

# 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 10/02/2016

## SBAS Messages

**start:** 05:57:18.129 10.02.2016 ( week: 1883 sec: 280638.129 )  
**end:** 15:30:26.129 10.02.2016 ( week: 1883 sec: 315026.129 )  
**duration:** 09:33:08 ..

### quality

**valid samples** 68778  
**total samples** 68778  
**number of SBAS PRNs** 2

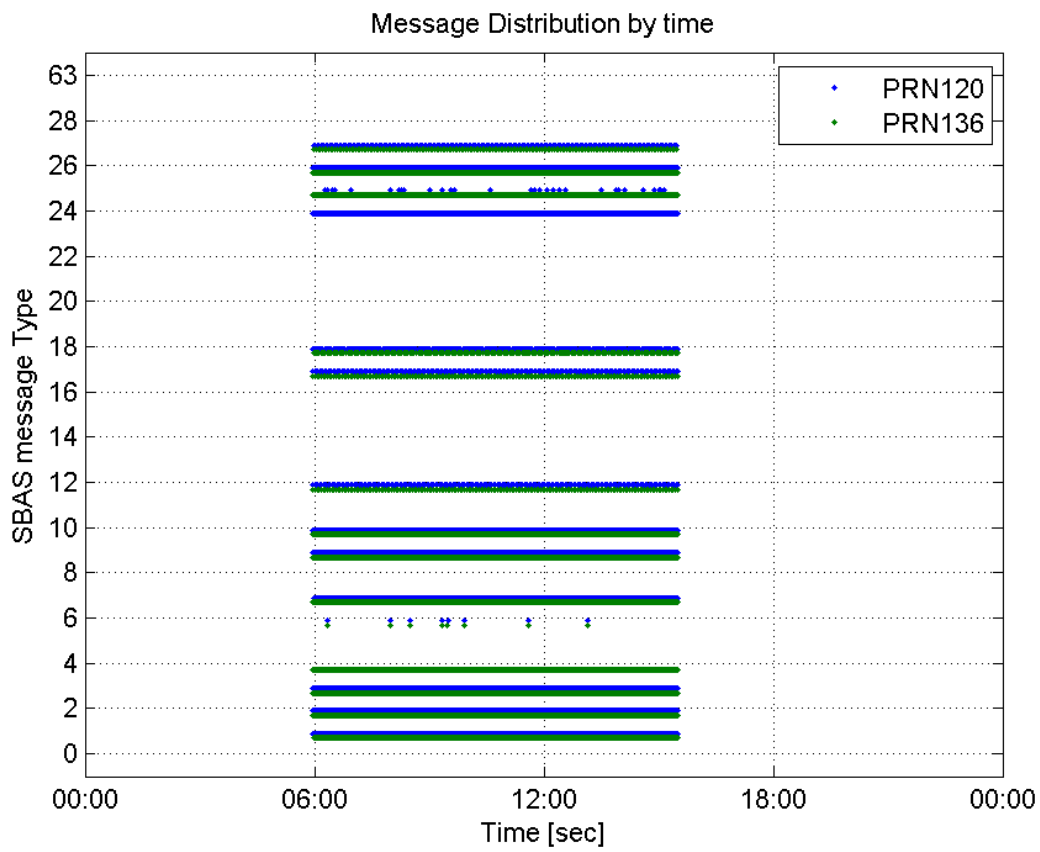
### SBAS SIS Overview

#### Message Type 6 repetitions :

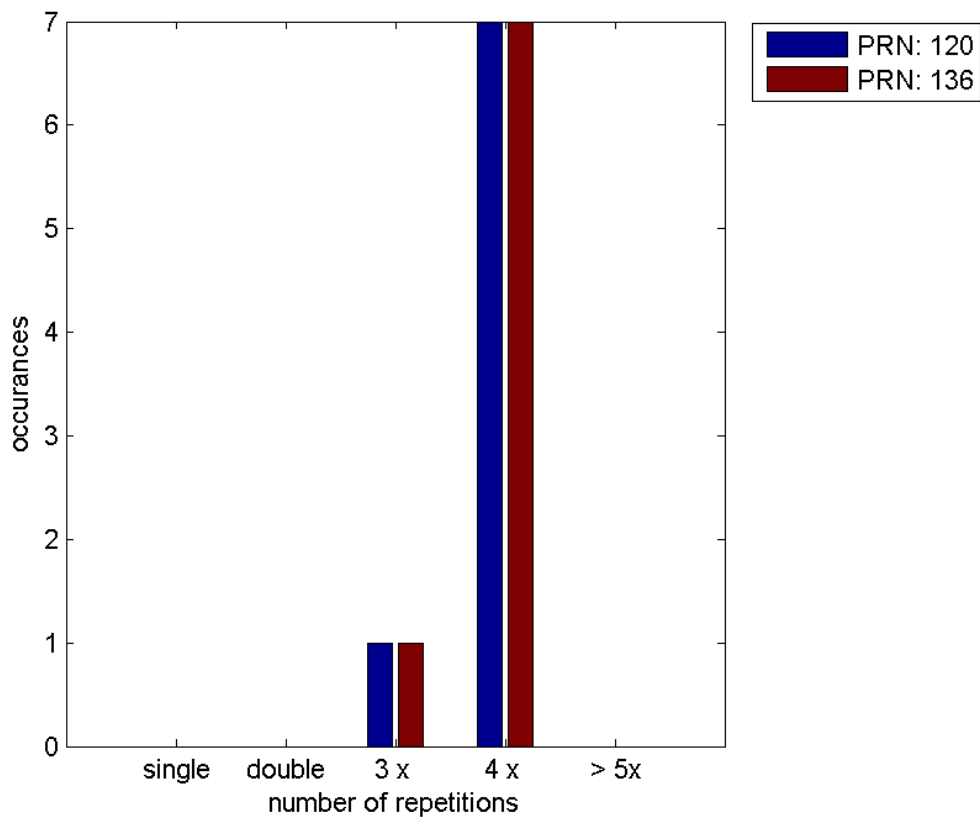
	single	double	3 x	4 x	> 5x
<b>PRN 120</b>	0	0	1	7	0
<b>PRN 136</b>	0	0	1	7	0

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#### Message Distribution by time:



**Message Type 6 repetitions:**



## Broadcast SBAS Messages :

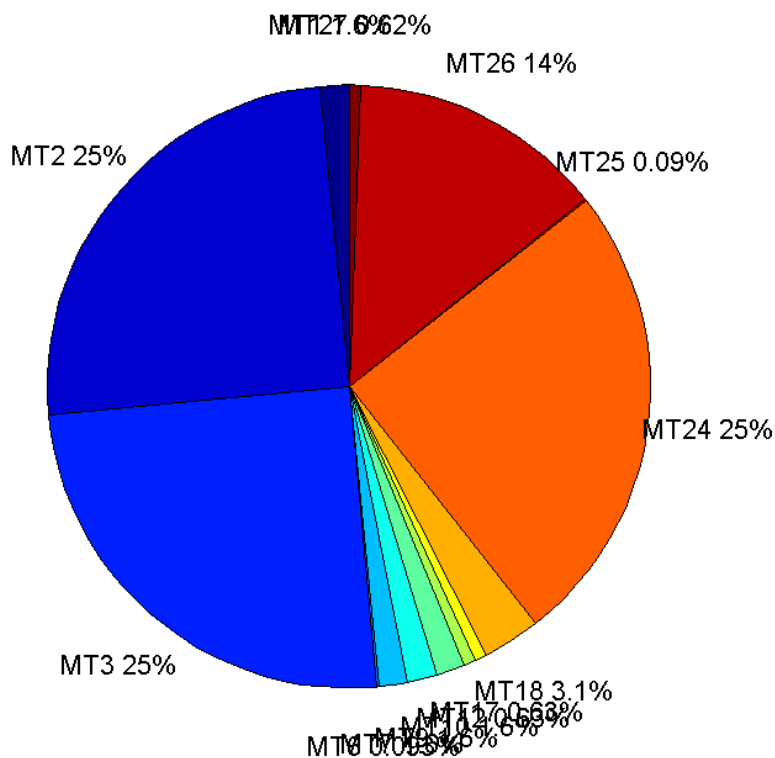
	number of messages	%
MT 0	0	0
MT 1	536	1.55864
MT 2	8585	24.9644
MT 3	8586	24.9673
MT 4	0	0
MT 5	0	0
MT 6	32	0.093053
MT 7	535	1.55573
MT 9	535	1.55573
MT 10	536	1.55864
MT 12	215	0.6252
MT 17	215	0.6252
MT 18	1072	3.11728
MT 24	8585	24.9644
MT 25	31	0.0901451
MT 26	4712	13.7021
MT 27	214	0.622292
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	34389	100

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	70	64.2467	0	0	0
MT 2	4	8	4.00548	8	0	0
MT 3	4	8	4.00536	8	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	6031	789.935	7	7	7
MT 7	64	70	64.2472	0	0	0
MT 9	64	70	64.2472	0	0	0
MT 10	64	70	64.2467	0	0	0
MT 12	156	167	160.486	214	0	0
MT 17	160	168	160.505	0	0	0
MT 18	4	136	32.071	0	0	0
MT 24	4	8	4.00548	0	0	0
MT 25	29	3931	1066.2	0	0	0
MT						

26	4	26	7.29442	0	0	0
MT 27	156	171	160.507	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	433	1.25912
MT 2	8543	24.8422
MT 3	8543	24.8422
MT 4	8543	24.8422
MT 5	0	0
MT 6	32	0.093053
MT 7	433	1.25912
MT 9	433	1.25912

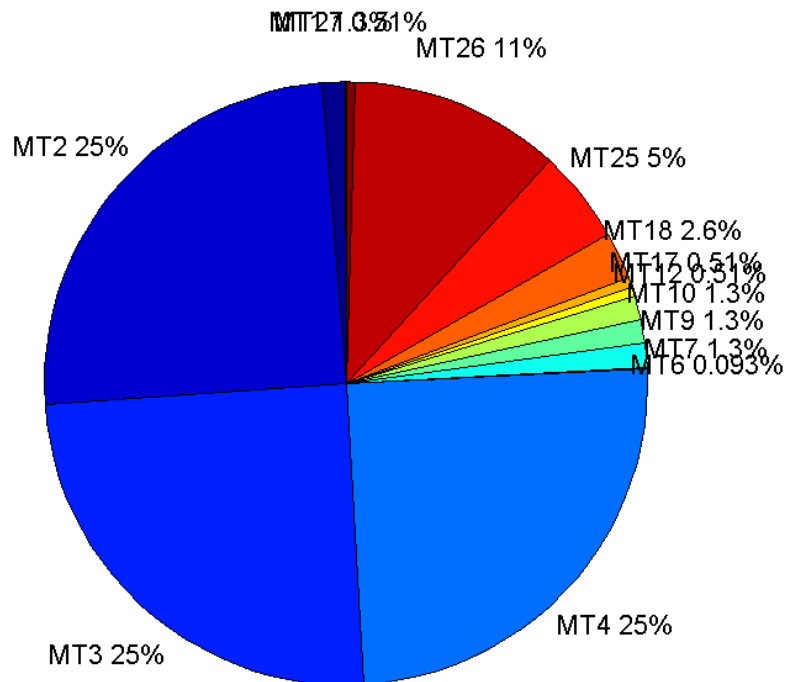
MT 10	433	1.25912
MT 12	177	0.514699
MT 17	177	0.514699
MT 18	880	2.55896
MT 24	0	0
MT 25	1708	4.9667
MT 26	3878	11.2769
MT 27	176	0.511792
MT 28	0	0
MT 62	0	0
MT 63	0	0
<b>Total</b>	<b>34389</b>	<b>100</b>

## Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	81	79.4213	0	0	0
MT 2	4	8	4.02529	8	0	0
MT 3	4	8	4.0254	8	0	0
MT 4	4	8	4.0254	8	0	0
MT 5	--	--	--	--	--	--
MT 6	1	6005	789.935	7	7	7
MT 7	75	85	79.463	0	0	0
MT 9	75	81	79.4815	0	0	0
MT 10	74	84	79.4722	0	0	0
MT 12	184	202	195.091	176	0	0
MT 17	184	202	195.091	0	0	0
MT 18	4	165	38.8805	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	60	20.1418	0	0	0
MT 26	4	36	8.86407	0	0	0
MT 27	184	201	195.074	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_10EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2016_02_10EGNOS/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:** 05:57:19 10.02.2016 ( week: 1883 sec: 280639 )  
**end:** 15:30:26 10.02.2016 ( week: 1883 sec: 315026 )  
**duration:** 09:33:08 ..

