

Global View

site Laboratory satellite systems
 abbreviation NAU
 country Ukraine
 city Kiev
 comment
 program Pegasus
 version 4.8.2
 date 20/10/2015

SBAS Messages

start: 07:08:7.129 09.09.2015 (week: 1861 sec: 284887.129)
end: 13:47:33.129 09.09.2015 (week: 1861 sec: 308853.129)
duration: 06:39:26 ..

quality

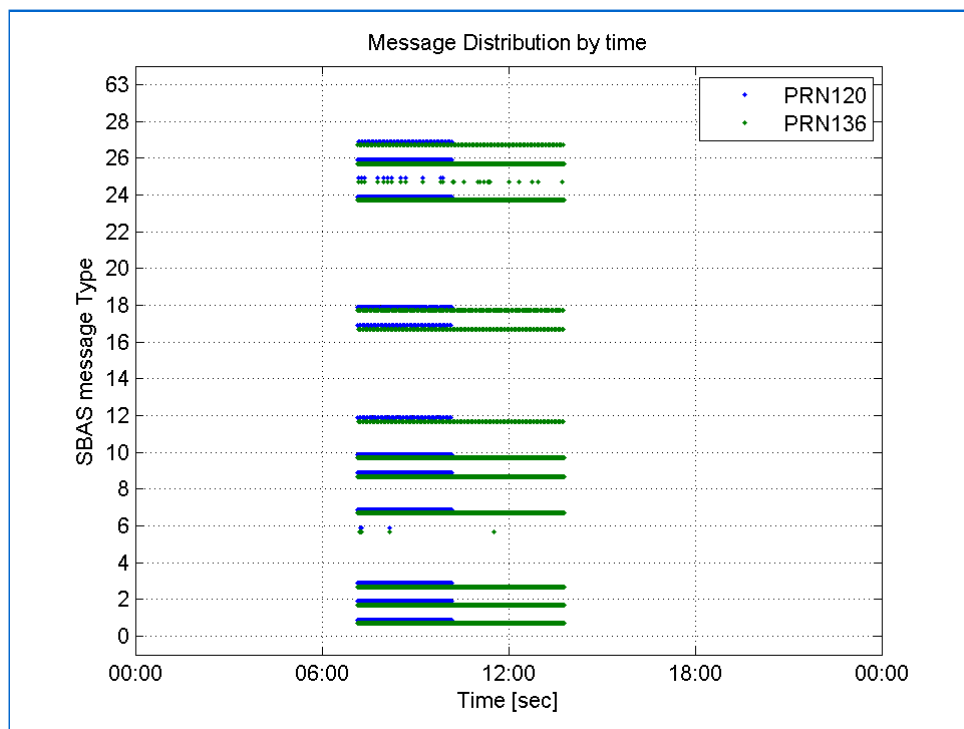
valid samples 47900
total samples 47900
number of SBAS PRNs 2

SBAS SIS Overview

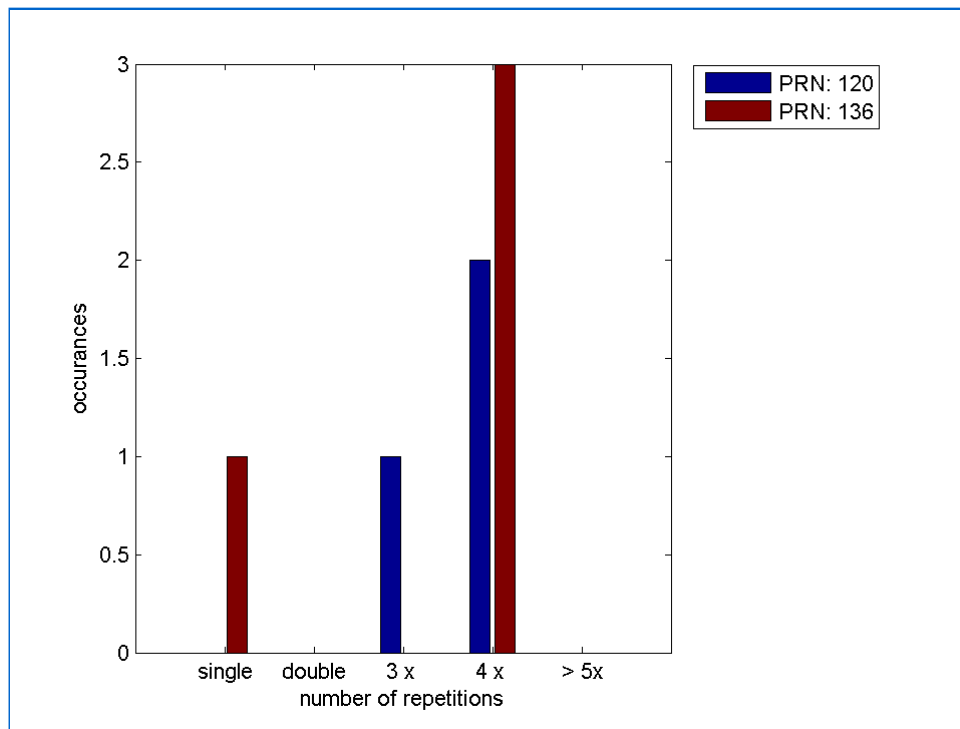
Message Type 6 repetitions :

