

Global View

program Pegasus
 version 4.8.4
 site Laboratory satellite systems
 abbreviation NAU
 country Ukraine
 city Kiev
 comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,
 P.50 - 54
 date 11/02/2016

SBAS Messages

start: 08:27:19.129 09.02.2016 (week: 1883 sec: 203239.129)
end: 13:04:10.129 09.02.2016 (week: 1883 sec: 219850.129)
duration: 04:36:51 ..

quality

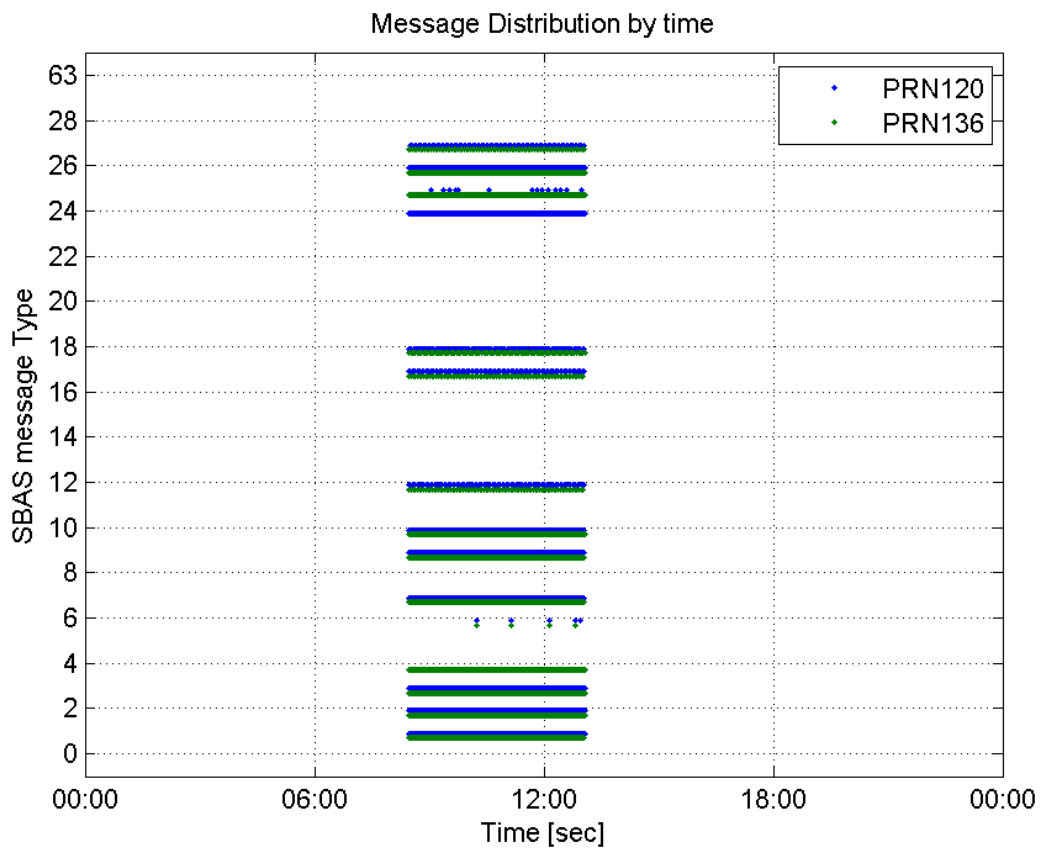
valid samples 33223
total samples 33223
number of SBAS PRNs 2

SBAS SIS Overview

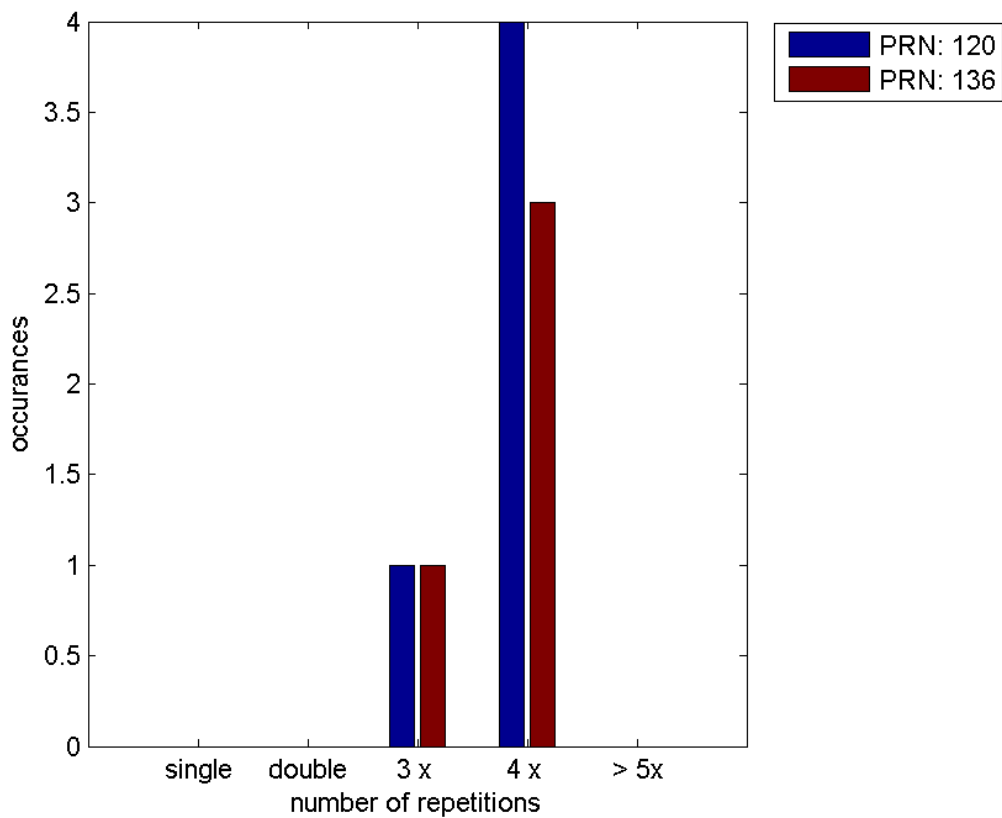
Message Type 6 repetitions :

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

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

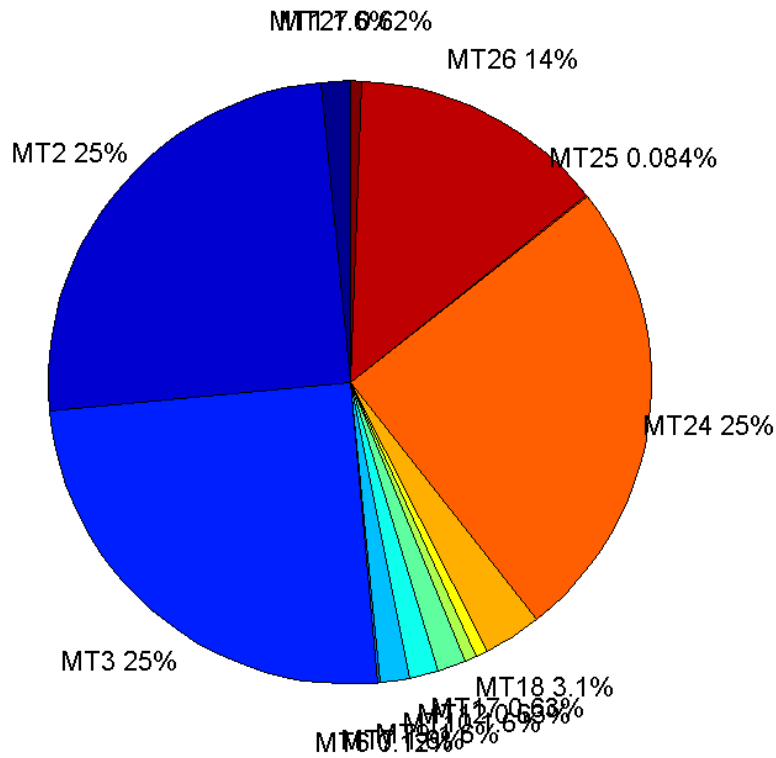
	number of messages	%
MT 0	0	0
MT 1	259	1.55921
MT 2	4147	24.9654
MT 3	4147	24.9654
MT 4	0	0
MT 5	0	0
MT 6	20	0.120402
MT 7	258	1.55319
MT 9	258	1.55319
MT 10	258	1.55319
MT 12	104	0.626091
MT 17	104	0.626091
MT 18	517	3.1124
MT 24	4148	24.9714
MT 25	14	0.0842815
MT 26	2274	13.6897
MT 27	103	0.620071
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	16611	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	72	64.345	0	0	0
MT 2	4	8	4.00507	5	0	0
MT 3	4	8	4.00507	5	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	3591	508.947	4	4	4
MT 7	64	70	64.3463	0	0	0
MT 9	64	70	64.3463	0	0	0
MT 10	64	70	64.3463	0	0	0
MT 12	156	167	160.67	103	0	0
MT 17	160	167	160.631	0	0	0
MT 18	4	135	32.0795	0	0	0
MT 24	4	8	4.00506	0	0	0
MT 25	179	4023	1084.62	0	0	0
MT						

26	4	31	7.30532	0	0	0
MT 27	156	167	160.637	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

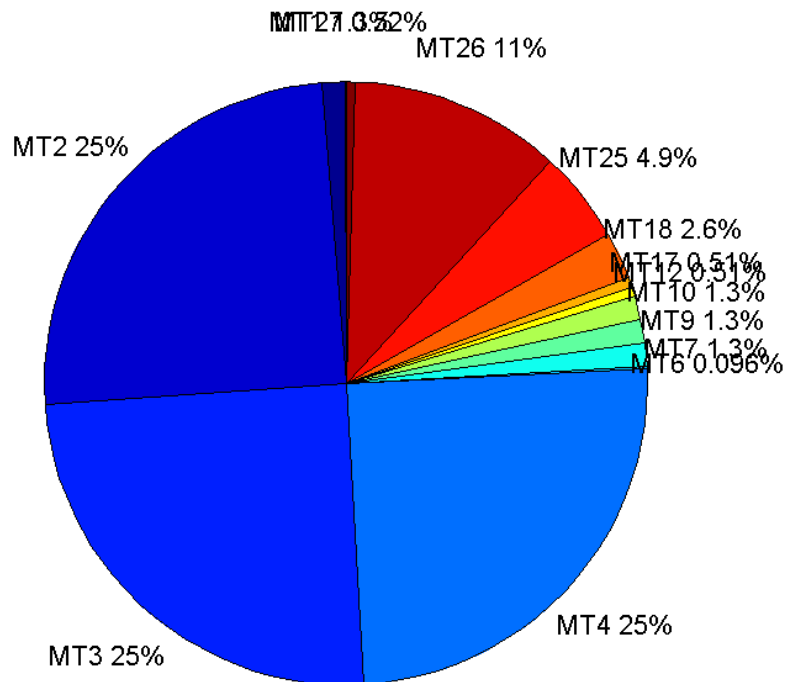
	number of messages	%
MT 0	0	0
MT 1	209	1.25813
MT 2	4128	24.8495
MT 3	4127	24.8435
MT 4	4128	24.8495
MT 5	0	0
MT 6	16	0.0963159
MT 7	209	1.25813
MT 9	209	1.25813

MT 10	210	1.26415
MT 12	85	0.511678
MT 17	85	0.511678
MT 18	426	2.56441
MT 24	0	0
MT 25	819	4.93017
MT 26	1875	11.287
MT 27	86	0.517698
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	16612	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	80	79.3173	0	0	0
MT 2	4	8	4.02472	4	0	0
MT 3	4	8	4.02472	4	0	0
MT 4	4	8	4.02472	4	0	0
MT 5	--	--	--	--	--	--
MT 6	1	3591	619.4	3	3	3
MT 7	76	84	79.5096	0	0	0
MT 9	76	81	79.3798	0	0	0
MT 10	75	81	79.4354	0	0	0
MT 12	186	201	194.881	84	0	0
MT 17	188	201	194.881	0	0	0
MT 18	4	161	38.9694	0	0	0
MT 24	--	--	--	--	--	--
MT 25	3	57	20.2763	0	0	0
MT 26	4	32	8.85272	0	0	0
MT 27	184	201	194.847	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/2016_02_09EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2016_02_09EGNOS/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: 08:27:20 09.02.2016 (week: 1883 sec: 203240)
end: 13:04:11 09.02.2016 (week: 1883 sec: 219851)
duration: 04:36:52 ..

quality

valid samples 16241
total samples 16612

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
max normHor	209482	1.56352	11.8097	0.132392	1.27006	19.0158	0.0667895
max normVer	219654	1.17991	20.5745	0.0573482	2.67462	18.3233	0.145968
max HPE	218582	39.2265	811.372	0.0483459	-10.1291	210.245	0.0481775
max VPE	218582	39.2265	811.372	0.0483459	-10.1291	210.245	0.0481775
min HPL	210959	0.613458	9.80399	0.0625723	0.603375	15.6132	0.0386452
min VPL	206173	1.19438	14.0333	0.0851108	1.07435	13.5055	0.0795494

Position discontinuity events :

#	Epoch	duration	stable period
1	218604	8	14993

APV-I discontinuity events :

#	Epoch	duration	stable period
1	208012	320	4401
2	208812	160	480
3	218060	552	9088

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	208012	320	4401
2	208416	2	84
3	208420	2	2
4	208424	2	2
5	208428	2	2
6	208432	2	2
7	208436	2	2
8	208439	3	1
9	208443	3	1
10	208447	3	1
11	208451	3	1
12	208455	3	1
13	208459	3	1
14	208463	3	1
15	208467	3	1
16	208471	105	1
17	208812	160	236
18	213784	160	4812

19	218060	552	4116
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LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	208012	320	4401
2	208416	2	84
3	208420	2	2
4	208424	2	2
5	208428	2	2
6	208432	2	2
7	208436	2	2
8	208439	3	1
9	208443	3	1
10	208447	3	1
11	208451	3	1
12	208455	3	1
13	208459	3	1
14	208463	3	1
15	208467	3	1
16	208471	105	1
17	208812	160	236
18	213784	160	4812
19	218060	552	4116

