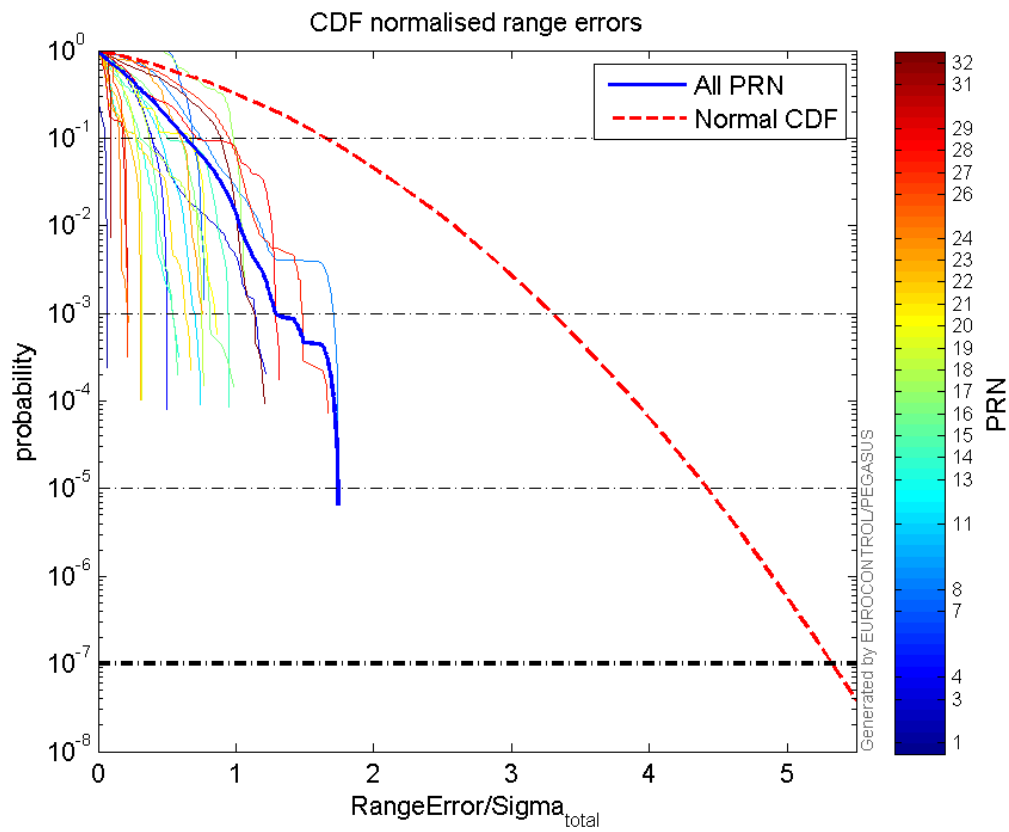
### Normalised Range errors (median):



