

# 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

## Position Domain

**start:** 06:23:50 26.08.2016 ( week: 1911 sec: 455030 )  
**end:** 11:21:30 26.08.2016 ( week: 1911 sec: 472890 )  
**duration:** 04:57:41 ..

### quality

**valid samples** 17490

**total samples** 17861

### Event tables

**Position discontinuity events type** all  
**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
<b>max normHor</b>	472496	1.81614	10.6061	0.171235	-0.251203	18.0526	0.0139151
<b>max normVer</b>	457656	1.47639	18.7923	0.0785634	-1.28843	14.8049	0.0870272
<b>max HPE</b>	459024	2.95622	23.9122	0.123628	2.64951	34.3051	0.0772338
<b>max VPE</b>	459024	2.95622	23.9122	0.123628	2.64951	34.3051	0.0772338
<b>min HPL</b>	466422	0.996882	9.14591	0.108998	0.024434	19.6837	0.00124133
<b>min VPL</b>	461722	1.39776	9.89468	0.141264	0.163989	12.372	0.0132549

#### Position discontinuity events :

#	Epoch	duration	stable period
1	459211	388	3810

#### APV-I discontinuity events :

#	Epoch	duration	stable period
1	458350	83	2949
2	458524	101	91
3	459211	388	586
4	459792	23	193

5	460574	199	759
6	465252	198	4479

**APV-35m discontinuity events :**

#	Epoch	duration	stable period
1	458350	83	2949
2	458524	101	91
3	458822	193	197
4	459056	2	41
5	459127	688	69
6	460574	199	759
7	465252	198	4479

**LPV-200 discontinuity events :**

#	Epoch	duration	stable period
1	458350	83	2949
2	458524	101	91
3	458822	193	197
4	459056	2	41
5	459127	688	69
6	460574	199	759
7	465252	198	4479

**First Glance analysis**

<b>Duration</b>	17861
<b>Number of Samples</b>	17861
<b>Number of invalid sample</b>	371
<b>Number of no position solution samples</b>	388
<b>Number of missing sample</b>	0
<b>Logging Loss</b>	0
<b>Processing Loss</b>	2.0772
<b>Number of Misleading Information</b>	0
<b>Data gaps</b>	0
<b>Discontinuities</b>	1

**Number of Samples :**

Valid	APV-1	LPV-200	CAT-1	APV-35m
17102	16498	16026	0	16026

**Accuracy statistics :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>HPE 95%</b>	1.60779	1.61262	1.61796	NaN	1.61796
<b>HPEscale 95%</b>	NaN	5.00821	5.02007	NaN	5.02007
<b>VPE 95%</b>	0.978359	0.905642	0.90587	NaN	0.90587
<b>VPEscale 95%</b>	NaN	2.45748	1.72887	NaN	1.72887

**Availability :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>Signal in Space</b>	0.977816	0.943282	0.916295	0	0.916295
<b>measurements</b>	0.957505	0.923688	0.897262	0	0.897262
<b>Operational</b>	0.957505	0.923688	0.897262	0	0.897262

**Discontinuity events :**

	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>All</b>	1	6	7	--	7
<b>Long</b>	1	6	6	--	6
<b>Independent</b>	1	6	6	--	6
<b>P(disc.)</b>	0.00087709	0.00545521	0.00561587	NaN	0.00561587
<b>P(slide)</b>	0.00087709	0.00545521	0.00655185	NaN	0.00655185

**Integrity events :**

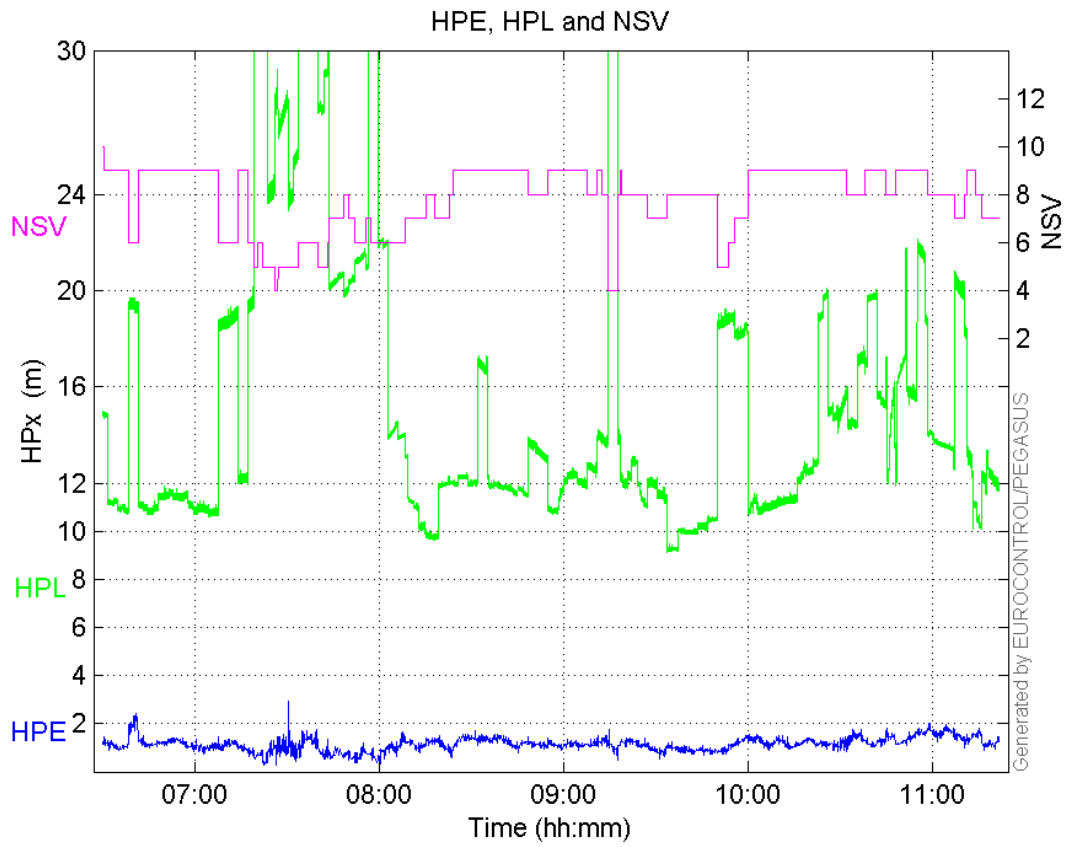
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
<b>Total</b>	0	0	0	0	0
<b>Horizontal</b>	0	0	0	0	0
<b>Vertical</b>	0	0	0	0	0

**Performance Summary :**

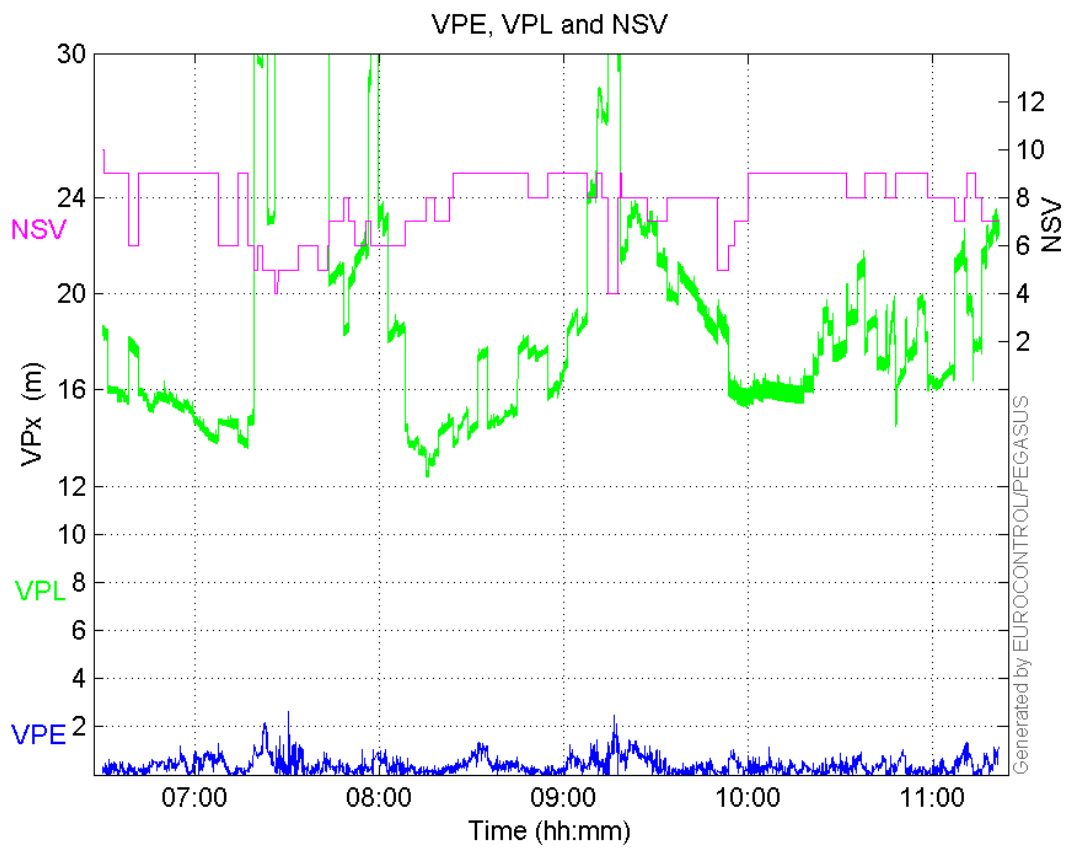
	Valid	APV-1	LPV-200	CAT-1	APV-35m
<b>Samples</b>	17102	16498	16026	0	16026
<b>SIS Availability</b>	0.977816	0.943282	0.916295	0	0.916295
<b>Local Availability</b>	0.957505	0.923688	0.897262	0	0.897262
<b>Operational Availability</b>	0.957505	0.923688	0.897262	0	0.897262
<b>HPE 95%</b>	1.60779	1.61262	1.61796	NaN	1.61796
<b>HPEScale 95%</b>	NaN	5.00821	5.02007	NaN	5.02007
<b>VPE 95%</b>	0.978359	0.905642	0.90587	NaN	0.90587
<b>VPEscale 95%</b>	NaN	2.45748	1.72887	NaN	1.72887
<b>All Discontinuity Events</b>	1	6	7	--	7
<b>Long Discontinuity Events</b>	1	6	6	--	6
<b>Independent Discontinuity Events</b>	1	6	6	--	6
<b>P(discontinuity)</b>	0.00087709	0.00545521	0.00561587	NaN	0.00561587
<b>P(sliding window)</b>	0.00087709	0.00545521	0.00655185	NaN	0.00655185
<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:**

