

Global View

city Kiev
country Ukraine
abbreviation NAU
program Pegasus
site Laboratory satellite systems
comment Konin V., Shyshkov F. InsideGNSS, Jan-Feb 2015,
P.50 - 54
version 4.8.2
date 22/11/2015

Range Domain

start: 05:54:19 18.11.2015 (week: 1871 sec: 280459)
end: 14:15:26 18.11.2015 (week: 1871 sec: 310526)
duration: 08:21:08 ..

quality

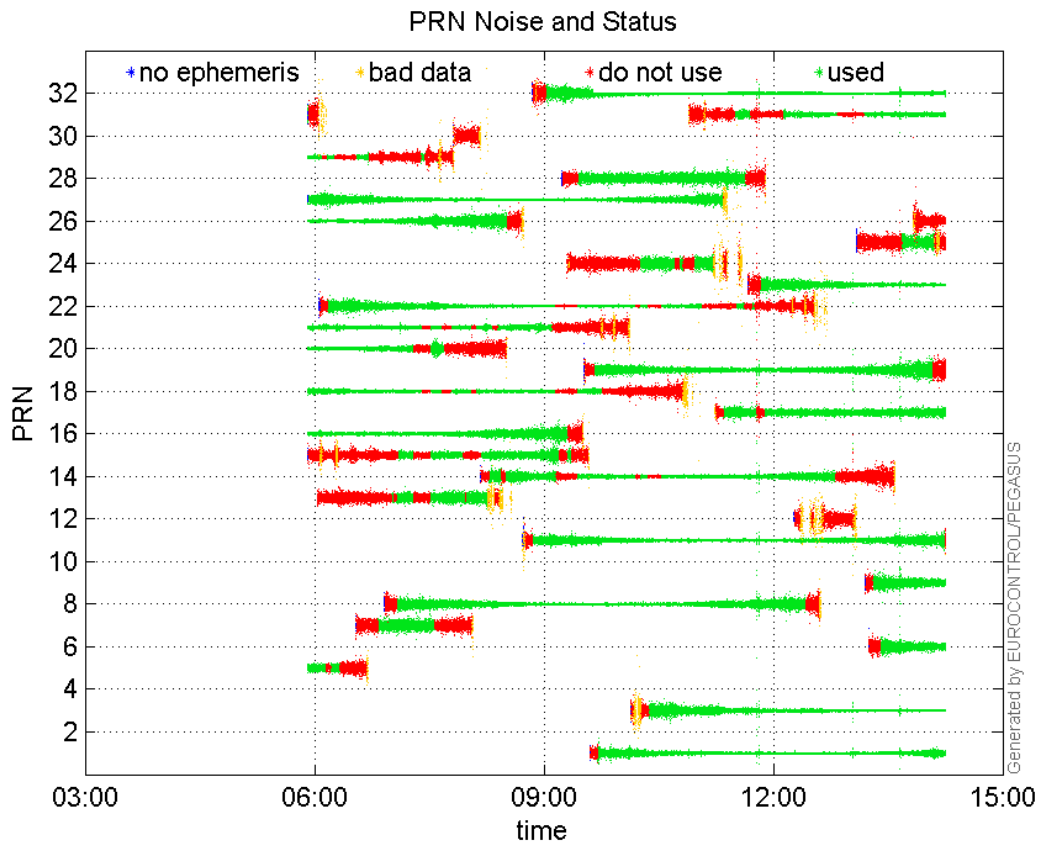
valid samples 30068
total samples 30068

PRN overview

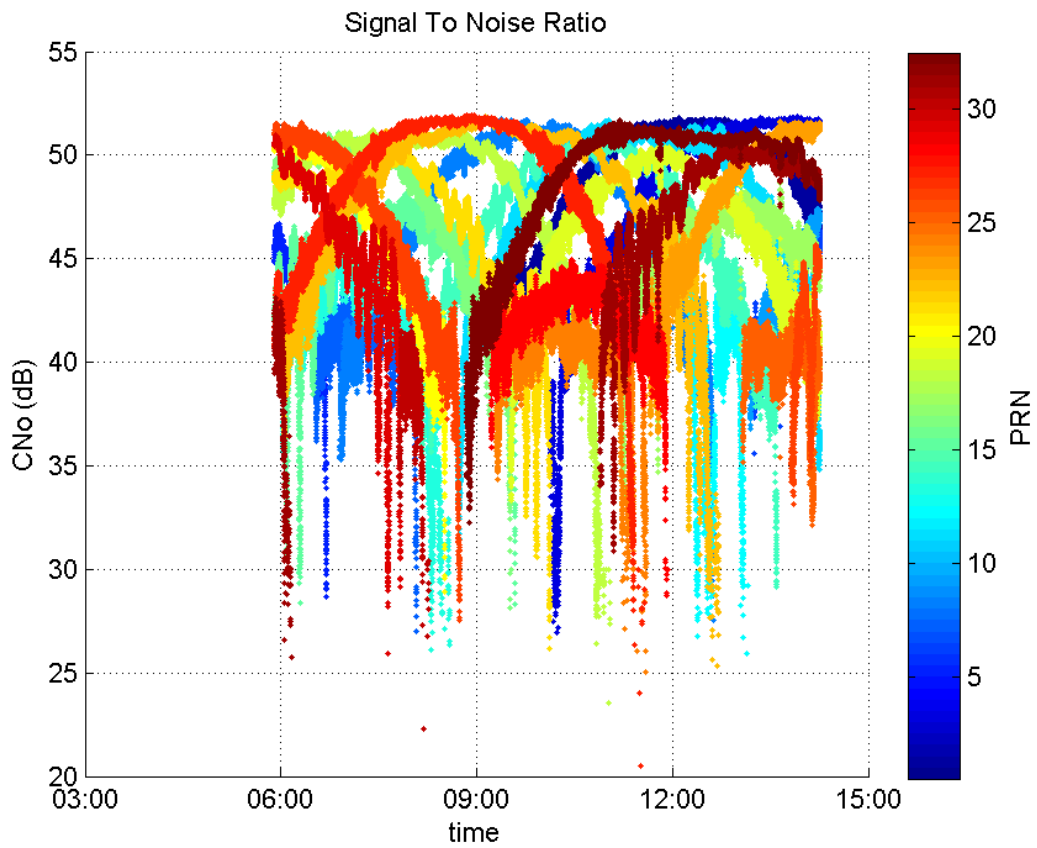
Number of Visible GPS Satellites 29
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



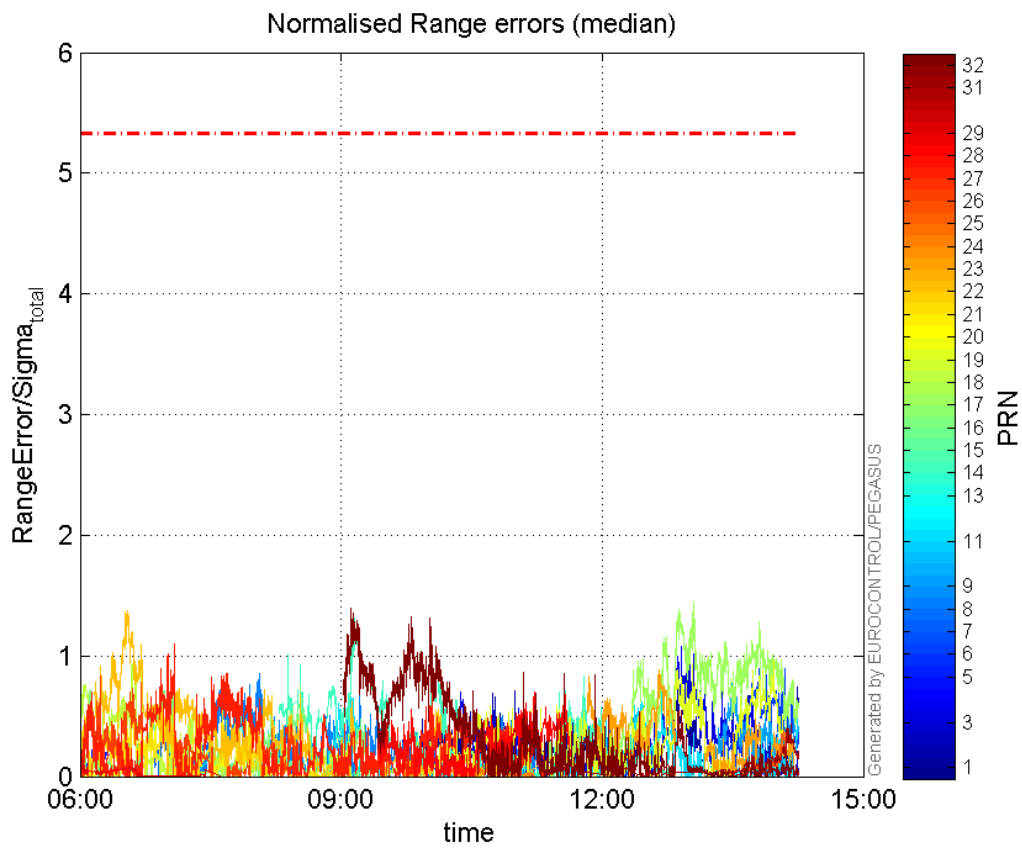
range errors

Number of Overbounding Norm Errors 0

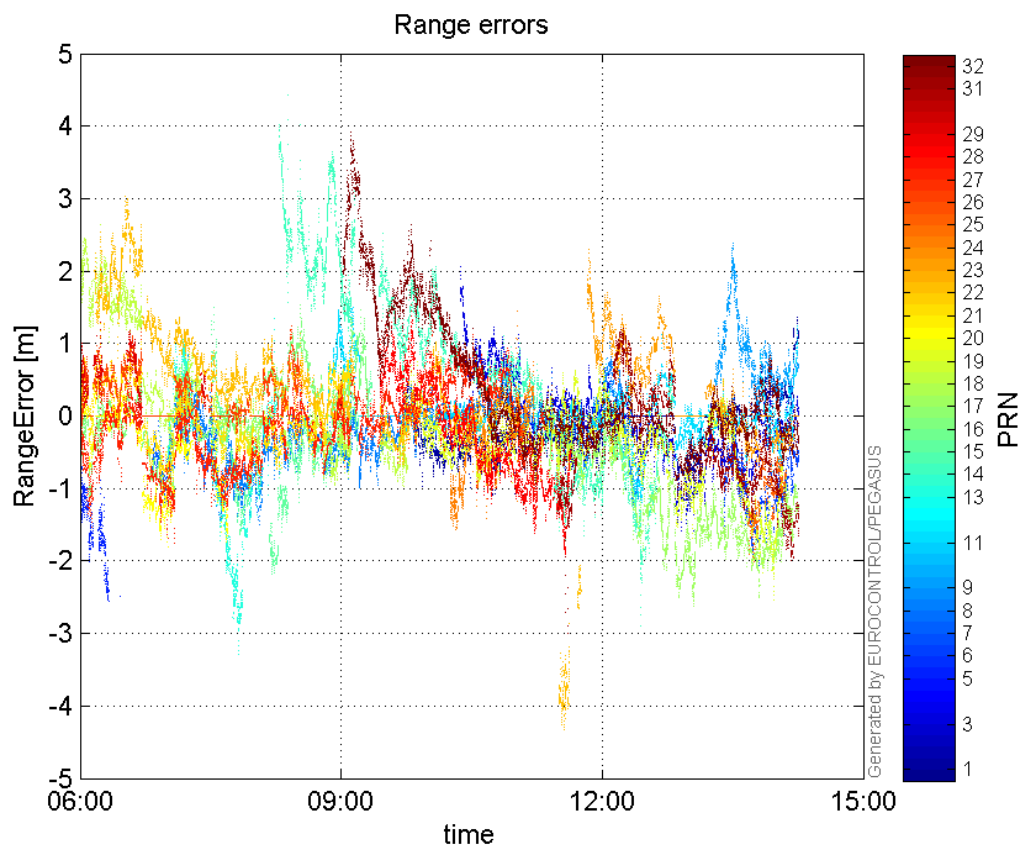
Max Norm Errors :

GPS Week	GPS Second	PRN	Norm Error	Range Error	Sigma
1871	305858	1	0.775493	-1.15331	1.4872
1871	305662	3	1.07735	-1.58978	1.47563
1871	282446	5	0.231417	-2.49146	10.7661
1871	308913	6	0.899232	-2.05427	2.28447
1871	284155	7	0.427598	-1.22706	2.86965
1871	288206	8	0.851005	-1.50676	1.77056
1871	307835	9	0.802816	2.38328	2.96865
1871	304853	11	0.731567	1.132	1.54736
1871	287418	13	0.520647	-2.86348	5.49984
1871	292151	14	1.31727	3.10611	2.35799
1871	287418	15	0.269258	-1.63637	6.07734
1871	284423	16	0.872094	-1.33295	1.52845
1871	306169	17	1.44772	-2.54564	1.75838
1871	283322	18	0.94707	1.80751	1.90853
1871	309500	19	0.969827	-2.53701	2.61594
1871	284134	20	0.54266	-1.69605	3.12543
1871	284122	21	0.703012	-1.23539	1.75729
1871	282787	22	1.37766	2.97322	2.15817
1871	304748	23	0.883971	1.64399	1.85978
1871	297624	24	0.136002	-1.41154	10.3789
1871	309887	25	0.379863	-1.16386	3.06389
1871	281631	26	0.831877	1.28758	1.5478
1871	284690	27	1.10203	-1.75045	1.58839
1871	299608	28	0.70116	-1.62662	2.3199
1871	280846	29	0.170769	1.07067	6.26969
1871	310205	31	0.429845	-1.99357	4.63788
1871	292021	32	1.39034	3.92443	2.82264

