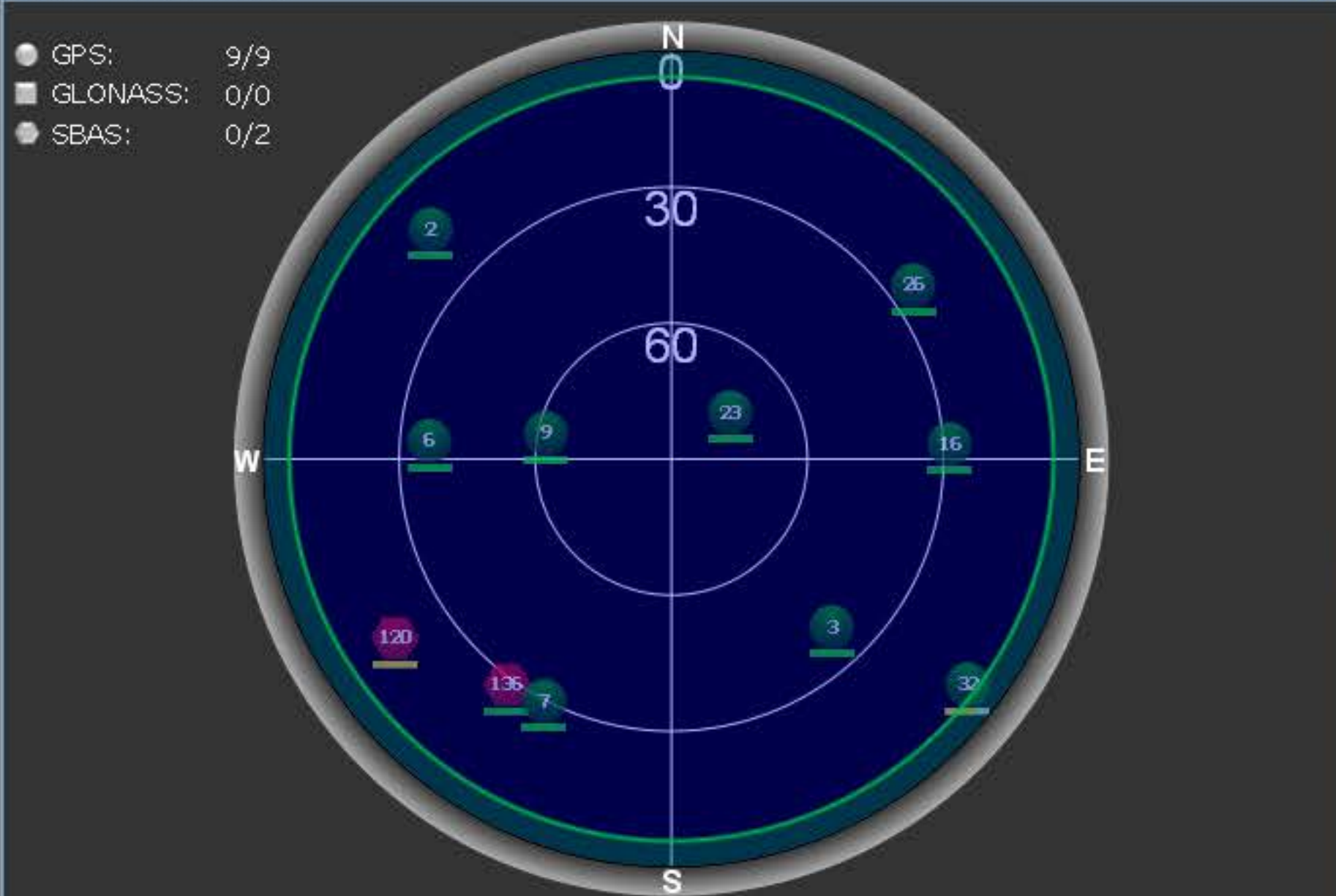


NovAtel

DOP

DLV3 - x

DLV3 - Constellation

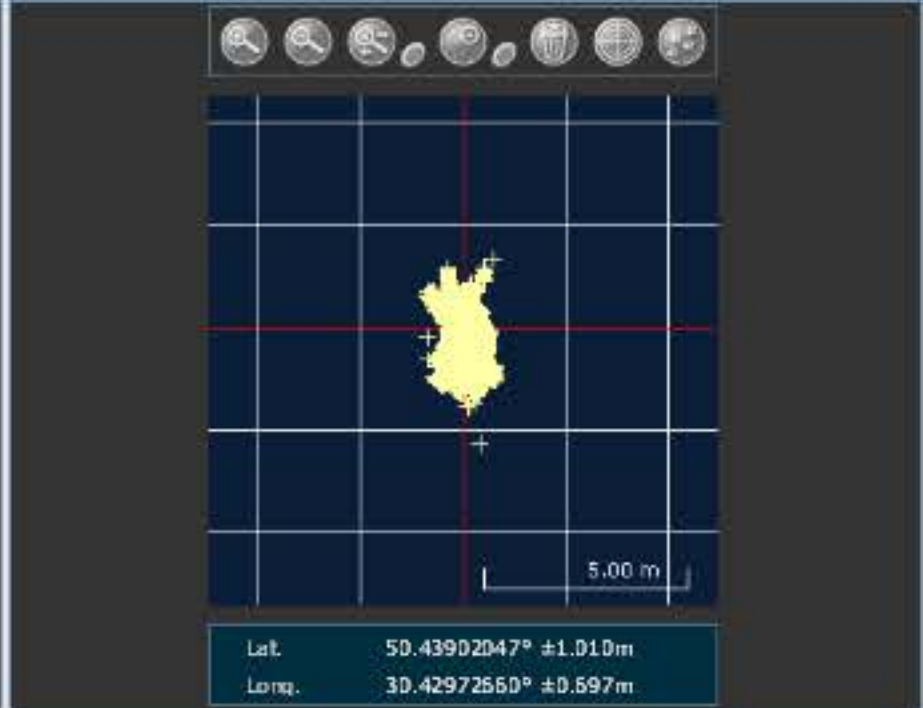


PRN	AZ	ELEV	C/No	STATUS
No SV				

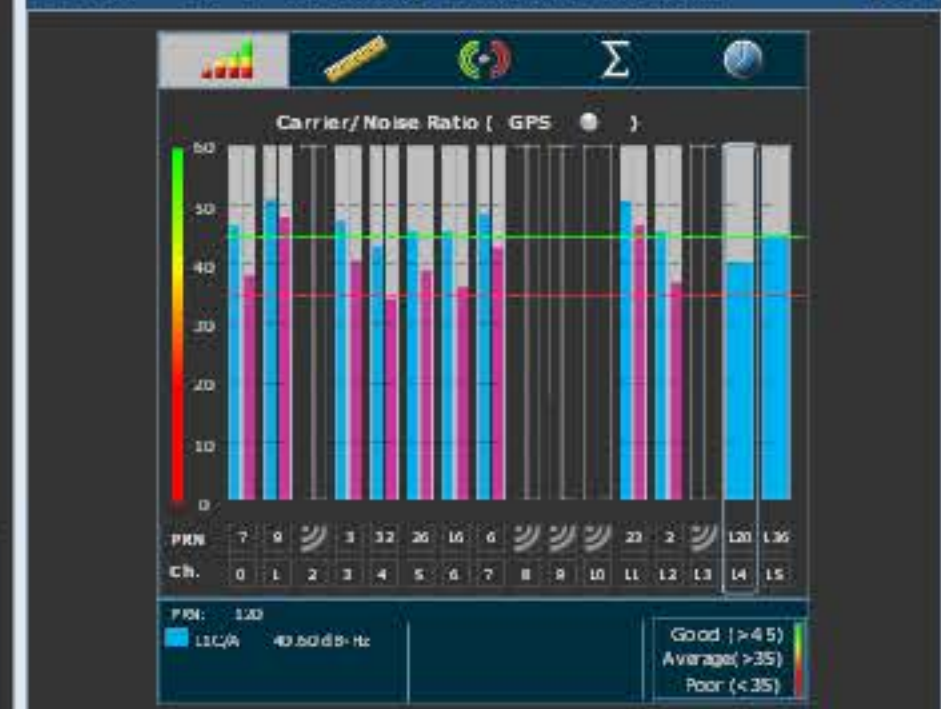
DLV3 - Position

Latitude	50.43902046°	+/- 1.01m
Longitude	30.42972659°	+/- 0.70m
Hgt. (MSL)	190.069m	+/- 1.58m
Solution type	SBAS	
Tono correction	Multi-frequency	
Advanced RTK status	N/A	
Solution age	0 second	
Differential age	5 seconds	
# of satellites used in solution	9	
	GPS	L1 L2 L5
	GLO	L1 L2
Solution status	Computed	
Wed 09/12/2015 14:20:29 GMT		
Wed 09/12/2015 15:20:29 Local		

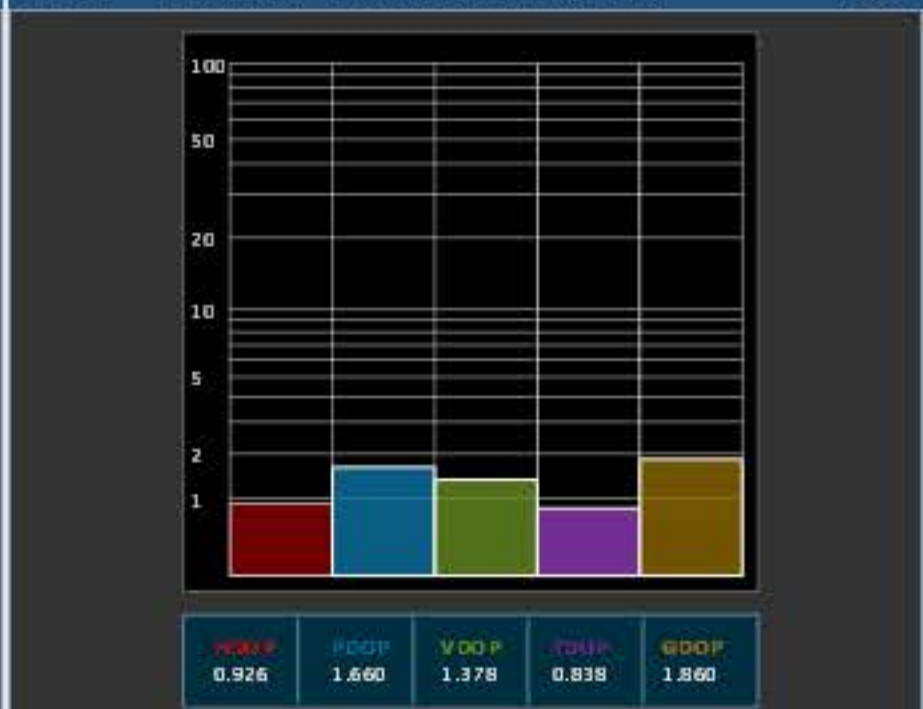
DLV3 - Plan



DLV3 - GPS Tracking Channel Status



DLV3 - Dilution of Precision (DOP)



DLV3 - Console Window

```
<OK
[COM1]
<OK
[COM1]
<OK
[COM1]
Command
```

DLV3 - Logging Control Window

Log File	Logs	Size	Elapsed:
asus482/data/In_date/2015_12_09EGNOS.gps	168566	120.21MB	07h 21m 57s

# Global View

program Pegasus  
 comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,  
 P.50 - 54  
 version 4.8.2  
 site Laboratory satellite systems  
 city Kiev  
 country Ukraine  
 abbreviation NAU  
 date 10/12/2015

## SBAS Messages

**start:** 06:58:34.129 09.12.2015 ( week: 1874 sec: 284314.129 )  
**end:** 14:21:56.129 09.12.2015 ( week: 1874 sec: 310916.129 )  
**duration:** 07:23:22 ..

### quality

**valid samples** 53158  
**total samples** 53158  
**number of SBAS PRNs** 2

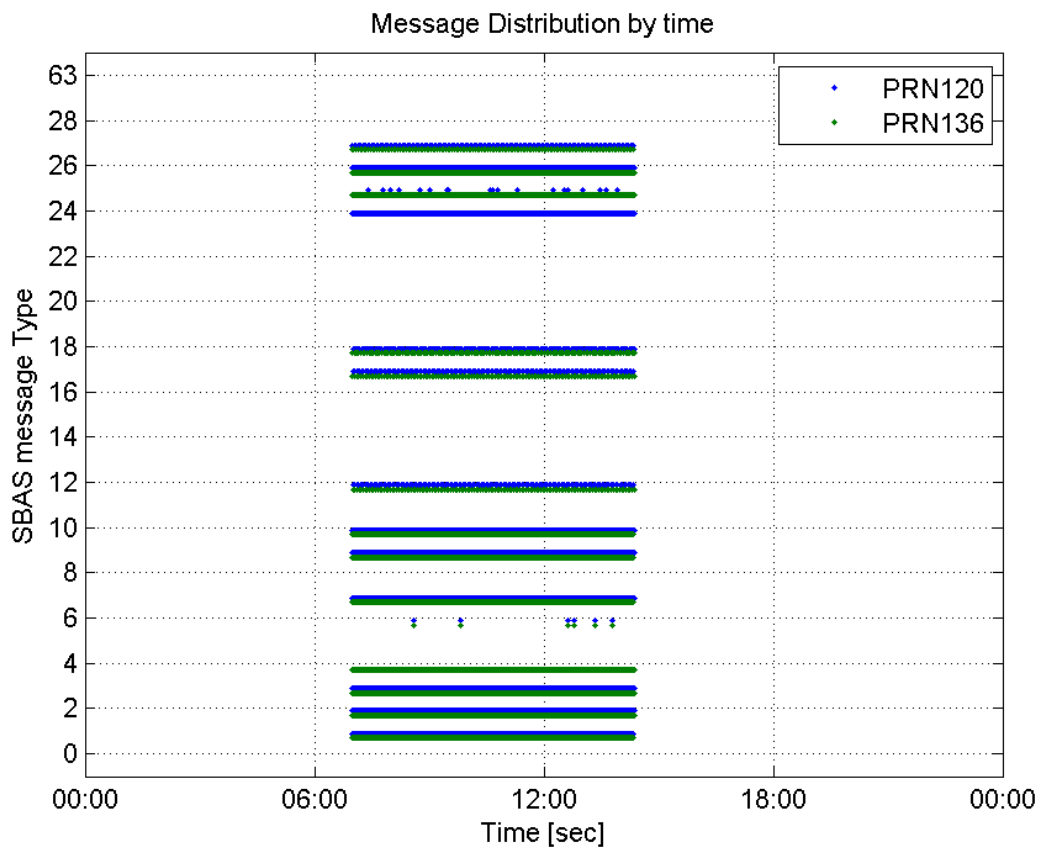
### SBAS SIS Overview

#### Message Type 6 repetitions :

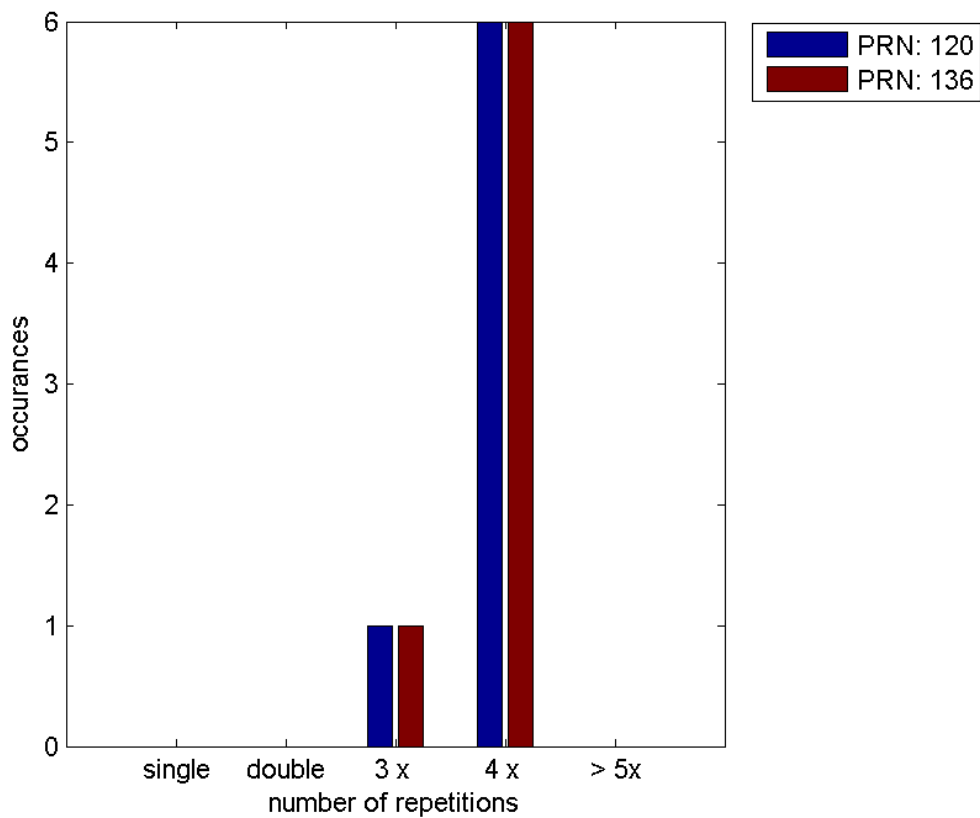
	single	double	3 x	4 x	> 5x
<b>PRN 120</b>	0	0	1	6	0
<b>PRN 136</b>	0	0	1	6	0