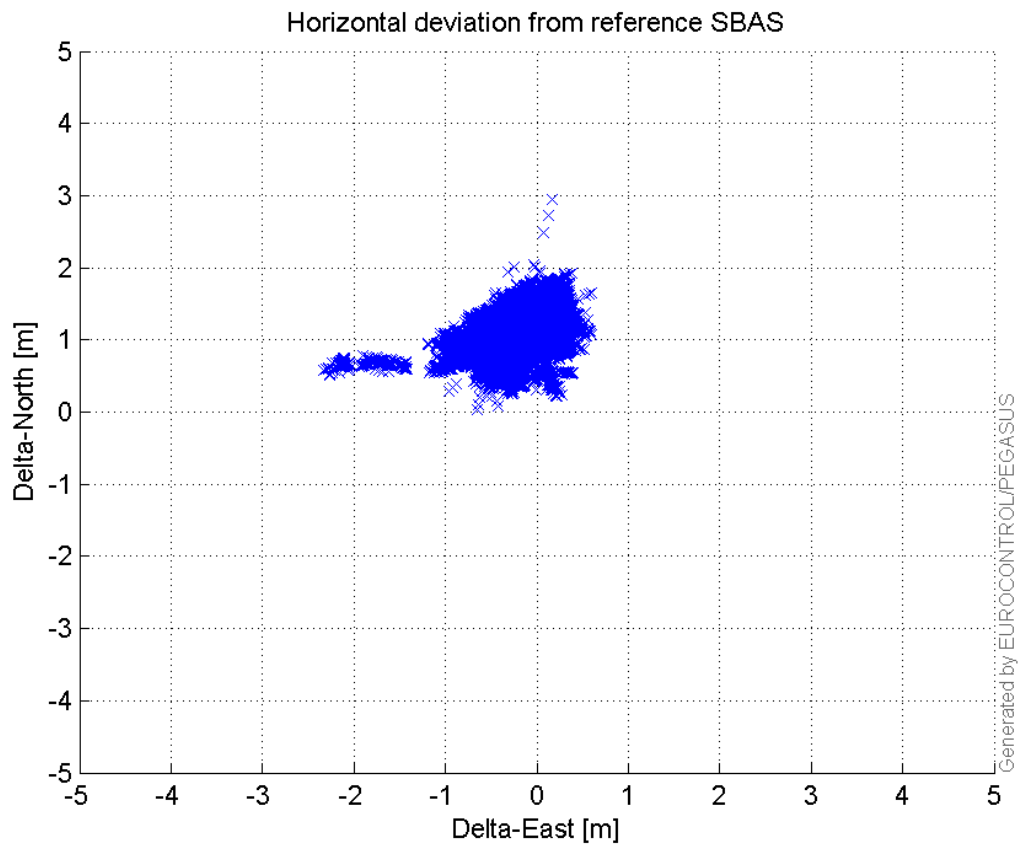


**VPE, VPL and NSV:**



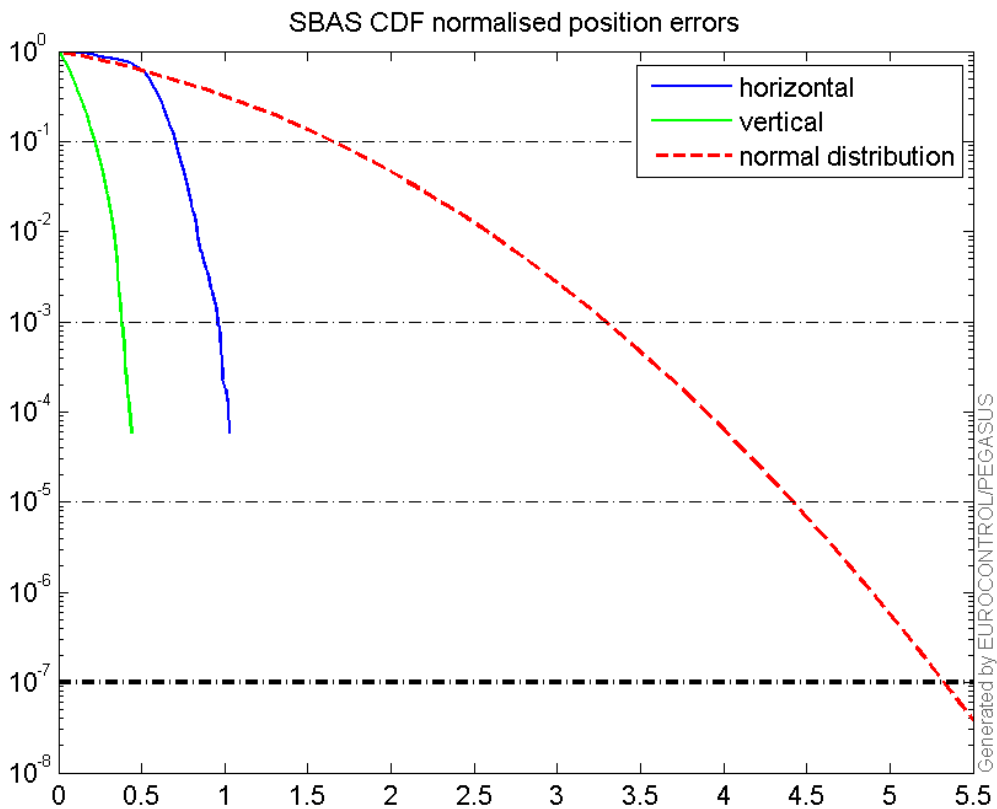
**Horizontal deviation**

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



## Statistics

<b>number</b>	16498
<b>sum</b>	19258.524
<b>sum2</b>	23577.905
<b>prctile95</b>	1.6126188
<b>prctile99</b>	1.8557849
<b>number</b>	16498
<b>sum</b>	5894.7046
<b>sum2</b>	3410.2826
<b>prctile95</b>	0.90564233
<b>prctile99</b>	1.2092028
<b>number</b>	16498
<b>sum</b>	238968.93
<b>sum2</b>	3802528.5
<b>prctile95</b>	23.67746
<b>prctile99</b>	28.91188
<b>number</b>	16498
<b>sum</b>	307148.09
<b>sum2</b>	6130081.2
<b>prctile95</b>	28.14654
<b>prctile99</b>	40.57568
<b>number</b>	16498
<b>sum</b>	1438.7954
<b>sum2</b>	137.1631
<b>prctile95</b>	0.12520529
<b>prctile99</b>	0.13896865
<b>number</b>	16498
<b>sum</b>	321.69509
<b>sum2</b>	9.8682857
<b>prctile95</b>	0.049149653
<b>prctile99</b>	0.062460469
<b>number</b>	16026
<b>sum</b>	18825.721
<b>sum2</b>	23158.55
<b>prctile95</b>	1.6179551
<b>prctile99</b>	1.8616824
<b>number</b>	16026
<b>sum</b>	5720.0866
<b>sum2</b>	3311.0168
<b>prctile95</b>	0.90586963
<b>prctile99</b>	1.2074742
<b>number</b>	16026
<b>sum</b>	226065.17
<b>sum2</b>	3449145.4
<b>prctile95</b>	21.451
<b>prctile99</b>	27.114924
<b>number</b>	16026
<b>sum</b>	288639.19
<b>sum2</b>	5402157.2
<b>prctile95</b>	23.45244
<b>prctile99</b>	33.331912

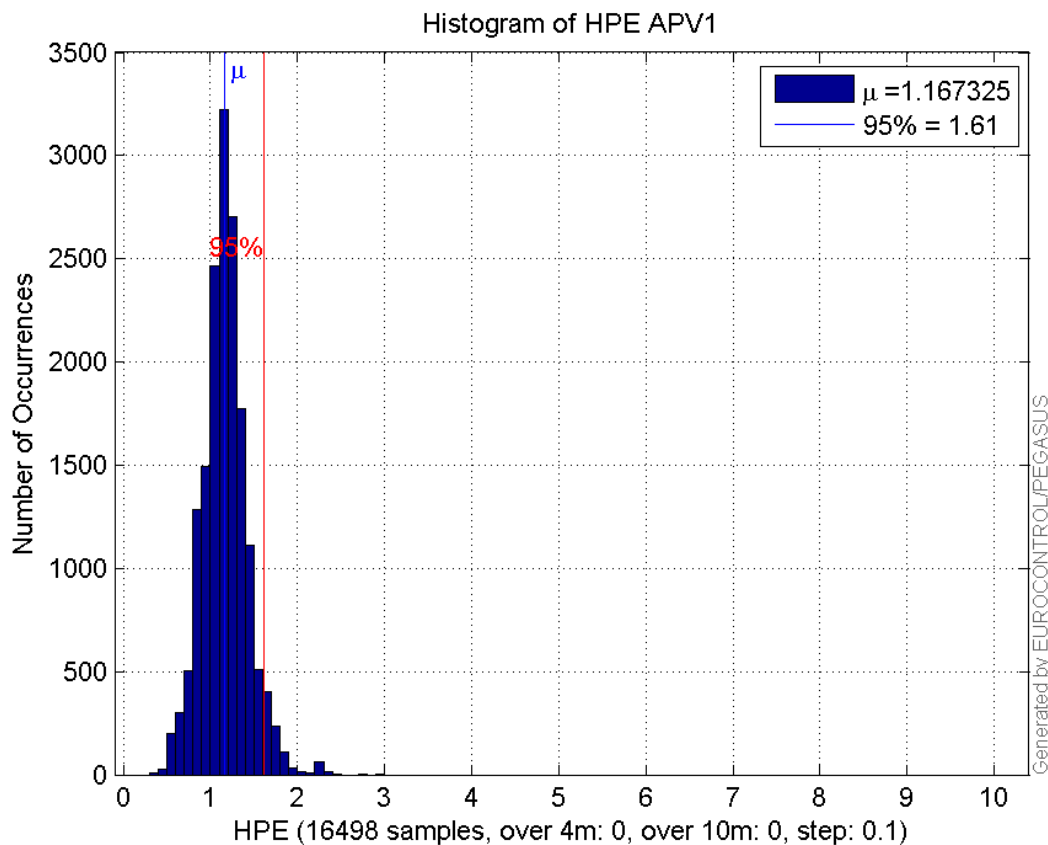
```

number 16026
sum 1422.8925
sum2 136.59324
prctile95 0.12550169
prctile99 0.13909553
number 16026
sum 317.1896
sum2 9.8009329
prctile95 0.049396376
prctile99 0.062685371
    
```

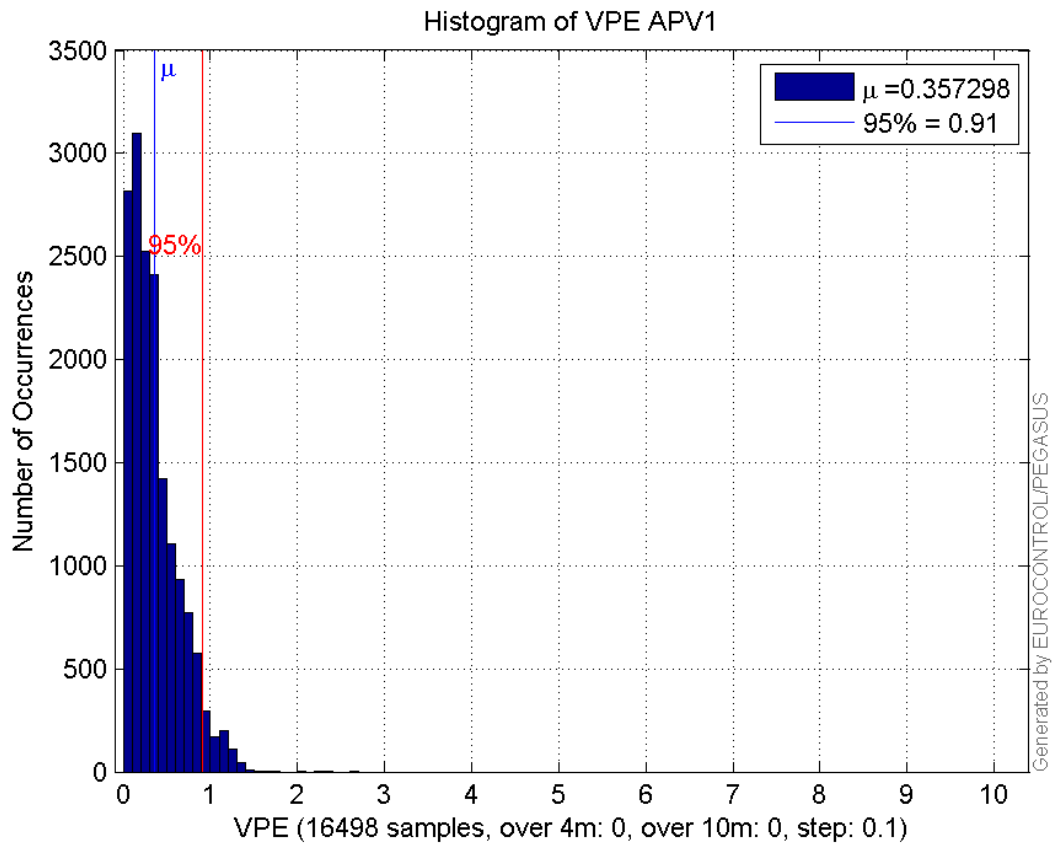
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.16732	0.257864	1.15592	1.61262	1.85578	1.19547
HPL	14.4847	4.54734	12.3492	23.6775	28.9119	15.1817
VPE	0.357298	0.281161	0.292985	0.905642	1.2092	0.454652
VPL	18.6173	4.9963	17.5284	28.1465	40.5757	19.276