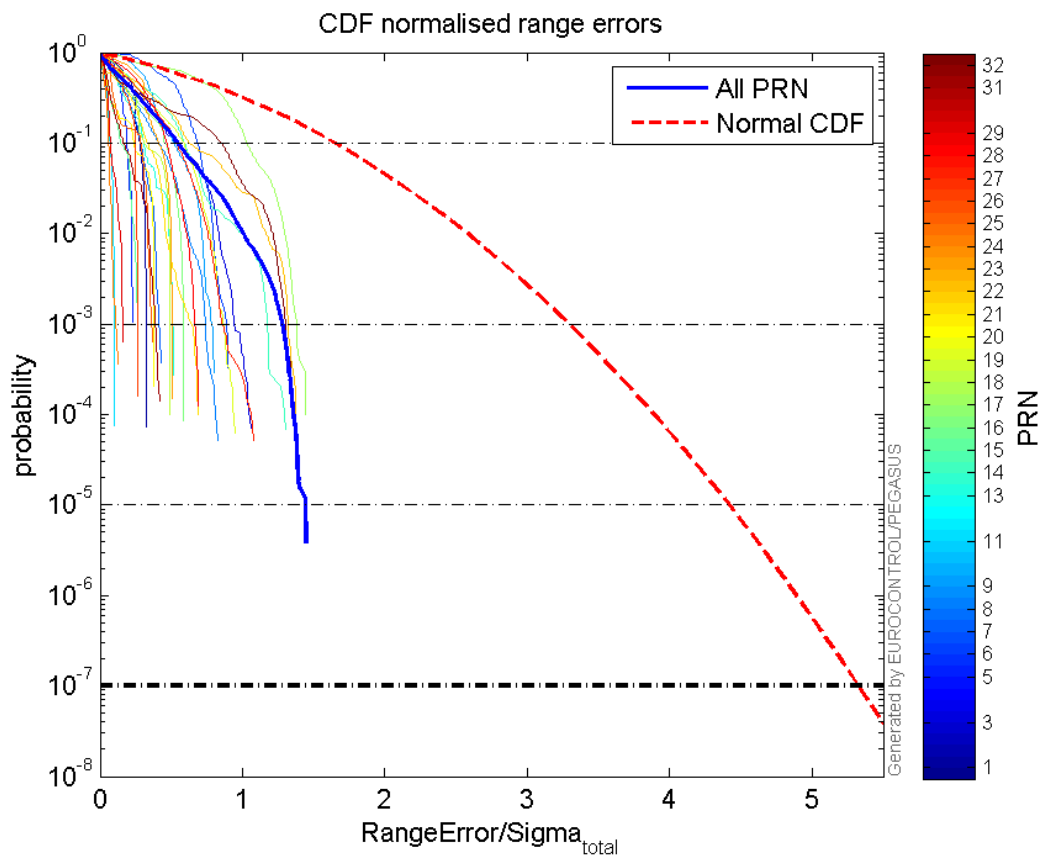
Normalised Range errors (median):



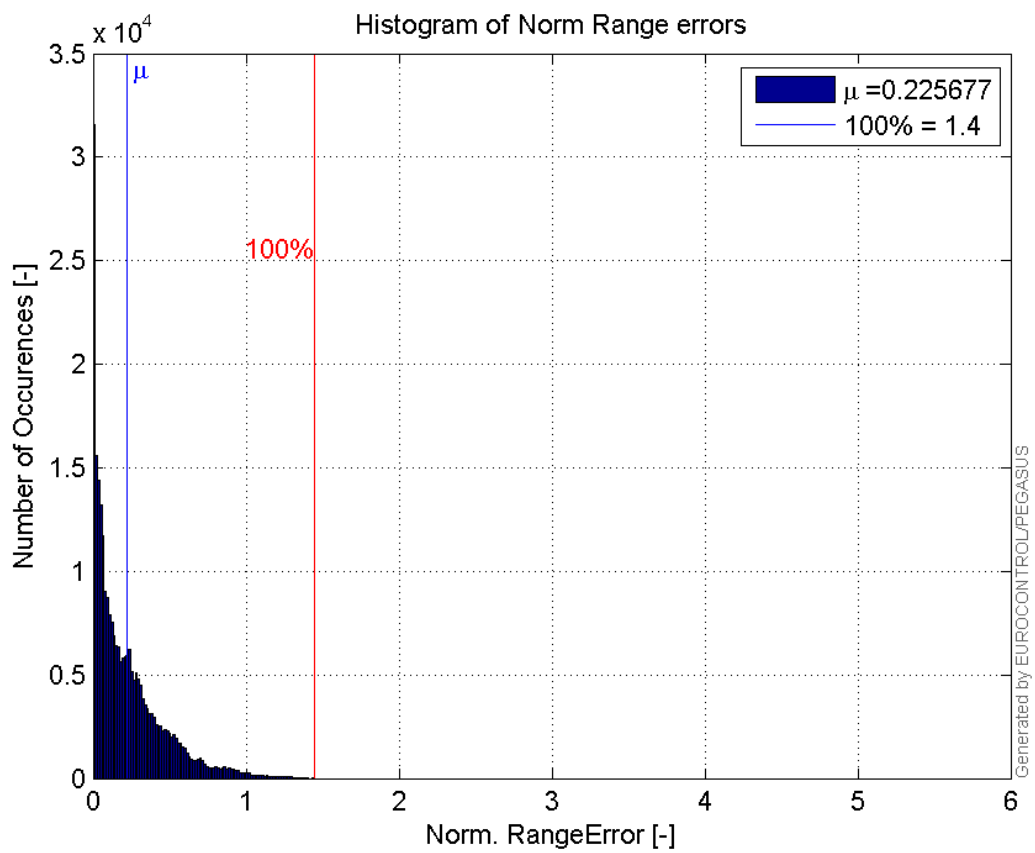
Range errors:



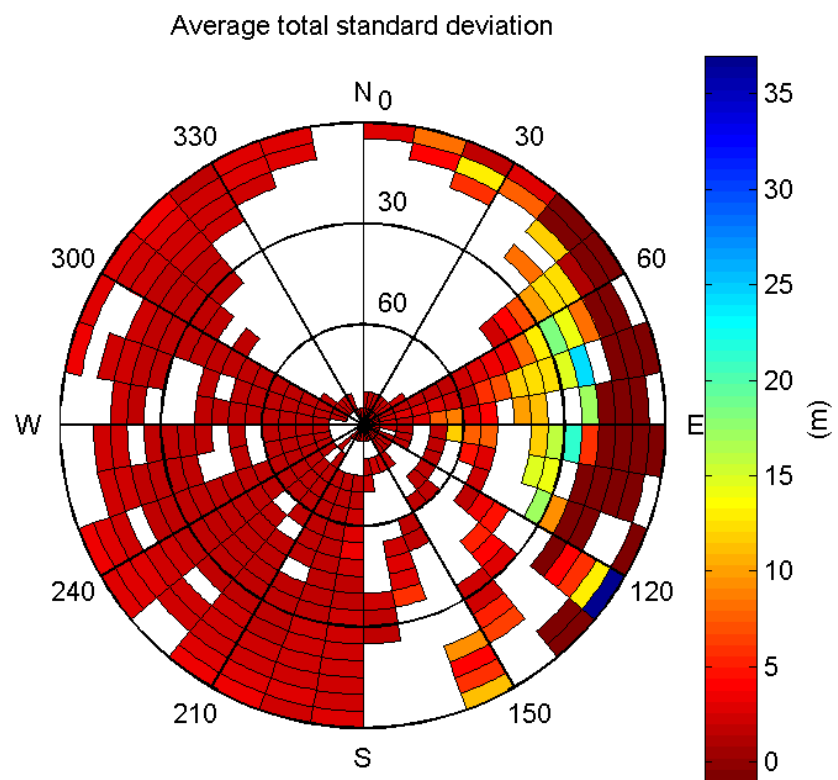
CDF normalised range errors:



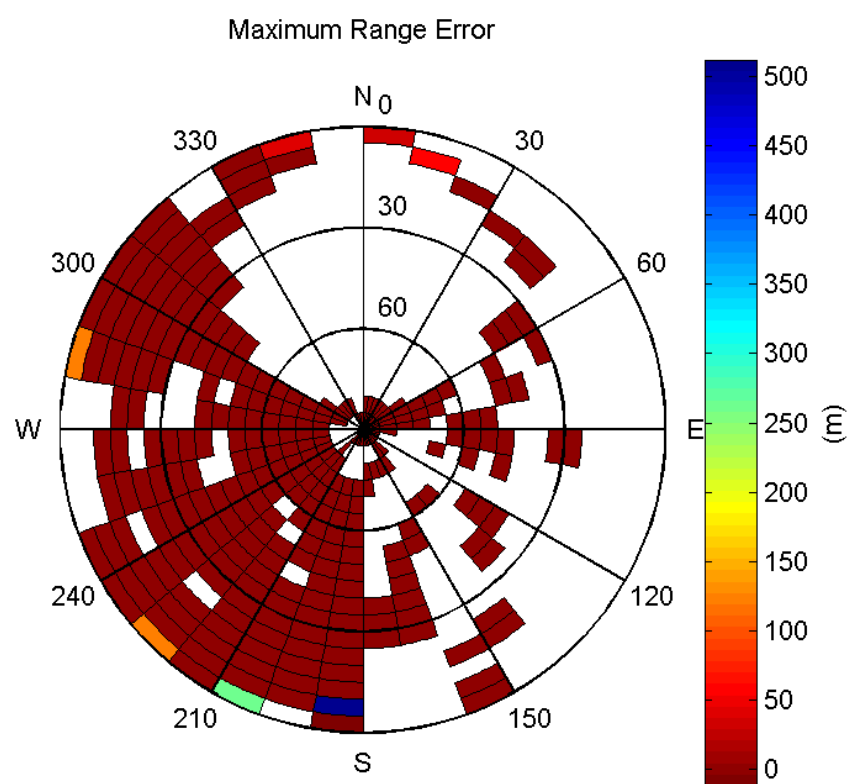
Histogram of Norm Range errors:



Sigma Sky Plot:

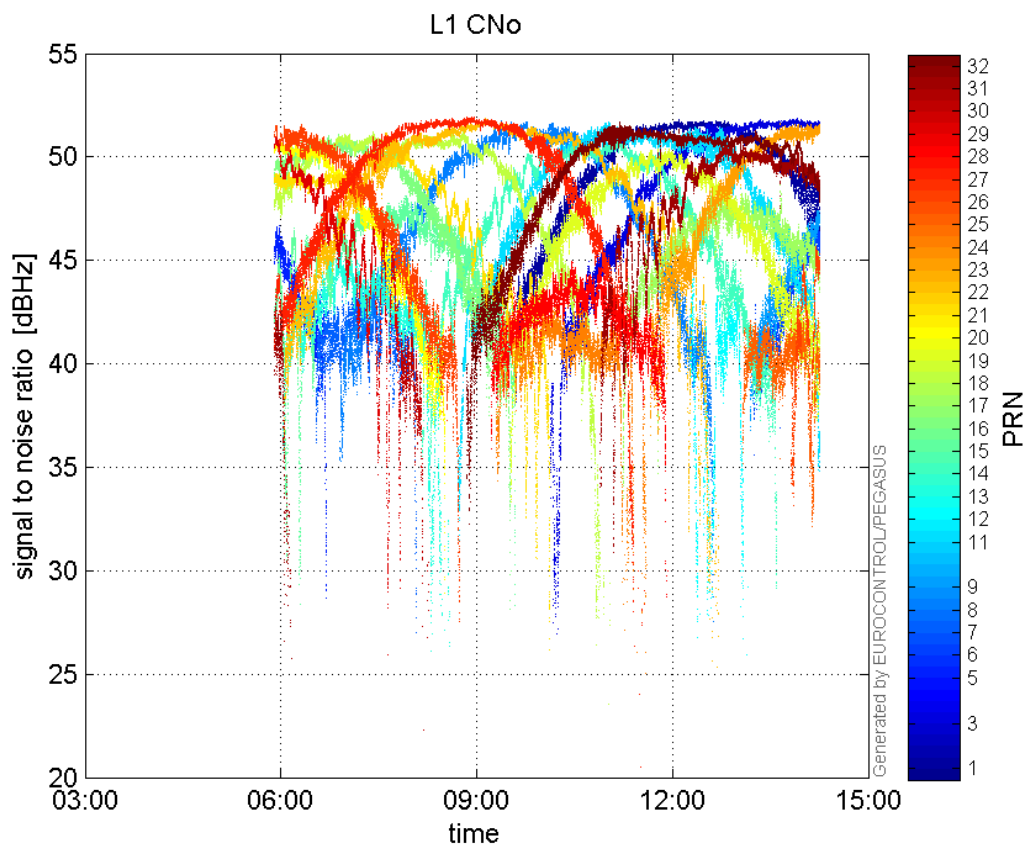


Norm Error Sky Plot:

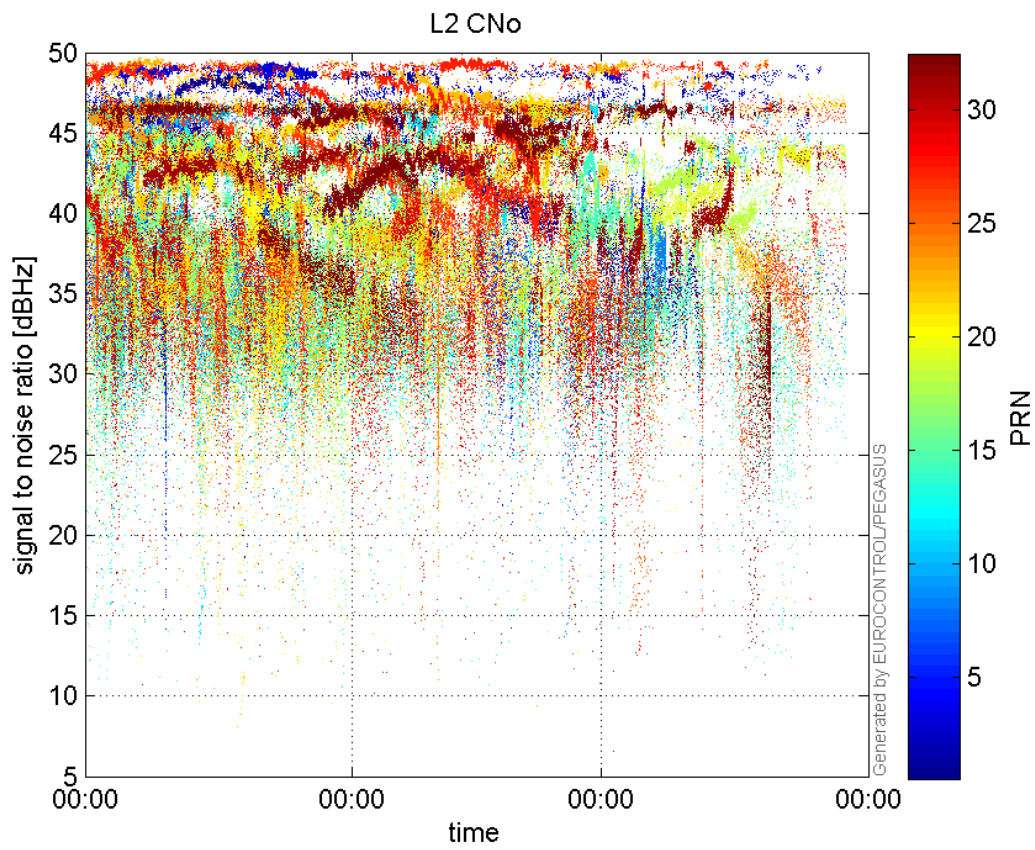


signal quality

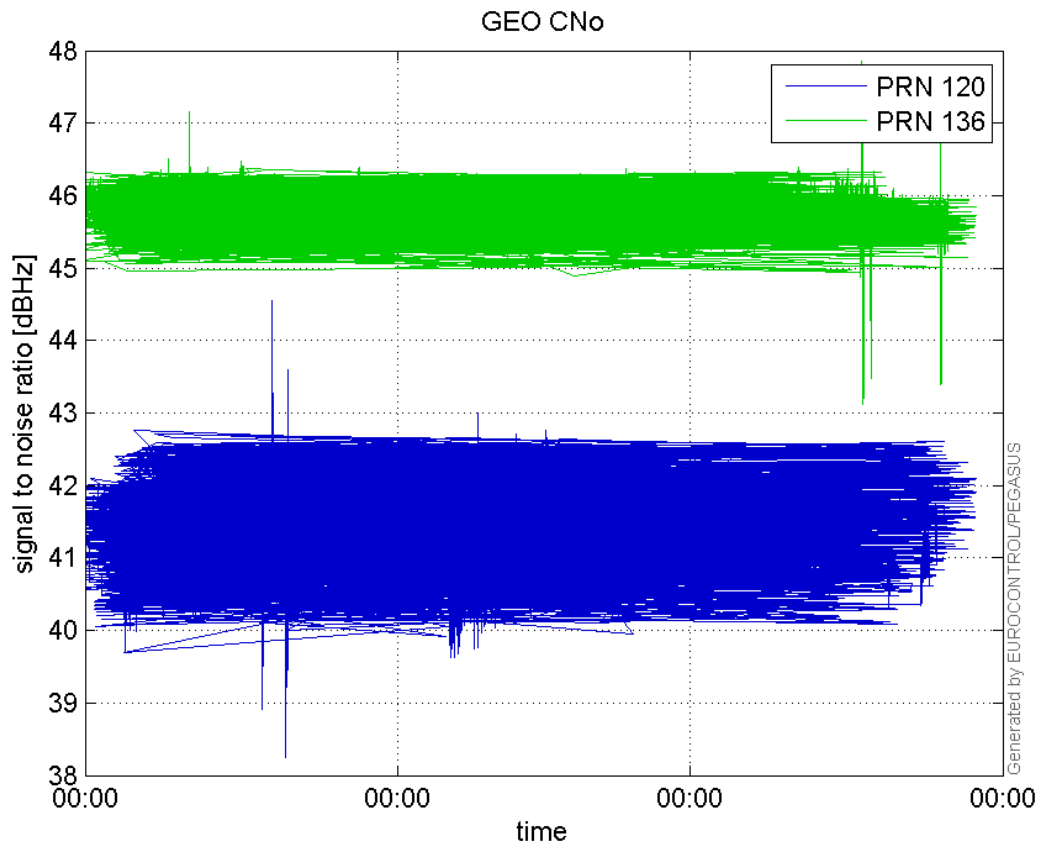
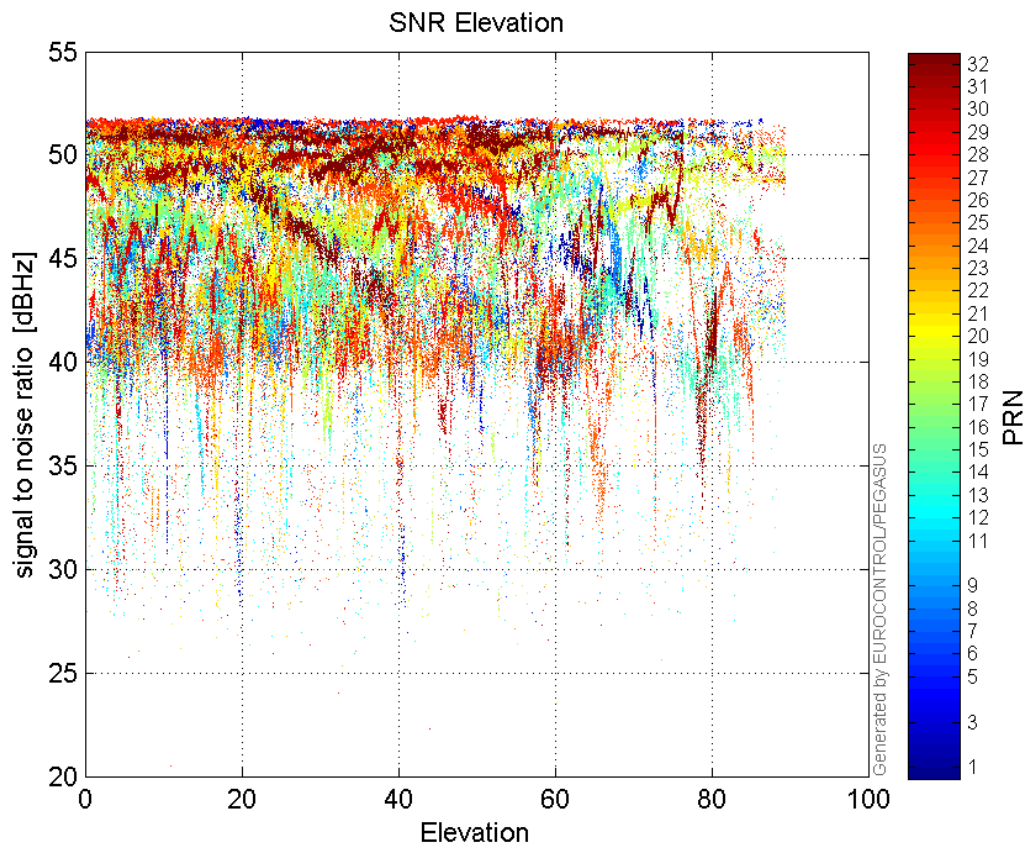
L1 CNo:

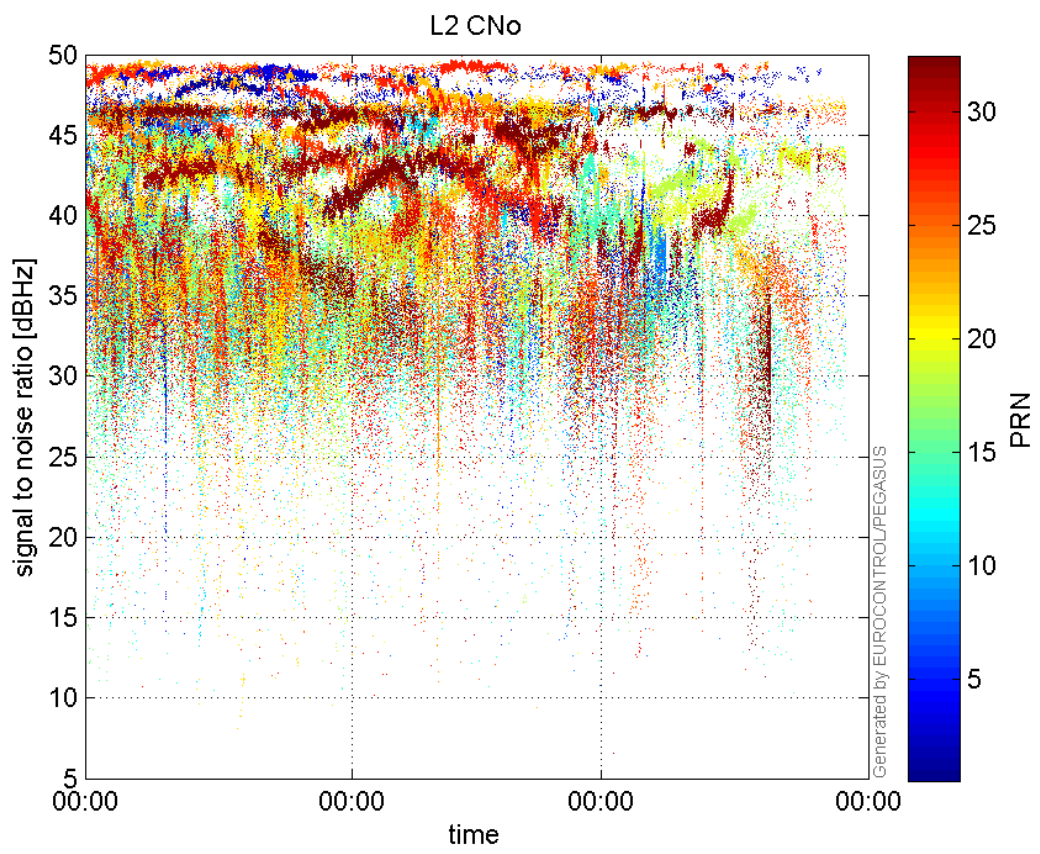


L2 CNo:

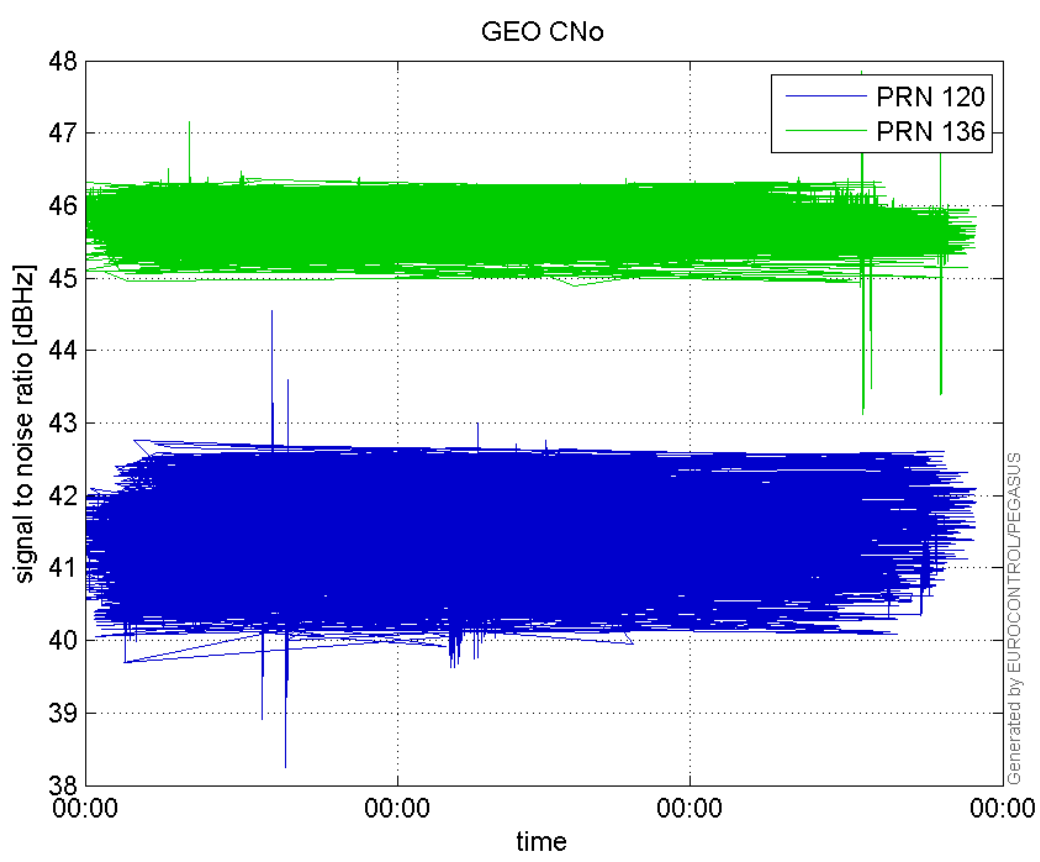


GEO CNo:

**SNR Elevation:****L2 CNo:**

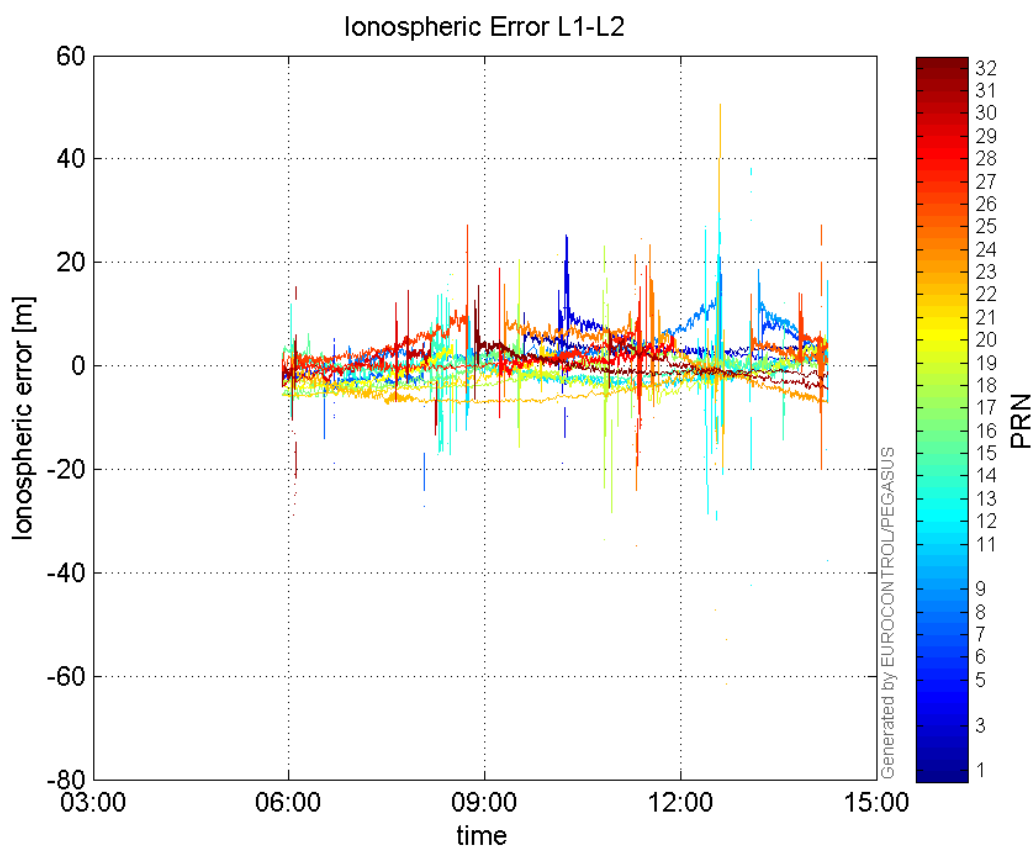


GEO CNo:



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_11_18EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_11_18EGNOS/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	219.172
mi_numbers	results	0

SBAS Messages

start: 05:54:18.129 18.11.2015 (week: 1871 sec: 280458.129)
end: 14:15:25.129 18.11.2015 (week: 1871 sec: 310525.129)
duration: 08:21:07 ..

quality

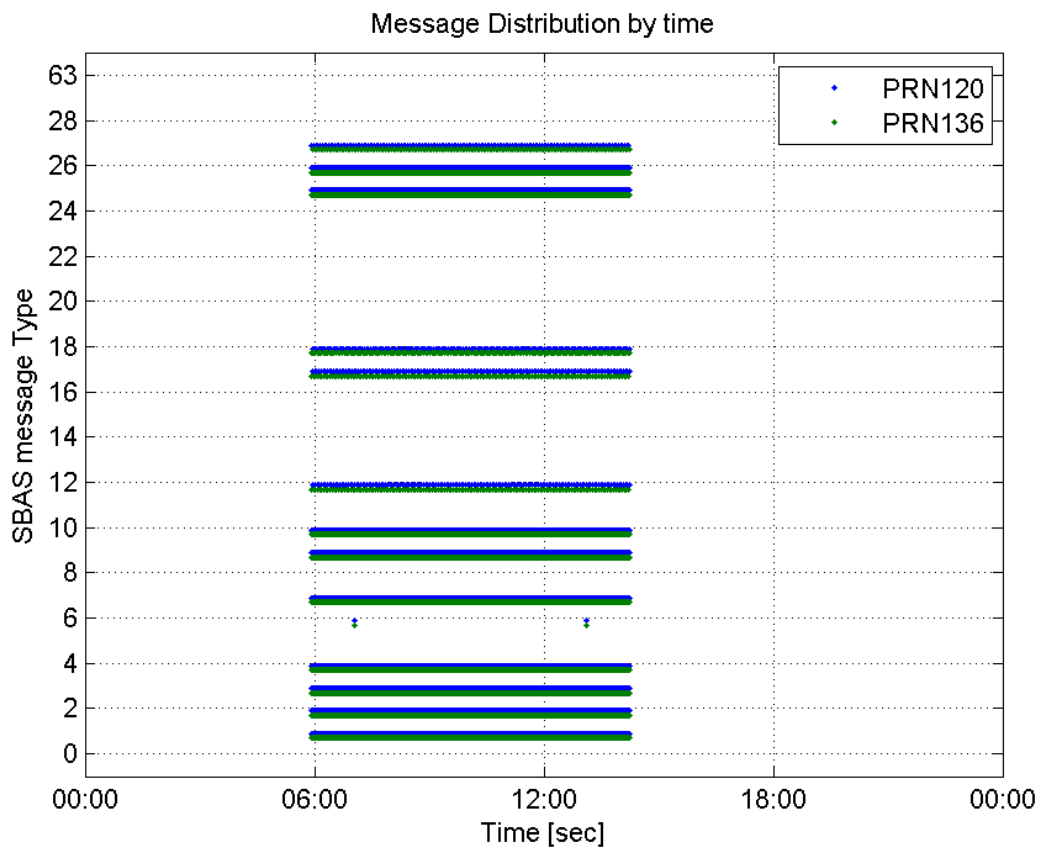
valid samples 60136
total samples 60136
number of SBAS PRNs 2

SBAS SIS Overview

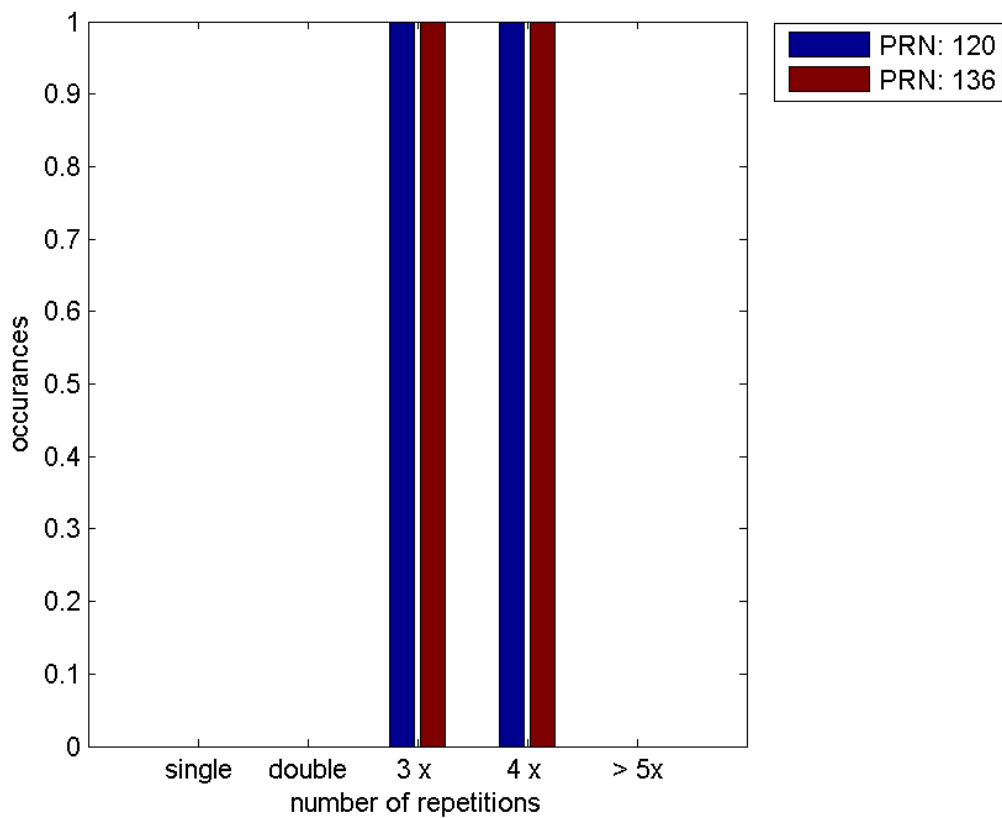
Message Type 6 repetitions :

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

 Message Distribution by time:



Message Type 6 repetitions:



Broadcast SBAS Messages :

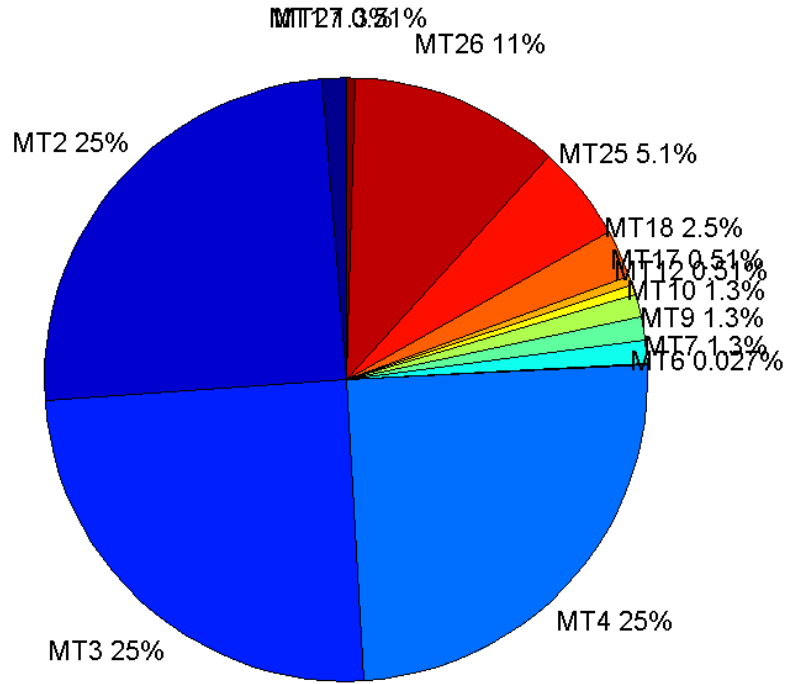
	number of messages	%
MT 0	0	0
MT 1	377	1.25382
MT 2	7471	24.847
MT 3	7470	24.8437
MT 4	7471	24.847
MT 5	0	0
MT 6	8	0.0266064
MT 7	377	1.25382
MT 9	378	1.25715
MT 10	377	1.25382
MT 12	153	0.508847
MT 17	153	0.508847
MT 18	765	2.54423
MT 24	0	0
MT 25	1546	5.14168
MT 26	3369	11.2046
MT 27	153	0.508847
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	30068	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	75	81	79.6702	0	0	0
MT 2	4	8	4.02477	2	0	0
MT 3	4	8	4.02477	2	0	0
MT 4	4	8	4.0249	2	0	0
MT 5	--	--	--	--	--	--
MT 6	1	21883	3127	1	1	1
MT 7	76	81	79.6383	0	0	0
MT 9	75	85	79.6499	0	0	0
MT 10	75	82	79.6383	0	0	0
MT 12	189	201	196.395	152	0	0
MT 17	189	202	196.421	0	0	0
MT 18	4	170	39.1243	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	49	19.4537	0	0	0
MT						

26	4	41	8.92637	0	0	0
MT 27	184	201	196.395	0	0	0
MT 28	--	--	--	--	--	--
MT 62	--	--	--	--	--	--
MT 63	--	--	--	--	--	--

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

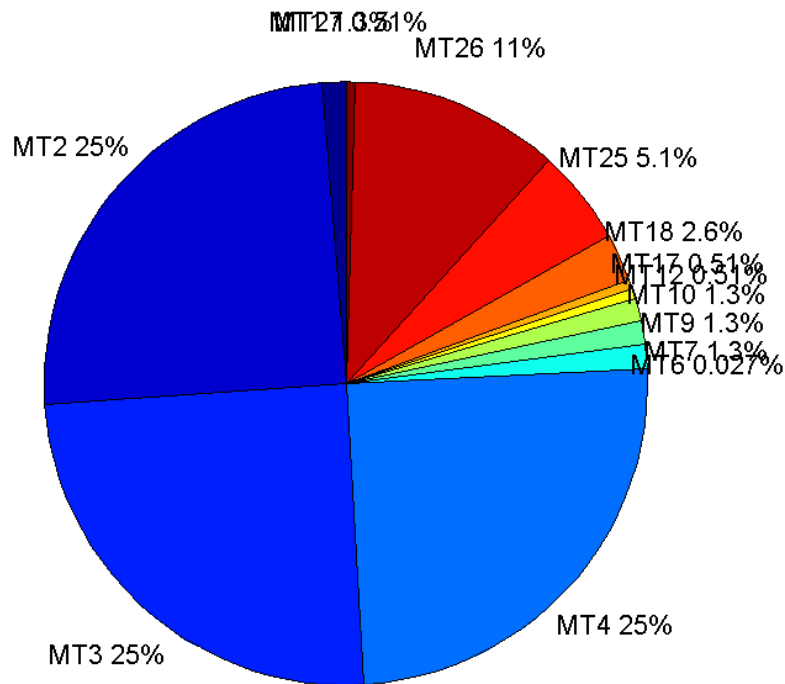
	number of messages	%
MT 0	0	0
MT 1	377	1.25382
MT 2	7470	24.8437
MT 3	7470	24.8437
MT 4	7470	24.8437
MT 5	0	0
MT 6	8	0.0266064
MT 7	376	1.2505
MT 9	377	1.25382

MT 10	377	1.25382
MT 12	153	0.508847
MT 17	153	0.508847
MT 18	768	2.55421
MT 24	0	0
MT 25	1547	5.145
MT 26	3369	11.2046
MT 27	153	0.508847
MT 28	0	0
MT 62	0	0
MT 63	0	0
Total	30068	100

Update intervals :

	Minimum [s]	Maximum [s]	Mean value	Exceed Max update	Exceed NPA timeout	Exceed PA timeout
MT 0	--	--	--	--	--	--
MT 1	76	83	79.758	0	0	0
MT 2	4	8	4.02517	2	0	0
MT 3	4	8	4.02504	2	0	0
MT 4	4	8	4.02517	2	0	0
MT 5	--	--	--	--	--	--
MT 6	1	21902	3129.71	1	1	1
MT 7	76	83	79.8427	0	0	0
MT 9	76	81	79.7686	0	0	0
MT 10	72	81	79.7473	0	0	0
MT 12	184	202	196.25	152	0	0
MT 17	184	201	196.25	0	0	0
MT 18	4	172	39.1773	0	0	0
MT 24	--	--	--	--	--	--
MT 25	1	52	19.4444	0	0	0
MT 26	3	53	8.92191	0	0	0
MT 27	184	201	196.289	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_11_18EGNOS/01_User/01_User
Outputfile	System	D:/PegasusDateGob/job/2015_11_18EGNOS/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

Position Domain

start: 05:54:19 18.11.2015 (week: 1871 sec: 280459)
end: 14:15:26 18.11.2015 (week: 1871 sec: 310526)
duration: 08:21:08 ..

quality

valid samples 29707
total samples 30068

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	295354	1.70367	10.2533	0.166158	2.33696	21.1086	0.110711
max normVer	294538	1.39307	14.9028	0.0934774	3.24596	20.2538	0.160264
max HPE	292476	8.75964	94.8616	0.0923412	-3.59036	54.6567	0.0656893
max VPE	306874	2.60827	30.6852	0.0850008	-3.65996	34.6164	0.105729
min HPL	297725	0.805886	8.78455	0.091739	0.160868	16.8332	0.00955659
min VPL	291708	0.853095	10.4138	0.0819196	1.15842	12.1605	0.0952607

APV-I discontinuity events :

#	Epoch	duration	stable period
1	292302	377	11482
2	292882	283	203

APV-35m discontinuity events :

