

Global View

city Kiev
abbreviation NAU
site Laboratory satellite systems
version 4.8.4
program Pegasus
comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,
P.50 - 54
country Ukraine
date 26/12/2015

Range Domain

start: 08:09:46 25.12.2015 (week: 1876 sec: 461386)
end: 12:39:01 25.12.2015 (week: 1876 sec: 477541)
duration: 04:29:16 ..

quality

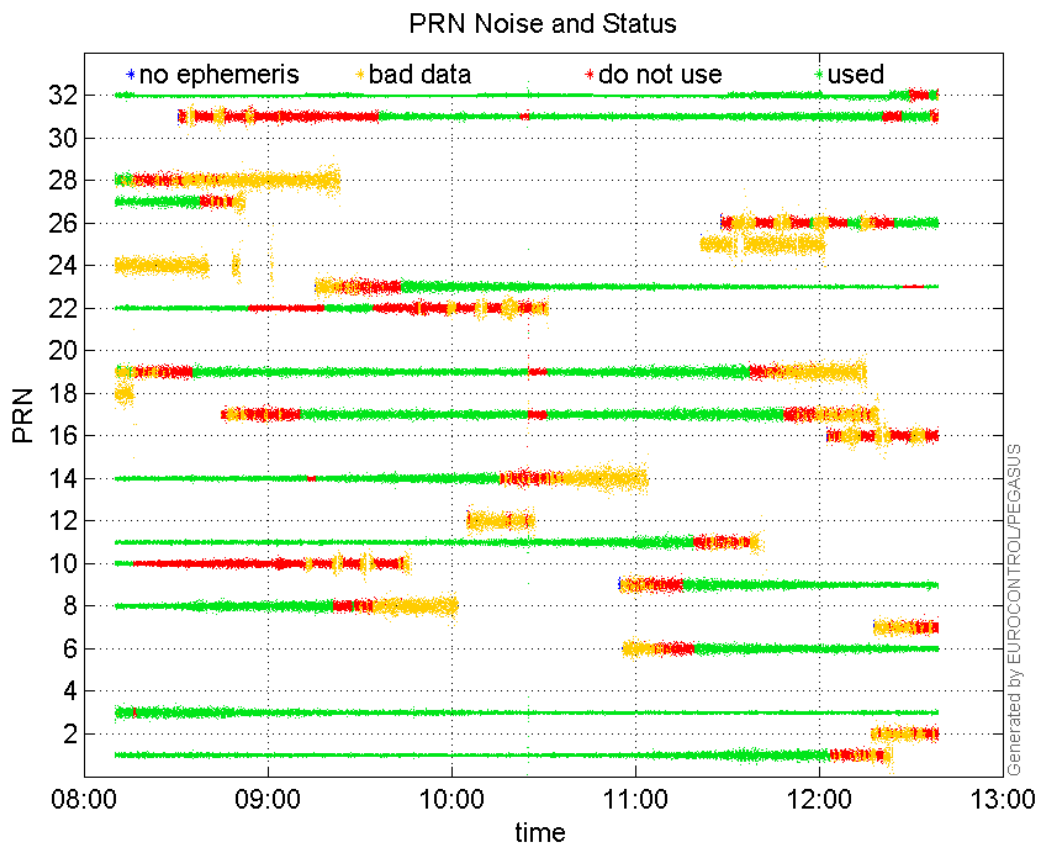
valid samples 16156
total samples 16156

PRN overview

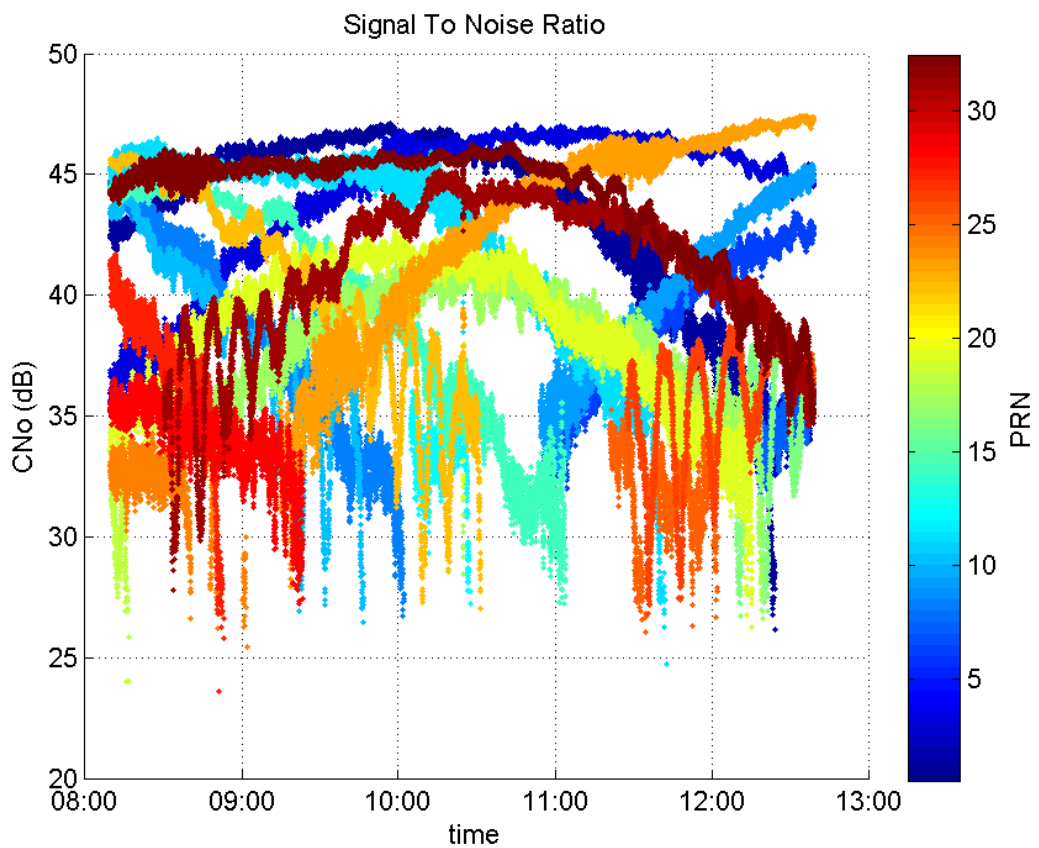
Number of Visible GPS Satellites 24
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



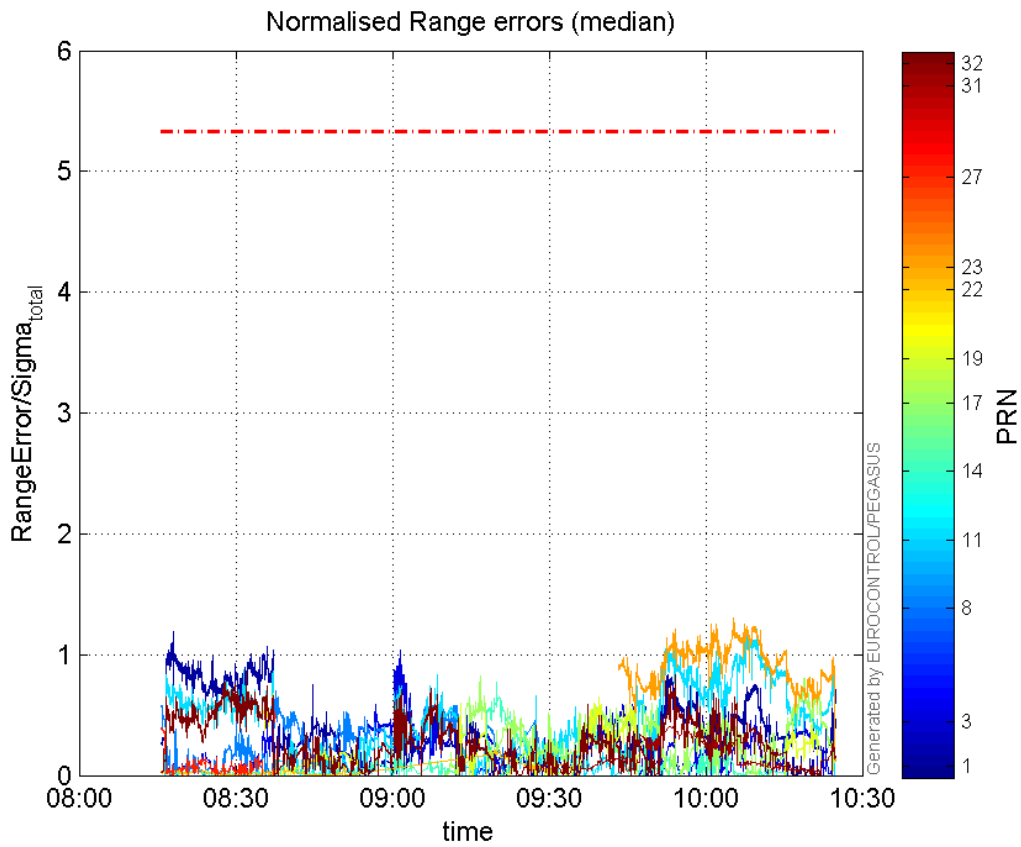
range errors

Number of Overbounding Norm Errors 0

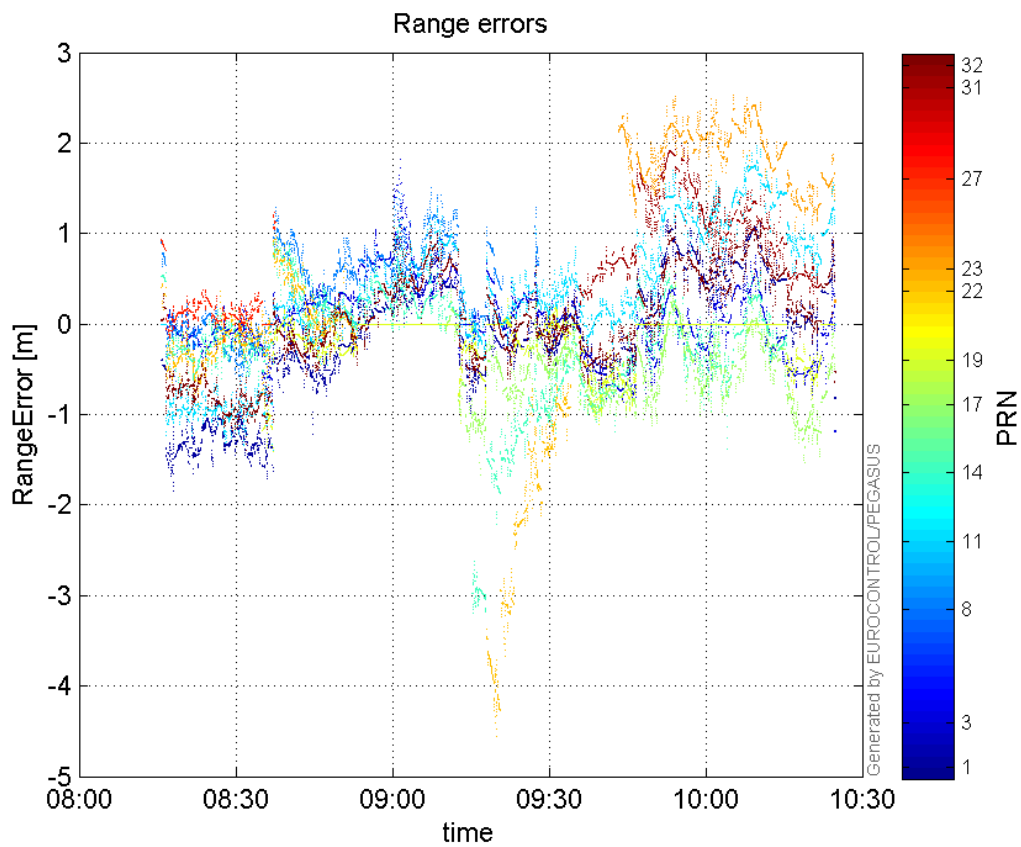
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1876	461886	1	1.1862	-1.8399	1.55109
1876	464498	3	1.0389	1.8274	1.75898
1876	464472	8	0.725728	1.4494	1.99716
1876	468585	11	1.20902	1.91073	1.5804
1876	465598	14	0.770332	-2.2084	2.86681
1876	465408	17	0.822606	-1.66654	2.02593
1876	463027	19	0.676296	-1.41074	2.08599
1876	465592	22	0.212588	-4.55129	21.409
1876	468317	23	1.30283	2.49997	1.91888
1876	463040	27	0.52487	1.23174	2.34676
1876	467650	31	0.442512	2.0819	4.70474
1876	462723	32	0.862102	-1.3995	1.62336

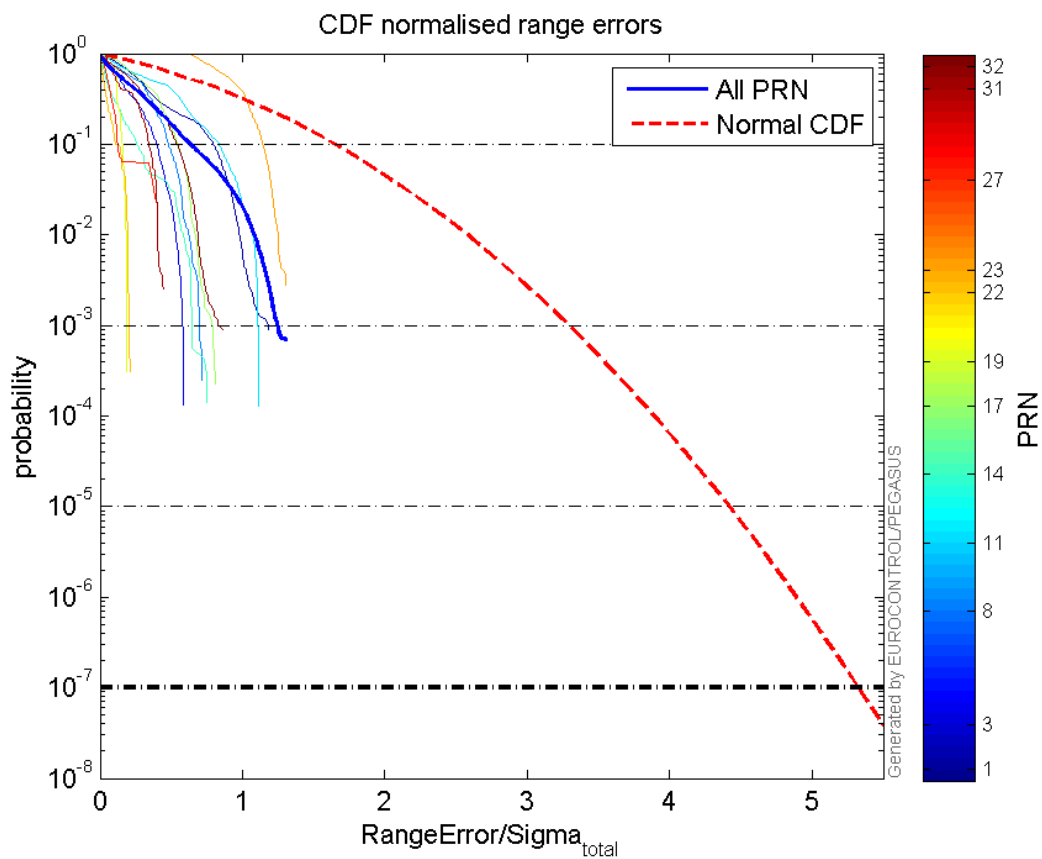
Normalised Range errors (median):