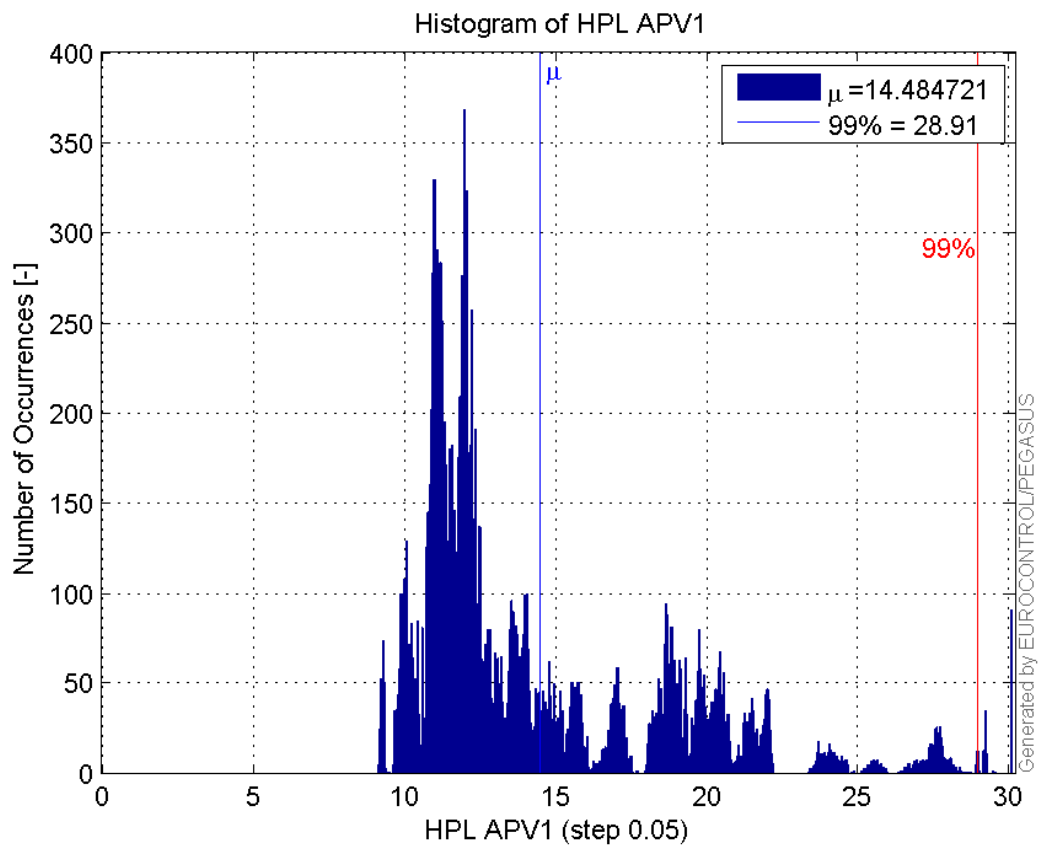
**Histogram of HPE APV1:**



**Histogram of VPE APV1:**

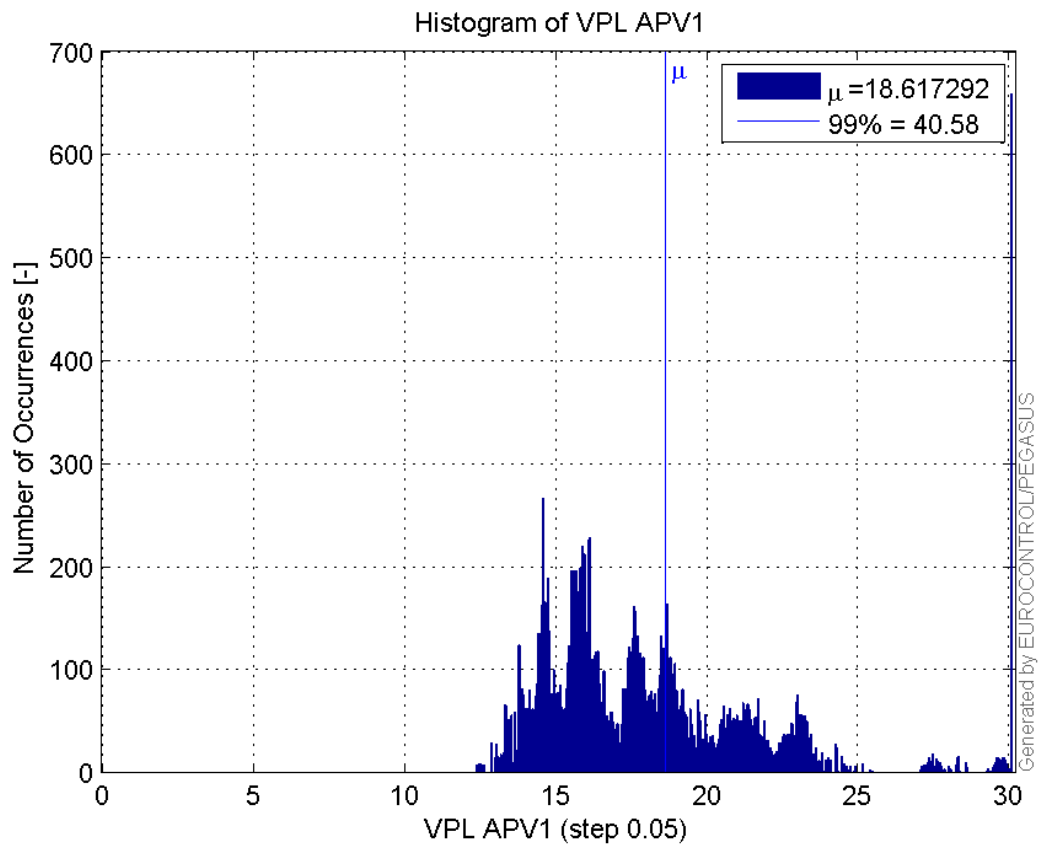


**Histogram of HPL APV1:**

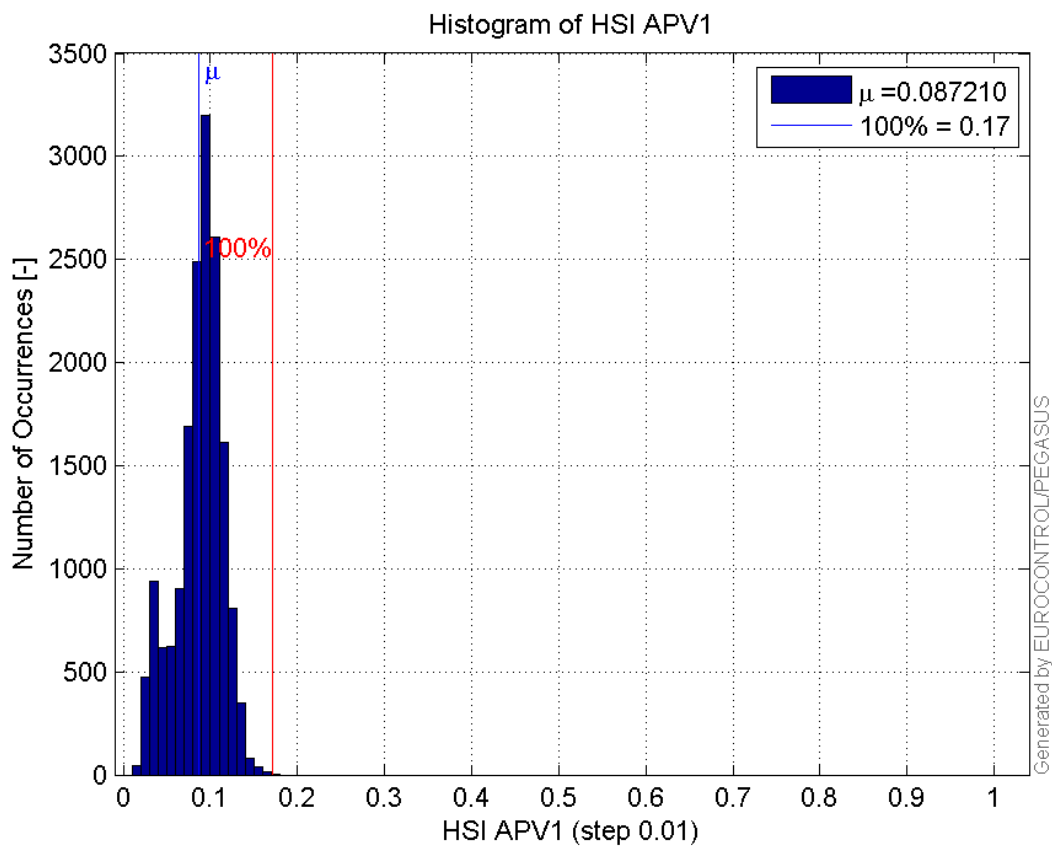


**Histogram of VPL APV1:**

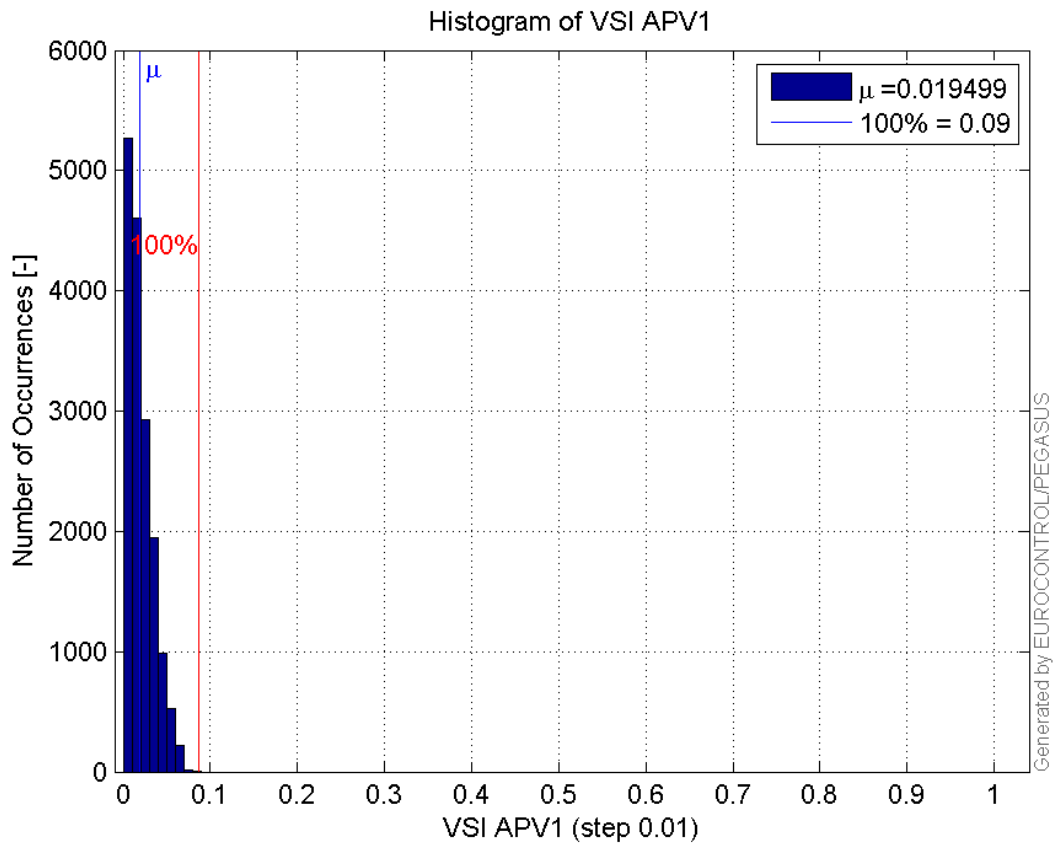




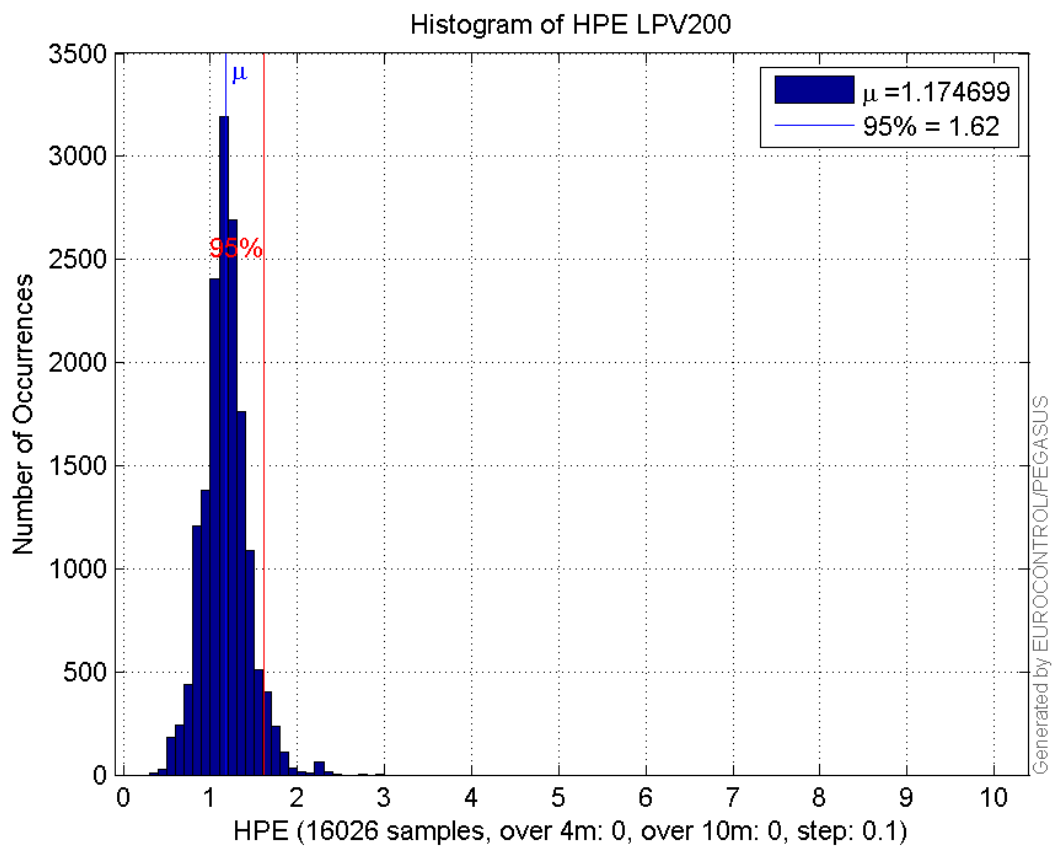
**Histogram of HSI APV1:**



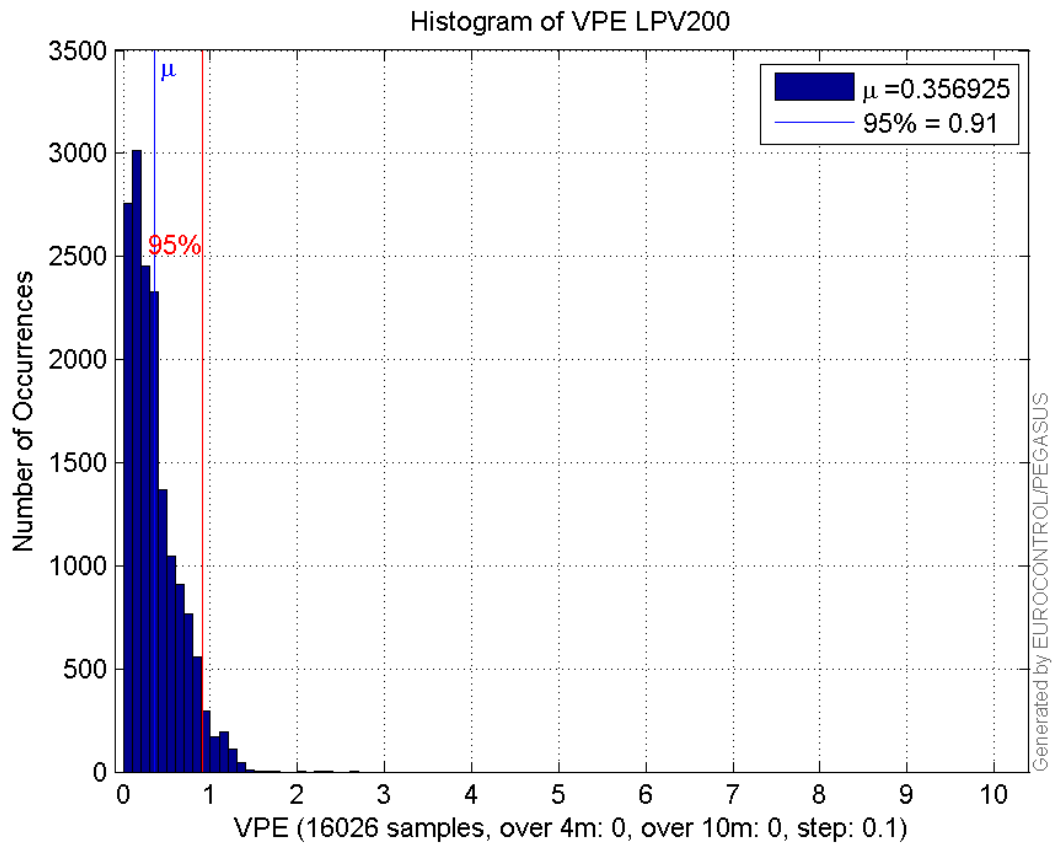
**Histogram of VSI APV1:**



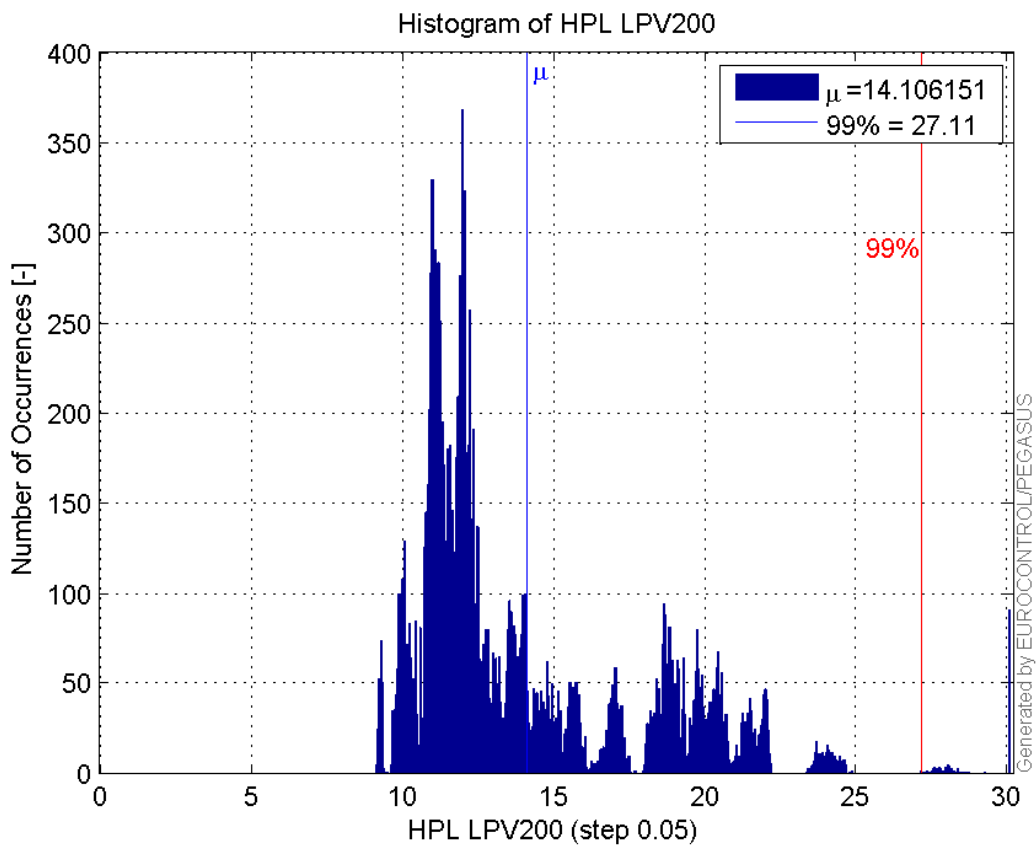
**Histogram of HPE LPV200:**



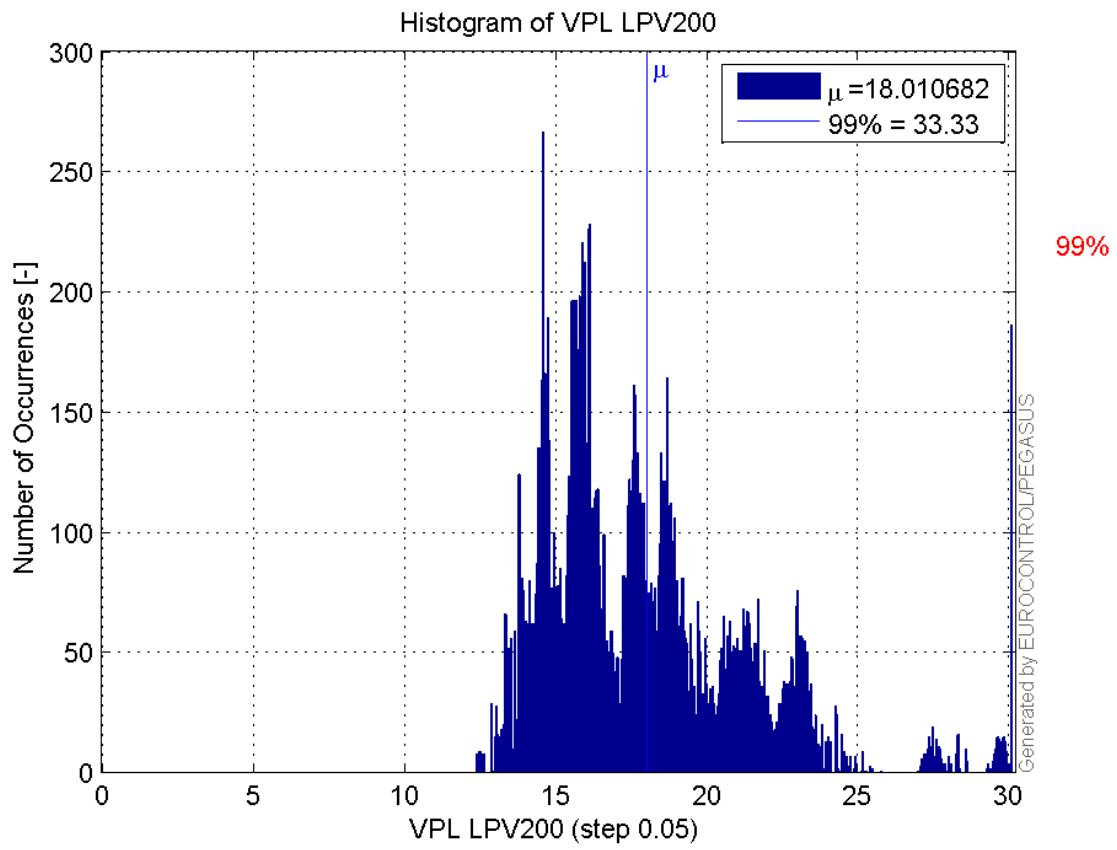
**Histogram of VPE LPV200:**



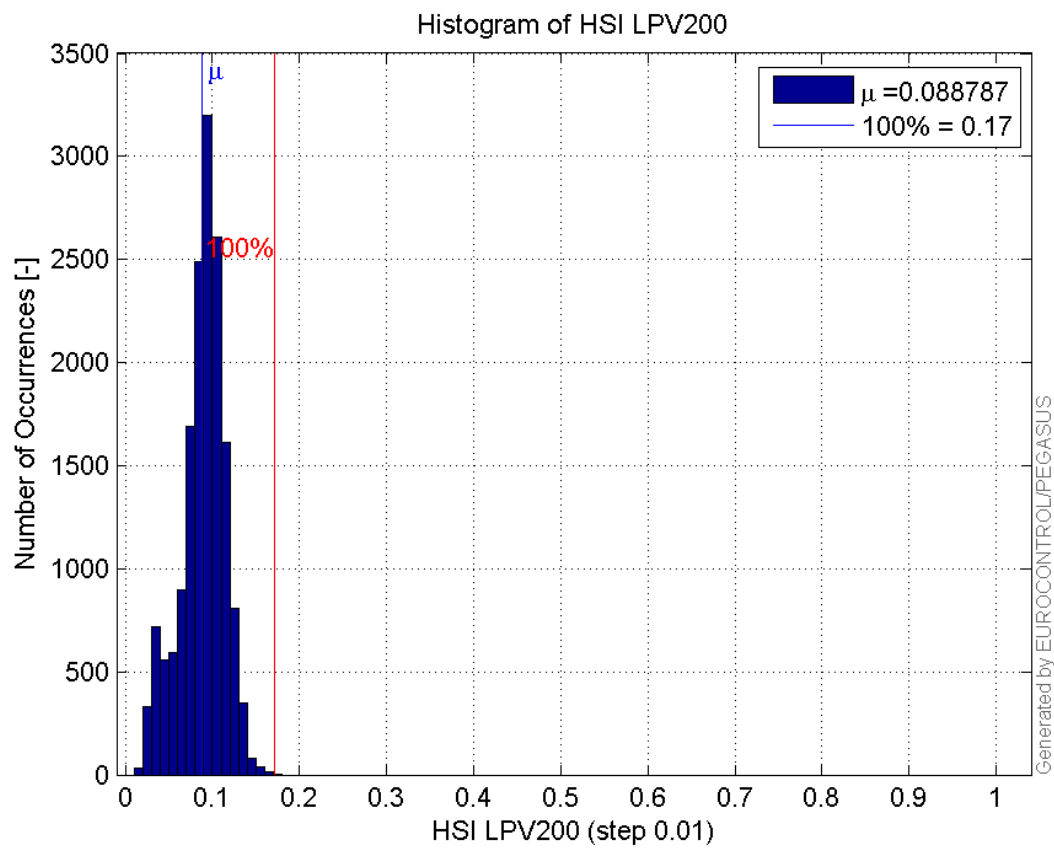
**Histogram of HPL LPV200:**



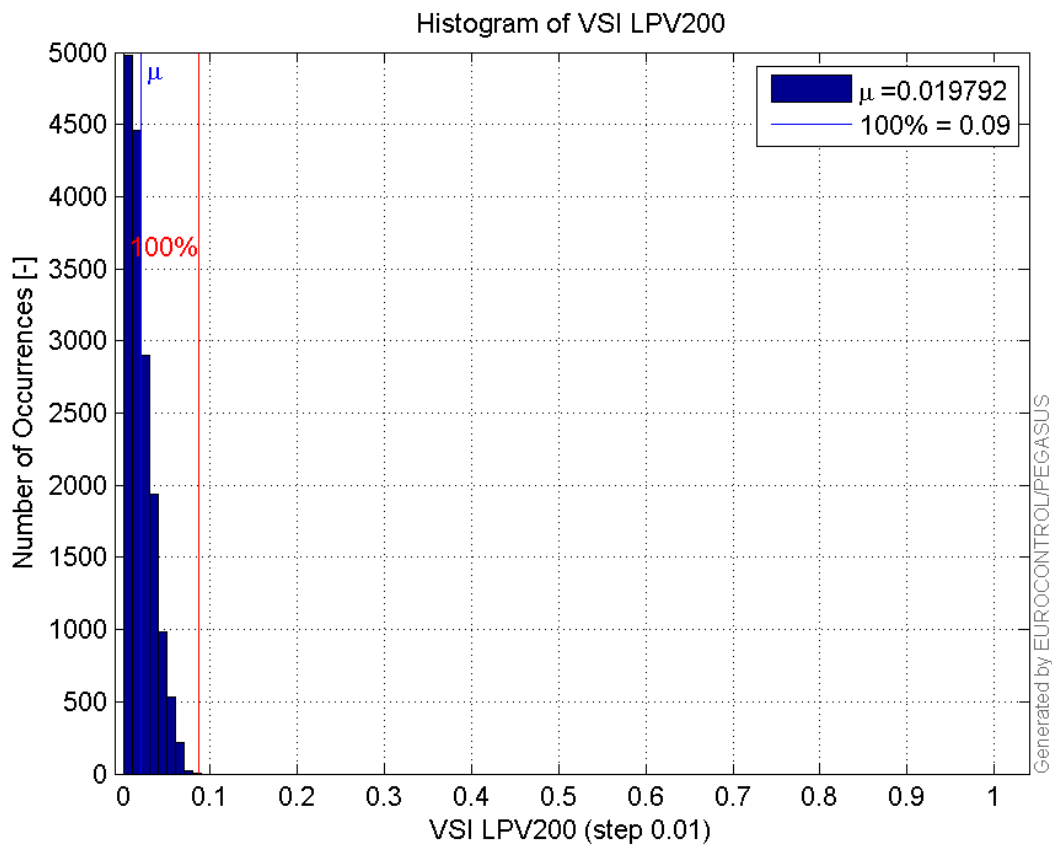