### quality

**valid samples** 34027  
**total samples** 34388

## 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** long

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
<b>max normHor</b>	283402	1.74334	9.03246	0.193009	0.318775	15.6116	0.0204191
<b>max normVer</b>	305823	1.66668	28.7657	0.0579398	2.31499	17.4543	0.132631
<b>max HPE</b>	304649	26.369	460.103	0.057311	-5.15313	118.625	0.0434405
<b>max VPE</b>	304714	25.7386	668.115	0.0385241	-5.42689	173.636	0.0312544
<b>min HPL</b>	287165	1.29813	8.50536	0.152625	0.744236	13.0791	0.0569027
<b>min VPL</b>	282002	0.912289	8.70017	0.104859	0.18399	11.6305	0.0158196

APV-I discontinuity events :

#	Epoch	duration	stable period
1	293668	103	1
2	294722	160	951
3	295046	85	164
4	303869	146	8506
5	304103	615	1
6	304916	76	198
7	308678	37	3686

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	293668	103	1
2	294722	160	951
3	295046	85	164
4	303869	146	8506
5	304103	615	1
6	304916	76	198
7	308678	37	3686

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	293668	103	1
2	294722	160	951
3	295046	85	164
4	303869	146	8506
5	304103	615	1
6	304916	76	198
7	308678	37	3686

## First Glance analysis

Duration	34388
Number of Samples	34388
Number of invalid sample	361
Number of no position solution samples	0
Number of missing sample	0
Logging Loss	0
Processing Loss	1.0498
Number of Misleading Information	0
Data gaps	0
Discontinuities	0

## Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
34027	32738	32738	202	32738

## Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.69399	1.65587	1.65587	1.00646	1.65587
HPEScale 95%	NaN	5.45031	5.45031	4.57161	5.45031
VPE 95%	1.56938	1.50554	1.50554	0.543615	1.50554
VPEscale 95%	NaN	3.91218	2.73853	0.543865	2.73853

## Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.962118	0.962118	0.00593646	0.962118
measurements	0.989502	0.952018	0.952018	0.00587414	0.952018
Operational	0.989502	0.952018	0.952018	0.00587414	0.952018

## Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	61	61	80	61
Long	--	7	7	0	7
Independent	--	5	5	0	5
P(disc.)	NaN	0.00229092	0.00229092	0	0.00229092
P(slide)	NaN	0.00745311	0.00745311	0.777228	0.00745311

## 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 :

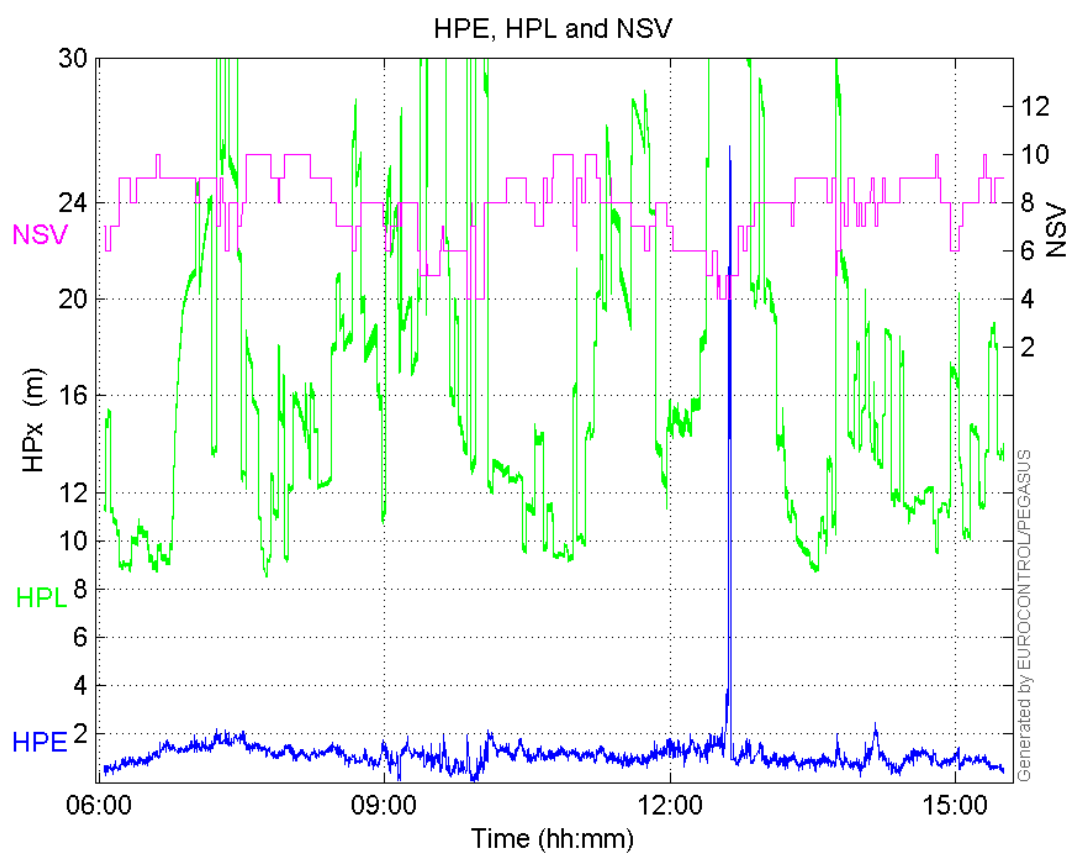
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	34027	32738	32738	202	32738



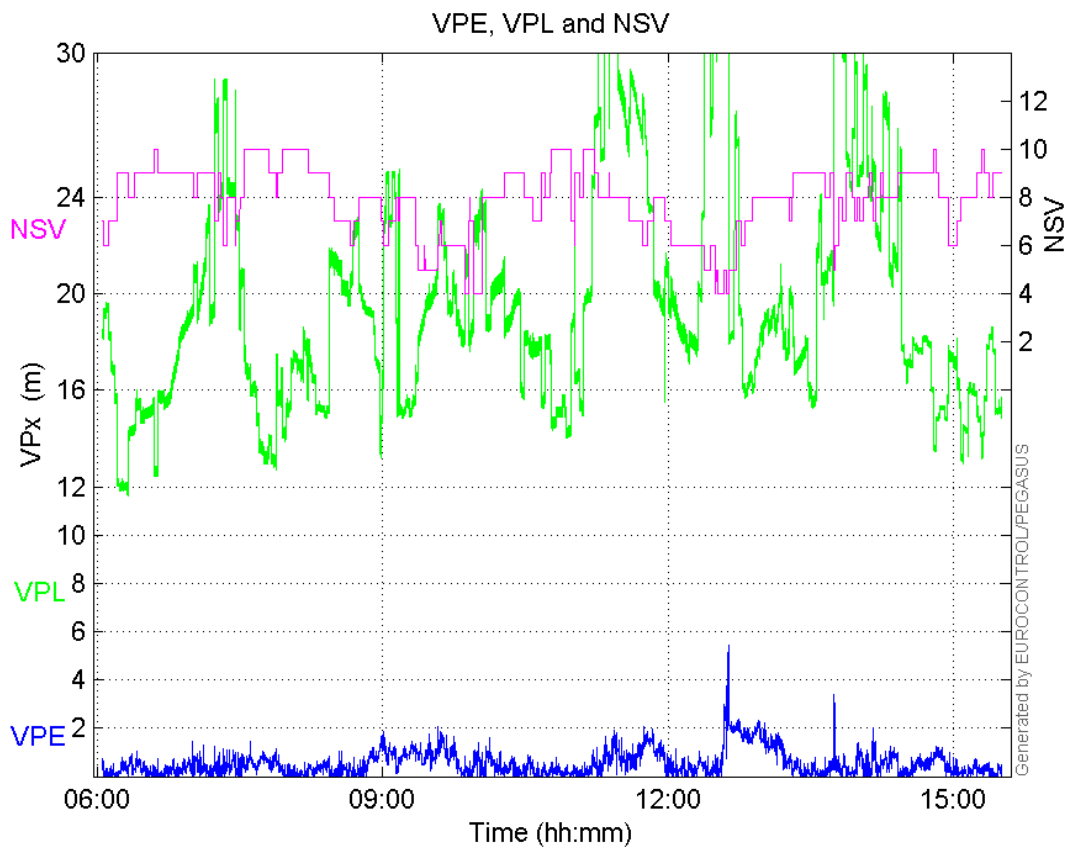
<b>SIS Availability</b>	1	0.962118	0.962118	0.00593646	0.962118
<b>Local Availability</b>	0.989502	0.952018	0.952018	0.00587414	0.952018
<b>Operational Availability</b>	0.989502	0.952018	0.952018	0.00587414	0.952018
<b>HPE 95%</b>	1.69399	1.65587	1.65587	1.00646	1.65587
<b>HPEscale 95%</b>	NaN	5.45031	5.45031	4.57161	5.45031
<b>VPE 95%</b>	1.56938	1.50554	1.50554	0.543615	1.50554
<b>VPEscale 95%</b>	NaN	3.91218	2.73853	0.543865	2.73853
<b>All Discontinuity Events</b>	--	61	61	80	61
<b>Long Discontinuity Events</b>	--	7	7	0	7
<b>Independent Discontinuity Events</b>	--	5	5	0	5
<b>P(discontinuity)</b>	NaN	0.00229092	0.00229092	0	0.00229092
<b>P(sliding window)</b>	NaN	0.00745311	0.00745311	0.777228	0.00745311
<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:

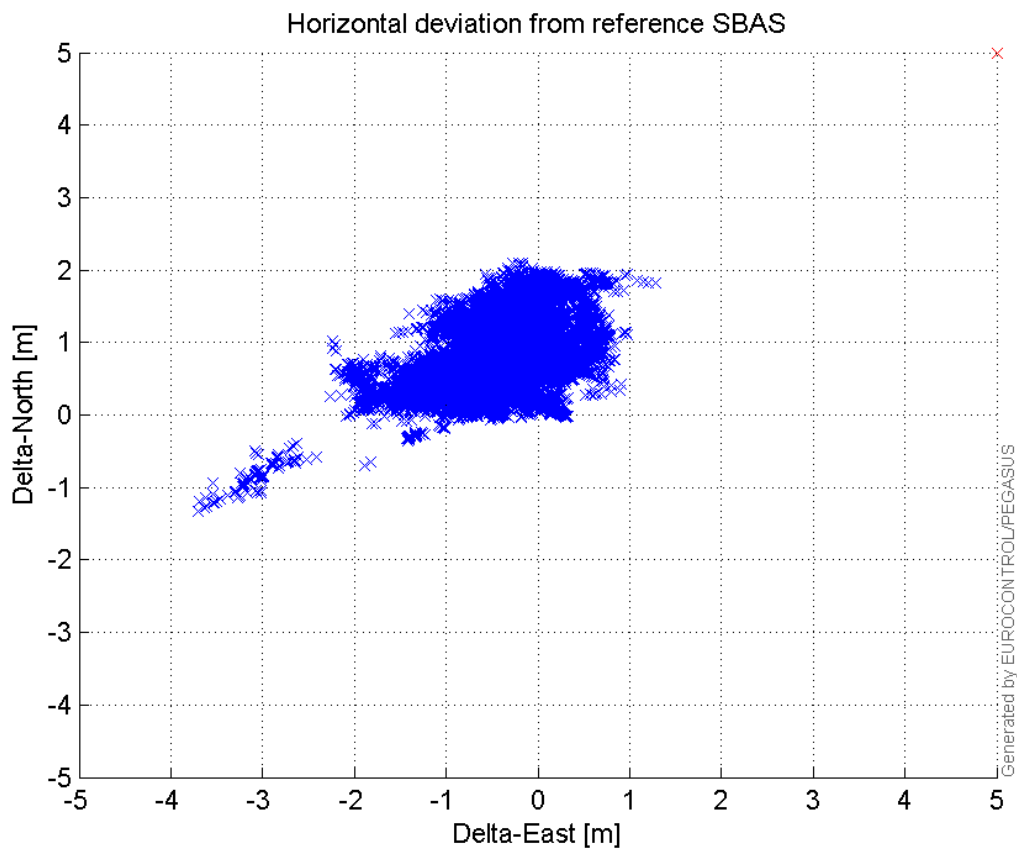


VPE, VPL and NSV:



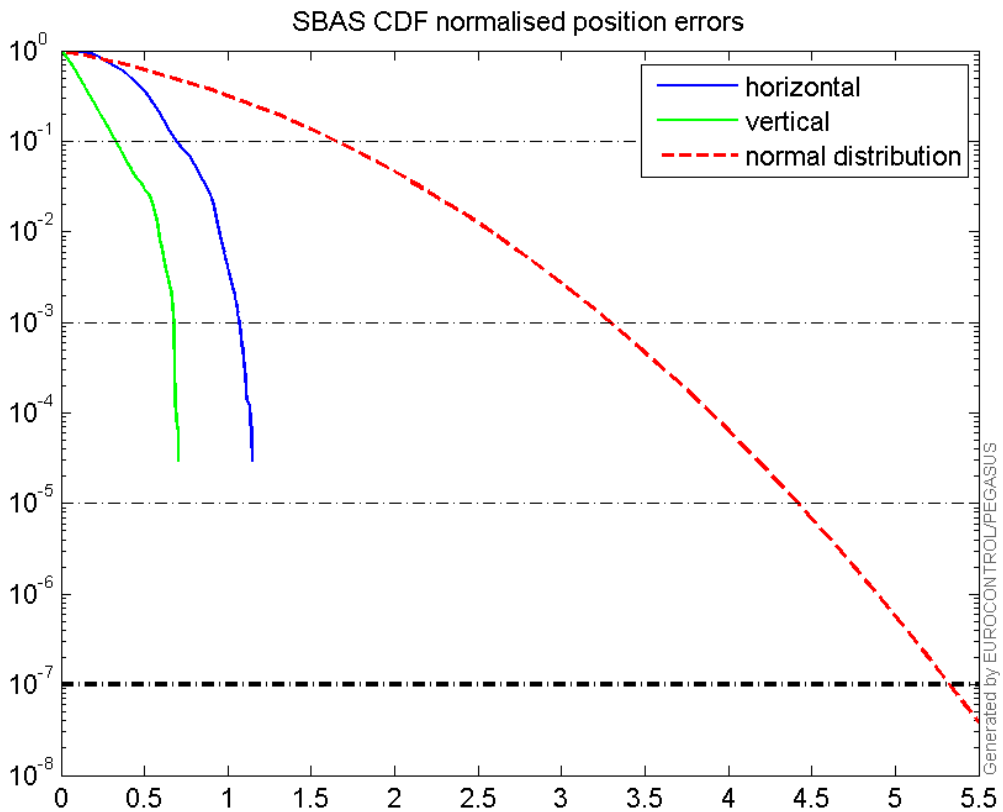
### Horizontal deviation

**Horizontal deviation from reference SBAS:**



CDF position

SBAS CDF position domain:



Statistics

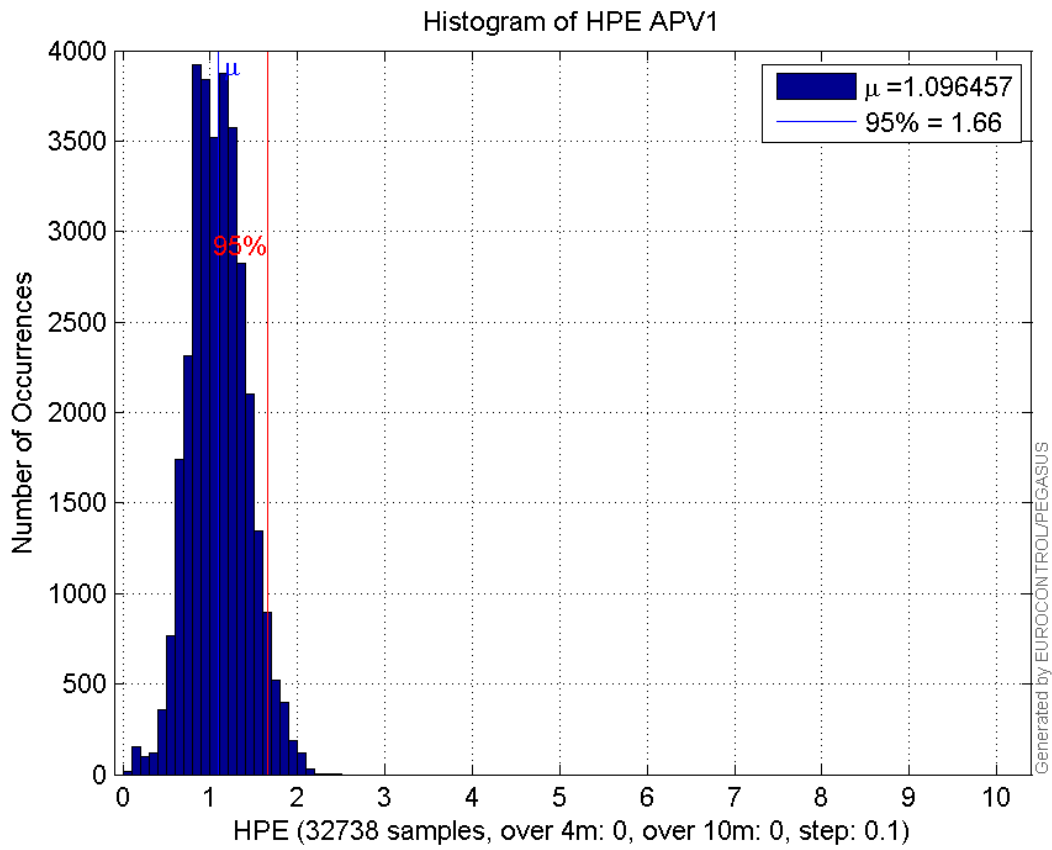
<b>number</b>	32738
<b>sum</b>	35895.818
<b>sum2</b>	42798.045
<b>prctile95</b>	1.6558688
<b>prctile99</b>	1.9060756
<b>number</b>	32738
<b>sum</b>	17290.692
<b>sum2</b>	15935.861
<b>prctile95</b>	1.5055418
<b>prctile99</b>	1.9924897
<b>number</b>	32738
<b>sum</b>	550851.78
<b>sum2</b>	10841923
<b>prctile95</b>	32.58748
<b>prctile99</b>	39.13402
<b>number</b>	32738
<b>sum</b>	635064.78
<b>sum2</b>	12944062
<b>prctile95</b>	28.48662
<b>prctile99</b>	31.430656
<b>number</b>	32738
<b>sum</b>	2425.9673

**sum2** 213.91396  
**prctile95** 0.13625782  
**prctile99** 0.15838454  
**number** 32738  
**sum** 908.60248  
**sum2** 44.661838  
**prctile95** 0.078243663  
**prctile99** 0.1099957  
**number** 32738  
**sum** 35895.818  
**sum2** 42798.045  
**prctile95** 1.6558688  
**prctile99** 1.9060756  
**number** 32738  
**sum** 17290.692  
**sum2** 15935.861  
**prctile95** 1.5055418  
**prctile99** 1.9924897  
**number** 32738  
**sum** 550851.78  
**sum2** 10841923  
**prctile95** 32.58748  
**prctile99** 39.13402  
**number** 32738  
**sum** 635064.78  
**sum2** 12944062  
**prctile95** 28.48662  
**prctile99** 31.430656  
**number** 32738  
**sum** 2425.9673  
**sum2** 213.91396  
**prctile95** 0.13625782  
**prctile99** 0.15838454  
**number** 32738  
**sum** 908.60248  
**sum2** 44.661838  
**prctile95** 0.078243663  
**prctile99** 0.1099957

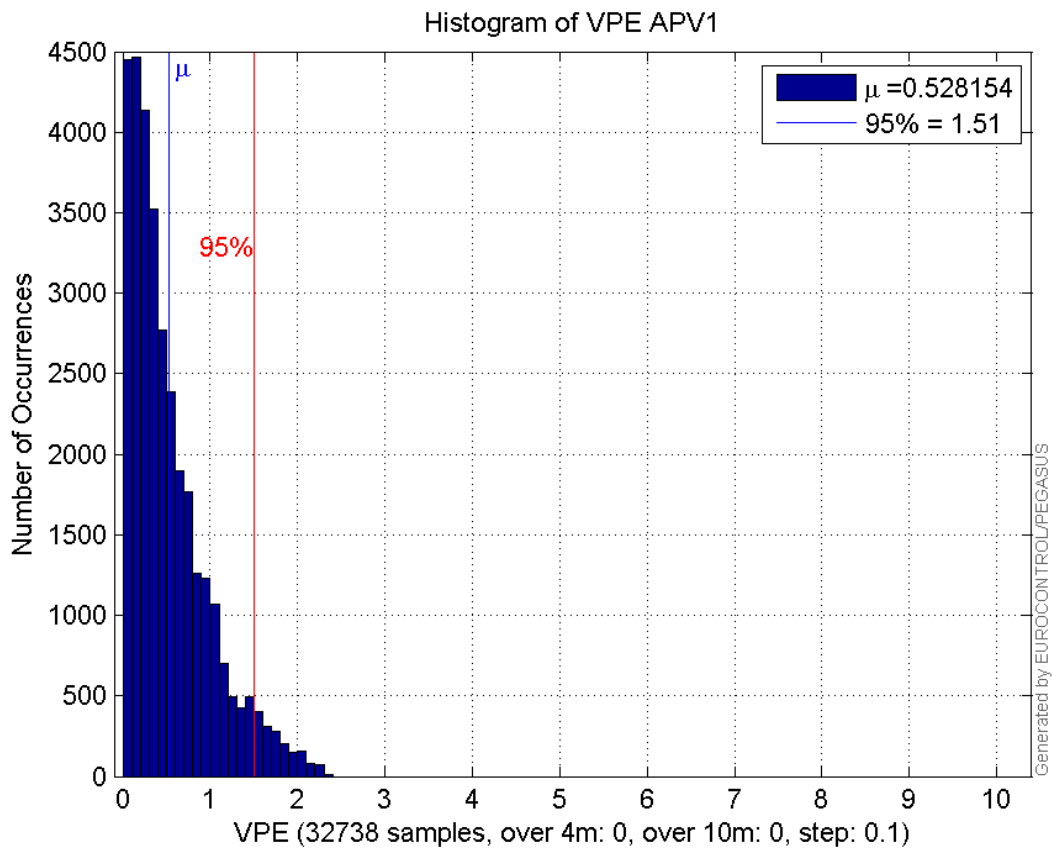
**Error and XPL Statistics :**

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
<b>HPE</b>	1.09646	0.324152	1.08797	1.65587	1.90608	1.14337
<b>HPL</b>	16.8261	6.93234	14.8086	32.5875	39.134	18.1981
<b>VPE</b>	0.528154	0.455883	0.394377	1.50554	1.99249	0.697689
<b>VPL</b>	19.3984	4.36877	18.4515	28.4866	31.4307	19.8843