---

#### Message Distribution by time:



**Message Type 6 repetitions:**



## Broadcast SBAS Messages :

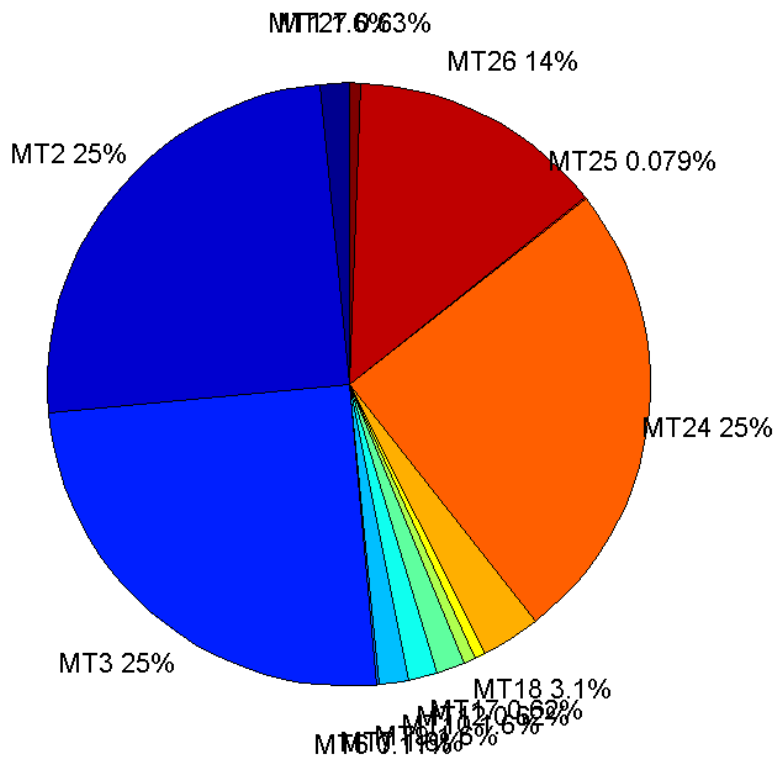
	number of messages	%
MT 0	0	0
MT 1	414	1.55903
MT 2	6629	24.9633
MT 3	6629	24.9633
MT 4	0	0
MT 5	0	0
MT 6	28	0.105442
MT 7	413	1.55526
MT 9	413	1.55526
MT 10	413	1.55526
MT 12	164	0.617586
MT 17	164	0.617586
MT 18	825	3.10676
MT 24	6630	24.967
MT 25	21	0.0790812
MT 26	3646	13.73
MT 27	166	0.625118
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	26555	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	70	64.2567	0	0	0
MT 2	4	40	4.01298	9	1	2
MT 3	4	40	4.01298	9	1	2
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	10116	694.444	6	5	6
MT 7	64	128	64.4126	1	0	0
MT 9	64	132	64.4126	0	0	0
MT 10	64	128	64.4029	1	0	0
MT 12	156	316	161.46	163	0	1
MT 17	156	320	161.436	0	0	0
MT 18	4	156	32.1481	0	0	0
MT 24	4	40	4.01297	0	0	0
MT 25	2	3878	1173.85	0	0	0
MT						

26	4	40	7.29492	0	0	0
MT 27	156	168	160.448	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	333	1.25174
MT 2	6610	24.8468
MT 3	6610	24.8468
MT 4	6610	24.8468
MT 5	0	0
MT 6	28	0.105251
MT 7	334	1.2555
MT 9	334	1.2555

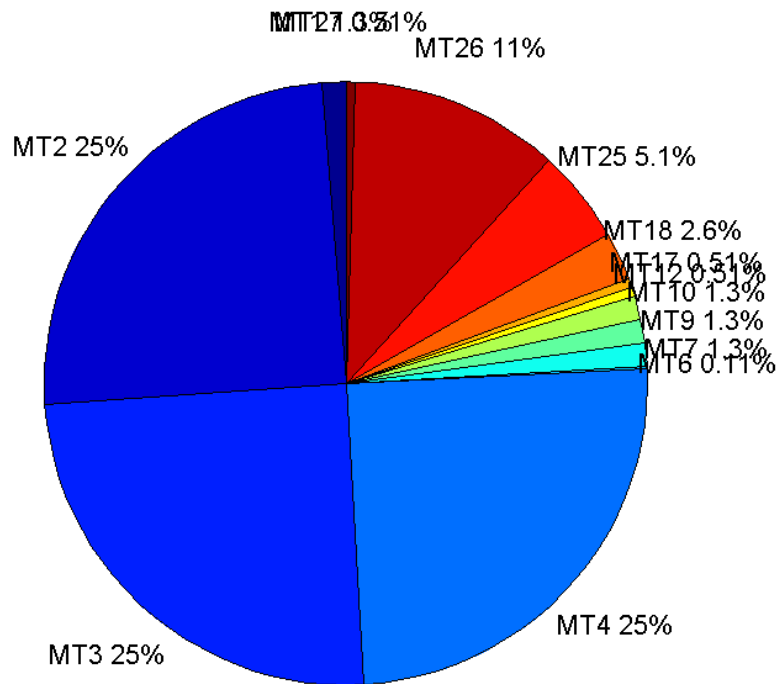
MT 10	333	1.25174
MT 12	136	0.511221
MT 17	136	0.511221
MT 18	680	2.5561
MT 24	0	0
MT 25	1344	5.05206
MT 26	2979	11.198
MT 27	136	0.511221
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	<b>26603</b>	<b>100</b>

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.759	0	0	0
MT 2	4	8	4.02451	7	0	0
MT 3	4	8	4.02466	7	0	0
MT 4	4	8	4.02466	7	0	0
MT 5	--	--	--	--	--	--
MT 6	1	10116	694.444	6	5	6
MT 7	74	81	79.6396	0	0	0
MT 9	76	82	79.6396	0	0	0
MT 10	76	88	79.7229	0	0	0
MT 12	184	201	196.267	135	0	0
MT 17	188	201	196.237	0	0	0
MT 18	4	172	39.0692	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	56	19.8004	0	0	0
MT 26	3	52	8.92948	0	0	0
MT 27	184	201	196.244	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:/PegasusDateGob/job/2015_12_09EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2015_12_09EGNOS/02_Convertor/02_Convertor

#### Configuration

Name	Section	Value
Receiver	Configuration	Novatel OEM4
Leap_Seconds	Configuration	17
Correction_mode	Configuration	SBAS MODE 0
Dual_Frequency	Configuration	no

### Range Domain

**start:** 06:58:35 09.12.2015 ( week: 1874 sec: 284315 )  
**end:** 14:21:57 09.12.2015 ( week: 1874 sec: 310917 )  
**duration:** 07:23:23 ..

### quality

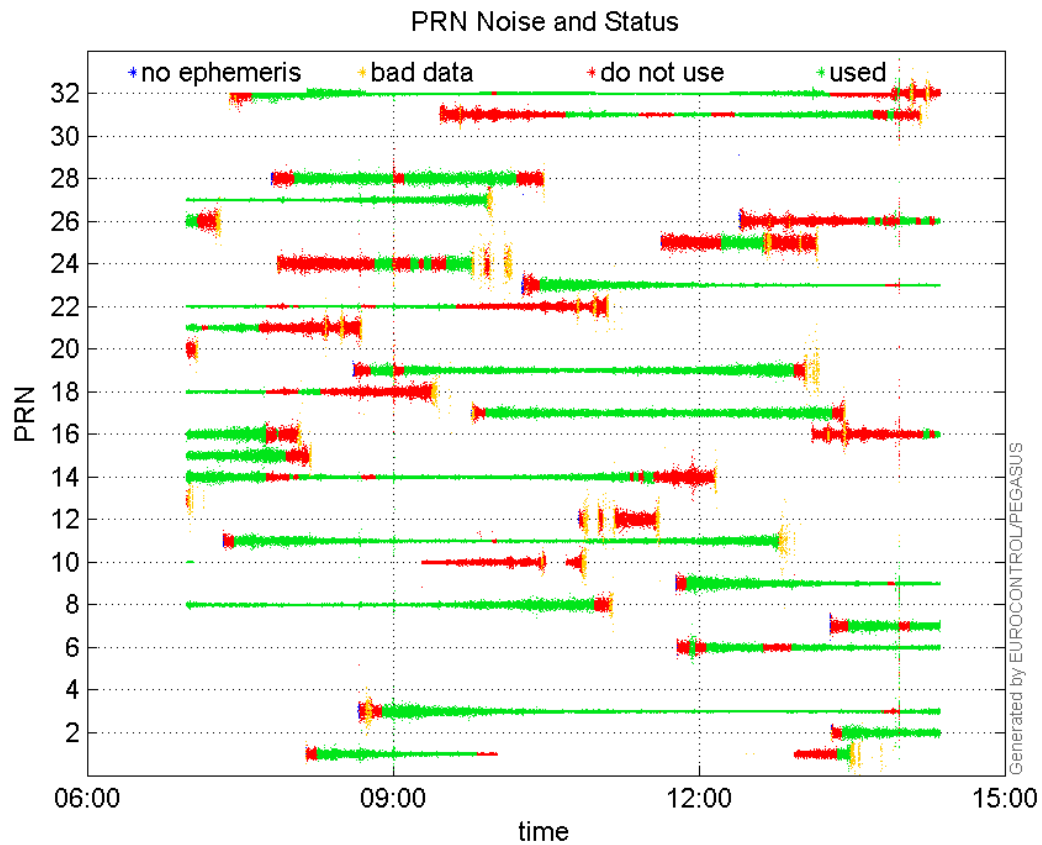
**valid samples** 26603  
**total samples** 26603

