

# Global View

country Ukraine  
 city Kiev  
 comment  
 program Pegasus  
 version 4.8.2  
 site Laboratory satellite systems  
 abbreviation NAU  
 date 28/10/2015

## SBAS Messages

**start:** 05:57:16.129 28.10.2015 ( week: 1868 sec: 280636.129 )  
**end:** 12:10:53.129 28.10.2015 ( week: 1868 sec: 303053.129 )  
**duration:** 06:13:37 ..

### quality

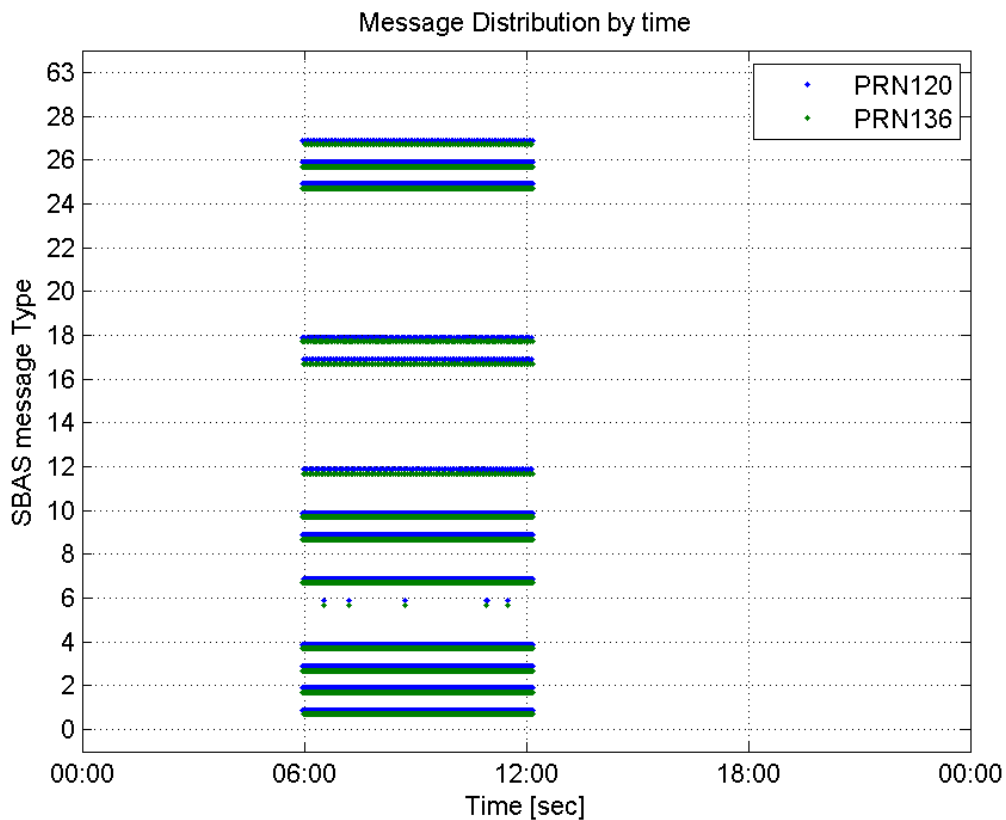
**valid samples** 44836  
**total samples** 44836  
**number of SBAS PRNs** 2

### SBAS SIS Overview

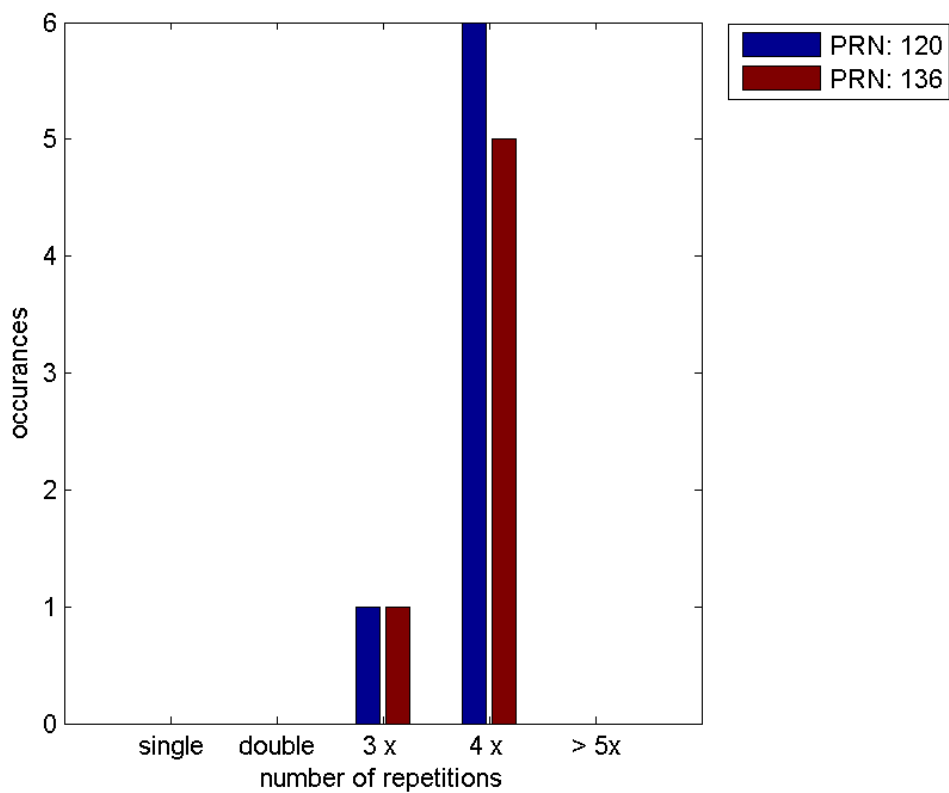
#### Message Type 6 repetitions :

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

#### Message Distribution by time:



**Message Type 6 repetitions:**



**SBAS SIS Analysis**

**PRN 120**

**Broadcast SBAS Messages :**

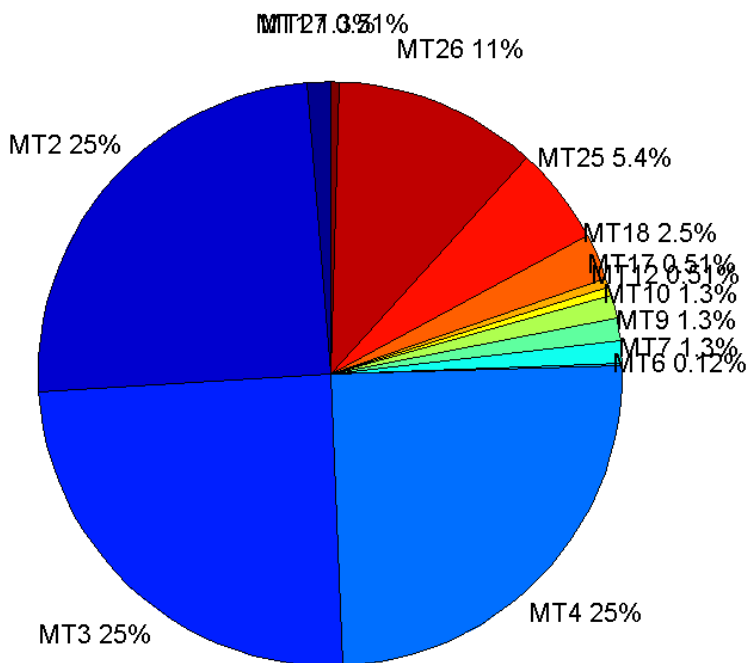
	number of messages	%
MT 0	0	0
MT 1	281	1.25346
MT 2	5543	24.7257
MT 3	5543	24.7257
MT 4	5543	24.7257
MT 5	0	0
MT 6	28	0.1249
MT 7	281	1.25346
MT 9	281	1.25346
MT 10	281	1.25346
MT 12	114	0.50852
MT 17	114	0.50852
MT 18	570	2.5426
MT 24	0	0
MT 25	1216	5.42421
MT 26	2508	11.1874
MT 27	115	0.512981
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	22418	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	75	81	79.7536	0	0	0
MT 2	4	8	4.04421	7	0	0
MT 3	4	8	4.04439	7	0	0
MT 4	4	9	4.04439	7	0	0
MT 5	--	--	--	--	--	--
MT 6	1	7950	661.185	6	5	6
MT 7	76	84	79.8107	0	0	0
MT 9	75	81	79.8107	0	0	0
MT 10	76	81	79.7679	0	0	0
MT 12	188	203	196.487	113	0	0
MT 17	188	202	196.522	0	0	0
MT 18	4	164	39.1054	0	0	0
MT 24	--	--	--	--	--	--
MT 25	2	53	18.4387	0	0	0
MT 26	3	40	8.93299	0	0	0
MT 27	184	201	196.623	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	281	1.25346
MT 2	5541	24.7167
MT 3	5540	24.7123
MT 4	5540	24.7123
MT 5	0	0
MT 6	24	0.107057
MT 7	281	1.25346
MT 9	281	1.25346
MT 10	282	1.25792
MT 12	115	0.512981
MT 17	115	0.512981
MT 18	575	2.5649
MT 24	0	0

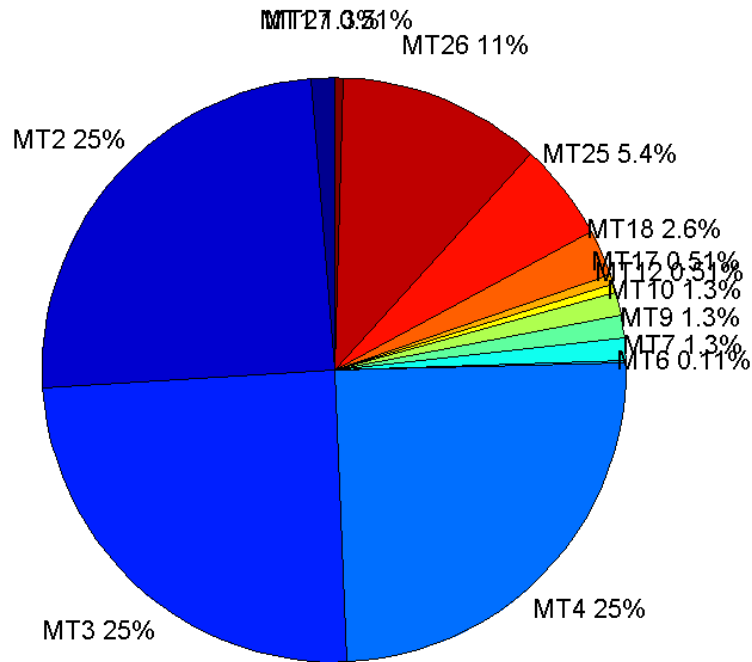
<b>MT 25</b>	1215	5.41975
<b>MT 26</b>	2514	11.2142
<b>MT 27</b>	114	0.50852
<b>MT 28</b>	0	0
<b>MT 62</b>	0	0
<b>MT 63</b>	0	0
<b>Total</b>	22418	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
<b>MT 0</b>	--	--	--	--	--	--
<b>MT 1</b>	76	85	79.7643	0	0	0
<b>MT 2</b>	4	8	4.04639	6	0	0
<b>MT 3</b>	4	8	4.0464	6	0	0
<b>MT 4</b>	4	8	4.04622	6	0	0
<b>MT 5</b>	--	--	--	--	--	--
<b>MT 6</b>	1	7947	776.174	5	4	5
<b>MT 7</b>	76	82	79.7643	0	0	0
<b>MT 9</b>	74	88	79.7357	0	0	0
<b>MT 10</b>	76	86	79.637	0	0	0
<b>MT 12</b>	188	201	195.912	114	0	0
<b>MT 17</b>	187	201	195.912	0	0	0
<b>MT 18</b>	3	177	38.9652	0	0	0
<b>MT 24</b>	--	--	--	--	--	--
<b>MT 25</b>	1	54	18.453	0	0	0
<b>MT 26</b>	1	60	8.91922	0	0	0
<b>MT 27</b>	188	201	195.947	0	0	0
<b>MT 28</b>	--	--	--	--	--	--
<b>MT 62</b>	--	--	--	--	--	--
<b>MT 63</b>	--	--	--	--	--	--

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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_28EGNOS/01_User/01_User
Outputfile	System	D:/PEGASUS_DAT_job/JOB/2015_10_28EGNOS/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:** 05:57:17 28.10.2015 ( week: 1868 sec: 280637 )  
**end:** 12:10:54 28.10.2015 ( week: 1868 sec: 303054 )  
**duration:** 06:13:38 ..