| | single | double | 3 x | 4 x | > 5x |
|----------------|--------|--------|-----|-----|------|
| PRN 120 | 0 | 0 | 1 | 2 | 0 |
| PRN 136 | 1 | 0 | 0 | 3 | 0 |

Message Distribution by time:



Message Type 6 repetitions:



SBAS SIS Analysis

PRN 120

Broadcast SBAS Messages :

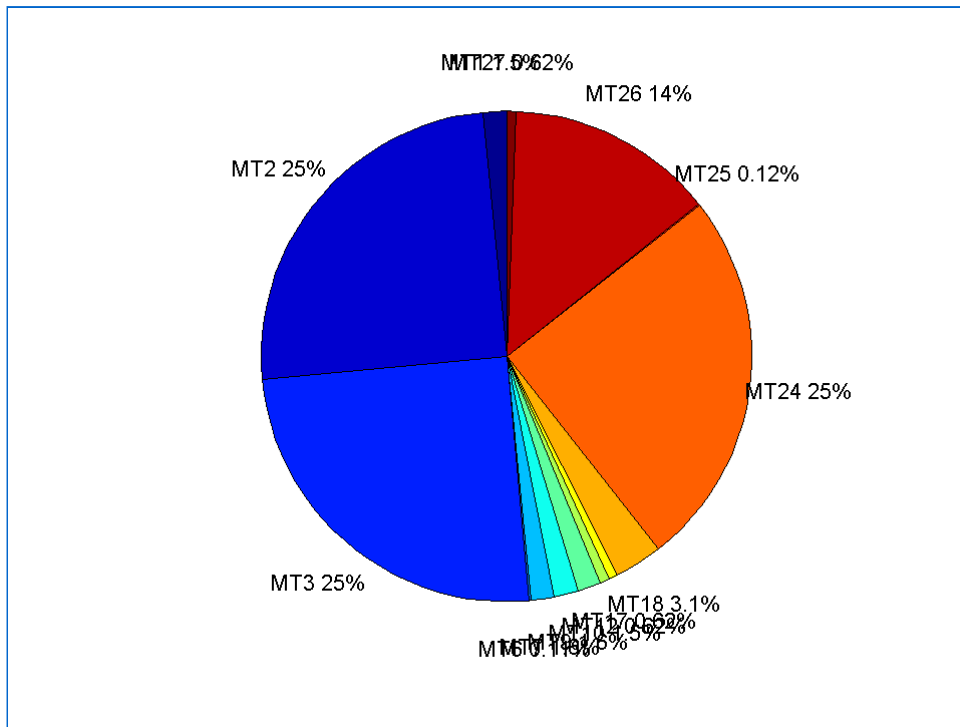
| | number of messages | % |
|--------------|--------------------|----------|
| MT 0 | 0 | 0 |
| MT 1 | 170 | 1.54728 |
| MT 2 | 2743 | 24.9659 |
| MT 3 | 2742 | 24.9568 |
| MT 4 | 0 | 0 |
| MT 5 | 0 | 0 |
| MT 6 | 12 | 0.10922 |
| MT 7 | 171 | 1.55638 |
| MT 9 | 171 | 1.55638 |
| MT 10 | 170 | 1.54728 |
| MT 12 | 68 | 0.618913 |
| MT 17 | 68 | 0.618913 |
| MT 18 | 345 | 3.14007 |
| MT 24 | 2743 | 24.9659 |
| MT 25 | 13 | 0.118322 |
| MT 26 | 1503 | 13.6798 |
| MT 27 | 68 | 0.618913 |
| MT 28 | 0 | 0 |
| MT 62 | 0 | 0 |
| MT 63 | 0 | 0 |
| Total | 10987 | 100 |