## PRN overview

Number of Visible GPS Satellites 28  
Number of Visible SBAS Satellites 2

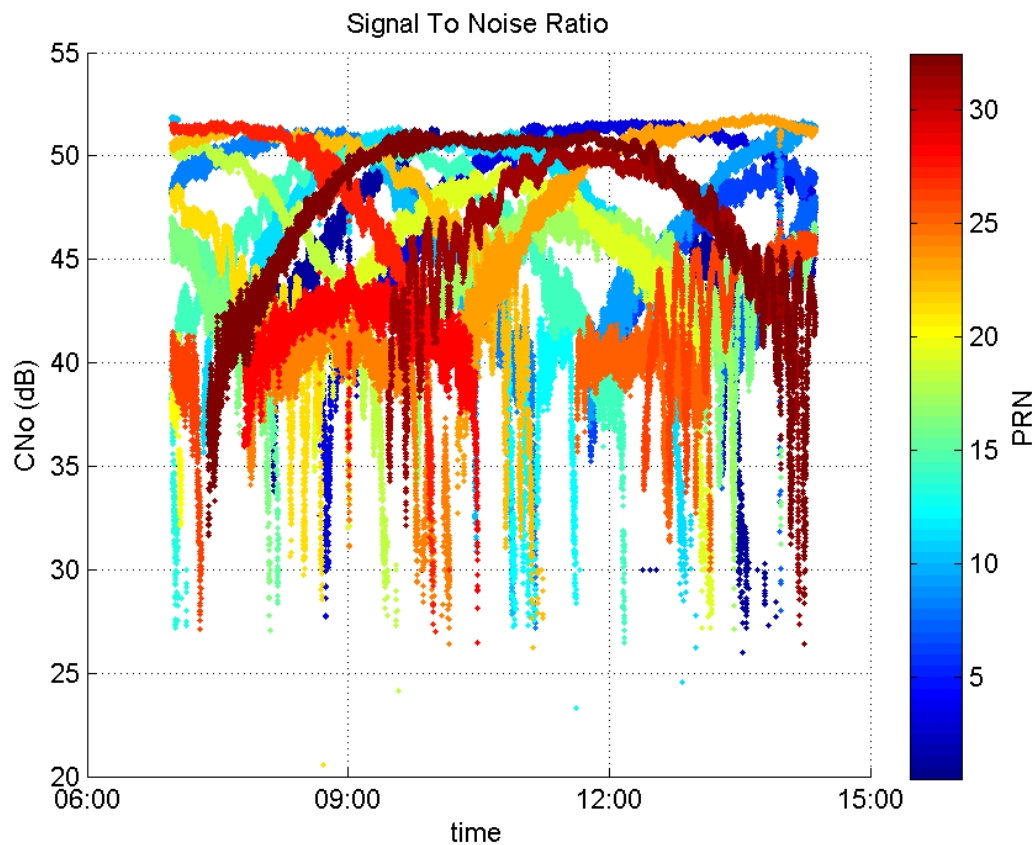
## signal quality and status

## PRN Noise and Status:



## Signal To Noise Ratio:





## range errors

Number of Overbounding Norm Errors 0

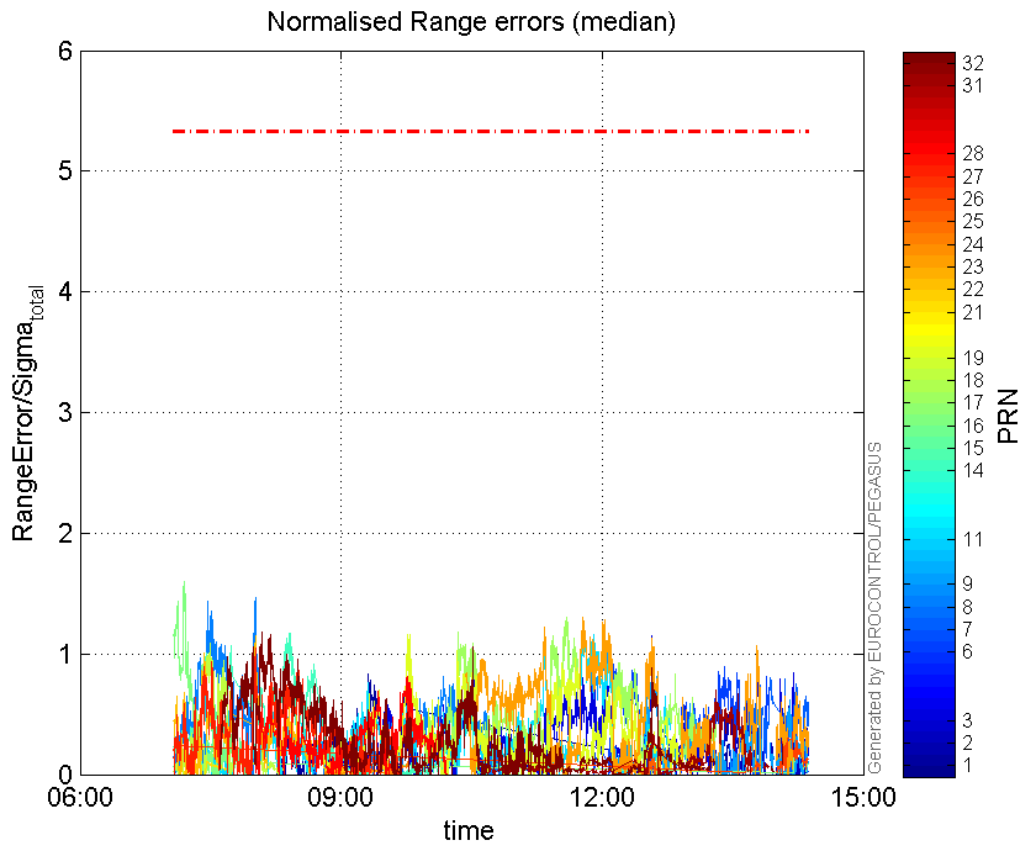
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1874	292727	1	0.830148	-1.40935	1.69771
1874	307722	2	0.570119	-1.35078	2.3693
1874	304452	3	1.15031	1.82245	1.58431
1874	302873	6	0.910153	-2.0923	2.29885
1874	308811	7	0.997694	2.35419	2.35963
1874	288067	8	1.47064	-2.12702	1.44632
1874	302568	9	1.07732	3.24087	3.00827
1874	301638	11	1.26014	2.215	1.75774
1874	289487	14	1.17489	2.36767	2.01524
1874	286316	15	0.685949	-2.4178	3.52475
1874	285089	16	1.60271	3.08843	1.927
1874	300904	17	1.30636	-2.28918	1.75234
1874	286200	18	1.09218	-2.46401	2.25605
1874	294361	19	1.15891	-1.94225	1.67593
1874	286042	21	0.10734	-2.05934	19.1852
1874	288080	22	1.15089	-1.71993	1.49443
1874	301570	23	1.30083	2.11474	1.62569
1874	292490	24	0.108435	-1.10162	10.1593
1874	304372	25	0.160402	1.35474	8.44593
1874	310251	26	0.352669	-1.25726	3.56498

1874	288062	27	1.04975	-1.54261	1.46951
1874	294361	28	0.815424	-1.79951	2.20684
1874	307091	31	0.698055	-2.01091	2.88073
1874	288346	32	1.17715	2.64178	2.24421

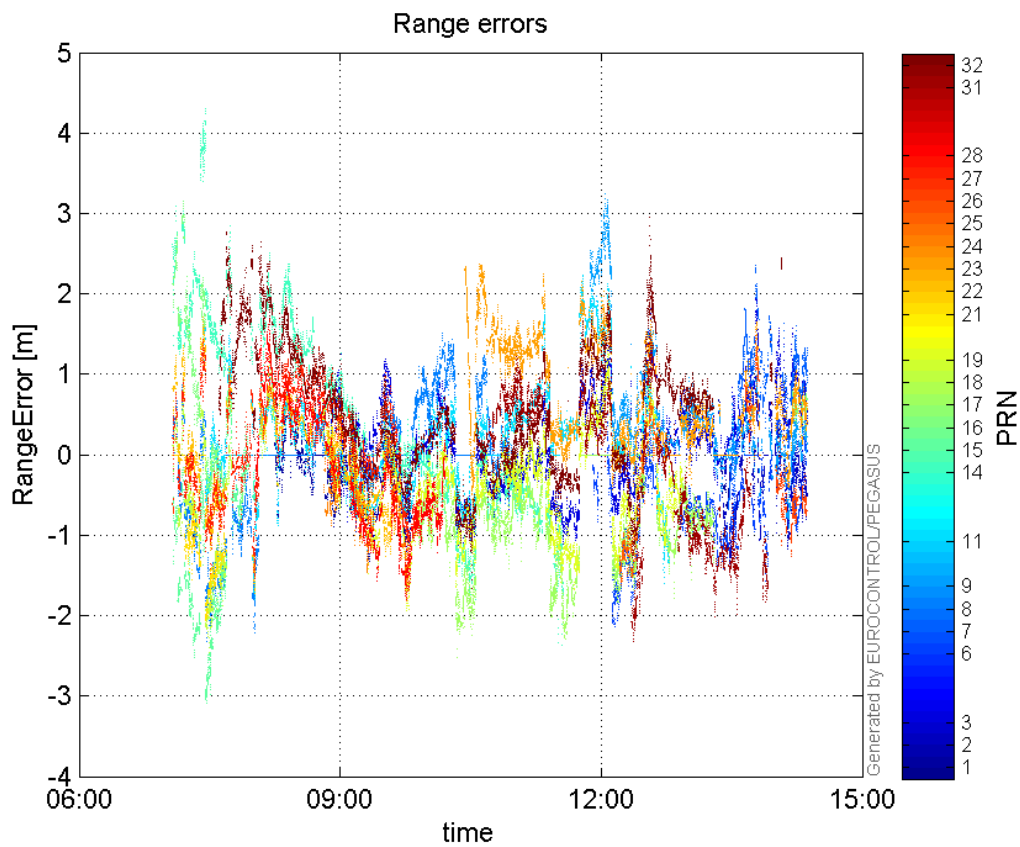
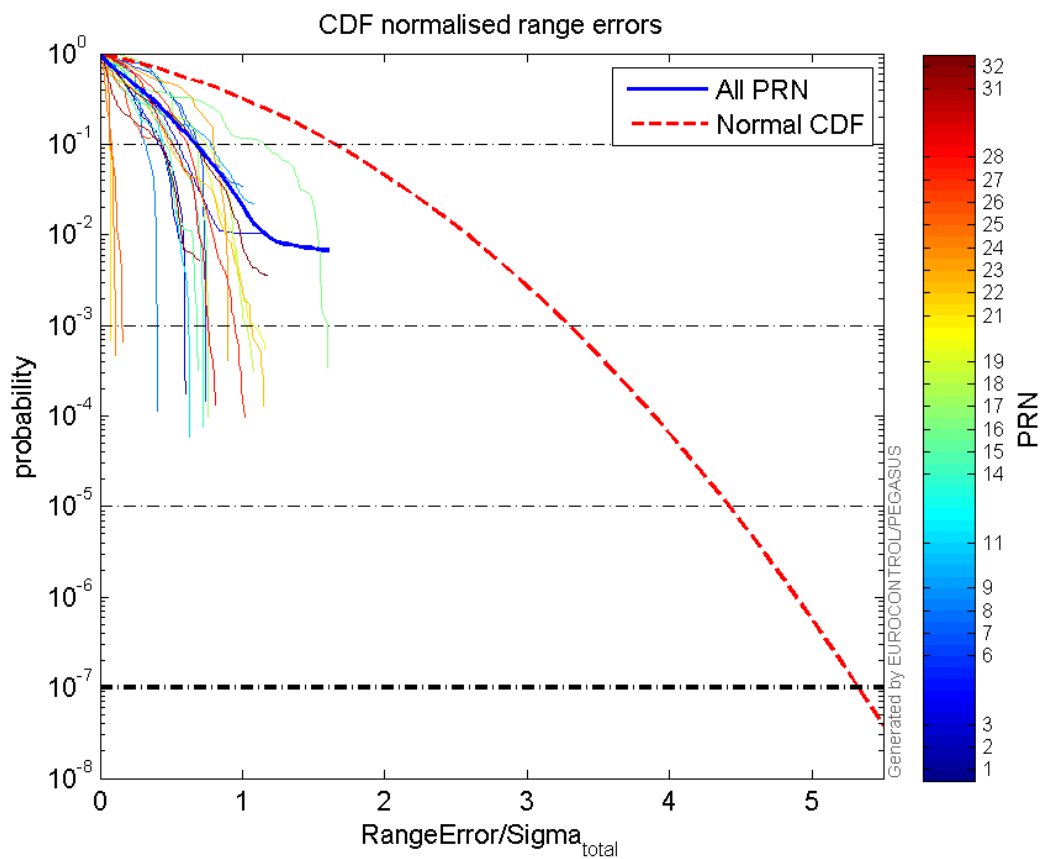
---

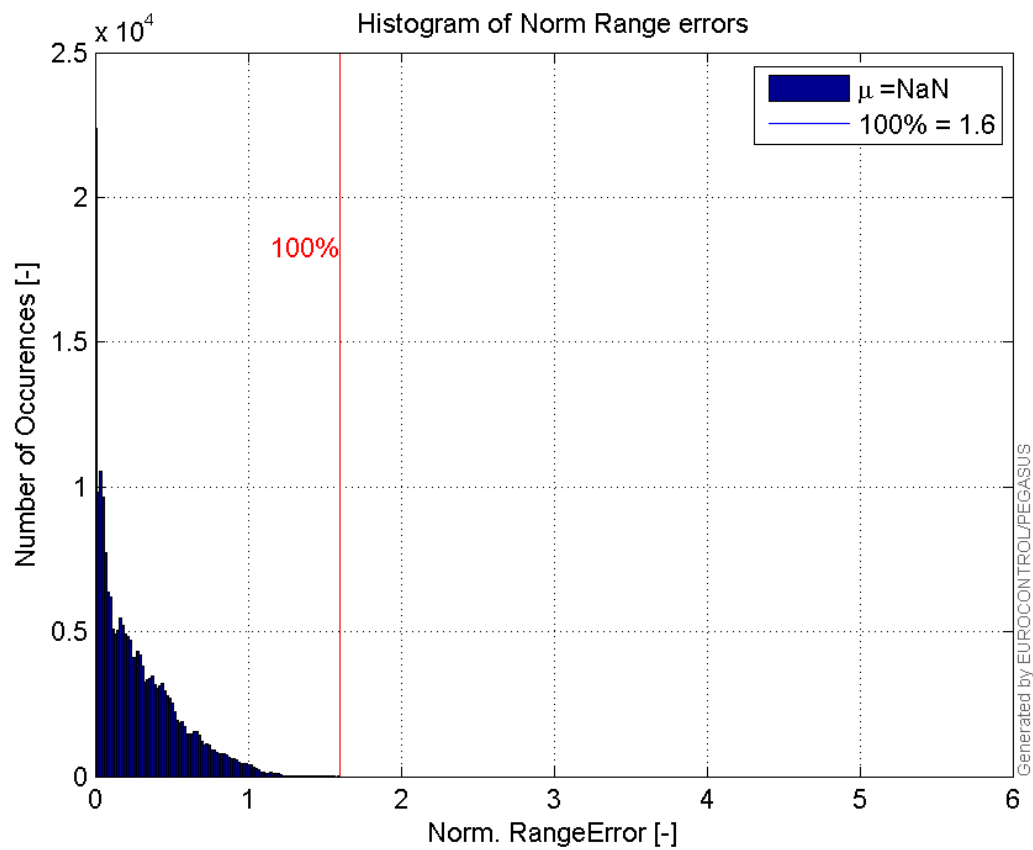
**Normalised Range errors (median):**



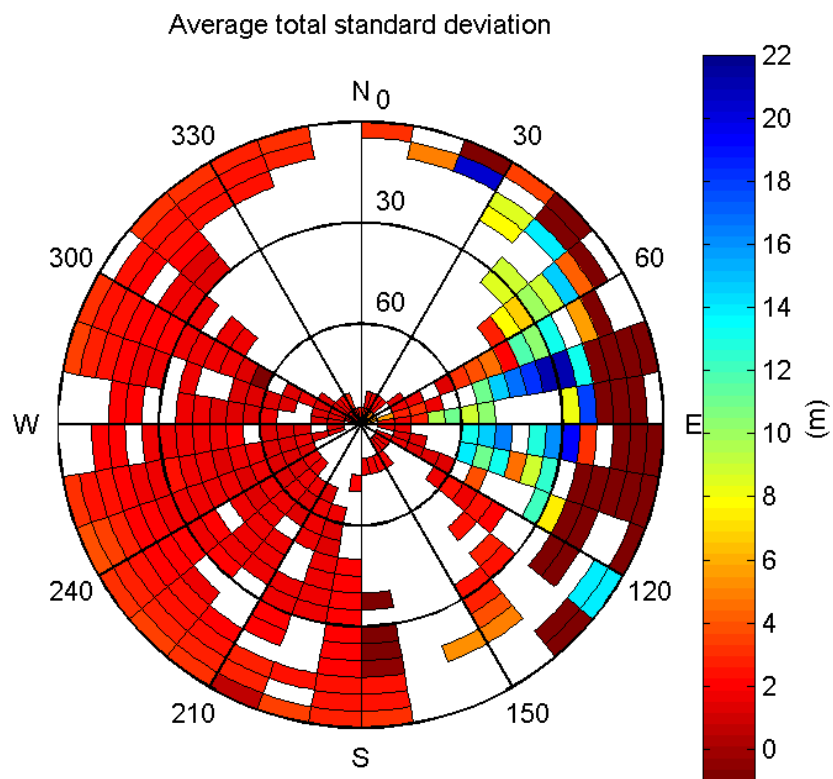

---

**Range errors:**

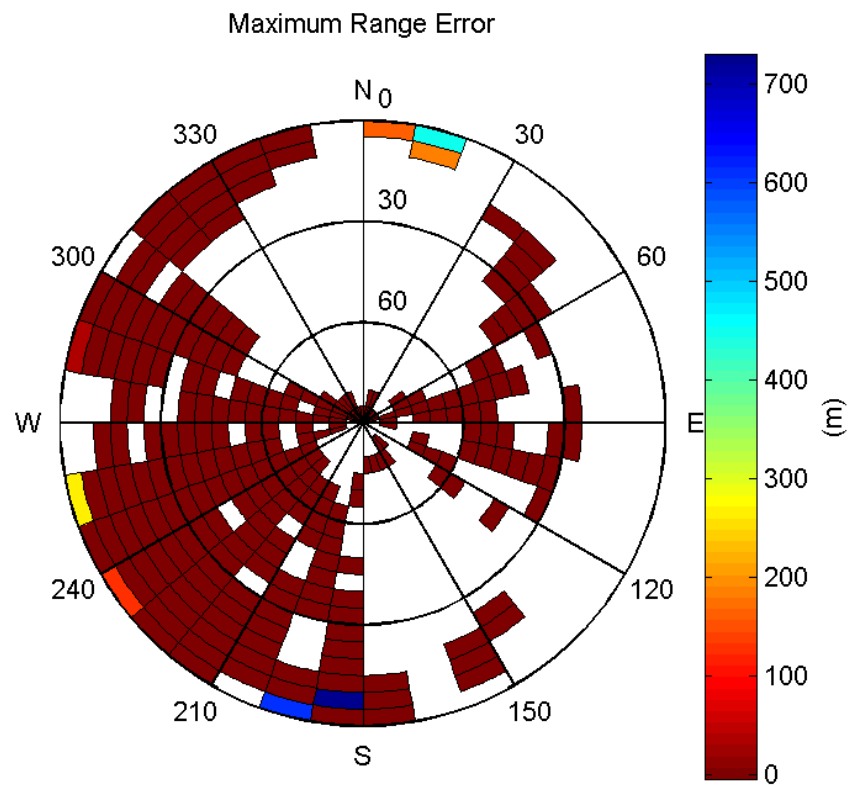
**CDF normalised range errors:****Histogram of Norm Range errors:**