## quality

**valid samples** 22057  
**total samples** 22418

## 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	291924	1.79964	10.0208	0.179591	1.15484	21.7744	0.0530367
max normVer	298425	1.98655	14.9538	0.132846	2.7487	16.6023	0.165561
max HPE	301469	5.46925	77.6201	0.0704617	0.327214	41.6646	0.00785353
max VPE	298425	1.98655	14.9538	0.132846	2.7487	16.6023	0.165561
min HPL	300578	1.3433	8.86246	0.151572	0.949372	18.8444	0.0503796
min VPL	297359	1.0319	9.0365	0.114192	0.383048	12.6883	0.0301891

## APV-I discontinuity events :

#	Epoch	duration	stable period
1	293042	21	12044
2	300602	1182	7539

## APV-35m discontinuity events :

#	Epoch	duration	stable period
1	293042	21	12044
2	300602	1182	7539

## LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	293042	21	12044
2	300602	1182	7539

## First Glance analysis

**Duration** 22418  
**Number of Samples** 22418  
**Number of invalid sample** 361  
**Number of no position solution samples** 0  
**Number of missing sample** 0  
**Logging Loss** 0  
**Processing Loss** 1.6103  
**Number of Misleading Information** 0  
**Data gaps** 0  
**Discontinuities** 0

## Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
22057	20854	20854	0	20854

## Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m

<b>HPE 95%</b>	2.05745	1.81145	1.81145	NaN	1.81145
<b>HPEscale 95%</b>	NaN	5.42979	5.42979	NaN	5.42979
<b>VPE 95%</b>	1.77217	1.79865	1.79865	NaN	1.79865
<b>VPEscale 95%</b>	NaN	4.56624	3.19637	NaN	3.19637

**Availability :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>Signal in Space</b>	1	0.945459	0.945459	0	0.945459
<b>measurements</b>	0.983897	0.930235	0.930235	0	0.930235
<b>Operational</b>	0.983897	0.930235	0.930235	0	0.930235

**Discontinuity events :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>All</b>	--	2	2	--	2
<b>Long</b>	--	2	2	--	2
<b>Independent</b>	--	2	2	--	2
<b>P(disc.)</b>	NaN	0.00143857	0.00143857	NaN	0.00143857
<b>P(slide)</b>	NaN	0.00143857	0.00143857	NaN	0.00143857

**Integrity events :**

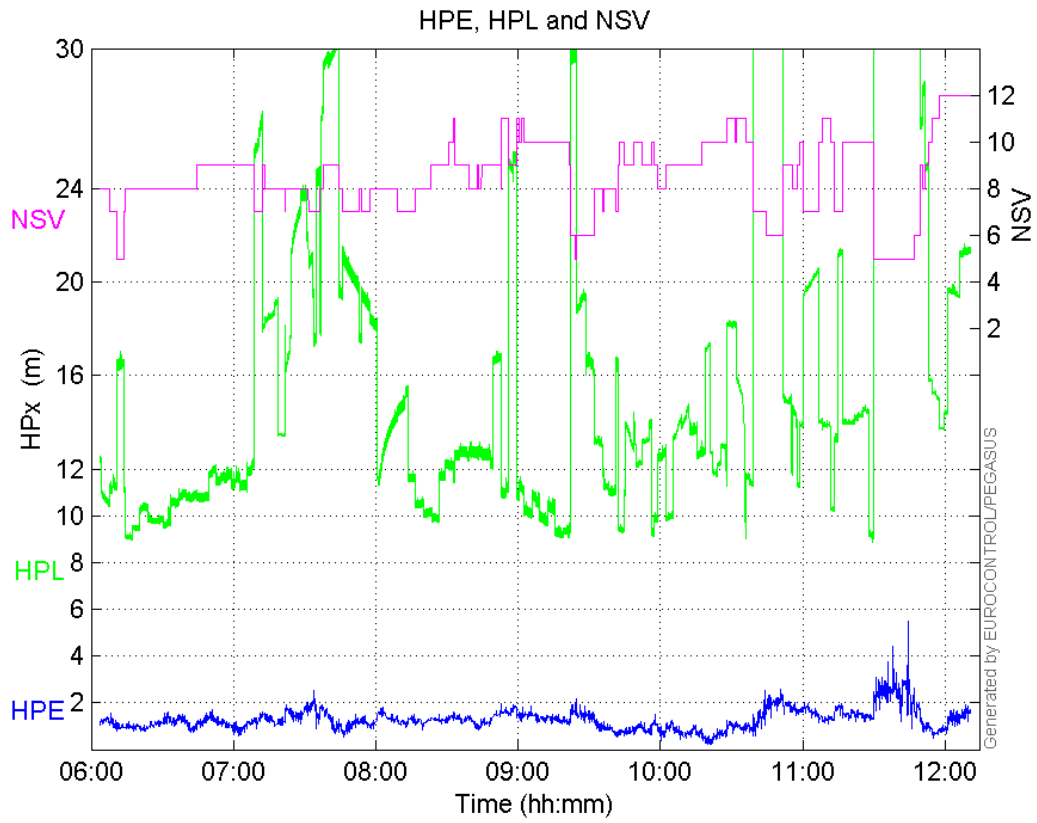
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
<b>Total</b>	0	0	0	0	0
<b>Horizontal</b>	0	0	0	0	0
<b>Vertical</b>	0	0	0	0	0

**Performance Summary :**

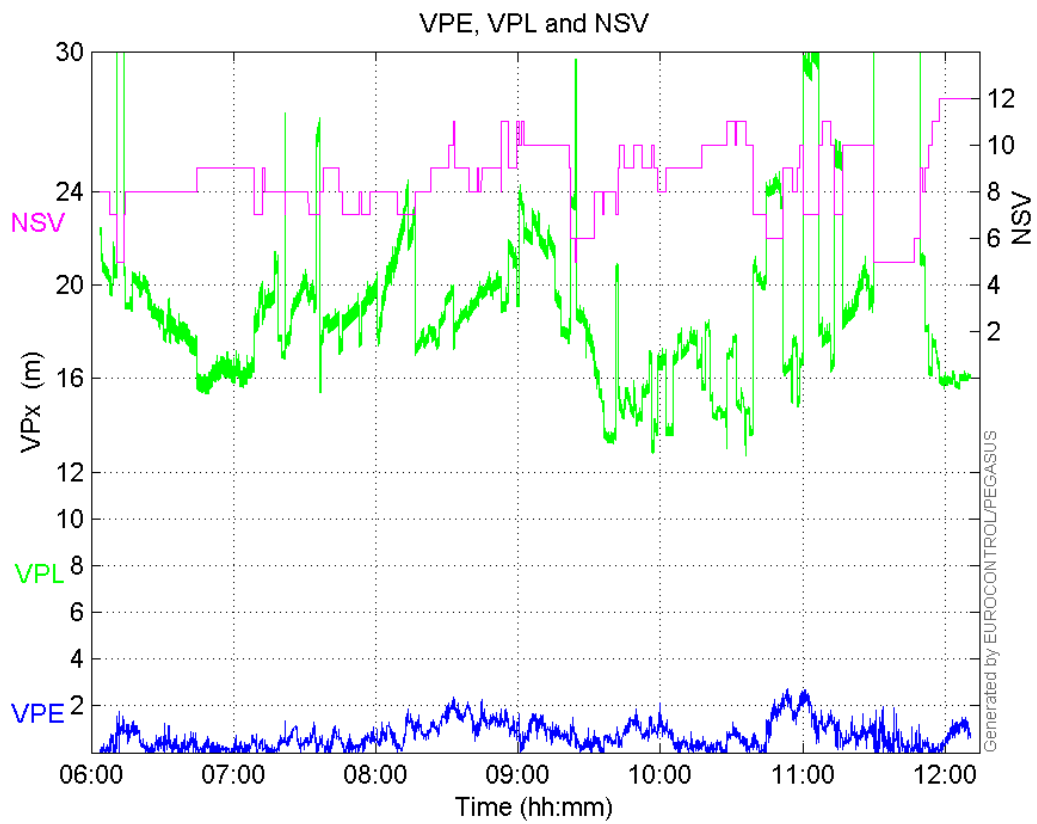
	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>Samples</b>	22057	20854	20854	0	20854
<b>SIS Availability</b>	1	0.945459	0.945459	0	0.945459
<b>Local Availability</b>	0.983897	0.930235	0.930235	0	0.930235
<b>Operational Availability</b>	0.983897	0.930235	0.930235	0	0.930235
<b>HPE 95%</b>	2.05745	1.81145	1.81145	NaN	1.81145
<b>HPEscale 95%</b>	NaN	5.42979	5.42979	NaN	5.42979
<b>VPE 95%</b>	1.77217	1.79865	1.79865	NaN	1.79865
<b>VPEscale 95%</b>	NaN	4.56624	3.19637	NaN	3.19637
<b>All Discontinuity Events</b>	--	2	2	--	2
<b>Long Discontinuity Events</b>	--	2	2	--	2
<b>Independent Discontinuity Events</b>	--	2	2	--	2
<b>P(discontinuity)</b>	NaN	0.00143857	0.00143857	NaN	0.00143857
<b>P(sliding window)</b>	NaN	0.00143857	0.00143857	NaN	0.00143857
<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:**



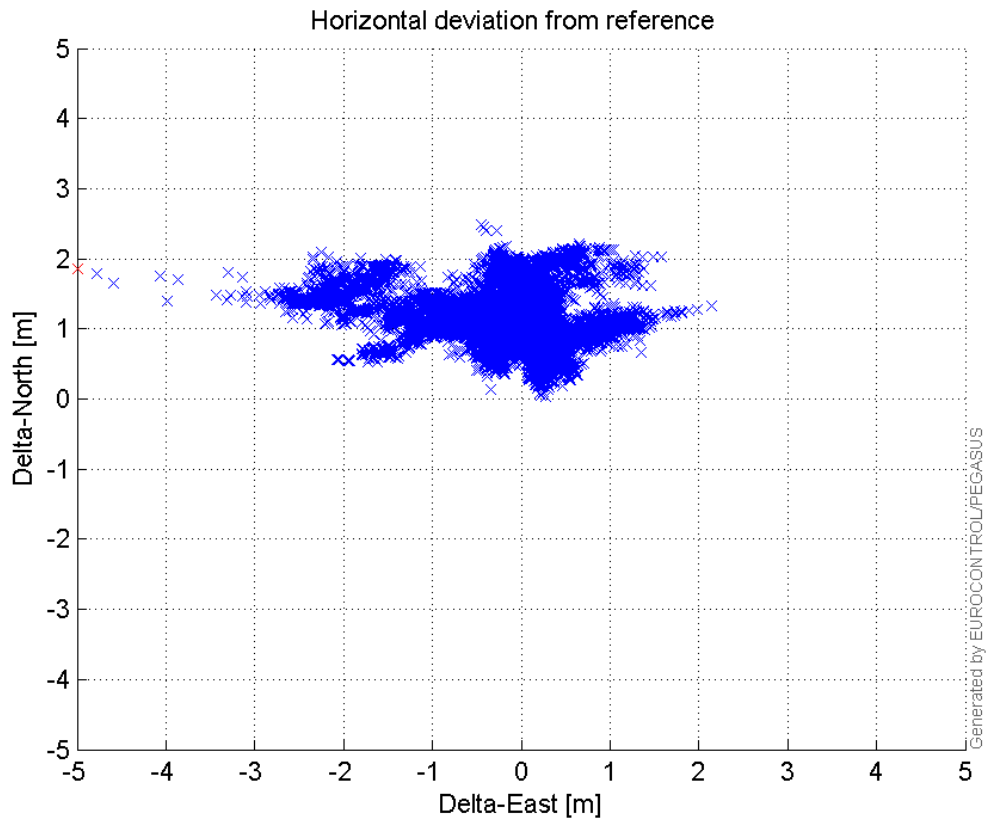


**VPE, VPL and NSV:**



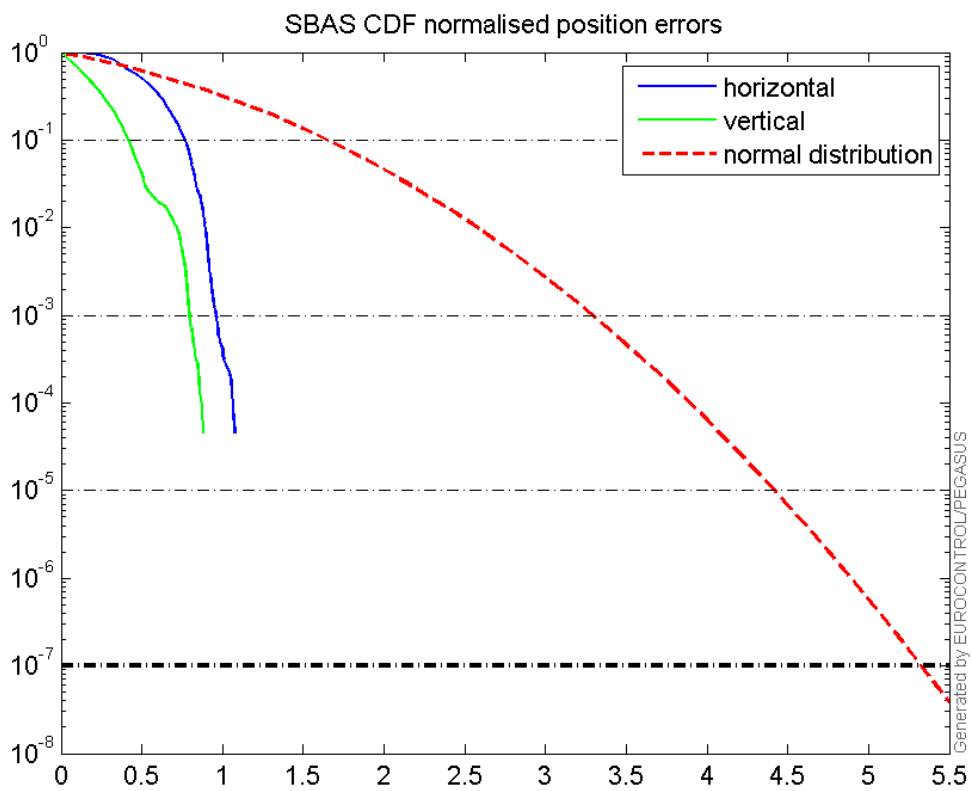
**Horizontal deviation**

**Horizontal deviation from reference :**



### CDF position

SBAS CDF position domain:



## Statistics

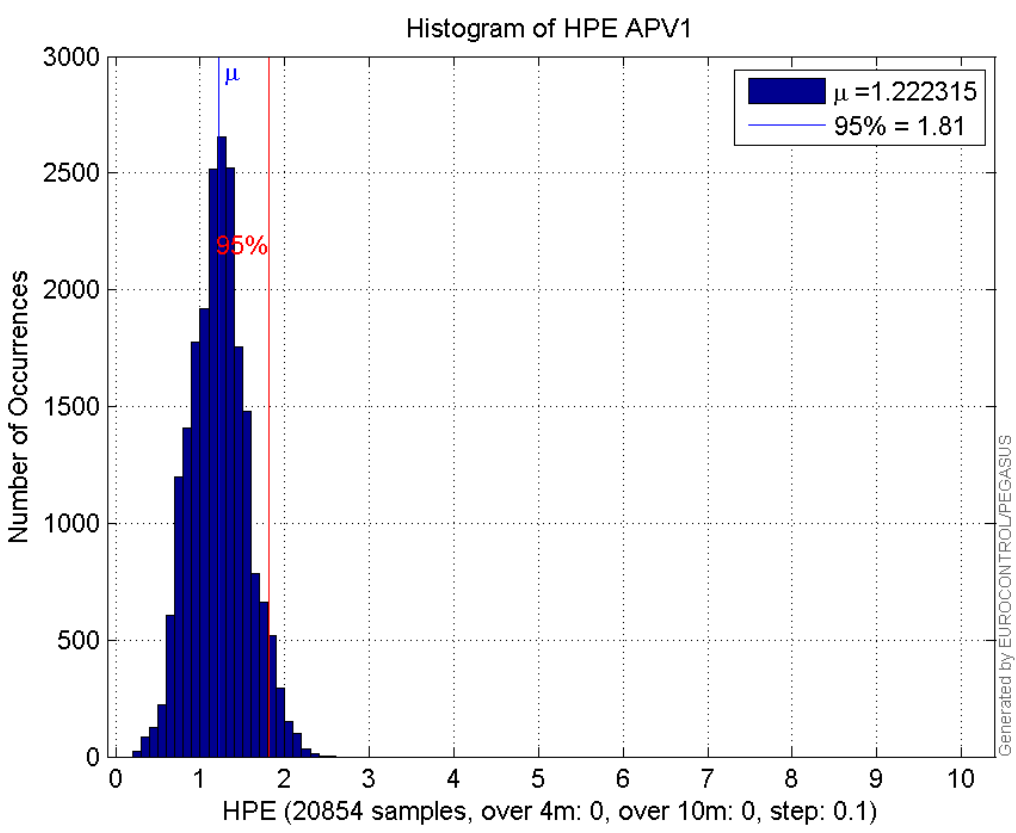
<b>number</b>	20854
<b>sum</b>	25490.158
<b>sum2</b>	33501.802
<b>prctile95</b>	1.8114529
<b>prctile99</b>	2.0466247
<b>number</b>	20854
<b>sum</b>	15347.954
<b>sum2</b>	17682.599
<b>prctile95</b>	1.7986535
<b>prctile99</b>	2.3137921
<b>number</b>	20854
<b>sum</b>	319709.75
<b>sum2</b>	5672879.3
<b>prctile95</b>	29.6543
<b>prctile99</b>	35.058876
<b>number</b>	20854
<b>sum</b>	389558.28
<b>sum2</b>	7488384.2
<b>prctile95</b>	24.21004
<b>prctile99</b>	30.13562
<b>number</b>	20854
<b>sum</b>	1816.0568
<b>sum2</b>	176.64881
<b>prctile95</b>	0.13574472
<b>prctile99</b>	0.14895732
<b>number</b>	20854
<b>sum</b>	820.44417
<b>sum2</b>	50.156952
<b>prctile95</b>	0.091324813
<b>prctile99</b>	0.13520509
<b>number</b>	20854
<b>sum</b>	25490.158
<b>sum2</b>	33501.802
<b>prctile95</b>	1.8114529
<b>prctile99</b>	2.0466247
<b>number</b>	20854
<b>sum</b>	15347.954
<b>sum2</b>	17682.599
<b>prctile95</b>	1.7986535
<b>prctile99</b>	2.3137921
<b>number</b>	20854
<b>sum</b>	319709.75
<b>sum2</b>	5672879.3
<b>prctile95</b>	29.6543
<b>prctile99</b>	35.058876
<b>number</b>	20854
<b>sum</b>	389558.28
<b>sum2</b>	7488384.2
<b>prctile95</b>	24.21004
<b>prctile99</b>	30.13562
<b>number</b>	20854
<b>sum</b>	1816.0568
<b>sum2</b>	176.64881

**prctile95** 0.13574472  
**prctile99** 0.14895732  
**number** 20854  
**sum** 820.44417  
**sum2** 50.156952  
**prctile95** 0.091324813  
**prctile99** 0.13520509

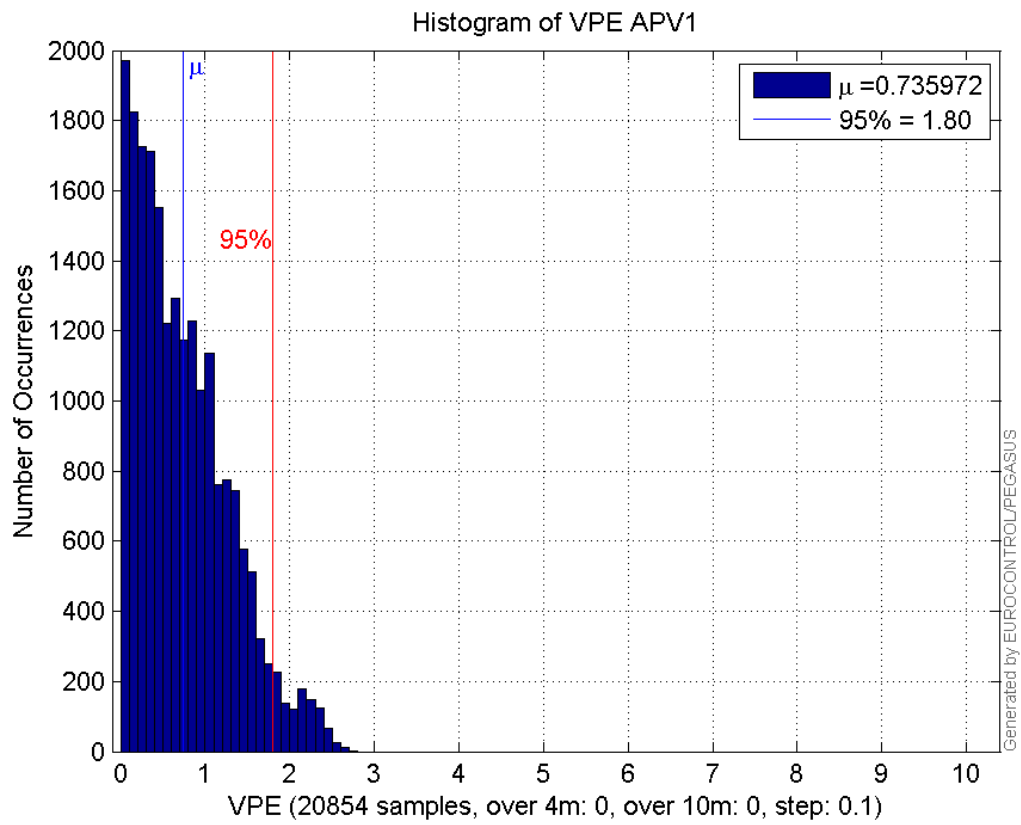
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.22232	0.335327	1.21877	1.81145	2.04662	1.26748
HPL	15.3309	6.08234	13.2209	29.6543	35.0589	16.4933
VPE	0.735972	0.553429	0.632431	1.79865	2.31379	0.920828
VPL	18.6803	3.18345	18.3471	24.21	30.1356	18.9496