First Glance analysis

Duration	16612
Number of Samples	16612
Number of invalid sample	371
Number of no position solution samples	8
Number of missing sample	0
Logging Loss	0
Processing Loss	2.2333
Number of Misleading Information	0
Data gaps	0
Discontinuities	1

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
16233	15209	14908	0	14908

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.70248	1.5487	1.55116	NaN	1.55116
HPEScale 95%	NaN	3.6078	3.61427	NaN	3.61427
VPE 95%	2.07122	1.8541	1.77979	NaN	1.77979
VPEscale 95%	NaN	4.69139	3.21024	NaN	3.21024

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.999507	0.936457	0.917924	0	0.917924
measurements	0.977185	0.915543	0.897424	0	0.897424
Operational	0.977185	0.915543	0.897424	0	0.897424

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	1	3	19	--	19
Long	1	3	5	--	5
Independent	1	3	4	--	4
P(disc.)	0.000924044	0.00295877	0.00402468	NaN	0.00402468
P(slide)	0.000924044	0.00295877	0.00630534	NaN	0.00630534

Integrity events :

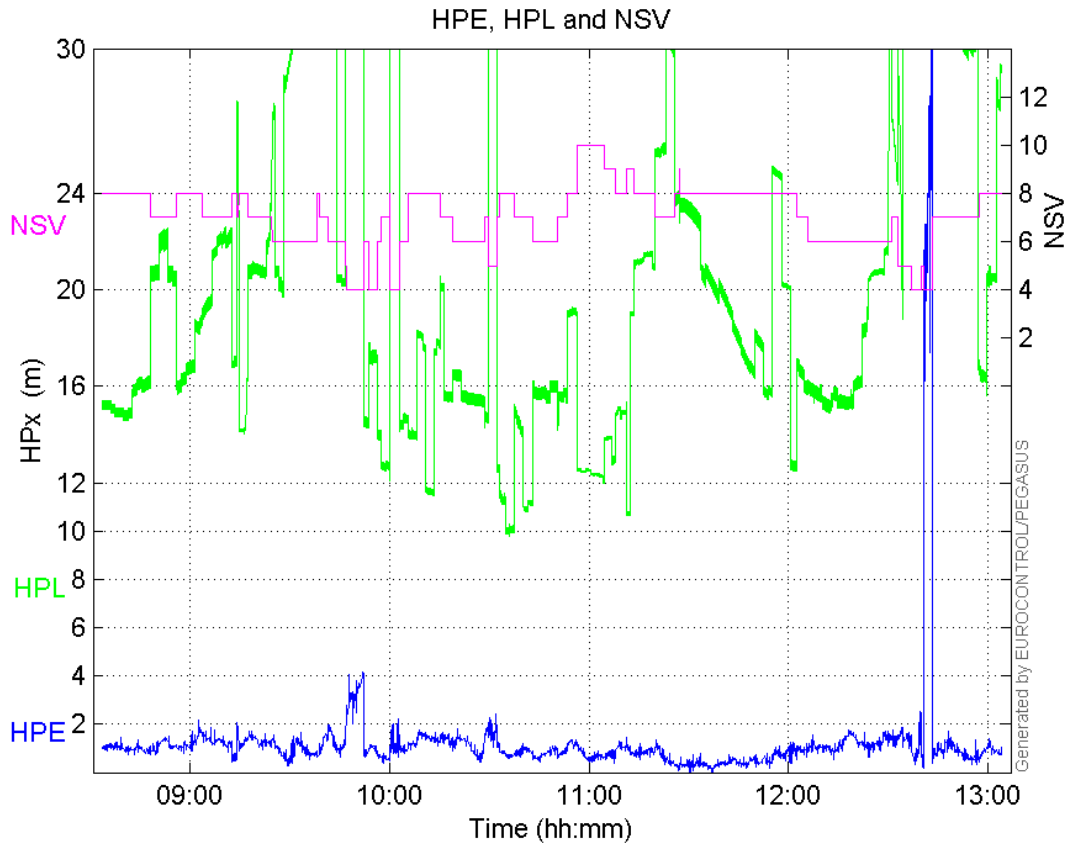
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

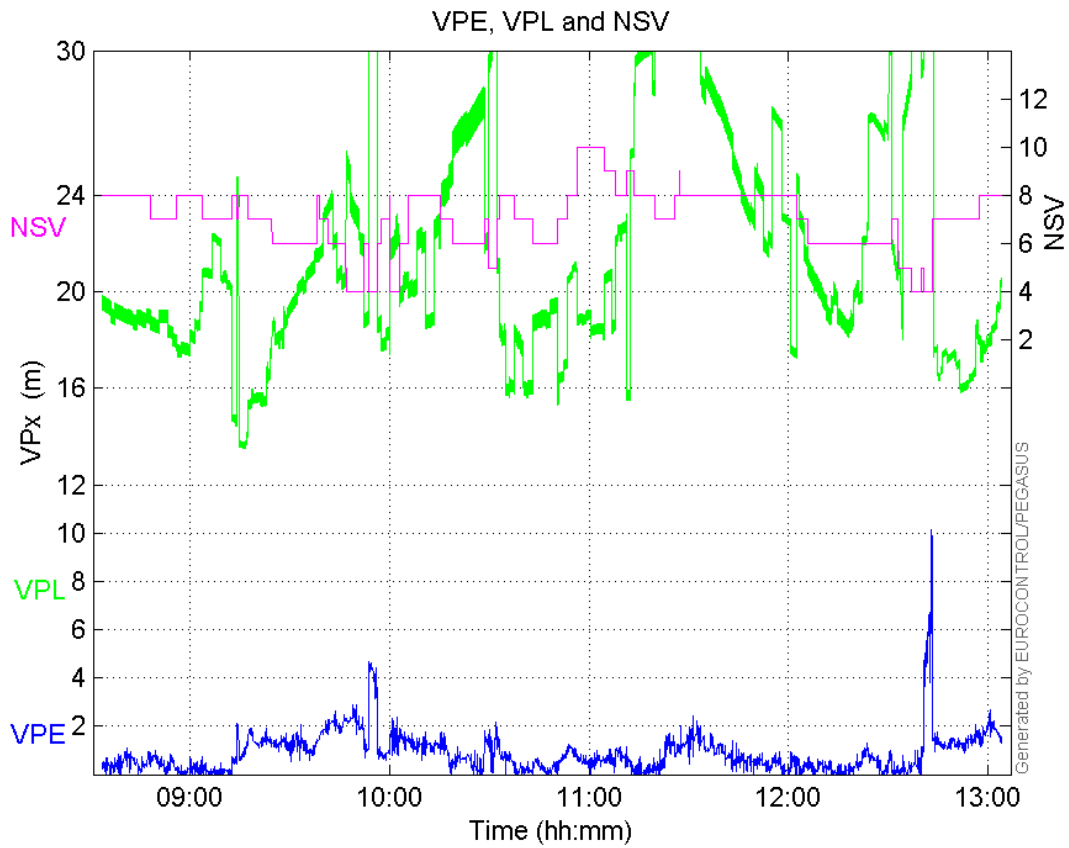
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	16233	15209	14908	0	14908
SIS Availability	0.999507	0.936457	0.917924	0	0.917924
Local Availability	0.977185	0.915543	0.897424	0	0.897424
Operational Availability	0.977185	0.915543	0.897424	0	0.897424
HPE 95%	1.70248	1.5487	1.55116	NaN	1.55116
HPEscale 95%	NaN	3.6078	3.61427	NaN	3.61427
VPE 95%	2.07122	1.8541	1.77979	NaN	1.77979
VPEscale 95%	NaN	4.69139	3.21024	NaN	3.21024
All Discontinuity Events	1	3	19	--	19
Long Discontinuity Events	1	3	5	--	5
Independent Discontinuity Events	1	3	4	--	4
P(discontinuity)	0.000924044	0.00295877	0.00402468	NaN	0.00402468
P(sliding window)	0.000924044	0.00295877	0.00630534	NaN	0.00630534
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:

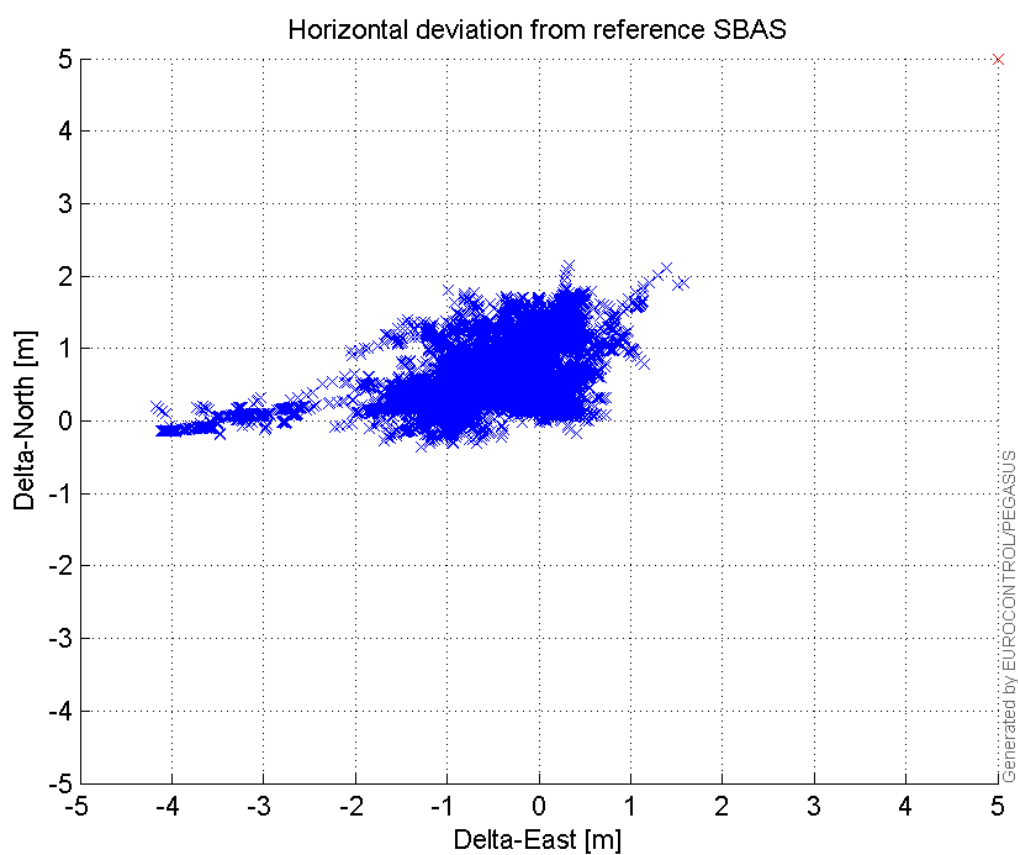


VPE, VPL and NSV:



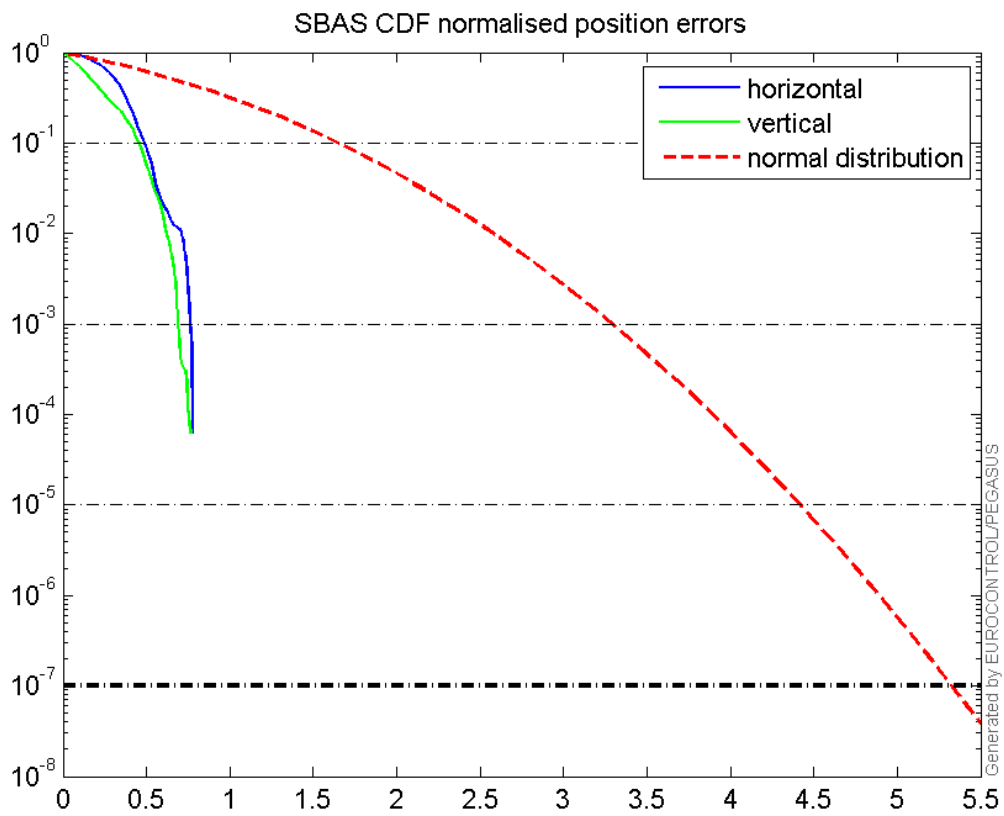
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