Update intervals :

| | Minimum [s] | Maximum [s] | Mean value | Exceed Max update | Exceed NPA timeout | Exceed PA timeout |
|------|-------------|-------------|------------|-------------------|--------------------|-------------------|
| MT 0 | -- | -- | -- | -- | -- | -- |
| MT 1 | 64 | 72 | 64.4024 | 0 | 0 | 0 |
| MT 2 | 4 | 7 | 4.00584 | 3 | 0 | 0 |
| MT 3 | 4 | 8 | 4.00584 | 3 | 0 | 0 |
| MT 4 | -- | -- | -- | -- | -- | -- |

| | | | | | | |
|-------|-----|------|---------|----|----|----|
| MT 5 | -- | -- | -- | -- | -- | -- |
| MT 6 | 1 | 3202 | 311.182 | 2 | 2 | 2 |
| MT 7 | 64 | 70 | 64.4 | 0 | 0 | 0 |
| MT 9 | 64 | 71 | 64.4 | 0 | 0 | 0 |
| MT 10 | 64 | 72 | 64.4024 | 0 | 0 | 0 |
| MT 12 | 156 | 175 | 160.716 | 67 | 0 | 0 |
| MT 17 | 159 | 171 | 160.716 | 0 | 0 | 0 |
| MT 18 | 4 | 131 | 31.8605 | 0 | 0 | 0 |
| MT 24 | 4 | 7 | 4.00584 | 0 | 0 | 0 |
| MT 25 | 23 | 2102 | 813.75 | 0 | 0 | 0 |
| MT 26 | 4 | 39 | 7.30493 | 0 | 0 | 0 |
| MT 27 | 160 | 171 | 160.657 | 0 | 0 | 0 |
| MT 28 | -- | -- | -- | -- | -- | -- |
| MT 62 | -- | -- | -- | -- | -- | -- |
| MT 63 | -- | -- | -- | -- | -- | -- |

Message Distribution PRN 120:



SBAS SIS Analysis

PRN 136

Broadcast SBAS Messages :

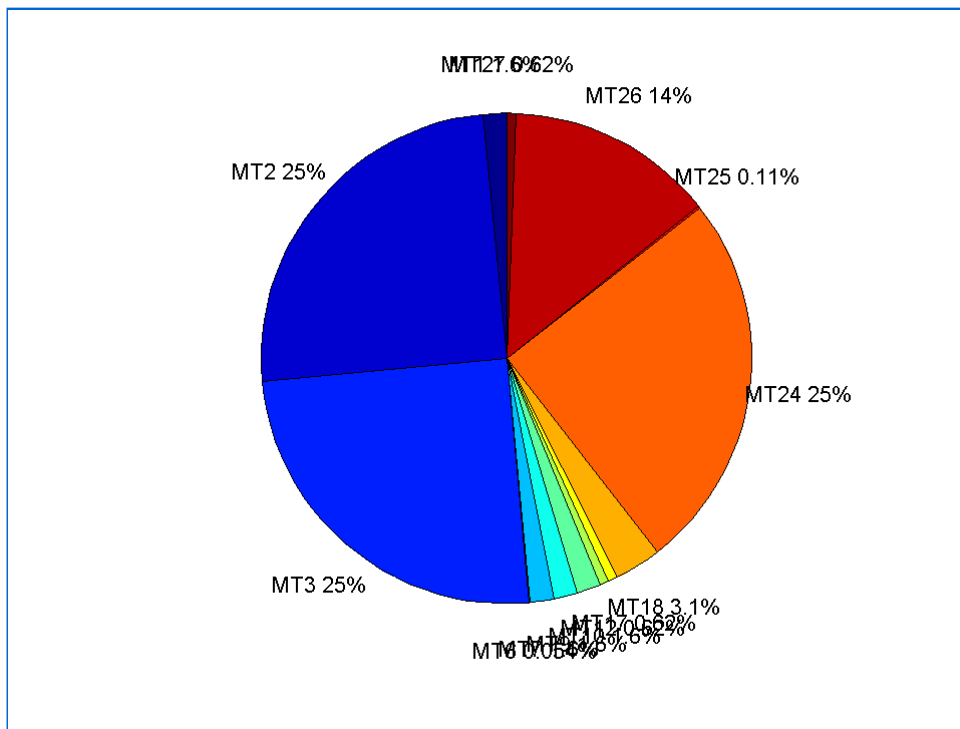
| | number of messages | % |
|------|--------------------|---------|
| MT 0 | 0 | 0 |
| MT 1 | 575 | 1.55772 |
| MT 2 | 9217 | 24.9695 |
| MT 3 | 9217 | 24.9695 |