**Histogram of VPL LPV200:**



**Histogram of HSI LPV200:**

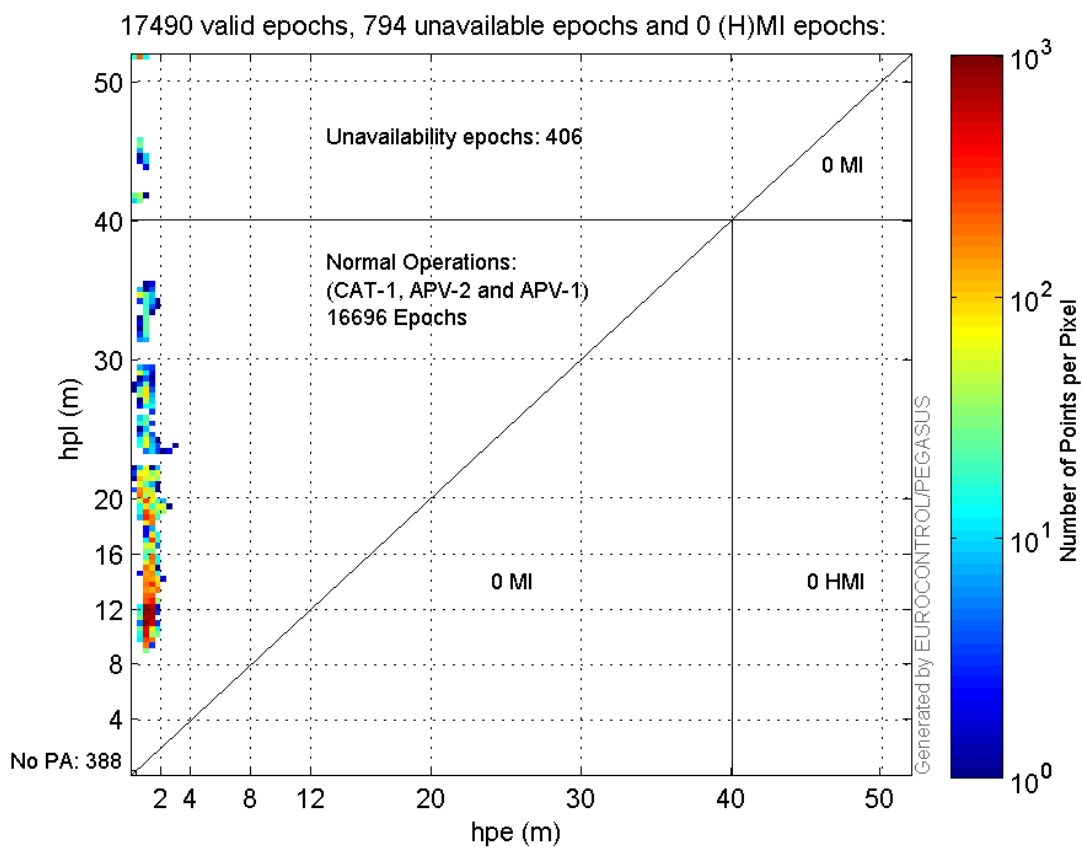


**Histogram of VSI LPV200:**

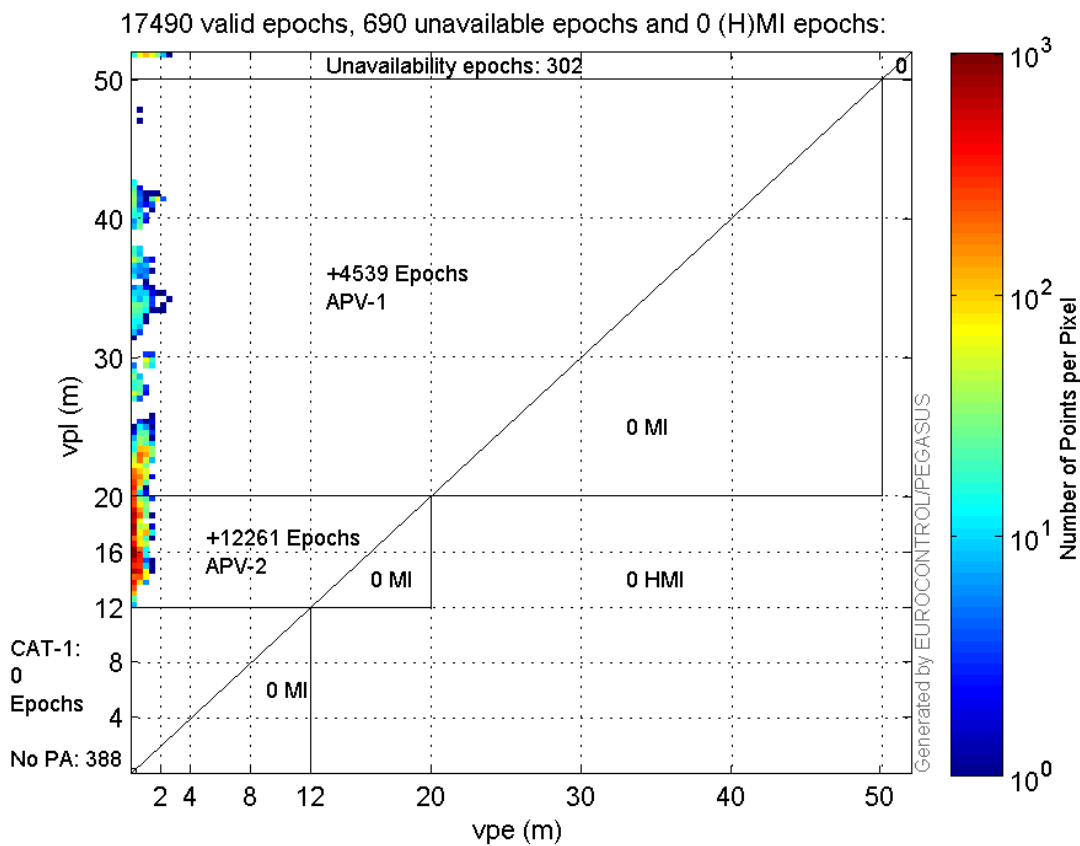


### Stanford Plots

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



## Vertical\_Stanford\_Plot\_SBAS:



## Parameters

## system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.4.0
input_prefix	system	D:/PegasusDateJob/job/2016_08_26_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_08_26_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	231.4846
mi_numbers	results	0

## Range Domain

**start:** 06:23:50 26.08.2016 ( week: 1911 sec: 455030 )  
**end:** 11:21:30 26.08.2016 ( week: 1911 sec: 472890 )  
**duration:** 04:57:41 ..