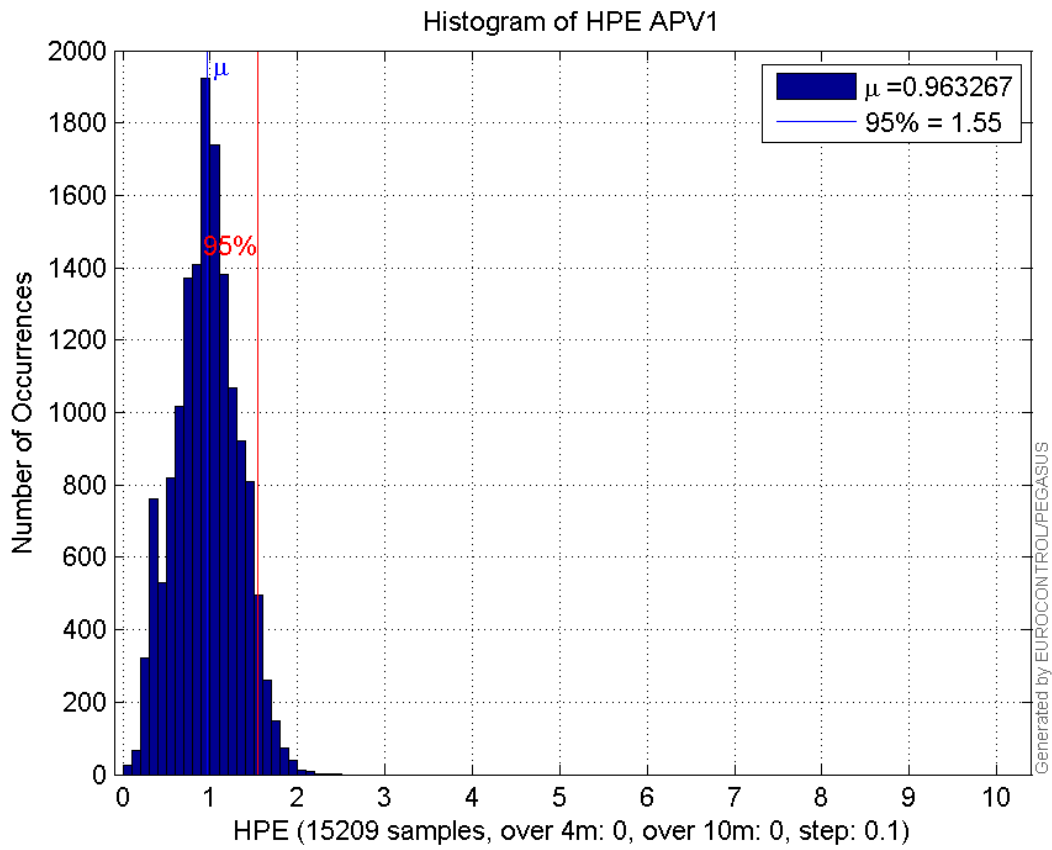
number	15209
sum	14650.323
sum2	16073.012
prctile95	1.5487035
prctile99	1.7838382
number	15209
sum	12345.061
sum2	16347.429
prctile95	1.8540963
prctile99	3.3970389
number	15209
sum	300157.19
sum2	6535046.3
prctile95	32.97052
prctile99	36.857912
number	15209
sum	329551.71
sum2	7502729.7
prctile95	31.107415
prctile99	37.937295
number	15209
sum	805.23006
sum2	50.784176
prctile95	0.090194933
prctile99	0.11913088
number	15209

sum 586.45374
sum2 35.612952
prctile95 0.093827821
prctile99 0.11628109
number 14908
sum 14432.485
sum2 15889.819
prctile95 1.5511602
prctile99 1.7880208
number 14908
sum 11551.814
sum2 13667.871
prctile95 1.7797853
prctile99 2.1725162
number 14908
sum 292846.22
sum2 6344341.9
prctile95 33.00573
prctile99 36.86552
number 14908
sum 318276.59
sum2 7079748.5
prctile95 30.38455
prctile99 31.980134
number 14908
sum 794.46062
sum2 50.249121
prctile95 0.090356729
prctile99 0.11932796
number 14908
sum 564.83418
sum2 33.570963
prctile95 0.091721166
prctile99 0.1125324

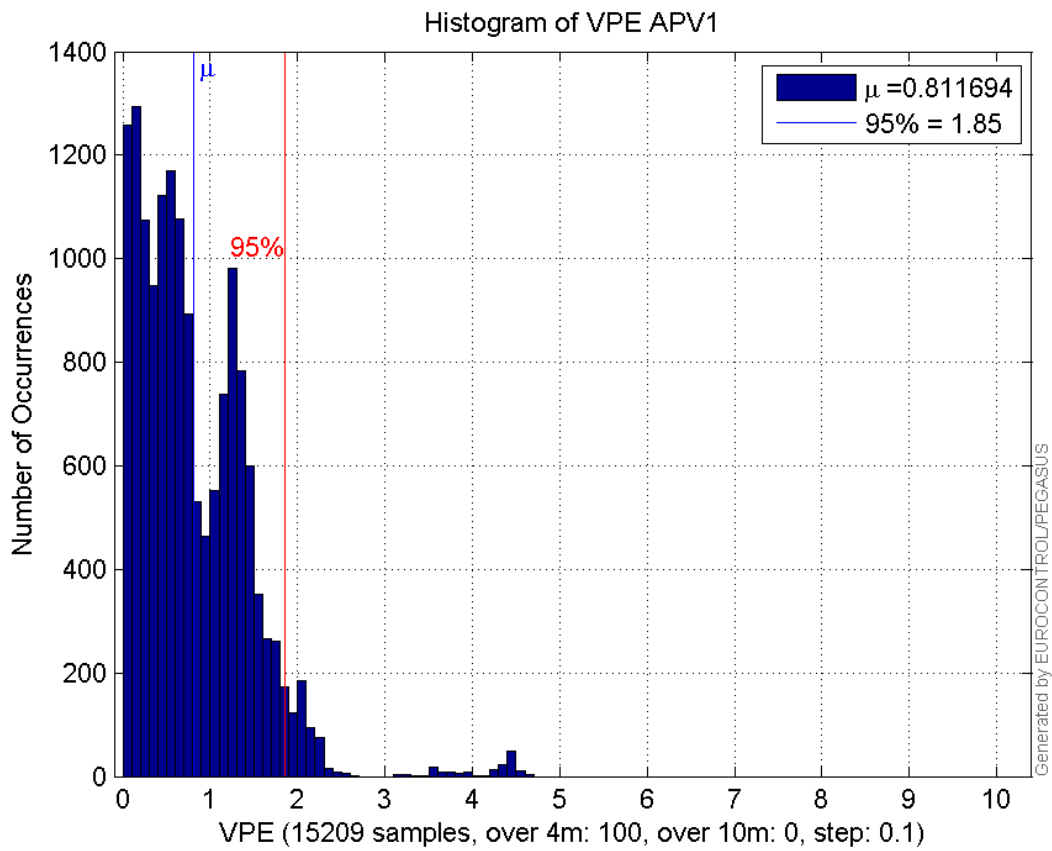
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	0.963267	0.359075	0.96334	1.5487	1.78384	1.02801
HPL	19.7355	6.34	17.925	32.9705	36.8579	20.7288
VPE	0.811694	0.645005	0.671039	1.8541	3.39704	1.03675
VPL	21.6682	4.87843	20.1087	31.1074	37.9373	22.2106

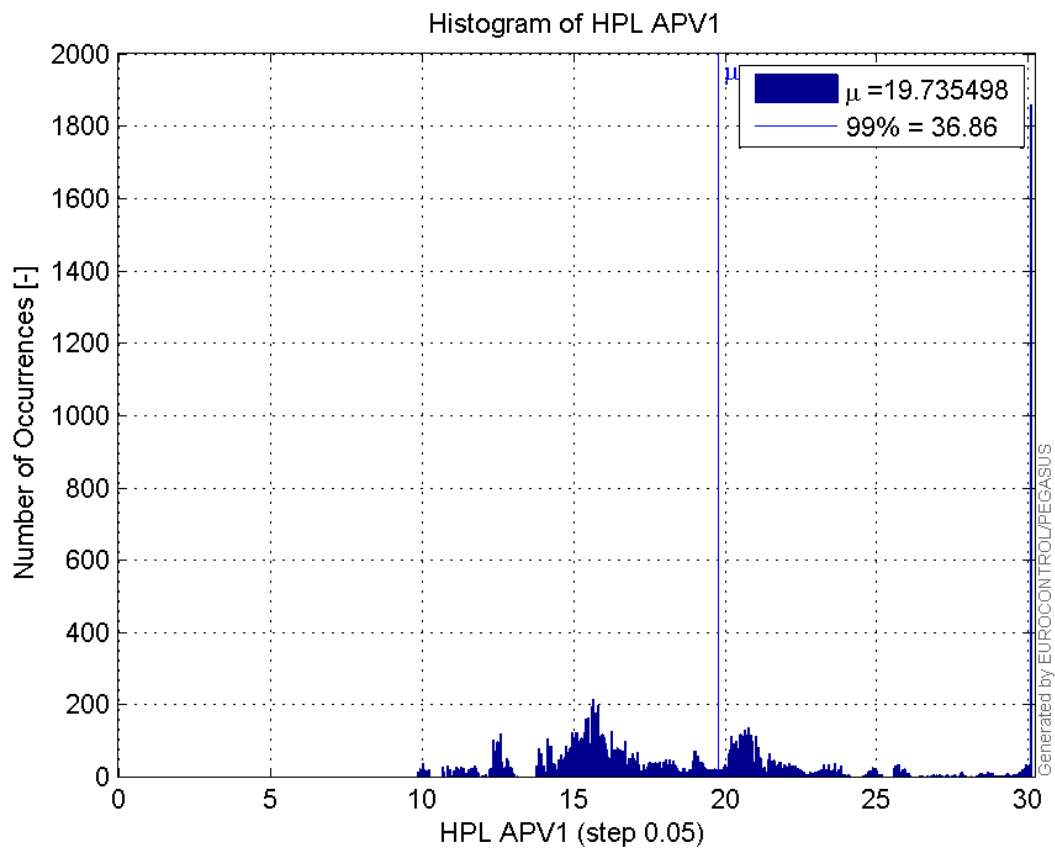
Histogram of HPE APV1:



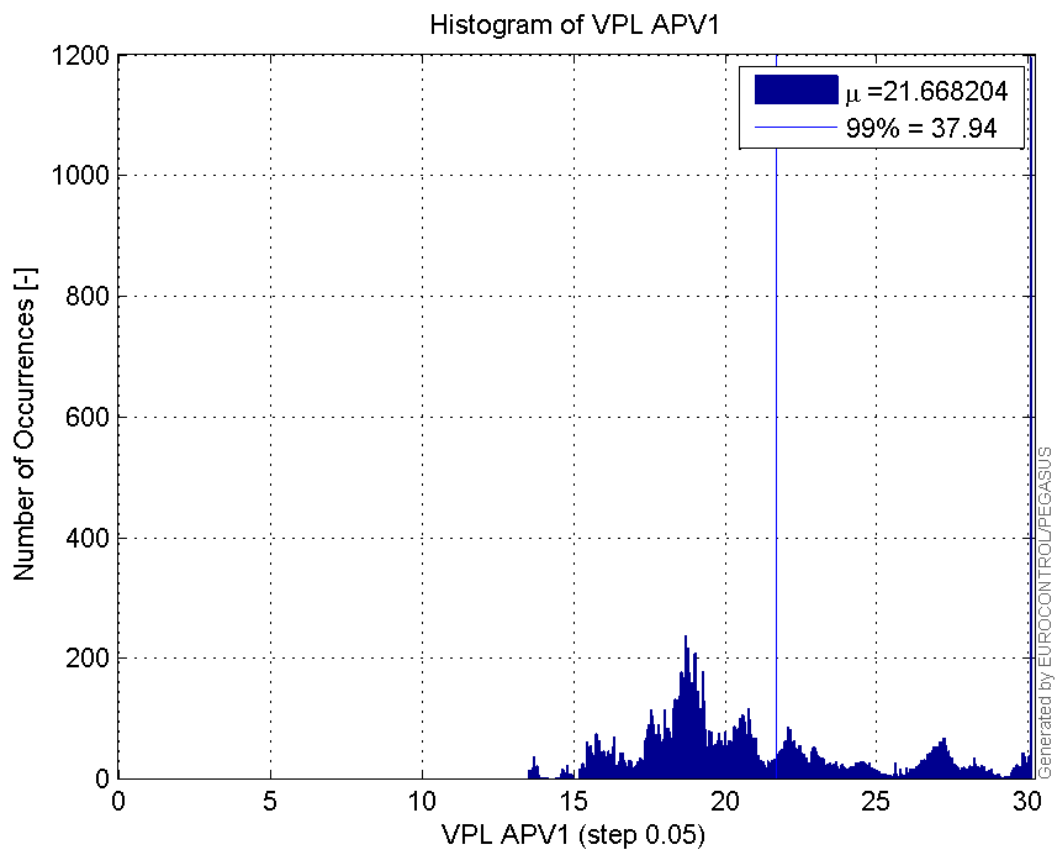
Histogram of VPE APV1:



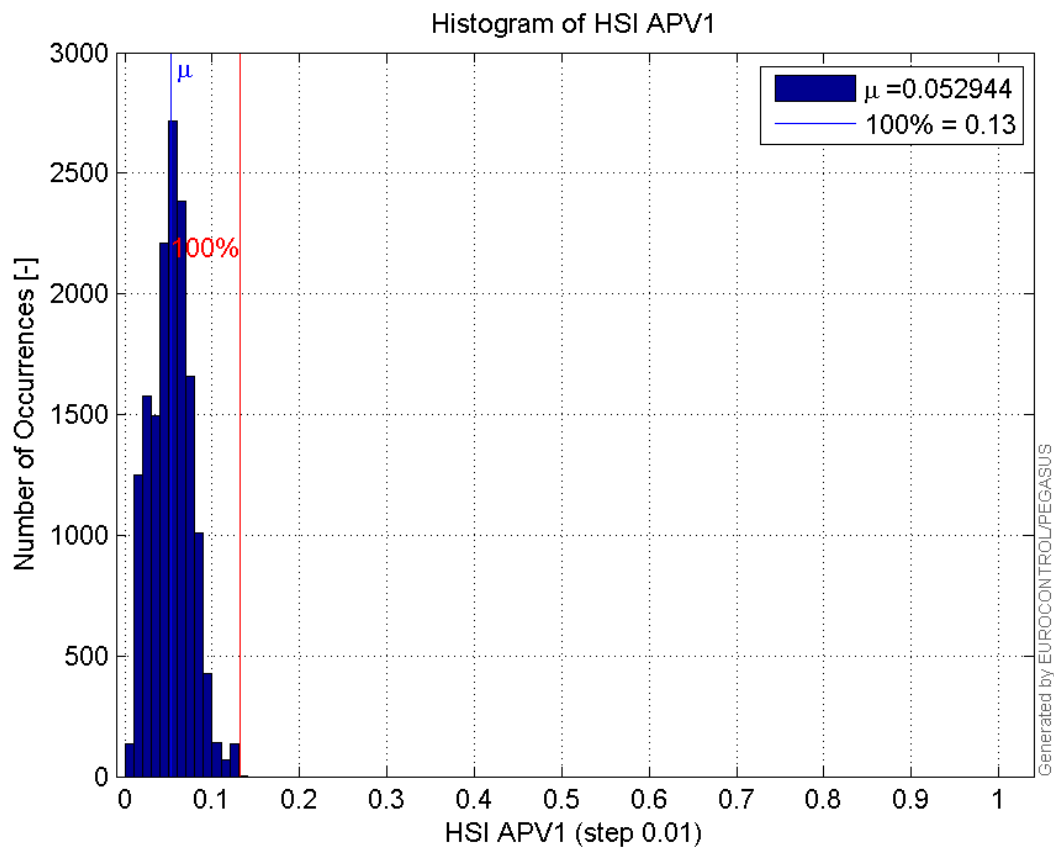
Histogram of HPL APV1:



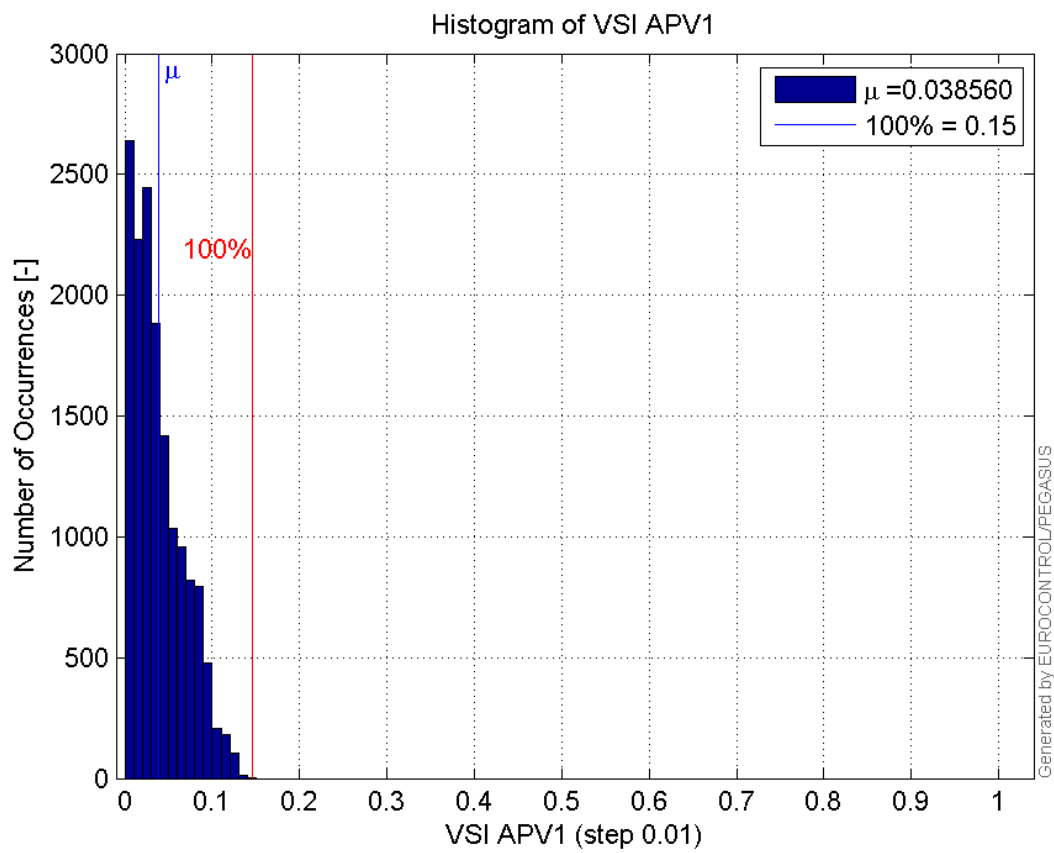
Histogram of VPL APV1:



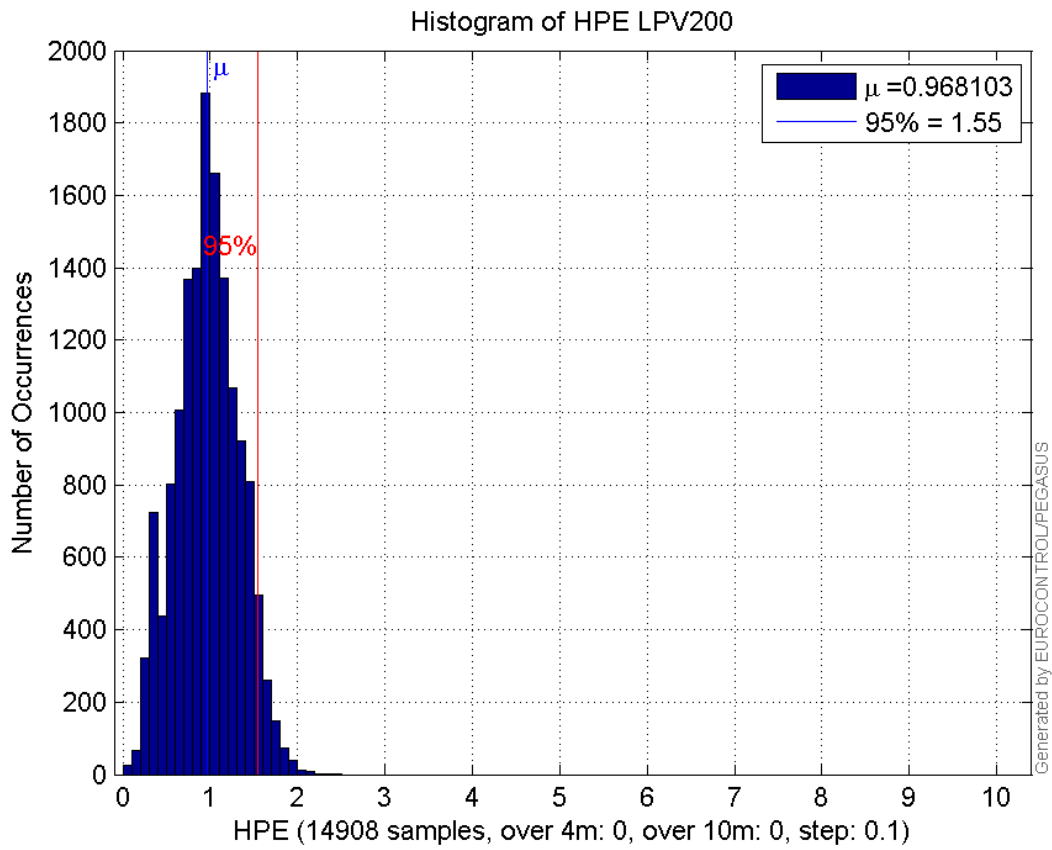
Histogram of HSI APV1:



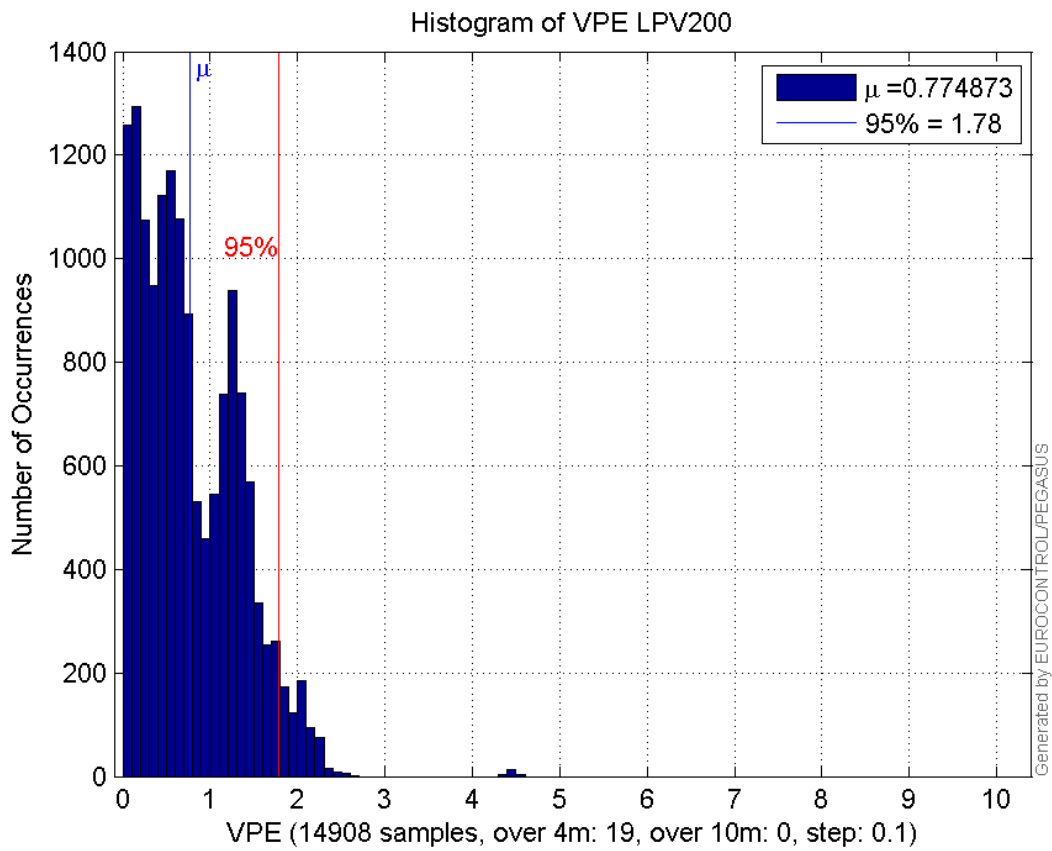
Histogram of VSI APV1:



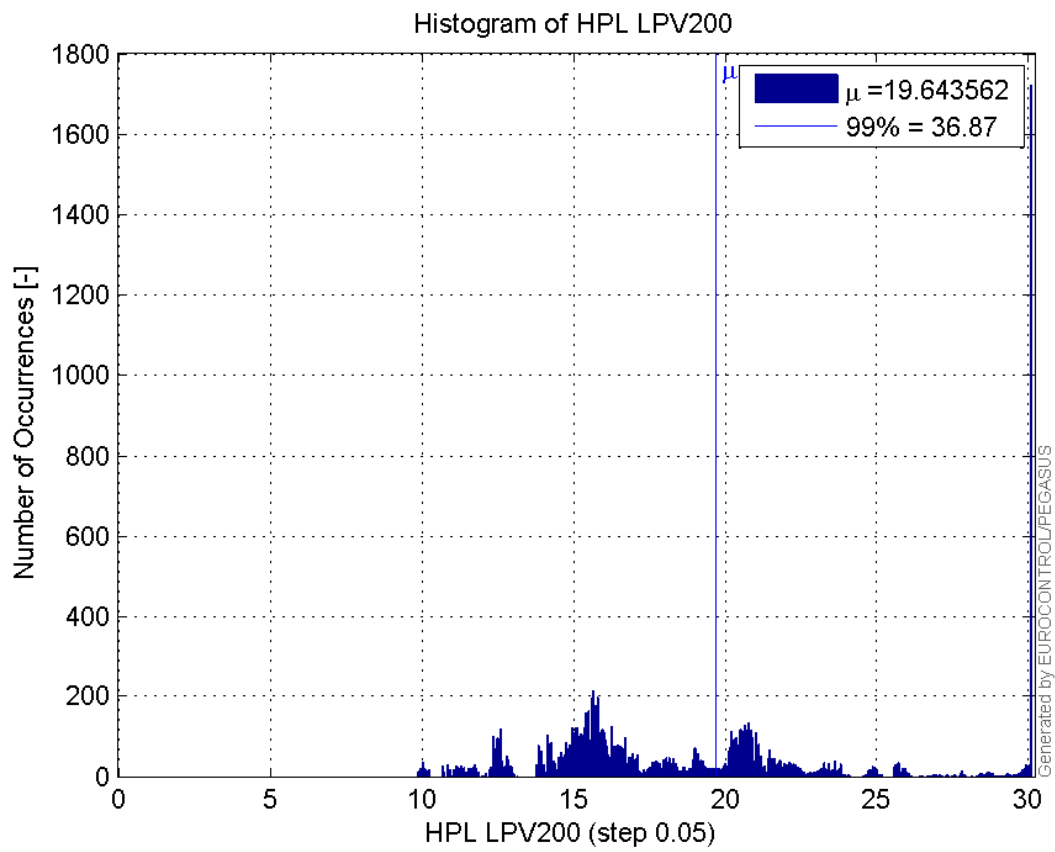
Histogram of HPE LPV200:



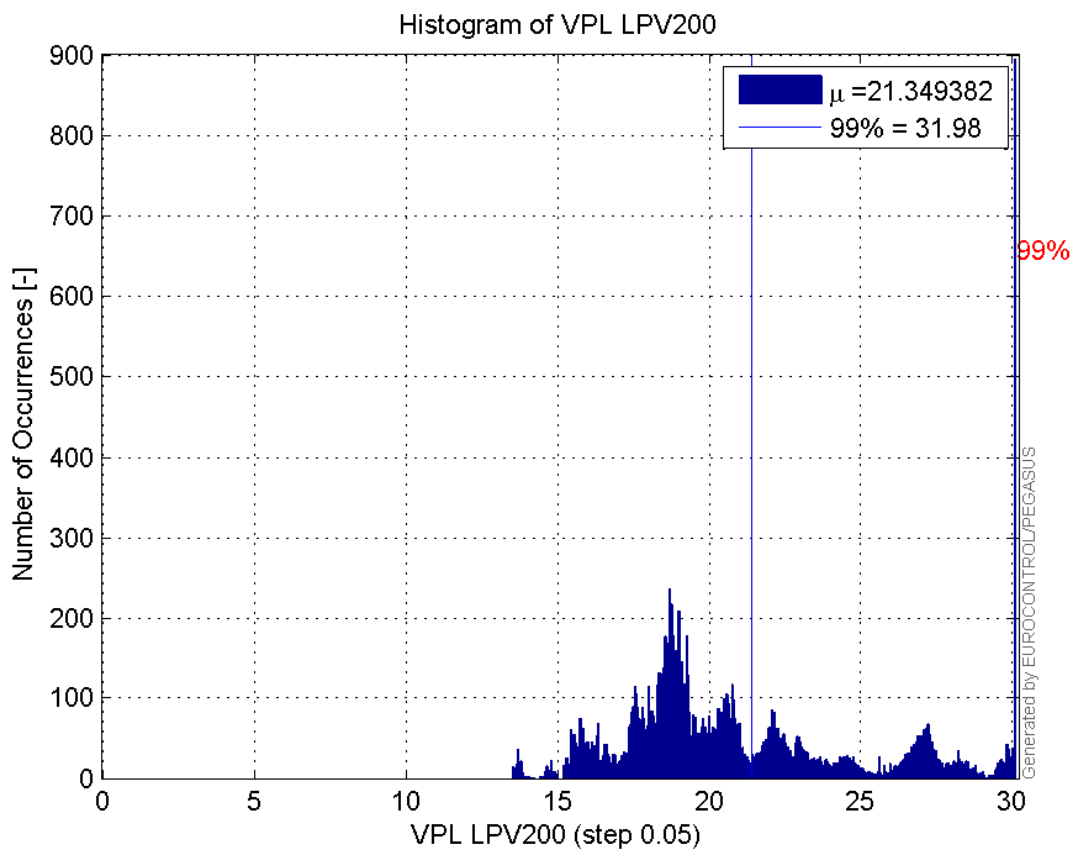
Histogram of VPE LPV200:



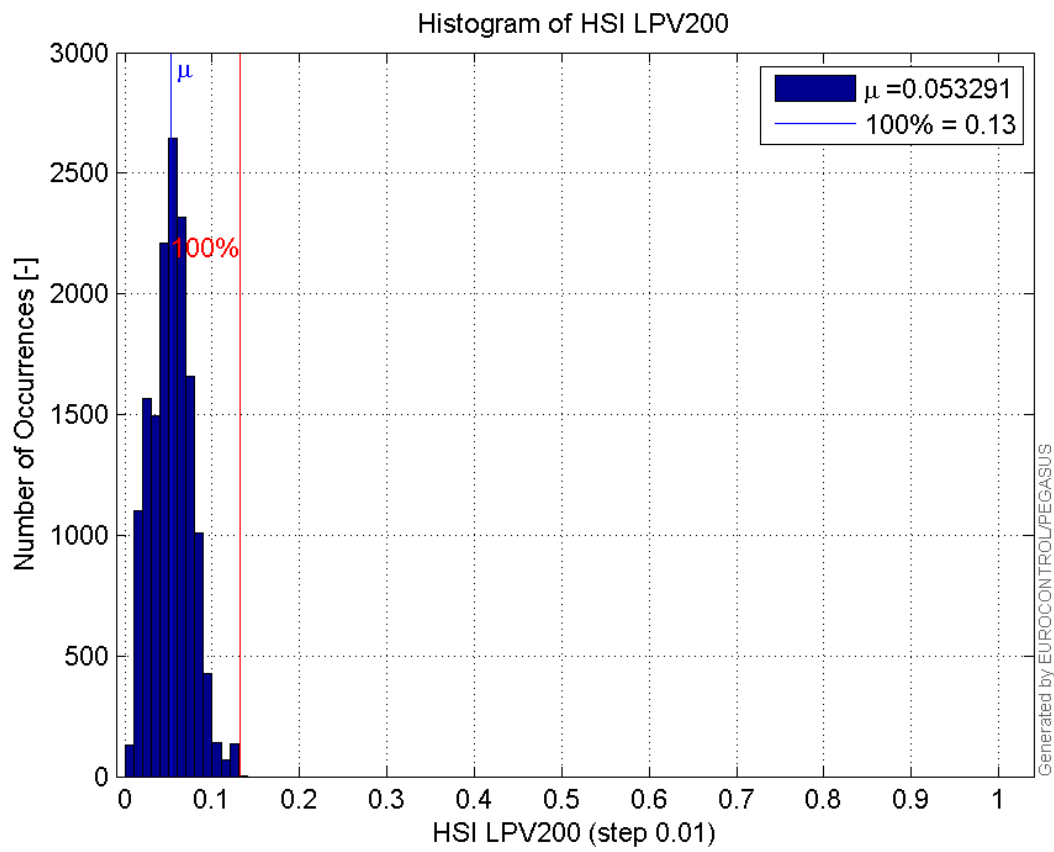
Histogram of HPL LPV200:



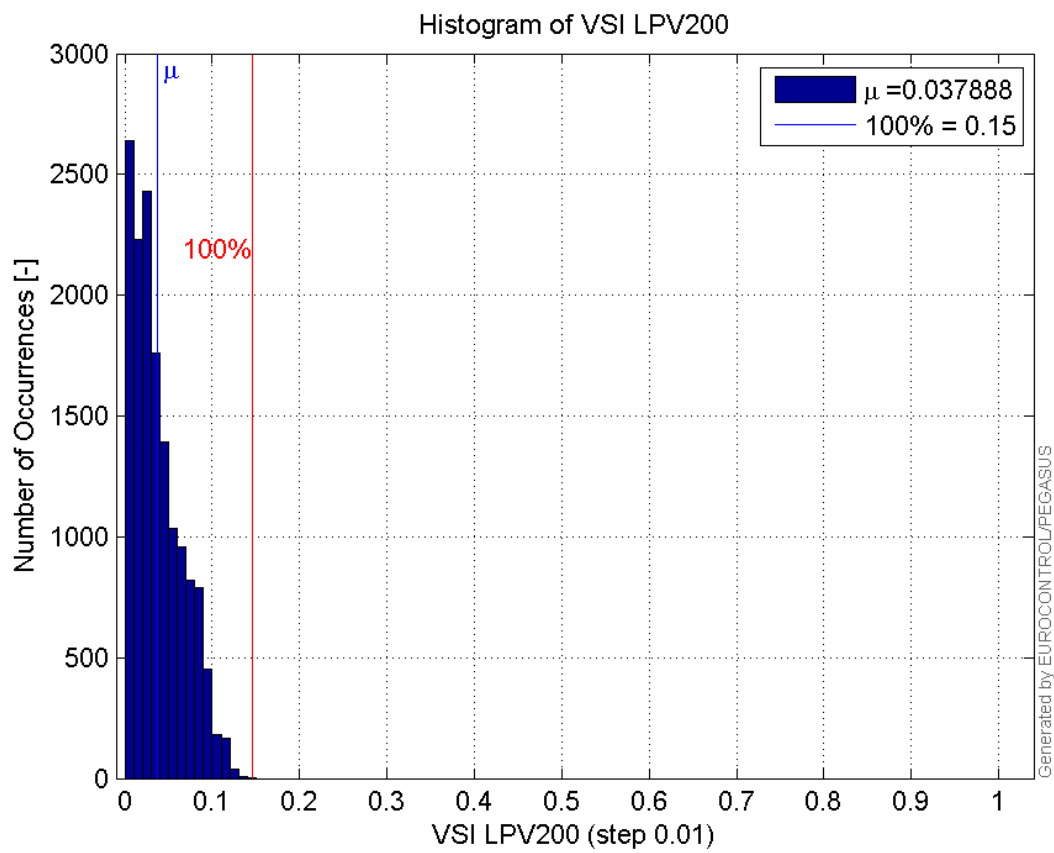
Histogram of VPL LPV200:



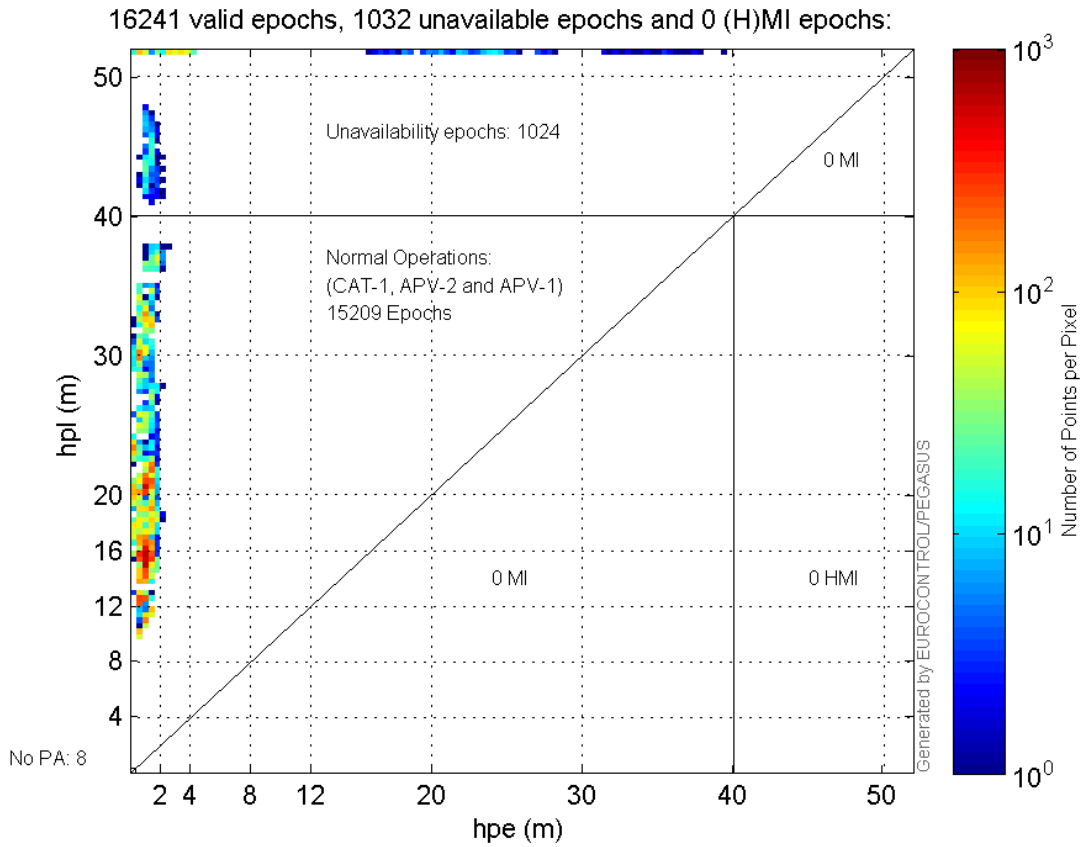
Histogram of HSI LPV200:



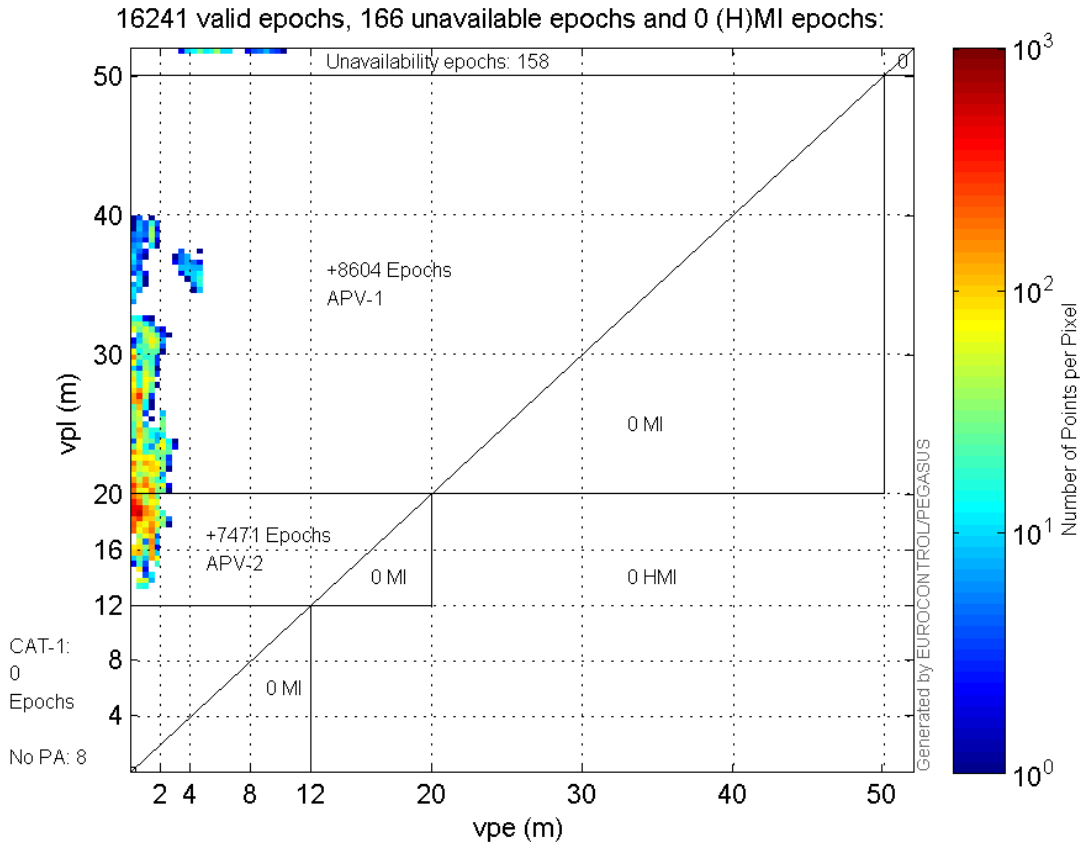
Histogram of VSI LPV200:



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_09EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_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	30.4296
init_alt	results	232.3379
mi_numbers	results	0

Range Domain

start: 08:27:20 09.02.2016 (week: 1883 sec: 203240)
end: 13:04:11 09.02.2016 (week: 1883 sec: 219851)
duration: 04:36:52 ..