| | | |
|-------|-------|-----------|
| MT 4 | 0 | 0 |
| MT 5 | 0 | 0 |
| MT 6 | 20 | 0.0541815 |
| MT 7 | 573 | 1.5523 |
| MT 9 | 573 | 1.5523 |
| MT 10 | 575 | 1.55772 |
| MT 12 | 230 | 0.623087 |
| MT 17 | 230 | 0.623087 |
| MT 18 | 1147 | 3.10731 |
| MT 24 | 9219 | 24.9749 |
| MT 25 | 42 | 0.113781 |
| MT 26 | 5066 | 13.7242 |
| MT 27 | 229 | 0.620378 |
| MT 28 | 0 | 0 |
| MT 62 | 0 | 0 |
| MT 63 | 0 | 0 |
| Total | 36913 | 100 |

Update intervals :

| | Minimum [s] | Maximum [s] | Mean value | Exceed Max update | Exceed NPA timeout | Exceed PA timeout |
|-------|-------------|-------------|------------|-------------------|--------------------|-------------------|
| MT 0 | -- | -- | -- | -- | -- | -- |
| MT 1 | 0 | 70 | 41.662 | 0 | 0 | 0 |
| MT 2 | 0 | 8 | 2.60004 | 4 | 0 | 0 |
| MT 3 | 0 | 8 | 2.60004 | 4 | 0 | 0 |
| MT 4 | -- | -- | -- | -- | -- | -- |
| MT 5 | -- | -- | -- | -- | -- | -- |
| MT 6 | 0 | 12051 | 814.842 | 3 | 3 | 3 |
| MT 7 | 0 | 70 | 41.6958 | 0 | 0 | 0 |
| MT 9 | 0 | 70 | 41.6958 | 0 | 0 | 0 |
| MT 10 | 0 | 70 | 41.662 | 0 | 0 | 0 |
| MT 12 | 0 | 171 | 103.747 | 148 | 0 | 0 |
| MT 17 | 0 | 171 | 103.747 | 0 | 0 | 0 |
| MT 18 | 0 | 151 | 20.7522 | 0 | 0 | 0 |
| MT 24 | 0 | 7 | 2.59991 | 0 | 0 | 0 |
| MT 25 | 0 | 2849 | 574.902 | 0 | 0 | 0 |
| MT 26 | 0 | 52 | 4.7309 | 0 | 0 | 0 |
| MT 27 | 0 | 167 | 104.219 | 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:/PEGASUS_DAT_job/JOB/2015_09_09EGNOS/01_User/01_User |
| Outputfile | System | D:/PEGASUS_DAT_job/JOB/2015_09_09EGNOS/02_Convertor/02_Convertor |

Configuration

| Name | Section | Value |
|-----------------|---------------|--------------|
| Receiver | Configuration | Novatel OEM4 |
| Leap_Seconds | Configuration | 15 |
| Correction_mode | Configuration | SBAS MODE 0 |
| Dual_Frequency | Configuration | no |

Position Domain

start: 07:08:08 09.09.2015 (week: 1861 sec: 284888)
 end: 13:47:34 09.09.2015 (week: 1861 sec: 308854)
 duration: 06:39:27 ..

quality

valid samples 23606
 total samples 23967

Event tables

Position discontinuity events type all
 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 | 291397 | 1.69476 | 11.6889 | 0.144989 | 0.547754 | 16.8055 | 0.0325937 |

| | | | | | | | |
|--------------------|--------|----------|---------|-----------|-----------|---------|-----------|
| max normVer | 285570 | 1.29674 | 15.761 | 0.0822753 | -1.92078 | 17.2441 | 0.111387 |
| max HPE | 288145 | 2.14863 | 43.1348 | 0.049812 | -0.839606 | 20.7463 | 0.0404702 |
| max VPE | 285570 | 1.29674 | 15.761 | 0.0822753 | -1.92078 | 17.2441 | 0.111387 |
| min HPL | 293730 | 0.825132 | 8.7658 | 0.0941309 | -0.551234 | 18.4937 | 0.0298066 |
| min VPL | 288916 | 1.36851 | 13.7031 | 0.0998685 | 0.115455 | 13.9621 | 0.0082692 |

