

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 16/03/2017

SBAS Messages

start: 09:28:17.129 24.02.2017 (week: 1937 sec: 466097.129)
end: 13:26:44.129 24.02.2017 (week: 1937 sec: 480404.129)
duration: 03:58:27 ..

quality

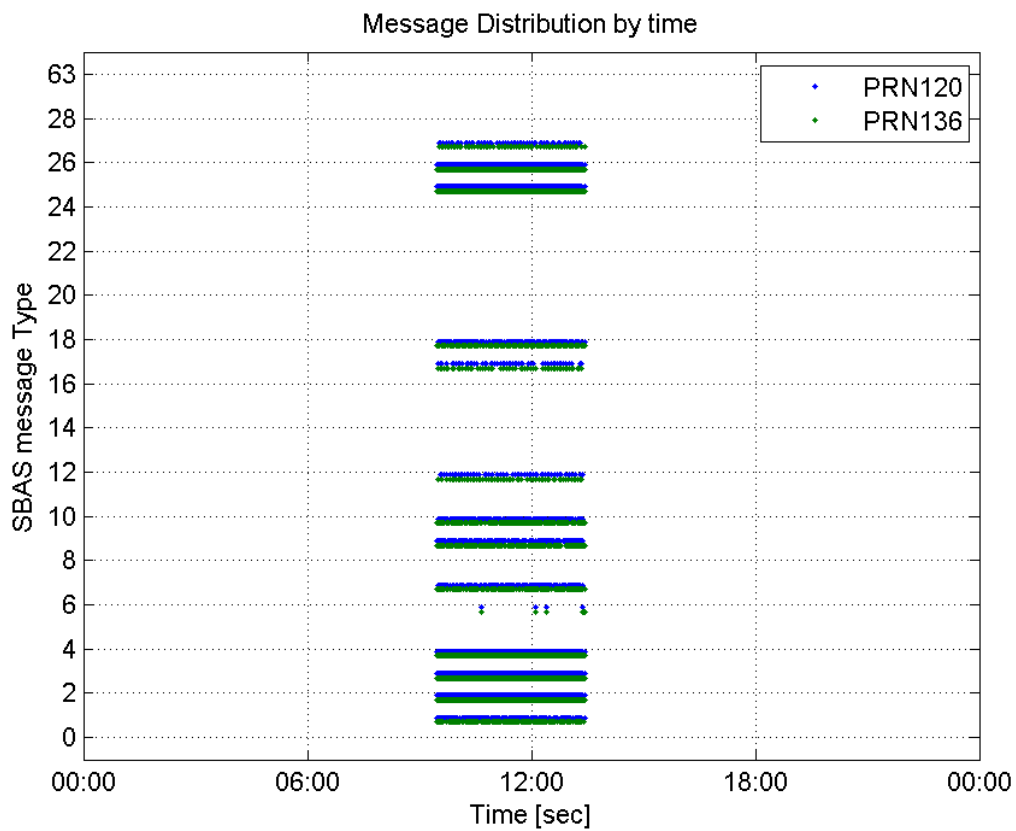
valid samples 22467
total samples 22467
number of SBAS PRNs 2

SBAS SIS Overview

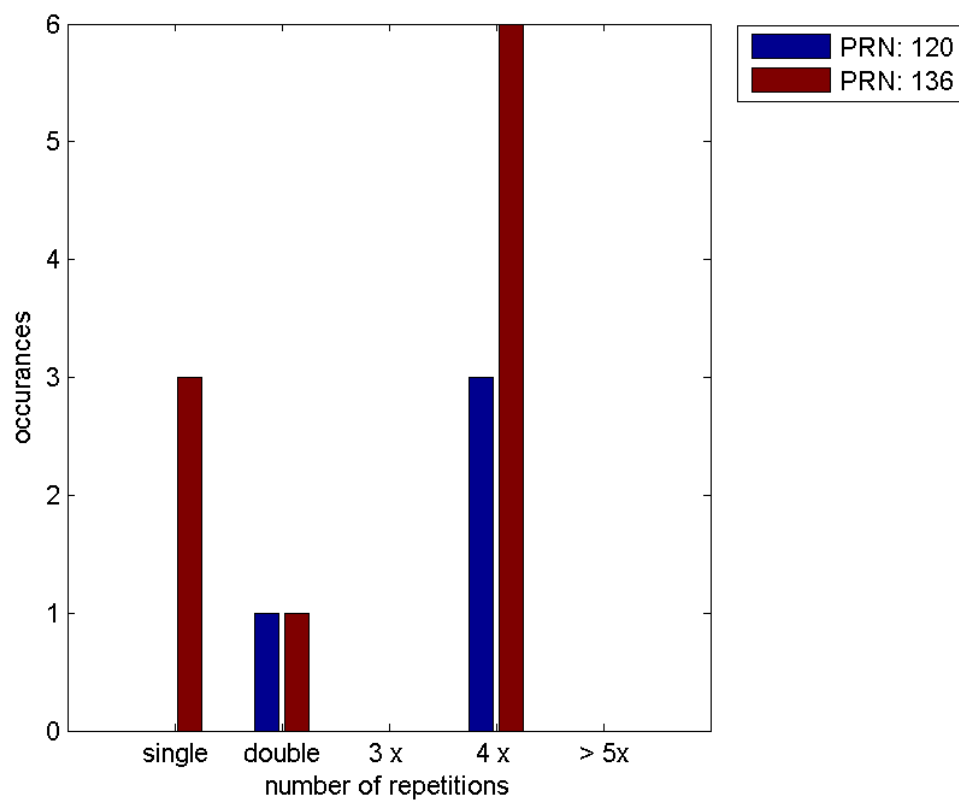
Message Type 6 repetitions :

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

Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

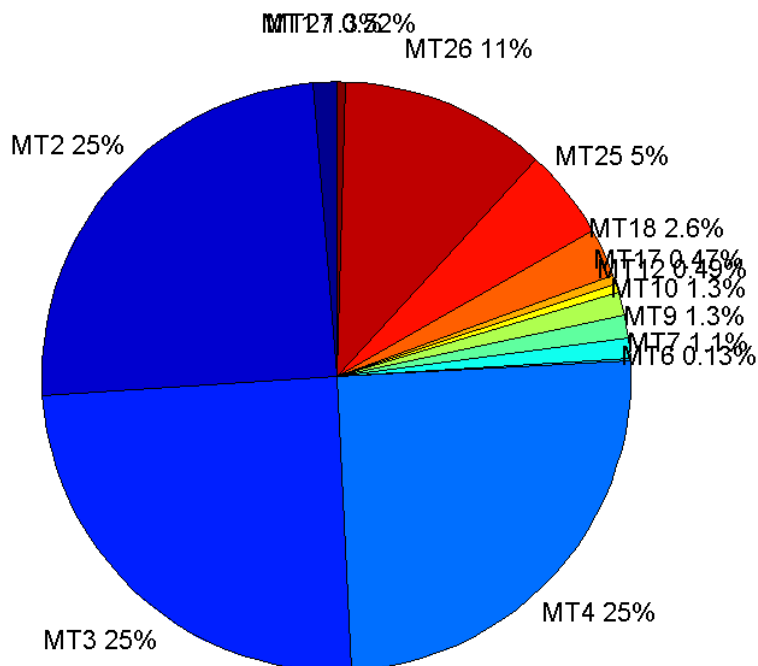
	number of messages	%
MT 0	0	0
MT 1	144	1.28732
MT 2	2770	24.7631
MT 3	2770	24.7631
MT 4	2801	25.0402
MT 5	0	0
MT 6	15	0.134096
MT 7	124	1.10853
MT 9	142	1.26944
MT 10	142	1.26944
MT 12	55	0.491686
MT 17	53	0.473807
MT 18	291	2.60147
MT 24	0	0
MT 25	560	5.00626
MT 26	1261	11.273
MT 27	58	0.518505
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	11186	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	320	99.7063	27	0	0
MT 2	4	230	5.16432	682	2	7
MT 3	4	231	5.16612	690	1	10
MT 4	4	235	5.1075	661	1	5
MT 5	--	--	--	--	--	--
MT 6	1	5169	693.5	3	3	3
MT 7	76	321	112.927	34	0	5
MT 9	76	320	98.9929	0	0	0
MT 10	76	320	99.0496	27	0	2
MT 12	190	581	253.296	54	14	14
MT 17	188	979	266.654	0	0	0
MT 18	4	328	49.0828	1	0	0
MT 24	--	--	--	--	--	--
MT 25	4	312	25.585	0	0	0
MT 26	4	236	11.3508	0	0	0
MT						

27	192	580	239.895	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

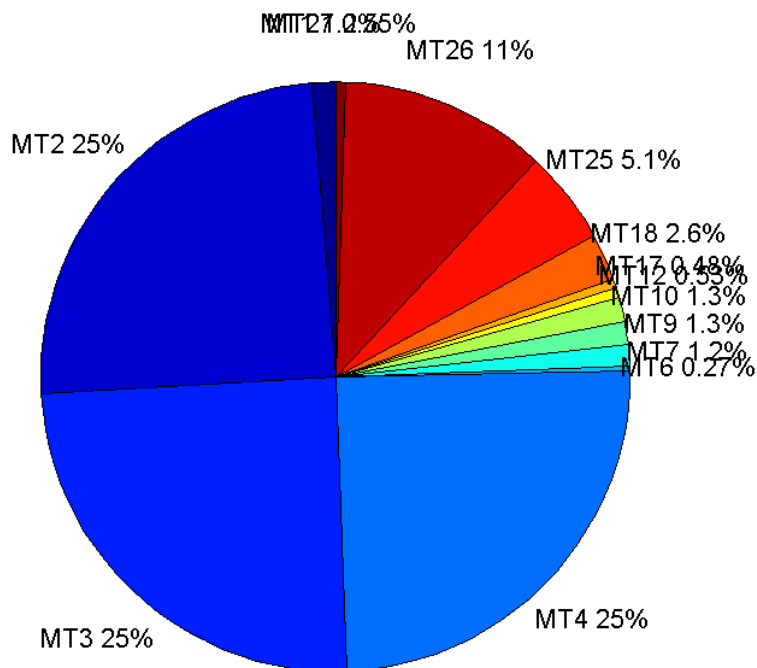
	number of messages	%
MT 0	0	0
MT 1	141	1.24989
MT 2	2780	24.6432
MT 3	2792	24.7496
MT 4	2782	24.6609
MT 5	0	0
MT 6	30	0.265934
MT 7	133	1.17897
MT 9	142	1.25875
MT 10	149	1.3208
MT 12	60	0.531868
MT 17	54	0.478681

MT 18	296	2.62388
MT 24	0	0
MT 25	576	5.10593
MT 26	1284	11.382
MT 27	62	0.549597
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	11281	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	315	101.121	28	0	0
MT 2	4	17	5.14682	734	0	4
MT 3	4	17	5.12469	716	0	4
MT 4	4	18	5.14347	721	0	5
MT 5	--	--	--	--	--	--
MT 6	1	5169	343.276	7	7	7
MT 7	75	397	107.462	33	1	4
MT 9	76	397	101	0	0	0
MT 10	76	322	96.3784	23	0	3
MT 12	186	587	234.966	59	11	11
MT 17	190	780	261.434	0	0	0
MT 18	4	189	48.3559	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	113	24.8522	0	0	0
MT 26	4	56	11.1309	0	0	0
MT 27	189	401	230.508	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/2017_02_24EGNOS2Hz/01_User/01_User
Outputfile	System	D:/PegasusDateJob/job/2017_02_24EGNOS2Hz/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: 09:28:17 24.02.2017 (week: 1937 sec: 466097)
end: 13:26:45 24.02.2017 (week: 1937 sec: 480405)
duration: 03:58:29 ..

quality

valid samples 25813
total samples 26522

Event tables

Position discontinuity events type long
APV-I discontinuity events type long
APV-35m discontinuity events type independent
LPV-200 discontinuity events type independent
CAT-I discontinuity events type nothing

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	477928	1.86456	11.9132	0.156512	0.125607	15.928	0.00788592
max normVer	479084	0.912099	18.2937	0.0498587	1.77263	17.3139	0.102382
max HPE	475825	3.4154	64.5926	0.052876	4.34913	117.383	0.0370507
max VPE	476127	1.74535	88.2878	0.0197688	-4.79504	171.449	0.0279677
min HPL	472929	1.20031	9.40917	0.127568	0.0869829	15.4318	0.0056366
min VPL	467446	0.773928	10.593	0.0730604	-0.78836	14.1727	0.0556252

Position discontinuity events :

#	Epoch	duration	stable period
1	467464	5.5	260.5
2	469075	8.5	144.5
3	469213	108.5	21.5
4	471286	40.5	291

APV-I discontinuity events :

#	Epoch	duration	stable period
1	467464	10	260.5
2	468923	77.5	43.5
3	469036	5.5	35.5
4	469075	12.5	33.5
5	469213	1282.5	21.5
6	470595	127.5	5.5
7	471176	5.5	2.5
8	471246	121.5	64.5
9	471419	5.5	51.5
10	471900	5.5	12.5
11	473767	6.5	7.5
12	473775	6.5	1.5
13	473806	40.5	12.5
14	474999	79.5	423.5
15	475430	13.5	351.5
16	477131	5.5	283.5
17	479197	5.5	269
18	479636	79.5	113.5

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	467464	10	260.5
2	468923	77.5	43.5