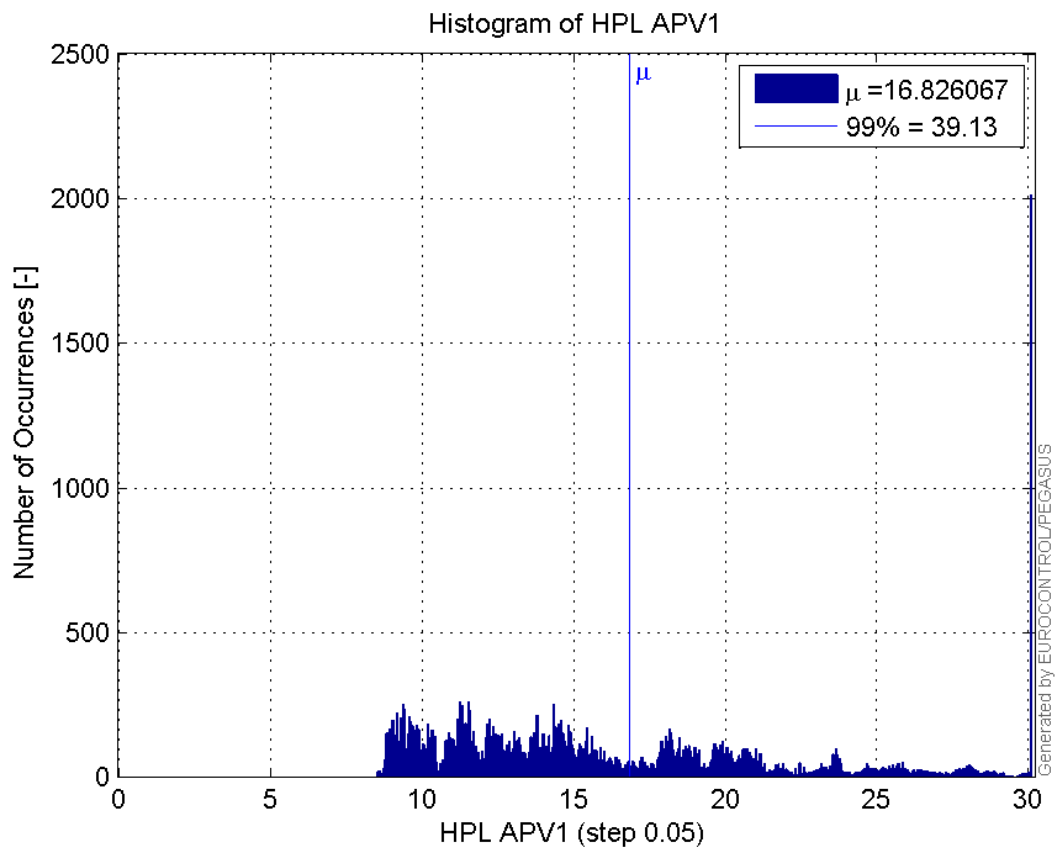
**Histogram of HPE APV1:**



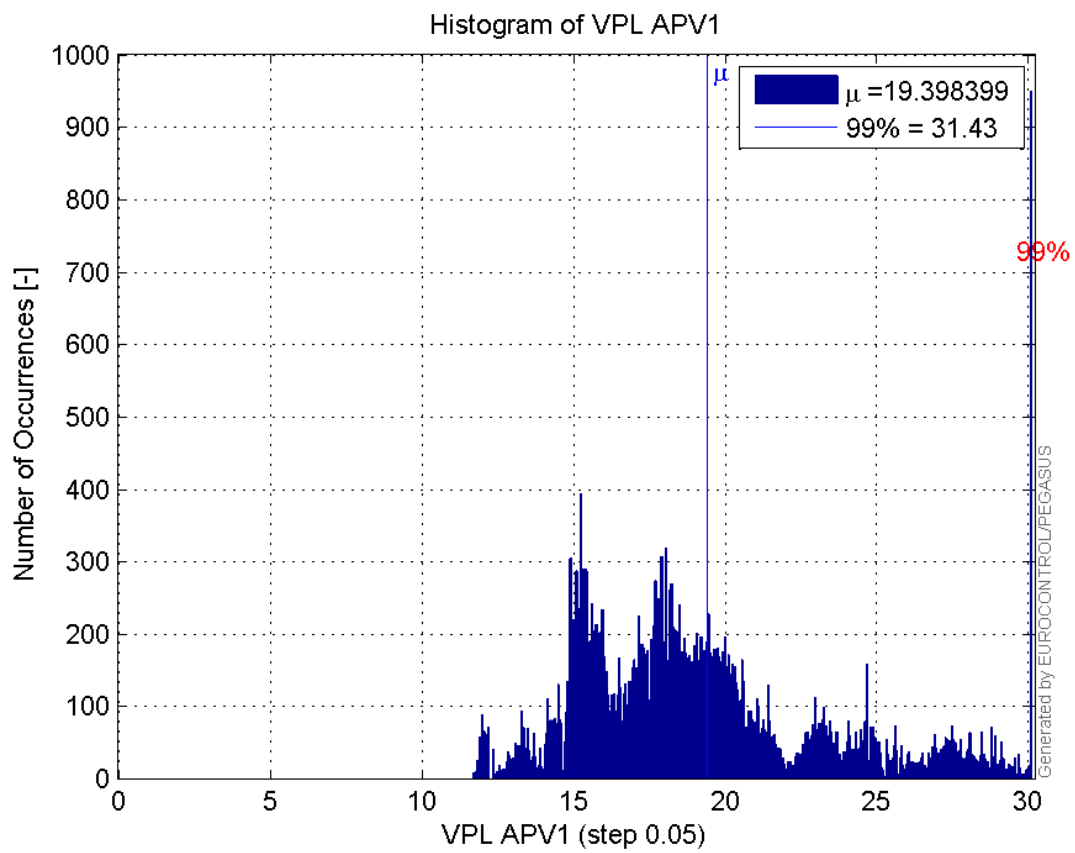
**Histogram of VPE APV1:**



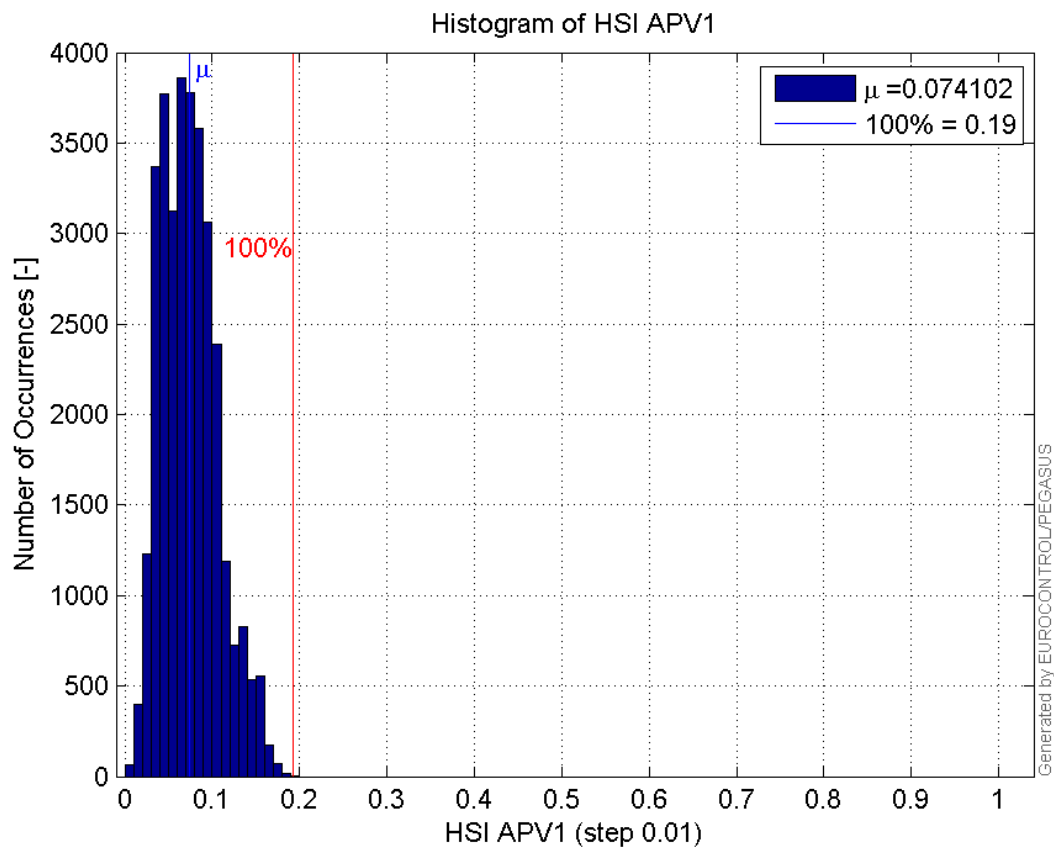
**Histogram of HPL APV1:**



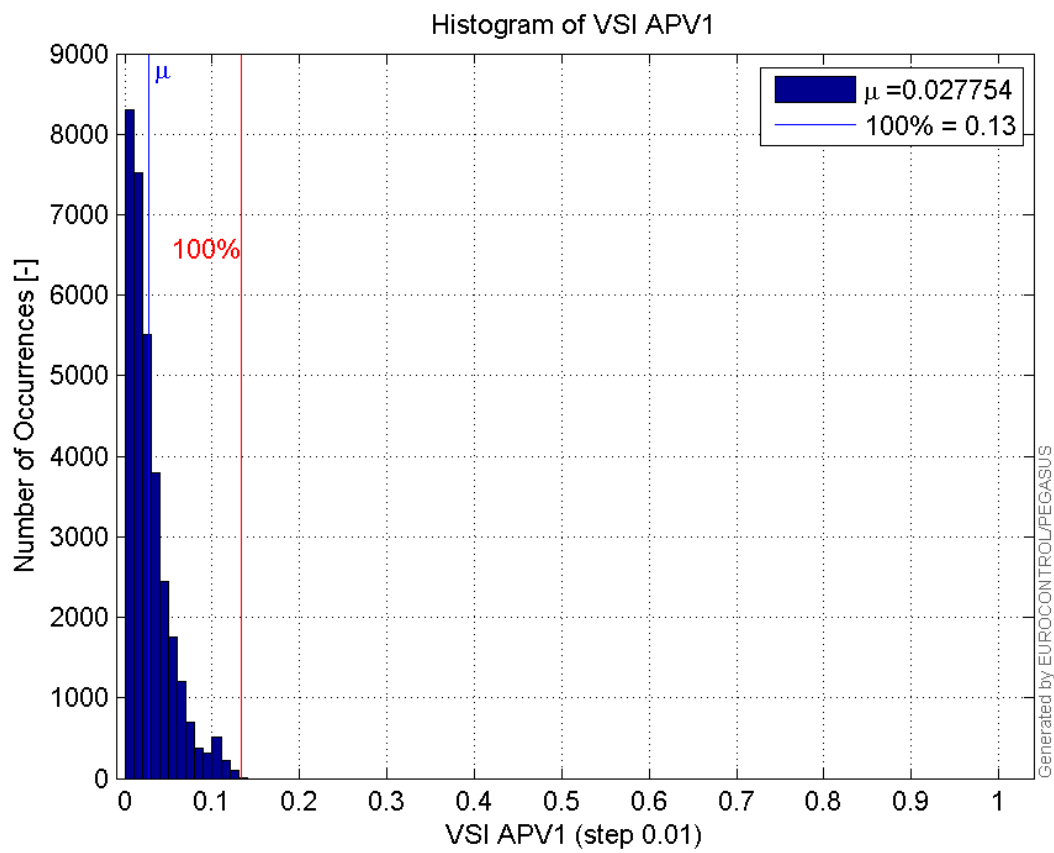
**Histogram of VPL APV1:**



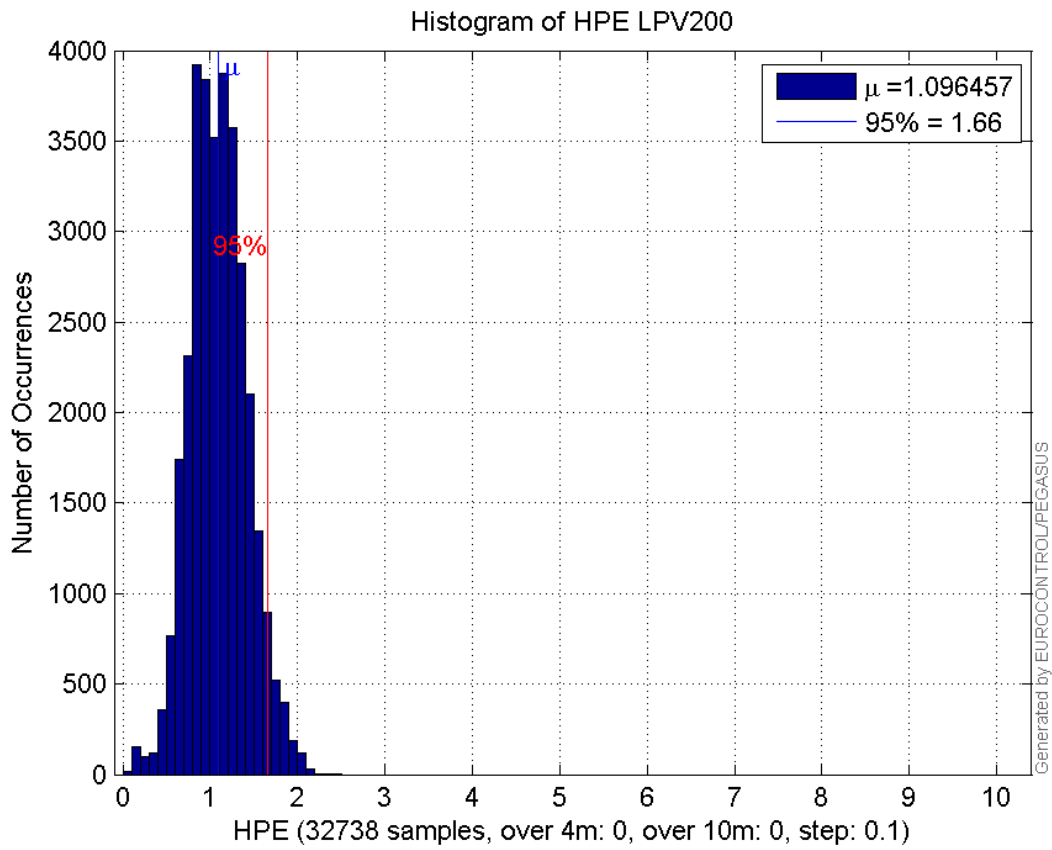
**Histogram of HSI APV1:**



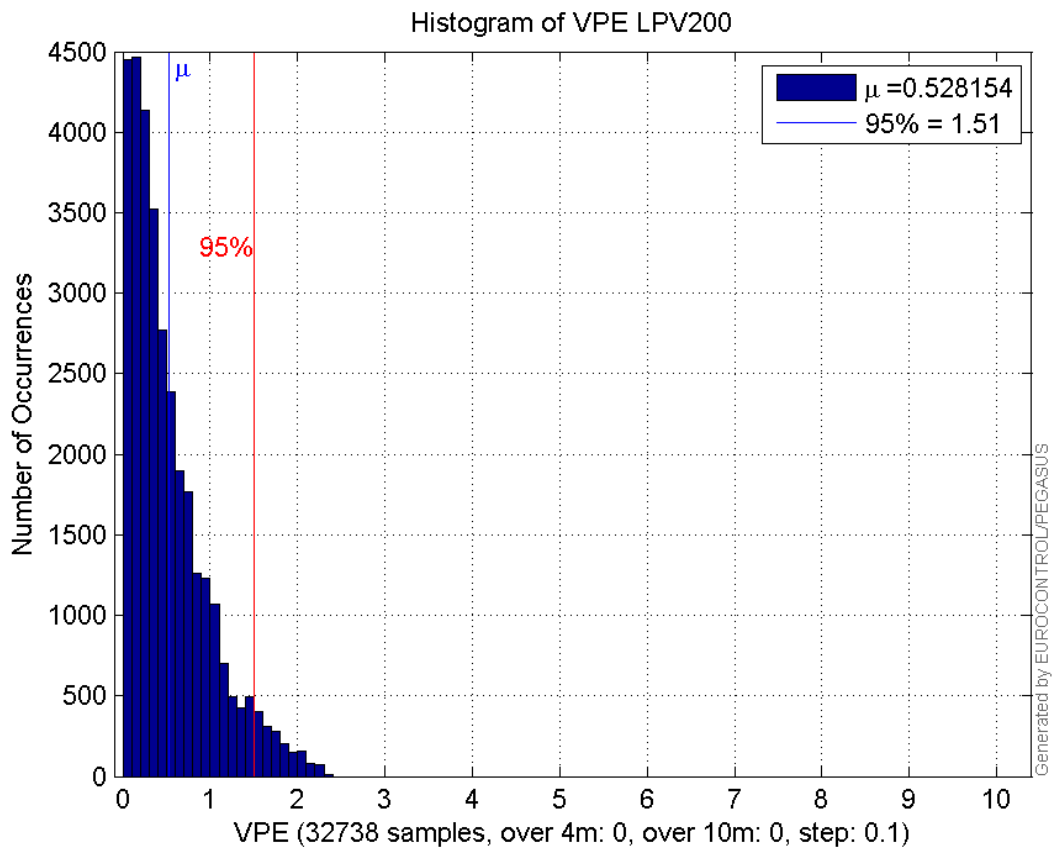
**Histogram of VSI APV1:**



**Histogram of HPE LPV200:**

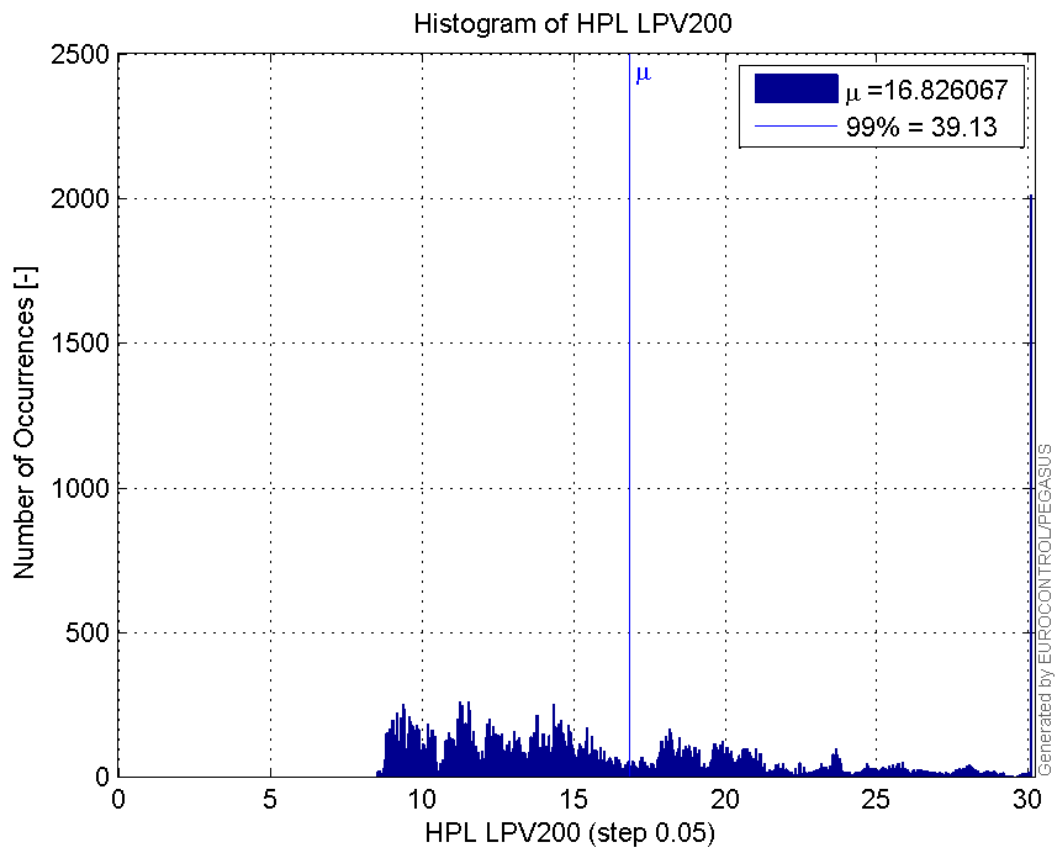


**Histogram of VPE LPV200:**

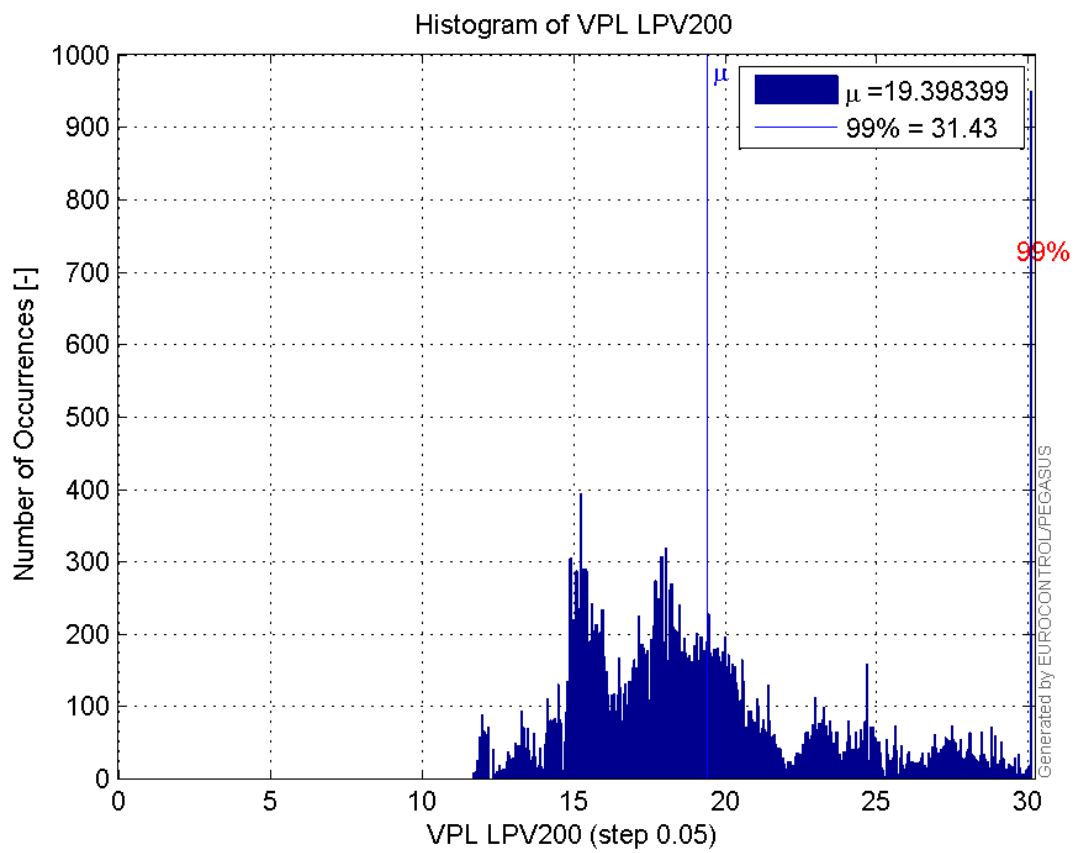


**Histogram of HPL LPV200:**

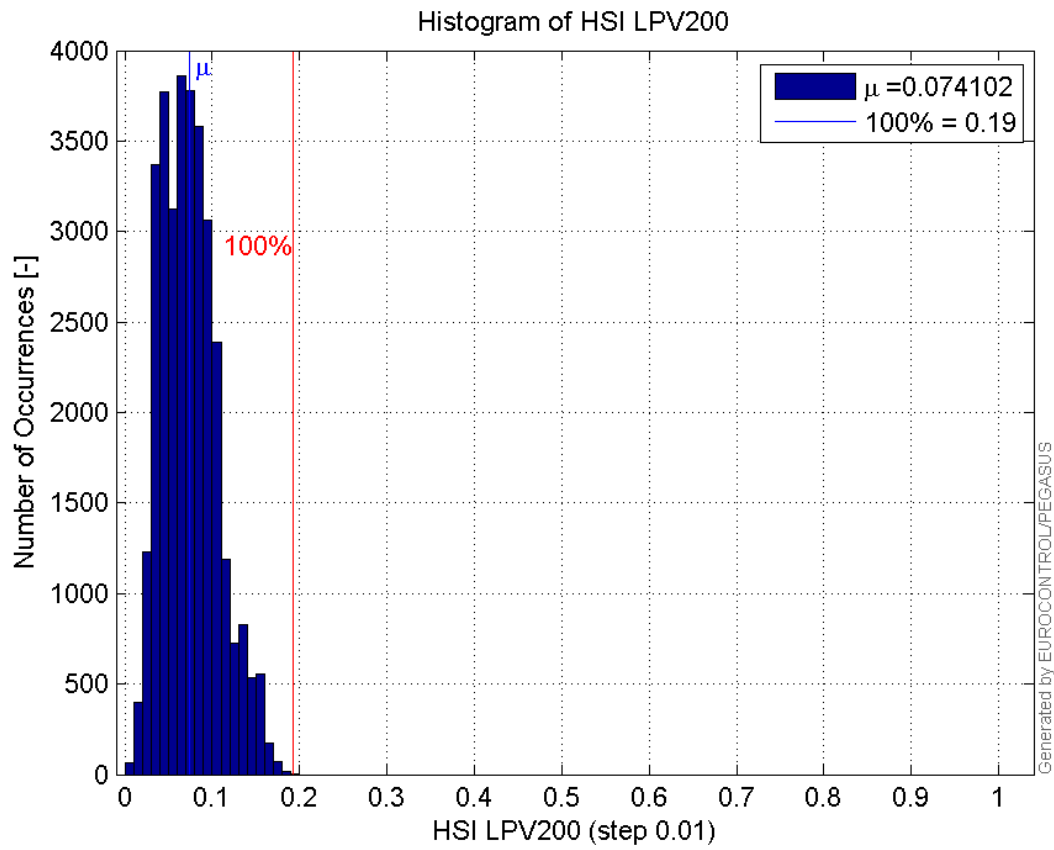