### quality

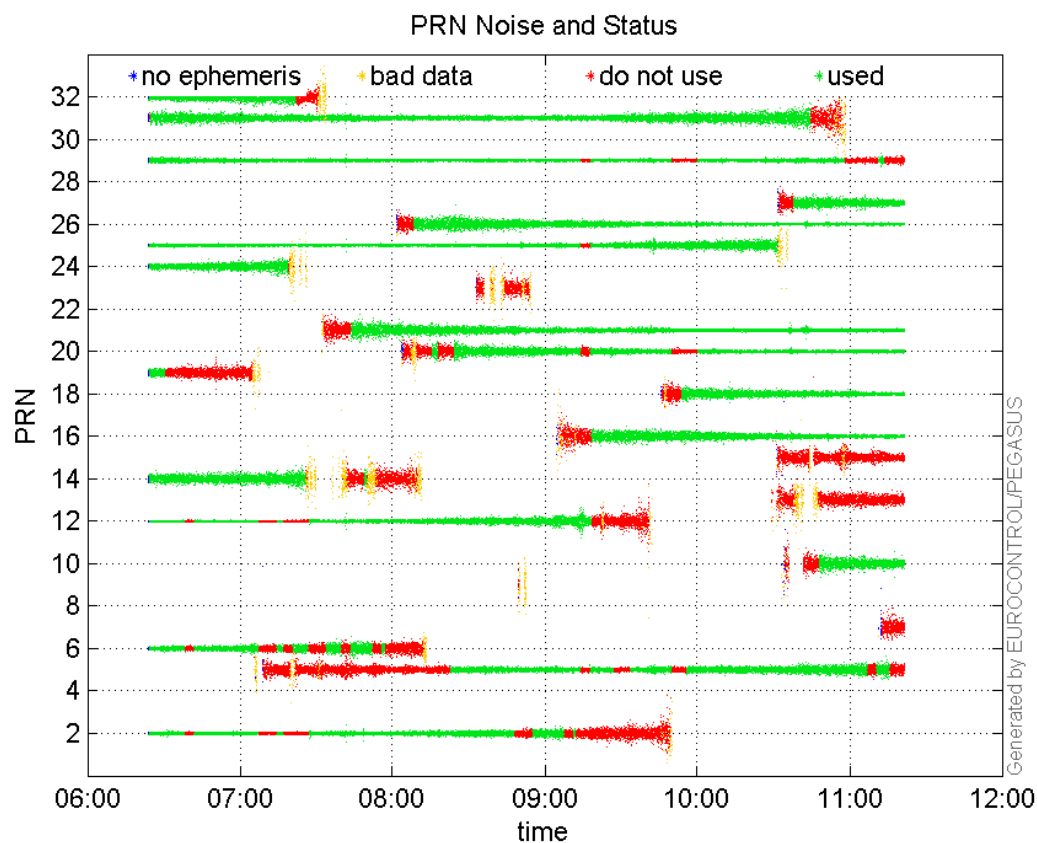
**valid samples** 17861  
**total samples** 17861

### PRN overview

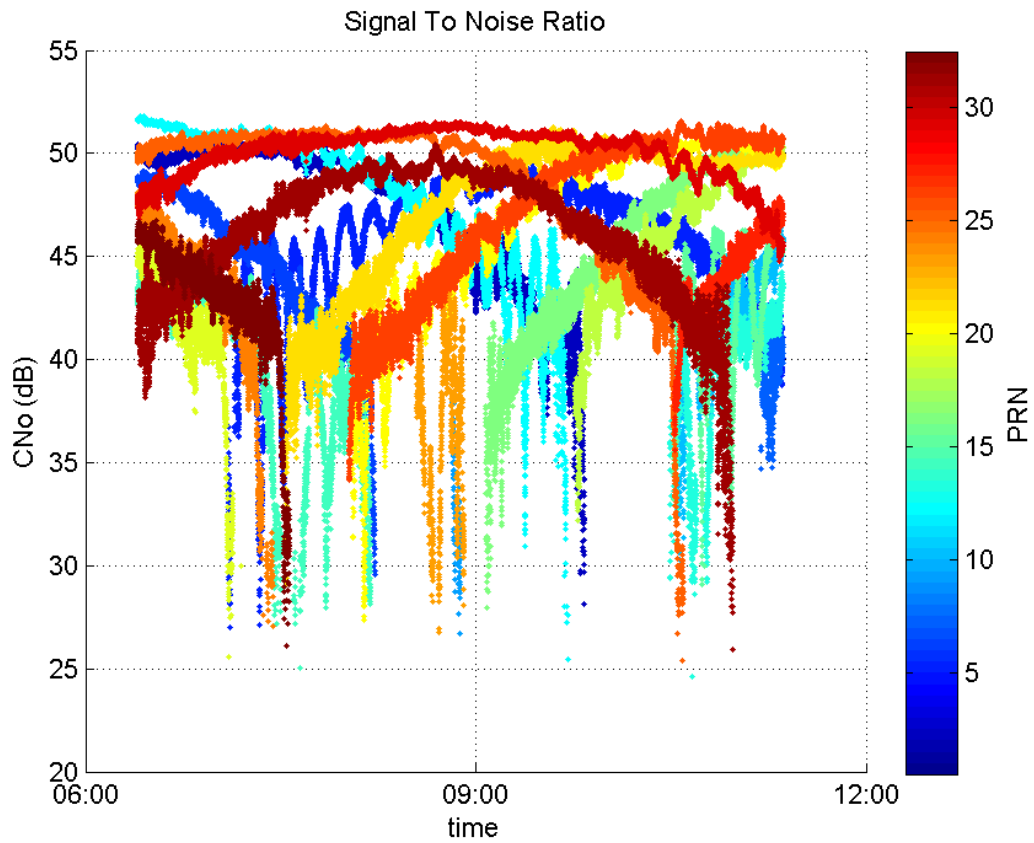
**Number of Visible GPS Satellites** 23  
**Number of Visible SBAS Satellites** 2

### signal quality and status

#### PRN Noise and Status:



#### Signal To Noise Ratio:



range errors

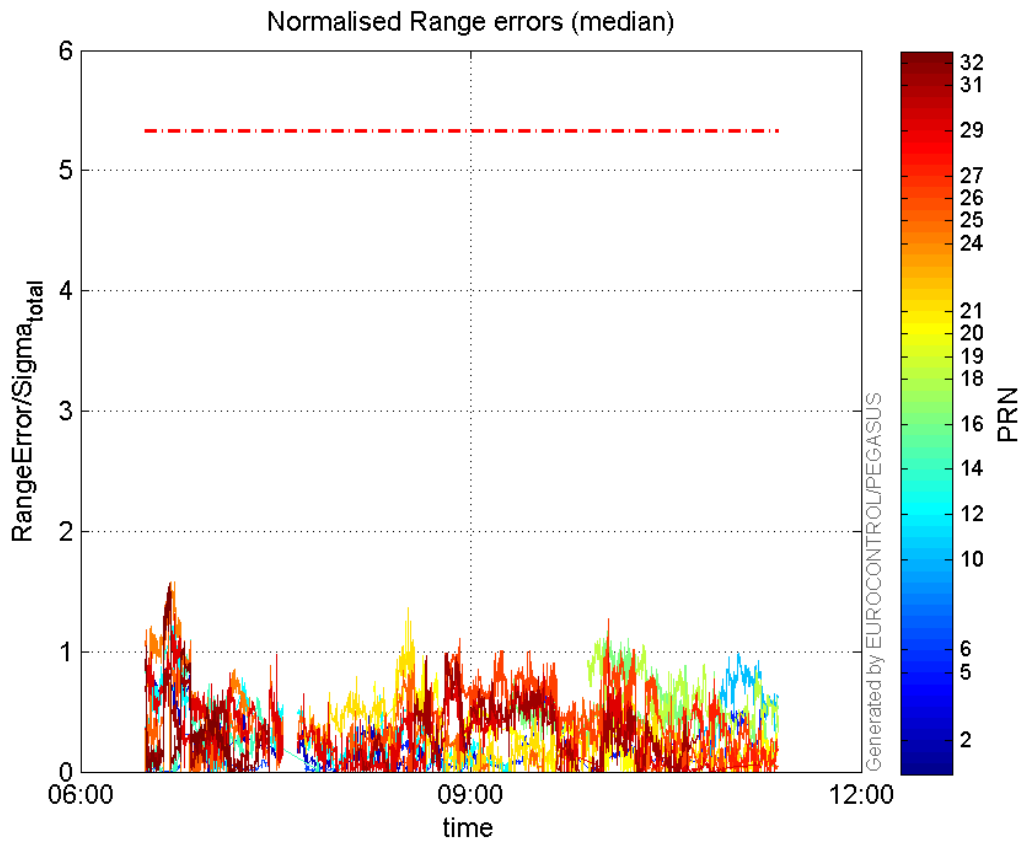
Number of Overbounding Norm Errors 0

Max Norm Errors :

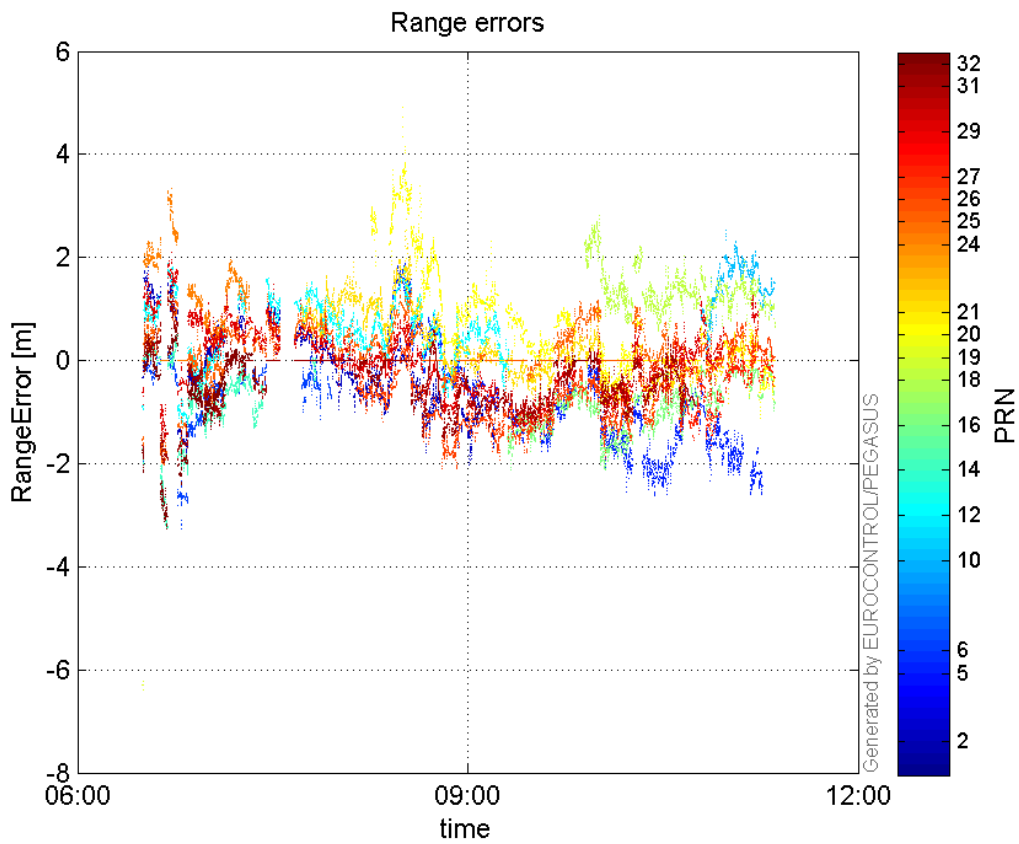
GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1911	455548	2	0.996839	1.9448	1.95097
1911	466435	5	0.693193	-1.76909	2.55209
1911	456470	6	0.390245	-3.26697	8.37158
1911	471800	10	0.987067	2.32014	2.35054
1911	456107	12	1.27356	1.83949	1.44437
1911	456075	14	1.54767	-3.25355	2.10223
1911	468207	16	1.17533	-2.08715	1.77579
1911	467980	18	1.10419	2.59102	2.34653
1911	455431	19	0.190558	-6.39484	33.5586
1911	462591	20	1.24935	4.9033	3.92469
1911	462662	21	1.36888	2.51159	1.83477
1911	456109	24	1.58153	3.28549	2.07741
1911	456001	25	1.44005	-1.94257	1.34895
1911	468208	26	1.27755	-1.91544	1.4993
1911	471146	27	0.773097	-1.74901	2.26234
1911	456190	29	1.30858	2.1072	1.61029
1911	463753	31	0.990533	-1.51461	1.52909
1911	456058	32	1.5727	-3.2295	2.05347