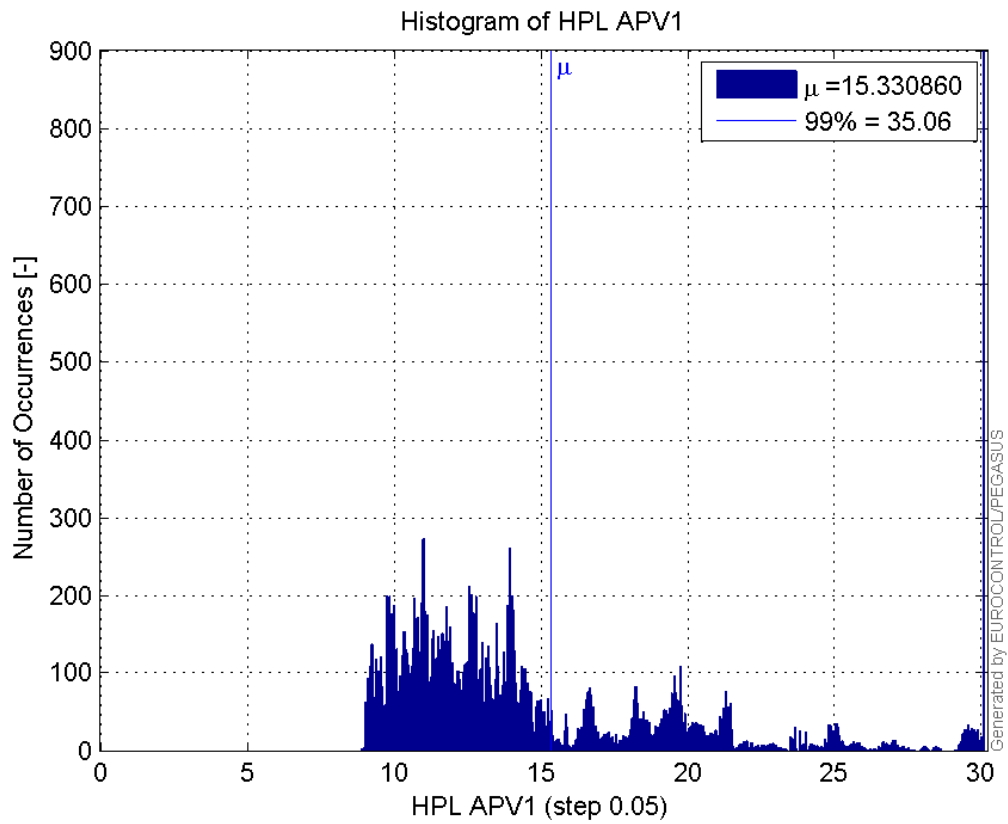
**Histogram of HPE APV1:**



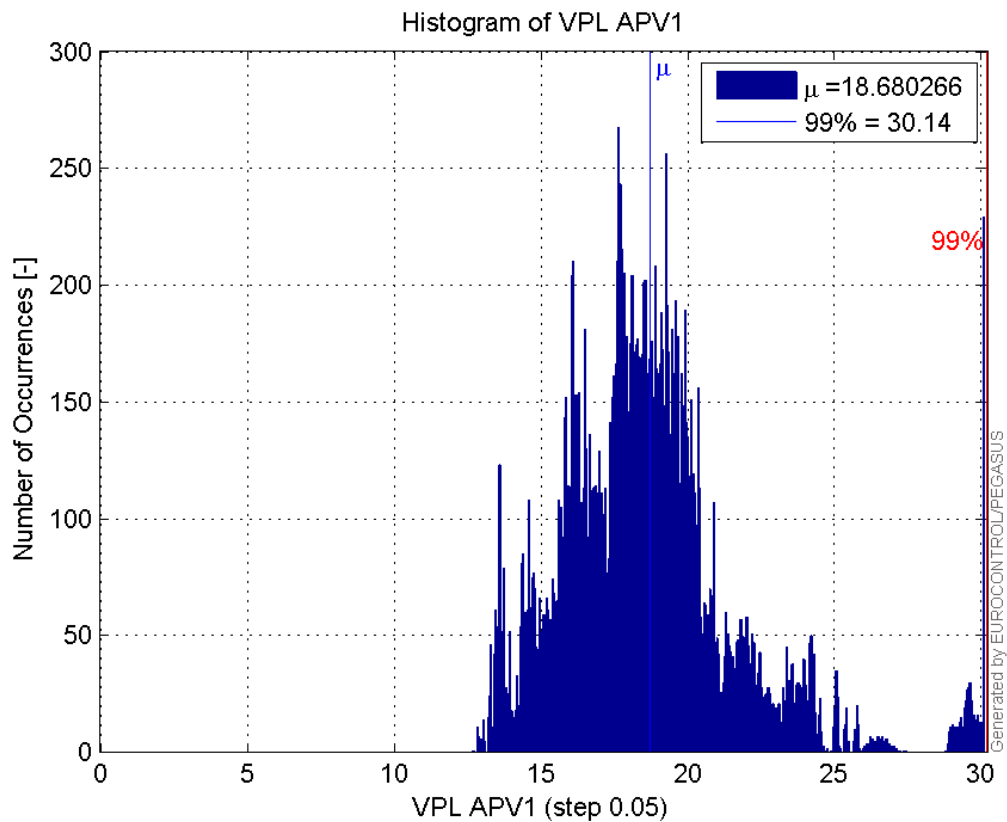
**Histogram of VPE APV1:**



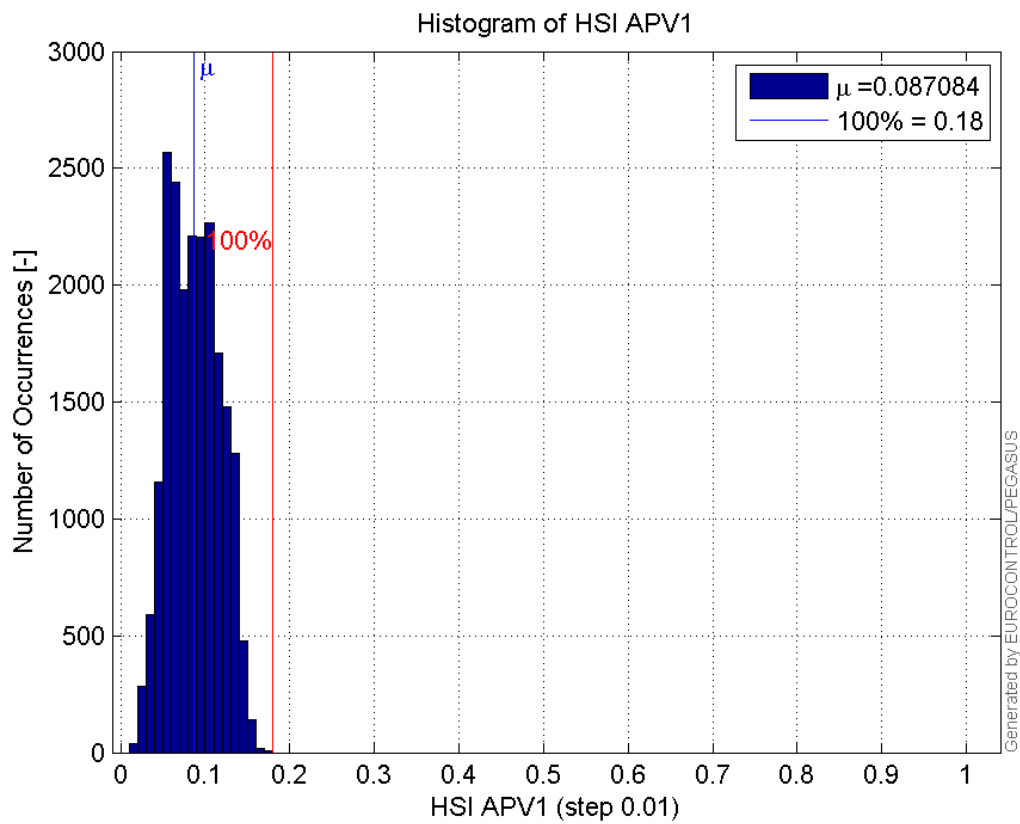
Histogram of HPL APV1:



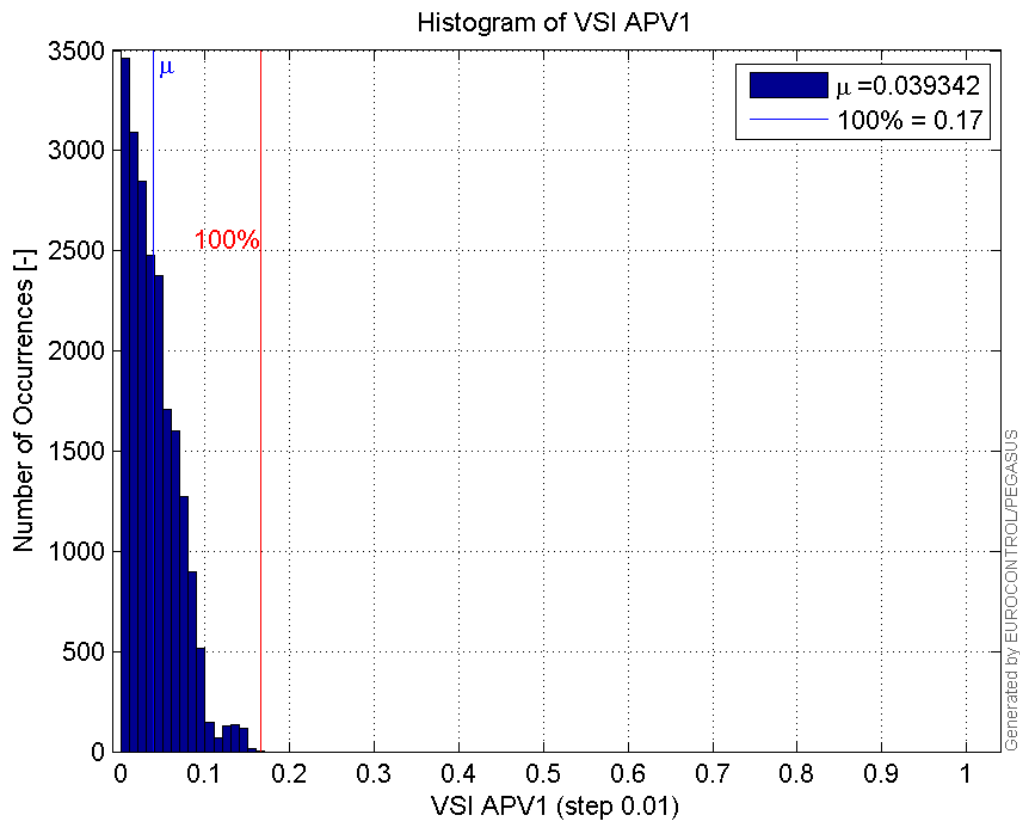
Histogram of VPL APV1:



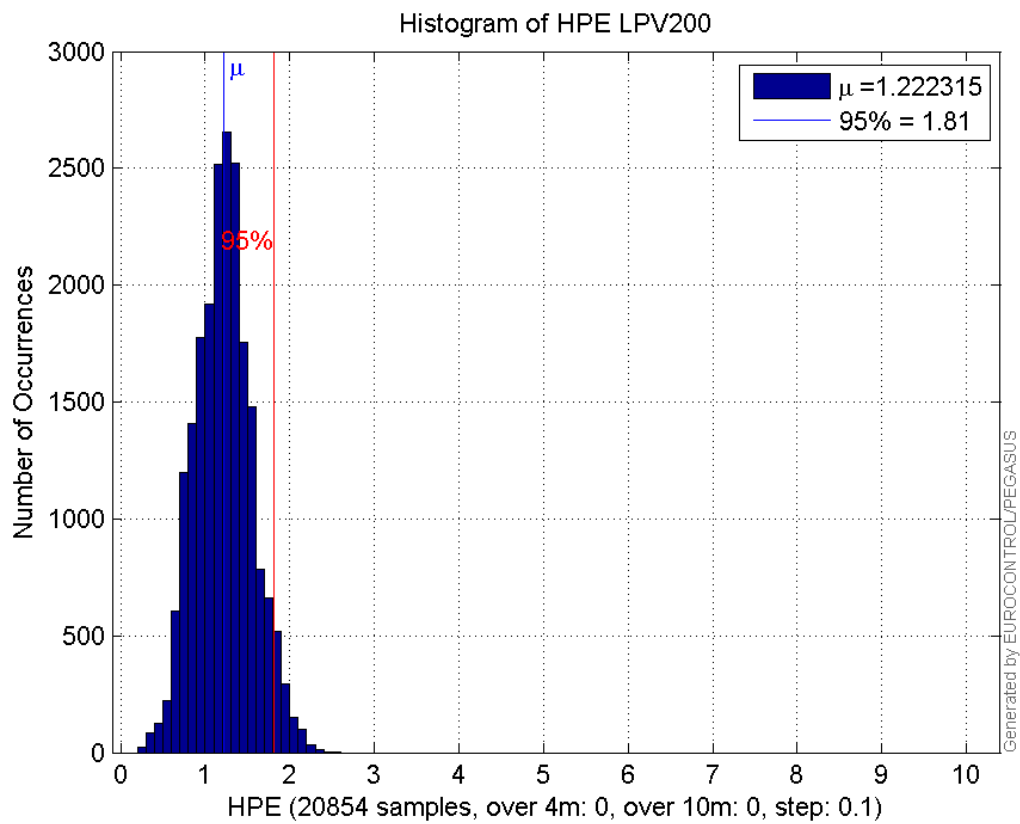
Histogram of HSI APV1:



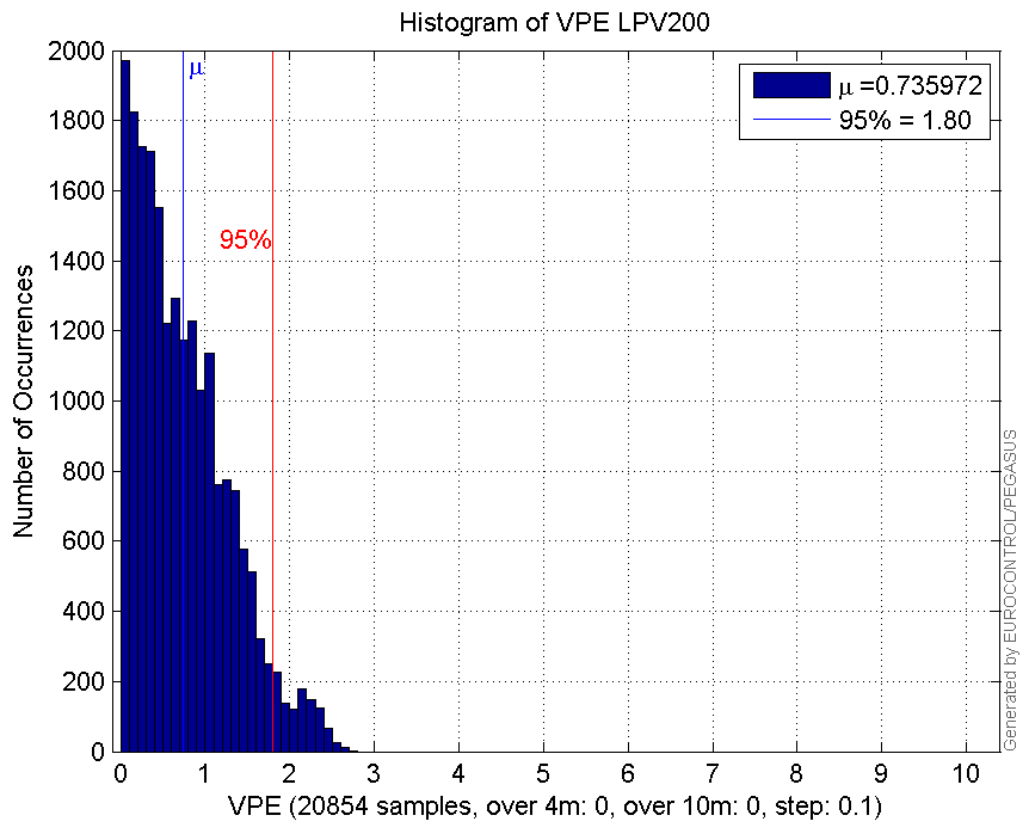
Histogram of VSI APV1:



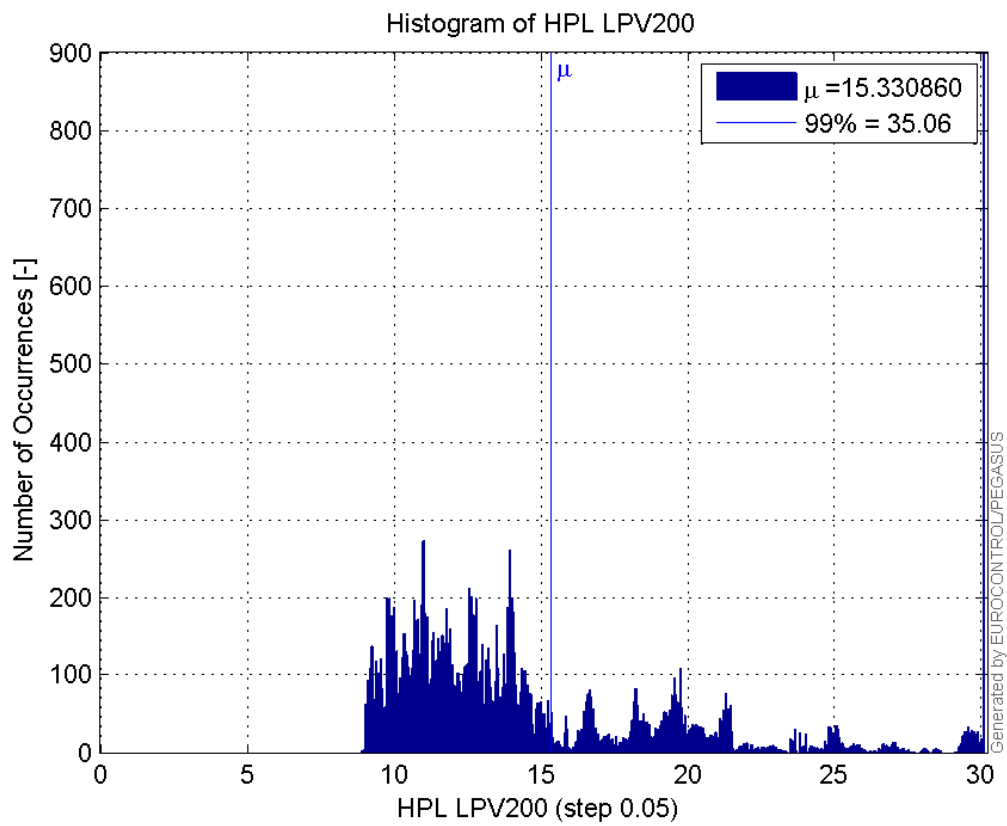
Histogram of HPE LPV200:



Histogram of VPE LPV200:



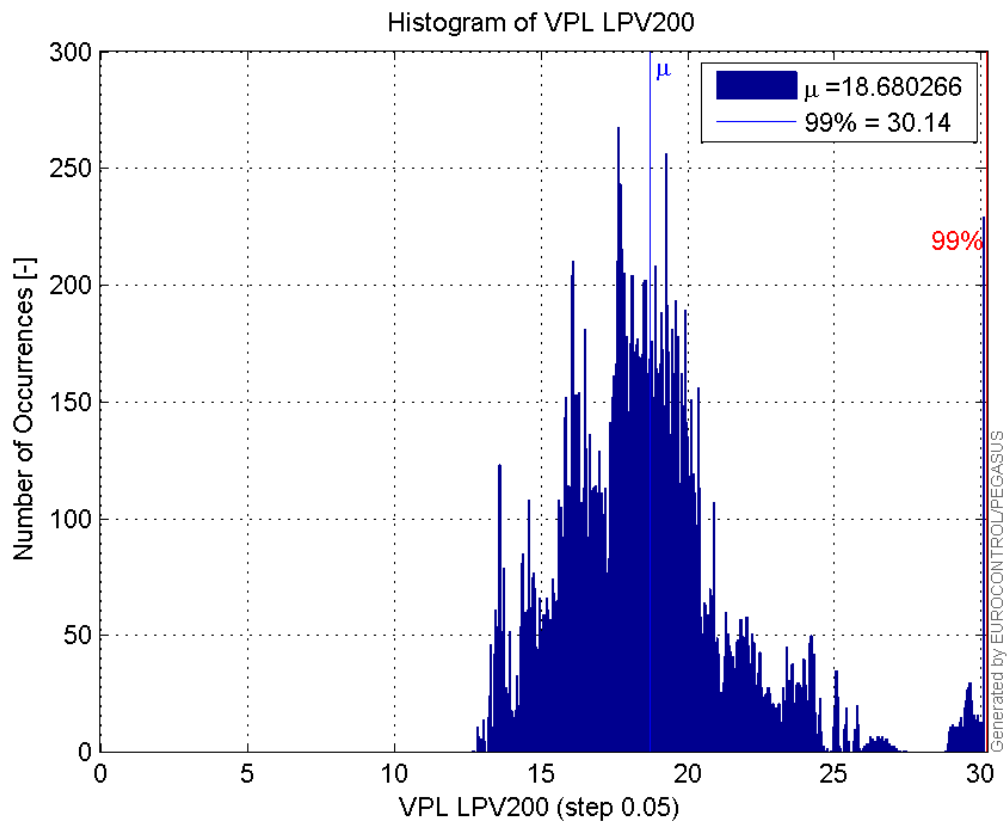
**Histogram of HPL LPV200:**



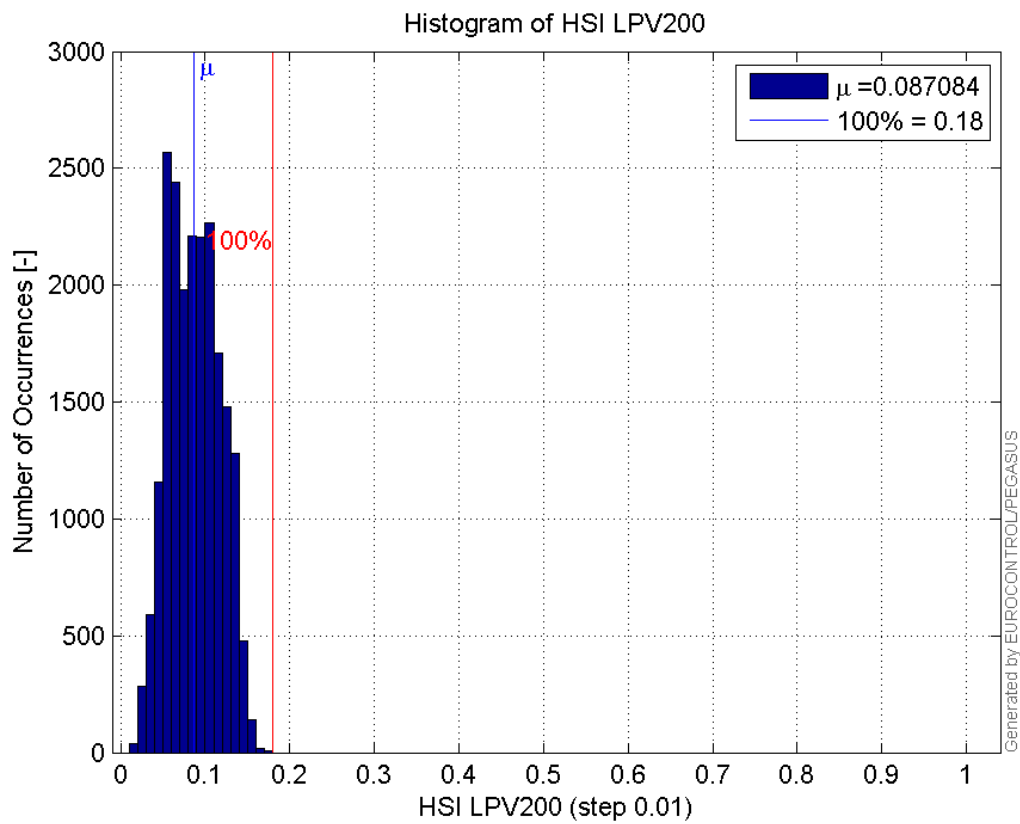
**Histogram of VPL LPV200:**

95

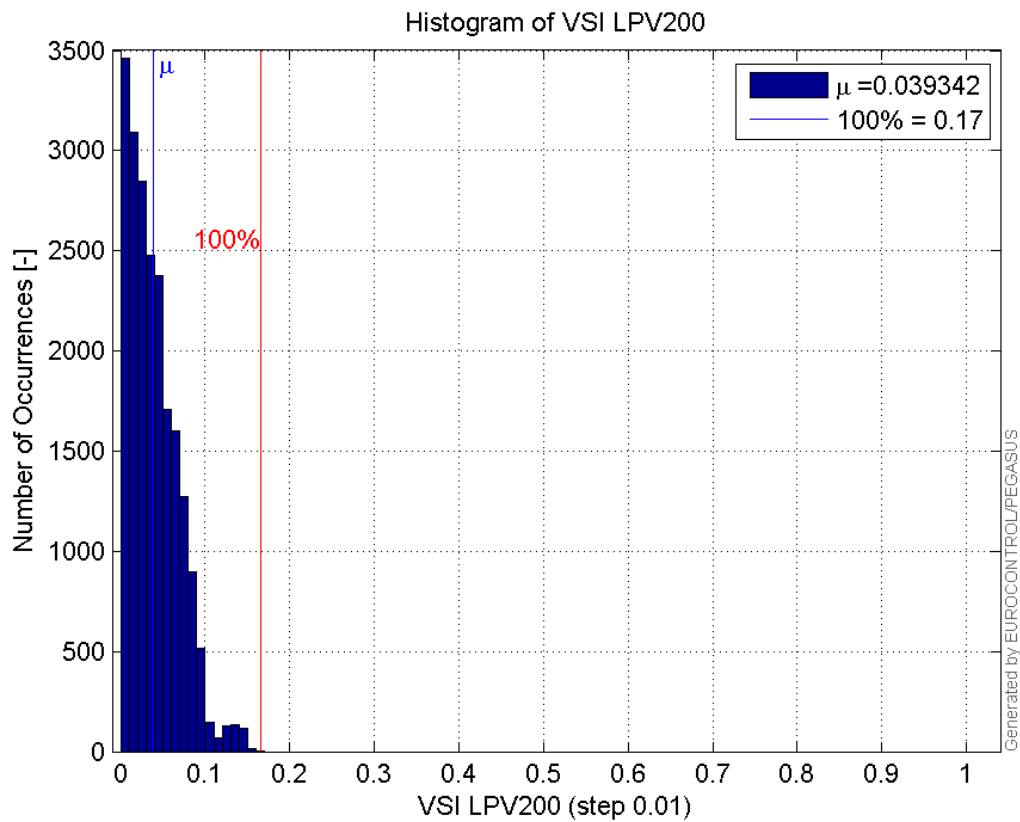




Histogram of HSI LPV200:

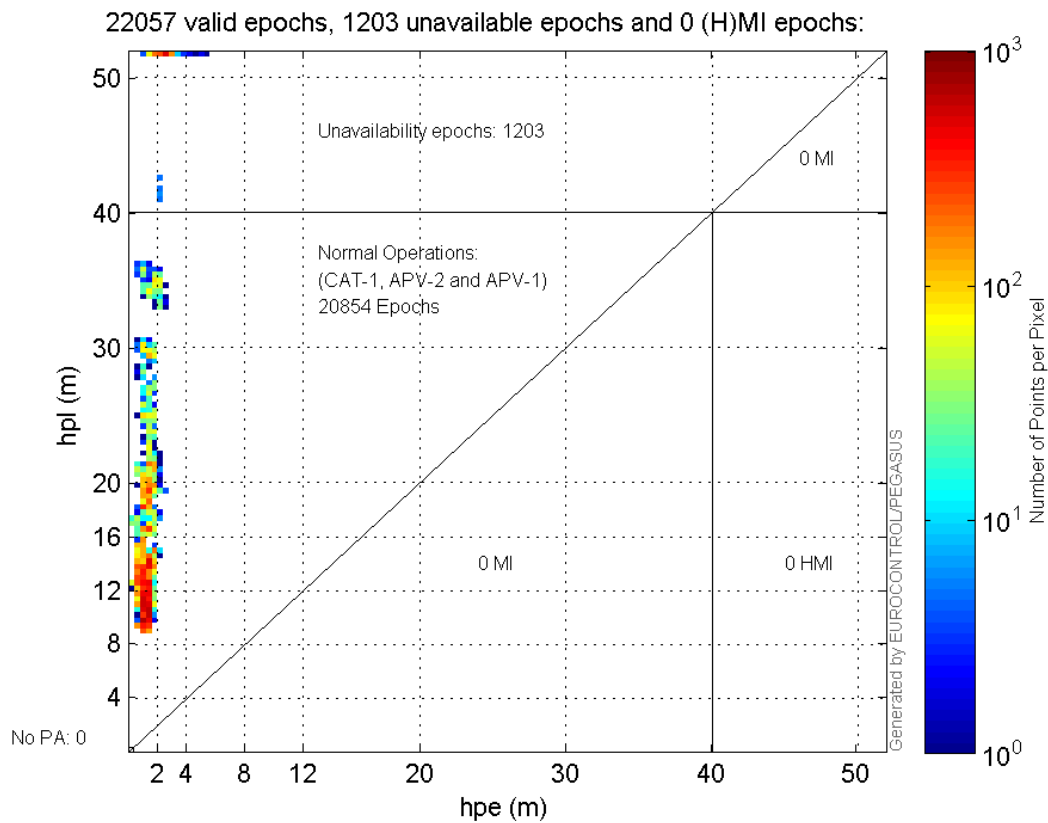


Histogram of VSI LPV200:



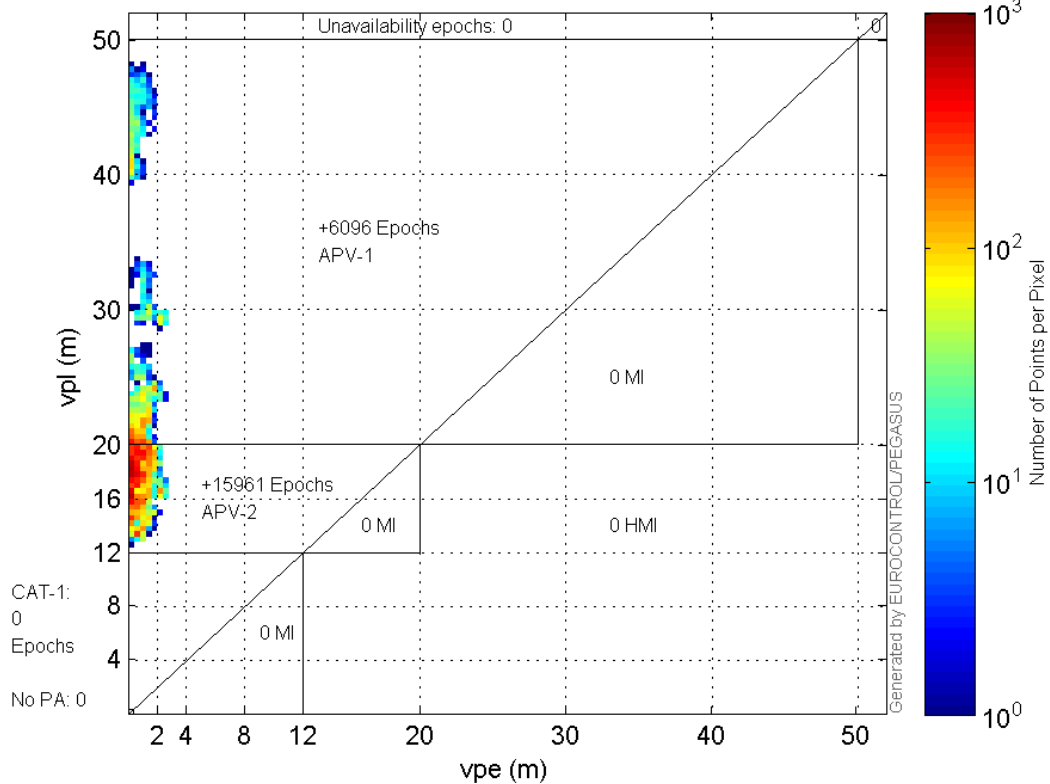
### Stanford Plots

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



#### Vertical\_Stanford\_Plot\_SBAS:

22057 valid epochs, 0 unavailable epochs and 0 (H)MI epochs:



## 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_28EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PEGASUS_DAT_job/JOB/2015_10_28EGNOS/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	223.8882
mi_numbers	results	0

## Range Domain

**start:** 05:57:17 28.10.2015 ( week: 1868 sec: 280637 )  
**end:** 12:10:54 28.10.2015 ( week: 1868 sec: 303054 )  
**duration:** 06:13:38 ..