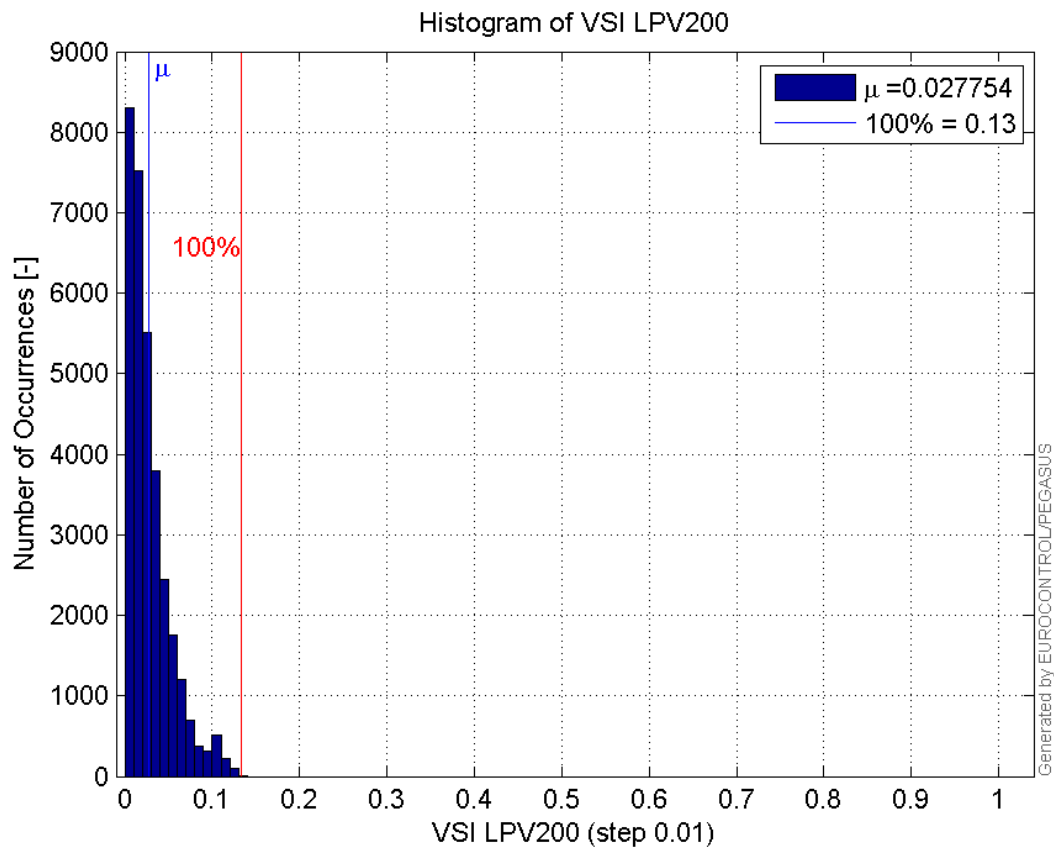
**Histogram of VPL LPV200:**



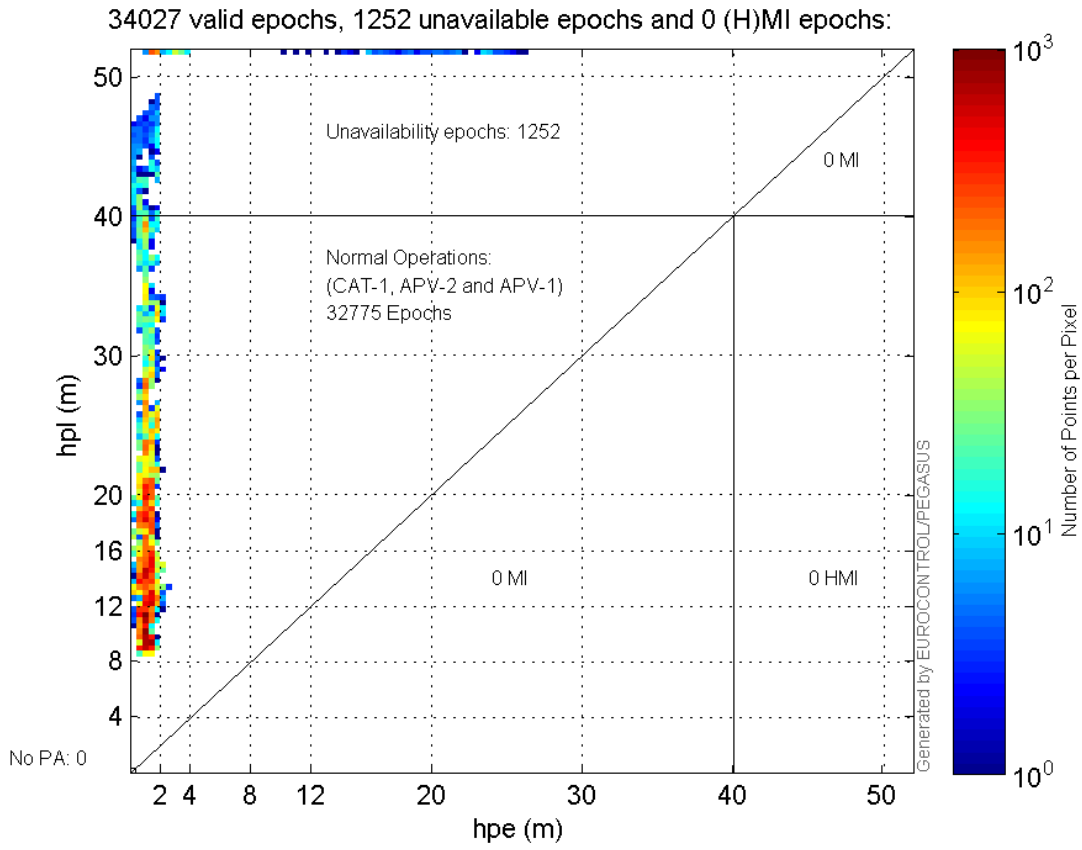
**Histogram of HSI LPV200:**



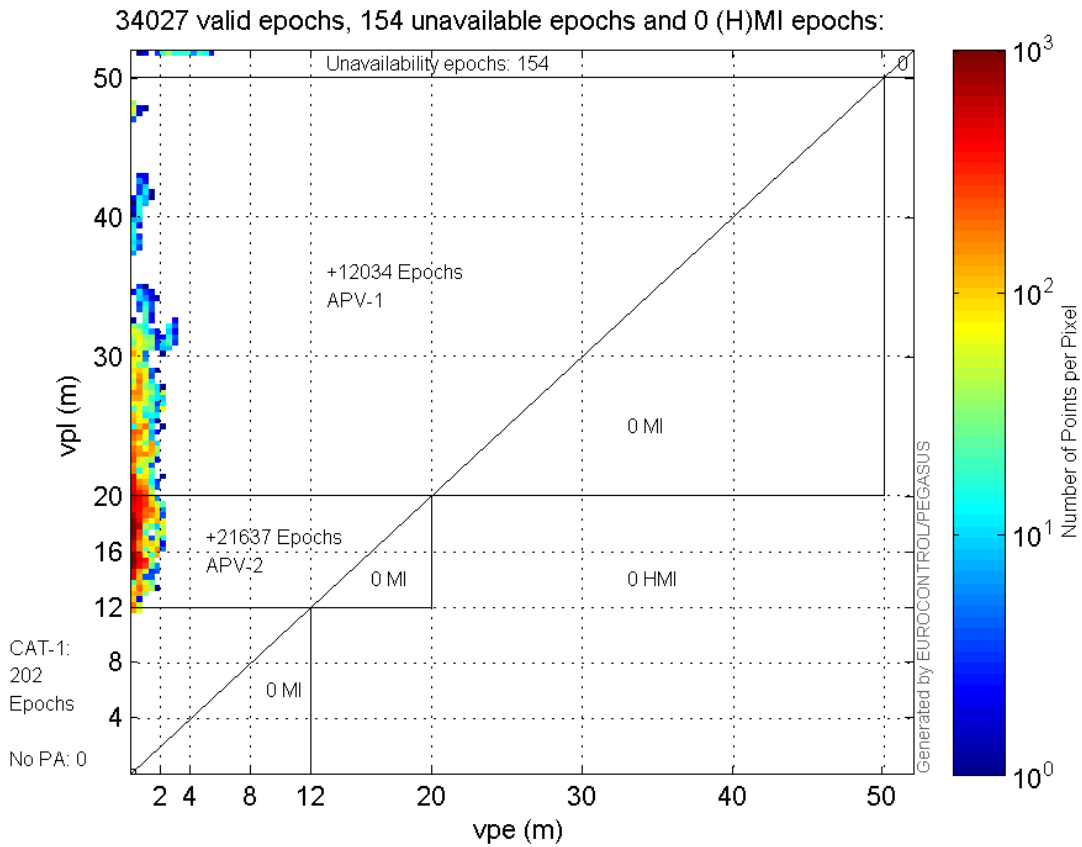
Histogram of VSI LPV200:



**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:/PegasusDateGob/job/2016_02_10EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_10EGNOS/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	220.4108
mi_numbers	results	0

## Range Domain

**start:** 05:57:19 10.02.2016 ( week: 1883 sec: 280639 )  
**end:** 15:30:26 10.02.2016 ( week: 1883 sec: 315026 )  
**duration:** 09:33:08 ..