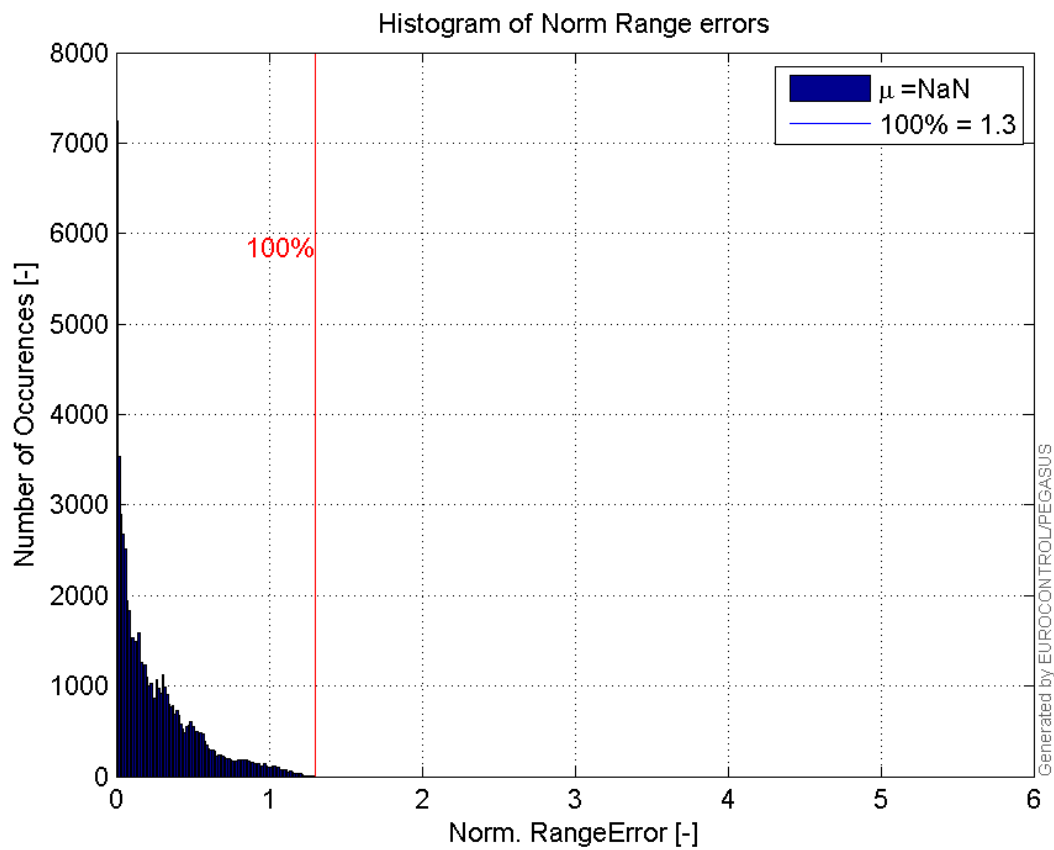
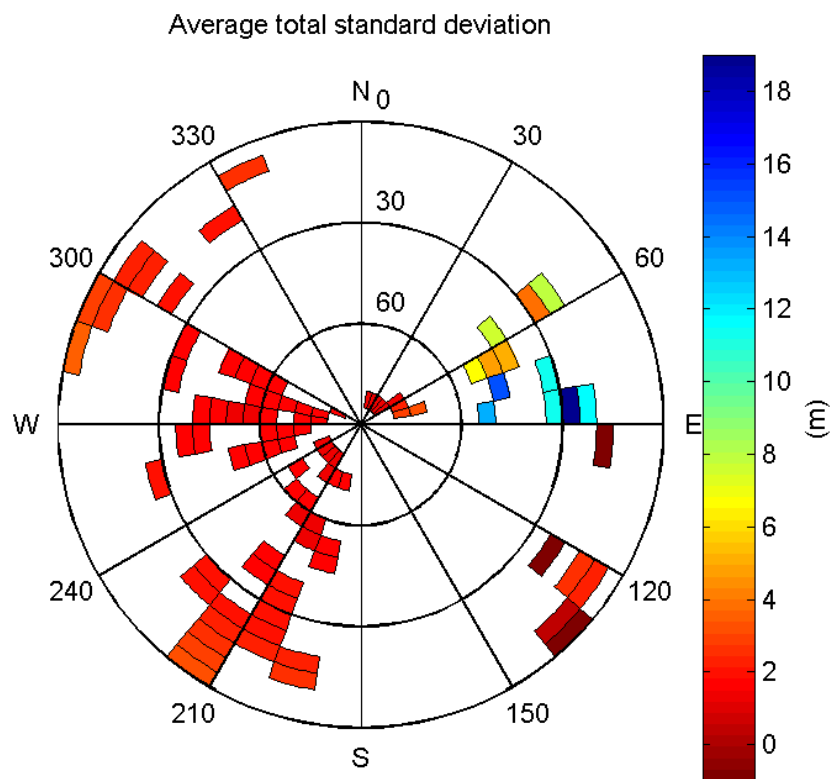
Range errors:

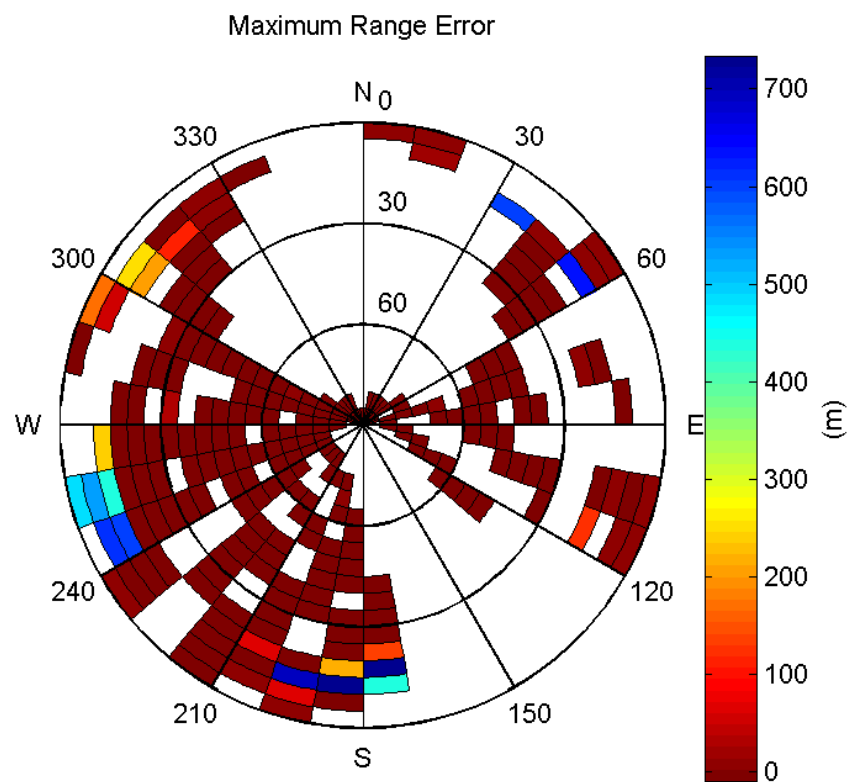


CDF normalised range errors:



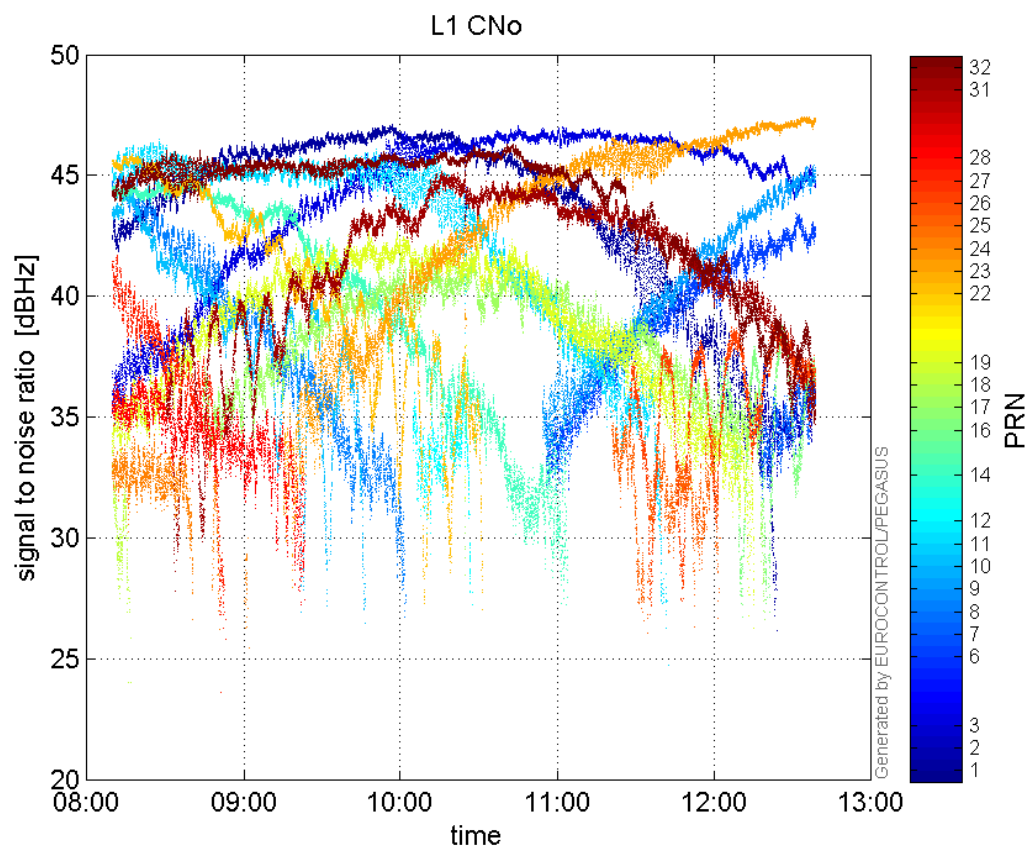
Histogram of Norm Range errors:

**Sigma Sky Plot:****Norm Error Sky Plot:**

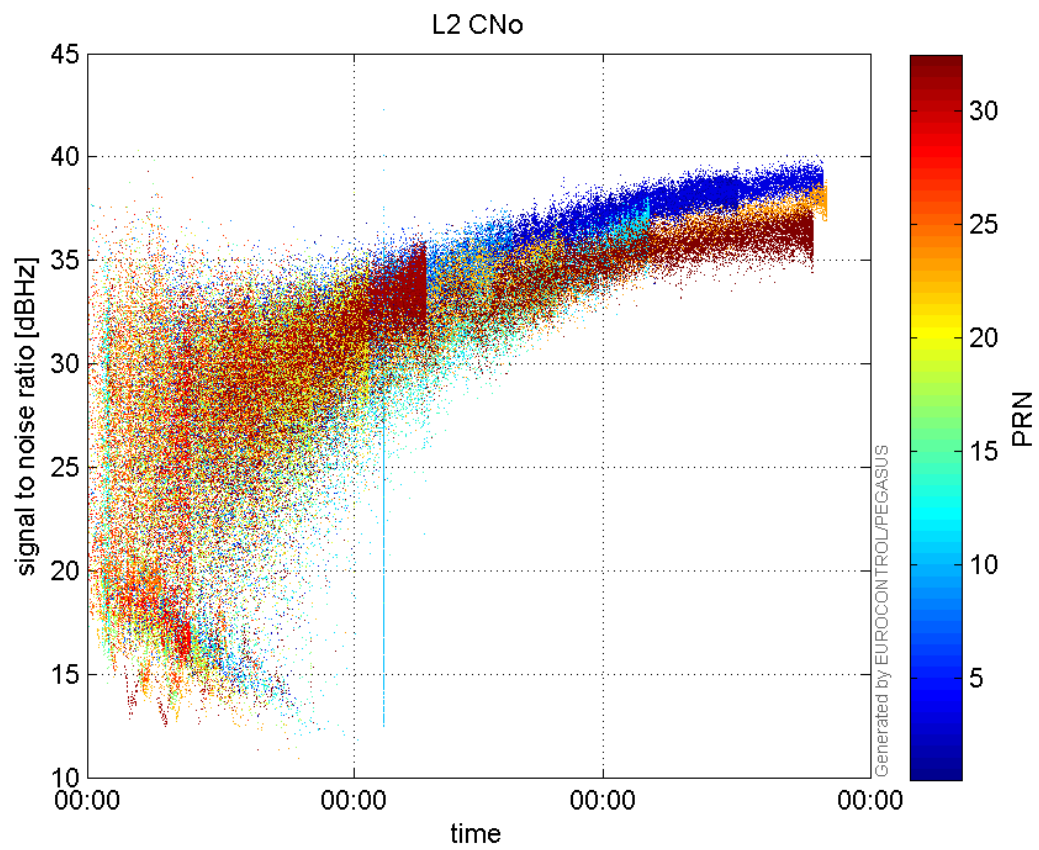


signal quality

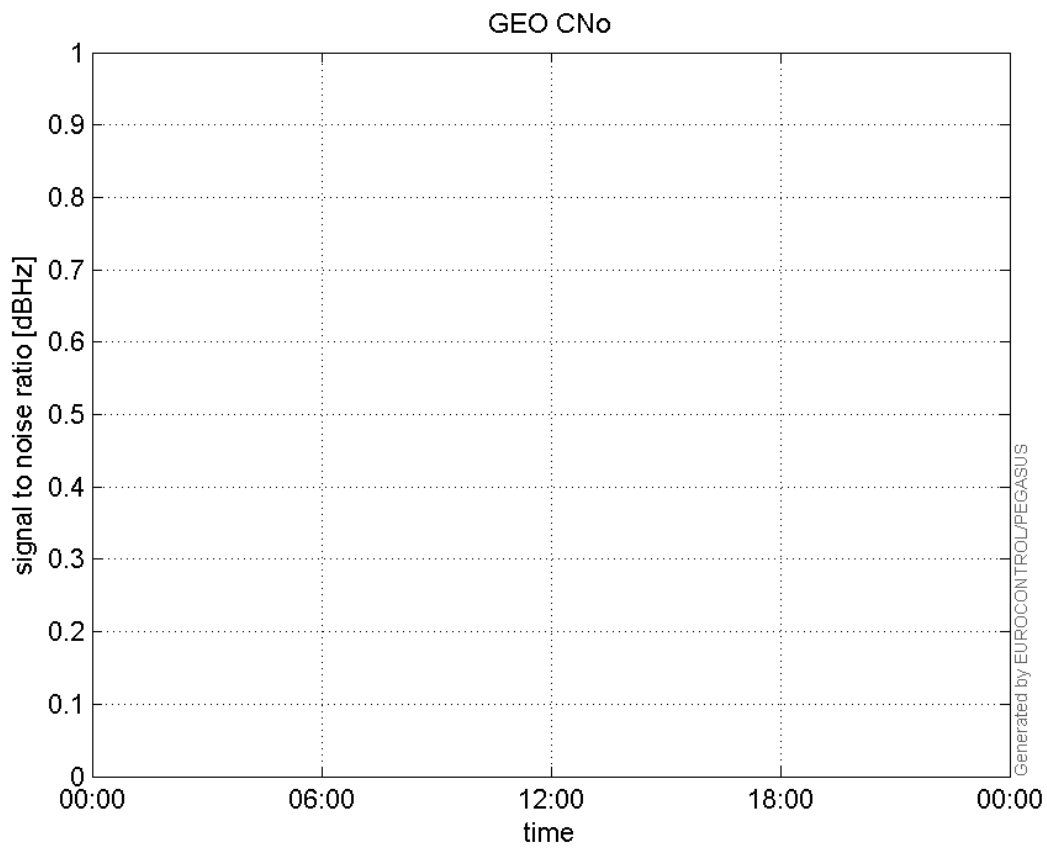
L1 CNo:



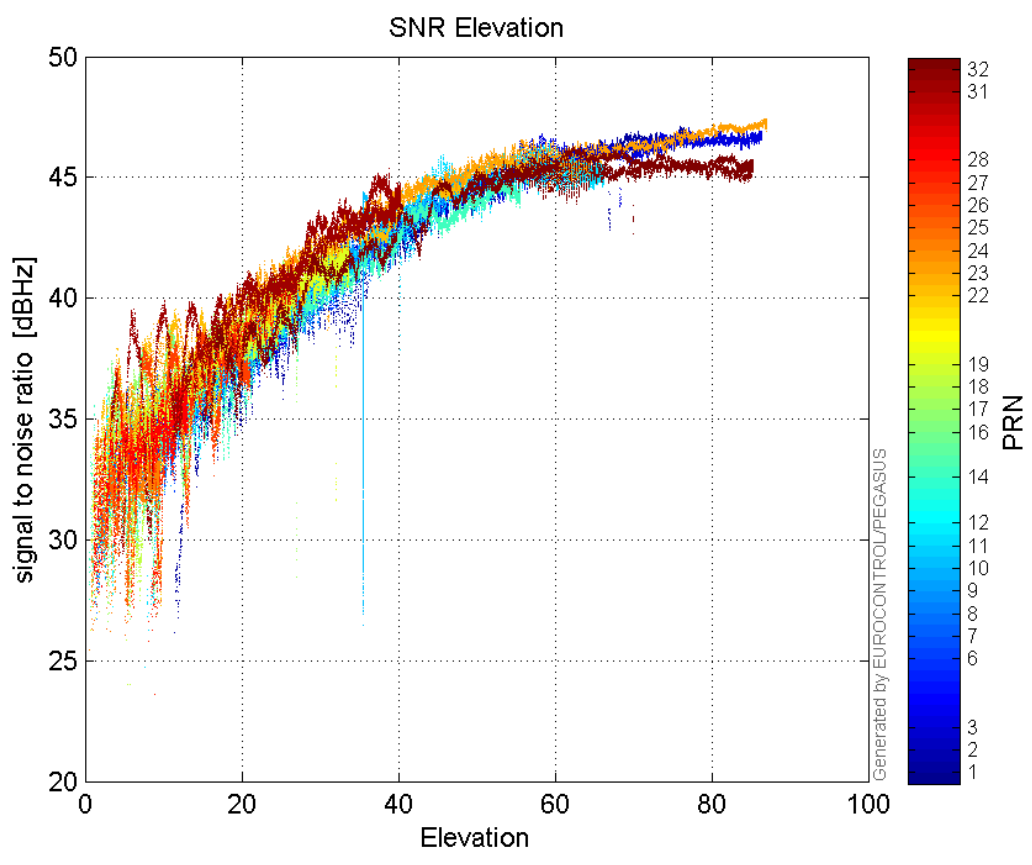
L2 CNo:



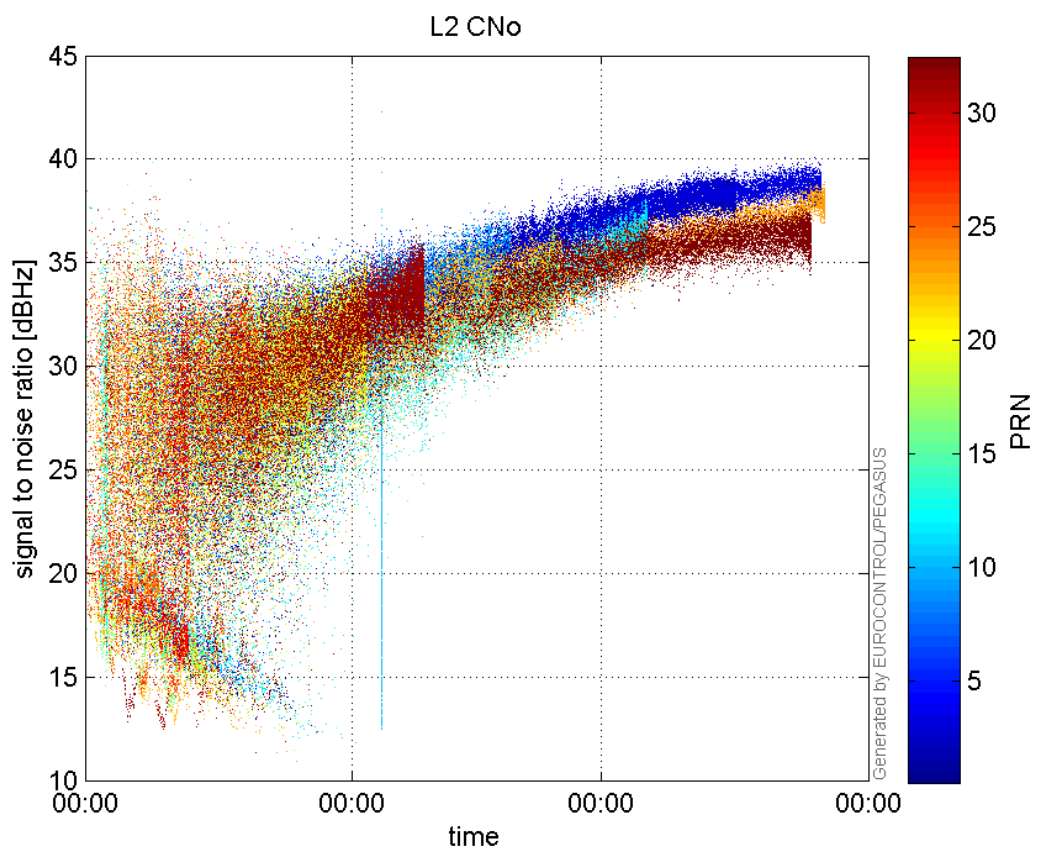
GEO CNo:



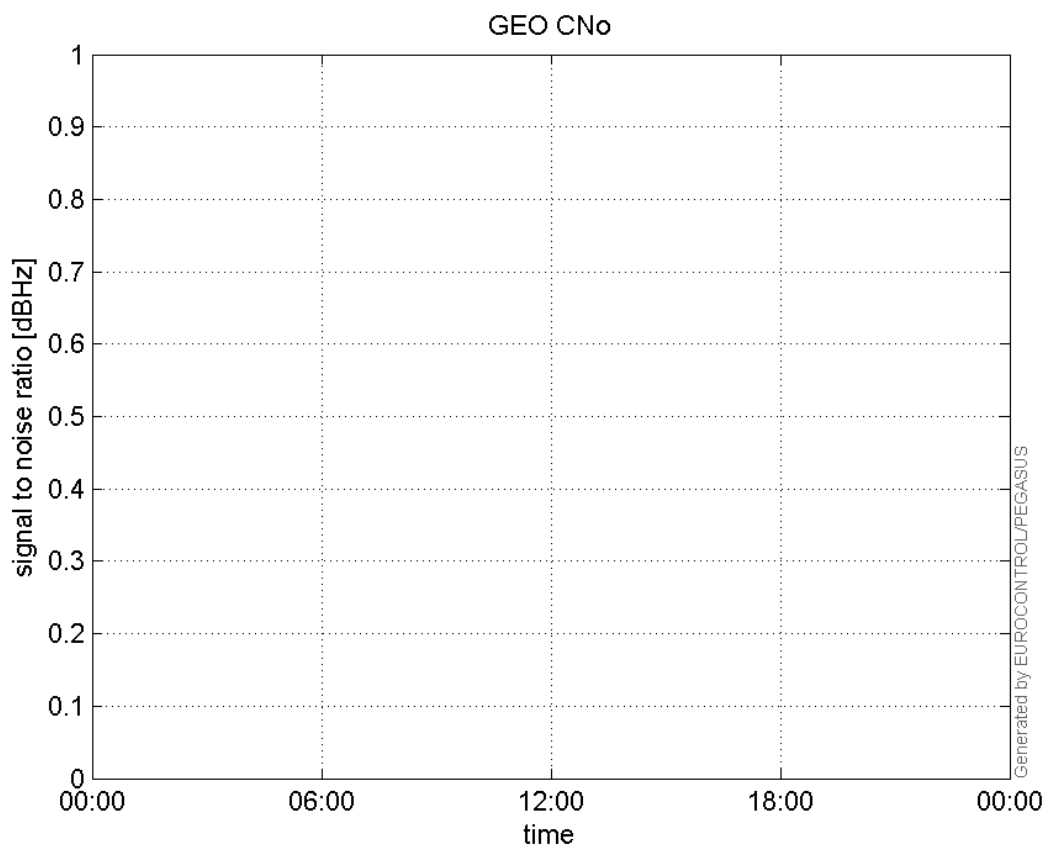
SNR Elevation:



L2 CNo:

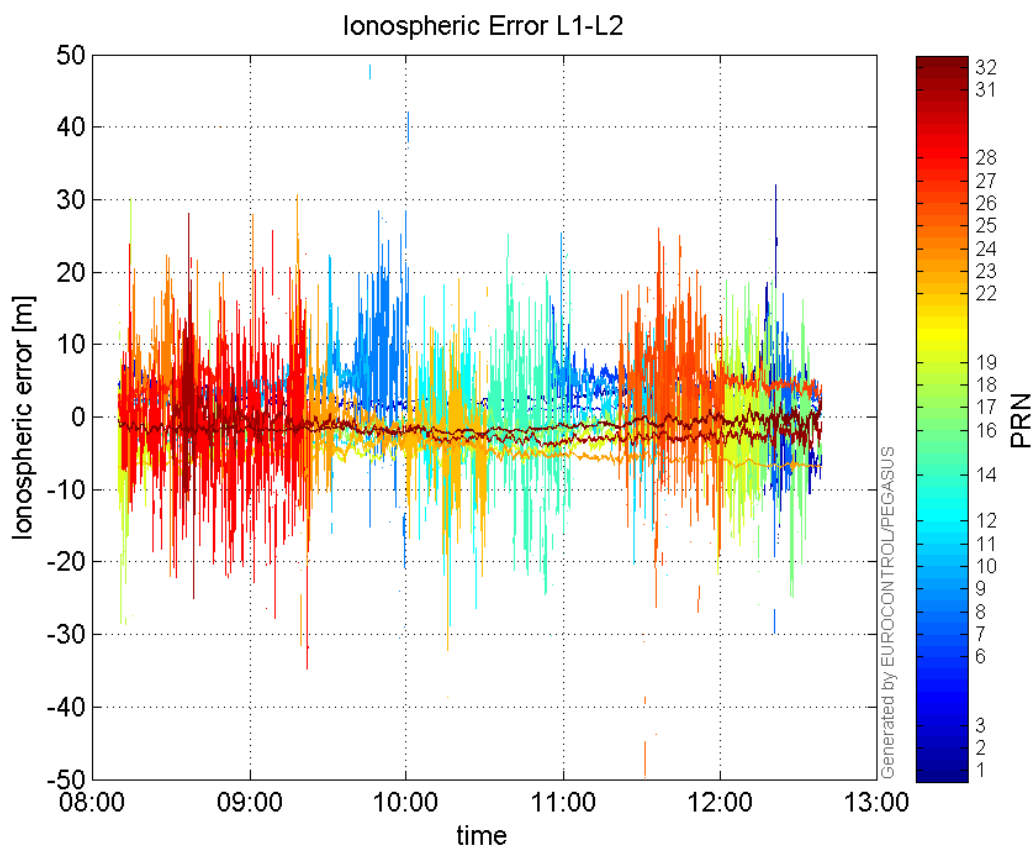


GEO CNo:



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/2015_12_25EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_12_25EGNOS/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	224.5735
mi_numbers	results	0

Position Domain

start: 08:09:46 25.12.2015 (week: 1876 sec: 461386)
end: 12:39:01 25.12.2015 (week: 1876 sec: 477541)
duration: 04:29:16 ..

quality

valid samples 15795
total samples 16156

Event tables

Position discontinuity events type no (0)
APV-I discontinuity events type all
APV-35m discontinuity events type long
LPV-200 discontinuity events type long
CAT-I discontinuity events type nothing

extremes :

	Epoch	HPE	HPL	HPE/HPL	VPE	VPL	VPE/VPL
max normHor	468335	1.88315	11.1144	0.169433	0.783767	16.8365	0.0465516
max normVer	466996	1.50924	11.1624	0.135208	1.76876	14.3726	0.123065
max HPE	469134	2.02111	26.5363	0.0761639	0.353378	31.513	0.0112137
max VPE	469498	0.882737	42.6512	0.0206967	3.6976	71.371	0.0518082
min HPL	468204	1.60829	10.9875	0.146375	0.294792	16.2075	0.0181886
min VPL	467012	1.53874	11.0459	0.139305	1.57048	14.2389	0.110295

APV-I discontinuity events :

#	Epoch	duration	stable period
1	461769	1	22
2	461773	1	3
3	461777	1	3
4	461781	1	3
5	461785	1	3
6	461789	1	3
7	461793	1	3

First Glance analysis

Duration	16156
Number of Samples	16156
Number of invalid sample	361
Number of no position solution samples	8043
Number of missing sample	0
Logging Loss	0
Processing Loss	2.2345
Number of Misleading Information	0
Data gaps	0
Discontinuities	0

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
7752	7730	7410	0	7410

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.77852	1.77857	1.78054	NaN	1.78054
HPEscale 95%	NaN	5.98278	6.00266	NaN	6.00266
VPE 95%	1.41657	1.40771	1.41691	NaN	1.41691
VPEscale 95%	NaN	3.24635	2.28958	NaN	2.28958

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	0.490788	0.489395	0.469136	0	0.469136
measurements	0.479822	0.47846	0.458653	0	0.458653

Operational	0.479822	0.47846	0.458653	0	0.458653
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Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	7	49	--	49
Long	--	0	0	--	0
Independent	--	0	0	--	0
P(disc.)	--	0	0	--	0
P(slide)	NaN	0.00426908	0.0110661	NaN	0.0110661

Integrity events :

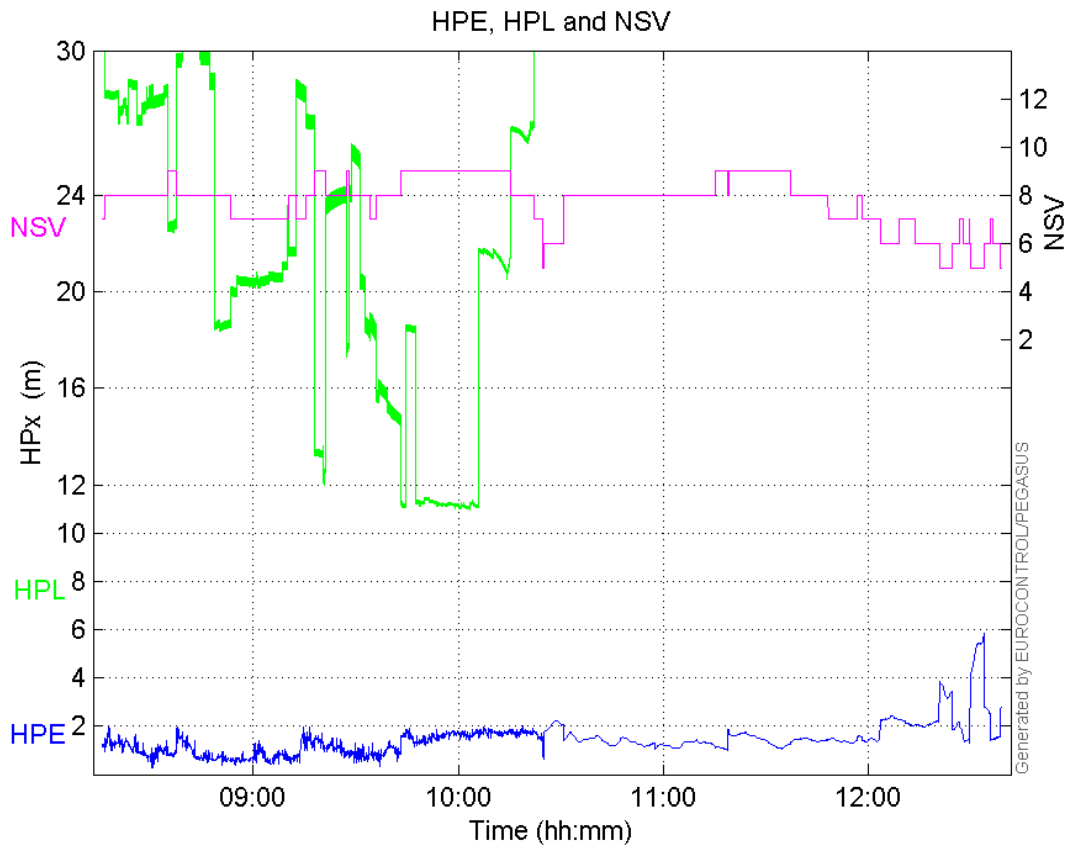
	MI	HMI APV-1	HMI LPV-200	HMI CAT-1	HMI APV-35m
Total	0	0	0	0	0
Horizontal	0	0	0	0	0
Vertical	0	0	0	0	0

Performance Summary :

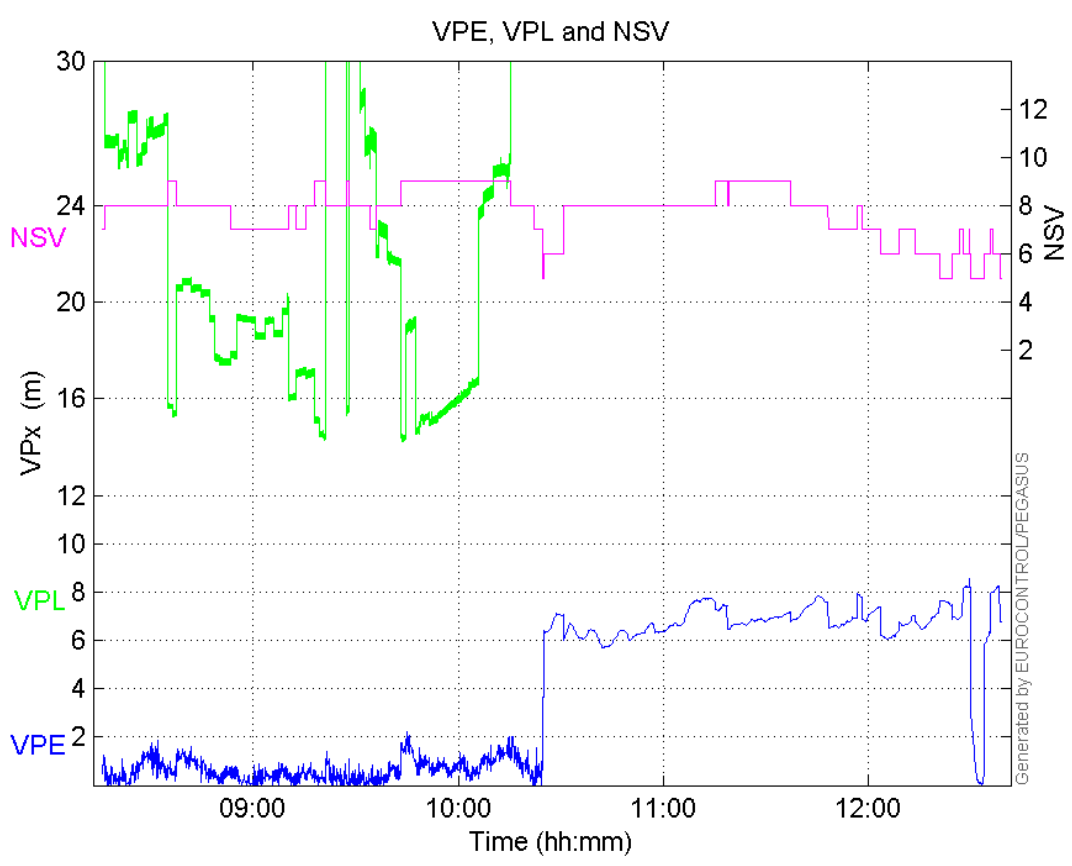
	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	7752	7730	7410	0	7410
SIS Availability	0.490788	0.489395	0.469136	0	0.469136
Local Availability	0.479822	0.47846	0.458653	0	0.458653
Operational Availability	0.479822	0.47846	0.458653	0	0.458653
HPE 95%	1.77852	1.77857	1.78054	NaN	1.78054
HPEScale 95%	NaN	5.98278	6.00266	NaN	6.00266
VPE 95%	1.41657	1.40771	1.41691	NaN	1.41691
VPEscale 95%	NaN	3.24635	2.28958	NaN	2.28958
All Discontinuity Events	--	7	49	--	49
Long Discontinuity Events	--	0	0	--	0
Independent Discontinuity Events	--	0	0	--	0
P(discontinuity)	--	0	0	--	0
P(sliding window)	NaN	0.00426908	0.0110661	NaN	0.0110661
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:

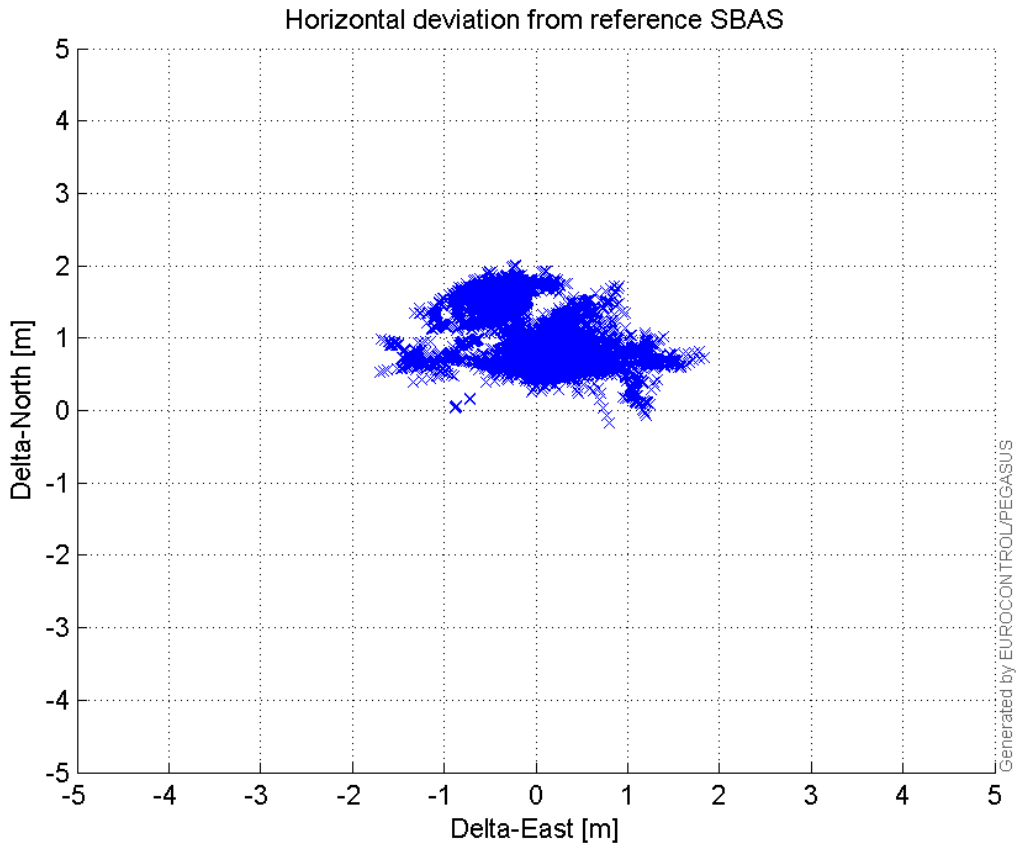


VPE, VPL and NSV:



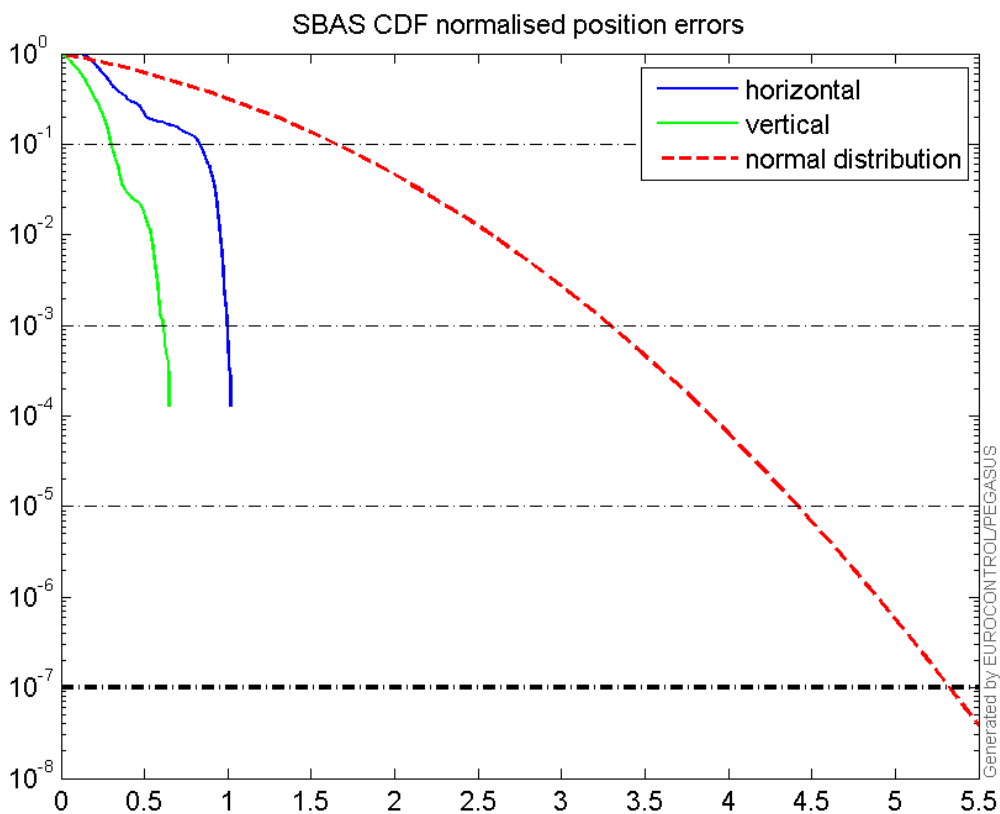
Horizontal deviation

Horizontal deviation from reference SBAS:



CDF position

SBAS CDF position domain:



Statistics

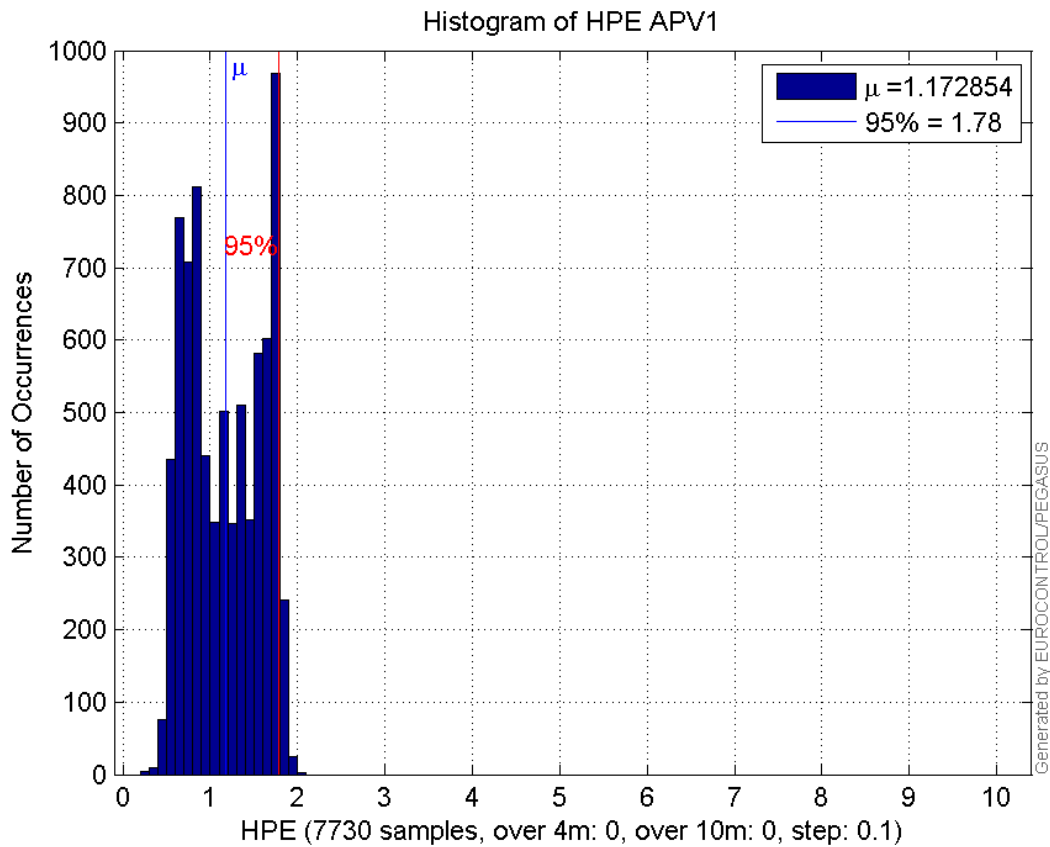
number	7730
sum	9066.1598
sum2	12008.935
prctile95	1.7785724
prctile99	1.8575846
number	7730
sum	4915.6168
sum2	4431.1631
prctile95	1.4077147
prctile99	1.7466402
number	7730
sum	166855.06
sum2	3914467.4
prctile95	30.2501
prctile99	30.72414
number	7730
sum	173122.46
sum2	4176628.3
prctile95	34.7552
prctile99	37.71576
number	7730
sum	486.55588
sum2	42.489358
prctile95	0.14956959
prctile99	0.15871449
number	7730
sum	235.55255
sum2	10.535741
prctile95	0.064926984
prctile99	0.10116392
number	7410
sum	8659.0305
sum2	11444.78
prctile95	1.7805371
prctile99	1.8588757
number	7410
sum	4780.3146
sum2	4341.8755
prctile95	1.4169098
prctile99	1.7550935
number	7410
sum	157294.85
sum2	3622650.1
prctile95	29.8877
prctile99	30.56778
number	7410
sum	161256.28
sum2	3735553.2
prctile95	31.9268

prctile99 34.47336
number 7410
sum 472.95156
sum2 41.86847
prctile95 0.15006658
prctile99 0.15889163
number 7410
sum 231.98032
sum2 10.475269
prctile95 0.065416596
prctile99 0.10127929

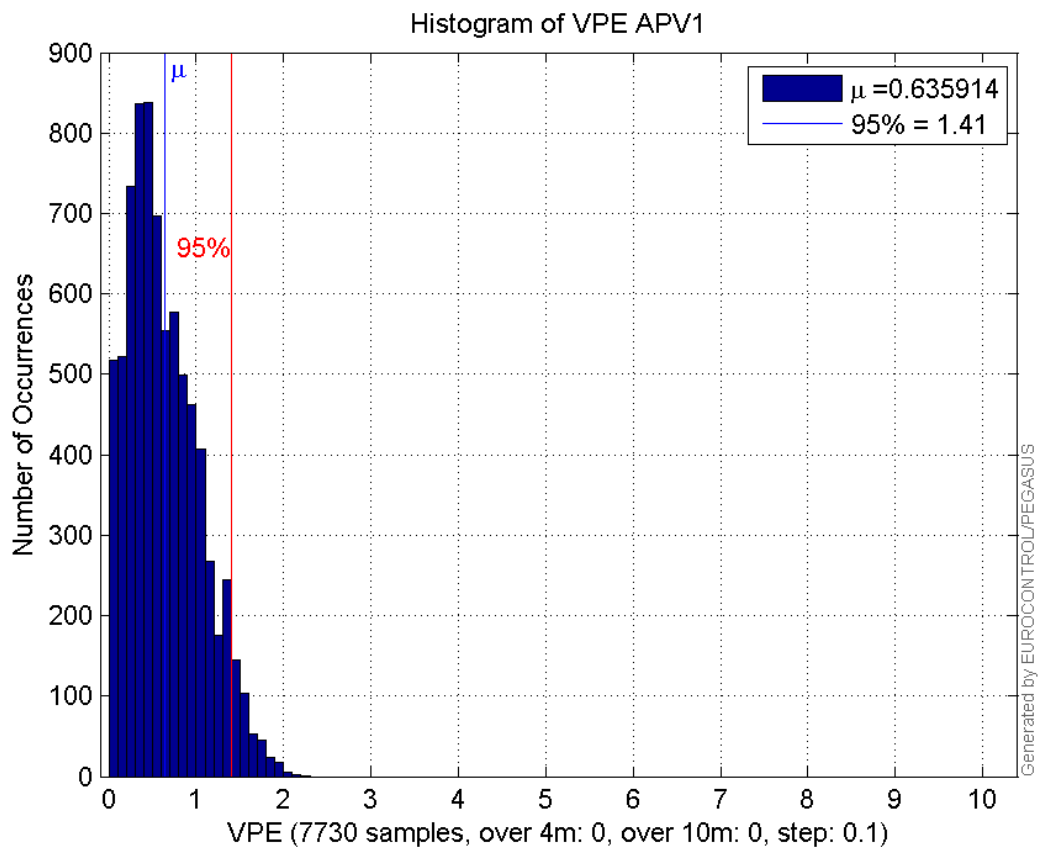
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.17285	0.421884	1.15316	1.77857	1.85758	1.24641
HPL	21.5854	6.36204	21.4948	30.2501	30.7241	22.5033
VPE	0.635914	0.410947	0.556248	1.40771	1.74664	0.757128
VPL	22.3962	6.22337	20.4957	34.7552	37.7158	23.2447

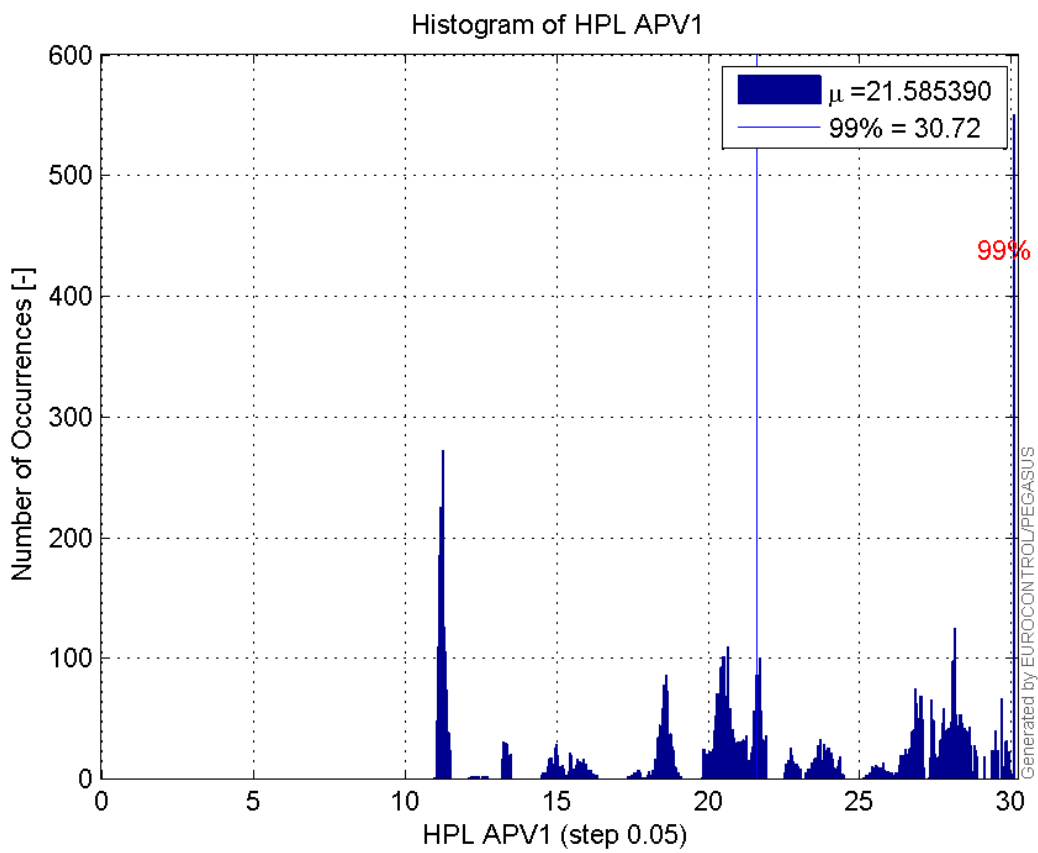
Histogram of HPE APV1:



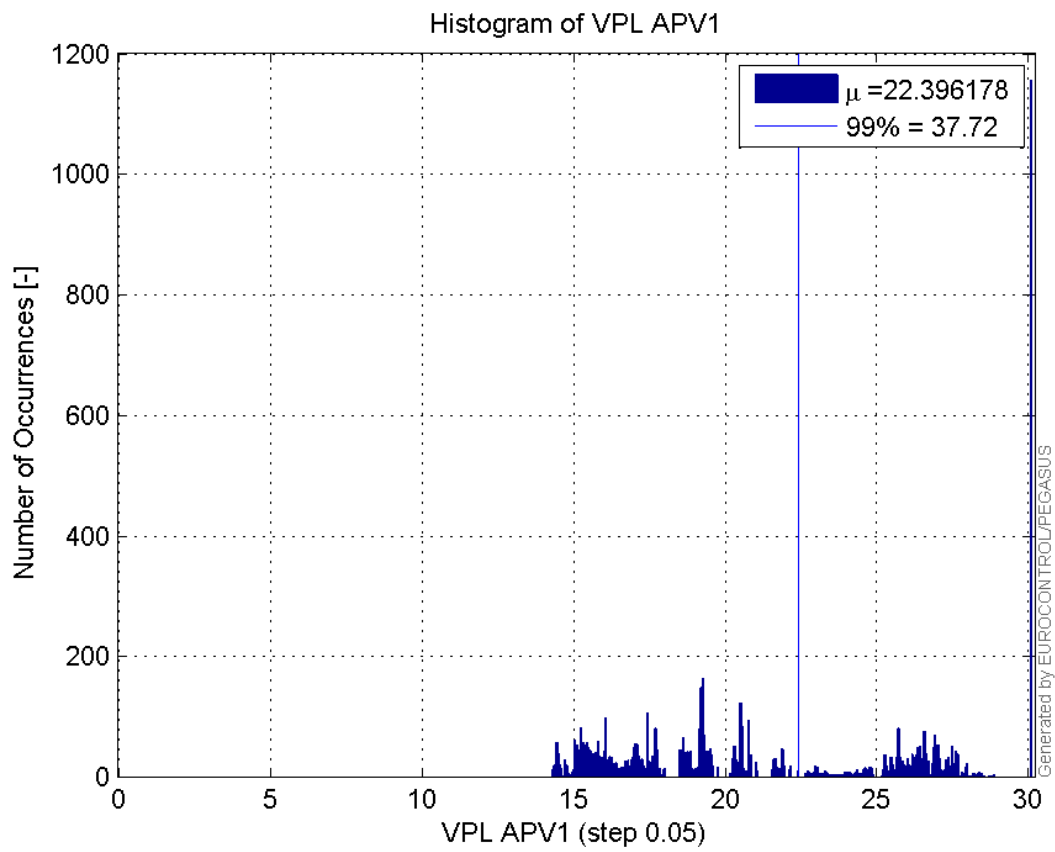
Histogram of VPE APV1:



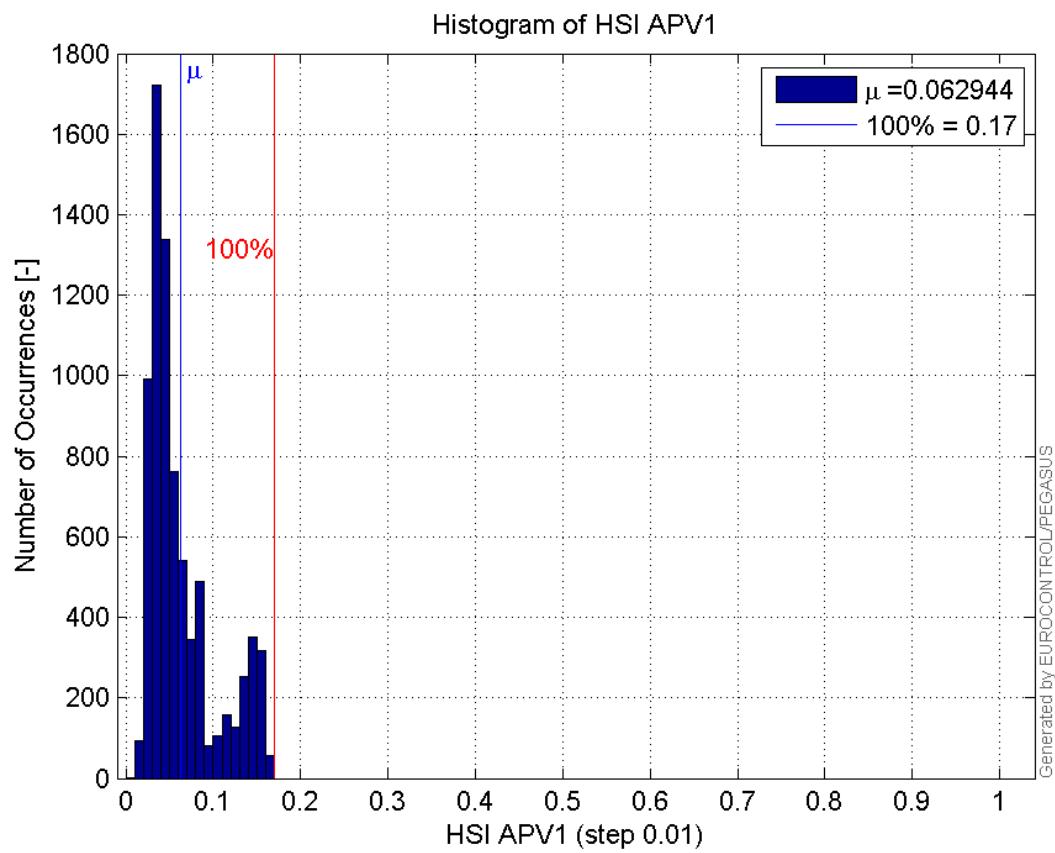
Histogram of HPL APV1:



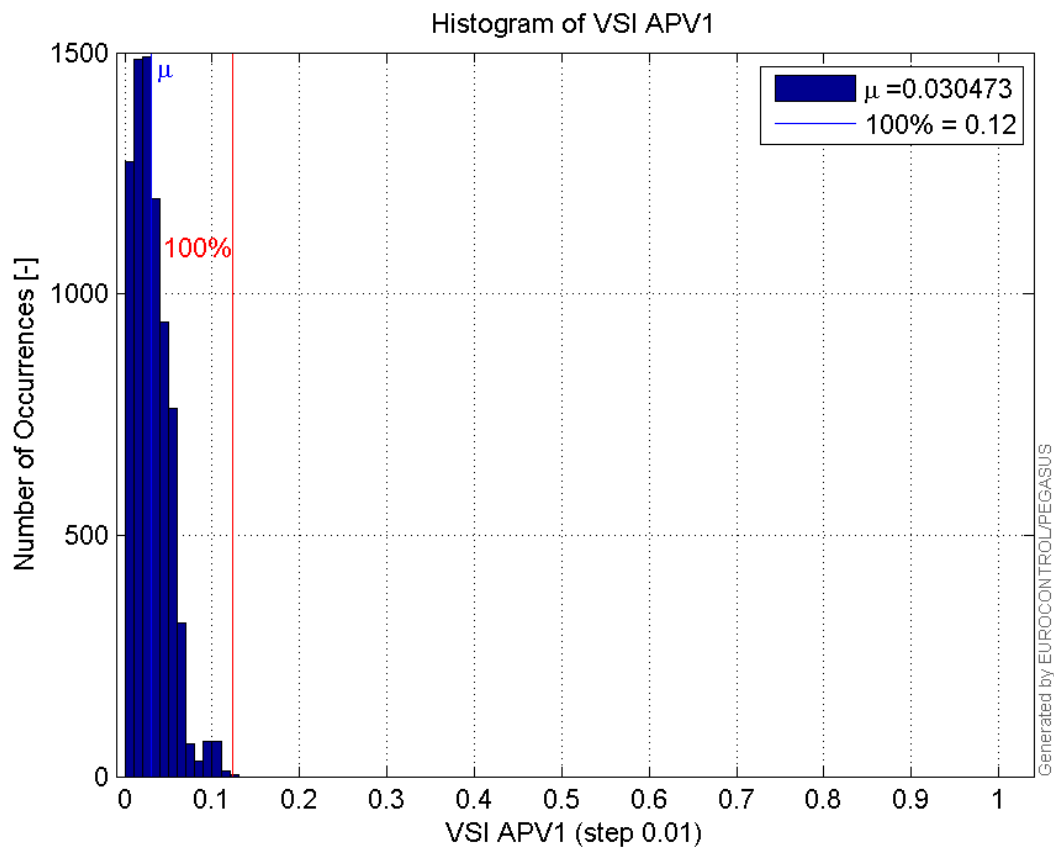
Histogram of VPL APV1:



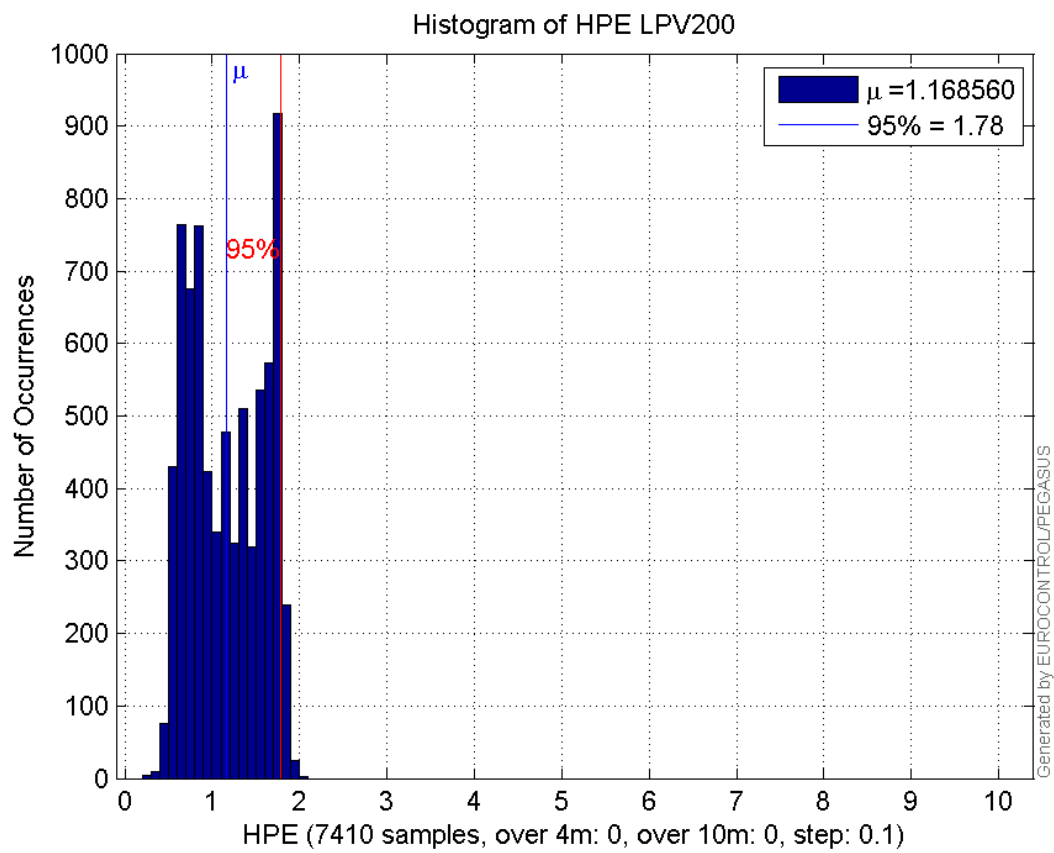
Histogram of HSI APV1:



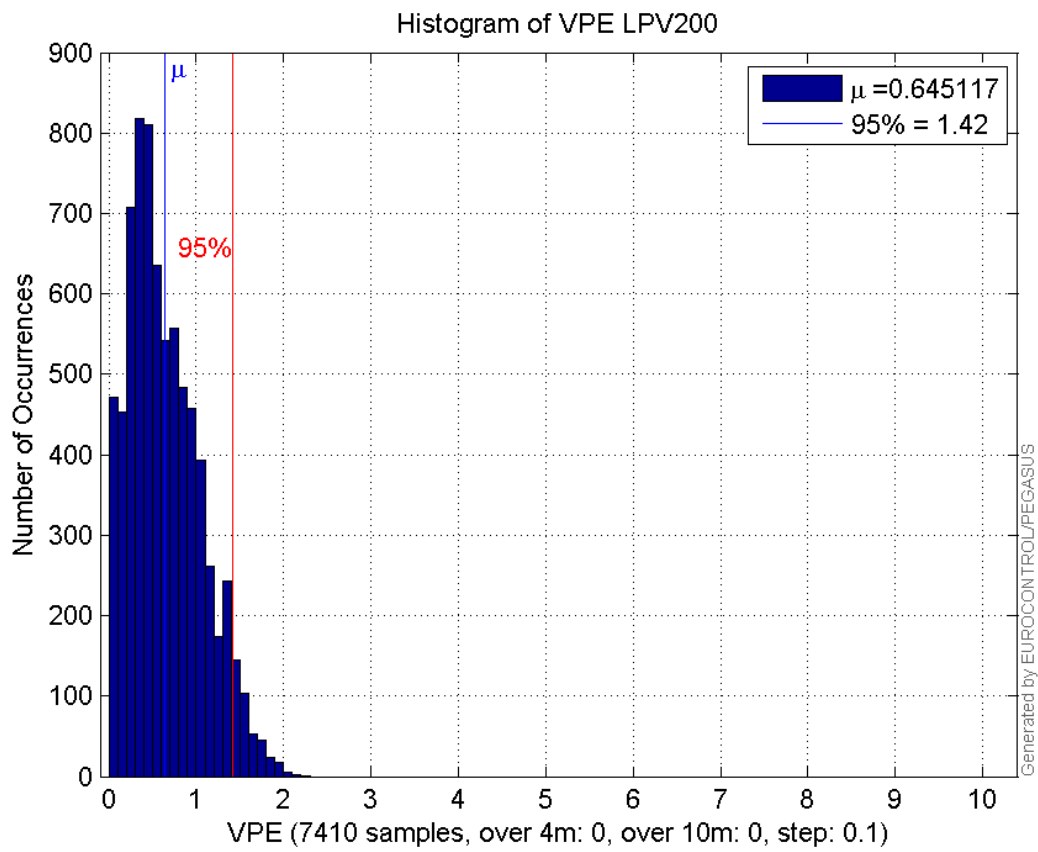
Histogram of VSI APV1:



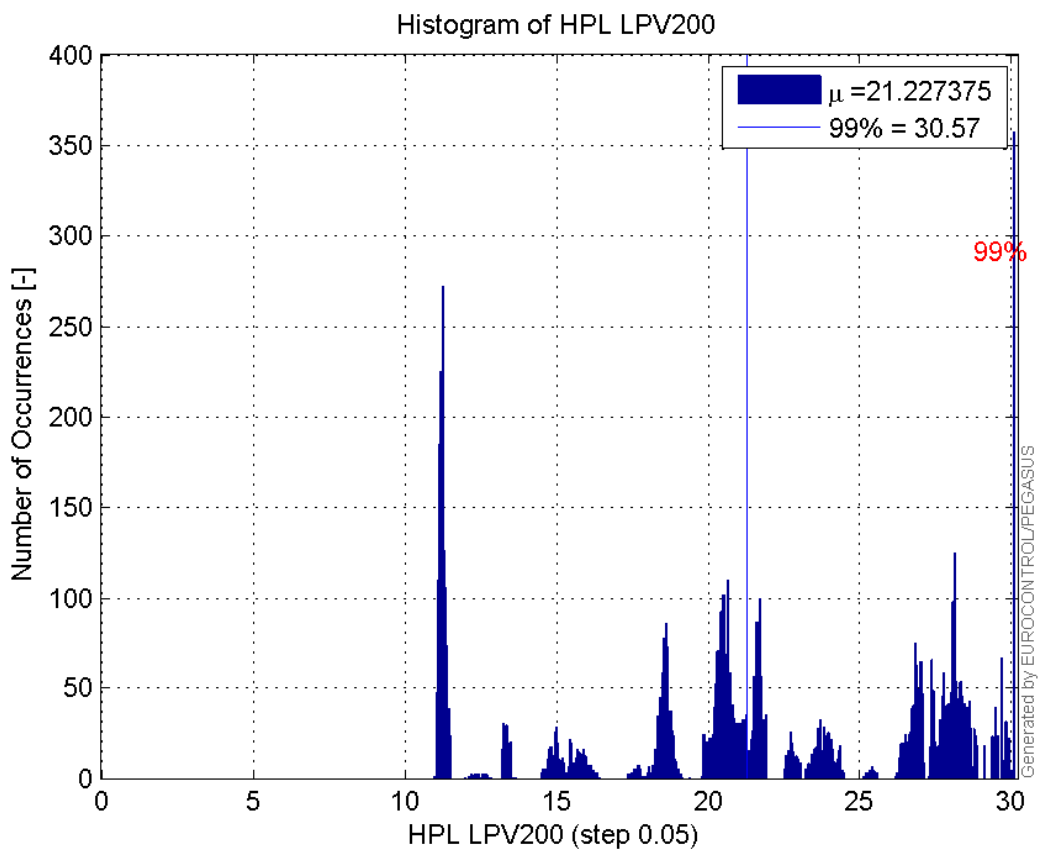
Histogram of HPE LPV200:



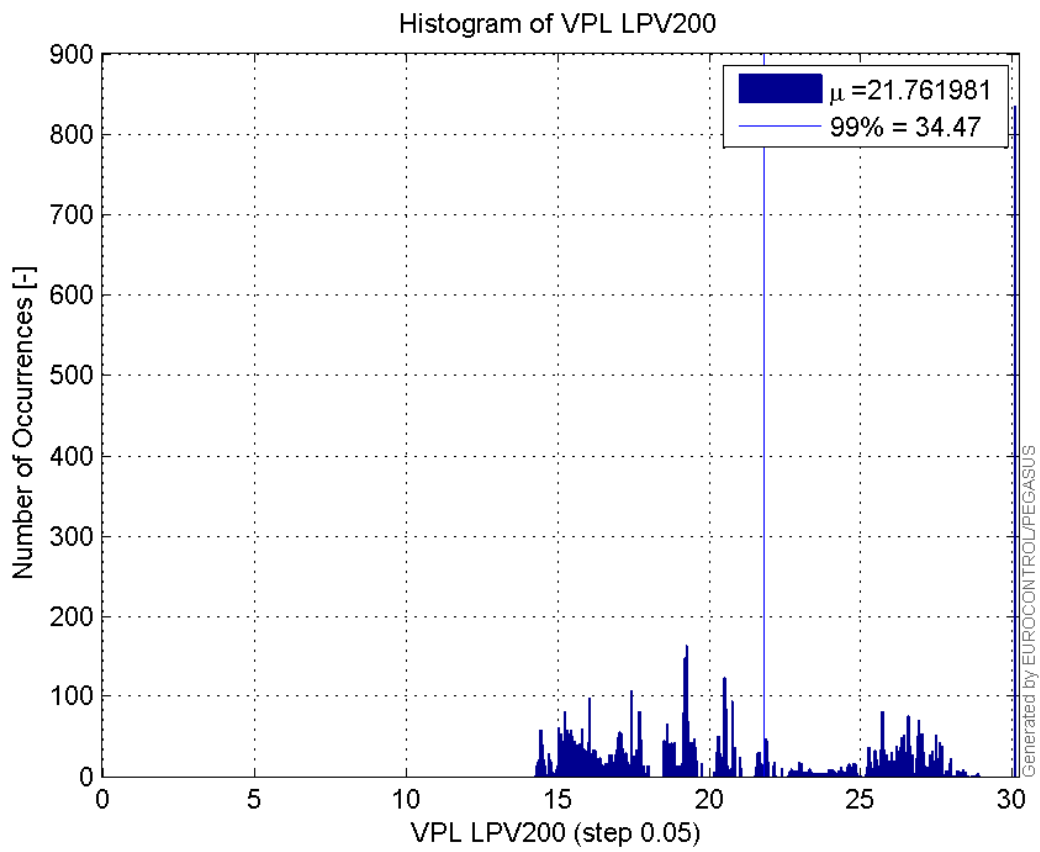
Histogram of VPE LPV200:



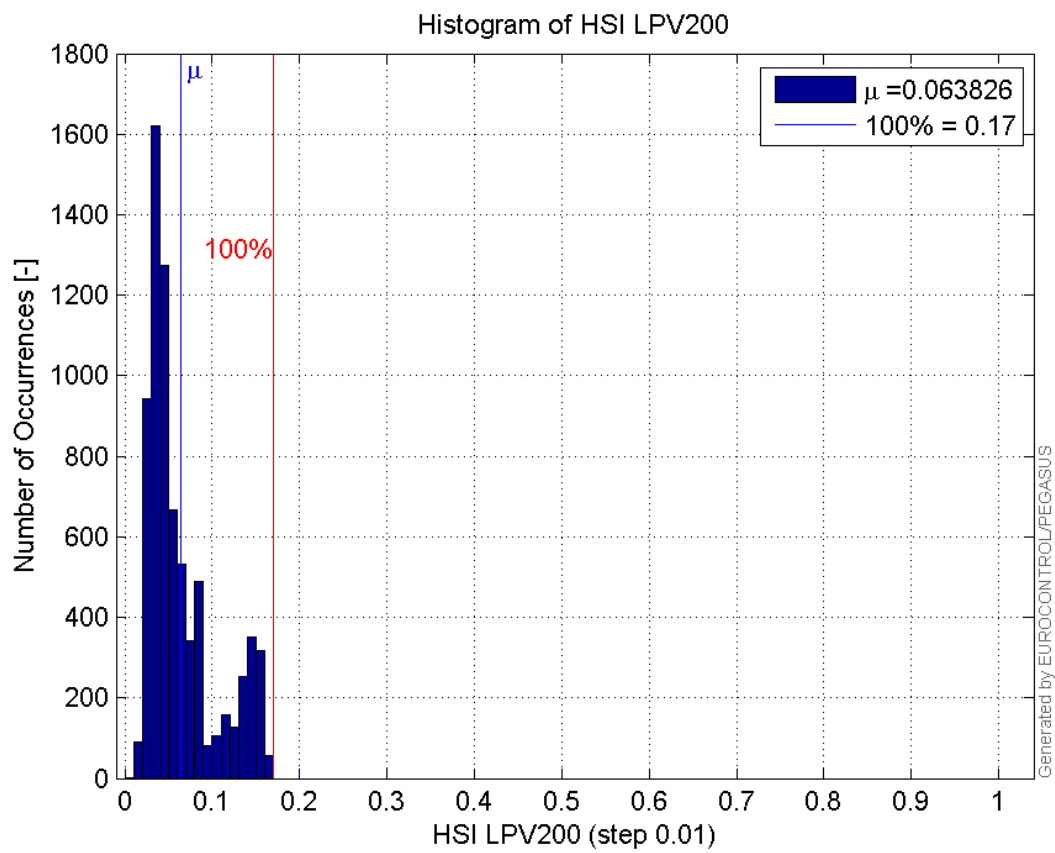
Histogram of HPL LPV200:



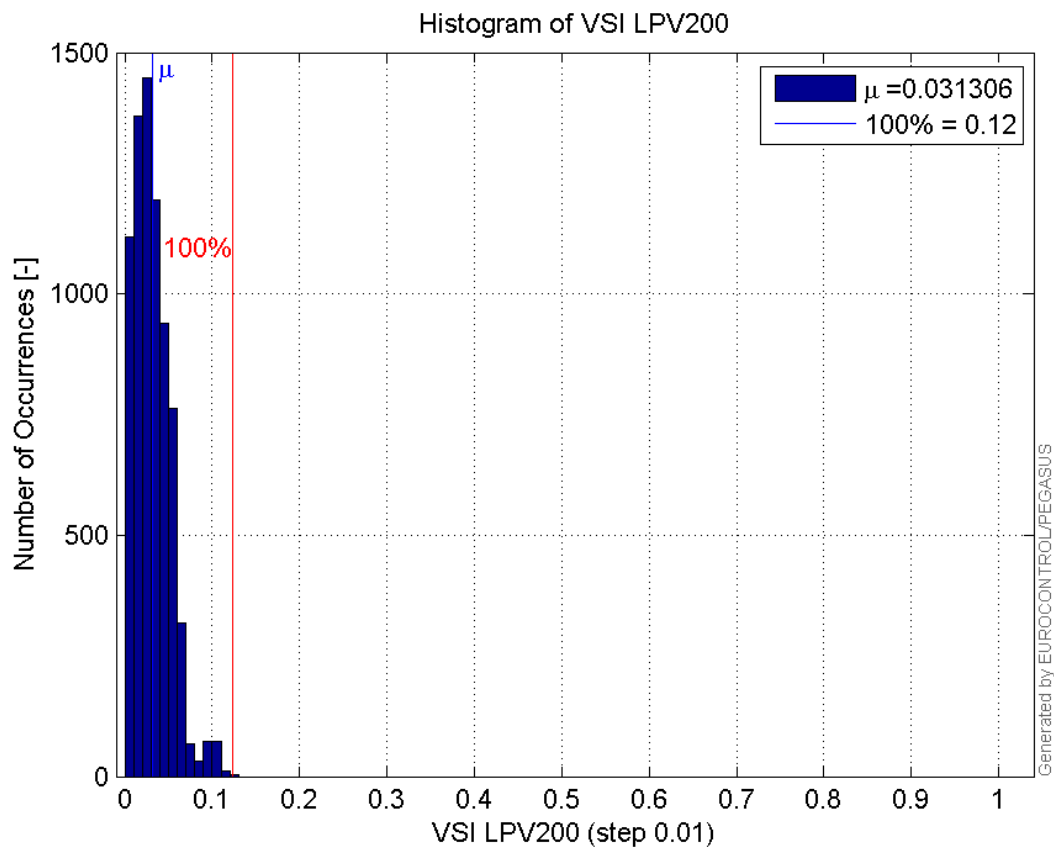
Histogram of VPL LPV200:



Histogram of HSI LPV200:

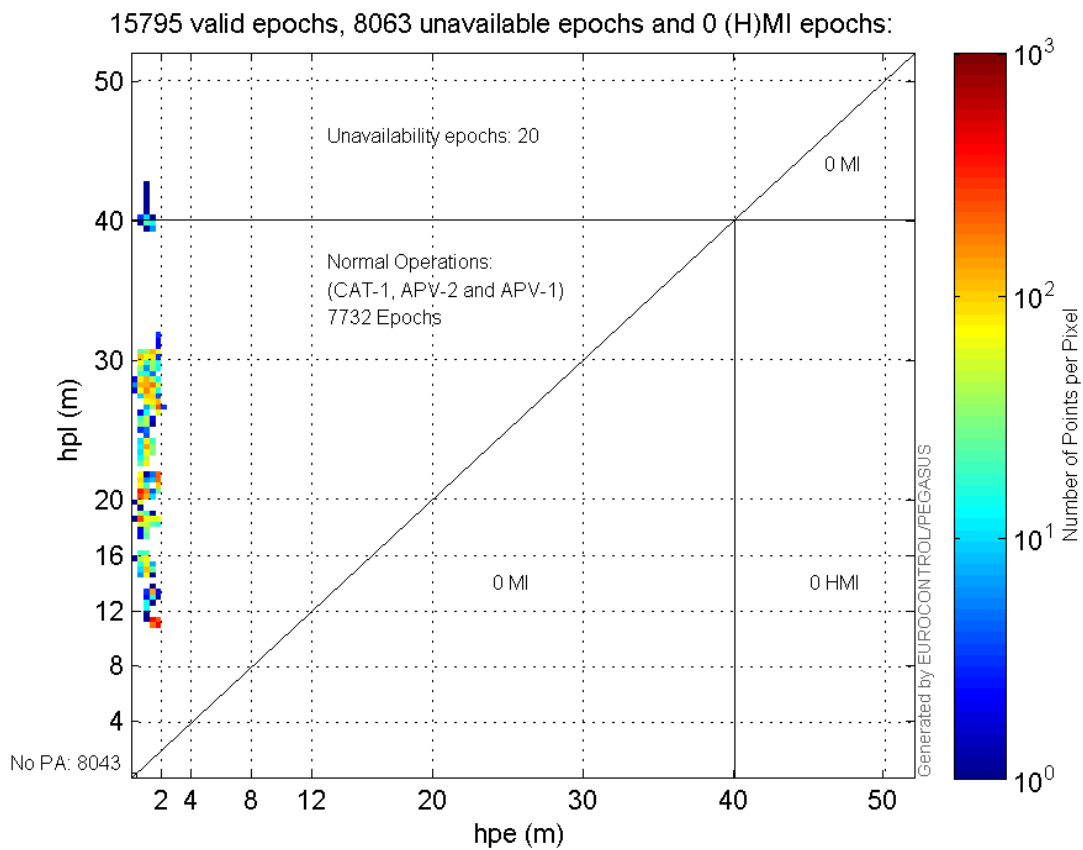


Histogram of VSI LPV200:

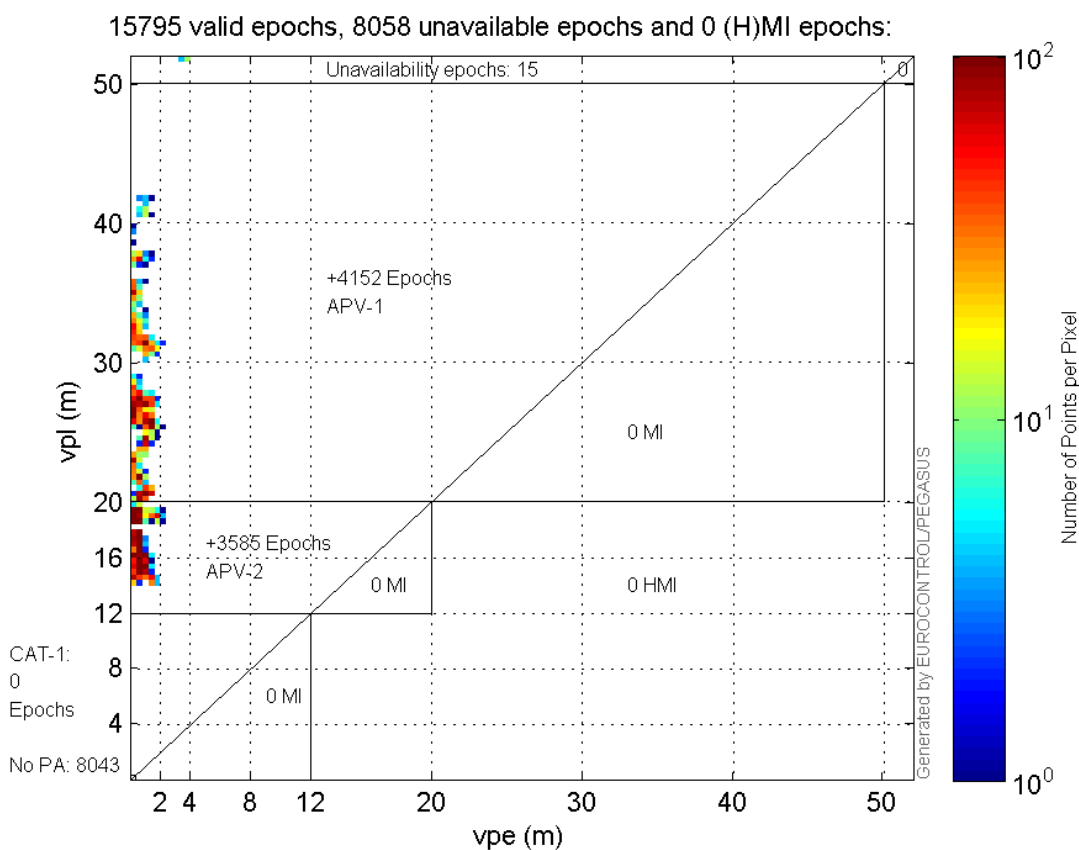


Stanford Plots

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:/PegasusDateGob/job/2015_12_25EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_12_25EGNOS/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	224.5735
mi_numbers	results	0

SBAS Messages

start: 08:09:45.129 25.12.2015 (week: 1876 sec: 461385.129)
end: 12:39:0.128998 25.12.2015 (week: 1876 sec: 477540.129)
duration: 04:29:15 ..

quality

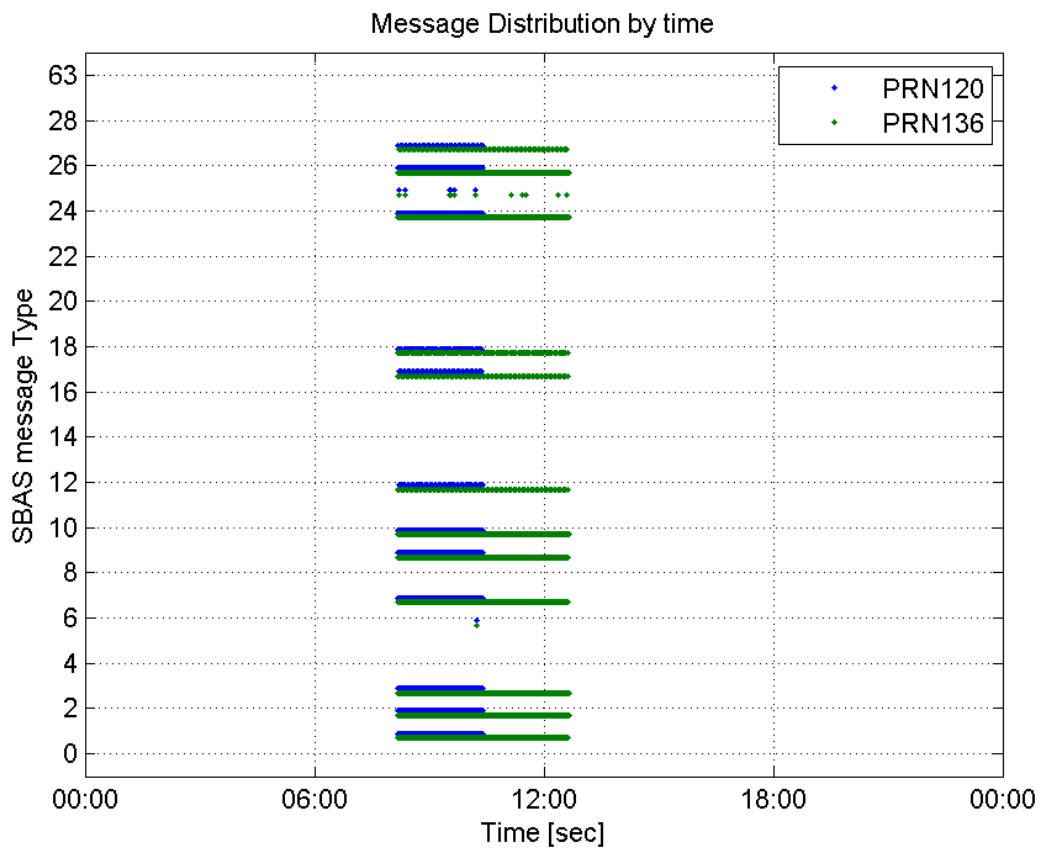
valid samples 24261
total samples 24261
number of SBAS PRNs 2

SBAS SIS Overview

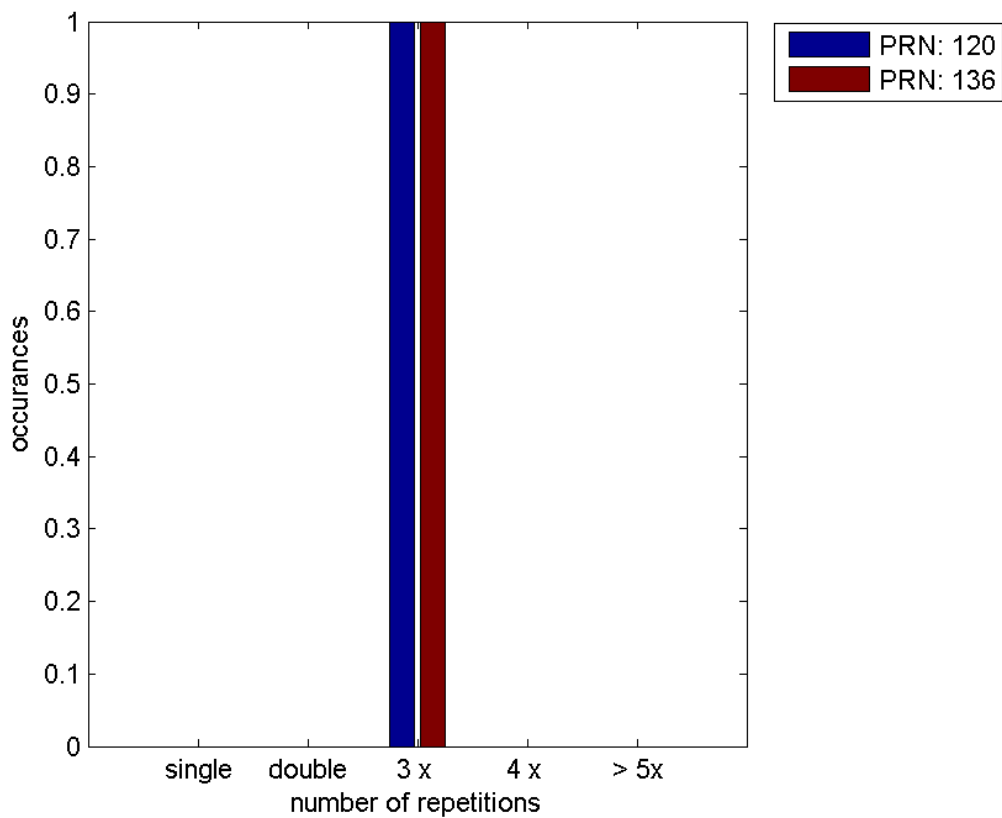
Message Type 6 repetitions :

	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:



Broadcast SBAS Messages :

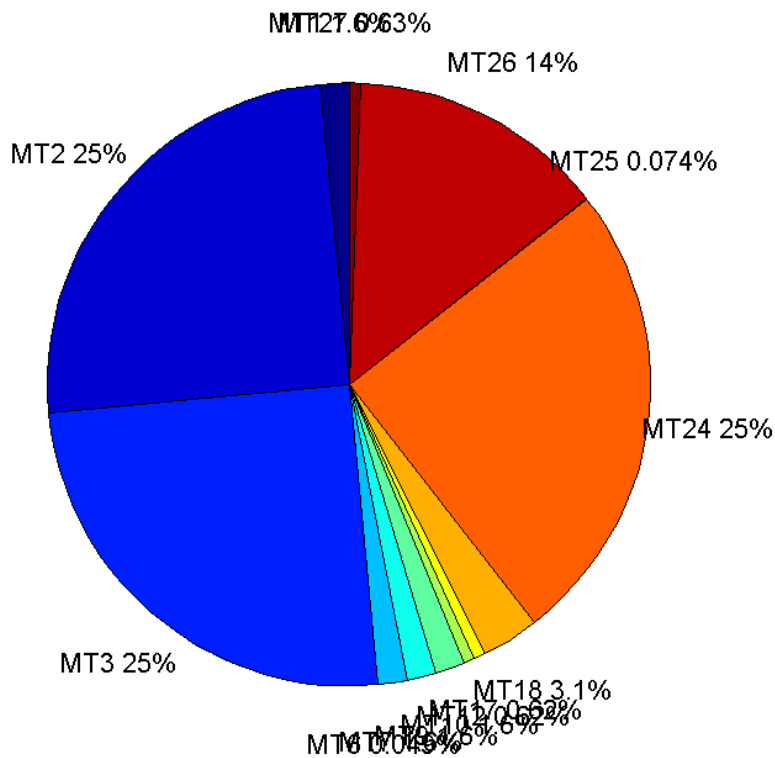
	number of messages	%
MT 0	0	0
MT 1	126	1.5546
MT 2	2024	24.9722
MT 3	2025	24.9846
MT 4	0	0
MT 5	0	0
MT 6	4	0.0493523
MT 7	126	1.5546
MT 9	126	1.5546
MT 10	126	1.5546
MT 12	50	0.616903
MT 17	50	0.616903
MT 18	250	3.08452
MT 24	2025	24.9846
MT 25	6	0.0740284
MT 26	1116	13.7693
MT 27	51	0.629241
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	8105	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	69	64.184	0	0	0
MT 2	4	8	4.00346	1	0	0
MT 3	4	7	4.00346	1	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	1	1	0	0	0
MT 7	64	69	64.216	0	0	0
MT 9	64	69	64.216	0	0	0
MT 10	64	69	64.216	0	0	0
MT 12	156	165	160.367	49	0	0
MT 17	160	167	160.367	0	0	0
MT 18	4	136	31.6586	0	0	0
MT 24	4	8	4.00346	0	0	0
MT 25	55	4265	1446.6	0	0	0
MT						

26	4	33	7.26368	0	0	0
MT 27	160	164	160.3	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

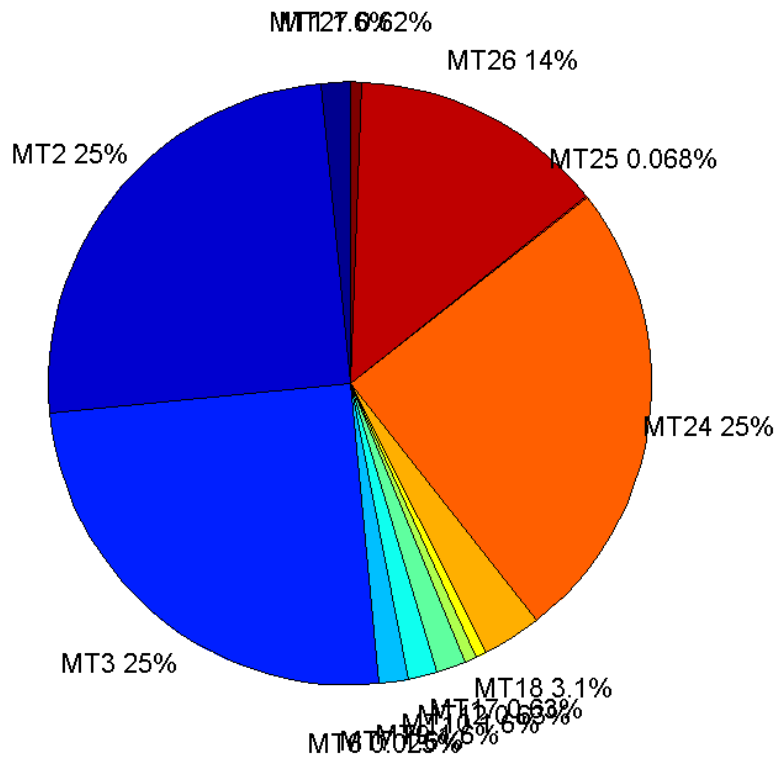
	number of messages	%
MT 0	0	0
MT 1	252	1.55979
MT 2	4037	24.9876
MT 3	4036	24.9814
MT 4	0	0
MT 5	0	0
MT 6	4	0.0247586
MT 7	252	1.55979
MT 9	252	1.55979

MT 10	252	1.55979
MT 12	101	0.625155
MT 17	101	0.625155
MT 18	504	3.11958
MT 24	4037	24.9876
MT 25	11	0.0680862
MT 26	2217	13.7225
MT 27	100	0.618965
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	16156	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	64	69	64.1434	0	0	0
MT 2	4	8	4.00223	1	0	0
MT 3	4	7	4.00248	1	0	0
MT 4	--	--	--	--	--	--
MT 5	--	--	--	--	--	--
MT 6	1	1	1	0	0	0
MT 7	64	69	64.1434	0	0	0
MT 9	64	69	64.1594	0	0	0
MT 10	64	69	64.1753	0	0	0
MT 12	156	165	160.28	100	0	0
MT 17	160	165	160.32	0	0	0
MT 18	4	140	31.8966	0	0	0
MT 24	4	8	4.00223	0	0	0
MT 25	55	4265	1587.9	0	0	0
MT 26	4	43	7.2852	0	0	0
MT 27	160	165	160.273	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_25EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2015_12_25EGNOS/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