quality

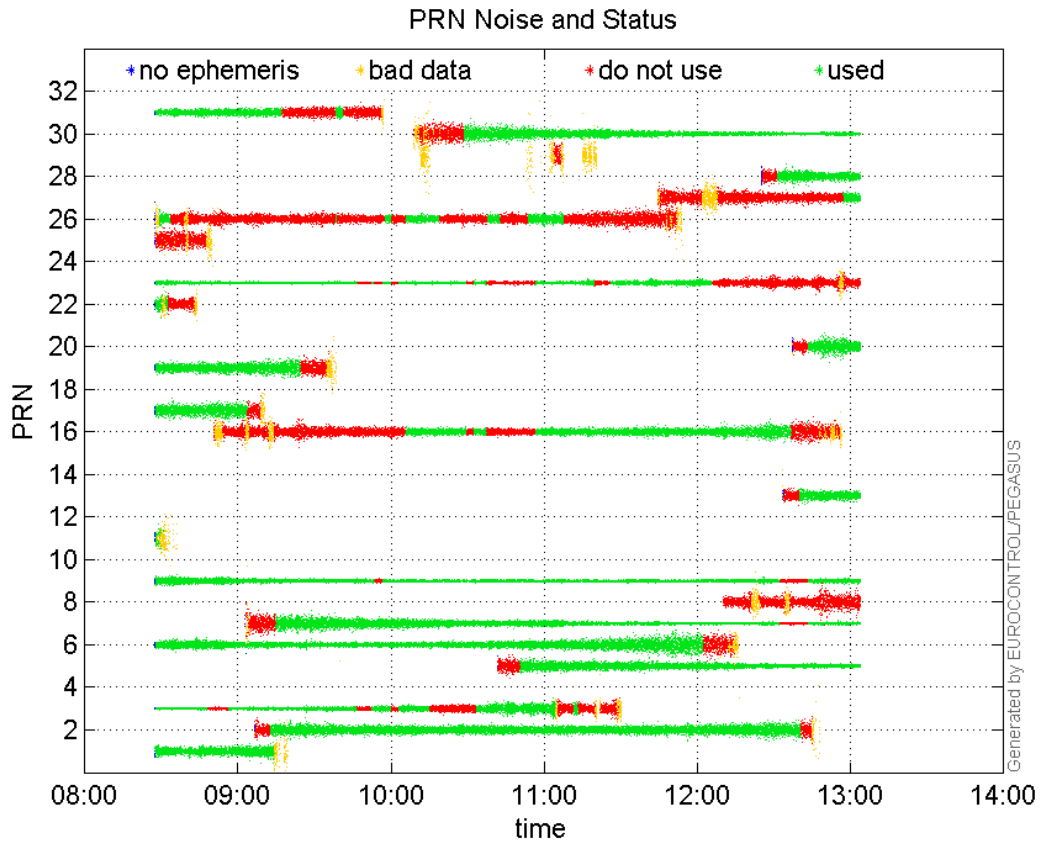
valid samples 16612
total samples 16612

PRN overview

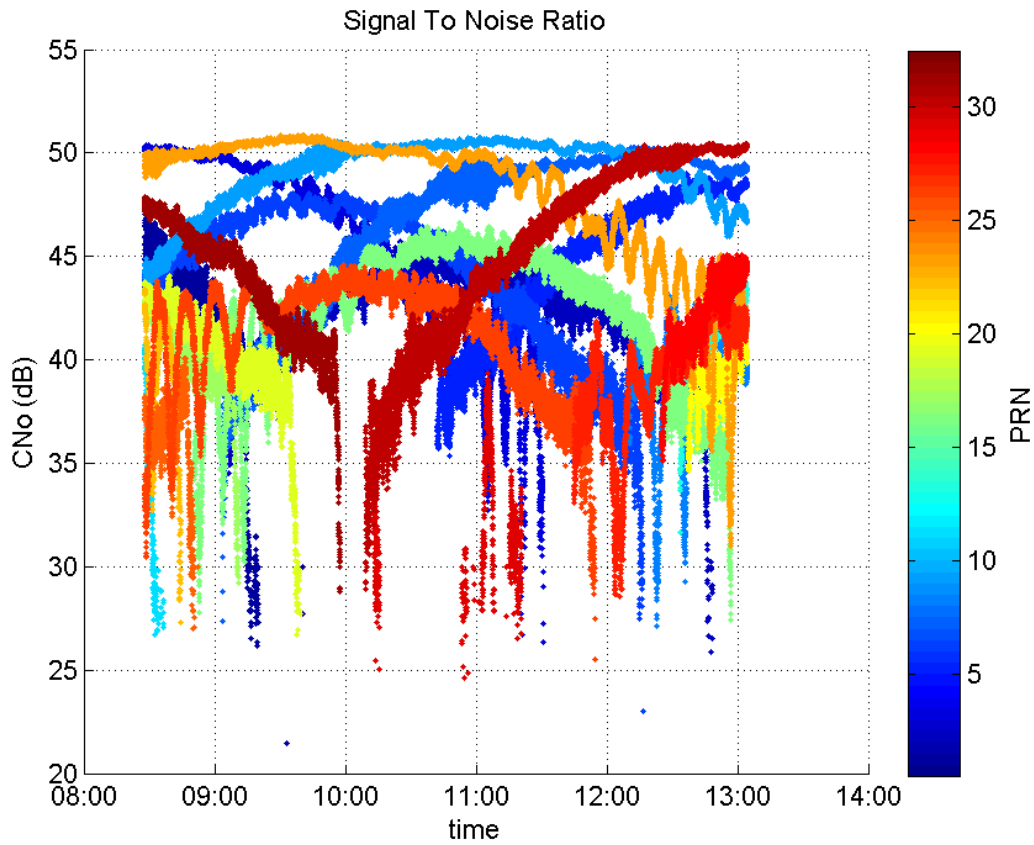
Number of Visible GPS Satellites 23
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



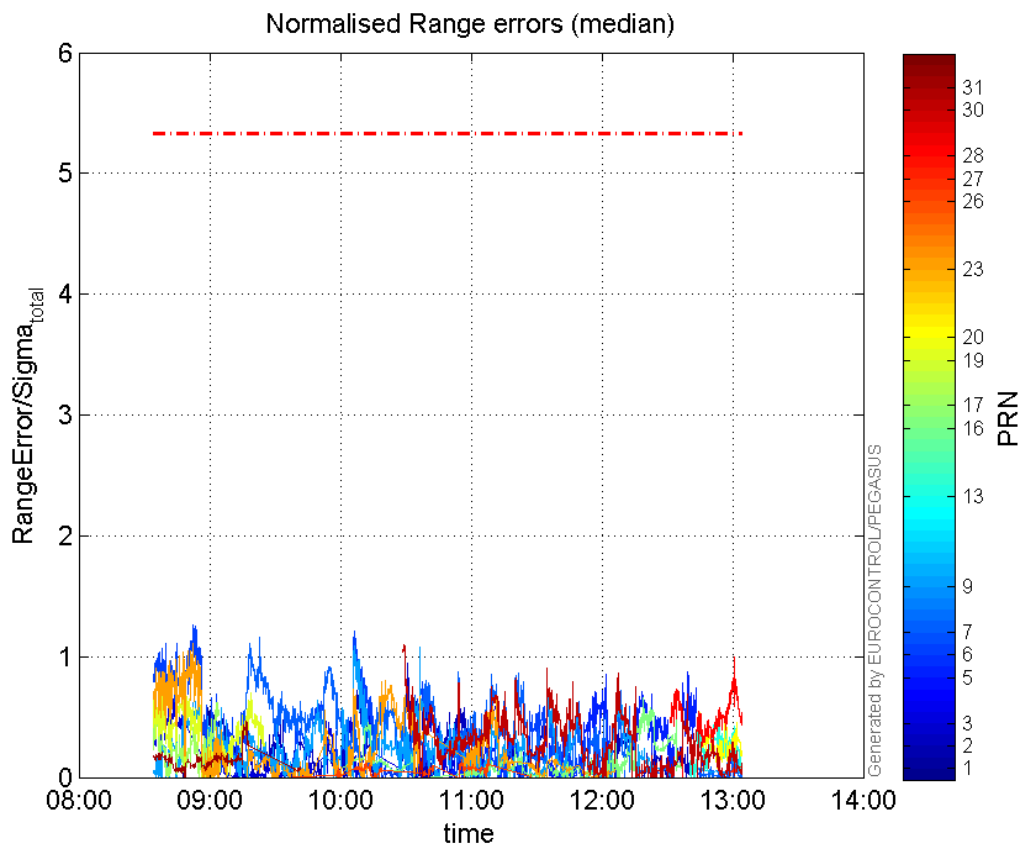
range errors

Number of Overbounding Norm Errors 0

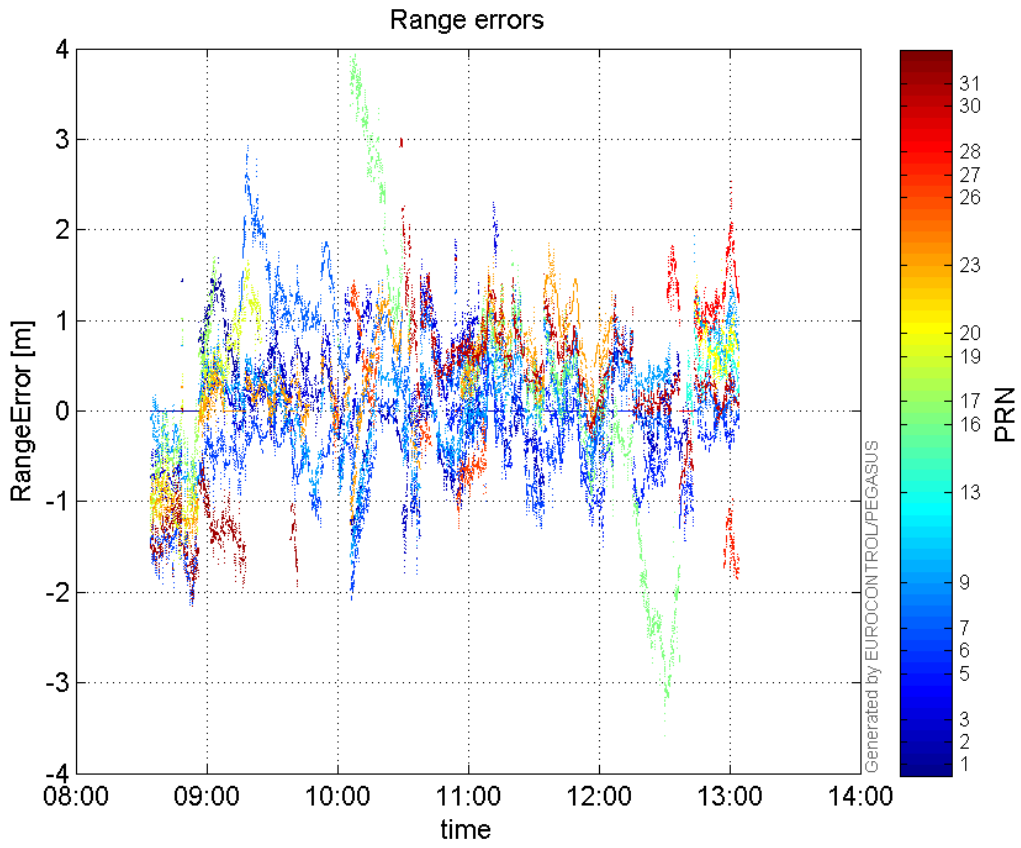
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1883	204520	1	0.735675	1.45722	1.9808
1883	210621	2	0.950155	-1.78893	1.88278
1883	204235	3	0.722248	-1.1215	1.5528
1883	218339	5	0.878432	-1.42693	1.62441
1883	204722	6	1.25801	-2.10977	1.67707
1883	206548	7	1.16264	2.78187	2.39271
1883	209163	9	1.08442	-1.66221	1.53281
1883	218688	13	0.469945	1.02542	2.182
1883	217124	16	0.657397	-2.00284	3.04661
1883	203622	17	0.618976	-1.3927	2.25001
1883	204258	19	0.802237	-1.73905	2.16775
1883	218689	20	0.540734	1.49305	2.76115
1883	204723	23	1.1139	-1.51002	1.35562
1883	212862	26	0.216677	-0.904475	4.1743
1883	219807	27	0.0857514	-1.85541	21.637
1883	219634	28	0.995617	2.53219	2.54334
1883	210540	30	1.09416	3.00399	2.74548
1883	206166	31	0.46851	-1.95059	4.16339

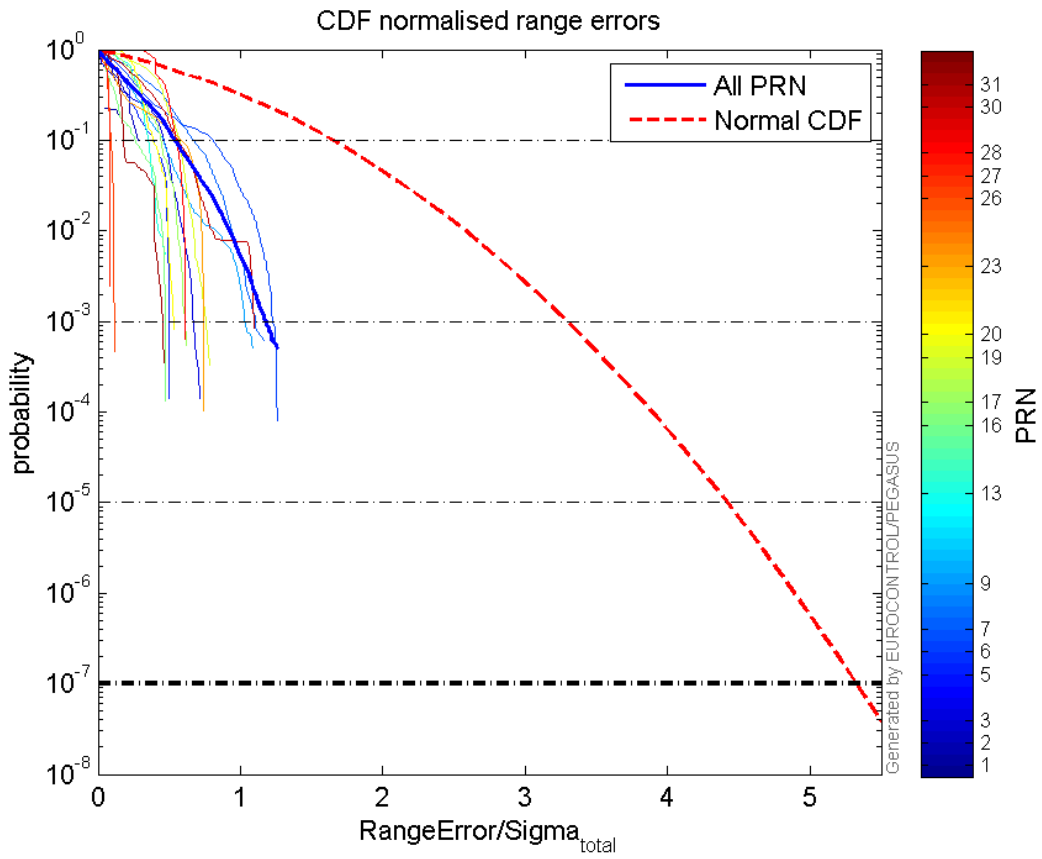
Normalised Range errors (median):