Normalised Range errors (median):

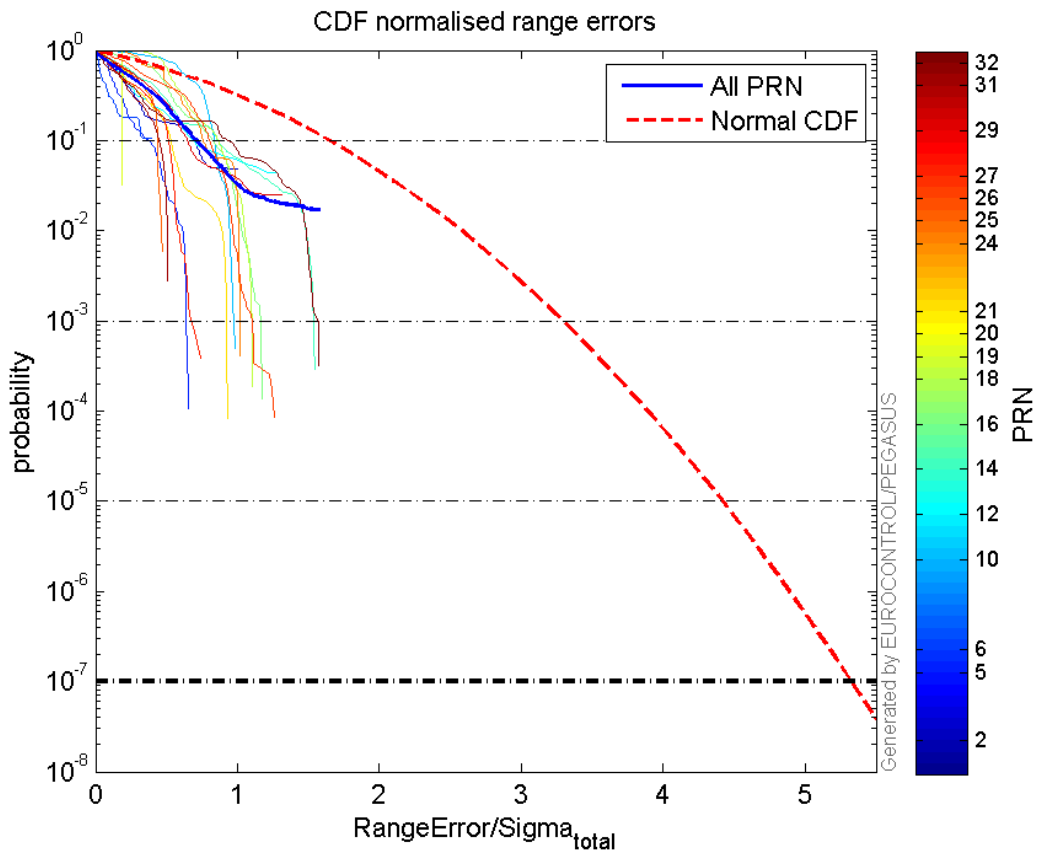




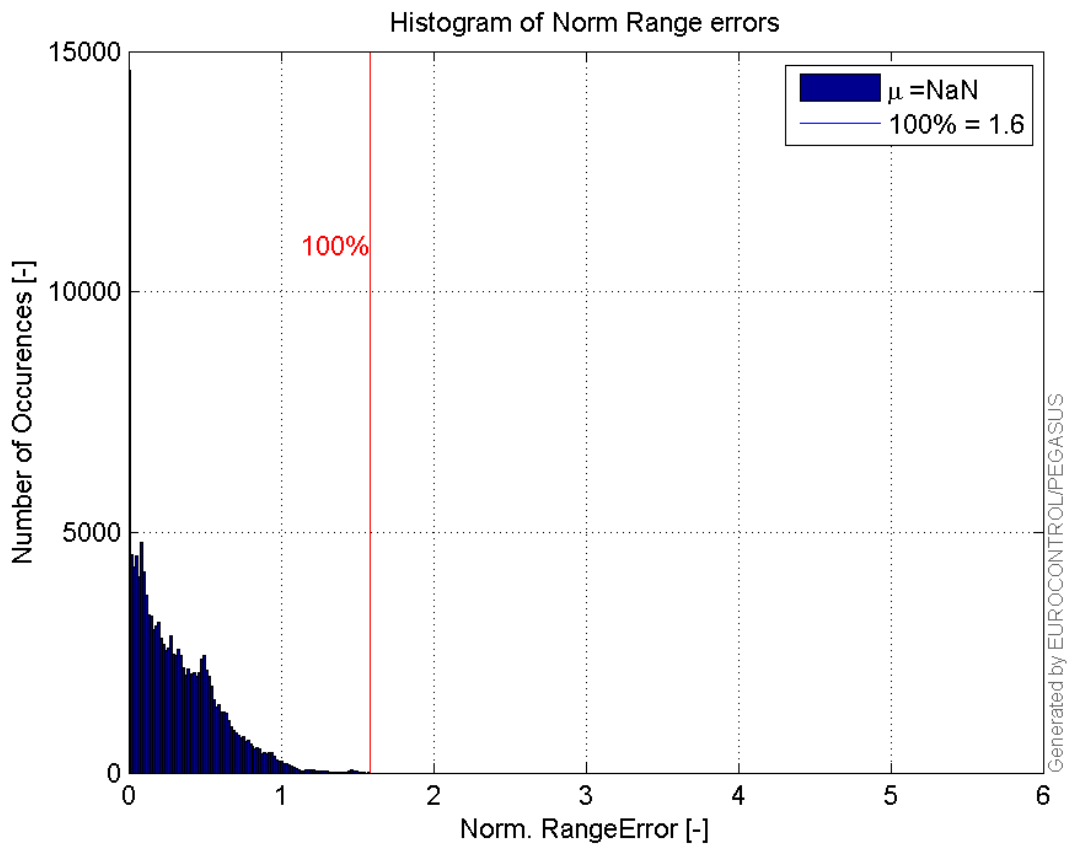
**Range errors:**



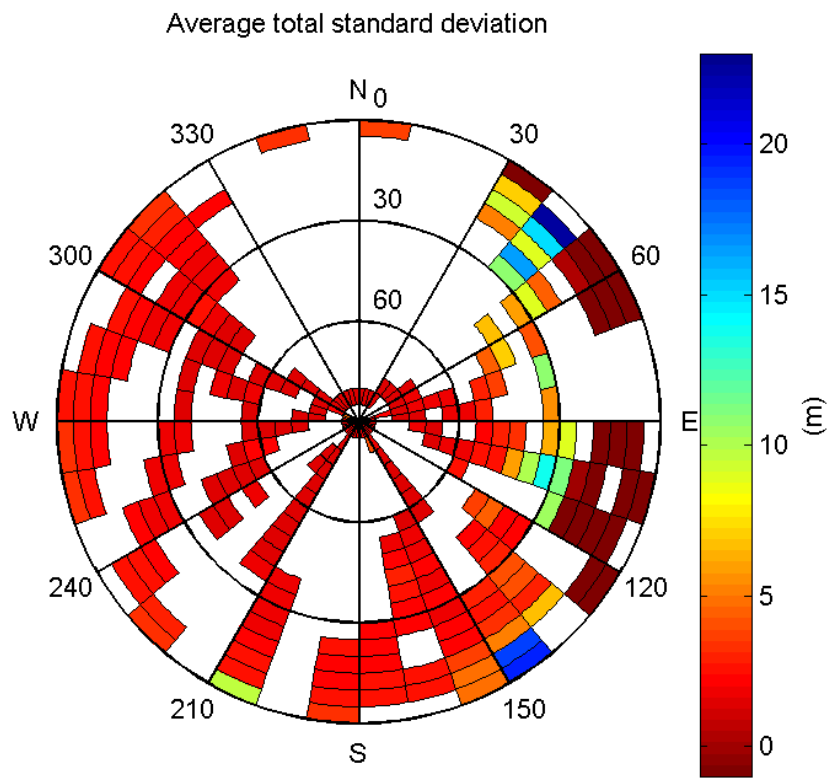
**CDF normalised range errors:**



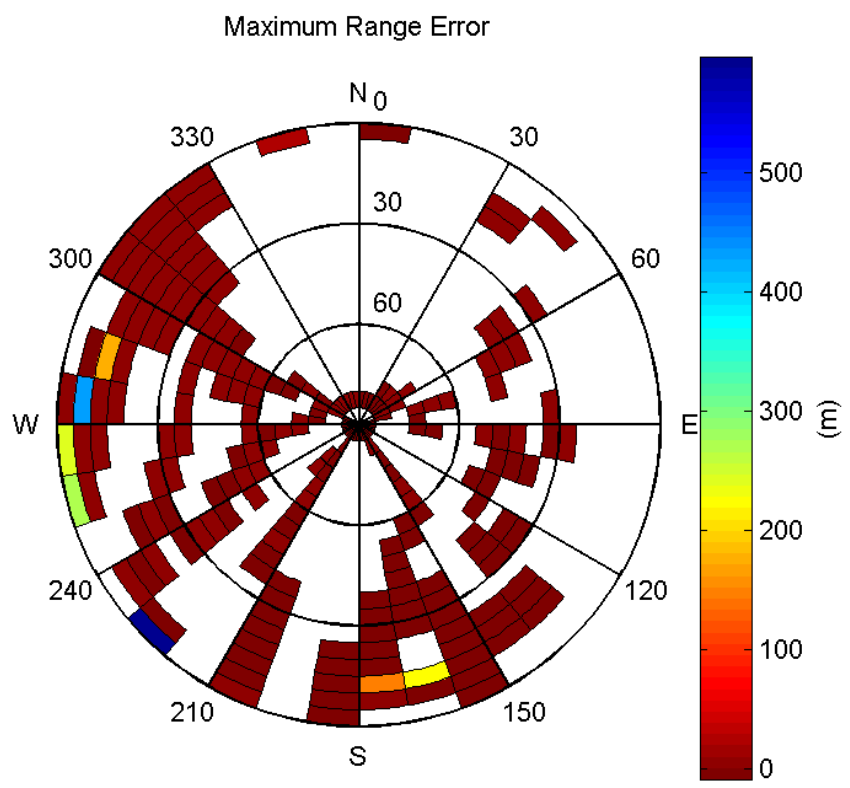
**Histogram of Norm Range errors:**



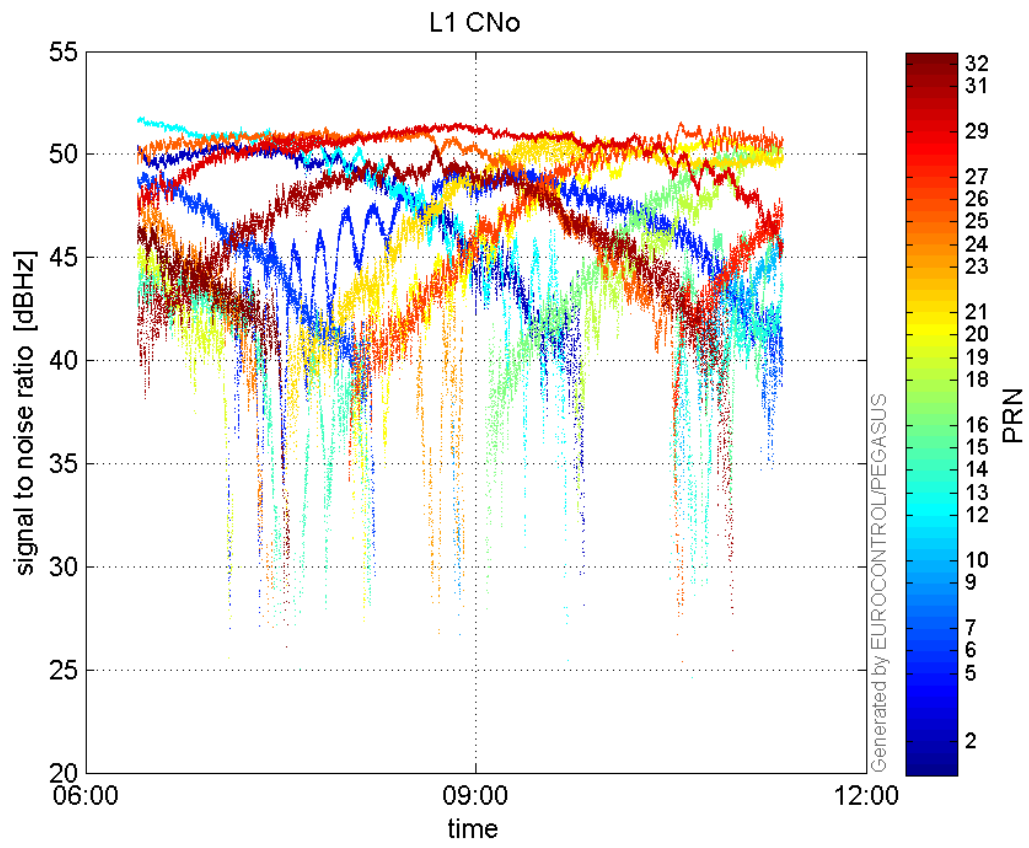
**Sigma Sky Plot:**



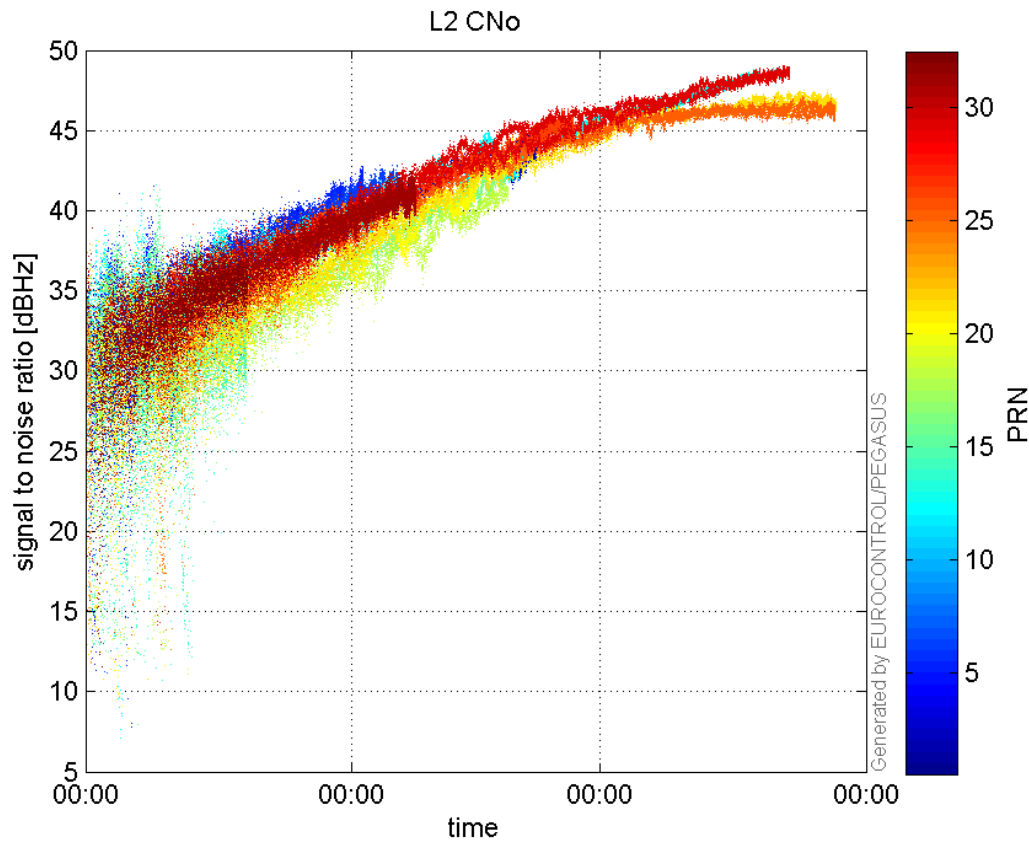
Norm Error Sky Plot:



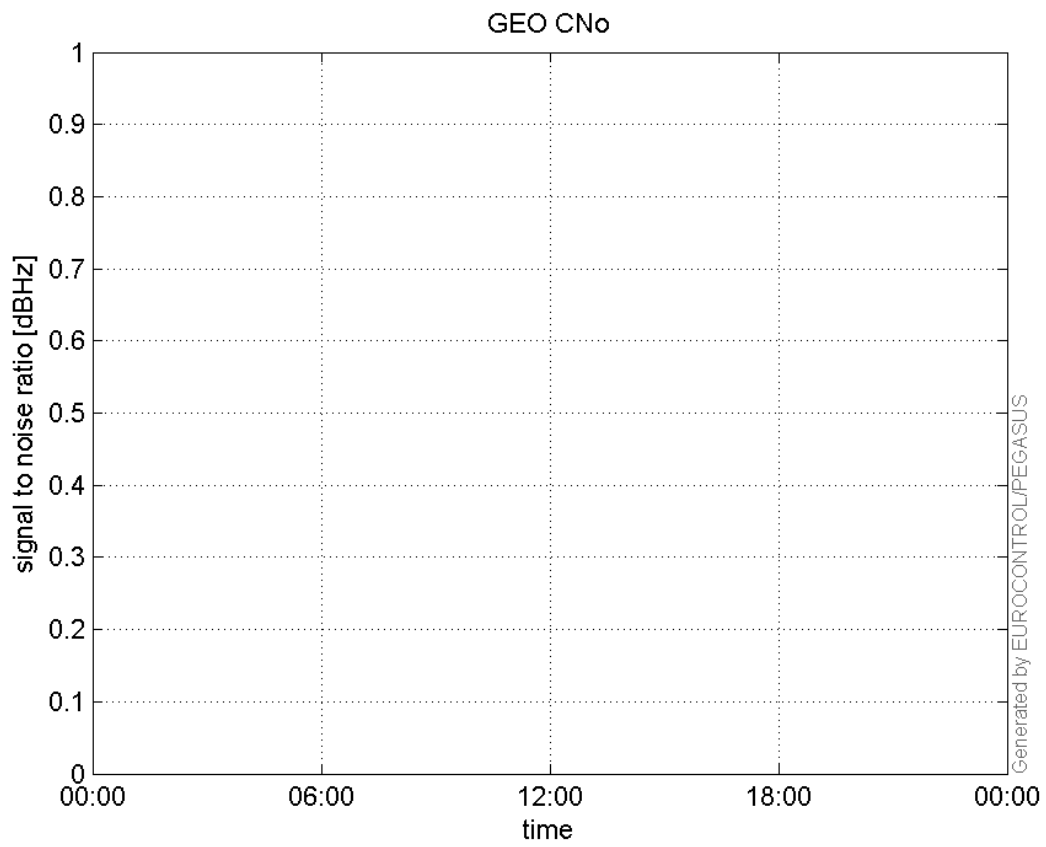
**L1 CNo:**



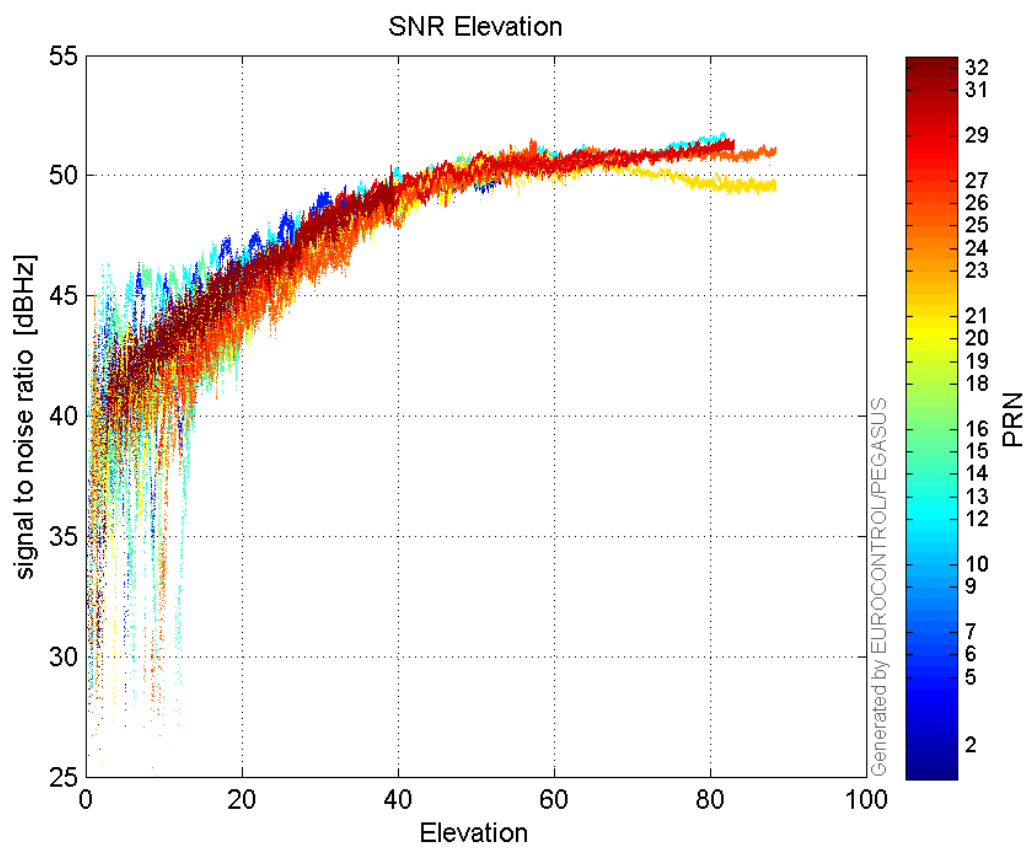
**L2 CNo:**



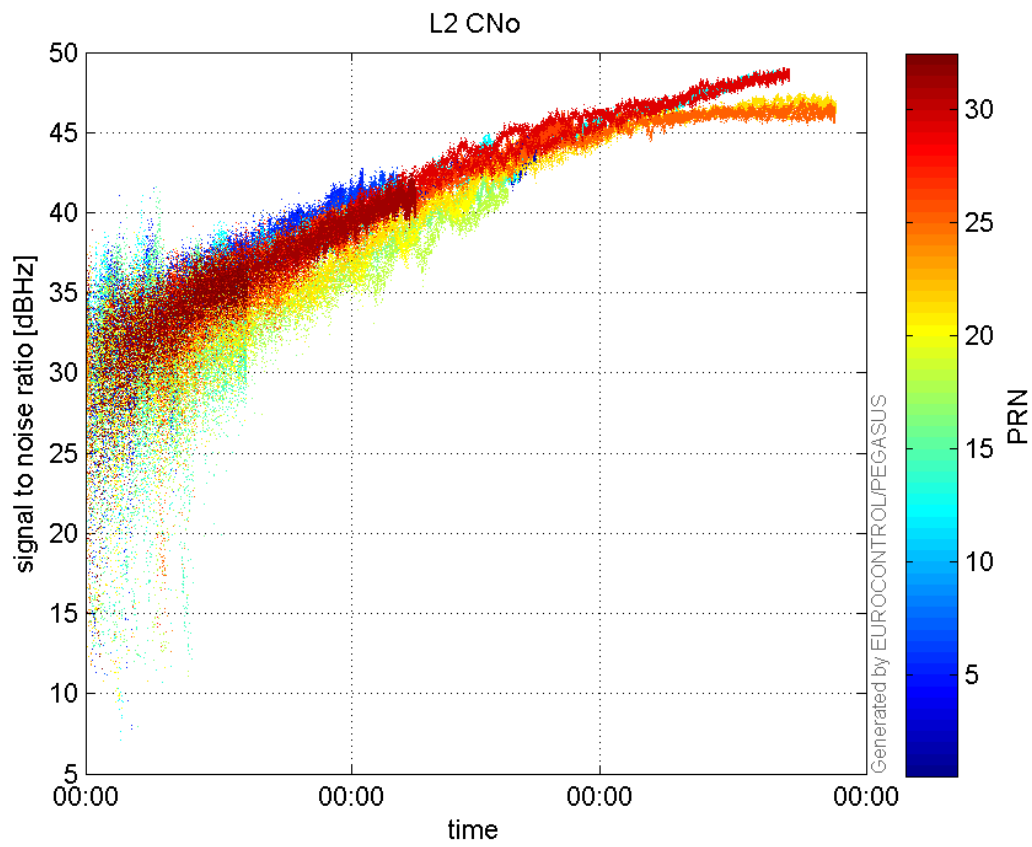
**GEO CNo:**



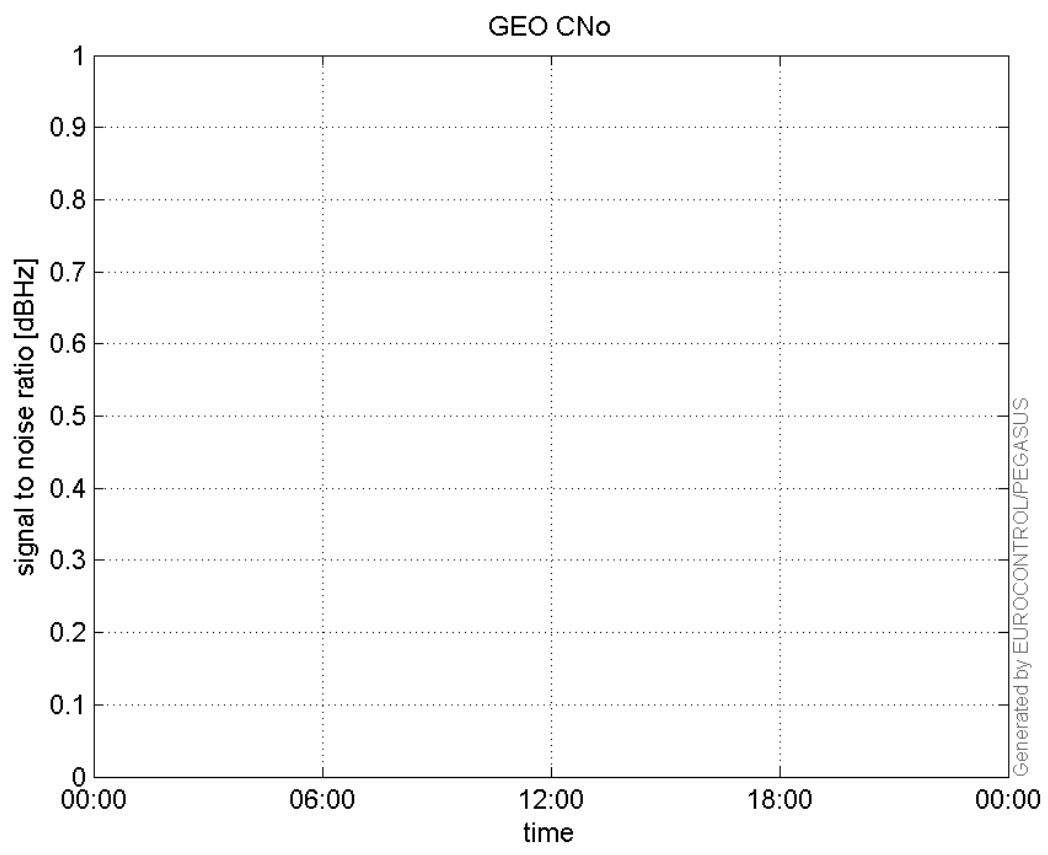
**SNR Elevation:**



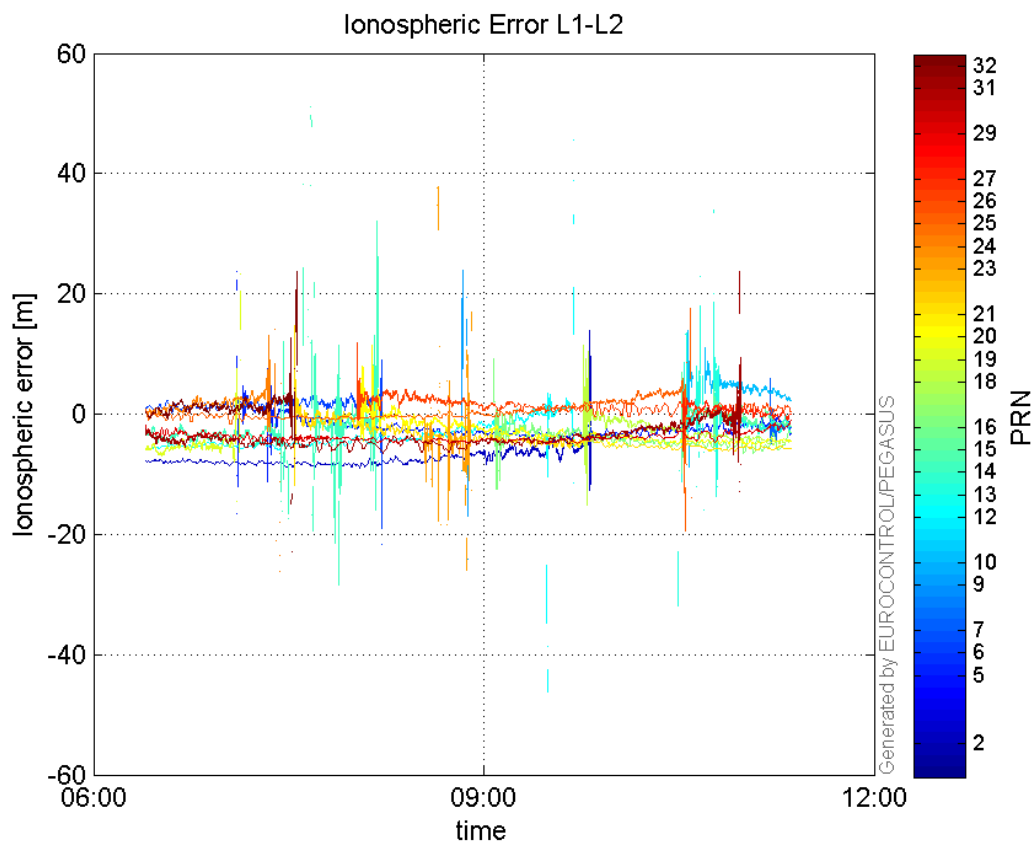
**L2 CNo:**



**GEO CNo:**



## 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_26_EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2016_08_26_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	231.4846
mi_numbers	results	0

## SBAS Messages

**start:** 06:23:50.129 26.08.2016 ( week: 1911 sec: 455030.129 )  
**end:** 11:21:29.129 26.08.2016 ( week: 1911 sec: 472889.129 )  
**duration:** 04:57:39 ..