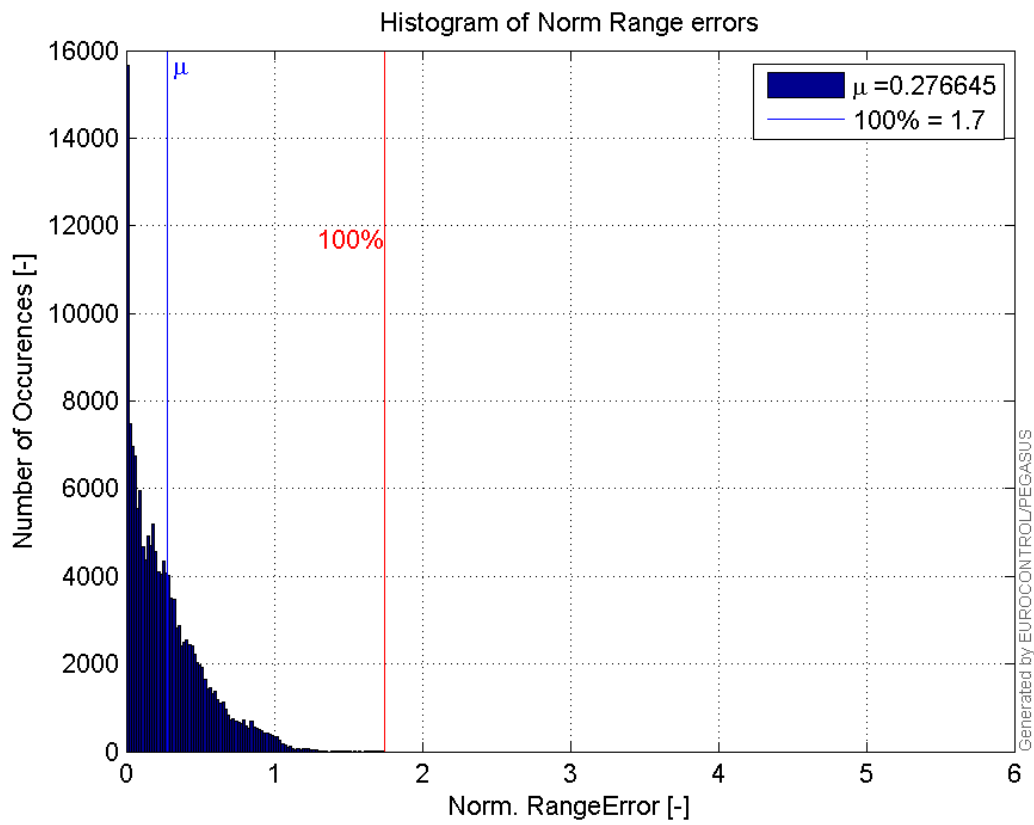
## Range errors:



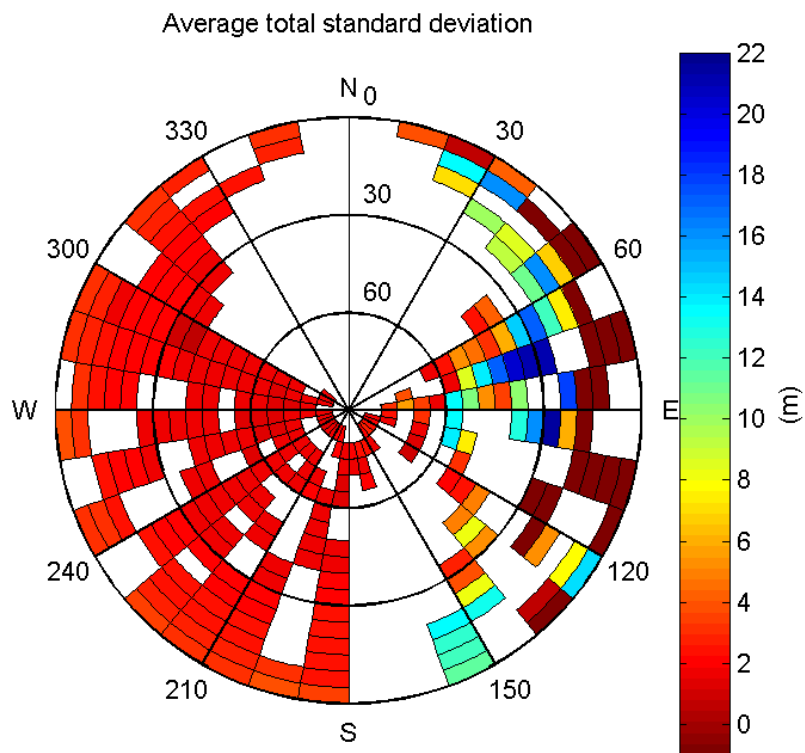
## CDF normalised range errors:



## Histogram of Norm Range errors:

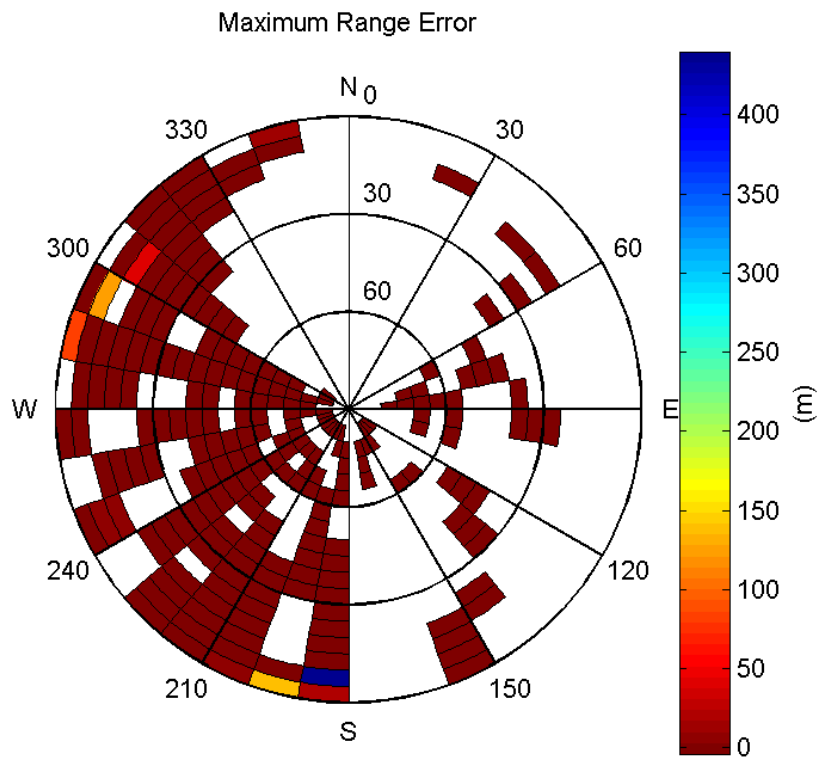


**Sigma Sky Plot:**



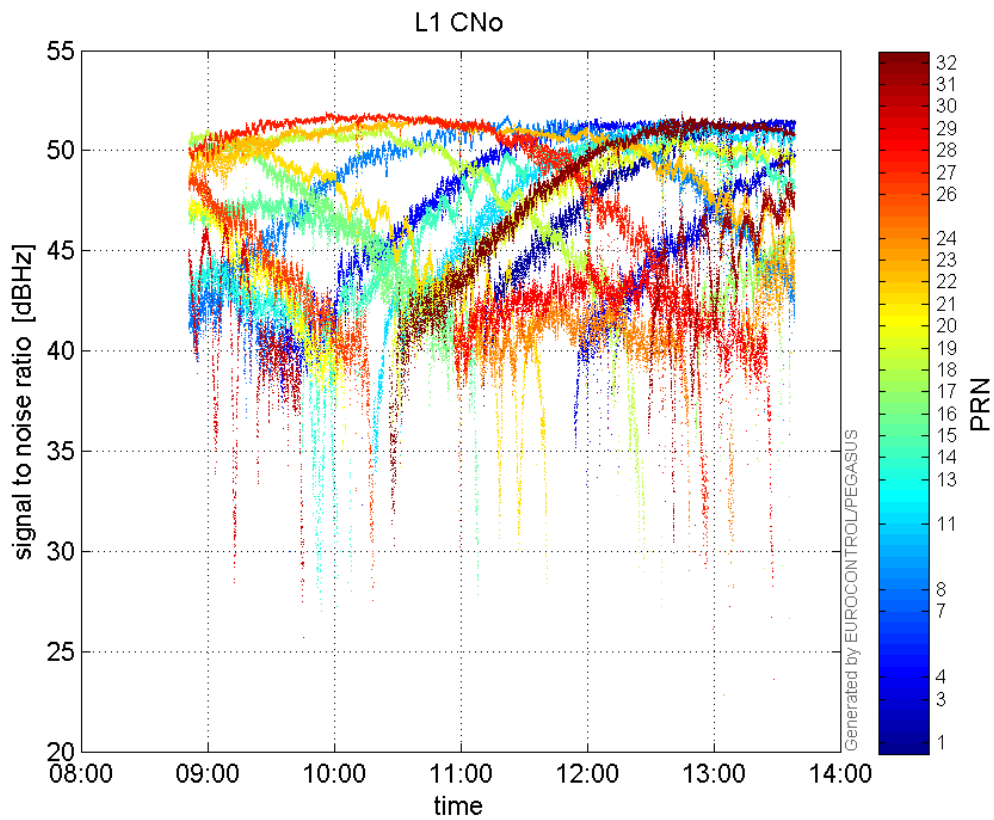