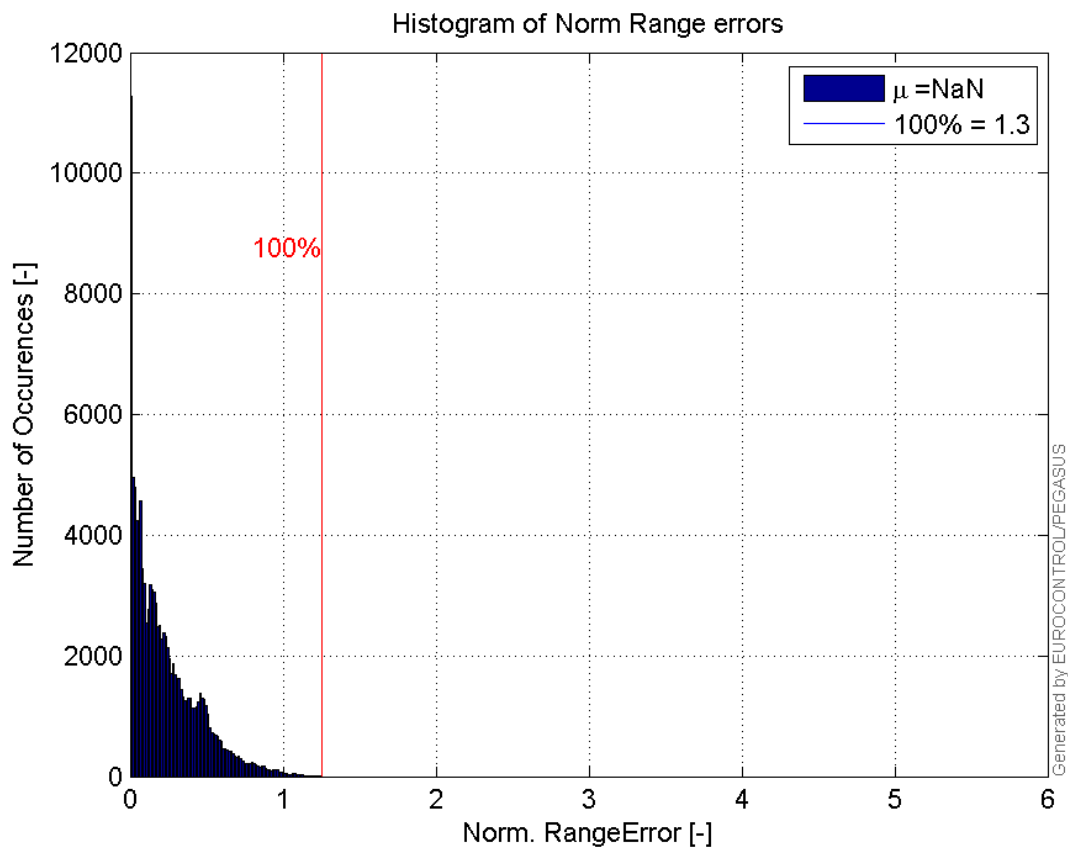
Range errors:



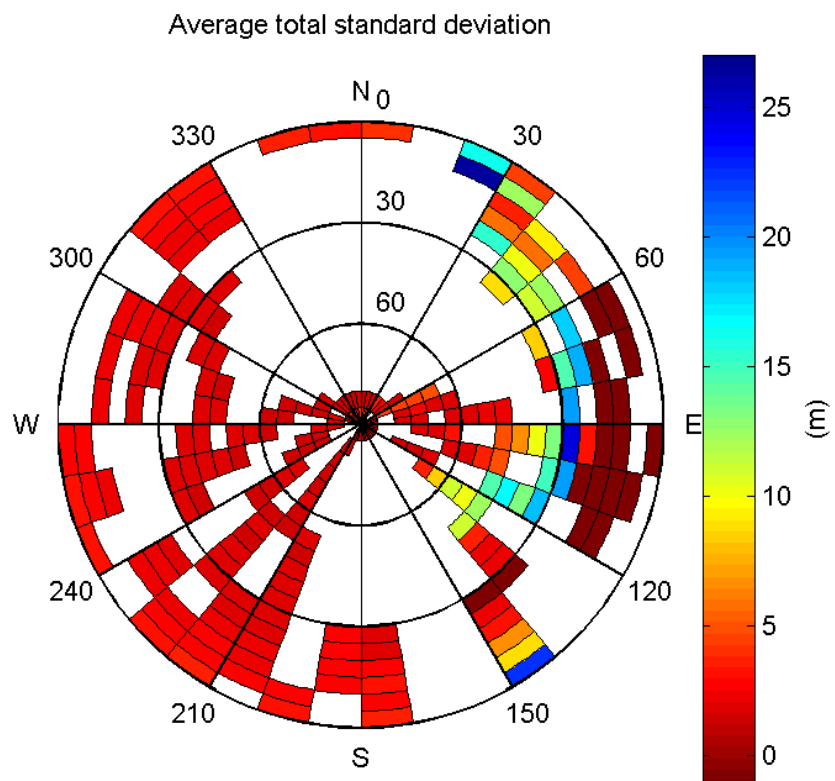
CDF normalised range errors:



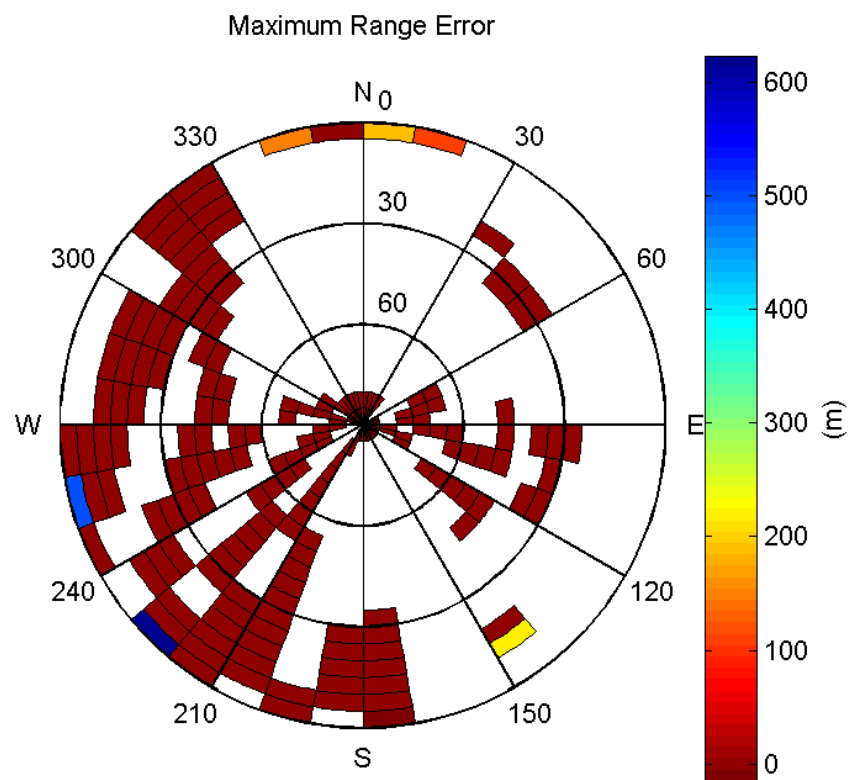
Histogram of Norm Range errors:



Sigma Sky Plot:

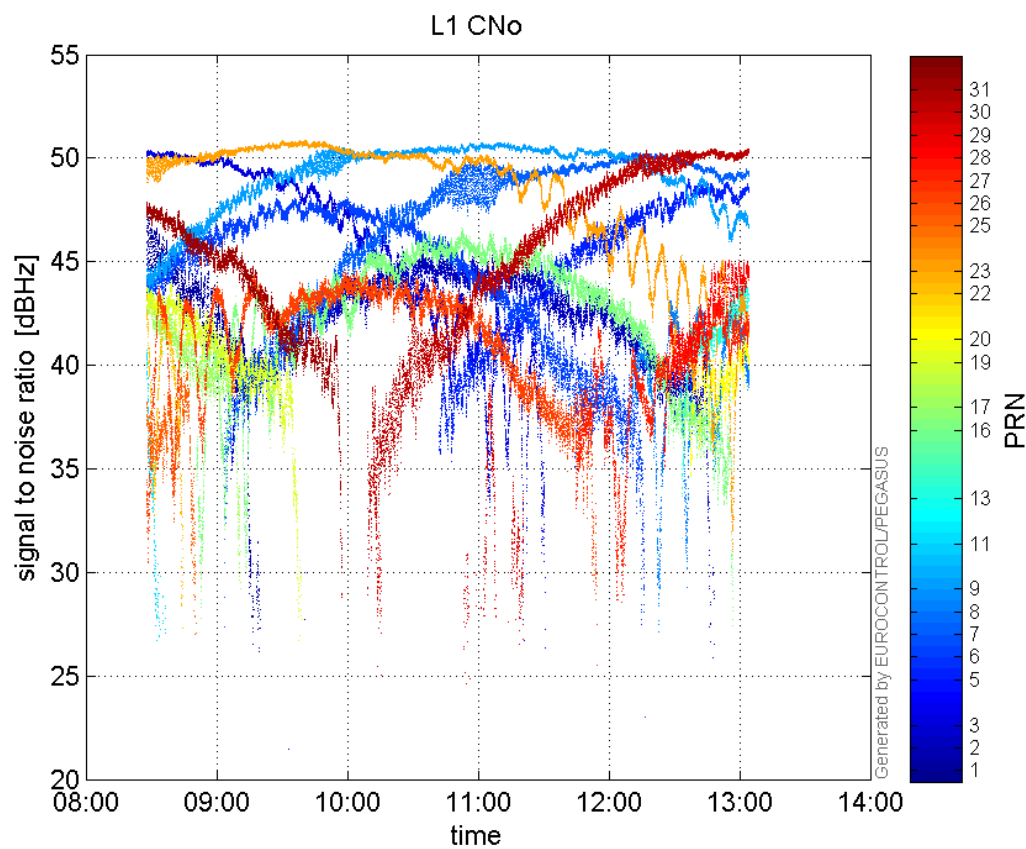


Norm Error Sky Plot:

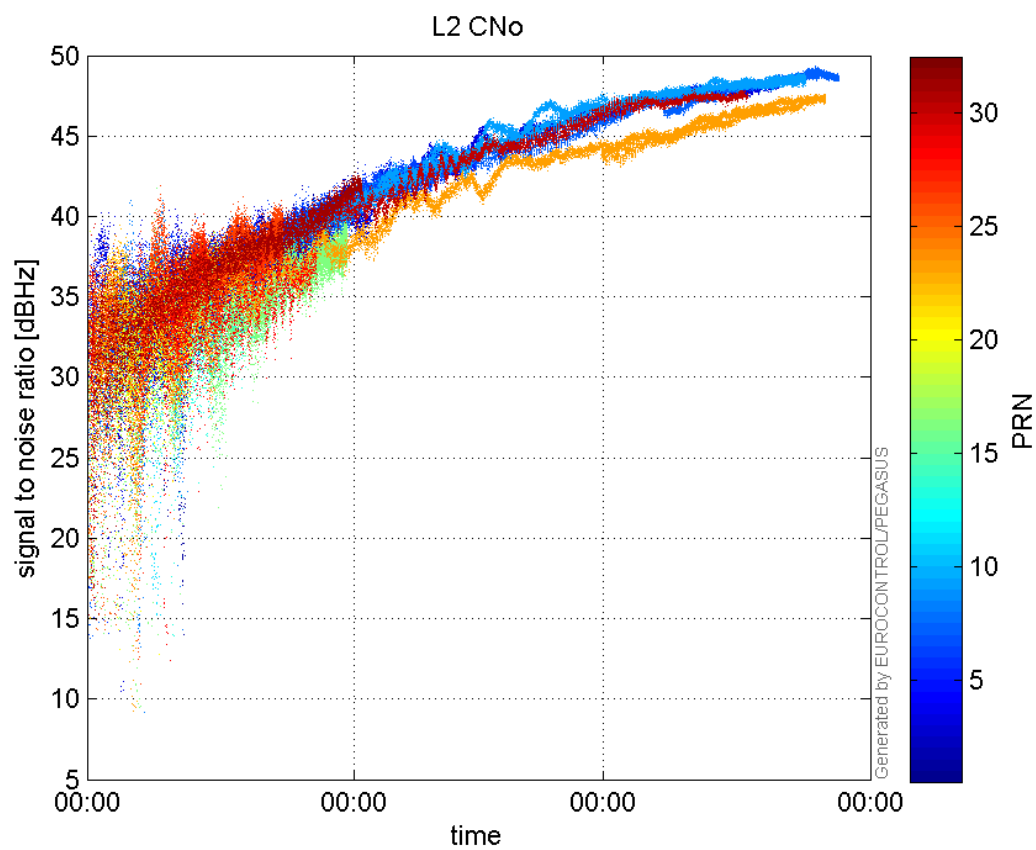


signal quality

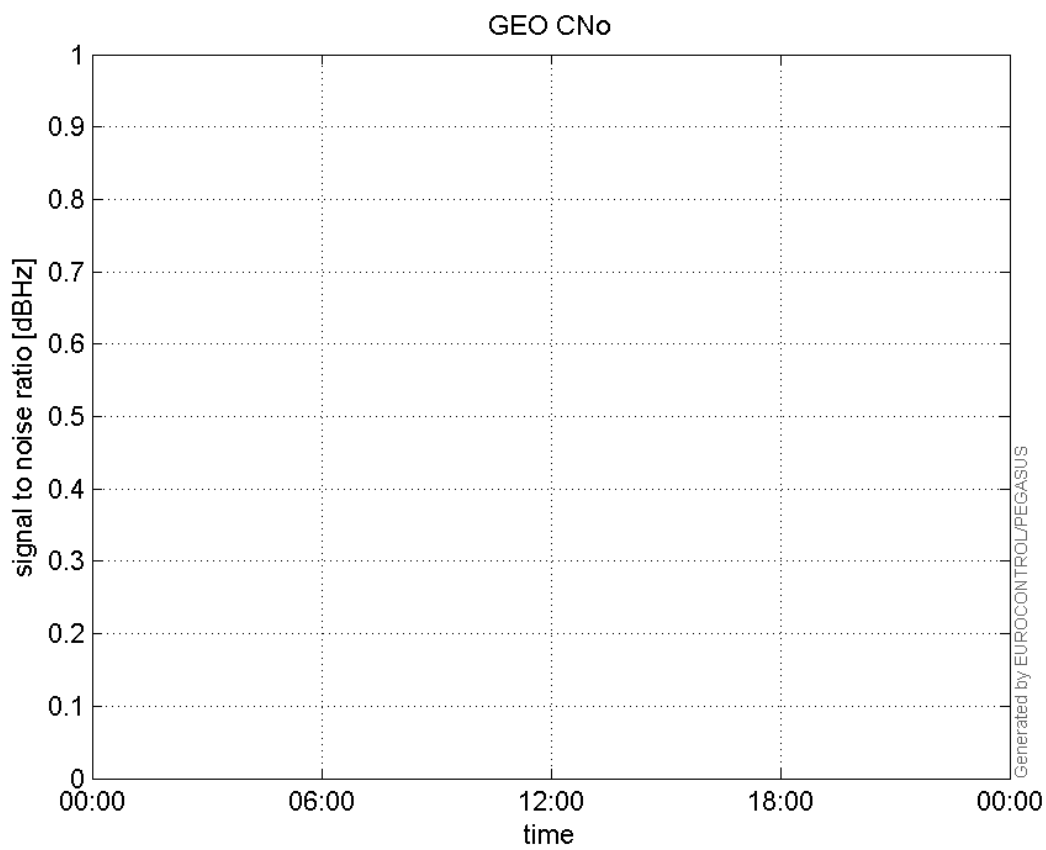
L1 CNo:



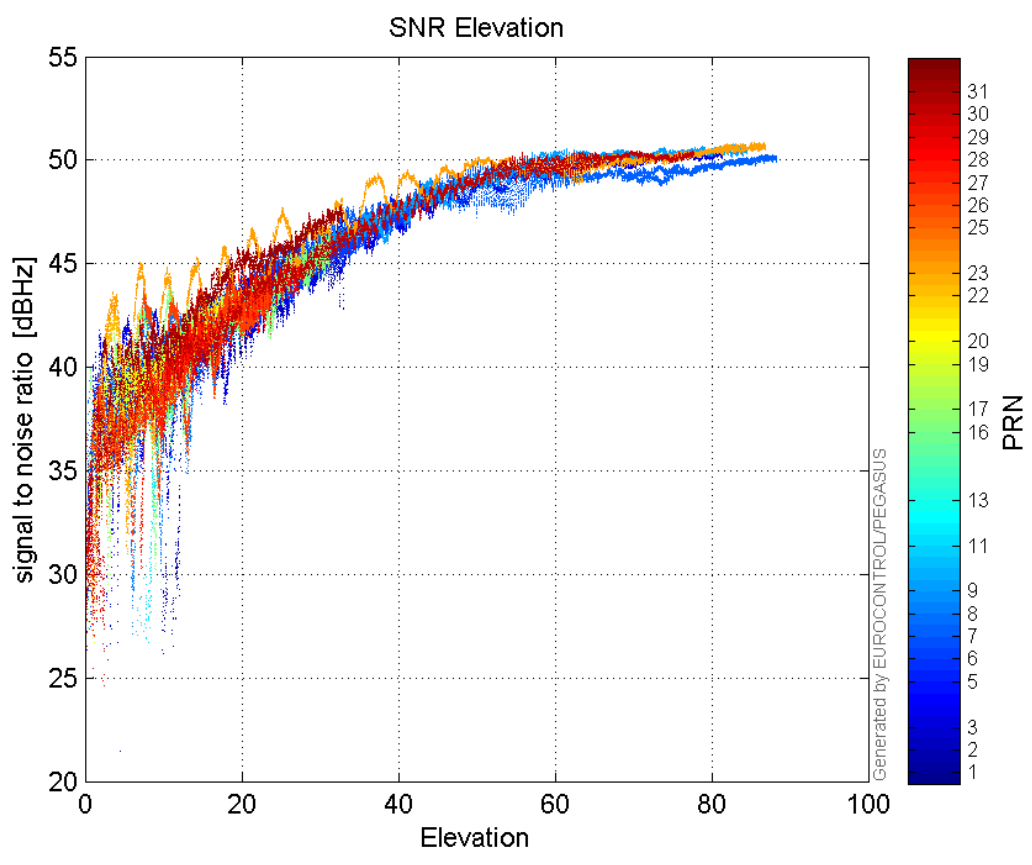
L2 CNo:



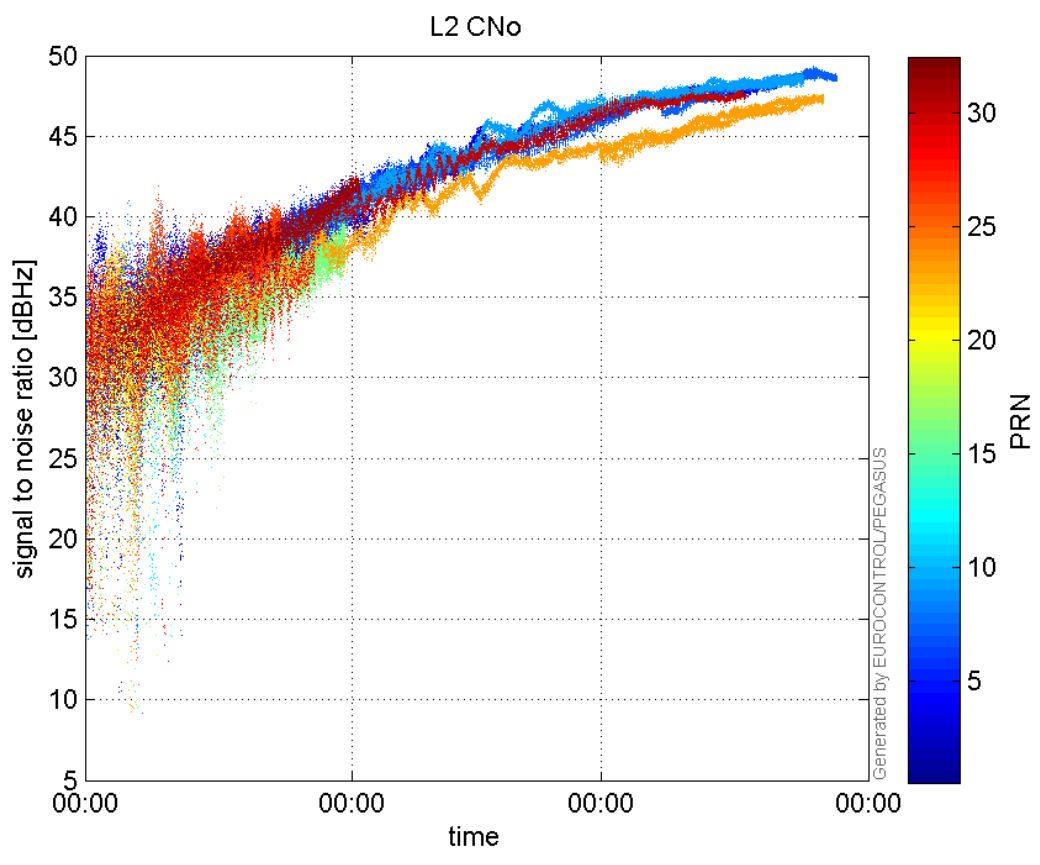
GEO CNo:



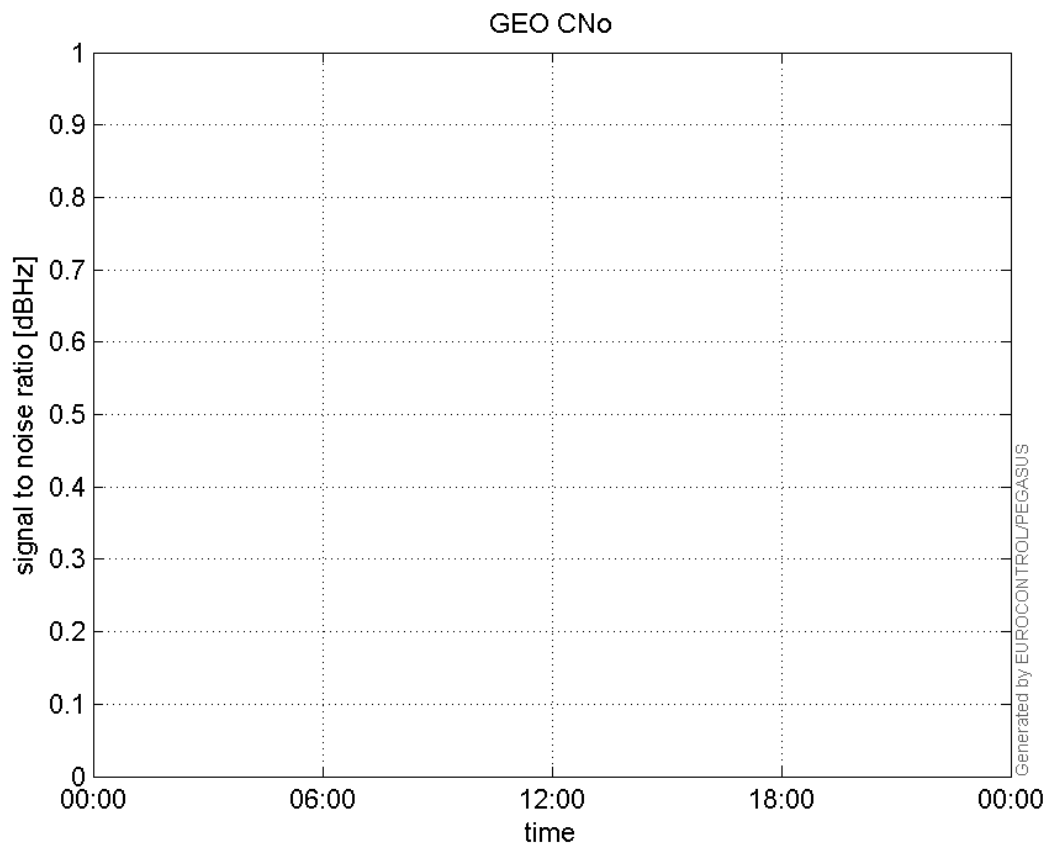
SNR Elevation:



L2 CNo:

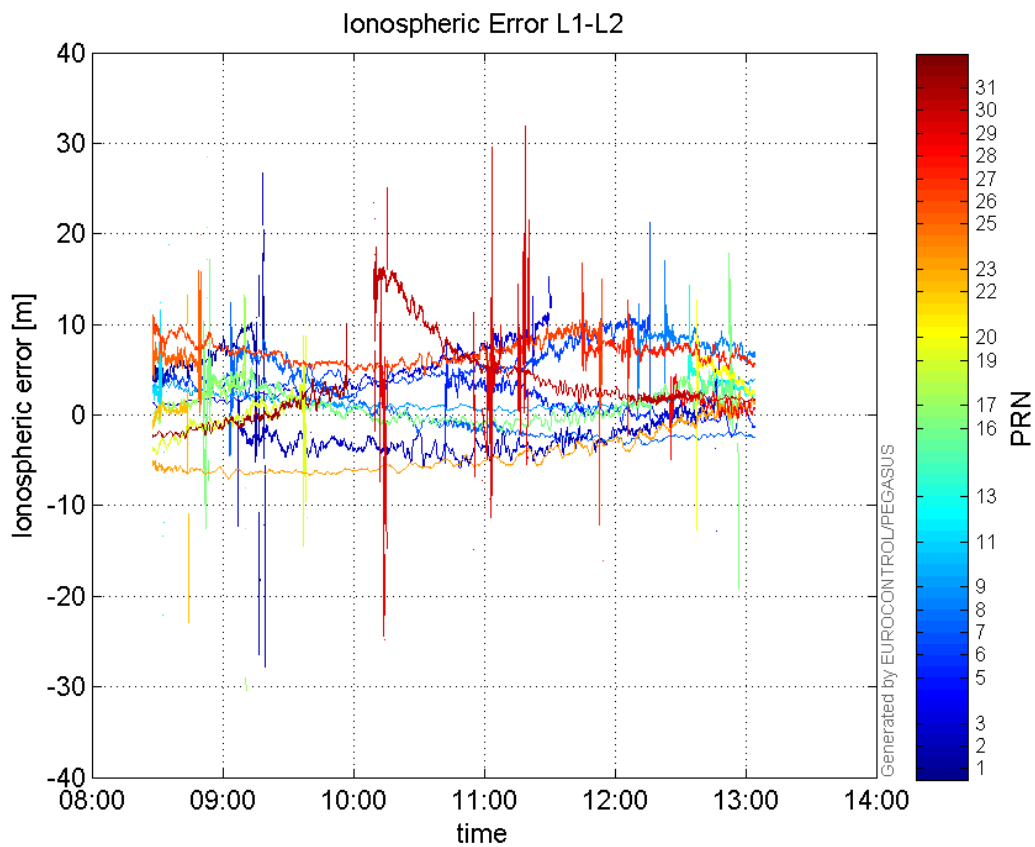


GEO CNo:



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_09EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2016_02_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	30.4296
init_alt	results	232.3379
mi_numbers	results	0