#### Sigma Sky Plot:

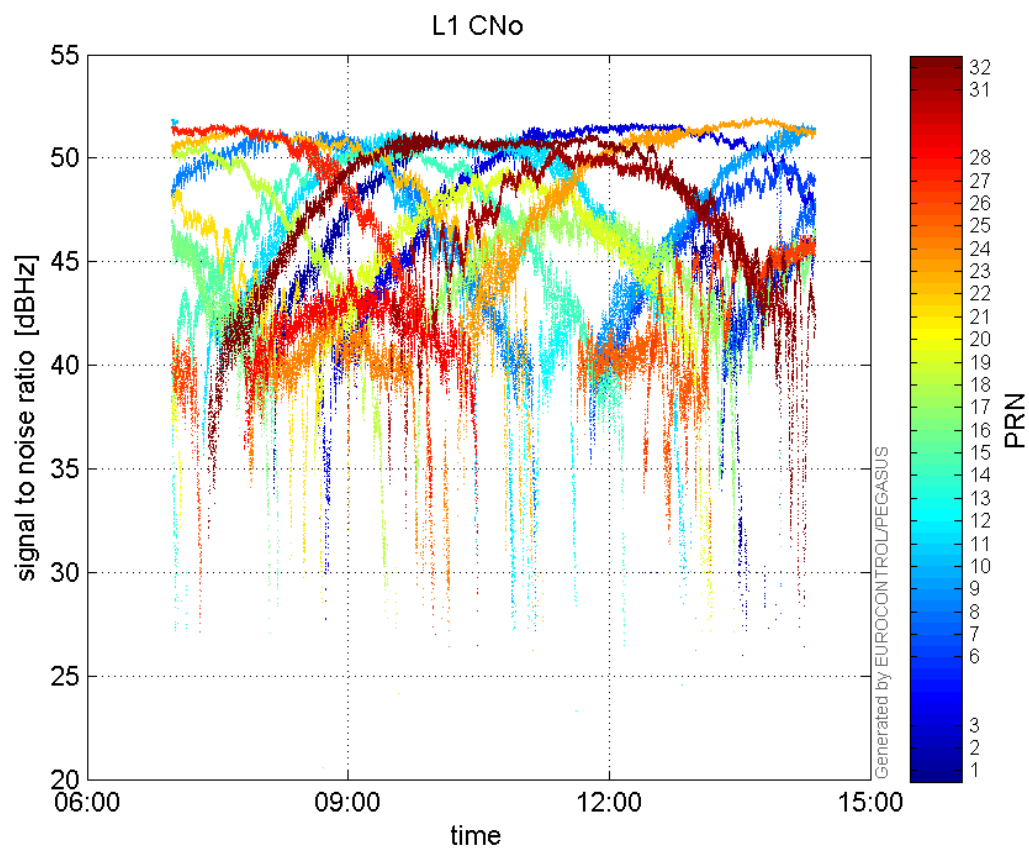


#### Norm Error Sky Plot:

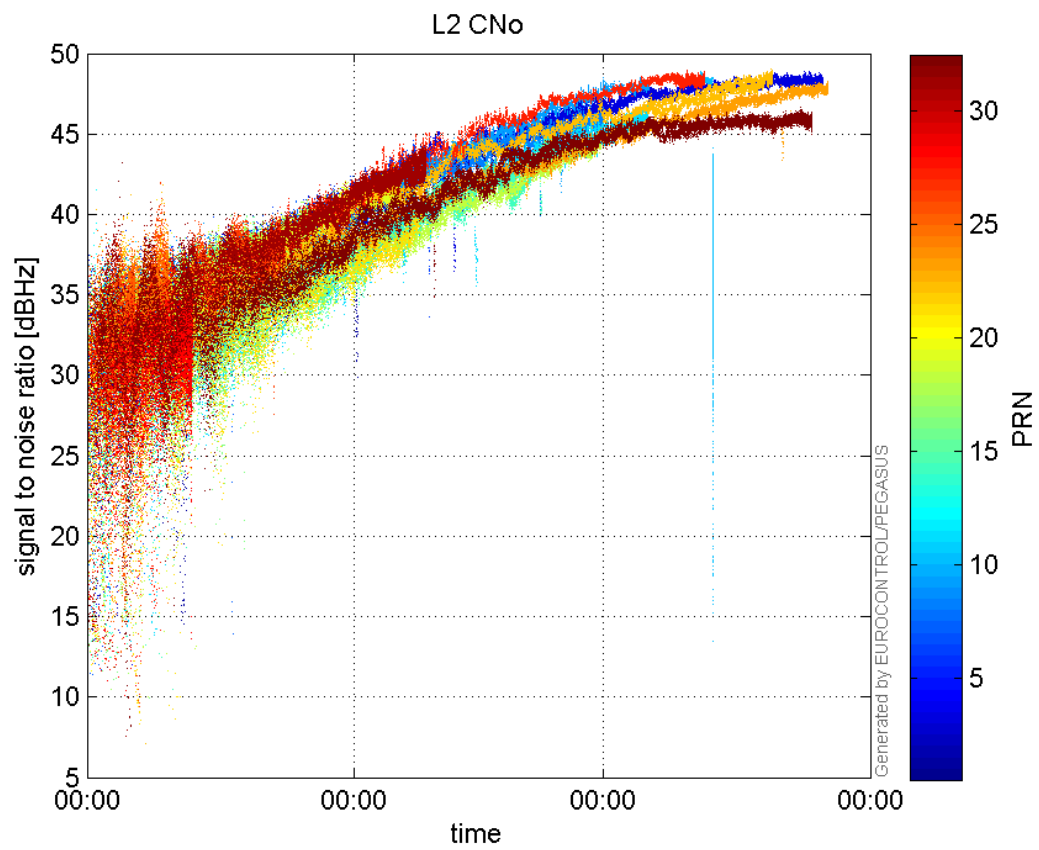


### signal quality

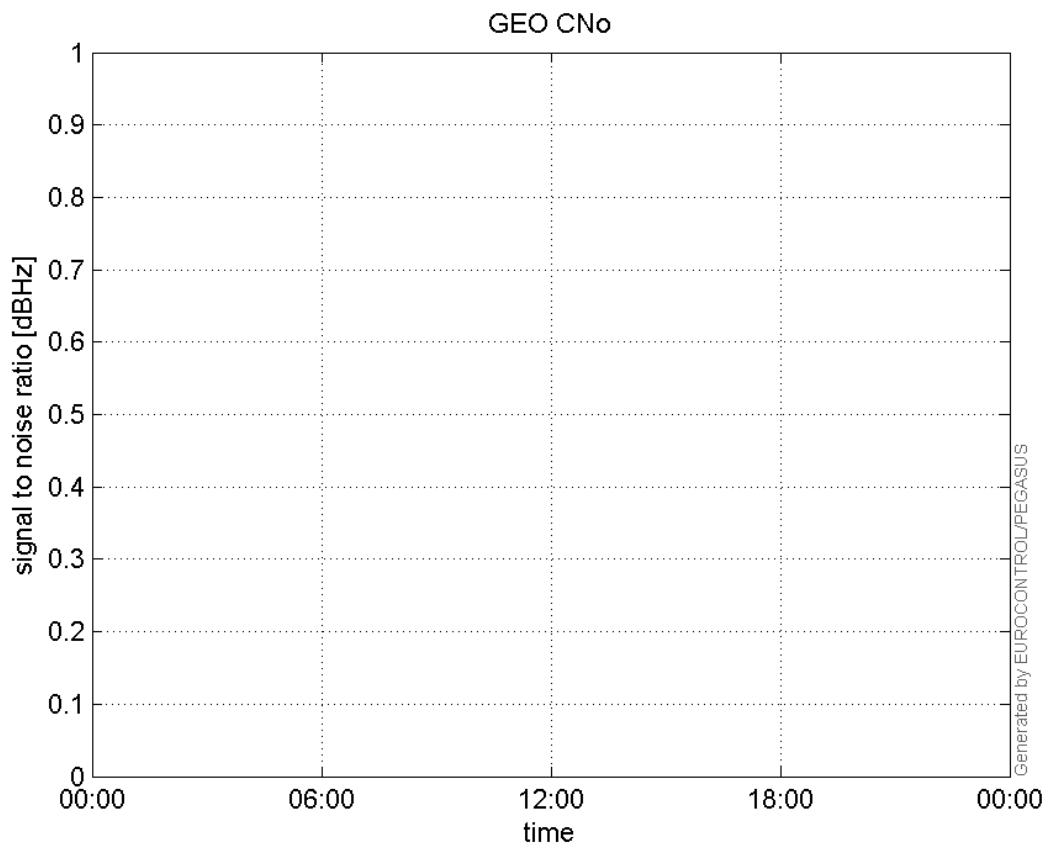
L1 CNo:



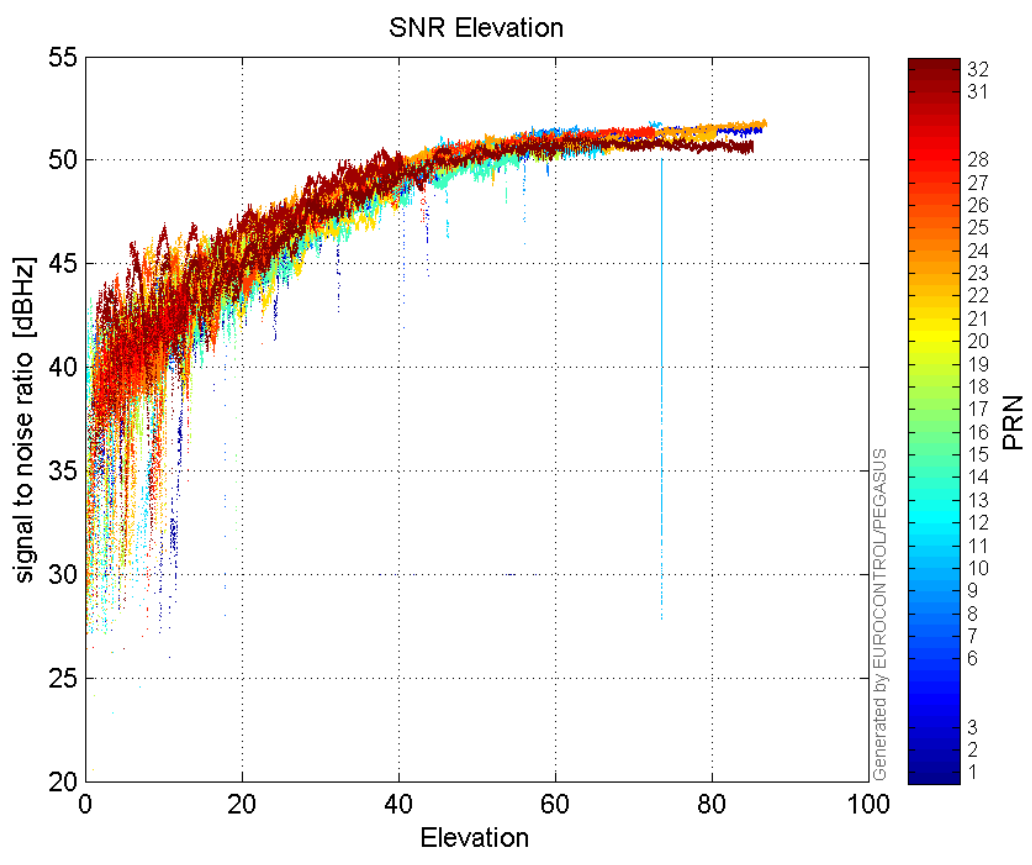
**L2 CNo:**



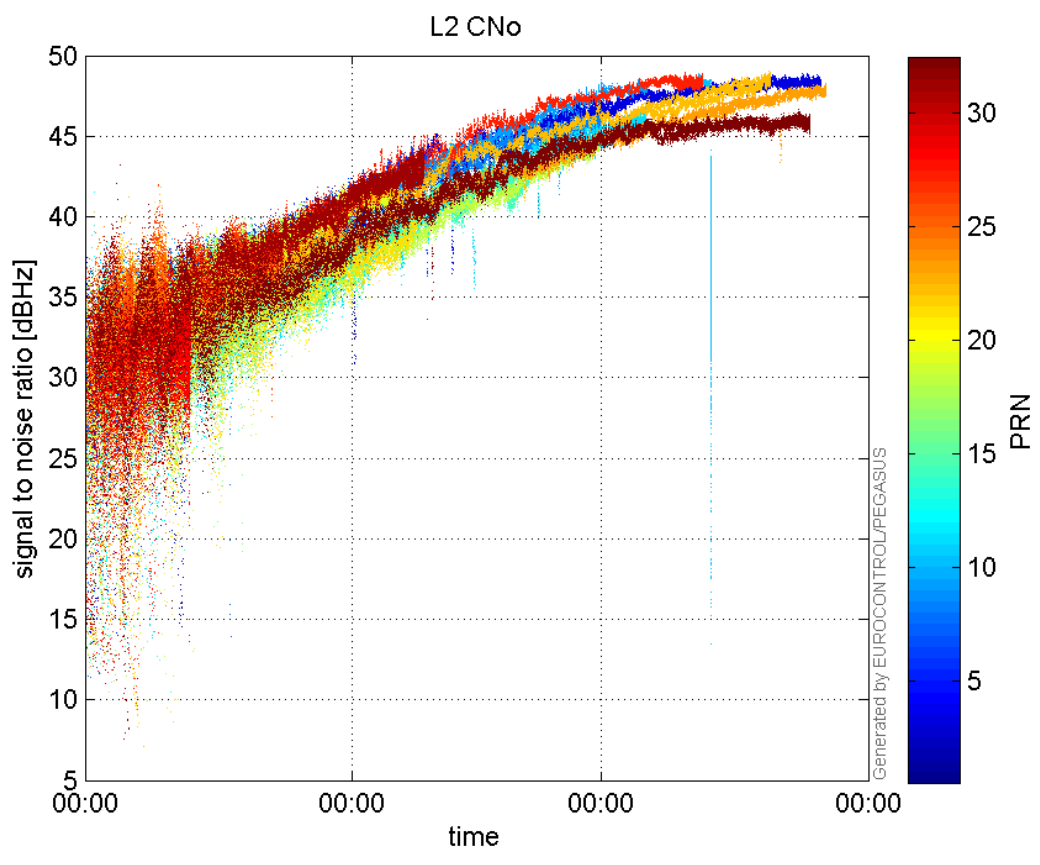
**GEO CNo:**



**SNR Elevation:**

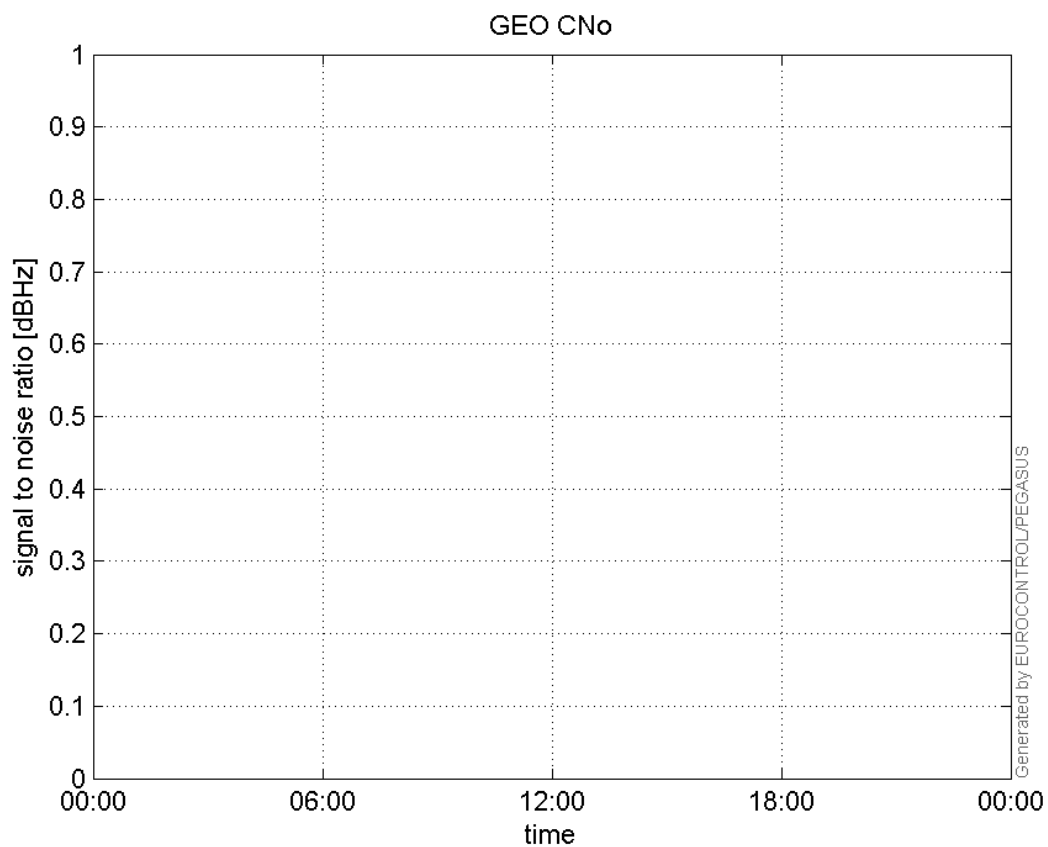


**L2 CNo:**



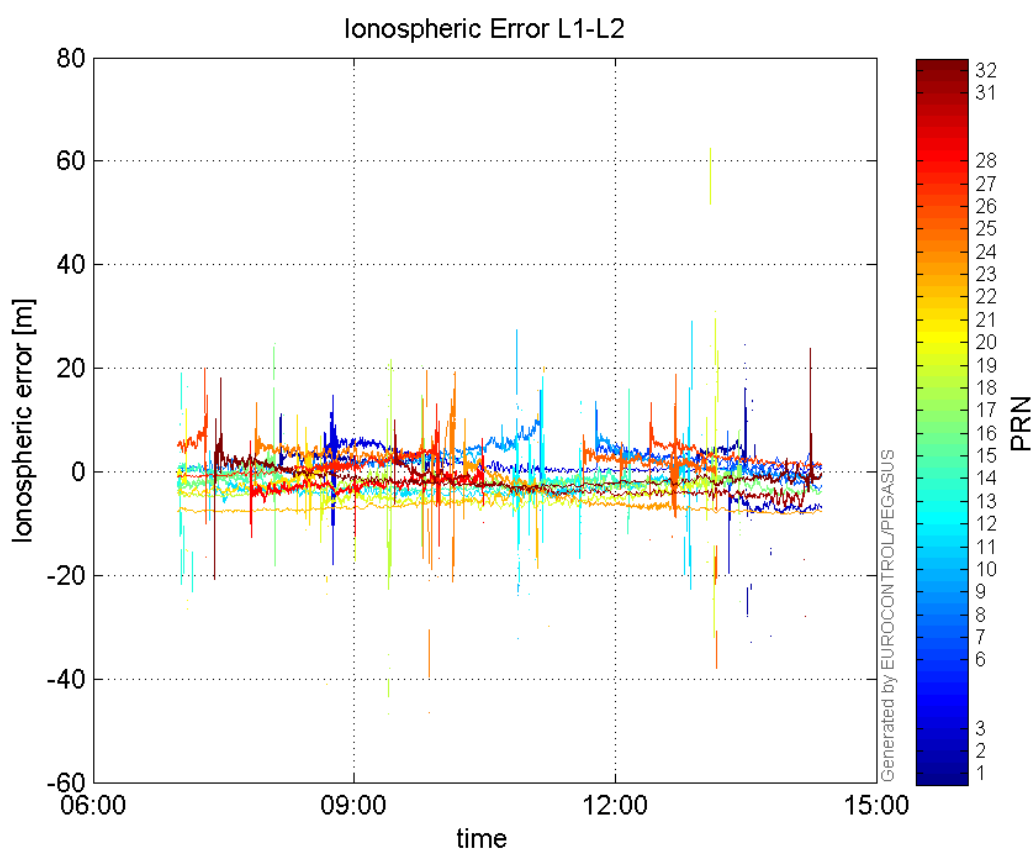
**GEO CNo:**





### 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:/PegasusDateGob/job/2015_12_09EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_12_09EGNOS/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	236.8949
mi_numbers	results	0

## Position Domain

**start:** 06:58:35 09.12.2015 ( week: 1874 sec: 284315 )  
**end:** 14:21:57 09.12.2015 ( week: 1874 sec: 310917 )  
**duration:** 07:23:23 ..

## quality

**valid samples** 26242  
**total samples** 26603

## Event tables

**Position discontinuity events type** all  
**APV-I discontinuity events type** all  
**APV-35m discontinuity events type** long  
**LPV-200 discontinuity events type** long  
**CAT-I discontinuity events type** no (0)

## extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
<b>max normHor</b>	285926	2.20586	13.9071	0.158614	-0.184386	20.0552	0.00919391
<b>max normVer</b>	288672	1.62852	15.1693	0.107356	3.3669	18.4954	0.18204
<b>max HPE</b>	309367	5.89546	94.8867	0.0621315	-	29.5669	0.000596653
<b>max VPE</b>	309298	2.26128	125.898	0.0179612	5.80471	77.2613	0.0751309
<b>min HPL</b>	304610	0.829478	9.08987	0.091253	-0.789792	12.8035	0.0616856
<b>min VPL</b>	307746	0.757089	9.91529	0.0763557	-1.04025	11.9119	0.0873288

## Position discontinuity events :

#	Epoch	duration	stable period
1	301048	8	16372
2	309033	40	7977
3	309299	59	226
4	309478	116	120

## APV-I discontinuity events :

#	Epoch	duration	stable period
1	287831	94	3155
2	301047	12	13122
3	309005	589	7946

## APV-35m discontinuity events :

#	Epoch	duration	stable period
1	287831	94	3155
2	300063	23	12138
3	300762	886	323
4	309005	753	7202

## LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	287831	94	3155
2	300063	23	12138
3	300762	886	323
4	309005	753	7202

## First Glance analysis

<b>Duration</b>	26603
<b>Number of Samples</b>	26603
<b>Number of invalid sample</b>	361

Number of no position solution samples	223
Number of missing sample	0
Logging Loss	0
Processing Loss	1.357
Number of Misleading Information	0
Data gaps	0
Discontinuities	4

## Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
26019	25547	24377	2	24377

## Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.76004	1.738	1.67728	0.765786	1.67728
HPEscale 95%	NaN	4.85592	4.88422	3.13953	4.88422
VPE 95%	2.22096	2.15622	2.16884	1.04808	2.16884
VPEscale 95%	NaN	5.86384	4.15859	1.05155	4.15859

## Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.991502	0.973516	0.928931	7.62137e-05	0.928931
measurements	0.978048	0.960305	0.916325	7.51795e-05	0.916325
Operational	0.978048	0.960305	0.916325	7.51795e-05	0.916325

## Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	4	3	56	--	56
Long	4	3	4	--	4
Independent	4	3	4	--	4
P(disc.)	0.00230601	0.00176146	0.00246134	NaN	0.00246134
P(slide)	0.00230601	0.00176146	0.00746605	NaN	0.00746605

## 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

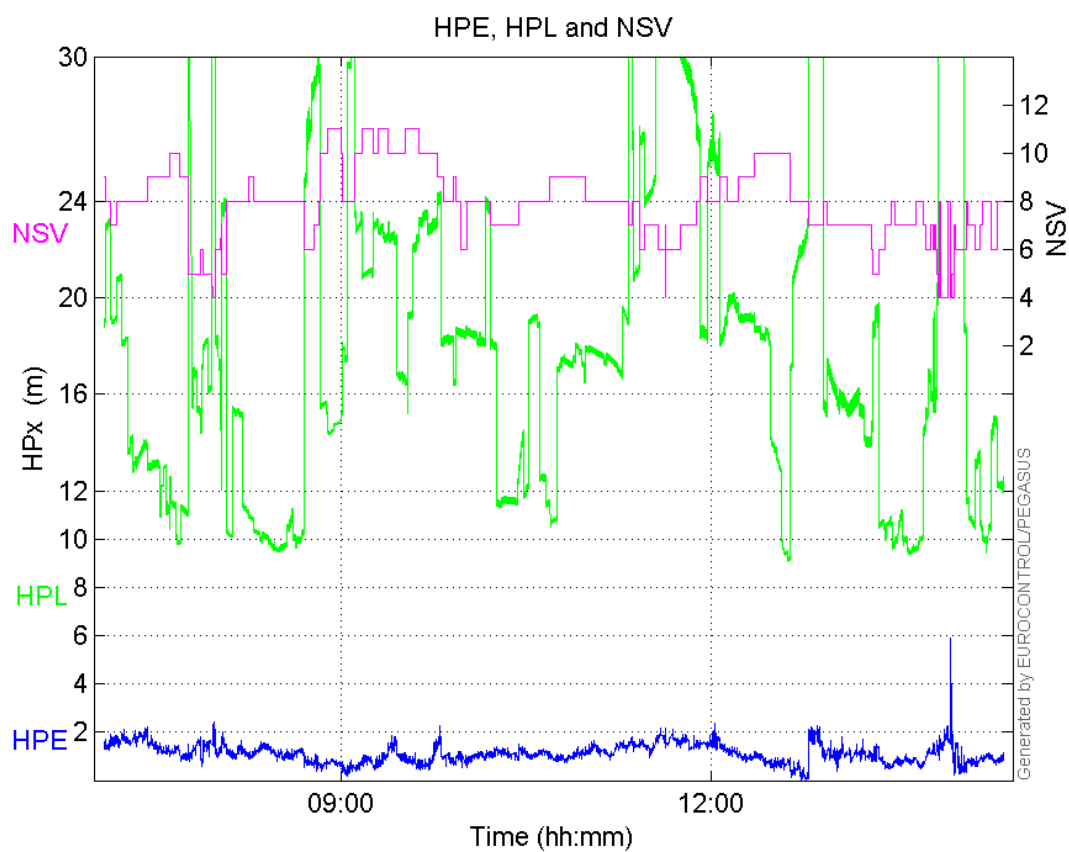
## Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	26019	25547	24377	2	24377
SIS Availability	0.991502	0.973516	0.928931	7.62137e-05	0.928931
Local Availability	0.978048	0.960305	0.916325	7.51795e-05	0.916325
Operational Availability	0.978048	0.960305	0.916325	7.51795e-05	0.916325

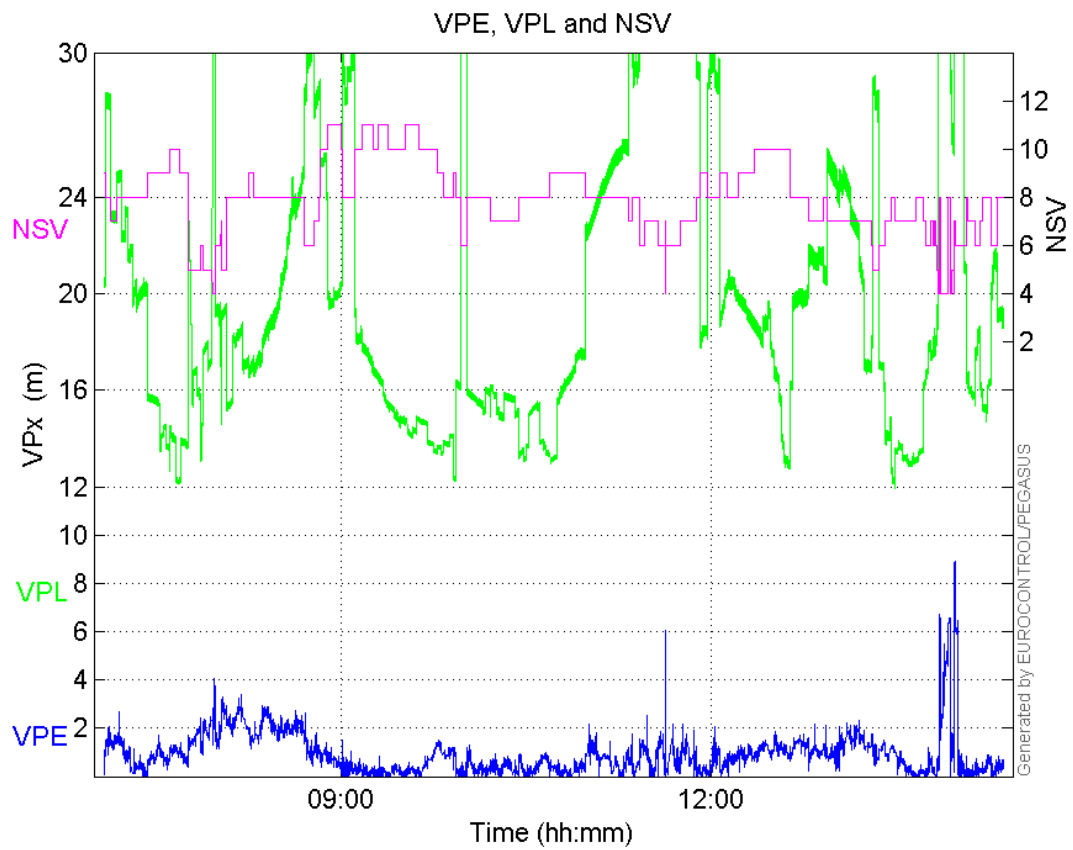
<b>HPE 95%</b>	1.76004	1.738	1.67728	0.765786	1.67728
<b>HPEscale 95%</b>	NaN	4.85592	4.88422	3.13953	4.88422
<b>VPE 95%</b>	2.22096	2.15622	2.16884	1.04808	2.16884
<b>VPEscale 95%</b>	NaN	5.86384	4.15859	1.05155	4.15859
<b>All Discontinuity Events</b>	4	3	56	--	56
<b>Long Discontinuity Events</b>	4	3	4	--	4
<b>Independent Discontinuity Events</b>	4	3	4	--	4
<b>P(discontinuity)</b>	0.00230601	0.00176146	0.00246134	NaN	0.00246134
<b>P(sliding window)</b>	0.00230601	0.00176146	0.00746605	NaN	0.00746605
<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:

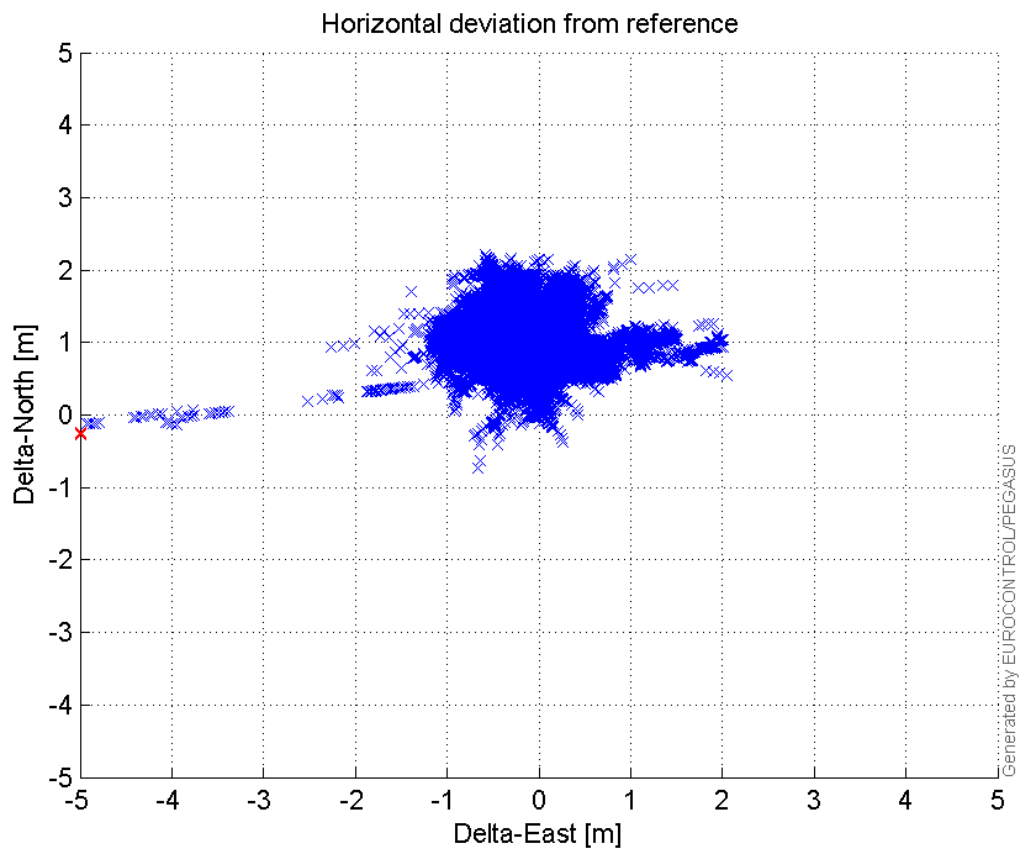


VPE, VPL and NSV:



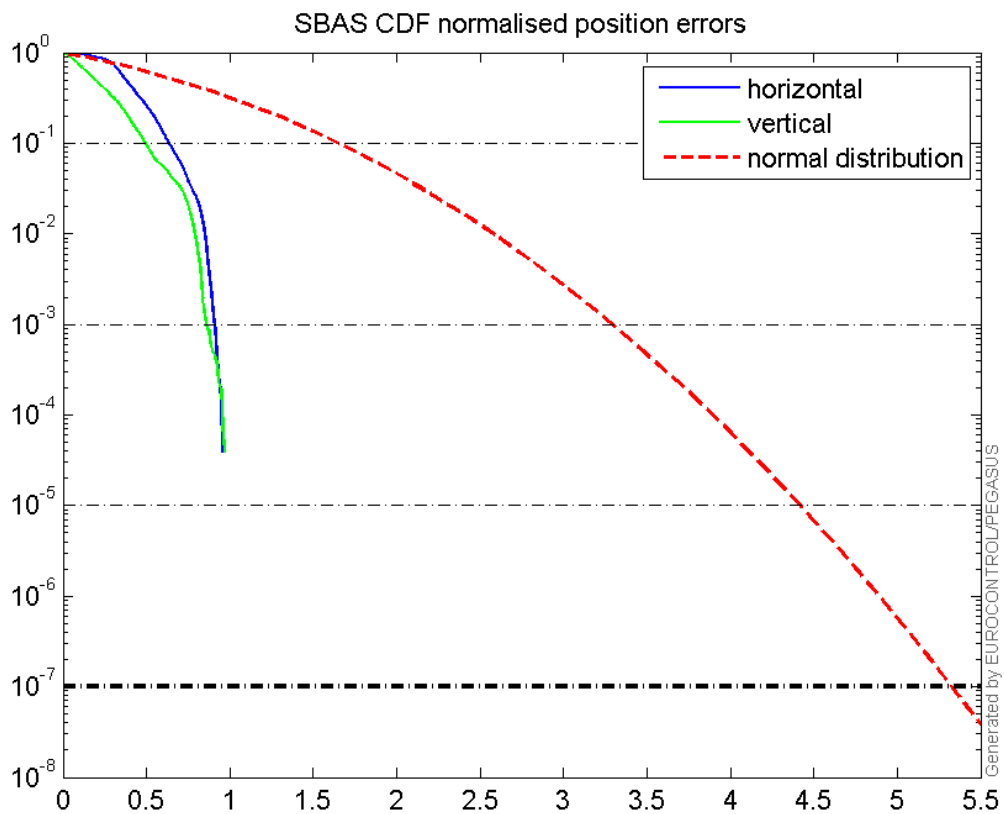
### Horizontal deviation

Horizontal deviation from reference :



## CDF position

SBAS CDF position domain:



## Statistics

<b>number</b>	25547
<b>sum</b>	28198.448
<b>sum2</b>	34465.176
<b>prctile95</b>	1.7379967
<b>prctile99</b>	1.9561713
<b>number</b>	25547
<b>sum</b>	21926.294
<b>sum2</b>	29495.855
<b>prctile95</b>	2.1562192
<b>prctile99</b>	2.7236123
<b>number</b>	25547
<b>sum</b>	458423.9
<b>sum2</b>	9291668.1
<b>prctile95</b>	32.354675
<b>prctile99</b>	35.493396
<b>number</b>	25547
<b>sum</b>	516999.08
<b>sum2</b>	11555382
<b>prctile95</b>	34.73436
<b>prctile99</b>	40.330936
<b>number</b>	25547
<b>sum</b>	1733.2682

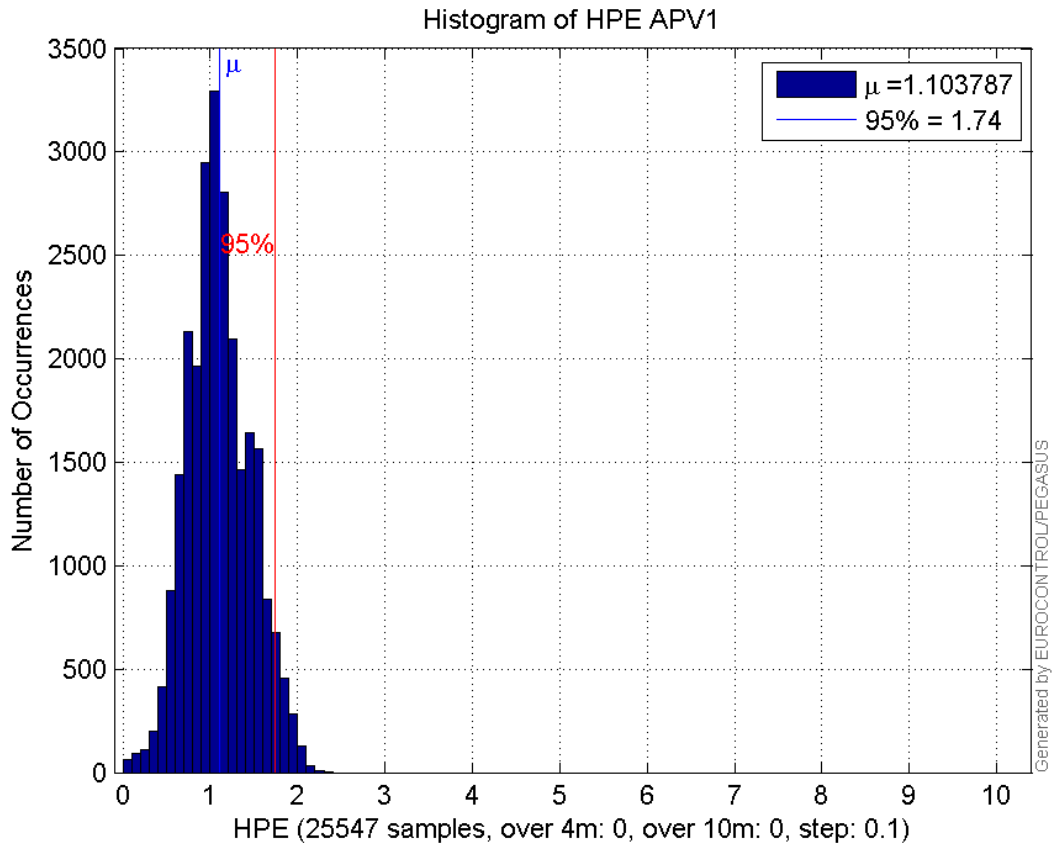


**sum2** 137.5597  
**prctile95** 0.12139794  
**prctile99** 0.14169945  
**number** 25547  
**sum** 1143.673  
**sum2** 82.742114  
**prctile95** 0.11727683  
**prctile99** 0.14846631  
**number** 24377  
**sum** 26424.063  
**sum2** 31549.1  
**prctile95** 1.6772837  
**prctile99** 1.9562684  
**number** 24377  
**sum** 20947.682  
**sum2** 28424.852  
**prctile95** 2.1688365  
**prctile99** 2.7305822  
**number** 24377  
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**sum2** 8032212.4  
**prctile95** 27.756895  
**prctile99** 35.389819  
**number** 24377  
**sum** 472102.98  
**sum2** 9828139.3  
**prctile95** 29.872445  
**prctile99** 34.224519  
**number** 24377  
**sum** 1679.0281  
**sum2** 134.83667  
**prctile95** 0.12210558  
**prctile99** 0.14192545  
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**sum2** 82.010757  
**prctile95** 0.11881678  
**prctile99** 0.14875037

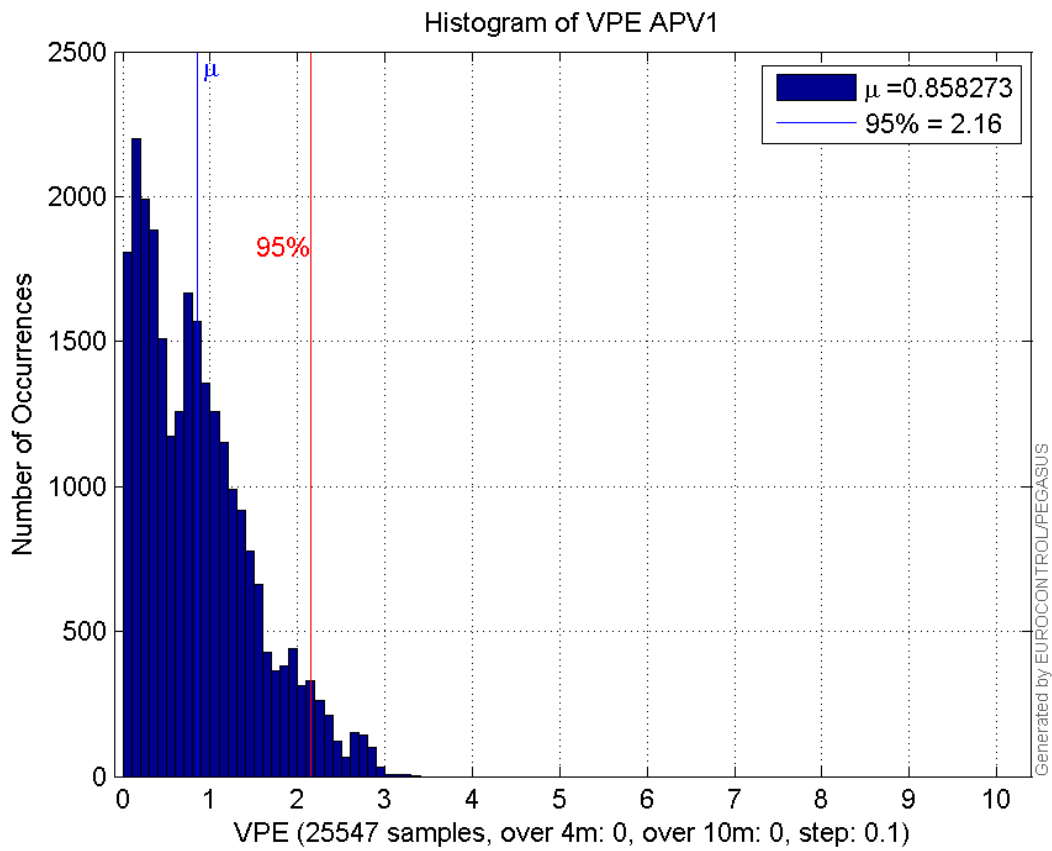
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	1.10379	0.361591	1.07377	1.738	1.95617	1.1615
<b>HPL</b>	17.9443	6.45843	17.4331	32.3547	35.4934	19.0712
<b>VPE</b>	0.858273	0.646495	0.757964	2.15622	2.72361	1.07451
<b>VPL</b>	20.2372	6.54041	18.3642	34.7344	40.3309	21.2678