**Norm Error Sky Plot:**



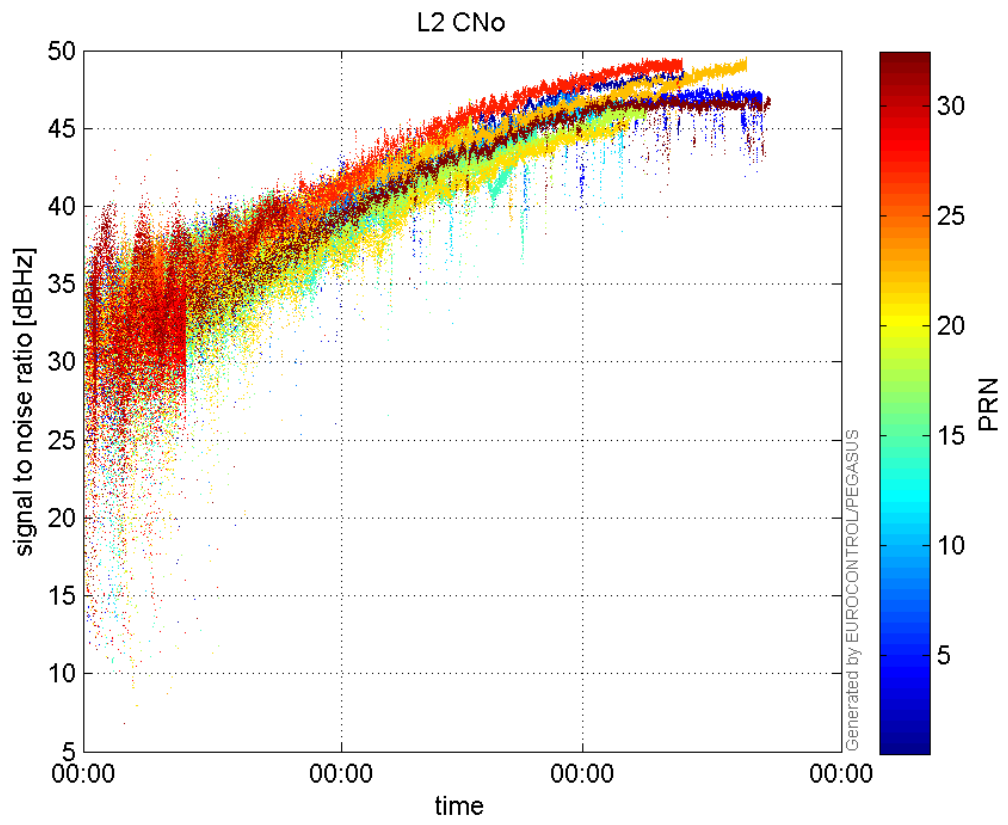


### signal quality

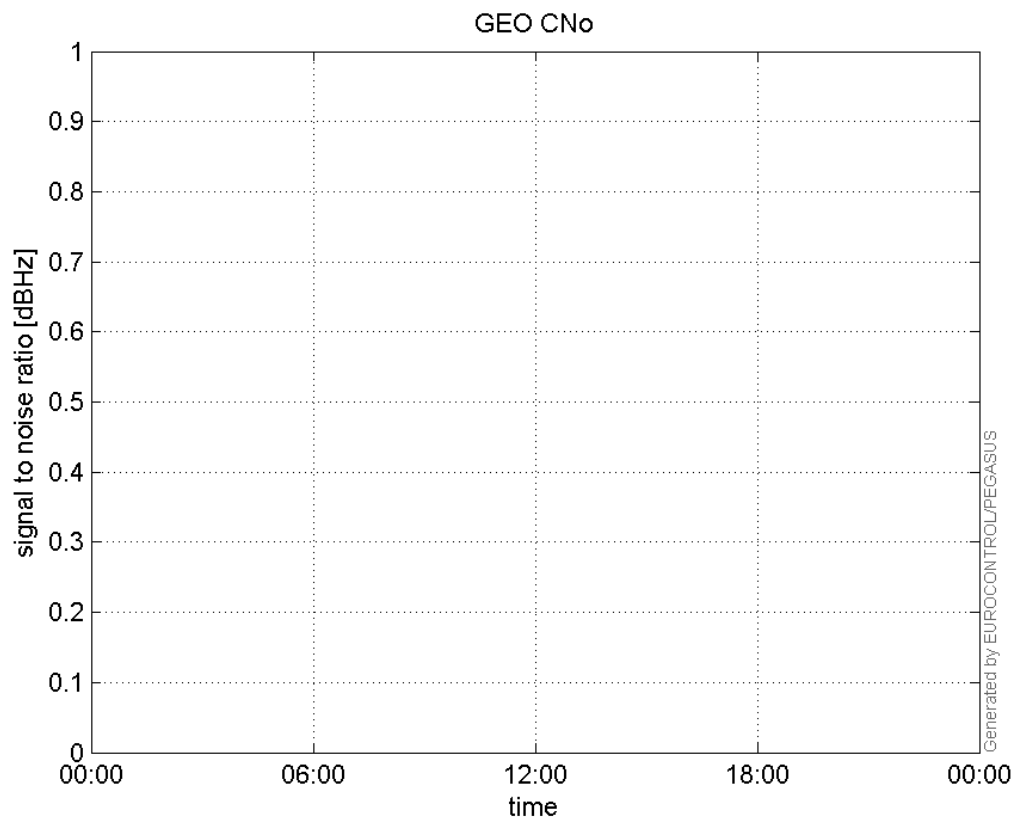
L1 CNo:



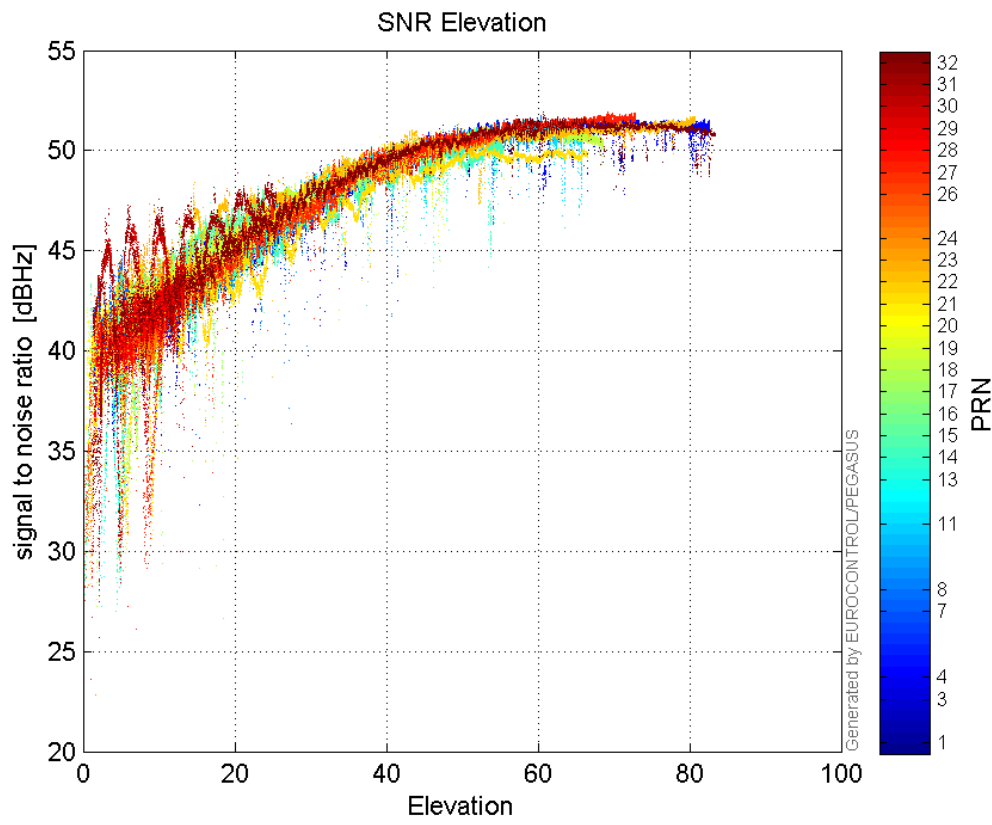
L2 CNo:



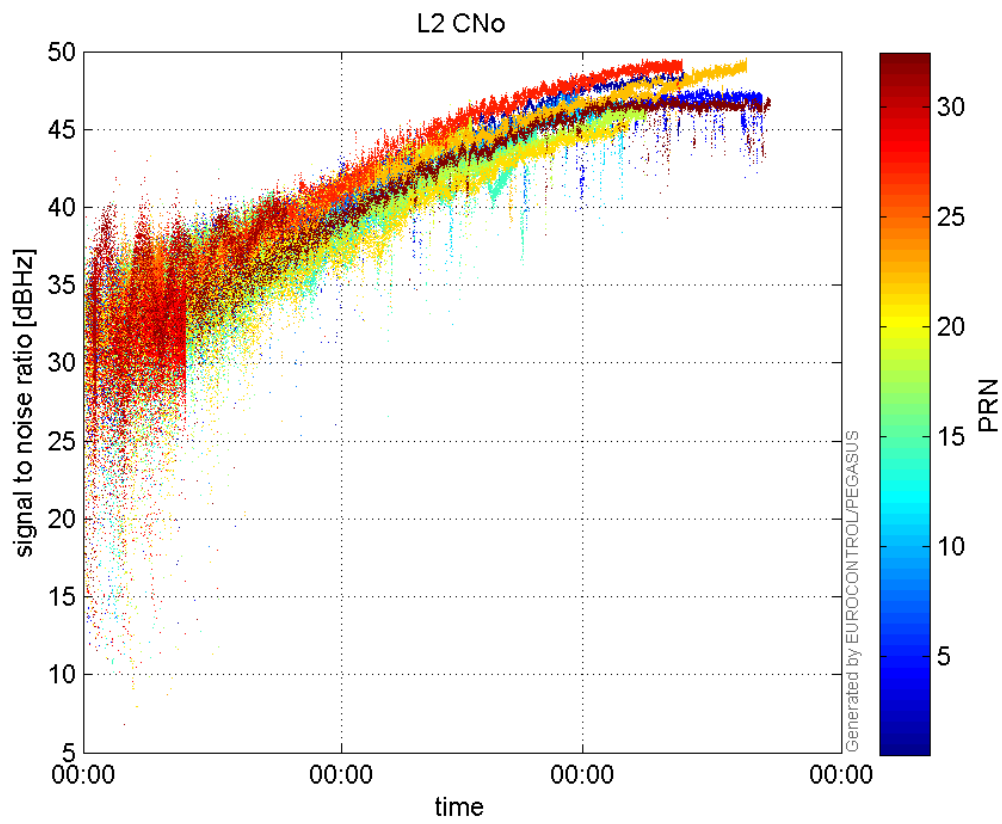
**GEO CNo:**



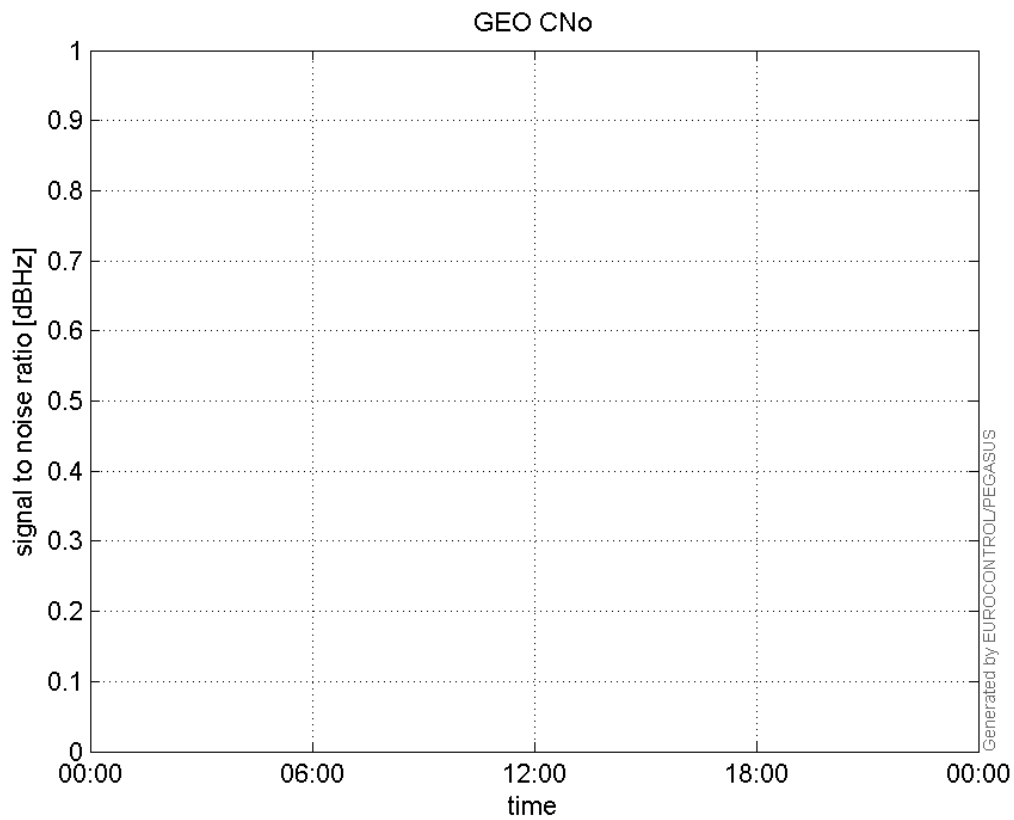
**SNR Elevation:**



**L2 CNo:**

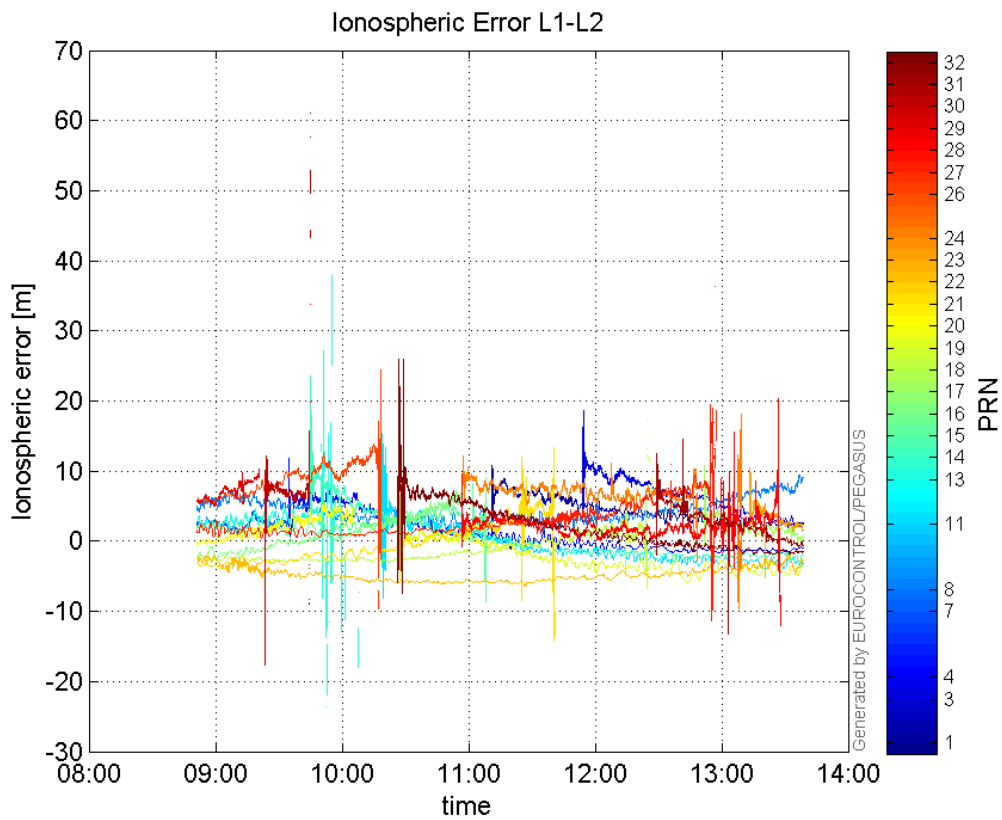


**GEO CNo:**



### 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:/PEGASUS_DAT_job/JOB/2015_10_26EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PEGASUS_DAT_job/JOB/2015_10_26EGNOS/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	228.4208
mi_numbers	results	0