### quality

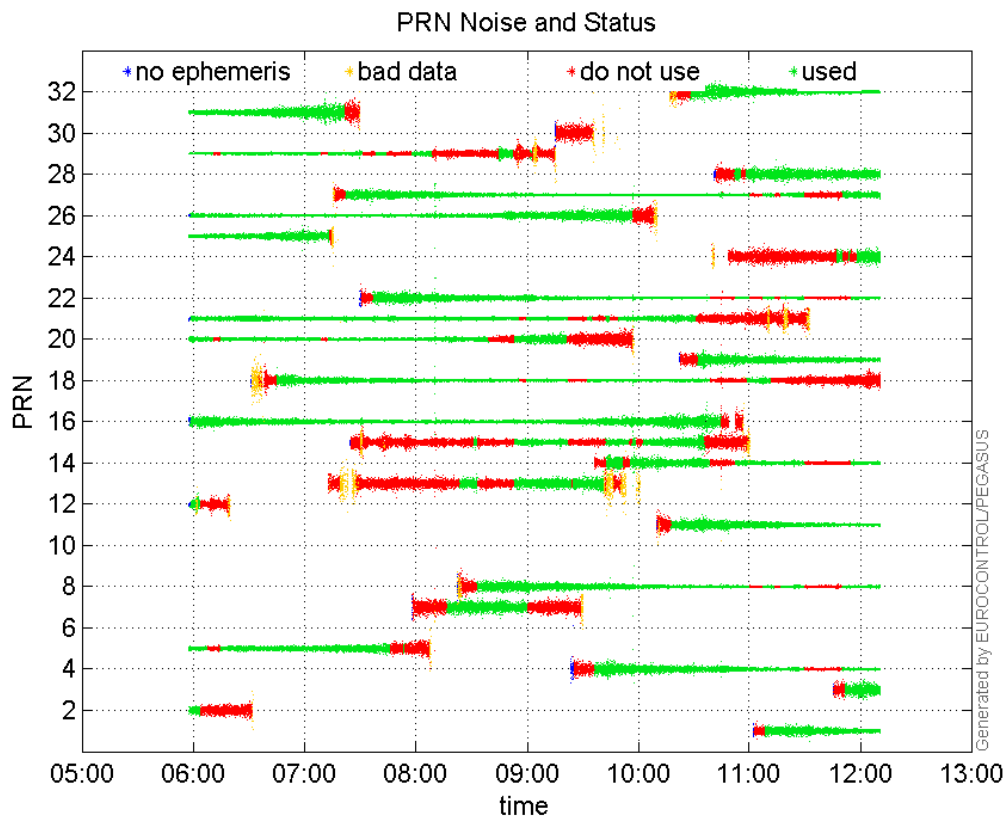
**valid samples** 22418  
**total samples** 22418

### PRN overview

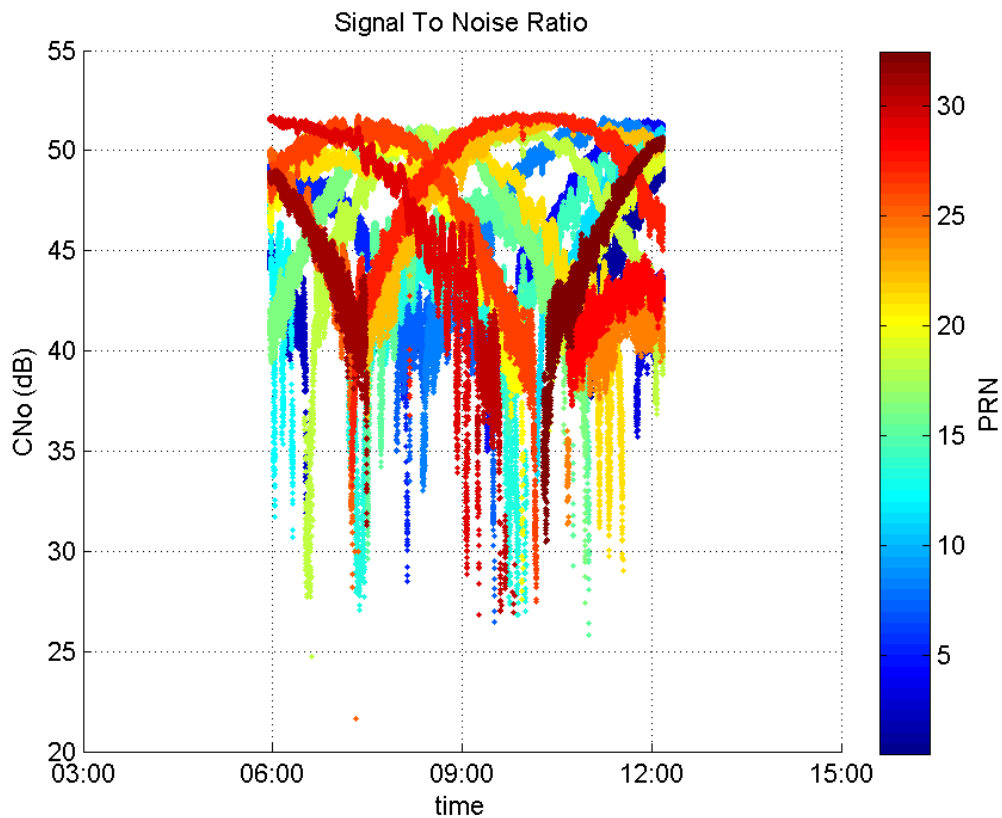
**Number of Visible GPS Satellites** 27  
**Number of Visible SBAS Satellites** 2

### signal quality and status

#### PRN Noise and Status:



#### Signal To Noise Ratio:



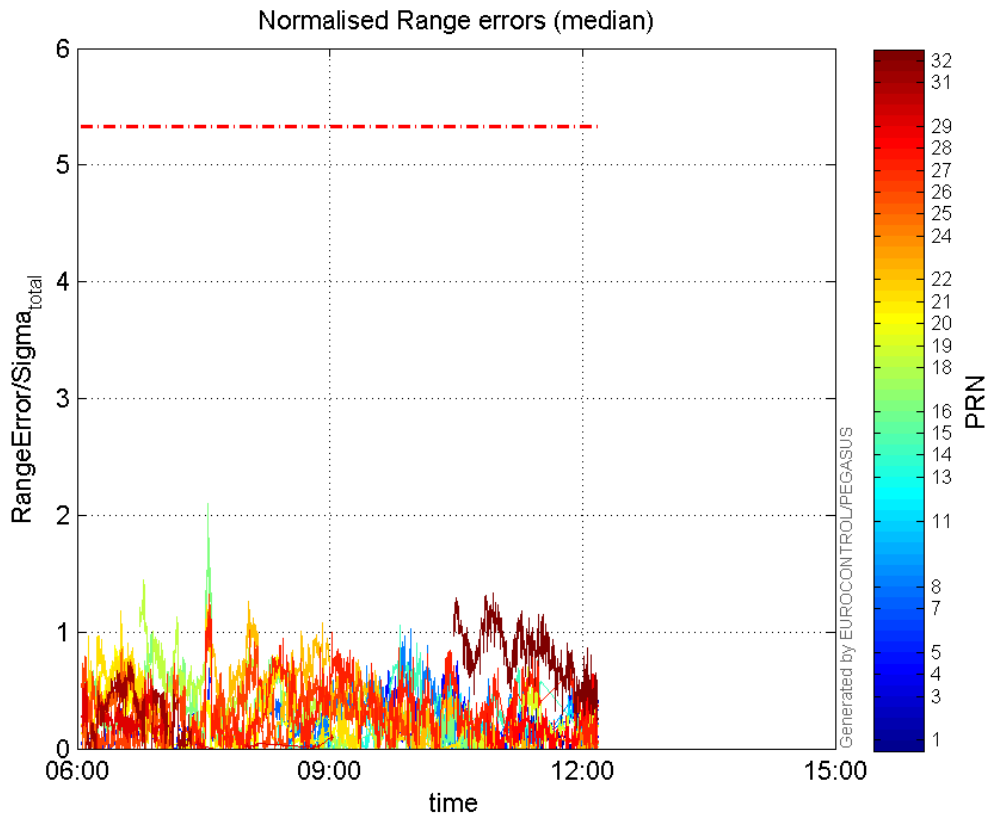
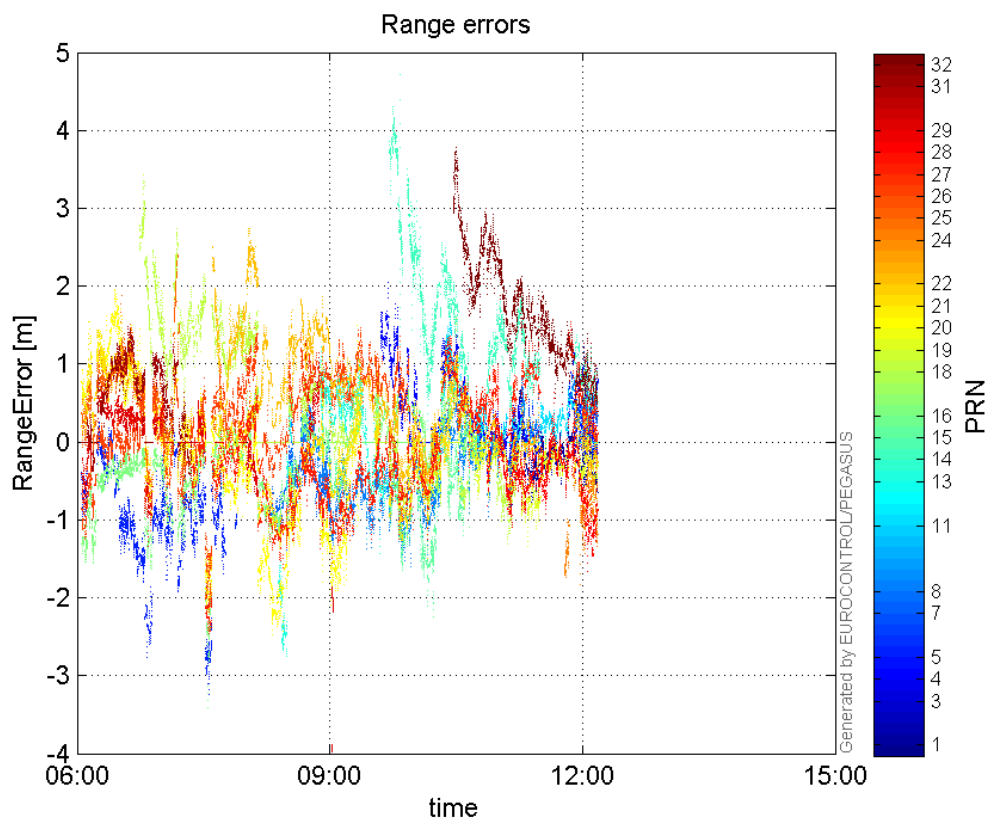
## range errors

Number of Overbounding Norm Errors 0

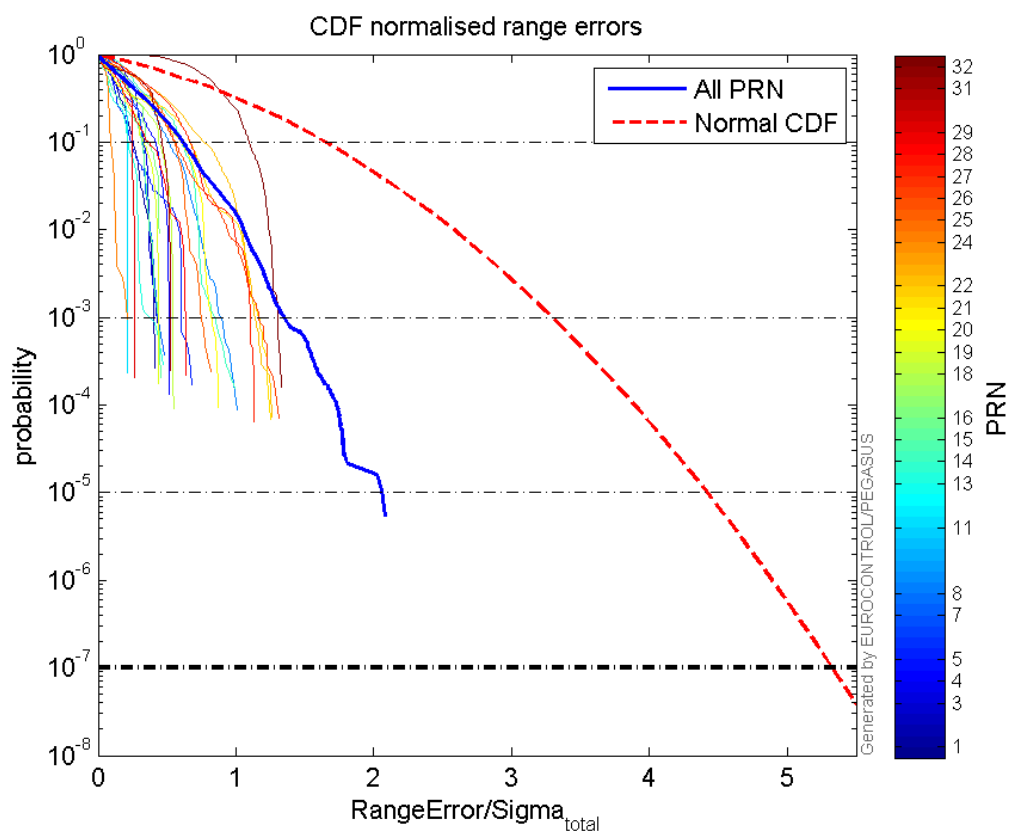
## Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1868	300214	1	0.414985	-0.832784	2.00678
1868	302458	3	0.448964	1.22037	2.7182
1868	297054	4	0.751061	1.47584	1.96501
1868	286454	5	0.690661	-3.23765	4.68776
1868	289768	7	0.511607	-1.39067	2.71825
1868	295056	8	1.02274	-1.6064	1.57069
1868	296762	11	0.638947	1.60722	2.51542
1868	293755	13	0.50199	-1.4377	2.864
1868	294593	14	1.05787	4.71127	4.45355
1868	295469	15	0.460137	-1.51821	3.29947
1868	286410	16	2.09799	-3.41477	1.62763
1868	283626	18	1.44691	3.43587	2.37463
1868	300054	19	0.703483	-1.34117	1.90646
1868	282403	20	0.880984	1.95611	2.22037
1868	286454	21	1.26679	-2.1071	1.66334
1868	288147	22	1.26171	2.74351	2.17443
1868	302319	24	0.228184	-1.82439	7.99527
1868	282688	25	0.856075	1.87855	2.19438
1868	286454	26	1.32342	-2.14629	1.62178
1868	286454	27	1.13673	-2.46215	2.16599
1868	302603	28	0.654923	-1.65517	2.52728
1868	283850	29	0.649769	-1.34628	2.07193