## quality

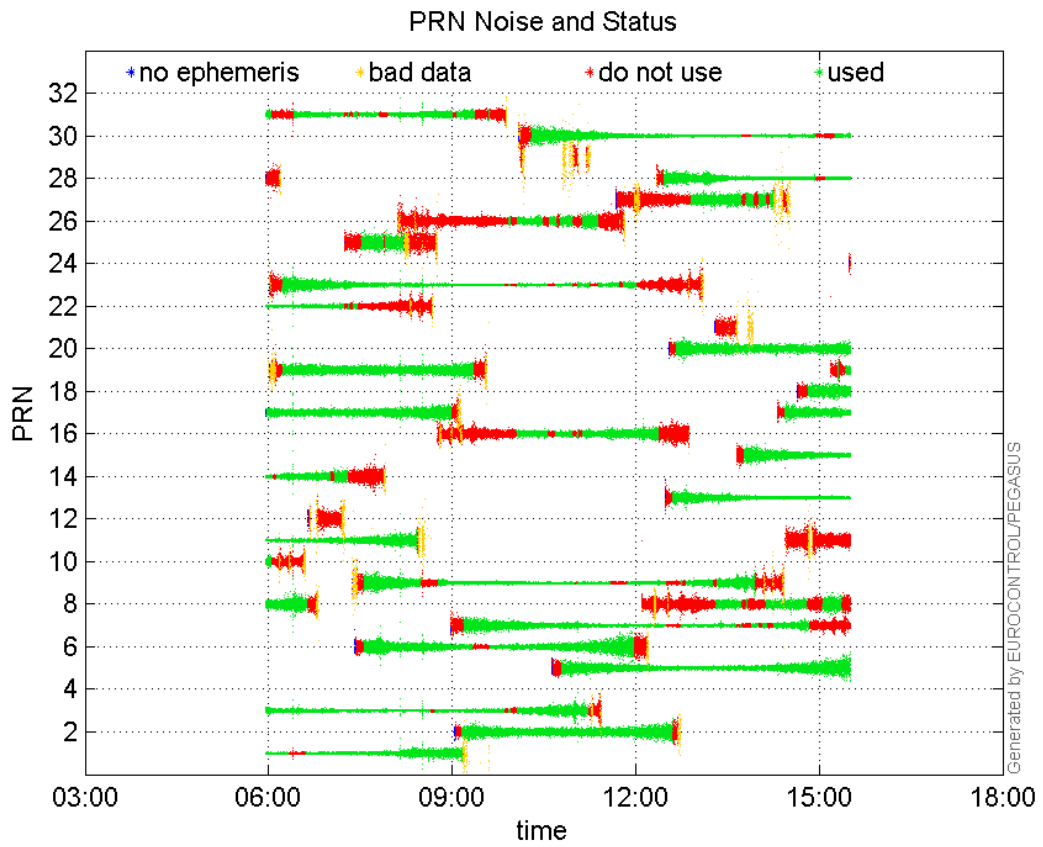
**valid samples** 34388  
**total samples** 34388

## PRN overview

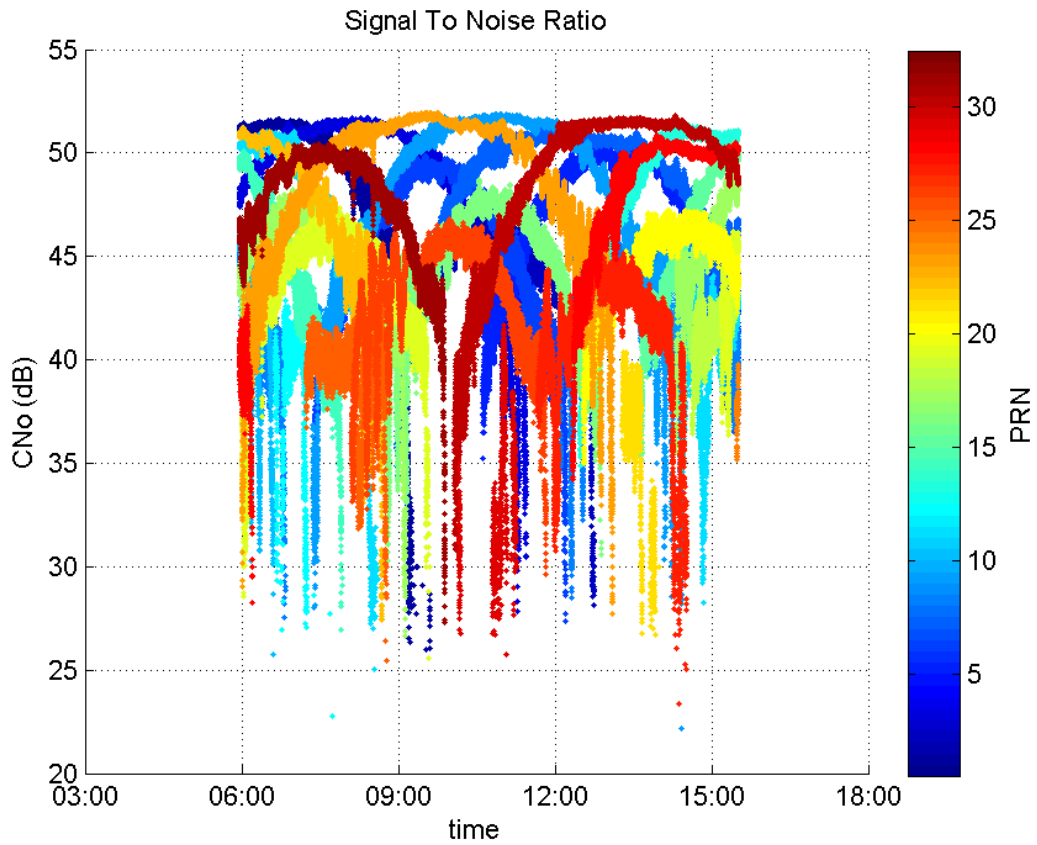
**Number of Visible GPS Satellites** 30  
**Number of Visible SBAS Satellites** 2

## signal quality and status

**PRN Noise and Status:**



**Signal To Noise Ratio:**



## range errors

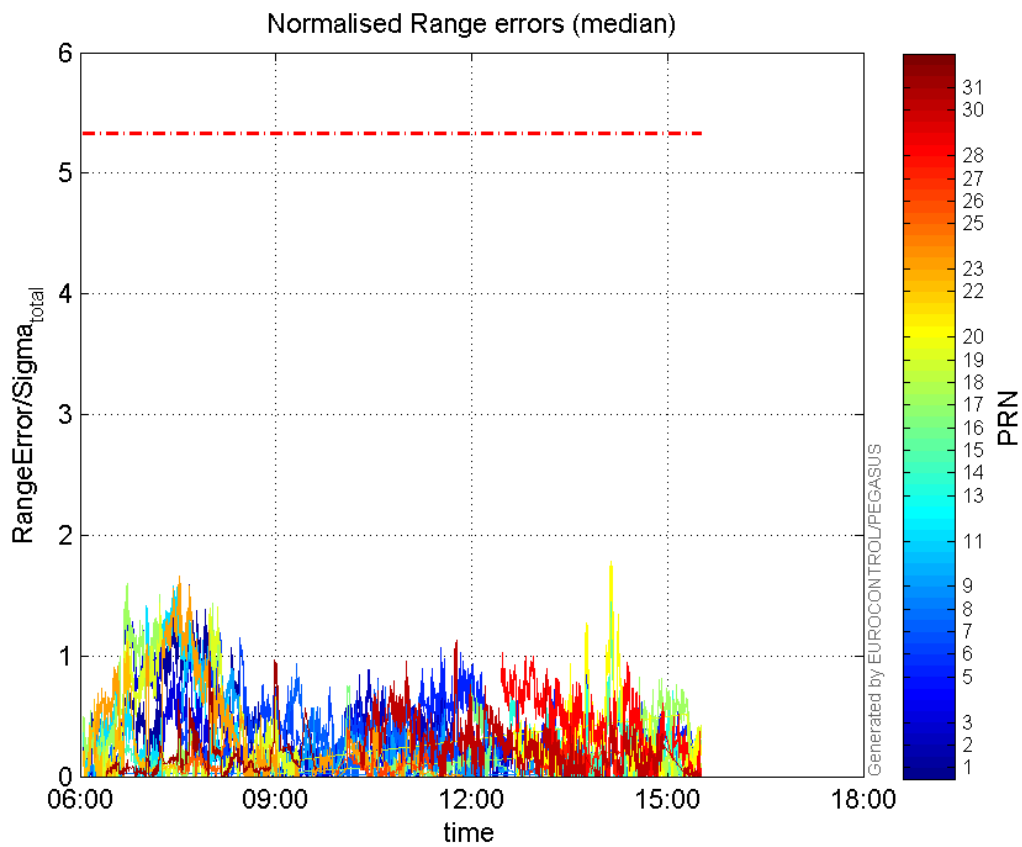
Number of Overbounding Norm Errors 0

## Max Norm Errors :

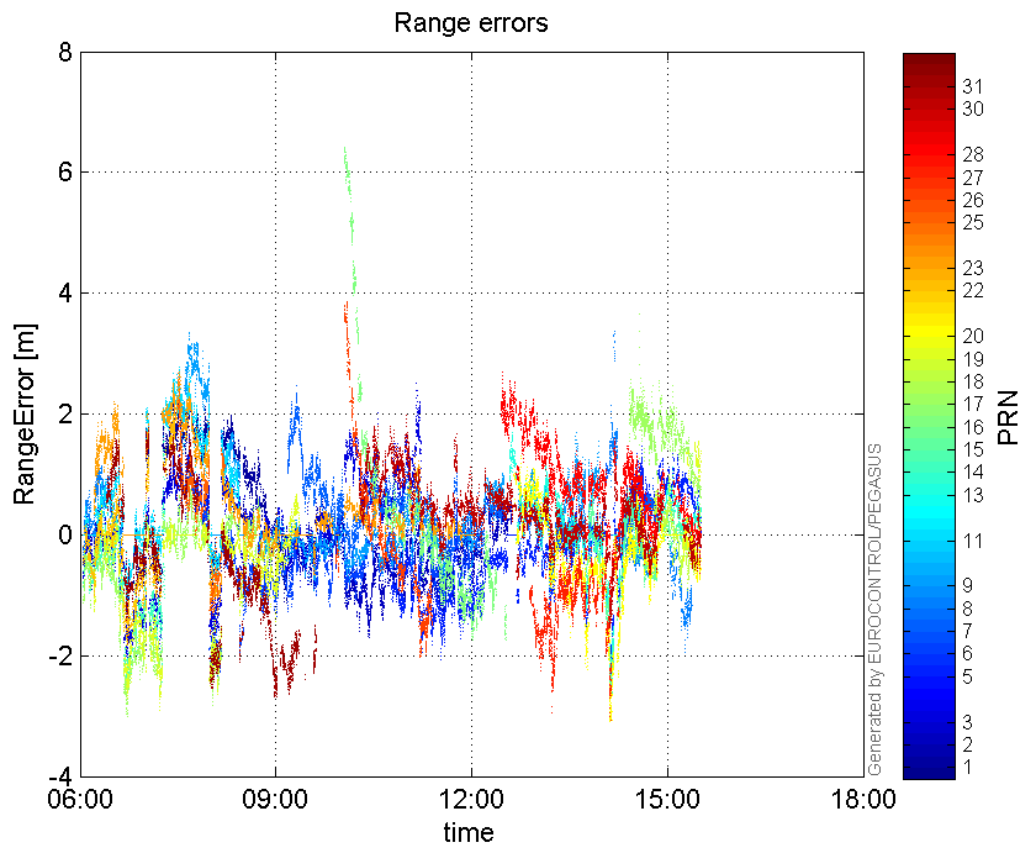
GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1883	286853	1	1.59173	2.43843	1.53194
1883	296707	2	0.887759	-1.67408	1.88574
1883	283404	3	1.37739	-1.98727	1.44278
1883	310004	5	1.45389	-2.38758	1.6422
1883	288536	6	1.19192	-2.1902	1.83753
1883	301550	7	1.04655	1.41494	1.352
1883	310259	8	0.685159	3.36699	4.91418
1883	287878	9	1.14505	2.807	2.45141
1883	285967	11	1.5754	2.67989	1.70109
1883	310078	13	1.61025	-2.43821	1.51418
1883	281408	14	0.471911	-0.931444	1.97377
1883	310111	15	1.31607	-2.65379	2.01646
1883	295655	16	0.749787	6.02189	8.03148
1883	283403	17	1.60331	-2.93813	1.83254
1883	314321	18	0.380574	-0.931908	2.44869
1883	285174	19	1.43848	-2.91322	2.0252
1883	310079	20	1.78286	-3.0298	1.69941
1883	283388	22	1.11658	-1.82791	1.63706
1883	286271	23	1.66605	2.59431	1.55716
1883	288702	25	0.299096	1.27433	4.26061
1883	295533	26	0.4027	3.43928	8.54055
1883	307960	27	0.587746	-1.50843	2.56646
1883	304082	28	1.02596	2.69406	2.62589
1883	301550	30	1.13055	1.67224	1.47914
1883	291531	31	0.962486	-2.69021	2.79506

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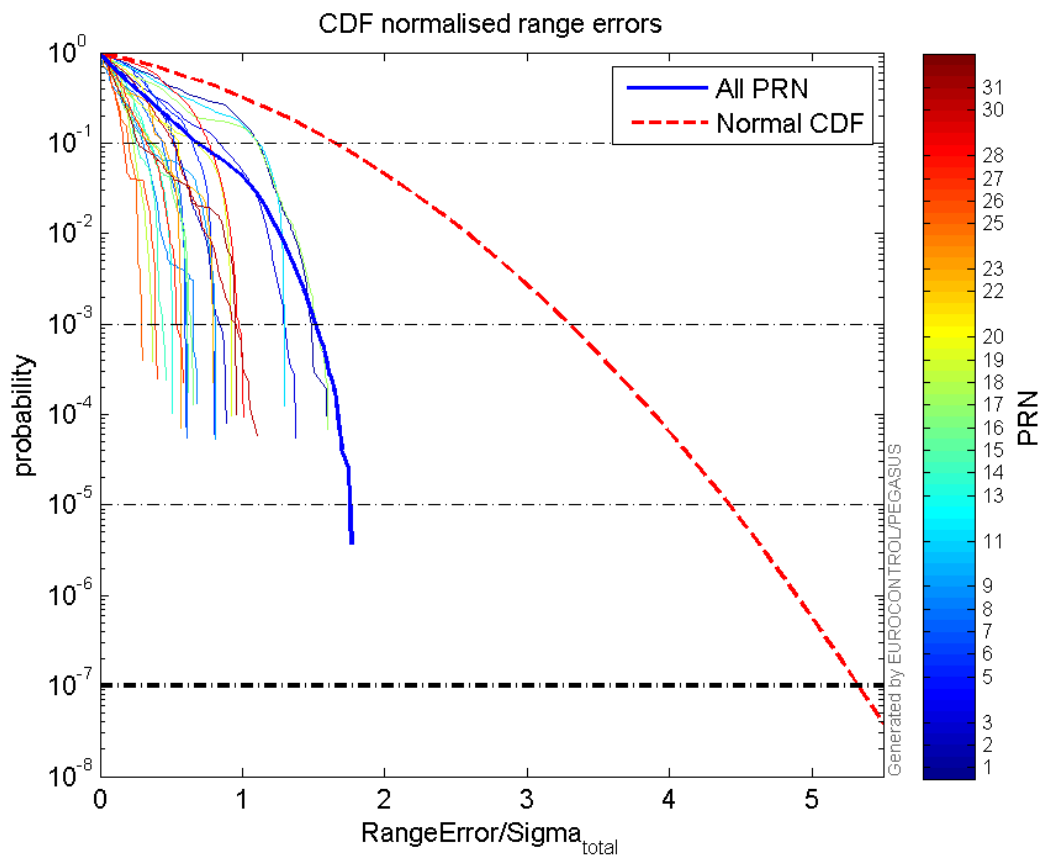
**Normalised Range errors (median):**