### quality

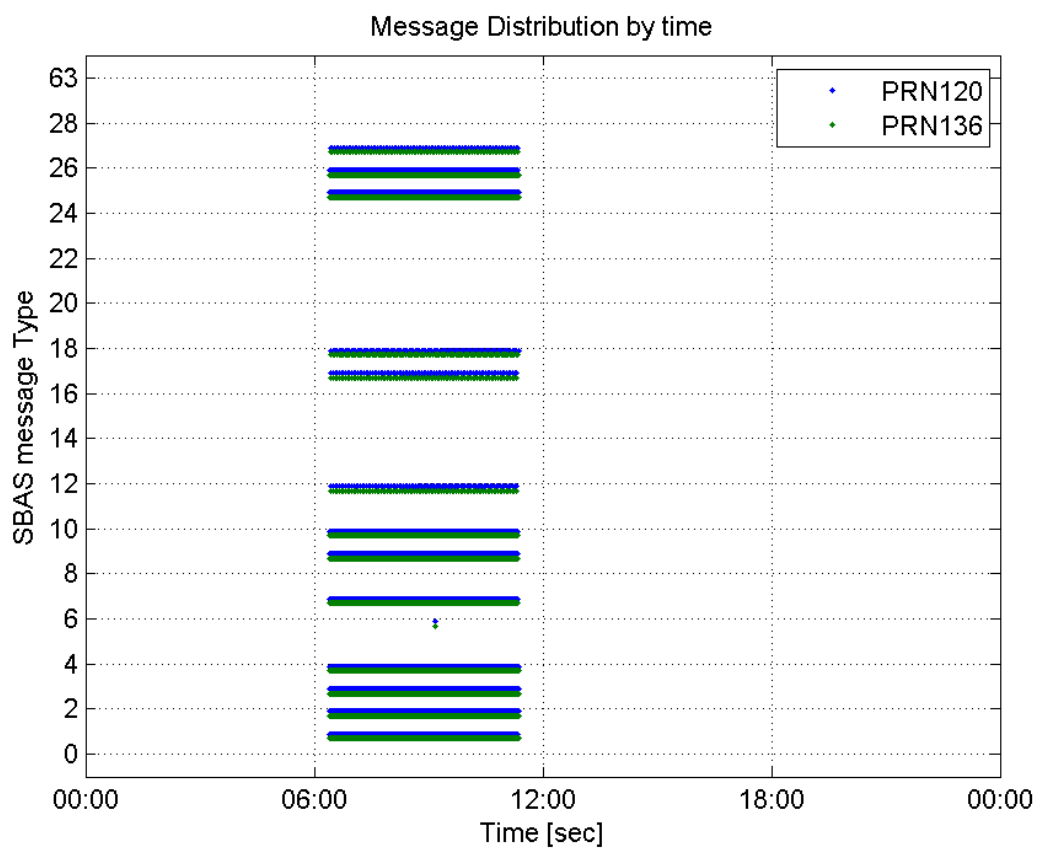
**valid samples** 35720  
**total samples** 35720  
**number of SBAS PRNs** 2

### SBAS SIS Overview

#### Message Type 6 repetitions :

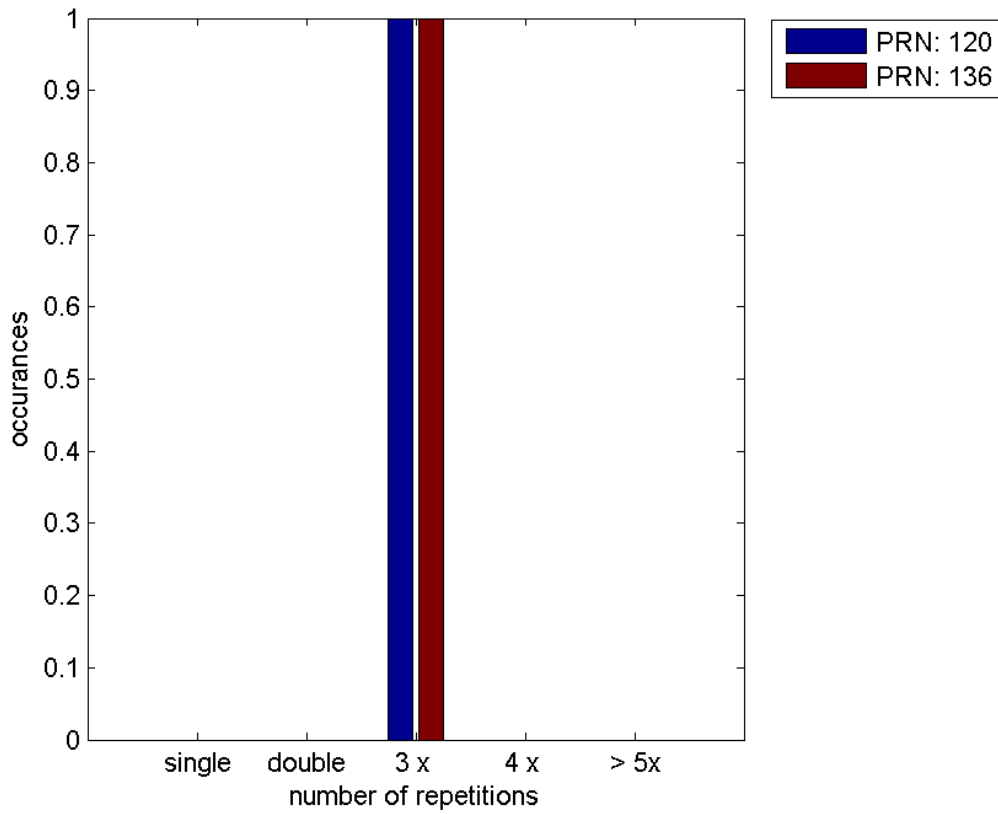
	single	double	3 x	4 x	> 5x
PRN 120	0	0	1	0	0
PRN 136	0	0	1	0	0

#### 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	224	1.2542
MT 2	4438	24.8488
MT 3	4438	24.8488
MT 4	4439	24.8544
MT 5	0	0
MT 6	4	0.0223964
MT 7	224	1.2542
MT 9	224	1.2542
MT 10	225	1.2598
MT 12	91	0.509518
MT 17	91	0.509518
MT 18	457	2.55879
MT 24	0	0
MT 25	894	5.0056
MT 26	2019	11.3046
MT 27	92	0.515118
MT 28	0	0
MT 62	0	0

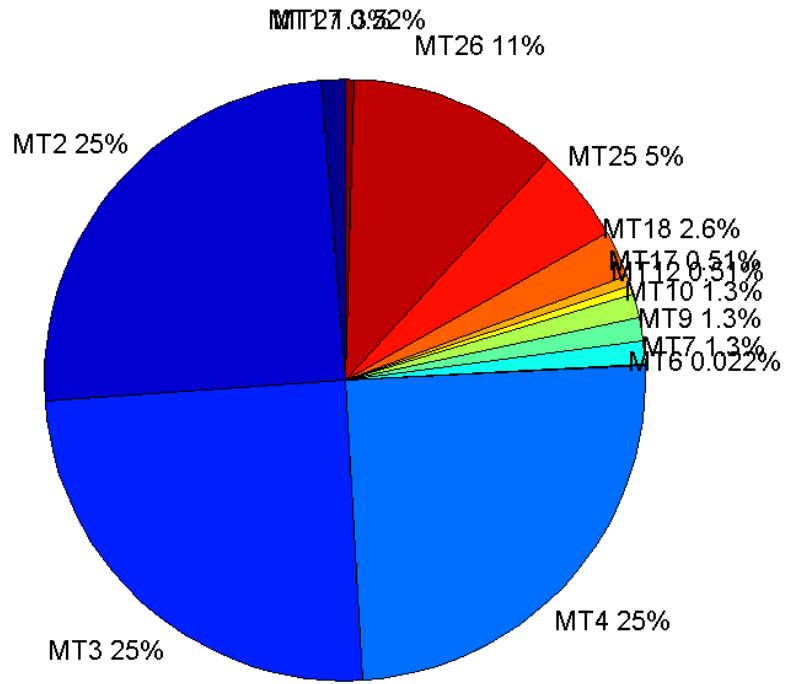
<b>MT 63</b>	0	0
<b>Total</b>	17860	100

## 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>	75	81	79.6682	0	0	0
<b>MT 2</b>	4	8	4.02412	1	0	0
<b>MT 3</b>	4	7	4.02412	1	0	0
<b>MT 4</b>	4	7	4.02411	1	0	0
<b>MT 5</b>	--	--	--	--	--	--
<b>MT 6</b>	1	1	1	0	0	0
<b>MT 7</b>	76	81	79.722	0	0	0
<b>MT 9</b>	76	82	79.6861	0	0	0
<b>MT 10</b>	75	81	79.6205	0	0	0
<b>MT 12</b>	188	201	194.733	90	0	0
<b>MT 17</b>	187	201	194.822	0	0	0
<b>MT 18</b>	4	161	38.8925	0	0	0
<b>MT 24</b>	--	--	--	--	--	--
<b>MT 25</b>	2	52	19.963	0	0	0
<b>MT 26</b>	3	37	8.84192	0	0	0
<b>MT 27</b>	188	201	194.879	0	0	0
<b>MT 28</b>	--	--	--	--	--	--
<b>MT 62</b>	--	--	--	--	--	--
<b>MT 63</b>	--	--	--	--	--	--

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**Message Distribution PRN 120:**



SBAS SIS Analysis

PRN 136

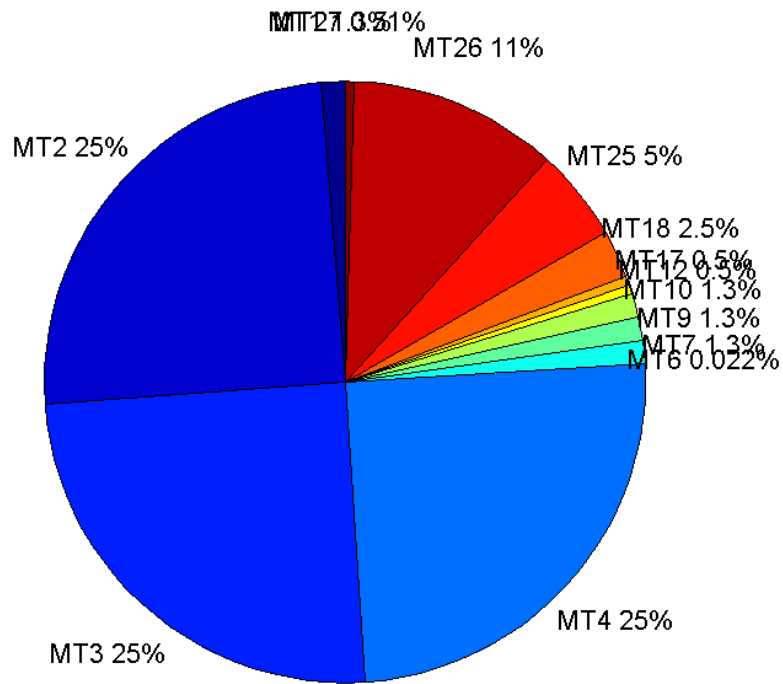
Broadcast SBAS Messages :

	number of messages	%
MT 0	0	0
MT 1	225	1.2598
MT 2	4447	24.8992
MT 3	4447	24.8992
MT 4	4447	24.8992
MT 5	0	0
MT 6	4	0.0223964
MT 7	224	1.2542
MT 9	224	1.2542
MT 10	224	1.2542
MT 12	90	0.503919
MT 17	90	0.503919
MT 18	454	2.54199
MT 24	0	0
MT 25	894	5.0056
MT 26	1999	11.1926
MT 27	91	0.509518
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	17860	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	75	81	79.6607	0	0	0
MT 2	4	8	4.01619	1	0	0
MT 3	4	7	4.01619	1	0	0
MT 4	4	7	4.01619	1	0	0
MT 5	--	--	--	--	--	--
MT 6	1	1	1	0	0	0
MT 7	76	83	79.6233	0	0	0
MT 9	76	81	79.6951	0	0	0
MT 10	76	82	79.6233	0	0	0
MT 12	188	200	196.663	89	0	0
MT 17	188	201	196.663	0	0	0
MT 18	4	161	39.1258	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	52	19.9731	0	0	0
MT 26	4	32	8.93493	0	0	0
MT 27	185	201	196.667	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:/PegasusDateJob/job/2016_08_26_EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2016_08_26_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