#	Epoch	duration	stable period
1	292302	377	11482
2	292882	283	203
3	305931	882	12766

LPV-200 discontinuity events :

#	Epoch	duration	stable period
1	292302	377	11482
2	292882	283	203
3	305931	882	12766

First Glance analysis

Duration 30068
Number of Samples 30068
Number of invalid sample 361
Number of no position solution samples 0
Number of missing sample 0
Logging Loss 0
Processing Loss 1.2006
Number of Misleading Information 0
Data gaps 0
Discontinuities 0

Number of Samples :

Valid	APV-1	LPV-200	CAT-1	APV-35m
29707	29047	28101	0	28101

Accuracy statistics :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
HPE 95%	1.80997	1.697	1.63612	NaN	1.63612
HPEscale 95%	NaN	4.48378	4.51207	NaN	4.51207
VPE 95%	2.06233	2.01491	1.96763	NaN	1.96763
VPEscale 95%	NaN	5.23943	3.68581	NaN	3.68581

Availability :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Signal in Space	1	0.977783	0.945939	0	0.945939
measurements	0.987994	0.966044	0.934582	0	0.934582
Operational	0.987994	0.966044	0.934582	0	0.934582

Discontinuity events :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
All	--	2	39	--	39
Long	--	2	3	--	3
Independent	--	2	3	--	3
P(disc.)	NaN	0.00103281	0.00160137	NaN	0.00160137
P(slide)	NaN	0.00103281	0.00476851	NaN	0.00476851

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

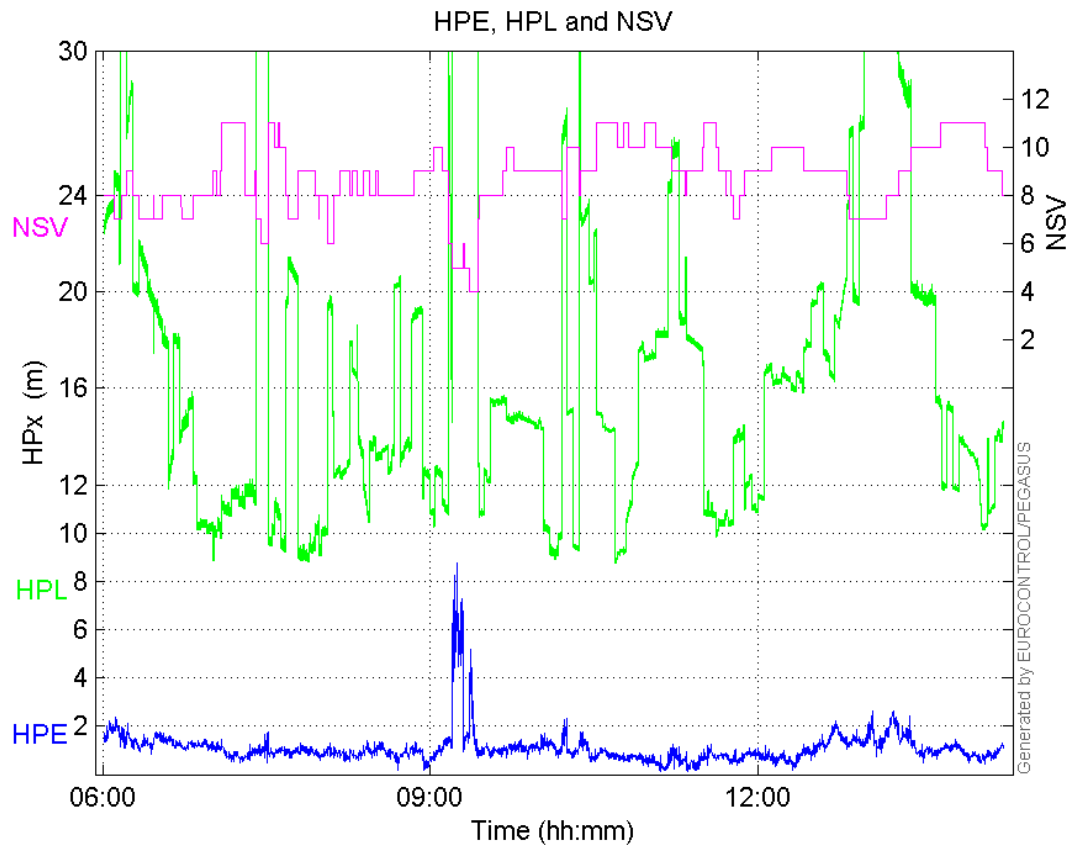
Performance Summary :

	Valid	APV-1	LPV-200	CAT-1	APV-35m
Samples	29707	29047	28101	0	28101
SIS Availability	1	0.977783	0.945939	0	0.945939
Local Availability	0.987994	0.966044	0.934582	0	0.934582
Operational Availability	0.987994	0.966044	0.934582	0	0.934582
HPE 95%	1.80997	1.697	1.63612	NaN	1.63612
HPEscale 95%	NaN	4.48378	4.51207	NaN	4.51207
VPE 95%	2.06233	2.01491	1.96763	NaN	1.96763
VPEscale 95%	NaN	5.23943	3.68581	NaN	3.68581
All Discontinuity Events	--	2	39	--	39
Long Discontinuity Events	--	2	3	--	3
Independent Discontinuity Events	--	2	3	--	3
P(discontinuity)	NaN	0.00103281	0.00160137	NaN	0.00160137
P(sliding window)	NaN	0.00103281	0.00476851	NaN	0.00476851

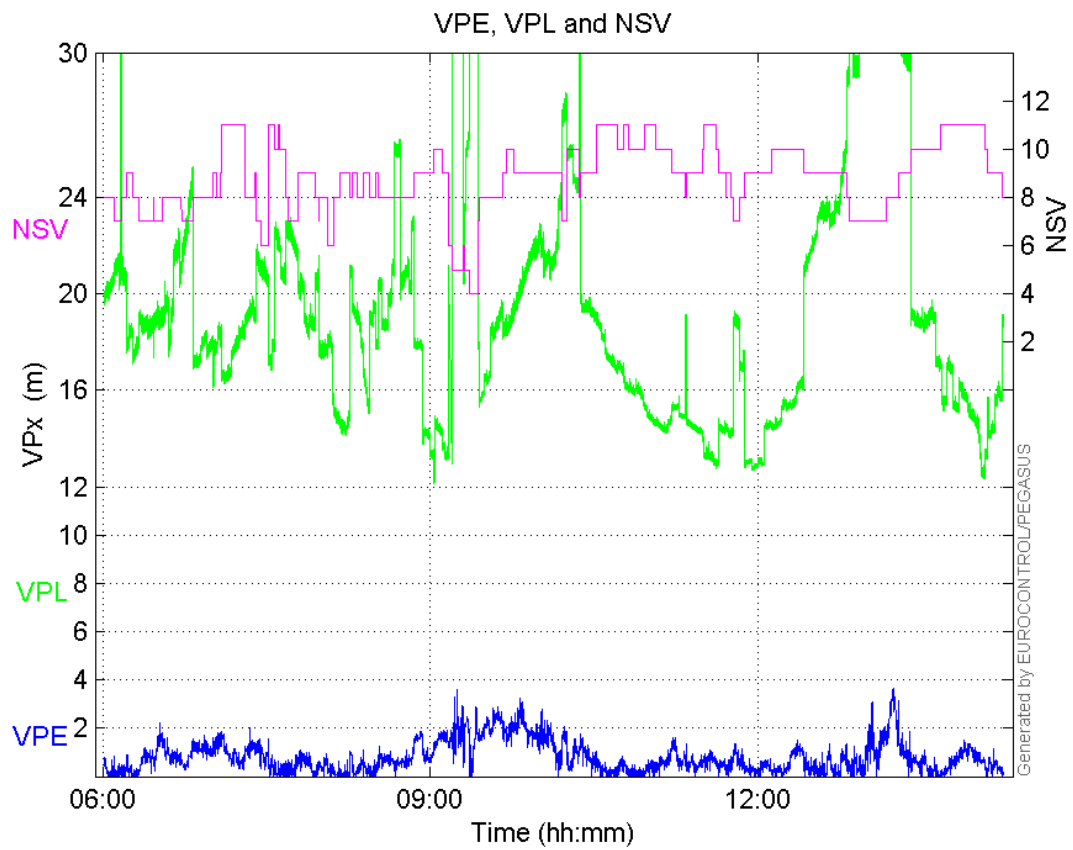
All Integrity Events	0	0	0	0	0
Horizontal Integrity Events	0	0	0	0	0
Vertical Integrity Events	0	0	0	0	0

Time Series

HPE, HPL and NSV:

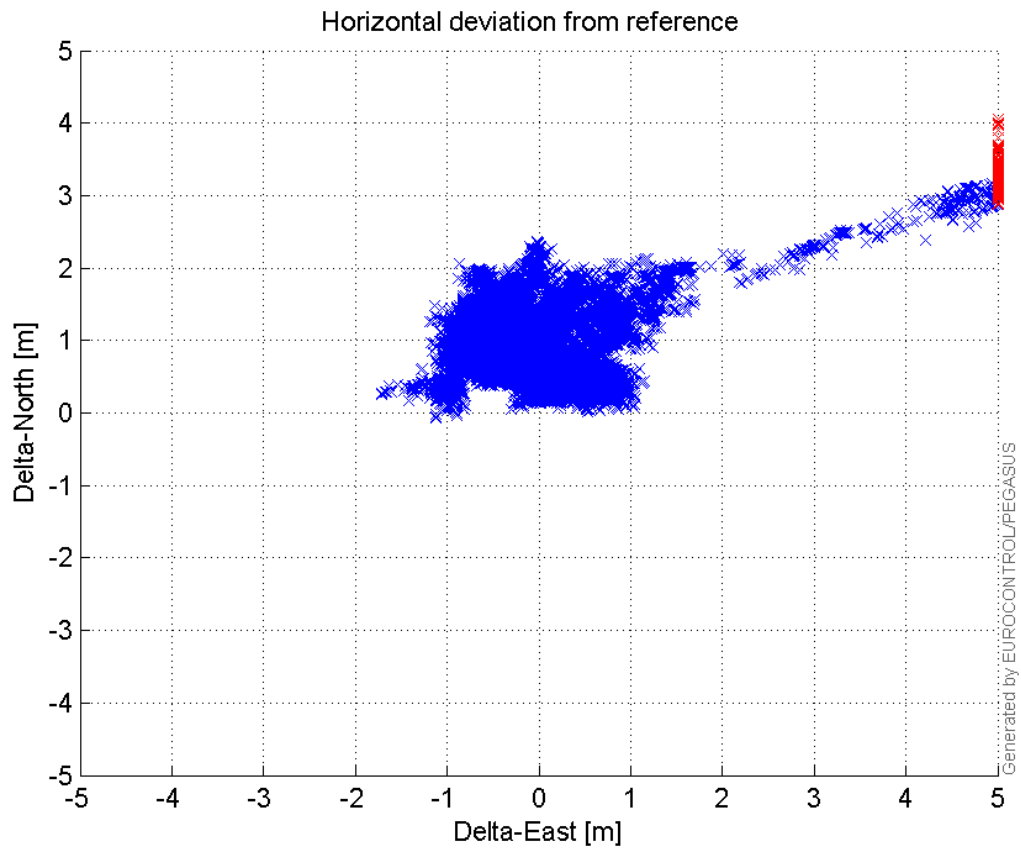


VPE, VPL and NSV:



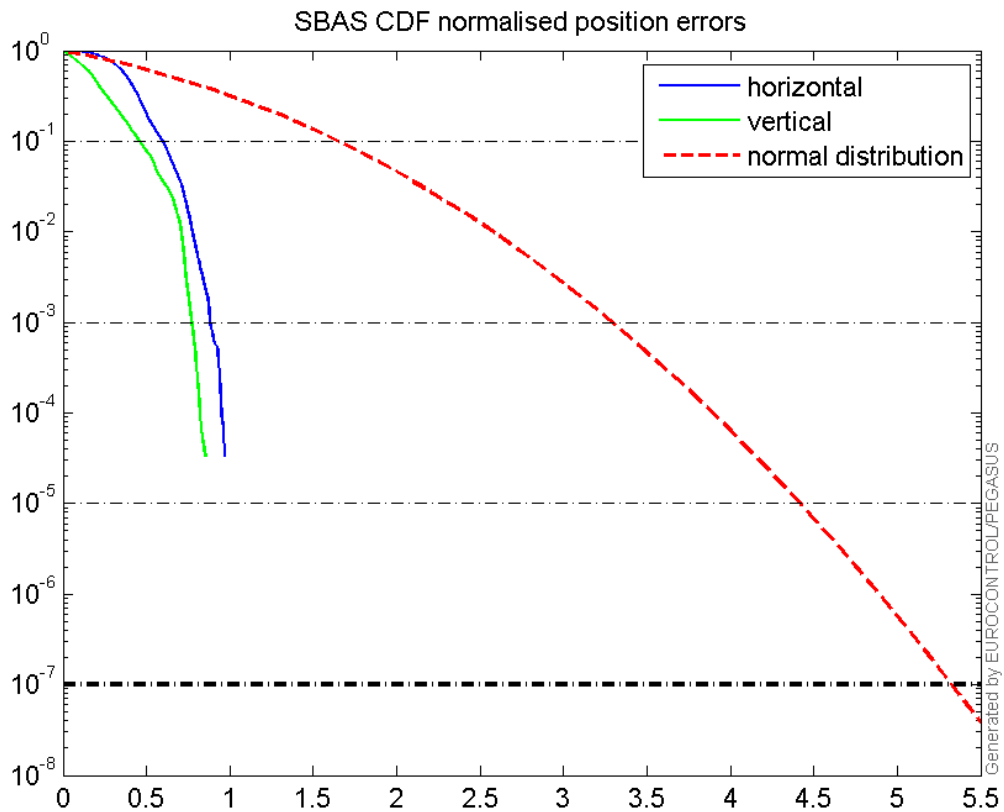
Horizontal deviation

Horizontal deviation from reference :



CDF position

SBAS CDF position domain:



Statistics

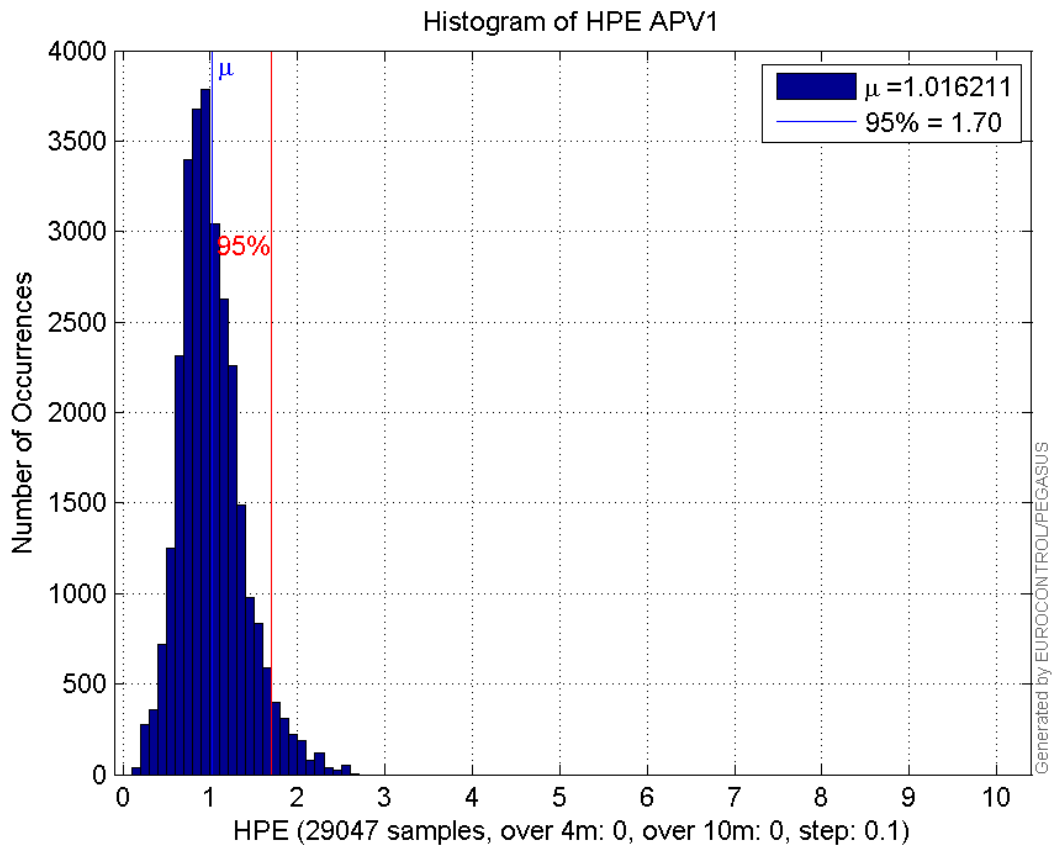
number	29047
sum	29517.877
sum2	33838.782
prctile95	1.697004
prctile99	2.1281119
number	29047
sum	22796.878
sum2	29156.748
prctile95	2.0149108
prctile99	2.6768872
number	29047
sum	486930.95
sum2	9464480.6
prctile95	34.48774
prctile99	36.46149
number	29047
sum	563646.11
sum2	11821588
prctile95	31.94008
prctile99	40.13839
number	29047
sum	1910.3536

sum2 143.36021
prctile95 0.1120946
prctile99 0.12938466
number 29047
sum 1193.7537
sum2 77.478308
prctile95 0.10478856
prctile99 0.1327895
number 28101
sum 27984.39
sum2 31215.247
prctile95 1.6361236
prctile99 2.0379448
number 28101
sum 21282.652
sum2 26198.27
prctile95 1.967633
prctile99 2.5521711
number 28101
sum 453559.64
sum2 8285205.4
prctile95 28.061035
prctile99 36.104852
number 28101
sum 526378.98
sum2 10351460
prctile95 27.11534
prctile99 33.458431
number 28101
sum 1866.5989
sum2 141.19179
prctile95 0.11280172
prctile99 0.12971493
number 28101
sum 1154.8468
sum2 75.464994
prctile95 0.10530878
prctile99 0.13303914

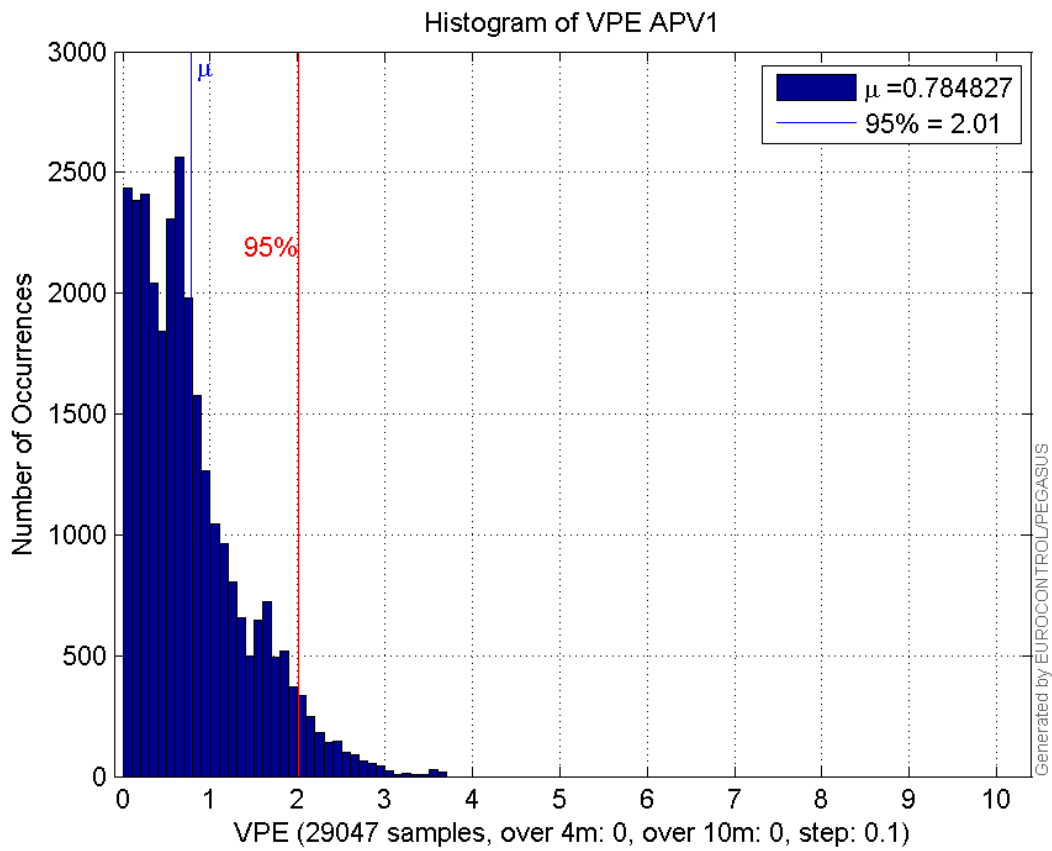
Error and XPL Statistics :

	Mean Value	Standard Deviation	50% Value	95% Value	99% Value	RMS Value
HPE	1.01621	0.363712	0.964637	1.697	2.12811	1.07934
HPL	16.7636	6.69463	14.9014	34.4877	36.4615	18.0509
VPE	0.784827	0.622766	0.64288	2.01491	2.67689	1.00189
VPL	19.4046	5.51752	18.5184	31.9401	40.1384	20.1738

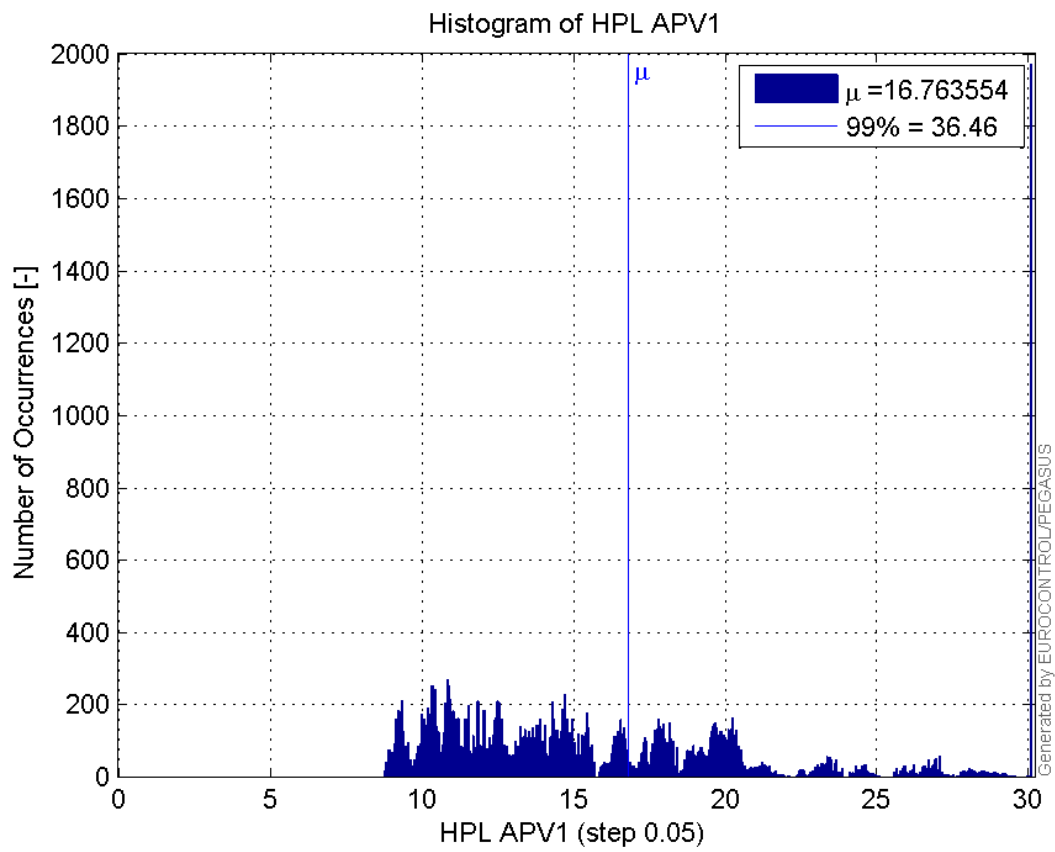
Histogram of HPE APV1:



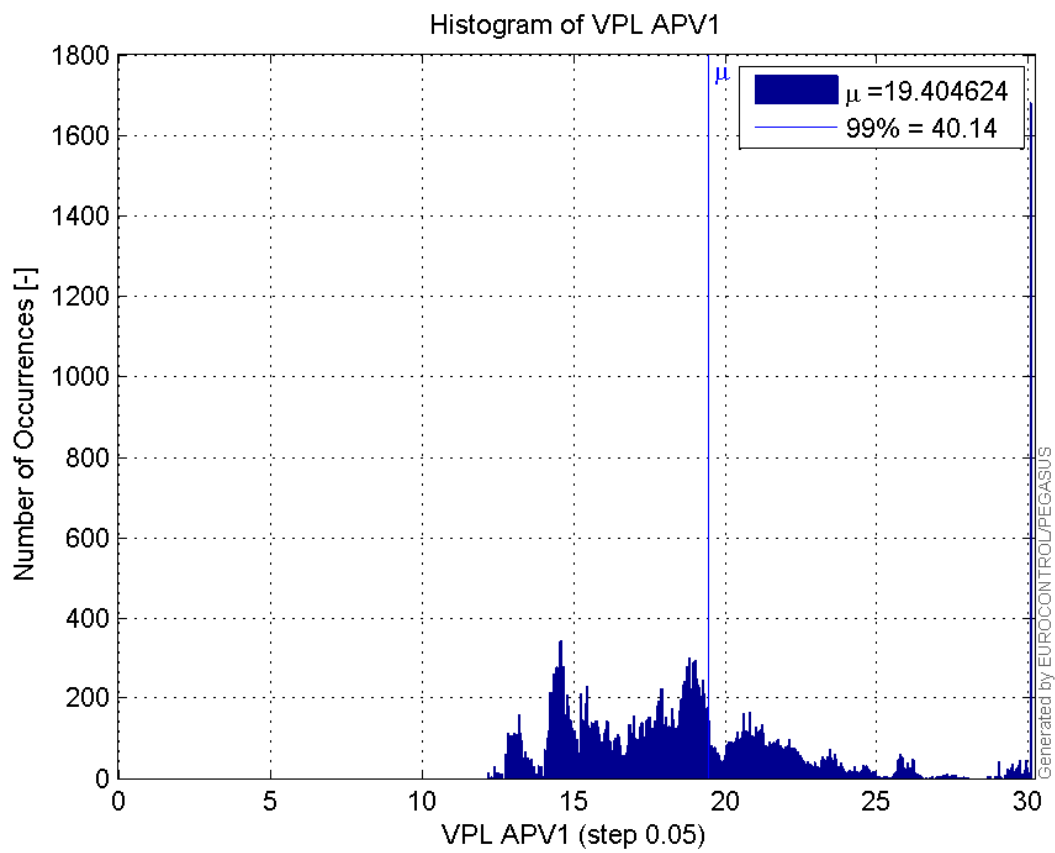
Histogram of VPE APV1:



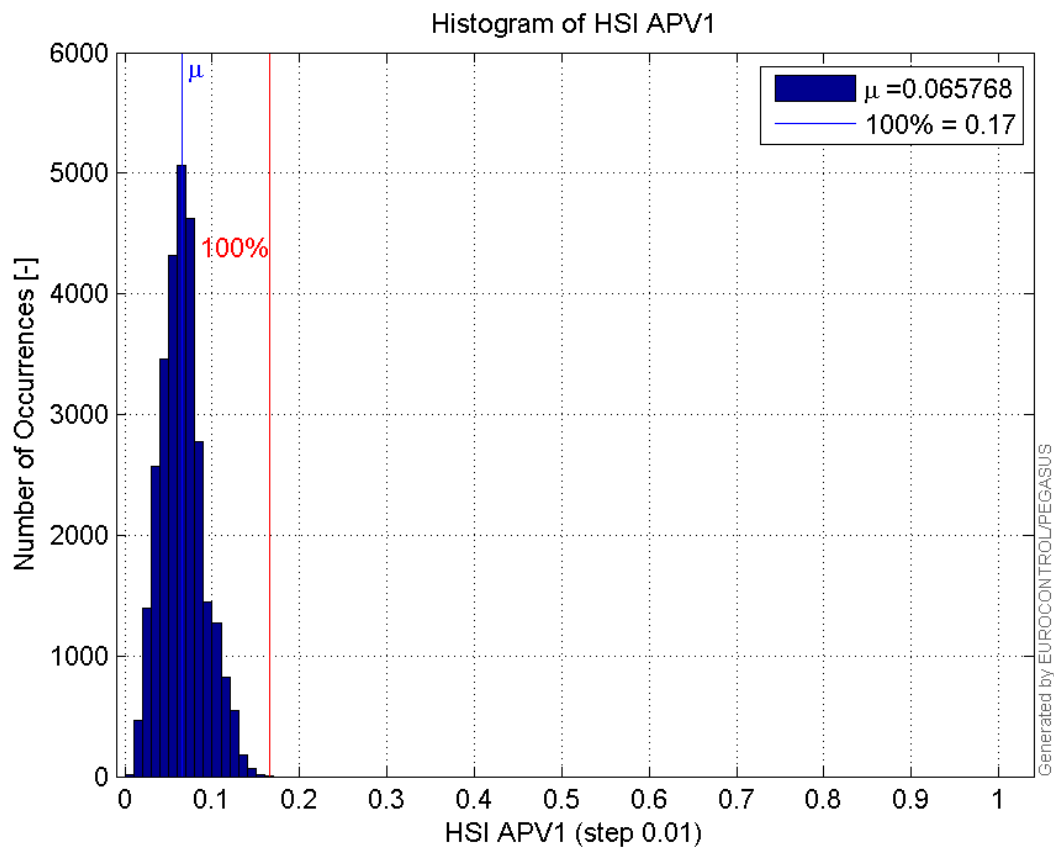
Histogram of HPL APV1:



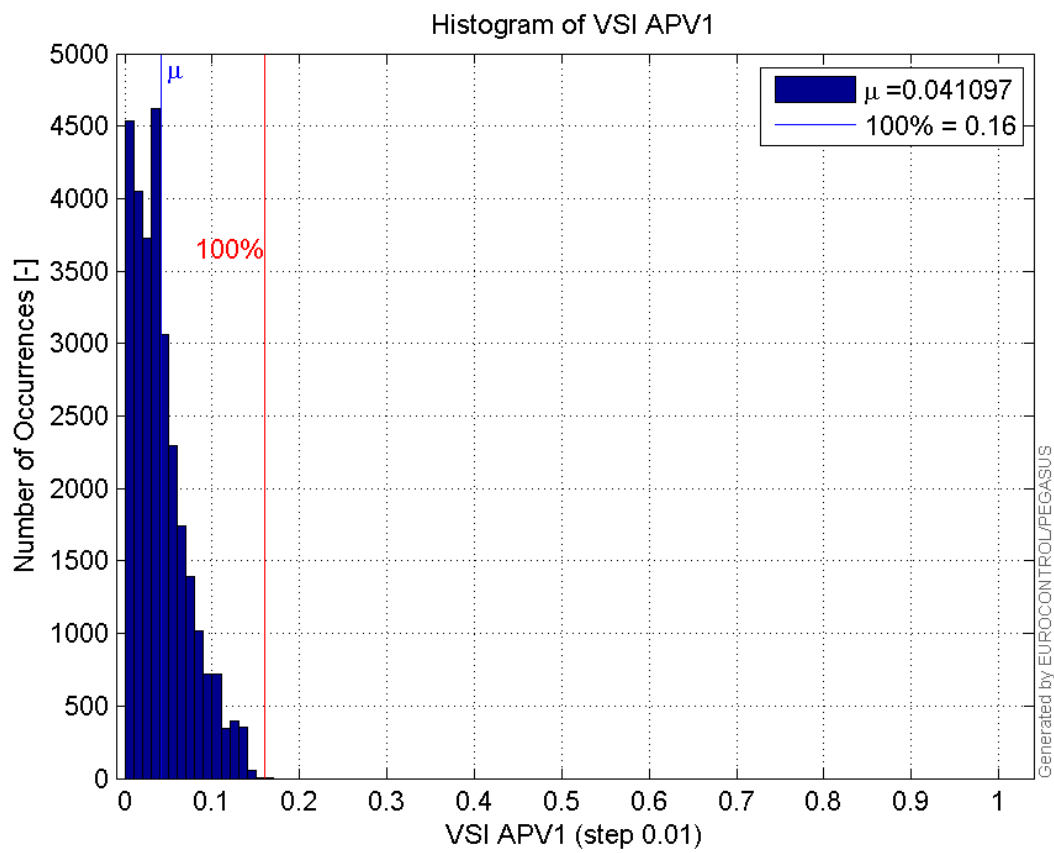
Histogram of VPL APV1:



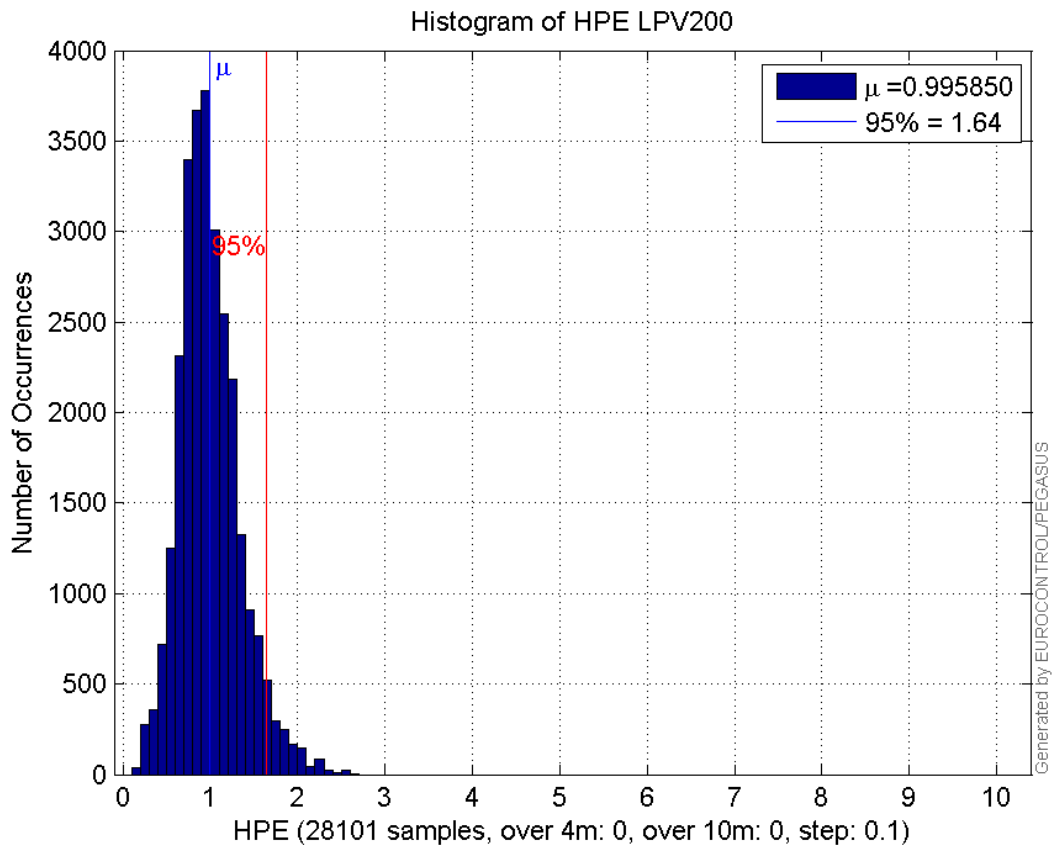
Histogram of HSI APV1:



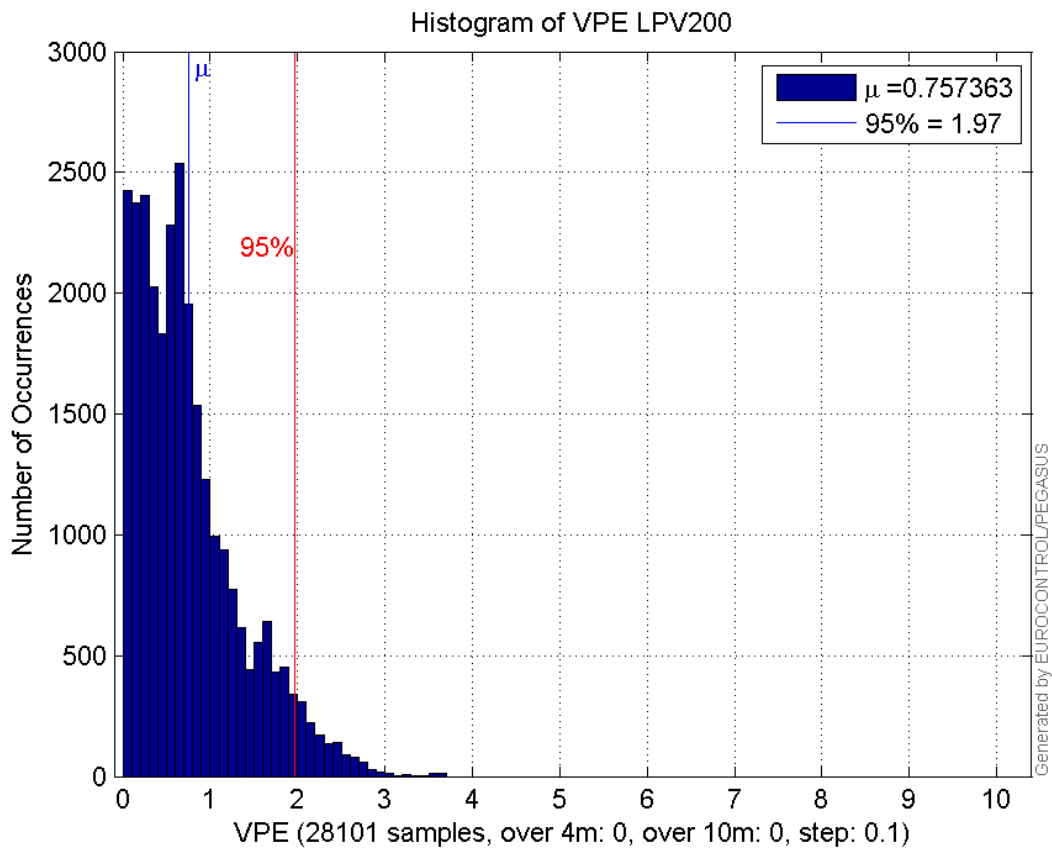
Histogram of VSI APV1:



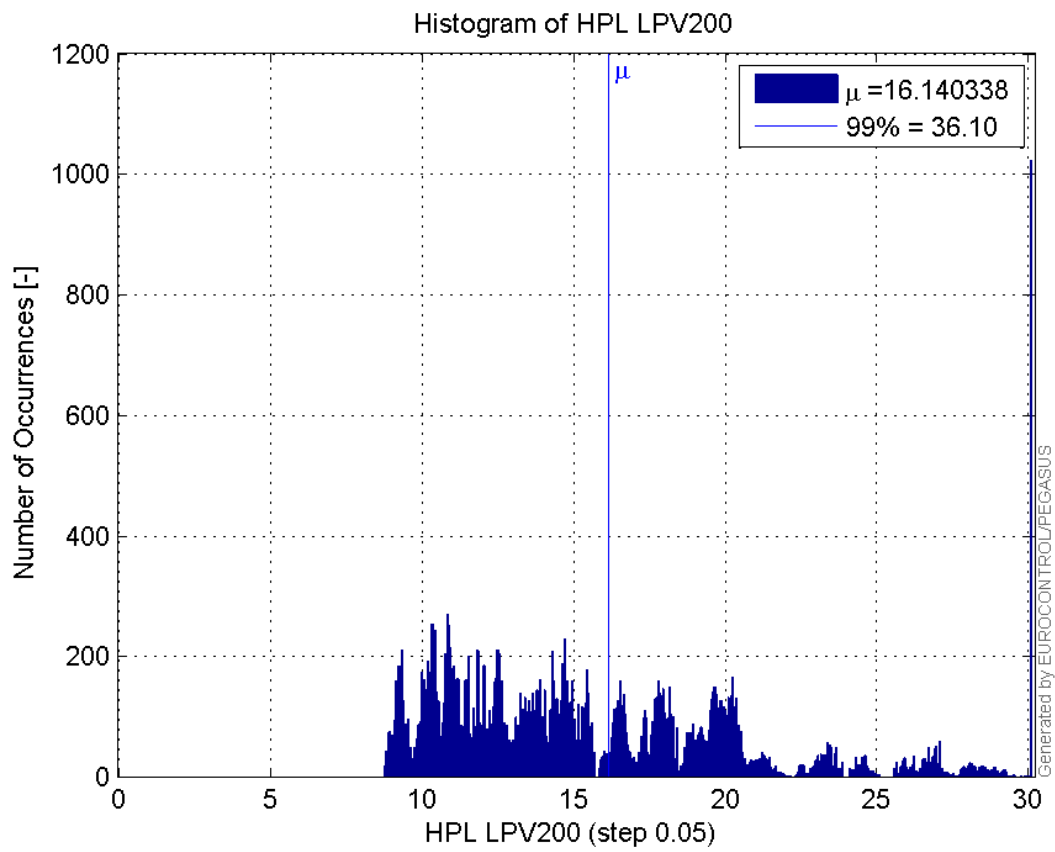
Histogram of HPE LPV200:



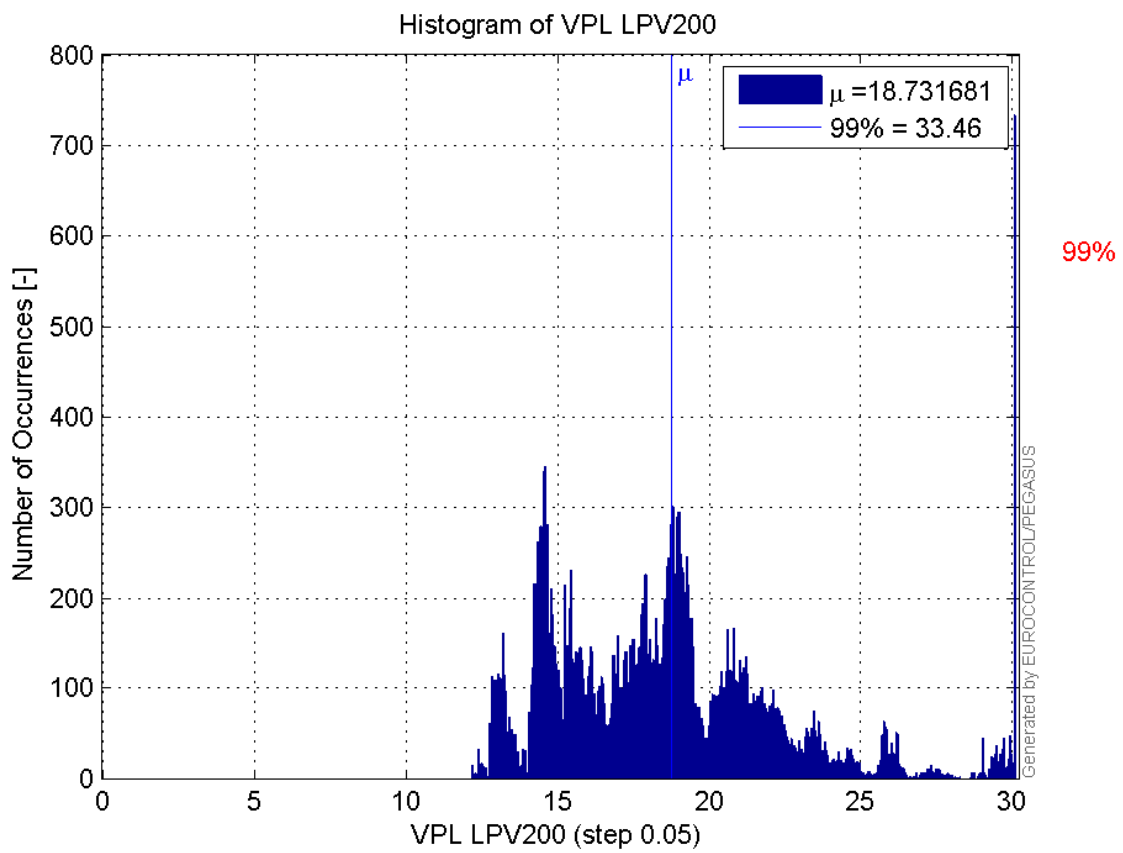
Histogram of VPE LPV200:



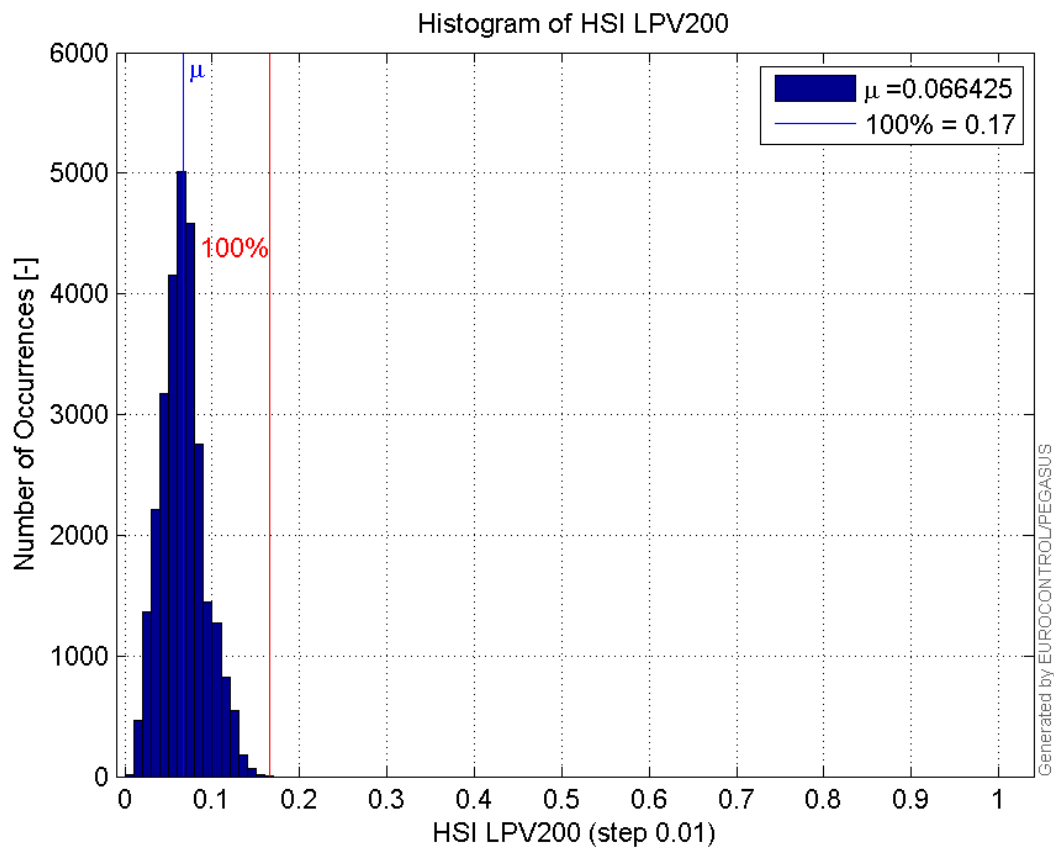
Histogram of HPL LPV200:



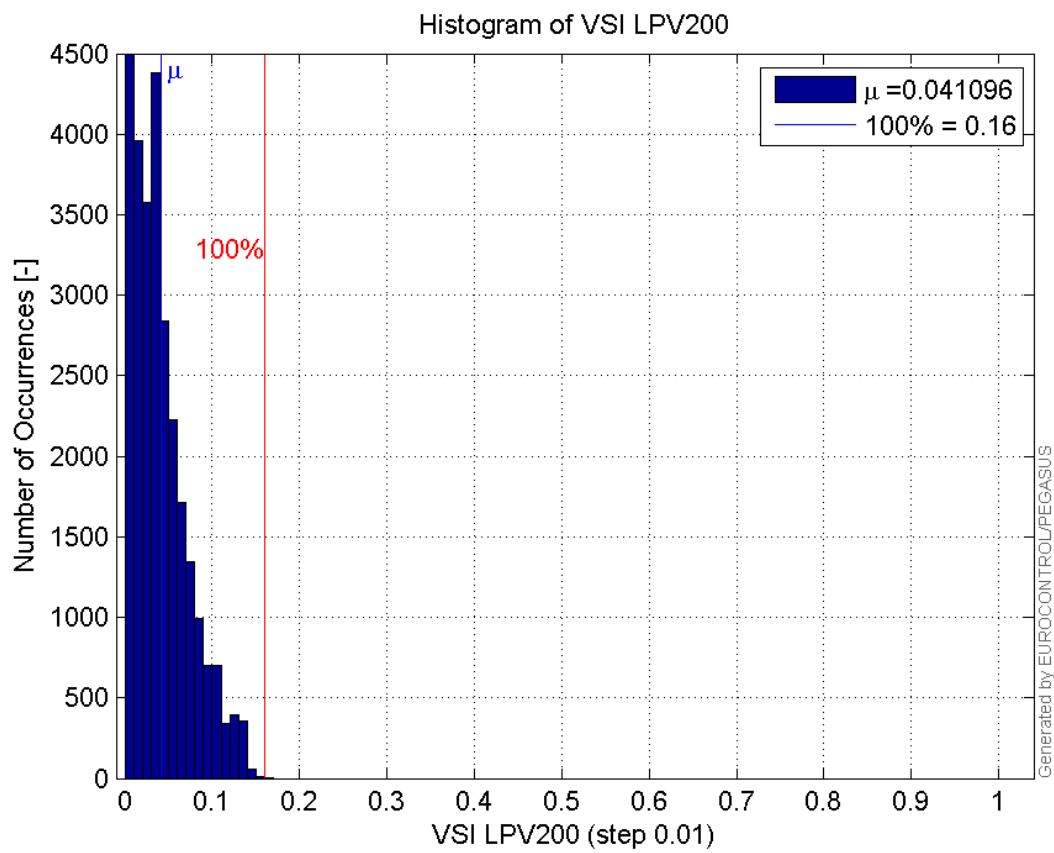
Histogram of VPL LPV200:



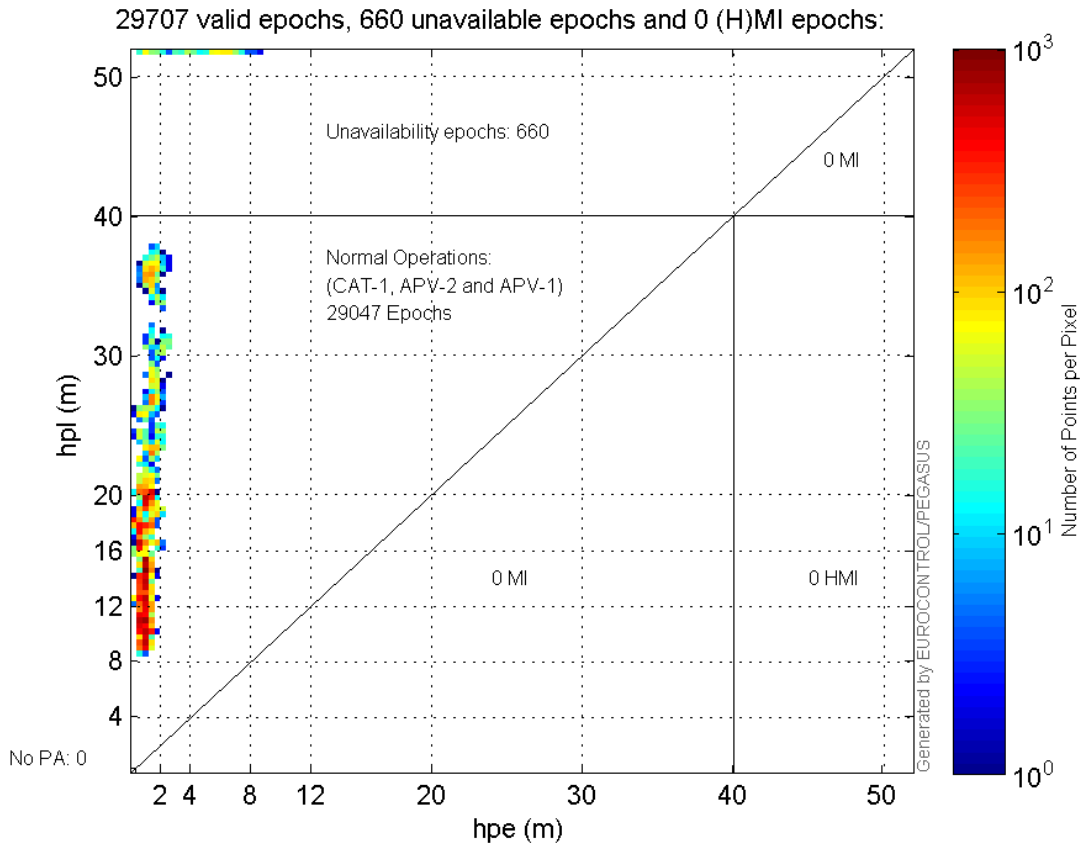
Histogram of HSI LPV200:



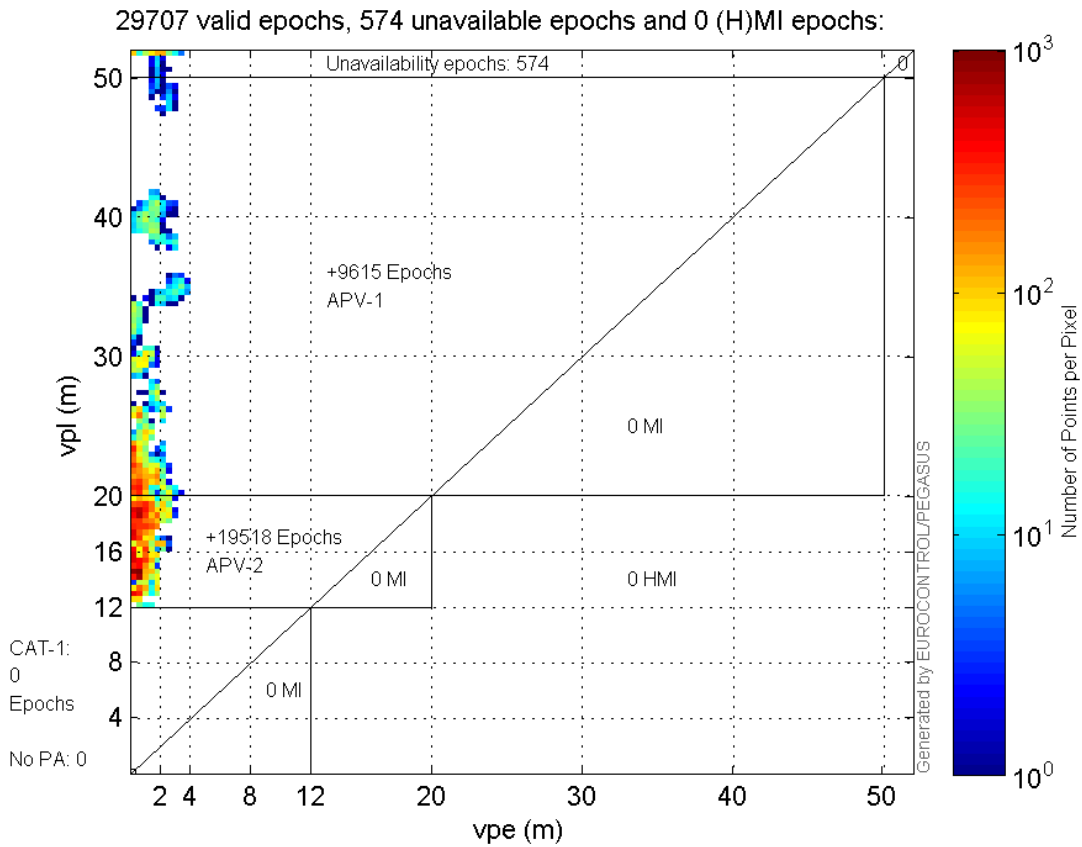
Histogram of VSI LPV200:



Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

Name	Section	Value
name	system	GNSS_Solution
version	system	4.8.2.1
input_prefix	system	D:/PegasusDateGob/job/2015_11_18EGNOS/02_Convertor/02_Convertor
output_prefix	system	D:/PegasusDateGob/job/2015_11_18EGNOS/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	219.172
mi_numbers	results	0