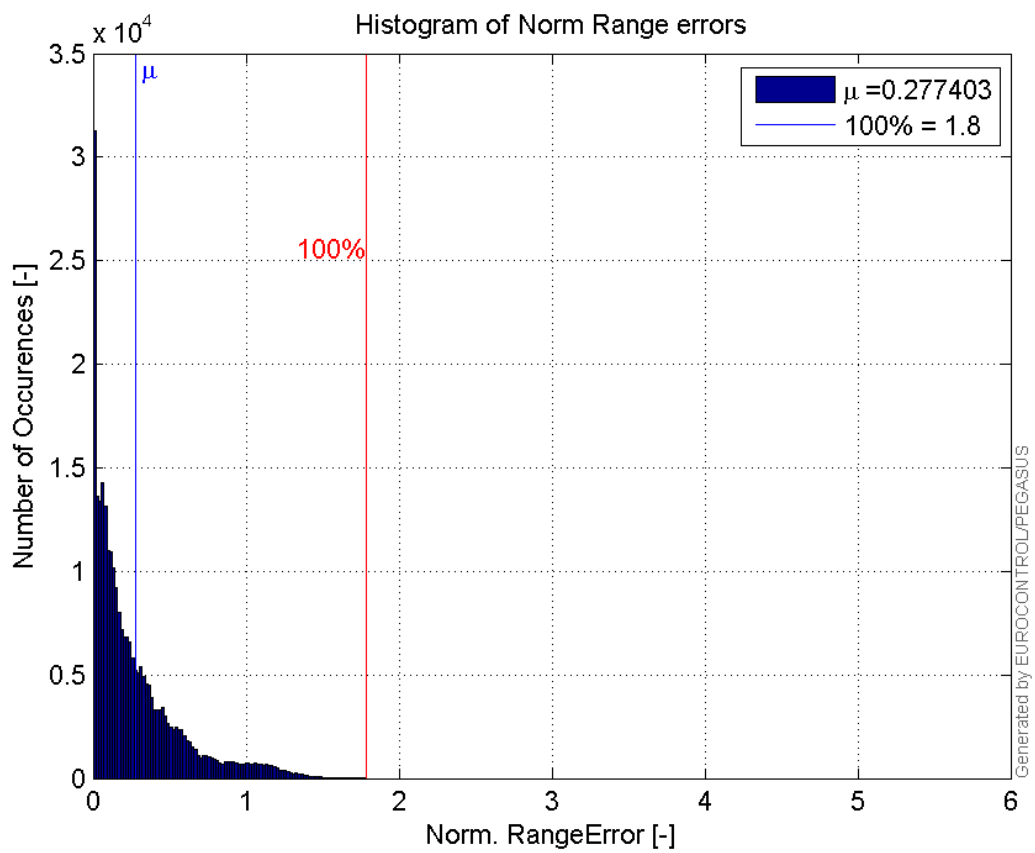
Range errors:



CDF normalised range errors:

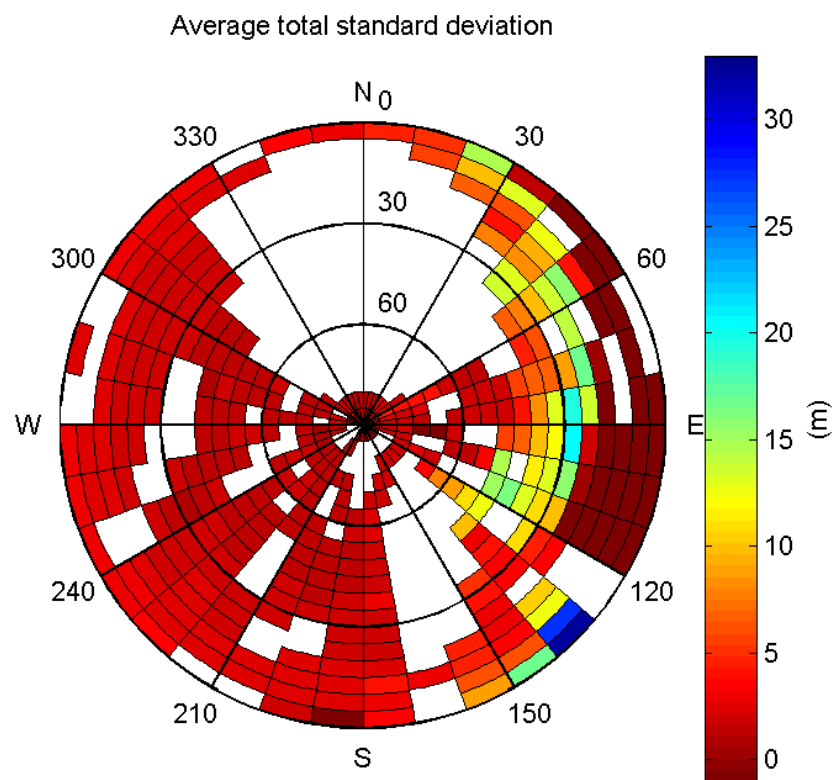


**Histogram of Norm Range errors:**

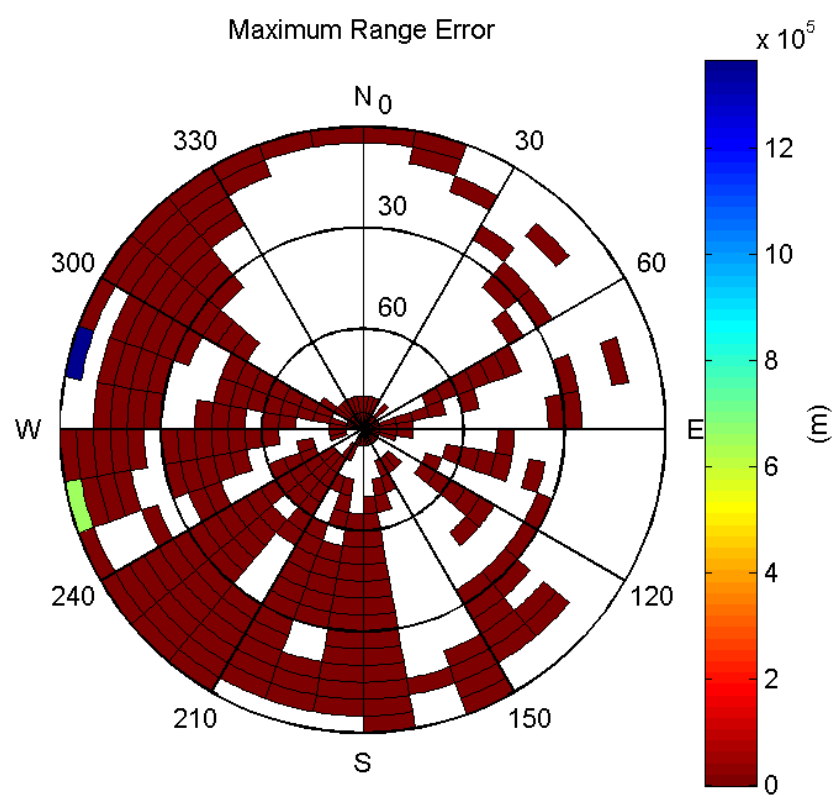


**Sigma Sky Plot:**



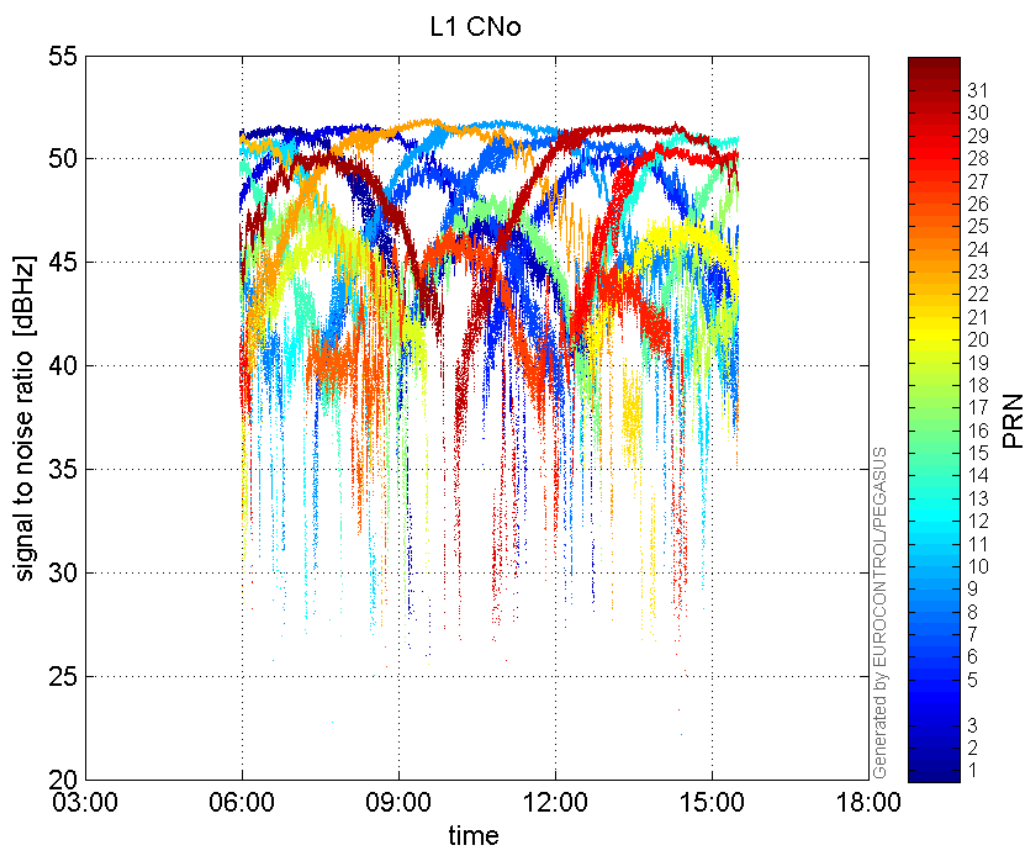


Norm Error Sky Plot:

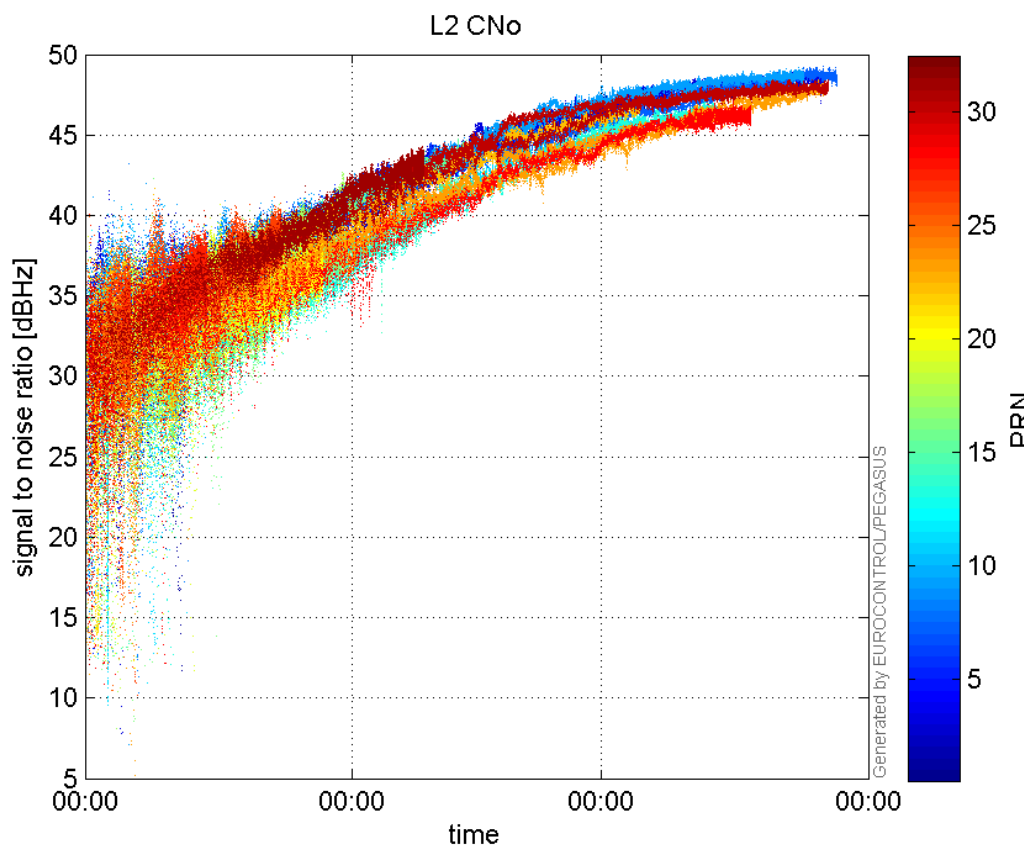


signal quality

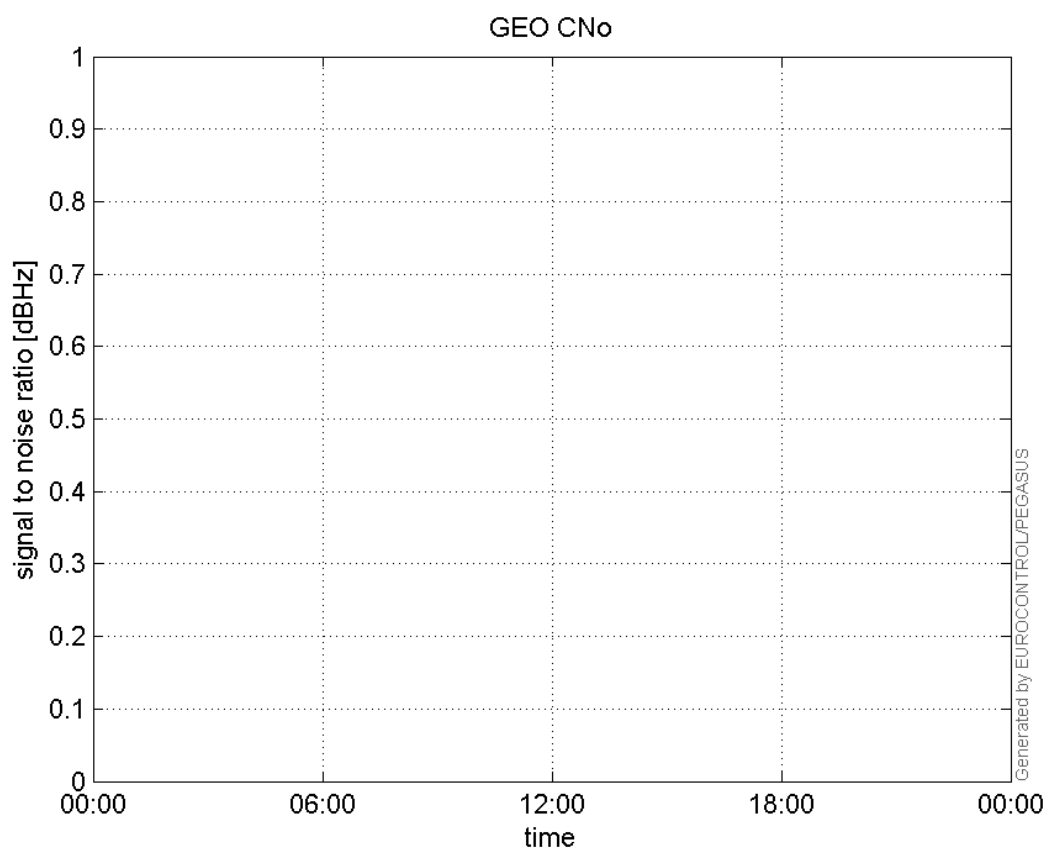
**L1 CNo:**



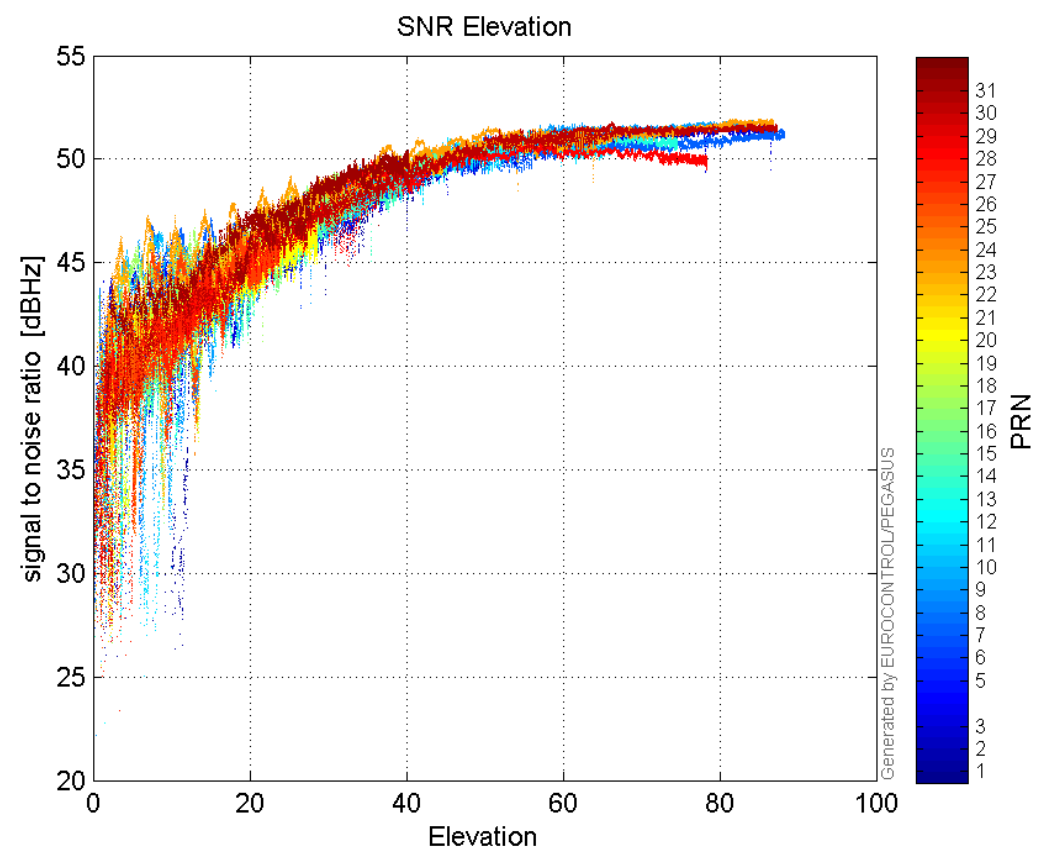
**L2 CNo:**



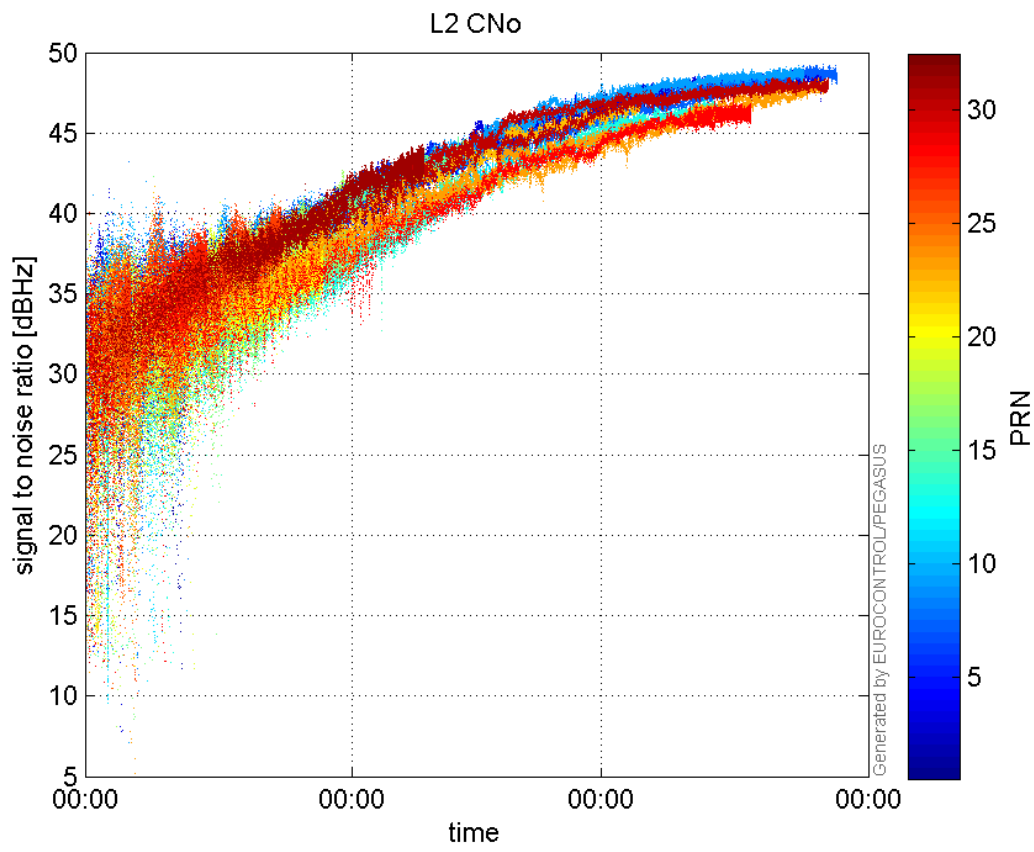
**GEO CNo:**



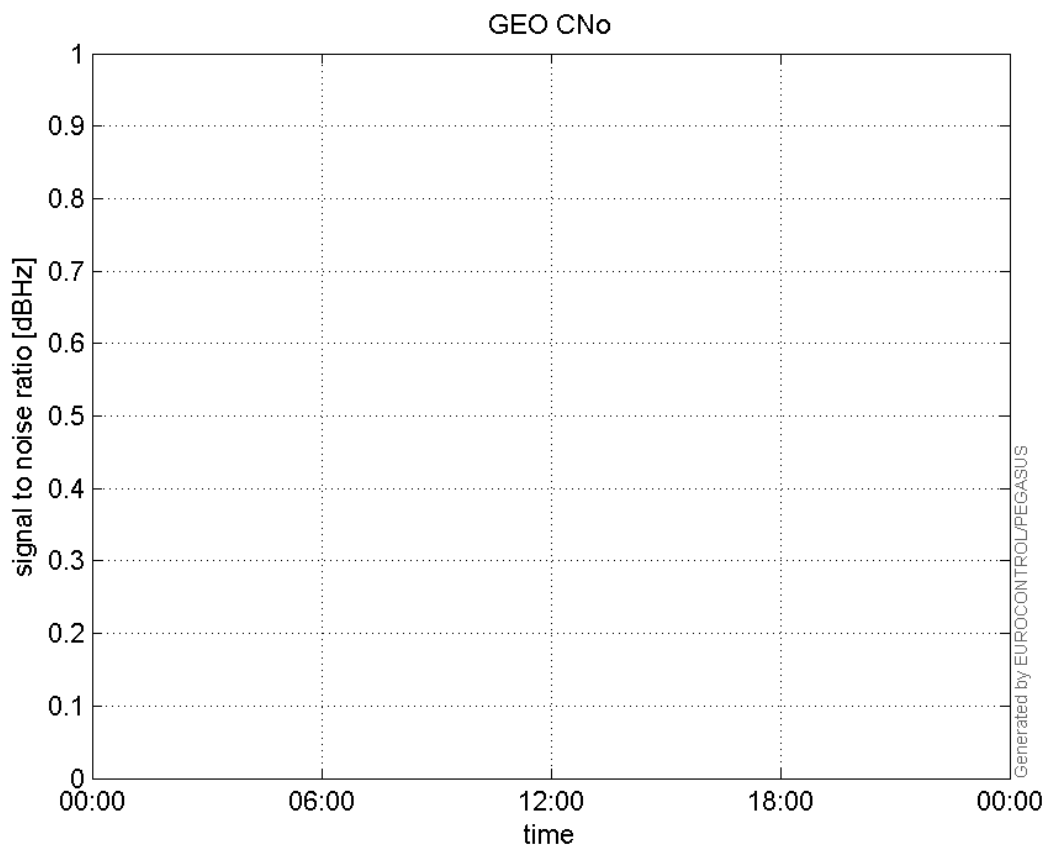
**SNR Elevation:**



**L2 CNo:**

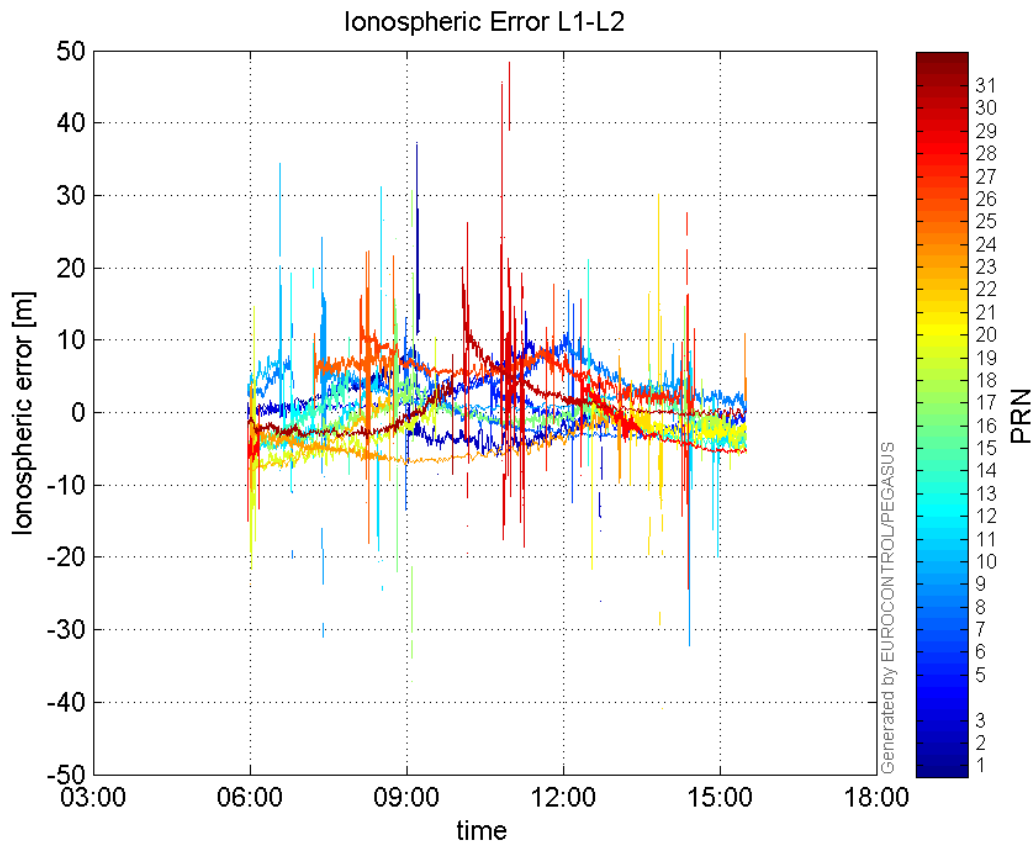


**GEO CNo:**



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_10EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_10EGNOS/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	220.4108
mi_numbers	results	0