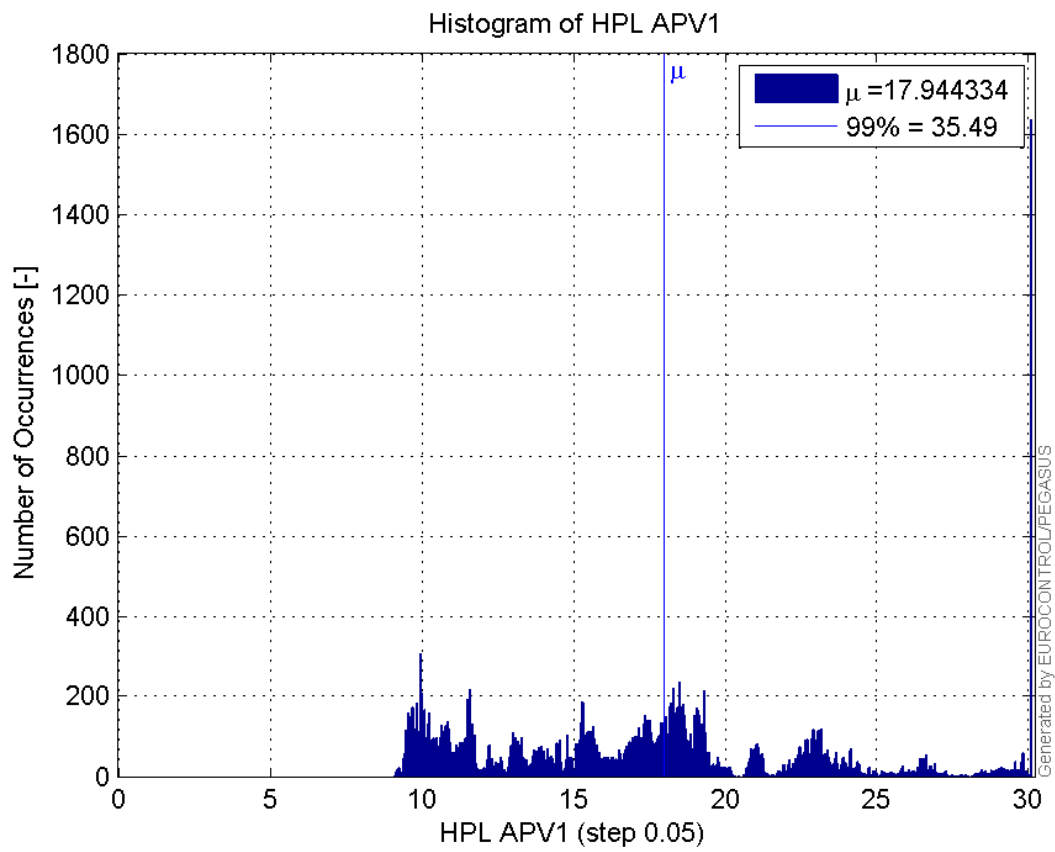
**Histogram of HPE APV1:**



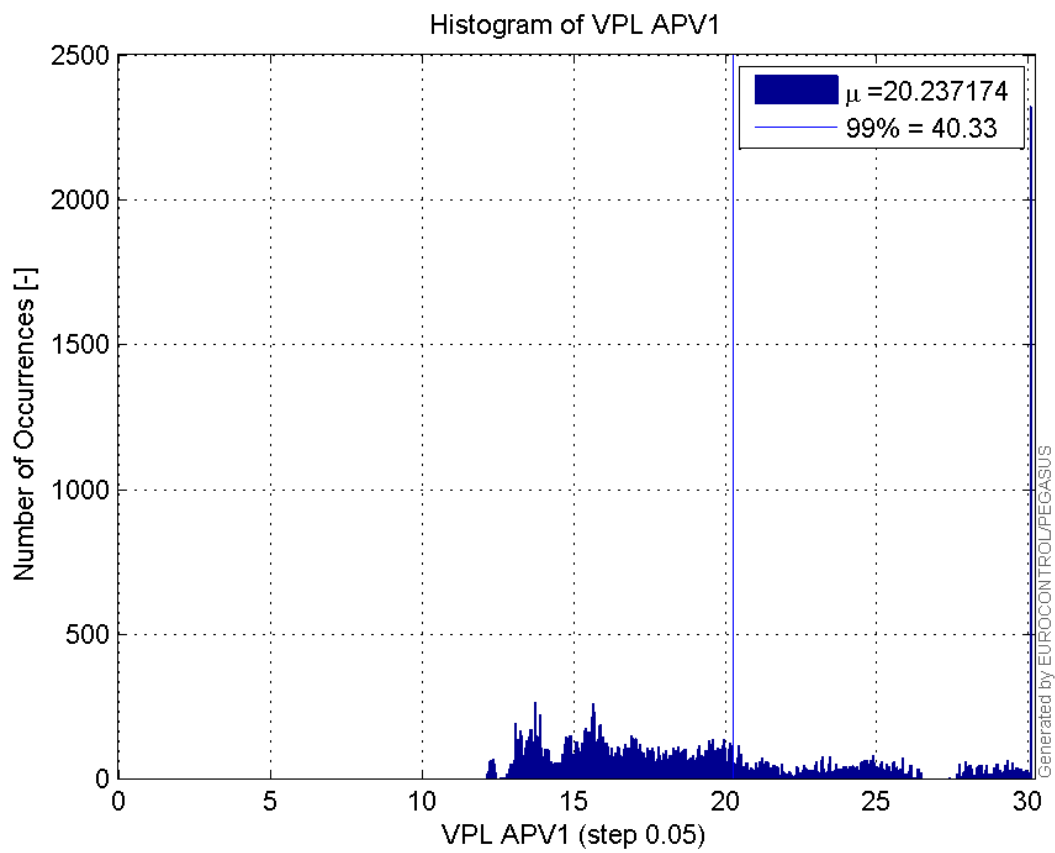
**Histogram of VPE APV1:**



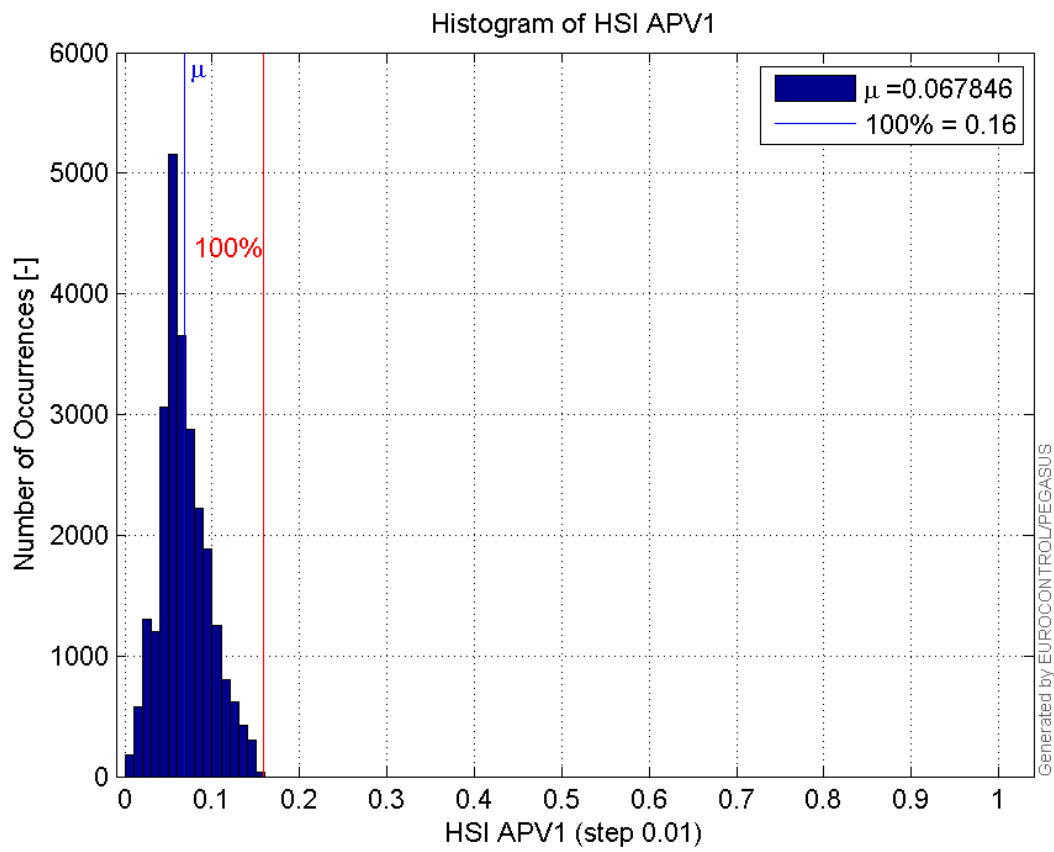
**Histogram of HPL APV1:**



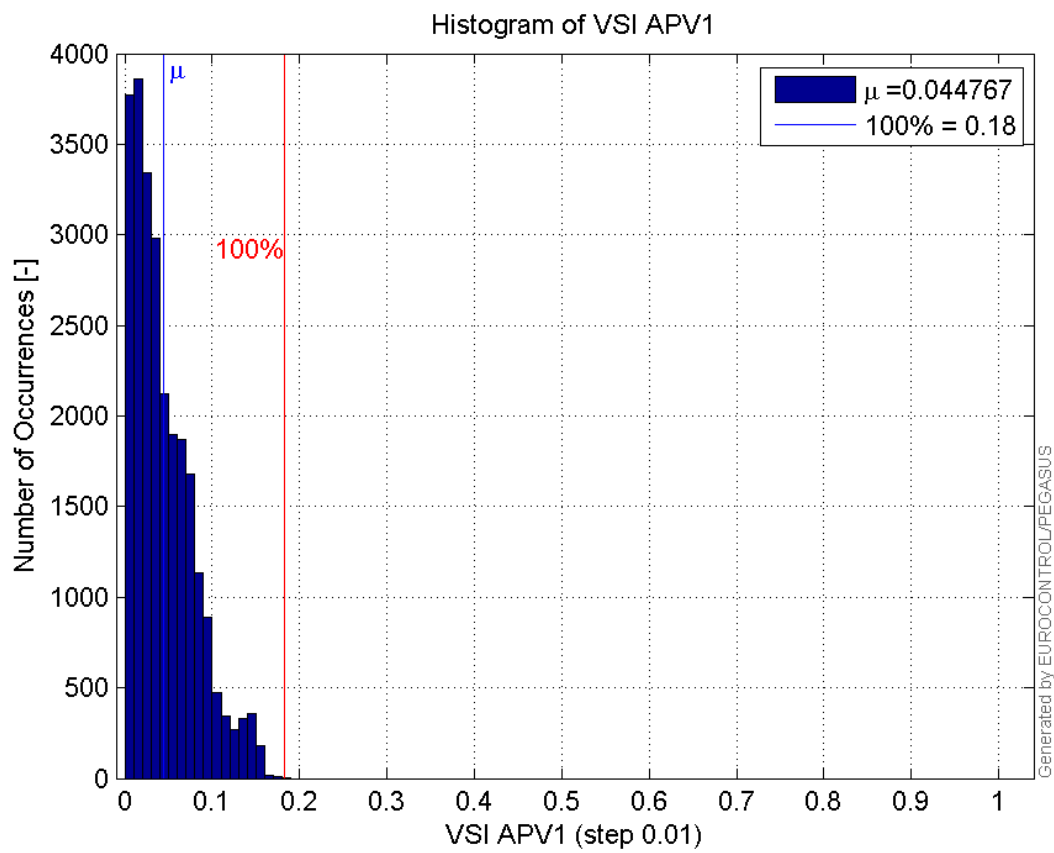
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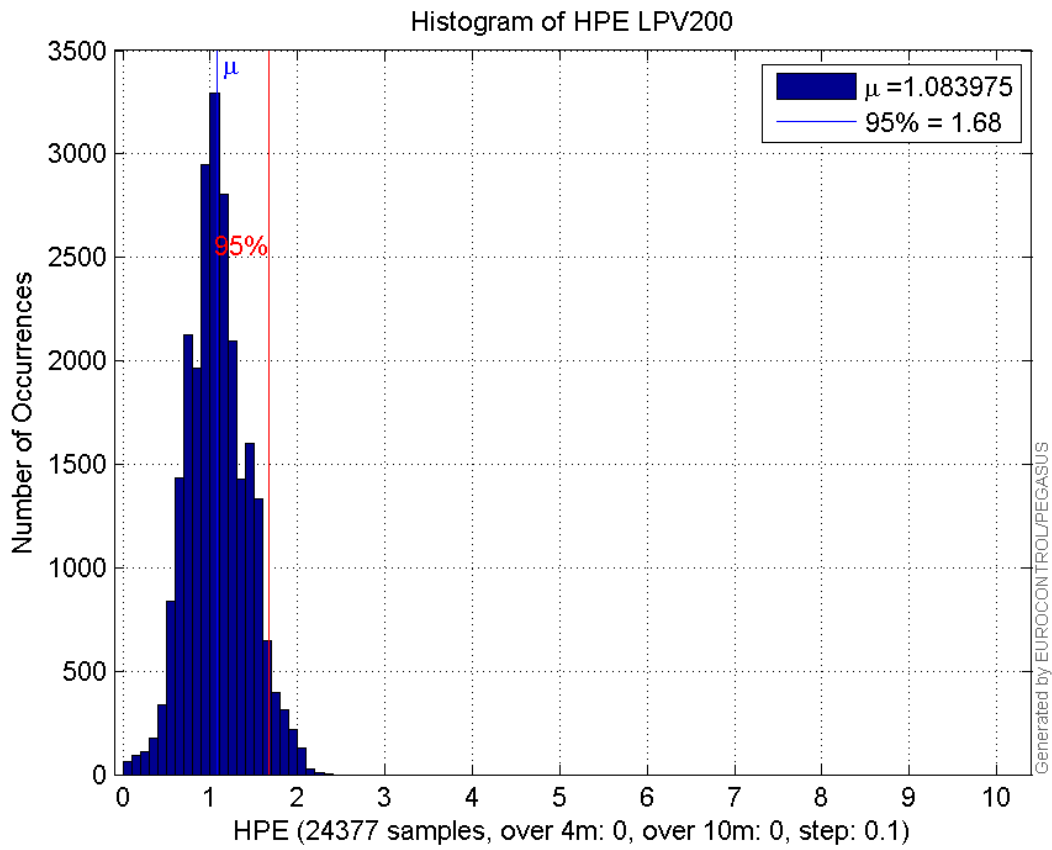
**Histogram of HSI APV1:**