3	471246	121.5	64.5
4	471419	5.5	51.5
5	474781	10.5	205.5
6	474999	79.5	175.5
7	475430	13.5	114.5
8	475503	270.5	22.5
9	476073	98.5	48.5
10	476197	40.5	25.5
11	476336	27.5	24.5
12	476471	33.5	75.5
13	477131	5.5	120.5
14	478600	9.5	148.5
15	479197	5.5	170.5
16	479636	79.5	113.5

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	467464	10	260.5
2	468923	77.5	43.5
3	471246	121.5	64.5
4	471419	5.5	51.5
5	474781	10.5	205.5
6	474999	79.5	175.5
7	475430	13.5	114.5
8	475503	270.5	22.5
9	476073	98.5	48.5
10	476197	40.5	25.5
11	476336	27.5	24.5
12	476471	33.5	75.5
13	477131	5.5	120.5
14	478600	9.5	148.5
15	479197	5.5	170.5
16	479636	79.5	113.5

First Glance analysis

Duration	14309
Number of Samples	26522
Number of invalid sample	709
Number of no position solution samples	829
Number of missing sample	2096
Logging Loss	7.3241
Processing Loss	2.6733
Number of Misleading Information	0
Data gaps	8
Discontinuities	38

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
24984	21768	20094	0	20094

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.588	1.55427	1.53336	NaN	1.53336
HPEscale 95%	NaN	5.10544	5.13957	NaN	5.13957
VPE 95%	1.46651	1.47772	1.44027	NaN	1.44027
VPEscale 95%	NaN	3.24225	2.29703	NaN	2.29703

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.967884	0.843296	0.778445	0	0.778445
measurements	0.94201	0.820753	0.757635	0	0.757635
Operational	1.74603	1.52128	1.40429	0	1.40429

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	31	50	119	--	119
Long	4	18	39	--	39
Independent	4	12	16	--	16
P(disc.)	0.00240154	0.00826902	0.0119439	NaN	0.0119439
P(slide)	0.0181116	0.031629	0.0564348	NaN	0.0564348

Integrity events :

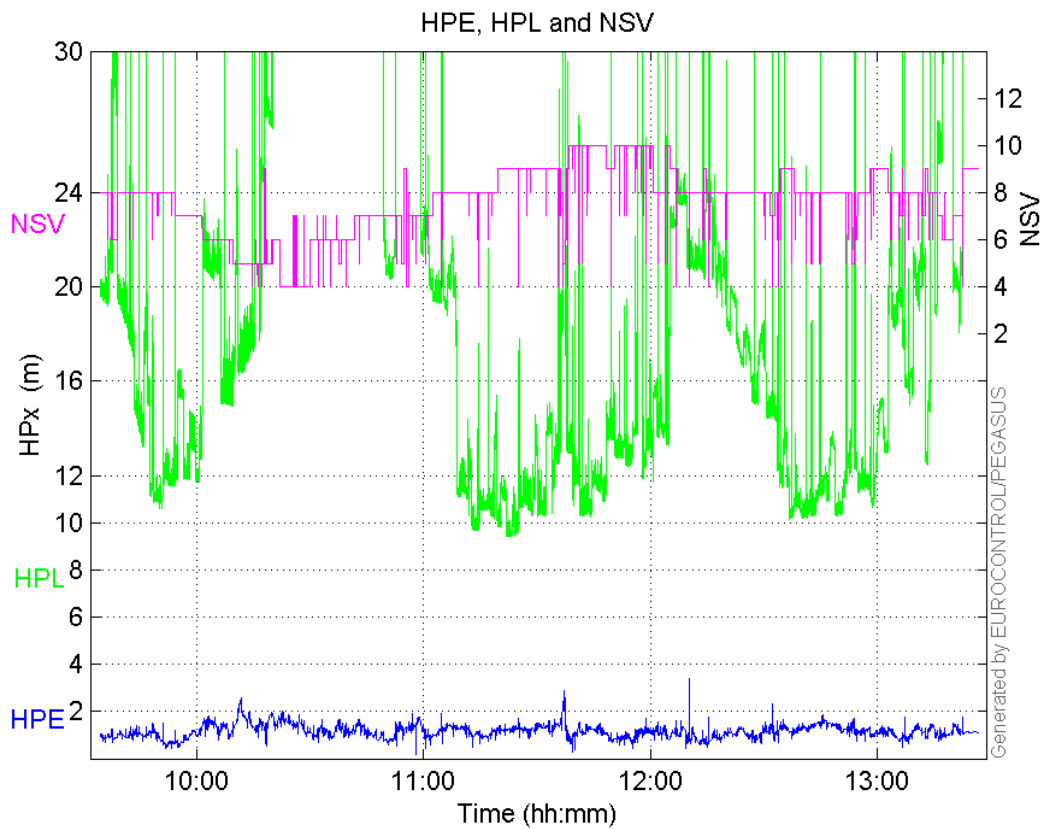
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

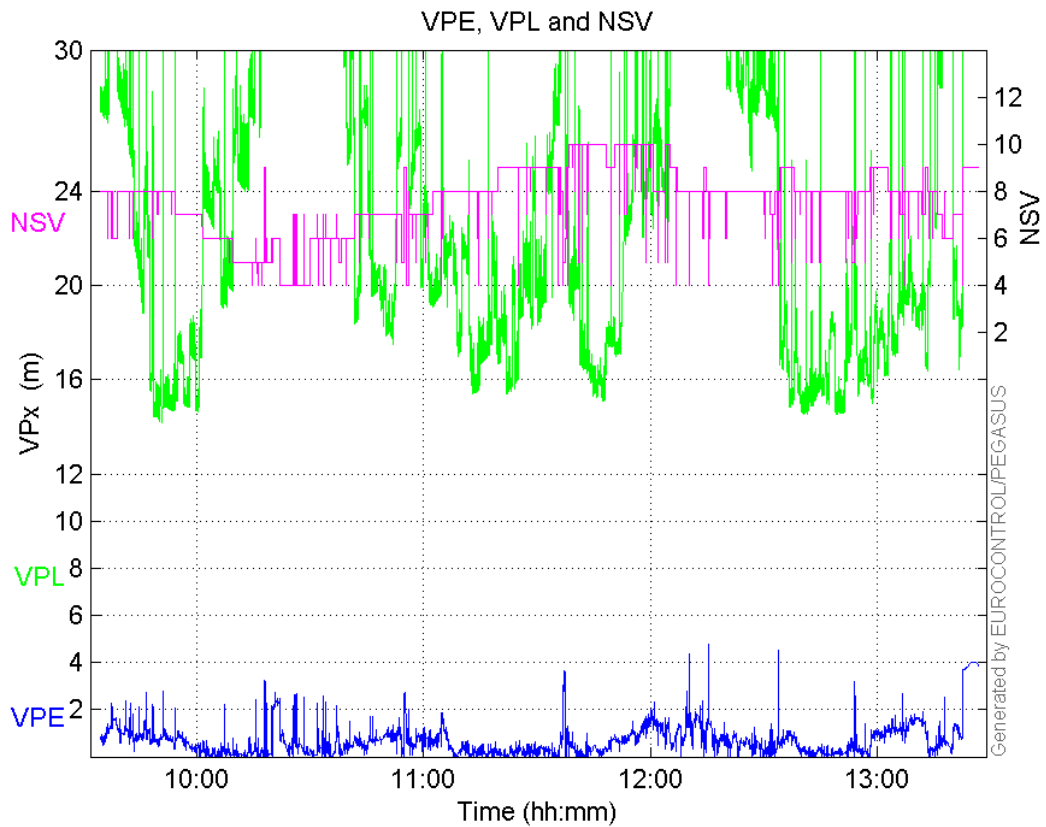
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	24984	21768	20094	0	20094
SIS Availability	0.967884	0.843296	0.778445	0	0.778445
Local Availability	0.94201	0.820753	0.757635	0	0.757635
Operational Availability	1.74603	1.52128	1.40429	0	1.40429
HPE 95%	1.588	1.55427	1.53336	NaN	1.53336
HPEscale 95%	NaN	5.10544	5.13957	NaN	5.13957
VPE 95%	1.46651	1.47772	1.44027	NaN	1.44027
VPEscale 95%	NaN	3.24225	2.29703	NaN	2.29703
All Discontinuity Events	31	50	119	--	119
Long Discontinuity Events	4	18	39	--	39
Independent Discontinuity Events	4	12	16	--	16
P(discontinuity)	0.00240154	0.00826902	0.0119439	NaN	0.0119439
P(sliding window)	0.0181116	0.031629	0.0564348	NaN	0.0564348
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

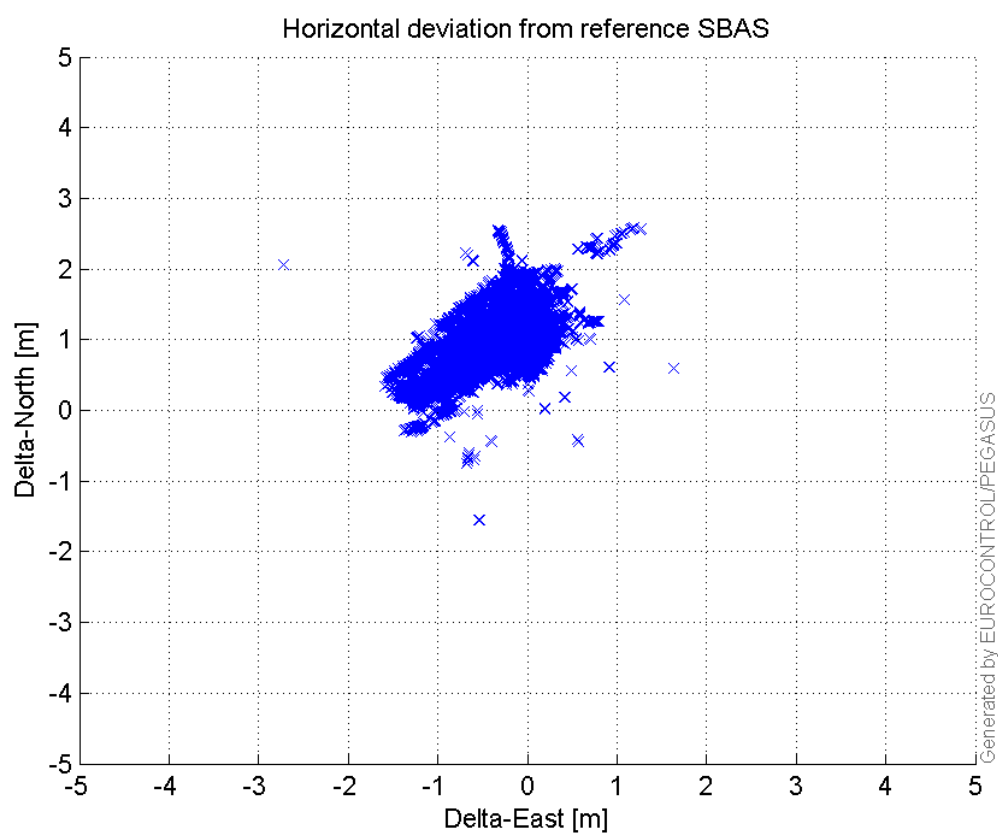
HPE, HPL and NSV:



VPE, VPL and NSV:

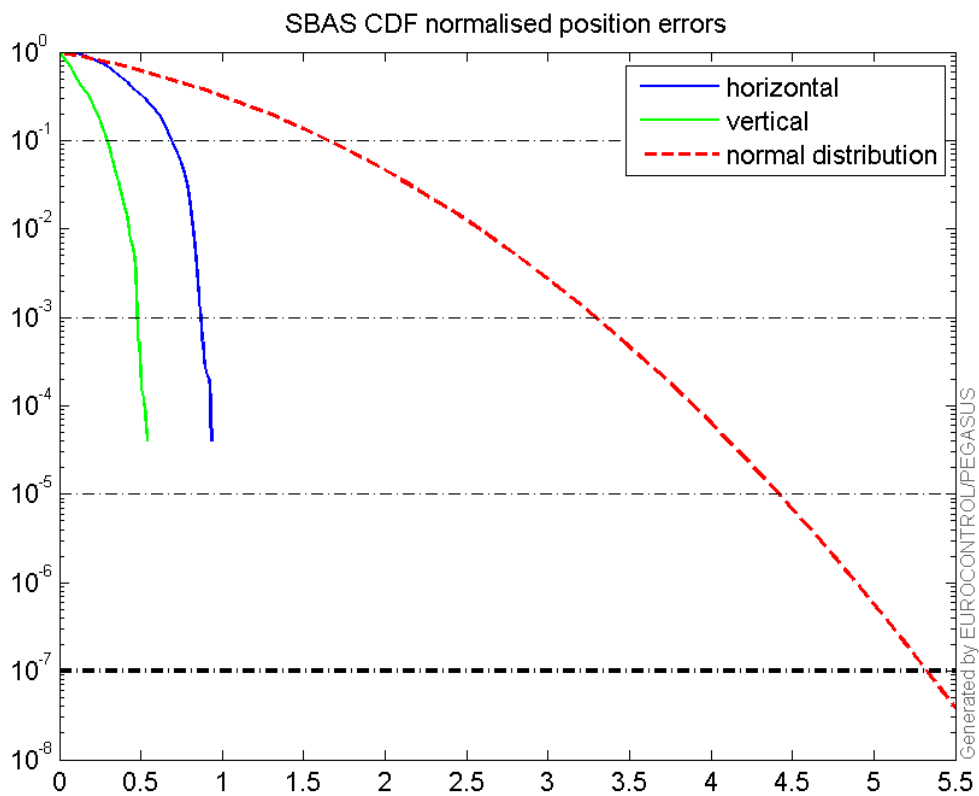


Horizontal deviation

Horizontal deviation from reference SBAS:

CDF position

SBAS CDF position domain:



Statistics

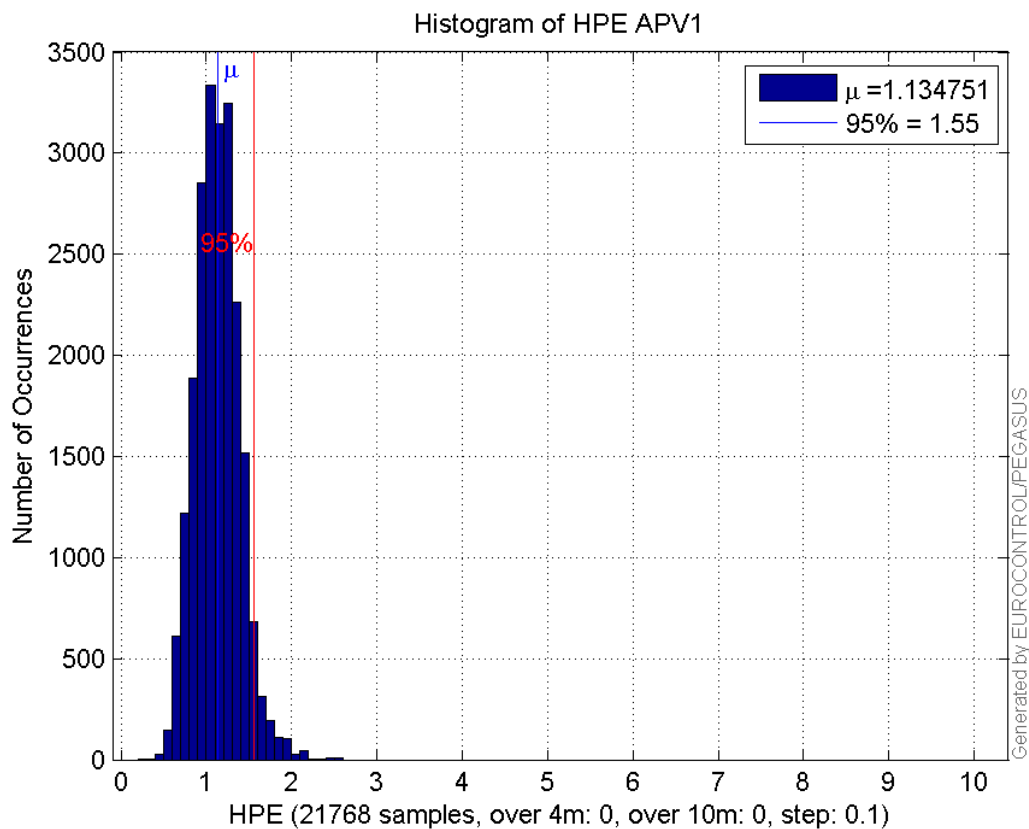
number	21768
sum	24701.256
sum2	29491.173
prctile95	1.5542738
prctile99	1.8867454
number	21768
sum	13365.049
sum2	12622.197
prctile95	1.4777173
prctile99	1.7522274
number	21768
sum	369773.84
sum2	7154405.3
prctile95	31.84644
prctile99	36.743592
number	21768
sum	495648.73
sum2	12354862
prctile95	37.76744
prctile99	42.95324
number	21768
sum	1633.7413
sum2	141.39802
prctile95	0.12763601
prctile99	0.13731341
number	21768
sum	604.4411
sum2	25.658159

prctile95 0.064844925
prctile99 0.080858214
number 20094
sum 22874.877
sum2 27323.562
prctile95 1.5333563
prctile99 1.8454375
number 20094
sum 11971.667
sum2 11006.099
prctile95 1.4402655
prctile99 1.7117314
number 20094
sum 329294.61
sum2 6155837.9
prctile95 31.91016
prctile99 36.983744
number 20094
sum 429541.92
sum2 9725699.2
prctile95 32.08748
prctile99 34.481536
number 20094
sum 1557.0548
sum2 137.54953
prctile95 0.12848931
prctile99 0.13770306
number 20094
sum 569.19485
sum2 24.626094
prctile95 0.065629394
prctile99 0.08151726

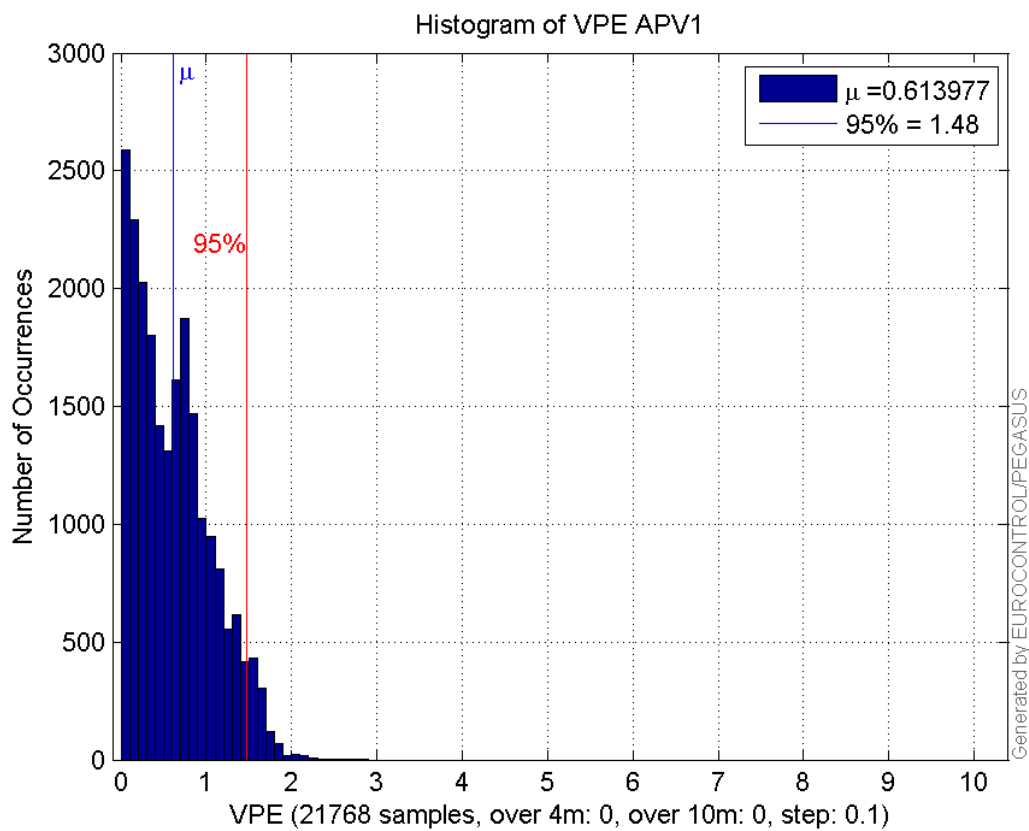
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.13475	0.259111	1.12542	1.55427	1.88675	1.16396
HPL	16.987	6.33313	15.1991	31.8464	36.7436	18.1292
VPE	0.613977	0.450436	0.563364	1.47772	1.75223	0.761479
VPL	22.7696	7.00837	20.3226	37.7674	42.9532	23.8237

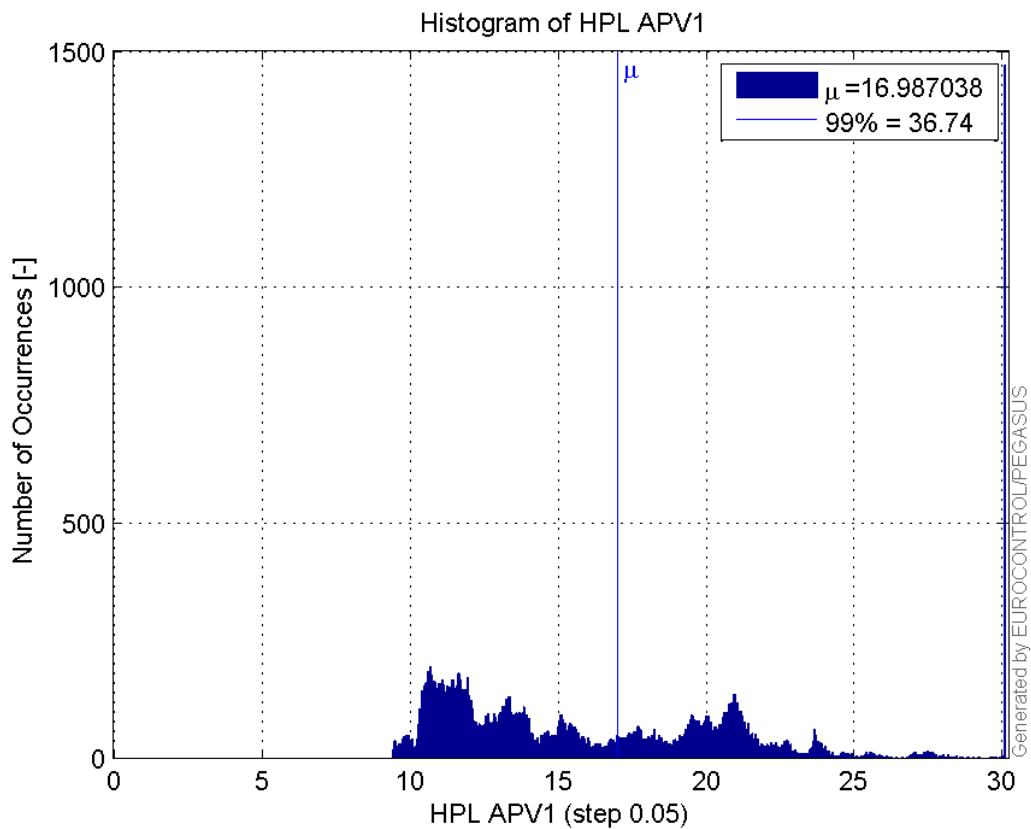
Histogram of HPE APV1:



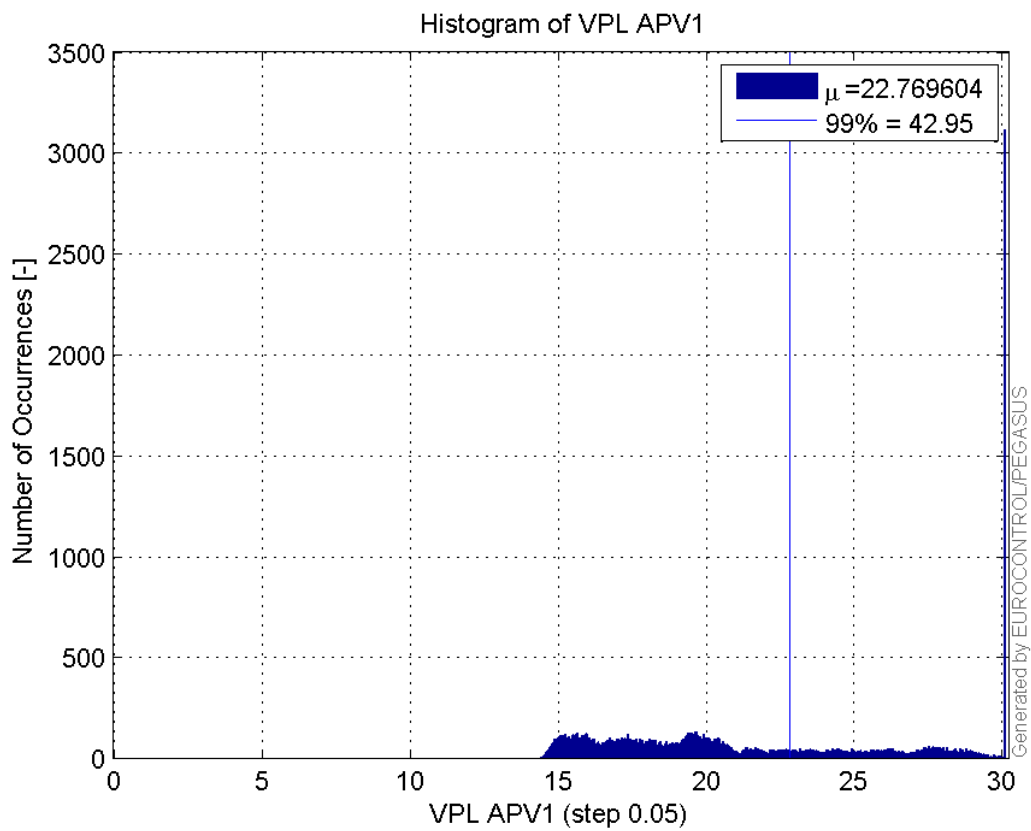
Histogram of VPE APV1:



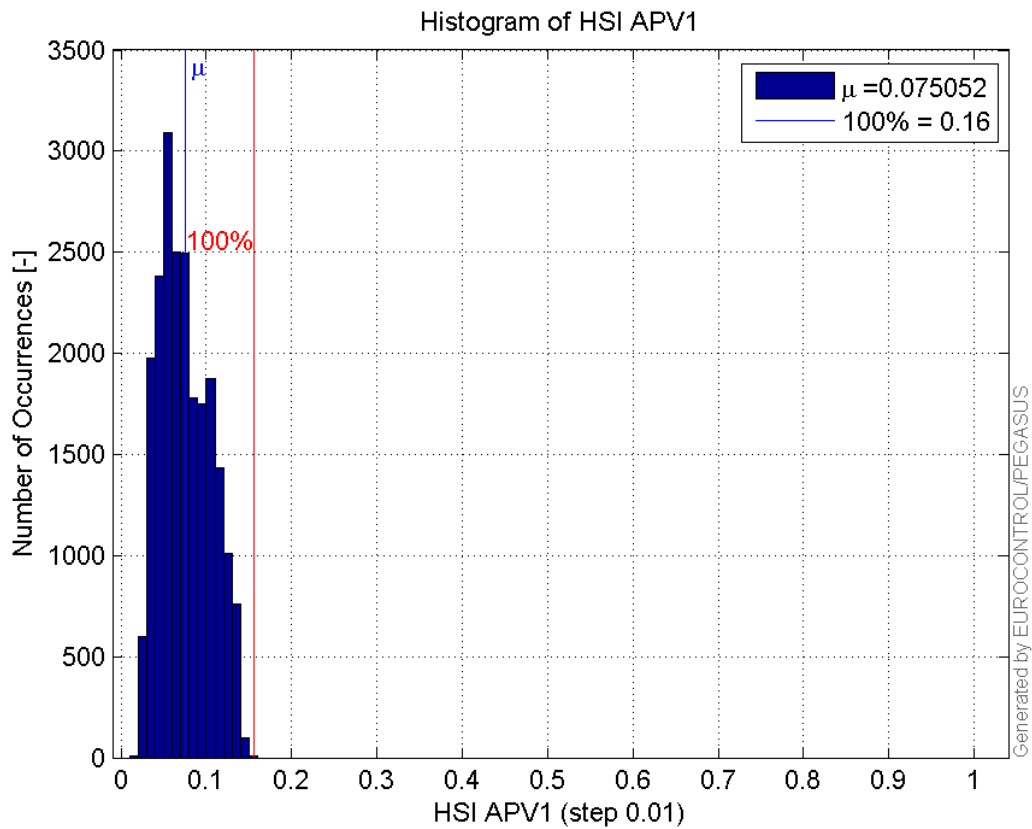
Histogram of HPL APV1:



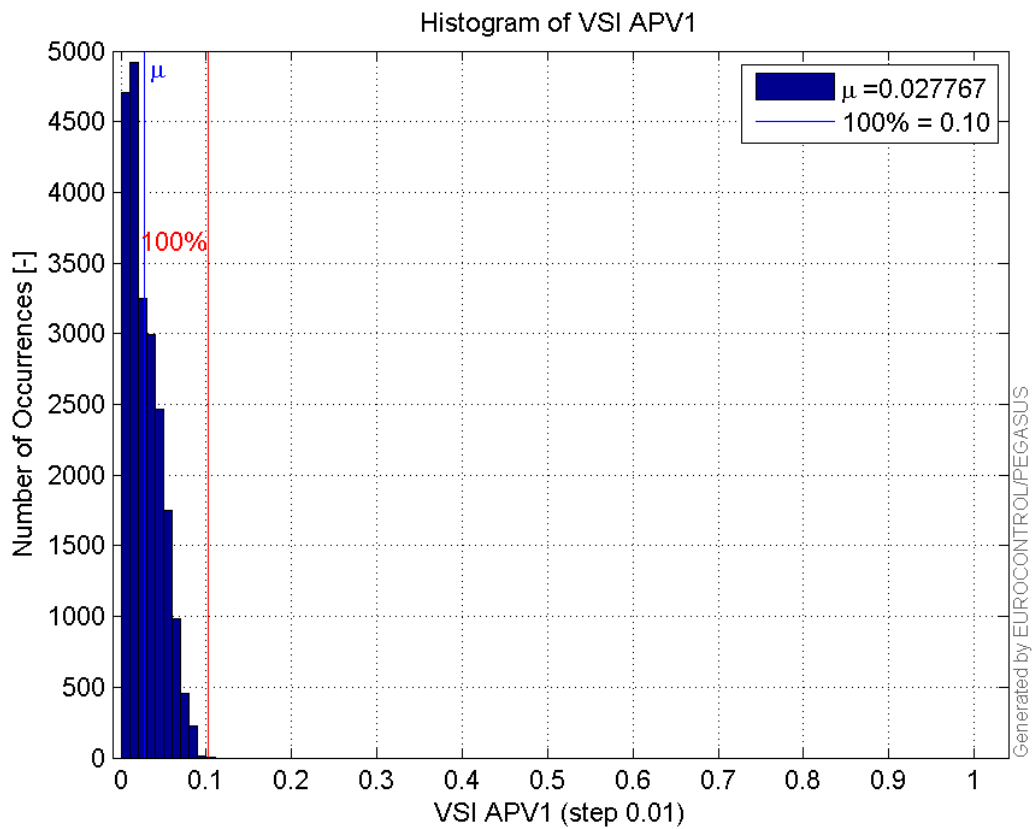
Histogram of VPL APV1:



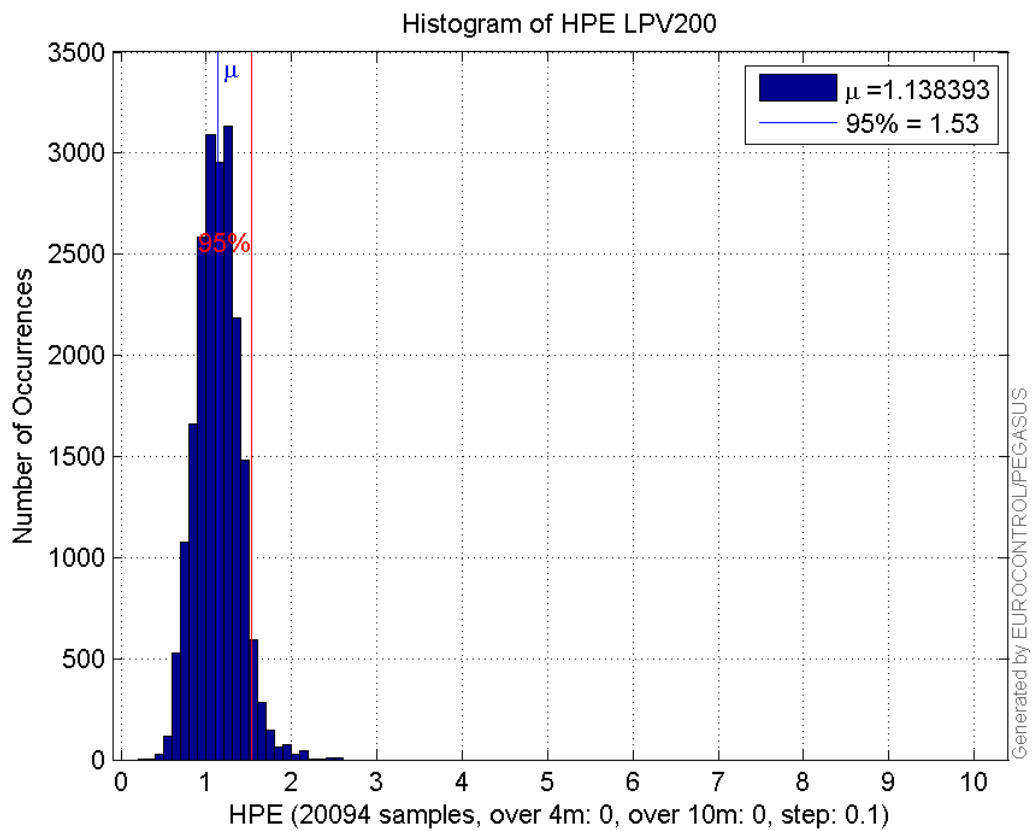
Histogram of HSI APV1:



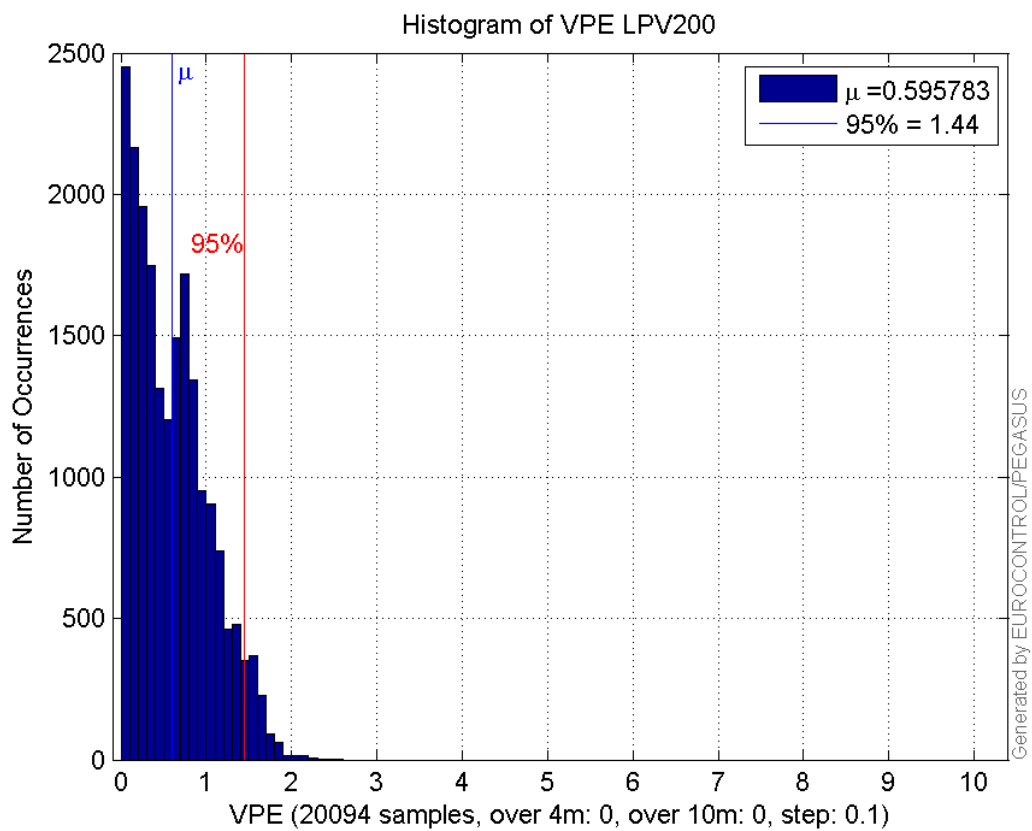
Histogram of VSI APV1:



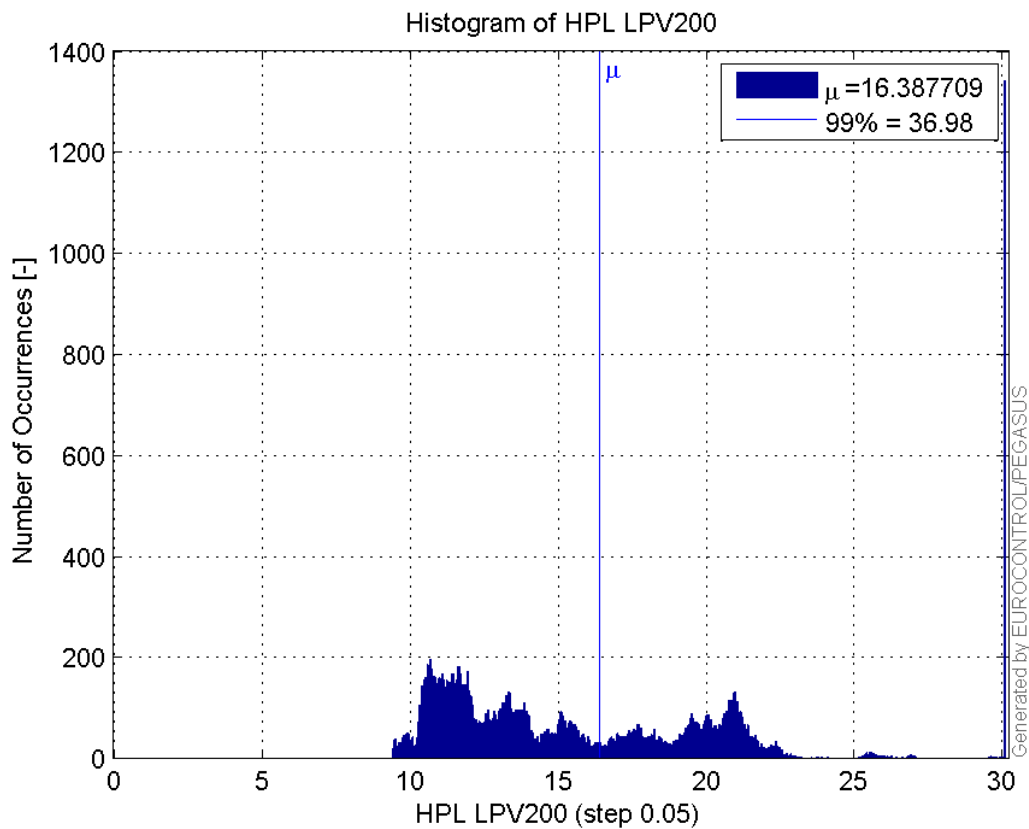
Histogram of HPE LPV200:



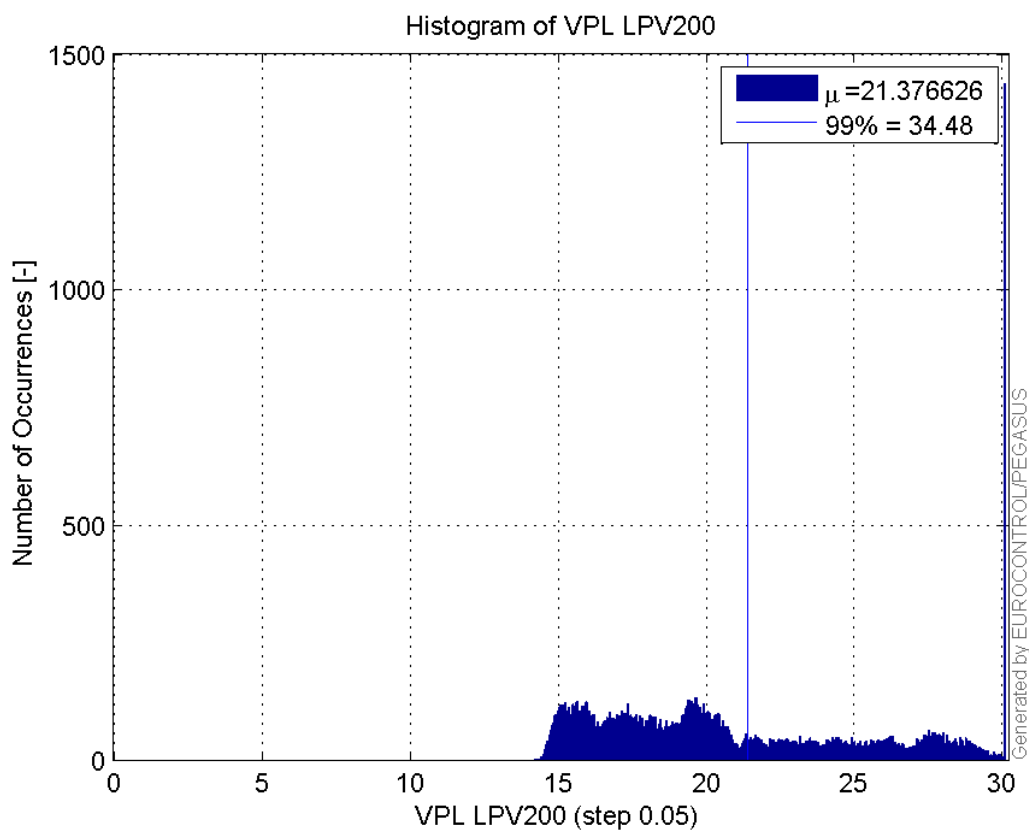
Histogram of VPE LPV200:



Histogram of HPL LPV200:

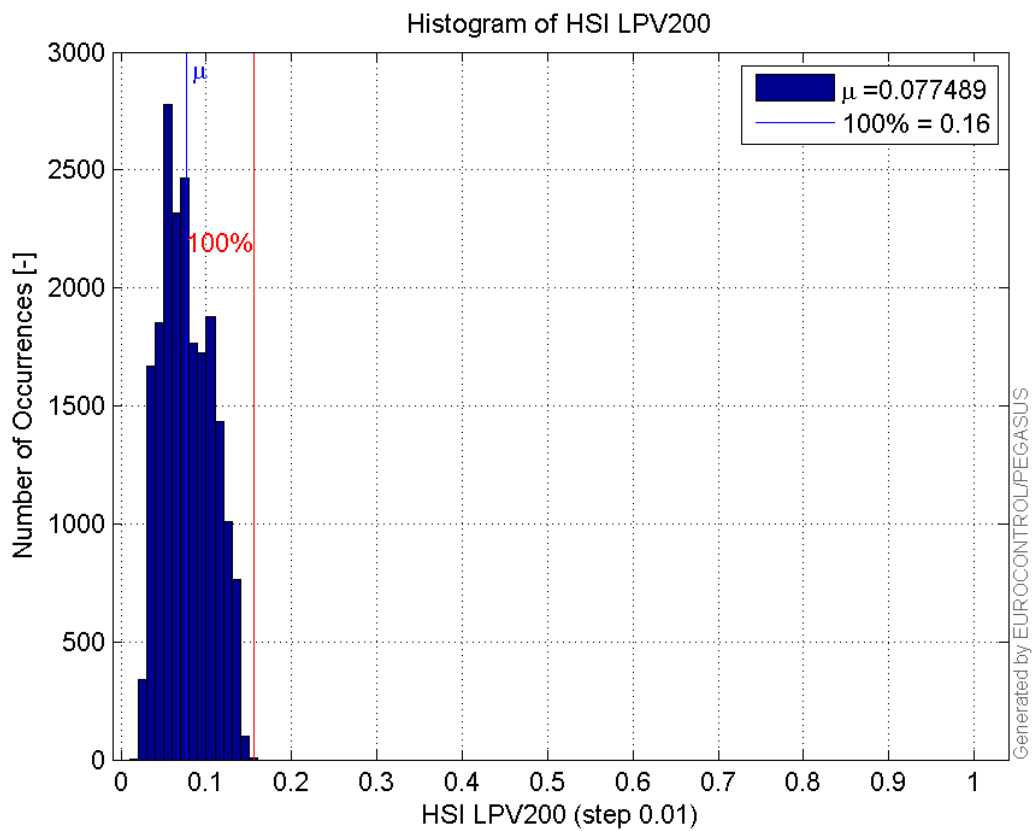


Histogram of VPL LPV200:

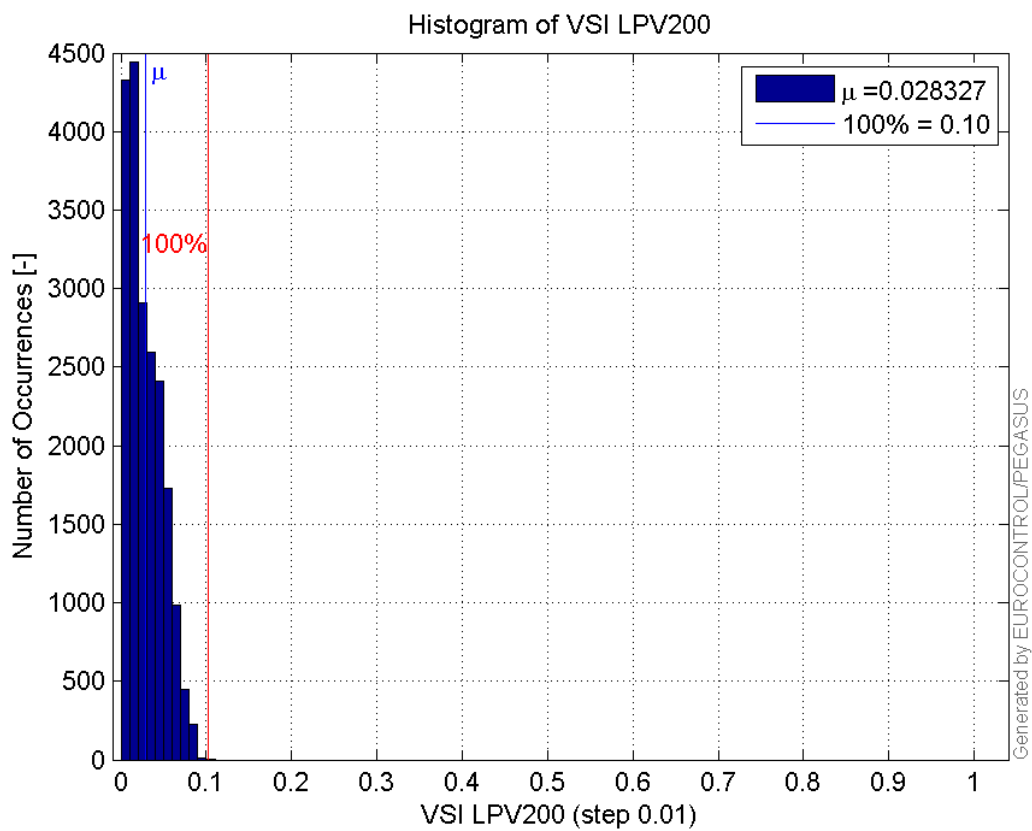


99%

Histogram of HSI LPV200:

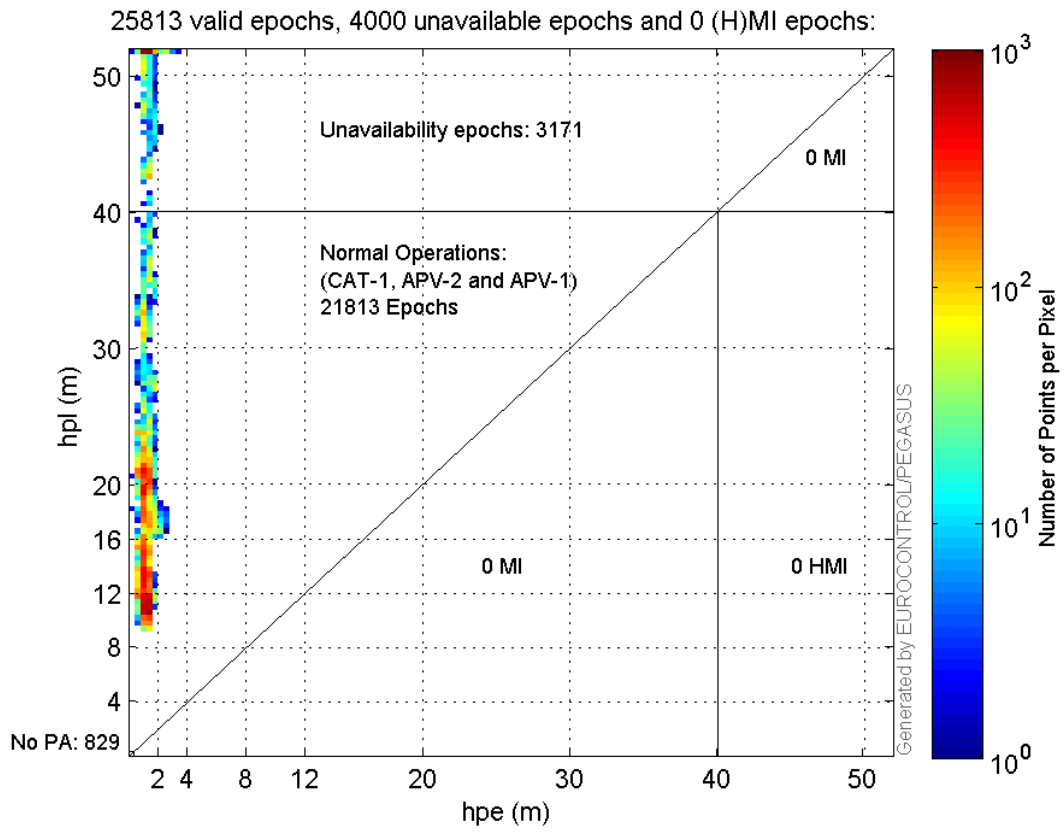


Histogram of VSI LPV200:

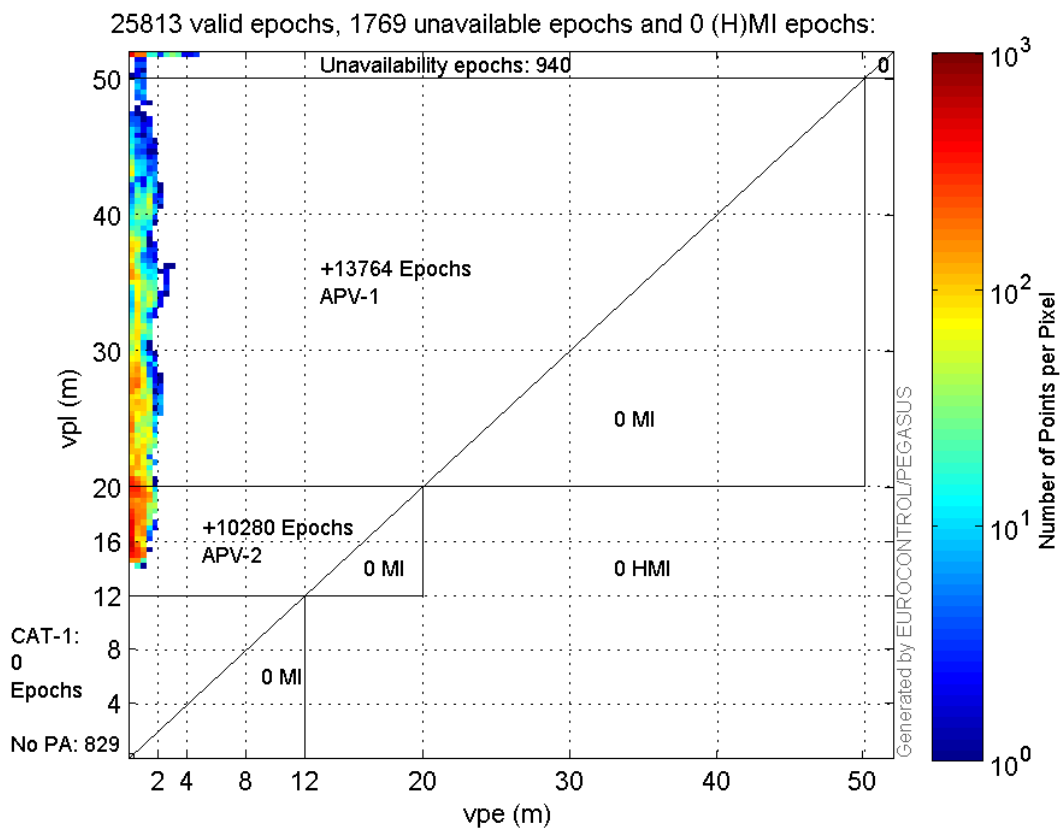


Stanford Plots

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/2017_02_24EGNOS2Hz/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2017_02_24EGNOS2Hz/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	236.2734
mi_numbers	results	0

Range Domain

start: 09:28:17 24.02.2017 (week: 1937 sec: 466097)
end: 13:26:45 24.02.2017 (week: 1937 sec: 480405)
duration: 03:58:29 ..