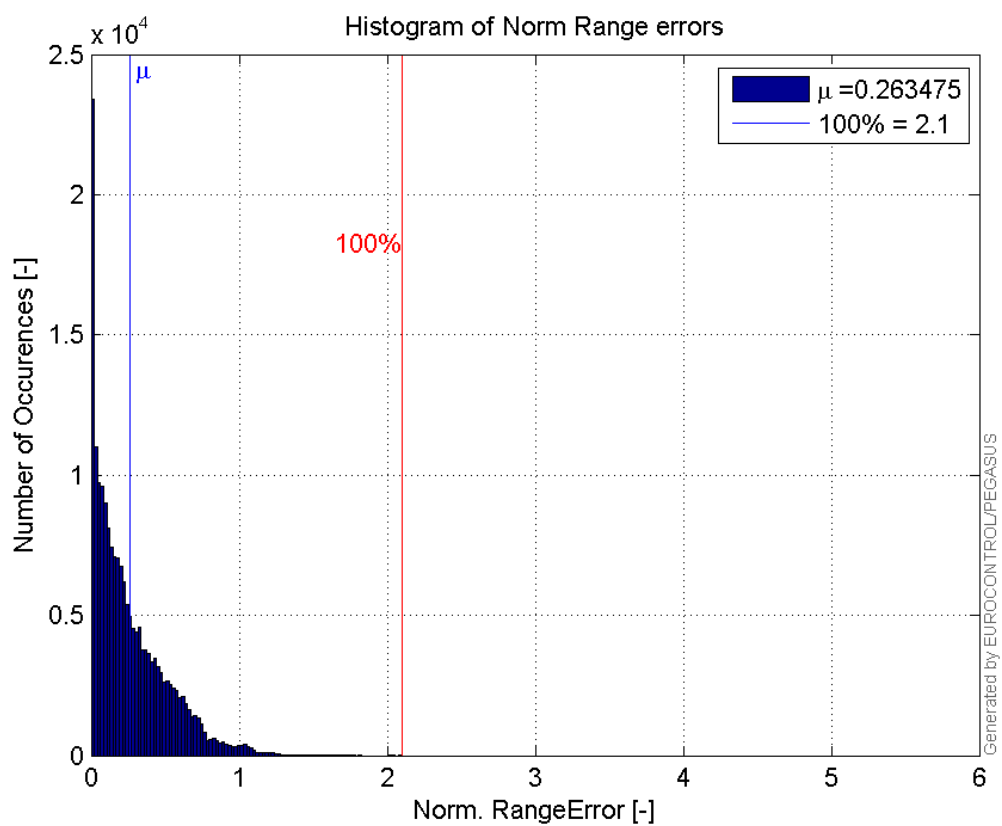
1868	282985	31	0.74605	1.47724	1.98009
1868	298574	32	1.3316	2.91636	2.19011

**Normalised Range errors (median):****Range errors:**

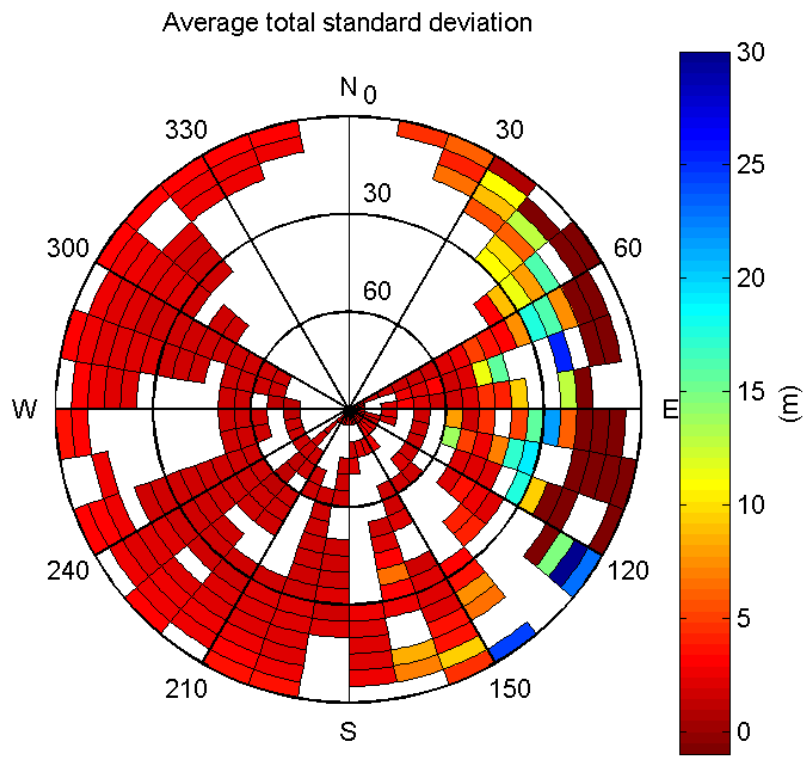
## CDF normalised range errors:



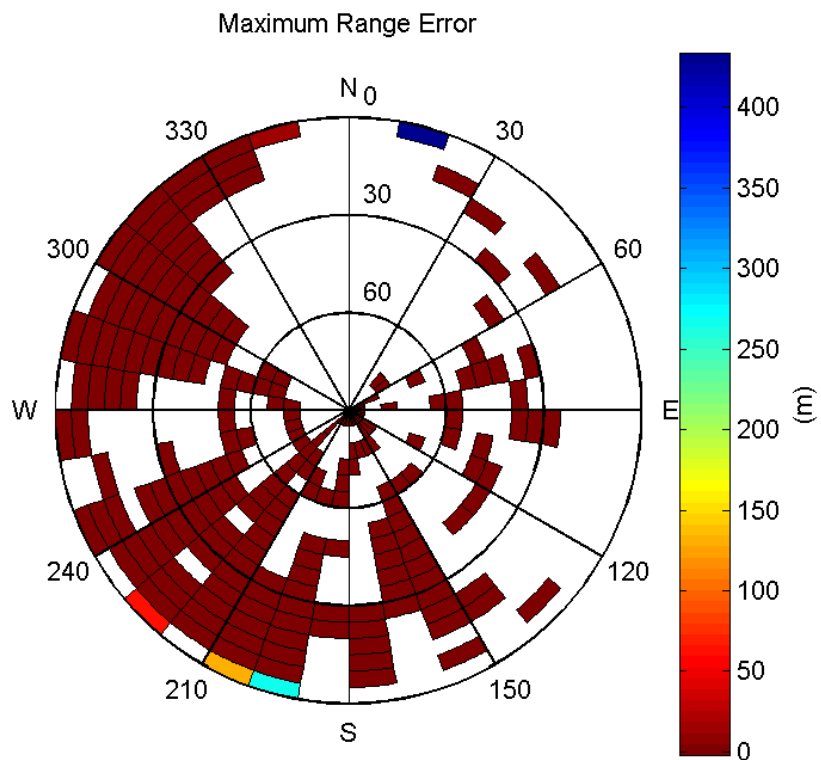
## Histogram of Norm Range errors:



## Sigma Sky Plot:



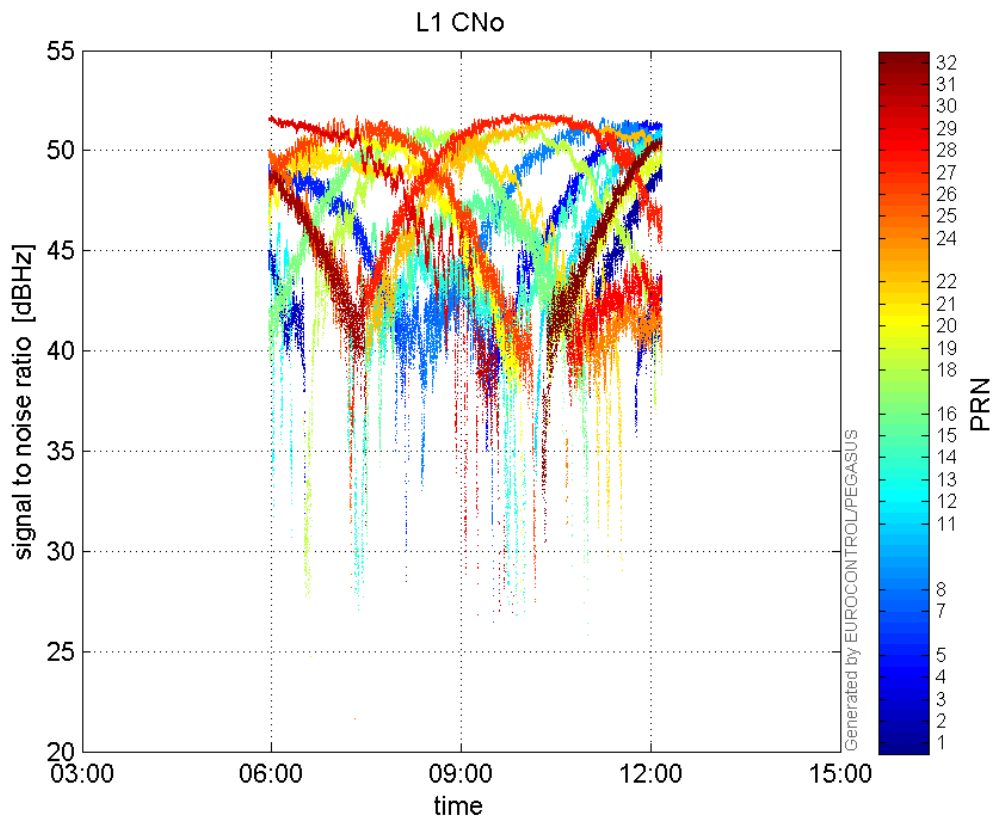
Norm Error Sky Plot:



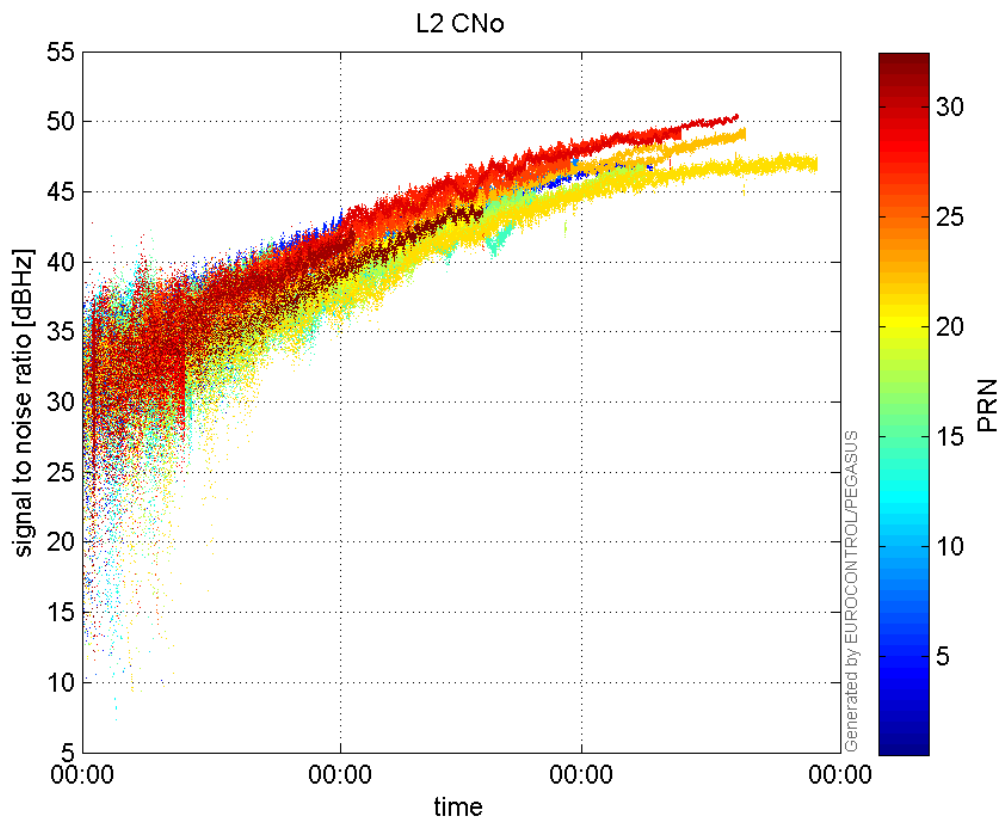
signal quality

L1 CNo:

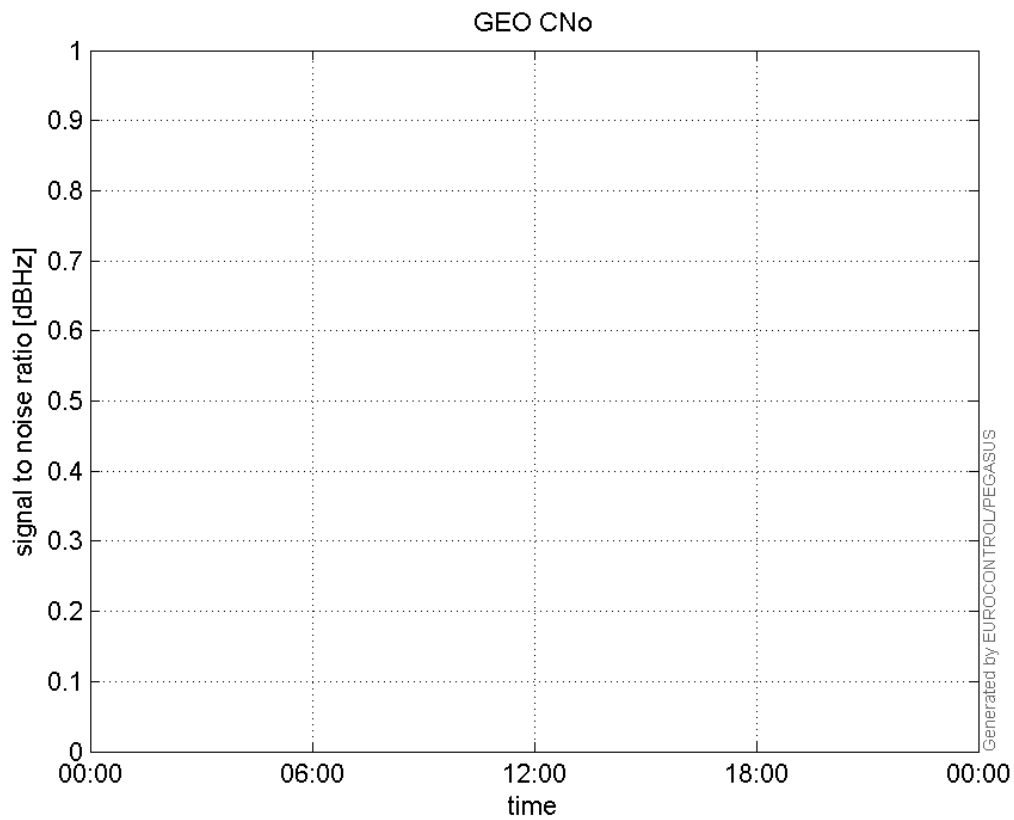
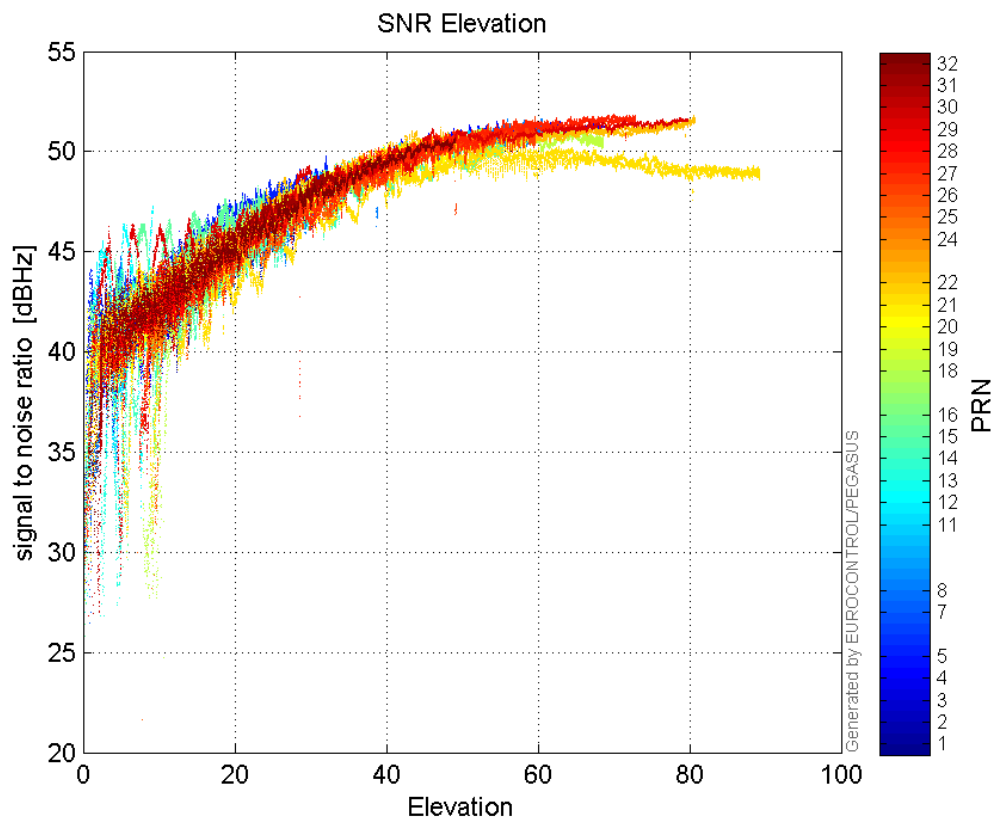


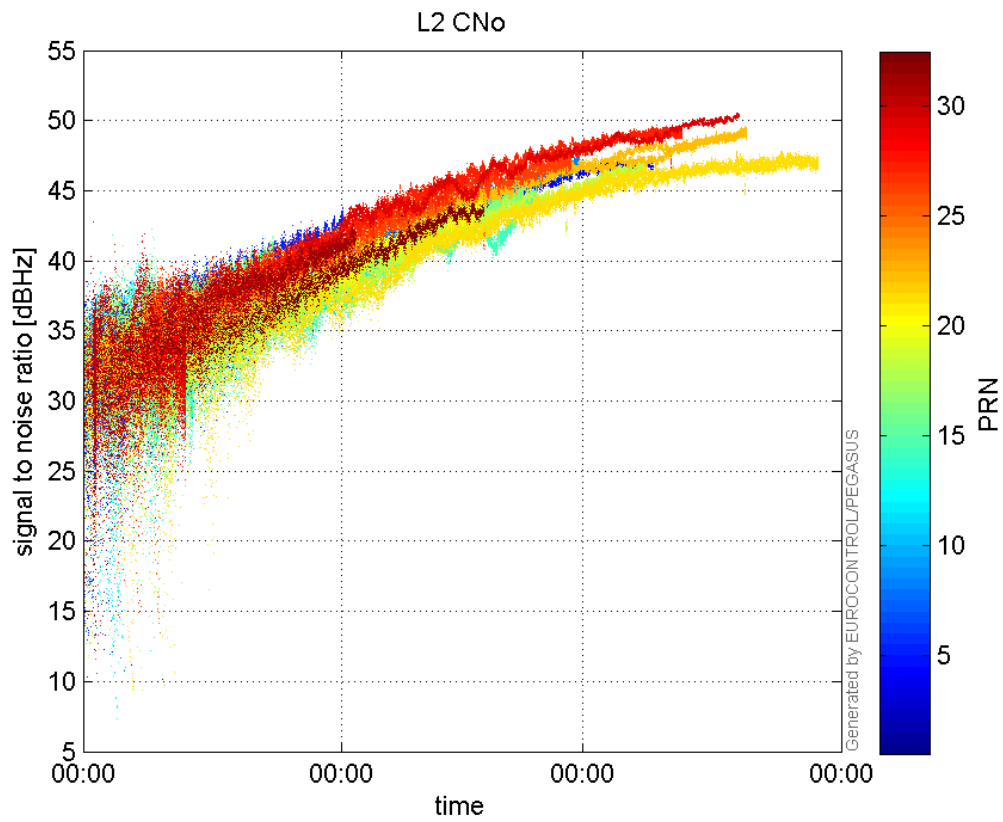


**L2 CNo:**

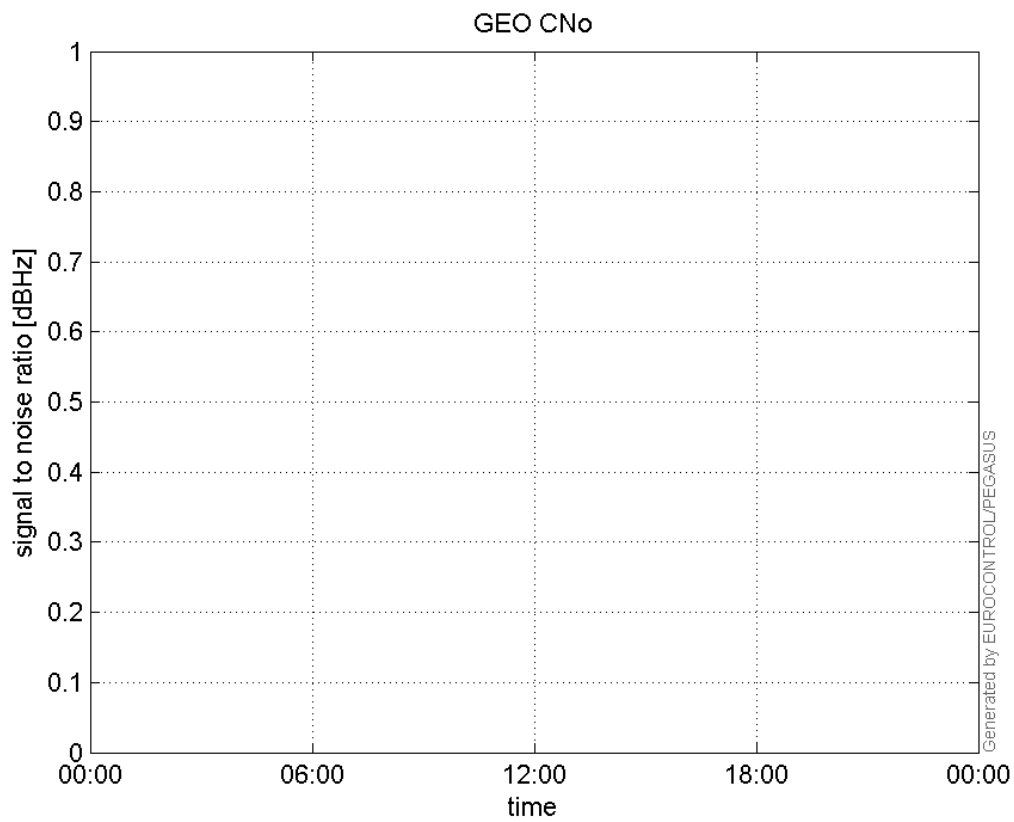


**GEO CNo:**

**SNR Elevation:****L2 CNo:**

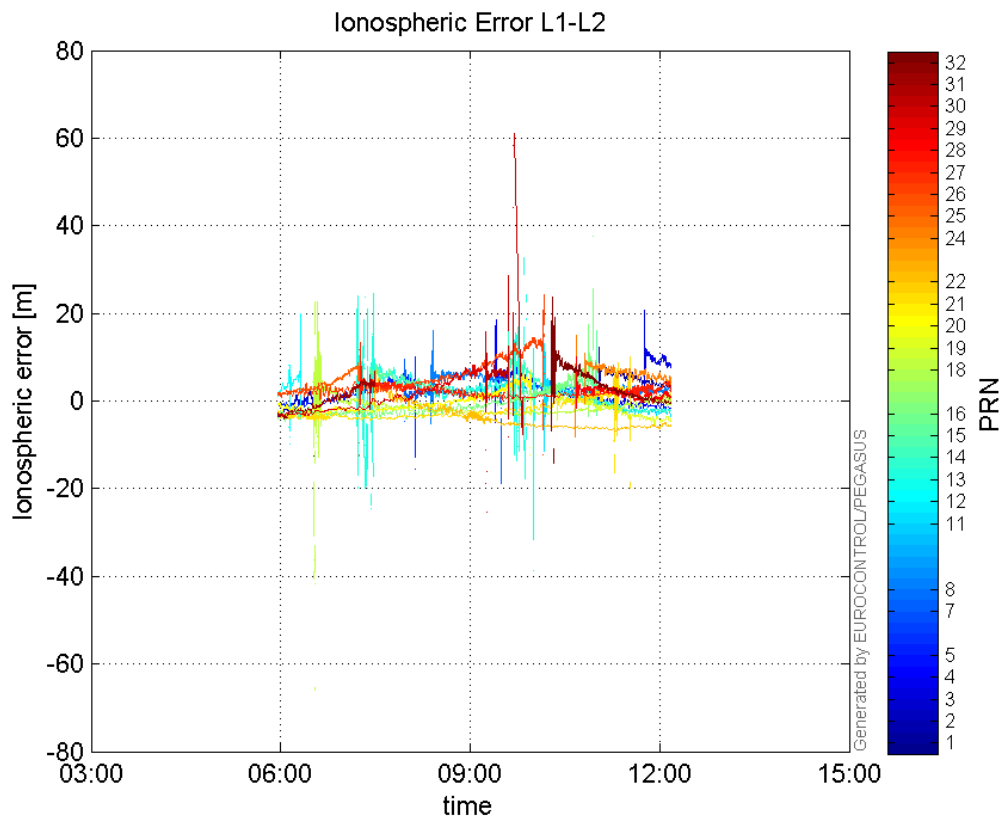


GEO CNo:



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_28EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PEGASUS_DAT_job/JOB/2015_10_28EGNOS/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

<b>init_lon</b>	results	30.4297
<b>init_alt</b>	results	223.8882
<b>mi_numbers</b>	results	0