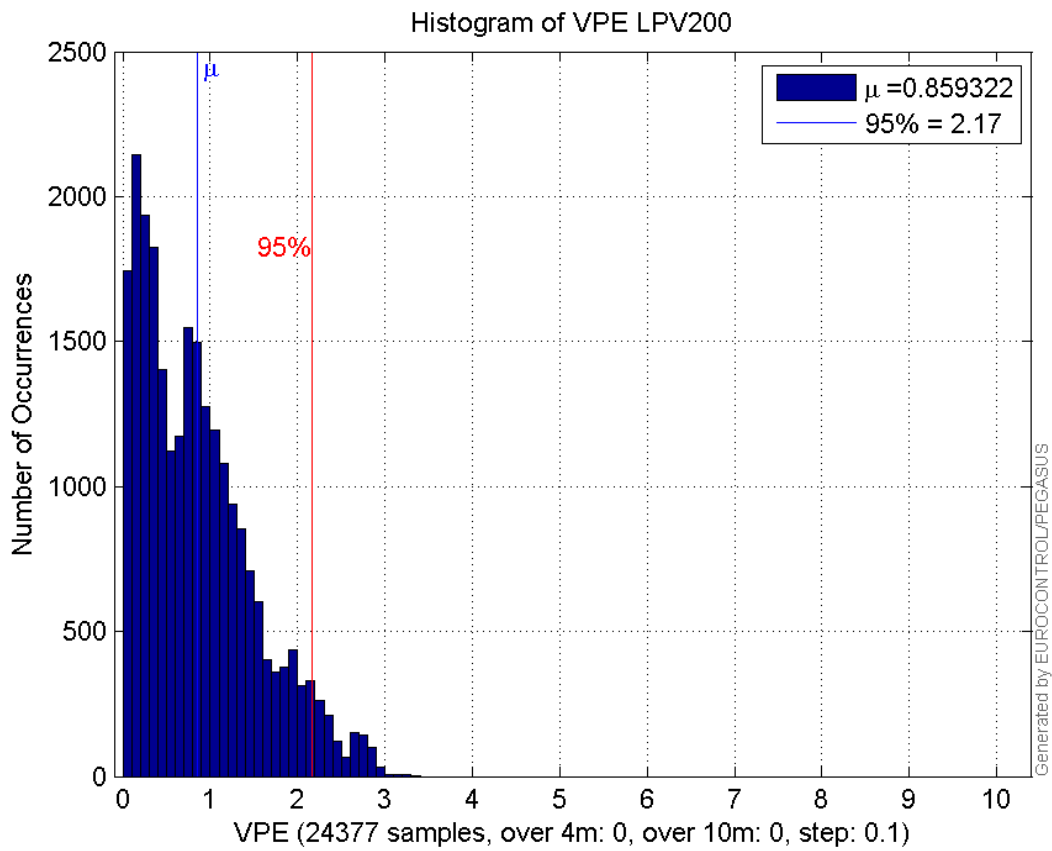
**Histogram of VSI APV1:**



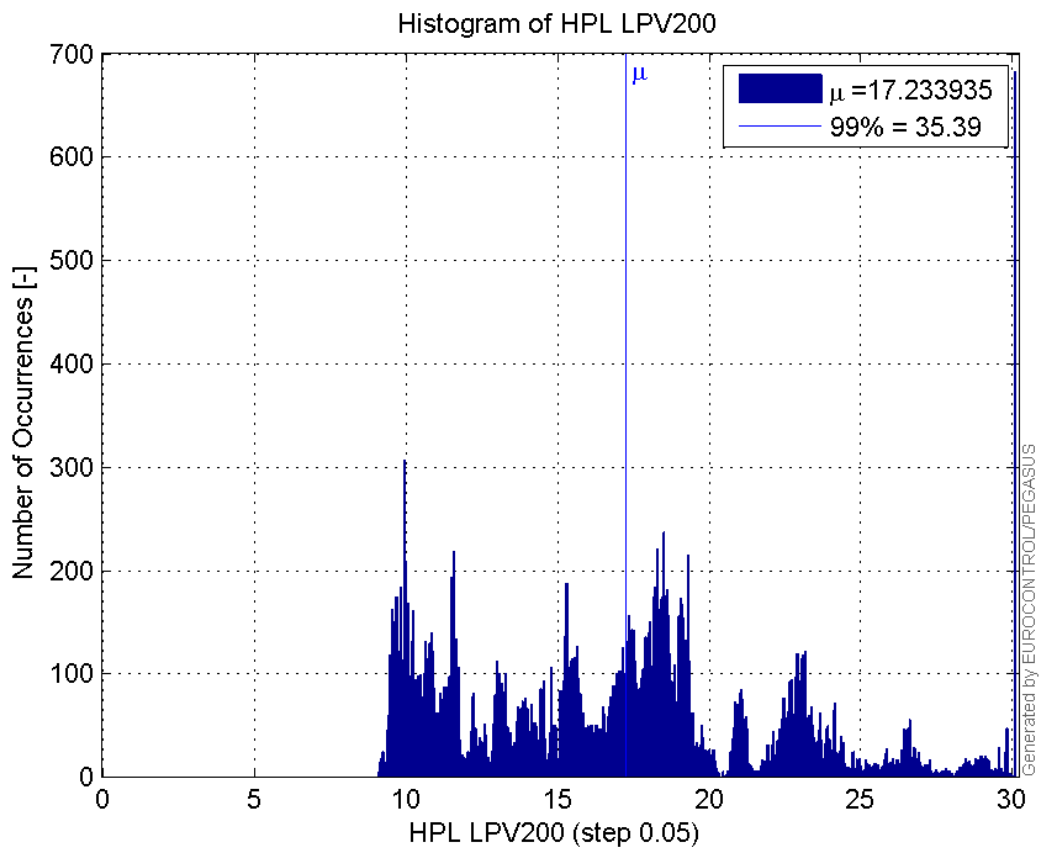
**Histogram of HPE LPV200:**



**Histogram of VPE LPV200:**

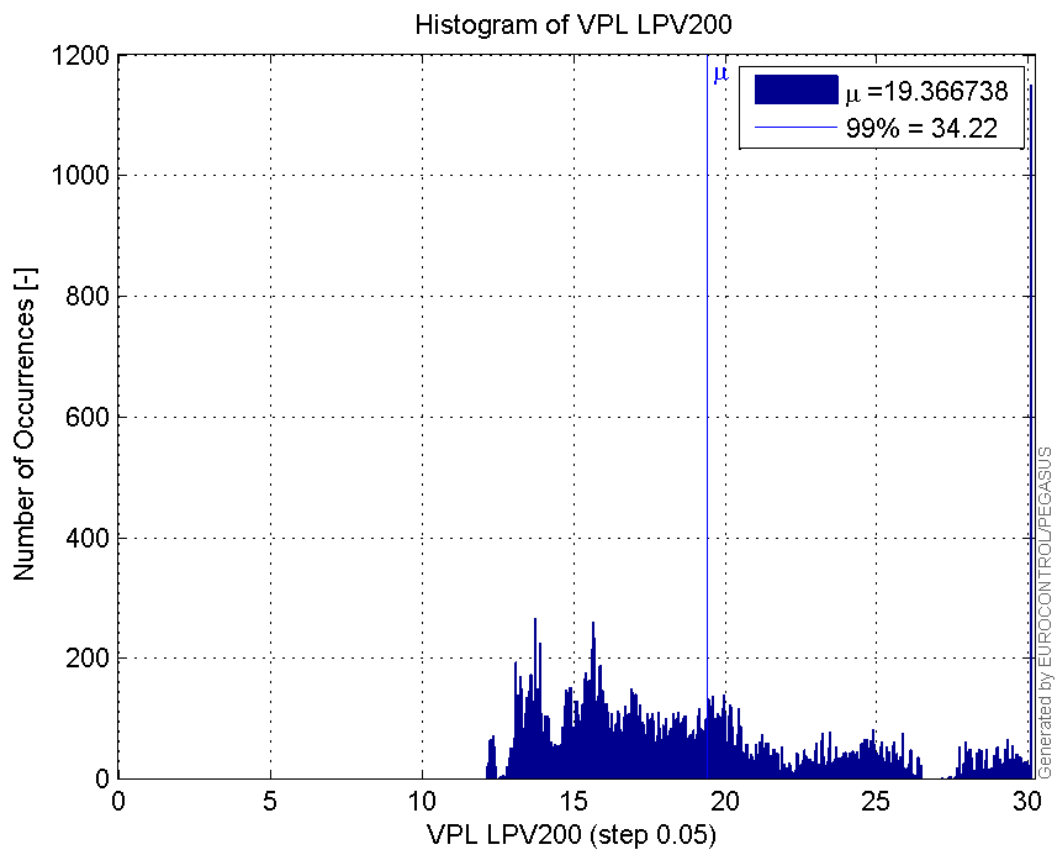


**Histogram of HPL LPV200:**



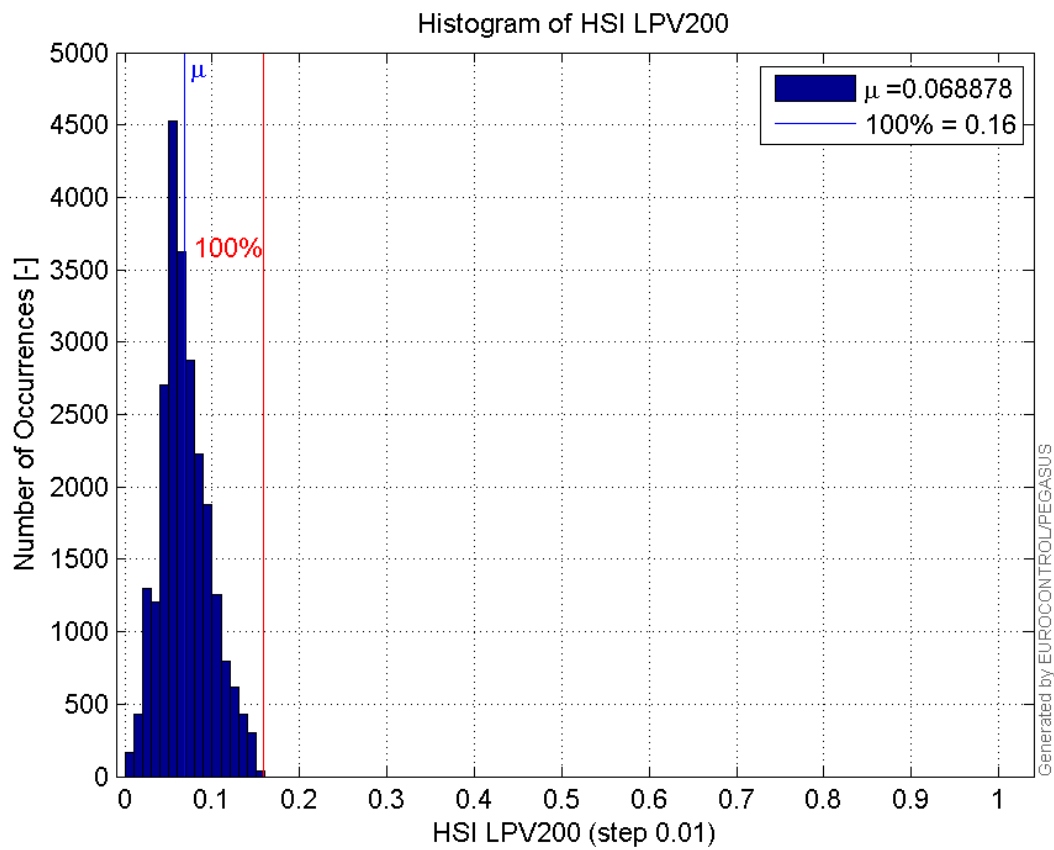
9

**Histogram of VPL LPV200:**

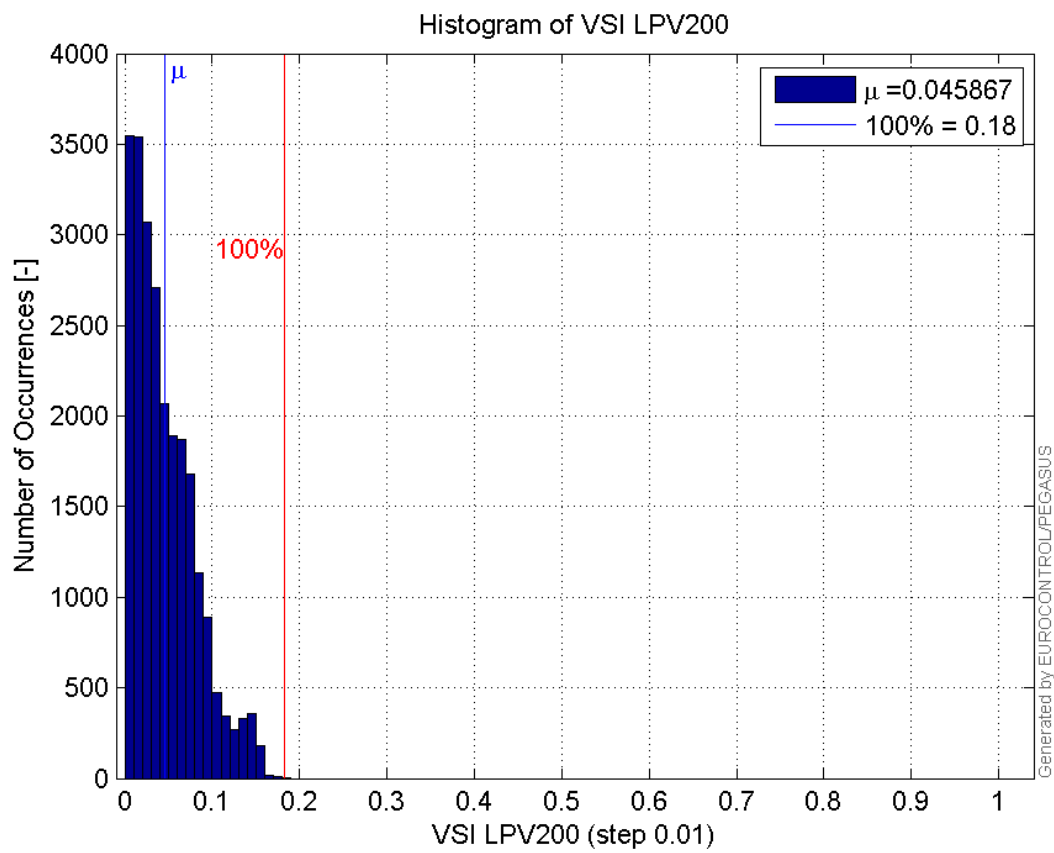


99%

**Histogram of HSI LPV200:**

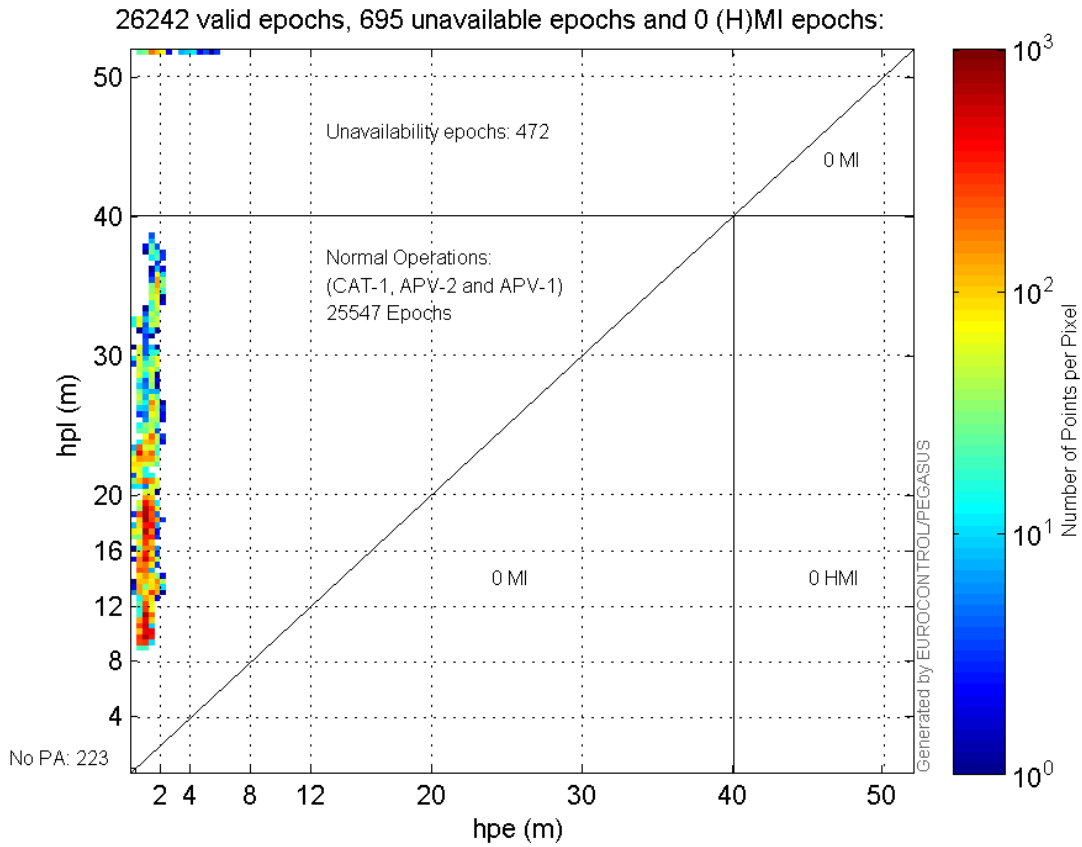


Histogram of VSI LPV200:

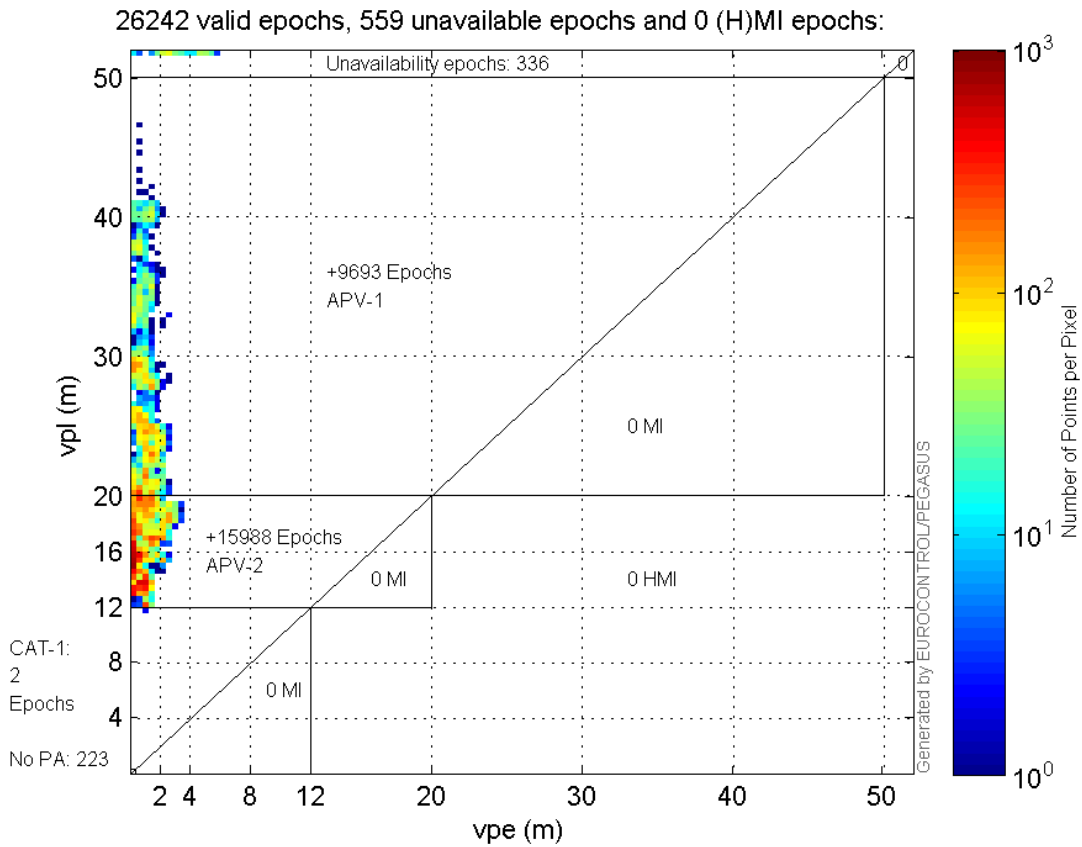




**Horizontal\_Stanford\_Plot\_SBAS:**



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



## Parameters

## system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDateGob/job/2015_12_09EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_12_09EGNOS/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	236.8949
mi_numbers	results	0