quality

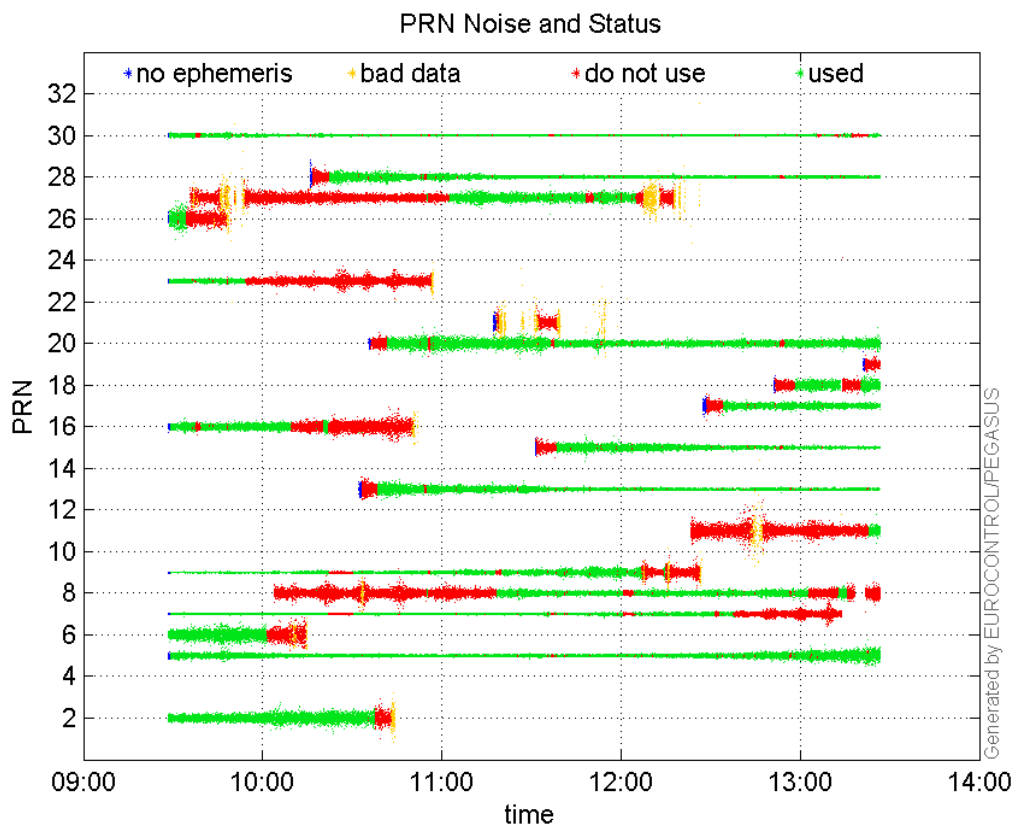
valid samples 26522
total samples 26522

PRN overview

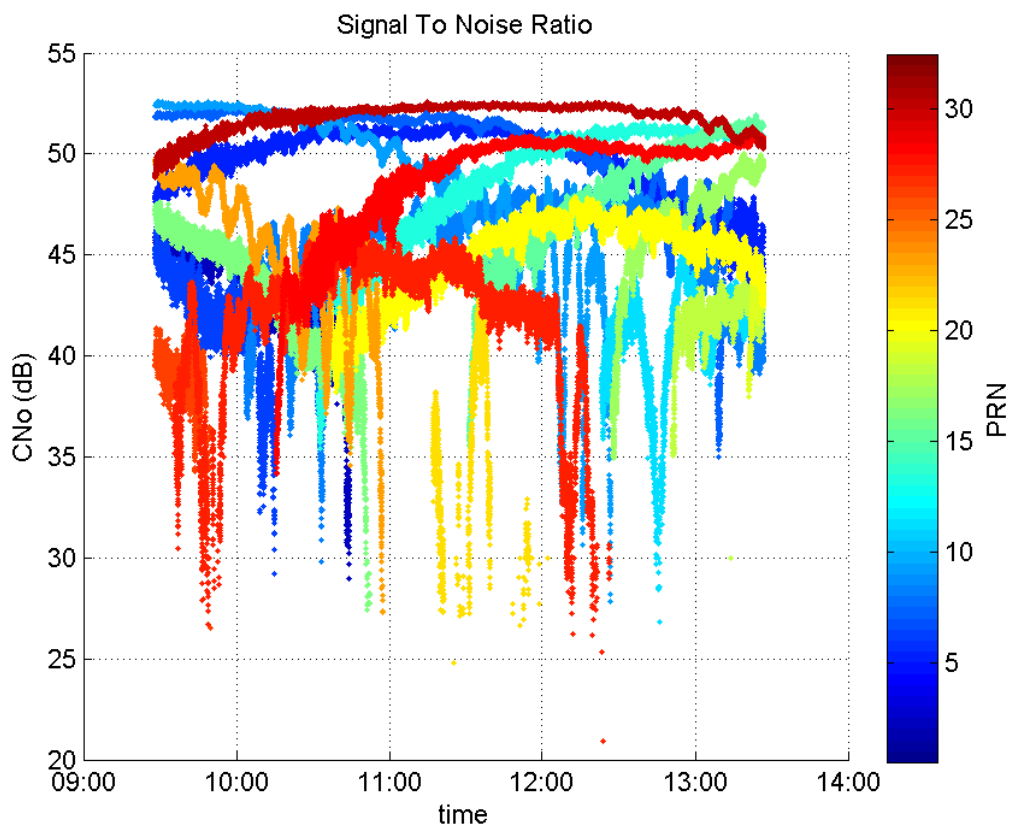
Number of Visible GPS Satellites 20
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



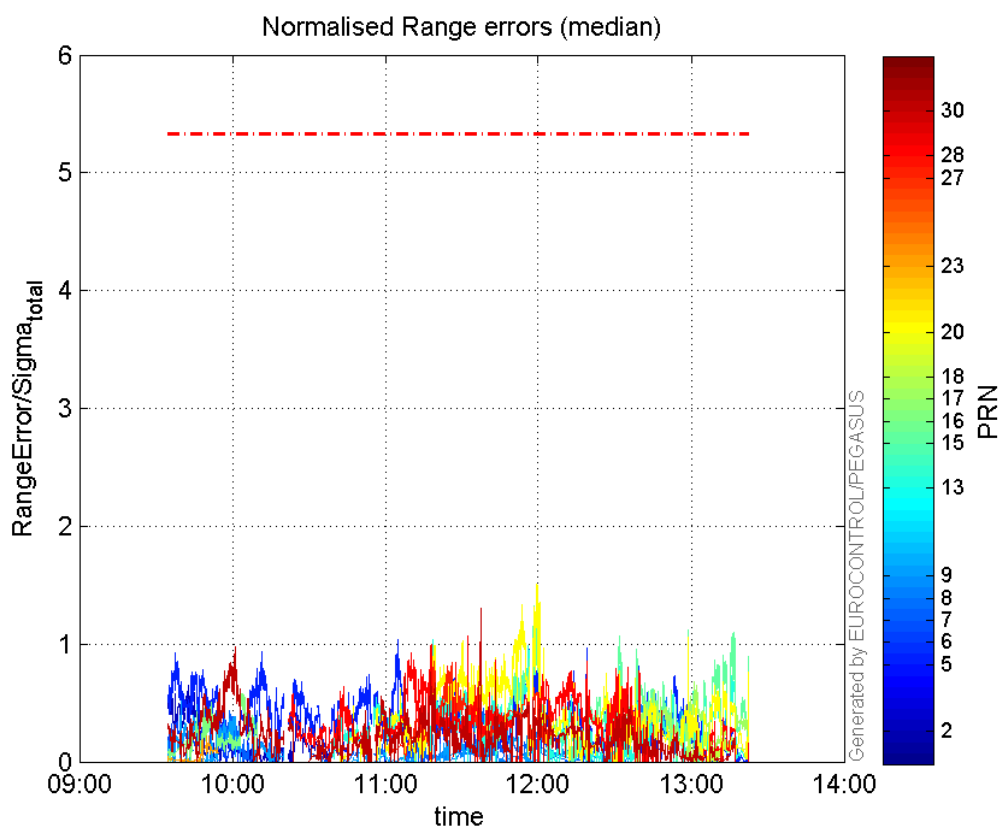
range errors

Number of Overbounding Norm Errors 0

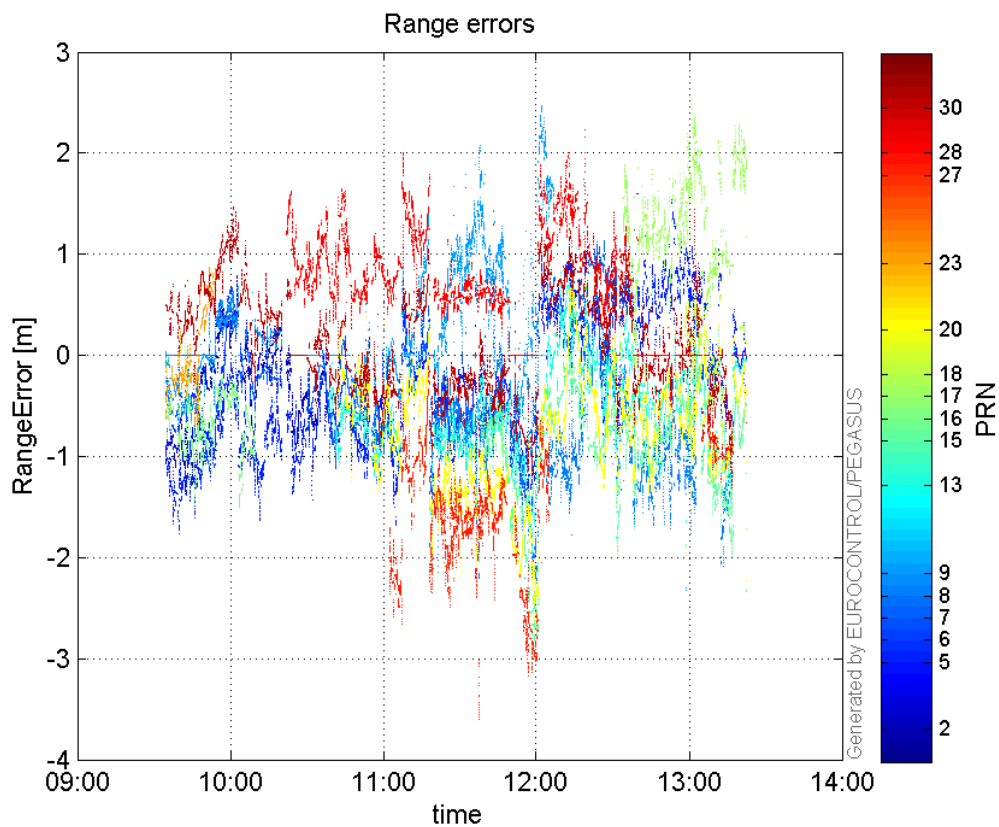
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1937	466970	2	0.646847	-1.30297	2.01434
1937	471889	5	1.03557	-1.63222	1.57617
1937	467526	6	0.485089	-1.23877	2.55369
1937	472754	7	0.911162	-1.44453	1.58537
1937	478731	8	0.607082	-2.32246	3.82561
1937	466786	9	0.518347	-1.05717	2.0395
1937	475108	13	1.30942	-1.95931	1.49631
1937	475108	15	1.32836	-2.945	2.21701
1937	468219	16	0.579108	-1.39759	2.41334
1937	478869	17	0.676427	2.52794	3.7372
1937	480151	18	0.665299	-1.71069	2.57131
1937	475172	20	1.50455	-2.63101	1.74871
1937	467382	23	0.22402	0.726965	3.24508
1937	473852	27	1.0145	-3.60095	3.54948
1937	473544	28	1.06419	1.65373	1.55398
1937	473849	30	1.30574	-1.88606	1.44444

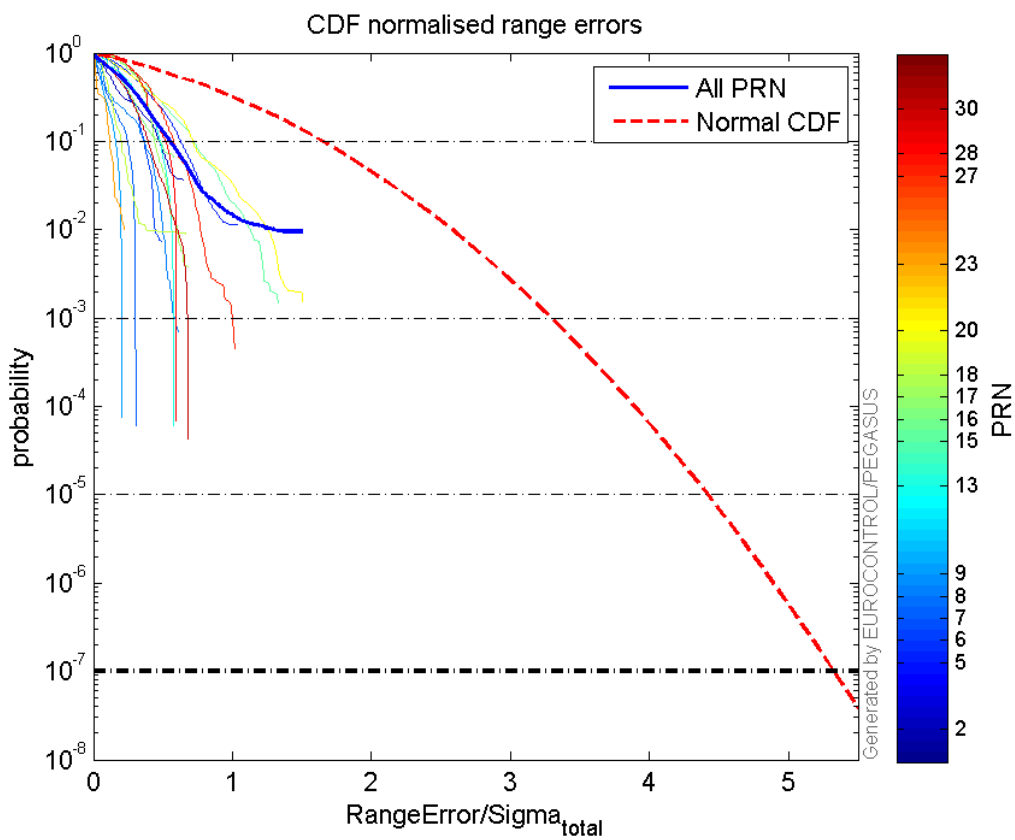
Normalised Range errors (median):



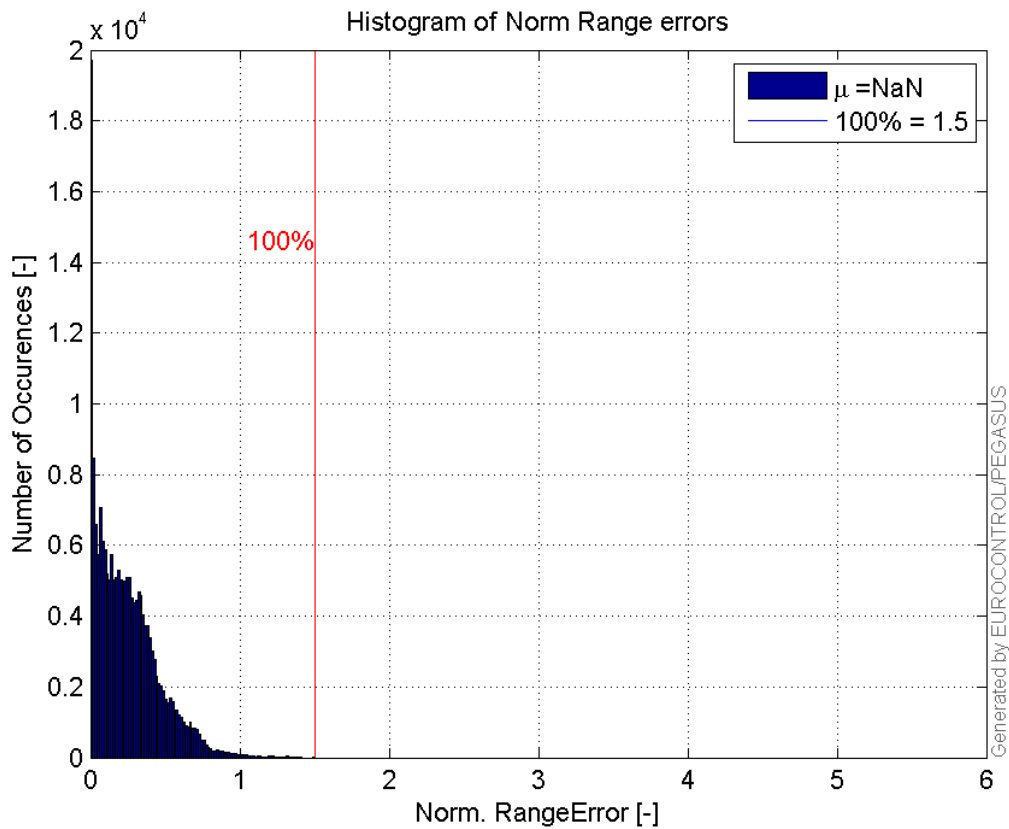
Range errors:



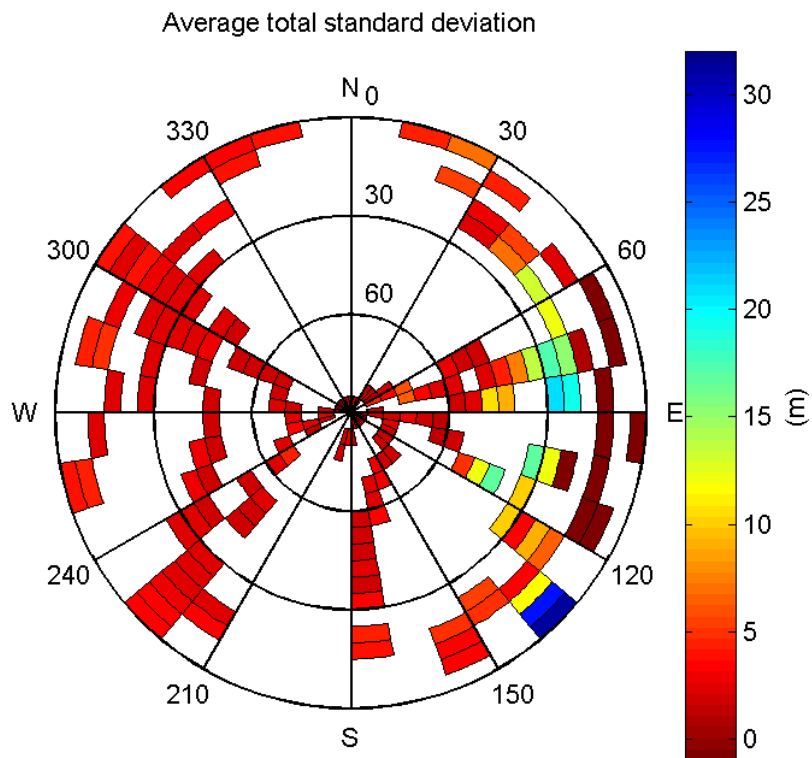
CDF normalised range errors:



Histogram of Norm Range errors:

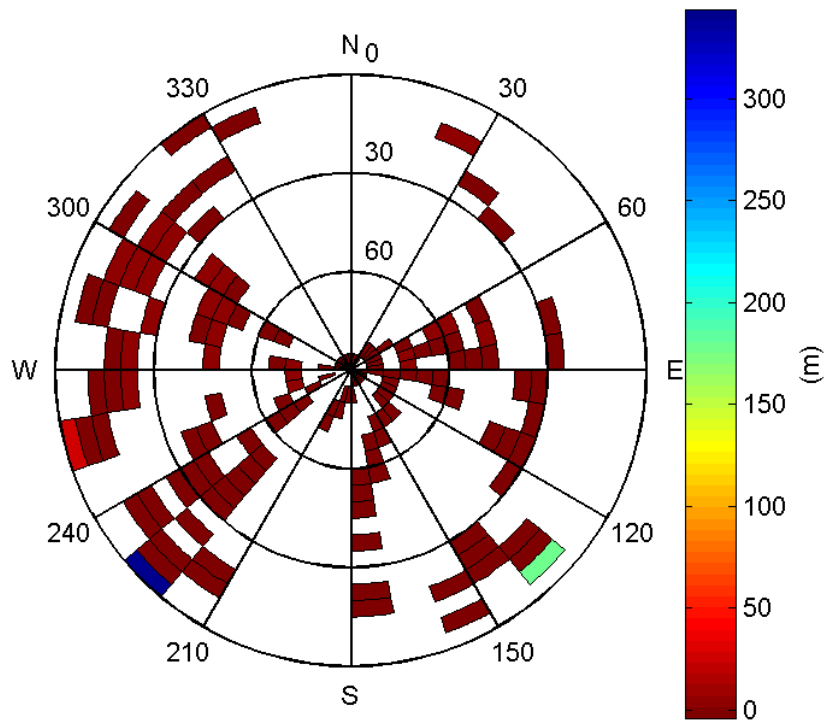


Sigma Sky Plot:



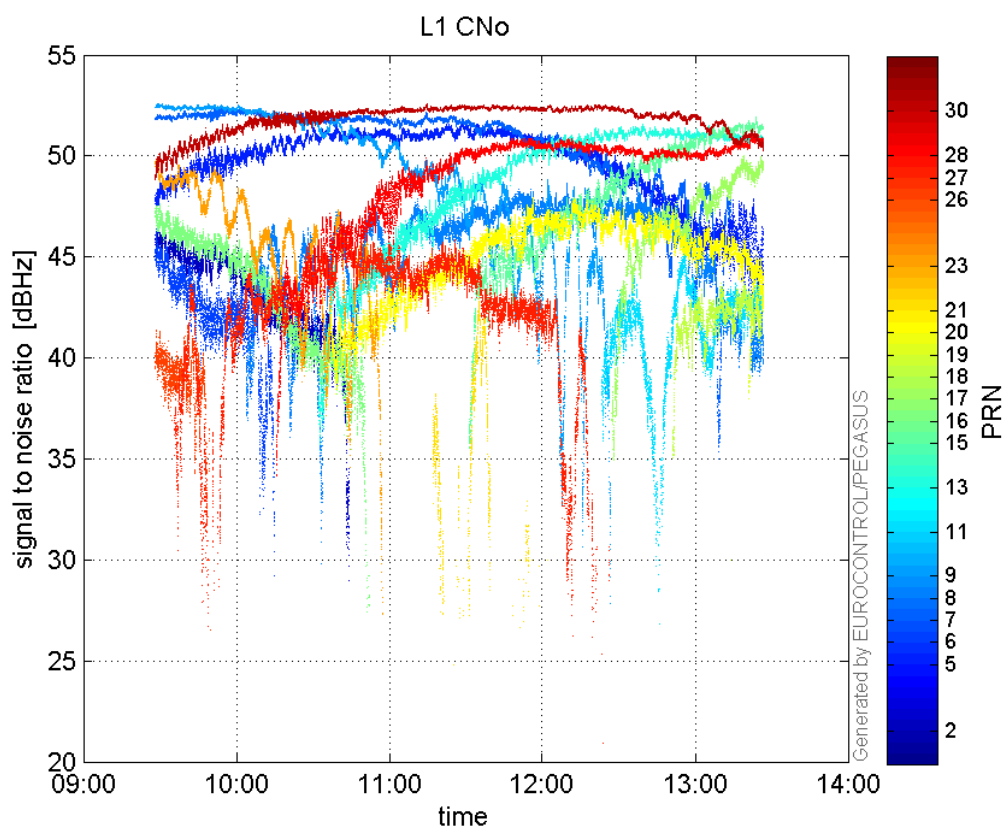
Norm Error Sky Plot:

Maximum Range Error

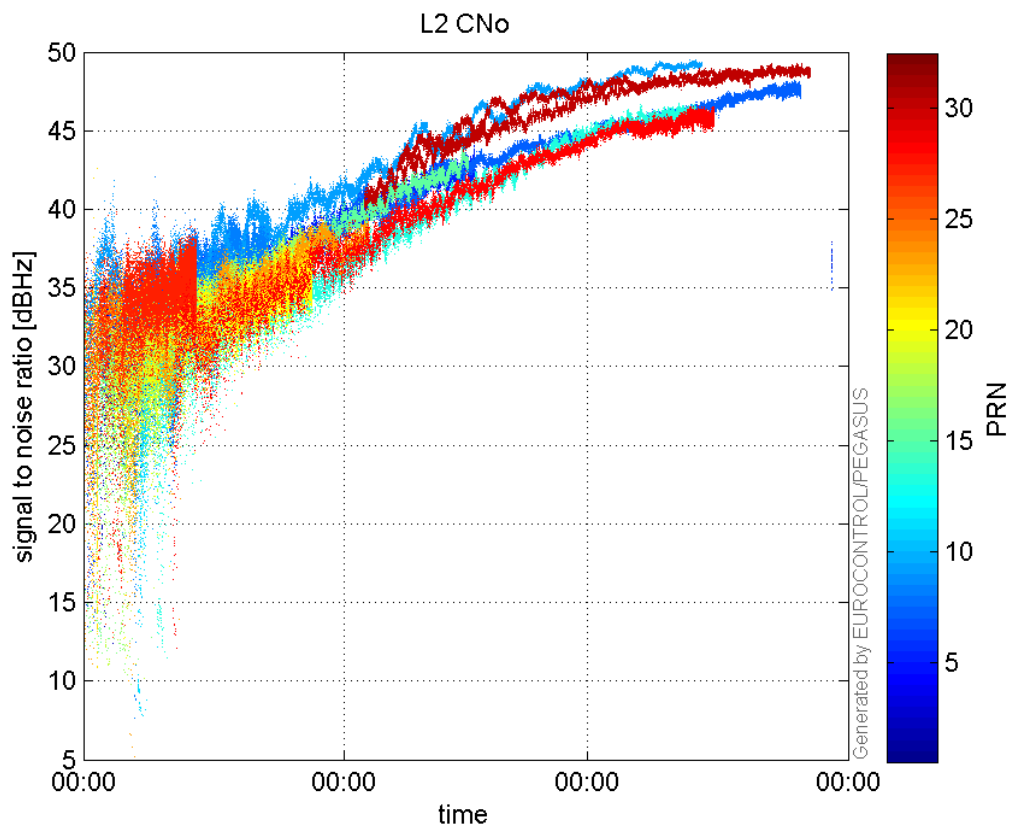


signal quality

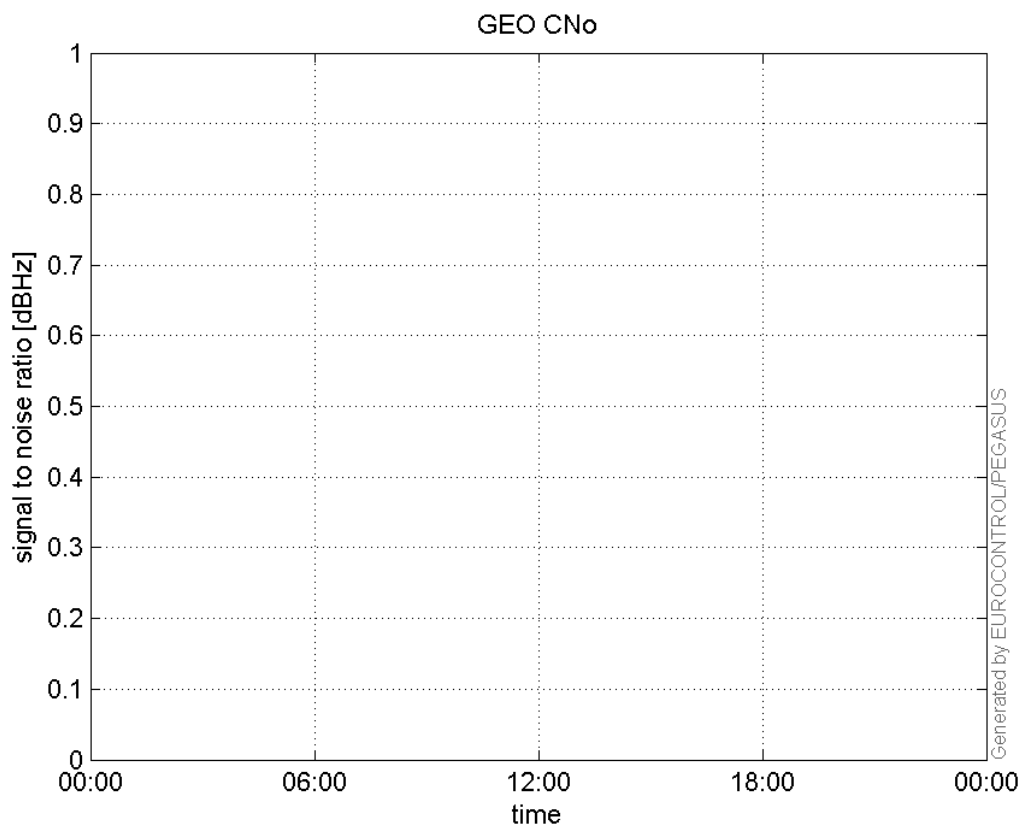
L1 CNo:



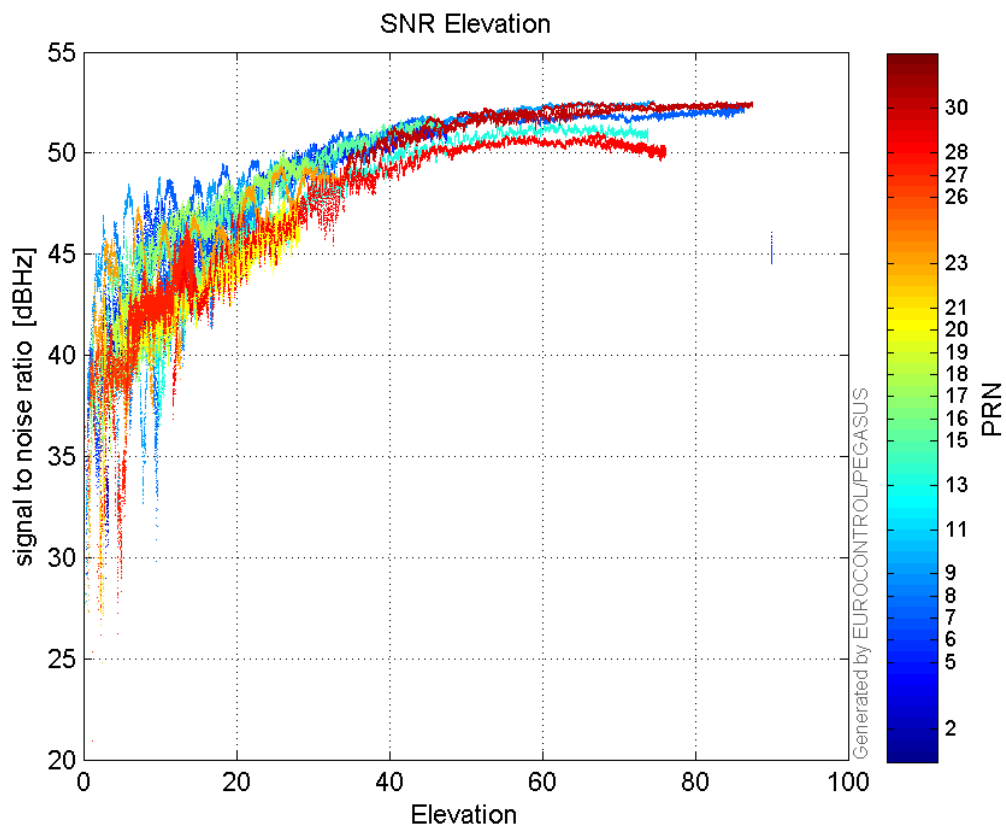
L2 CNo:



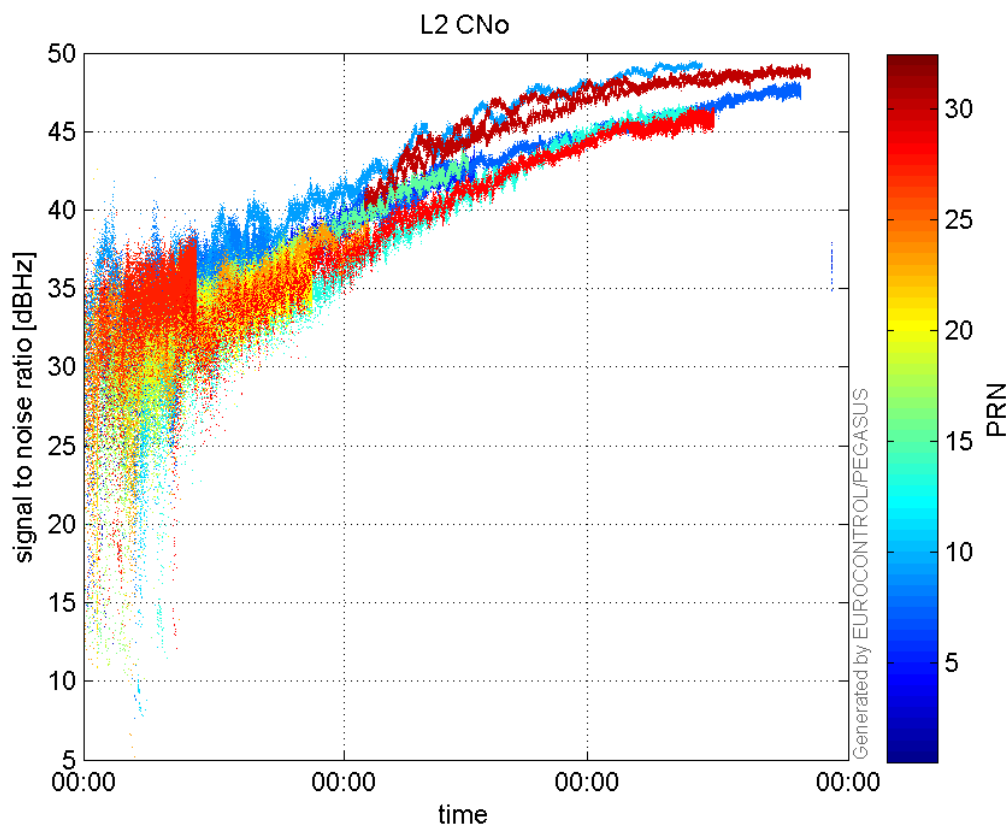
GEO CNo:



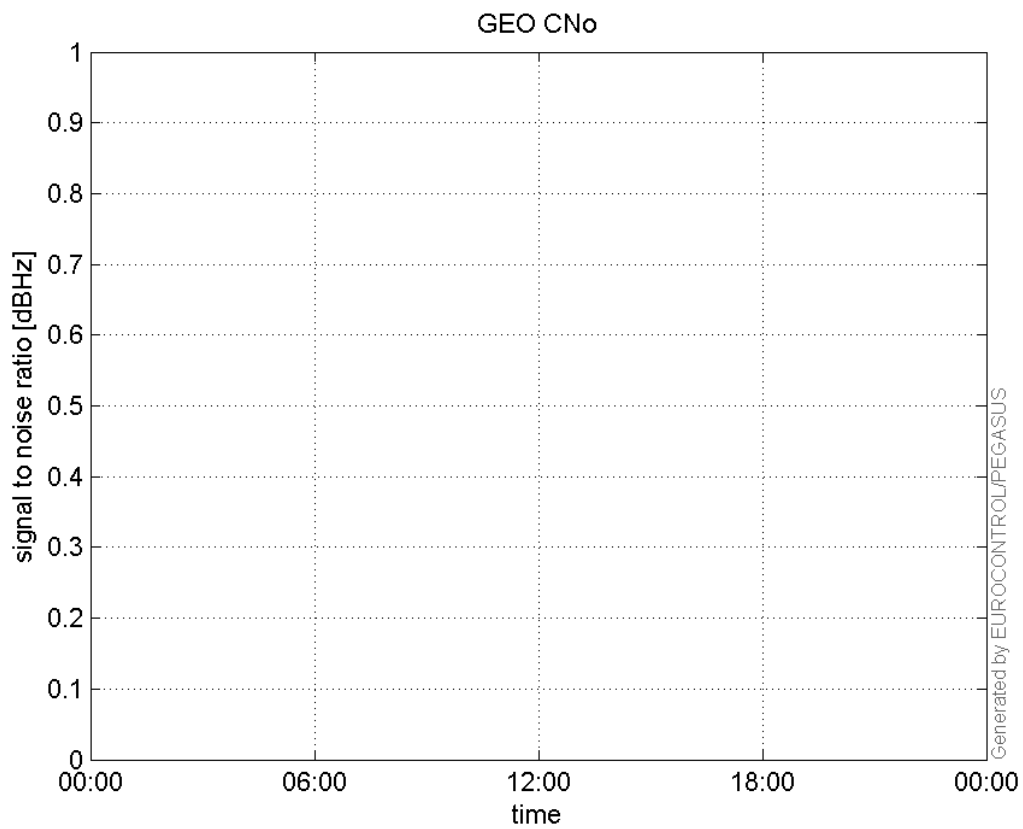
SNR Elevation:



L2 CNo:

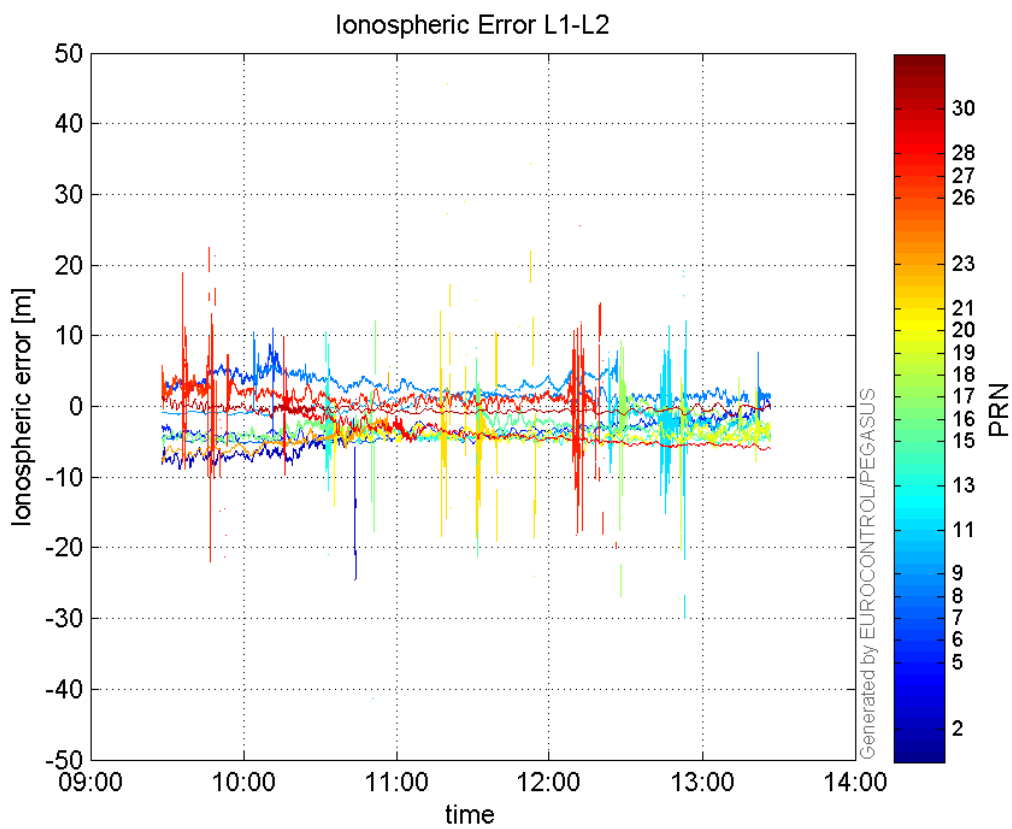


GEO CNo:



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:/PegasusDateJob/job/2017_02_24EGNOS2Hz/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateJob/job/2017_02_24EGNOS2Hz/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	236.2734
mi_numbers	results	0