Position discontinuity events :

| # | Epoch | duration | stable period |
|---|--------|----------|---------------|
| 1 | 286831 | 160 | 1582 |

APV-I discontinuity events :

| # | Epoch | duration | stable period |
|----|--------|----------|---------------|
| 1 | 286831 | 160 | 1582 |
| 2 | 287012 | 1 | 21 |
| 3 | 287016 | 1 | 3 |
| 4 | 287020 | 1 | 3 |
| 5 | 287024 | 1 | 3 |
| 6 | 287028 | 1 | 3 |
| 7 | 287032 | 1 | 3 |
| 8 | 287035 | 2 | 2 |
| 9 | 287039 | 2 | 2 |
| 10 | 287043 | 2 | 2 |
| 11 | 287047 | 2 | 2 |
| 12 | 287051 | 2 | 2 |
| 13 | 287055 | 2 | 2 |
| 14 | 287059 | 2 | 2 |
| 15 | 287062 | 3 | 1 |
| 16 | 287066 | 3 | 1 |
| 17 | 287070 | 3 | 1 |
| 18 | 287074 | 610 | 1 |
| 19 | 287953 | 482 | 269 |

APV-35m discontinuity events :

| # | Epoch | duration | stable period |
|---|--------|----------|---------------|
| 1 | 286642 | 31 | 1393 |
| 2 | 286831 | 853 | 2 |
| 3 | 287953 | 482 | 269 |

LPV-200 discontinuity events :

| # | Epoch | duration | stable period |
|---|--------|----------|---------------|
| 1 | 286642 | 31 | 1393 |
| 2 | 286831 | 853 | 2 |
| 3 | 287953 | 482 | 269 |

First Glance analysis

| | |
|---|--------|
| Duration | 23967 |
| Number of Samples | 23967 |
| Number of invalid sample | 361 |
| Number of no position solution samples | 13133 |
| Number of missing sample | 0 |
| Logging Loss | 0 |
| Processing Loss | 1.5062 |
| Number of Misleading Information | 0 |
| Data gaps | 0 |
| Discontinuities | 1 |

Number of Samples :

| | | | | | |
|--|--|--|--|--|--|
| | | | | | |
|--|--|--|--|--|--|

| Valid | APV-1 | LPV-200 | CAT-1 | APV-35m |
|-------|-------|---------|-------|---------|
| 10473 | 9352 | 9189 | 0 | 9189 |

Accuracy statistics :

| | Valid | APV-1 | LPV-200 | CAT-1 | APV-35m |
|--------------|----------|----------|----------|-------|----------|
| HPE 95% | 1.71686 | 1.71354 | 1.7141 | NaN | 1.7141 |
| HPEscale 95% | NaN | 5.08074 | 5.08319 | NaN | 5.08319 |
| VPE 95% | 0.955809 | 0.925001 | 0.910562 | NaN | 0.910562 |
| VPEscale 95% | NaN | 2.41458 | 1.69856 | NaN | 1.69856 |

Availability :

| | Valid | APV-1 | LPV-200 | CAT-1 | APV-35m |
|-----------------|----------|----------|----------|-------|----------|
| Signal in Space | 0.443658 | 0.39617 | 0.389265 | 0 | 0.389265 |
| measurements | 0.436976 | 0.390203 | 0.383402 | 0 | 0.383402 |
| Operational | 0.436976 | 0.390203 | 0.383402 | 0 | 0.383402 |

Discontinuity events :

| | Valid | APV-1 | LPV-200 | CAT-1 | APV-35m |
|-------------|------------|------------|------------|-------|------------|
| All | 1 | 19 | 42 | -- | 42 |
| Long | 1 | 3 | 3 | -- | 3 |
| Independent | 1 | 2 | 2 | -- | 2 |
| P(disc.) | 0.00143225 | 0.00320787 | 0.00326477 | NaN | 0.00326477 |
| P(slide) | 0.00143225 | 0.00834046 | 0.0119708 | NaN | 0.0119708 |

Integrity events :

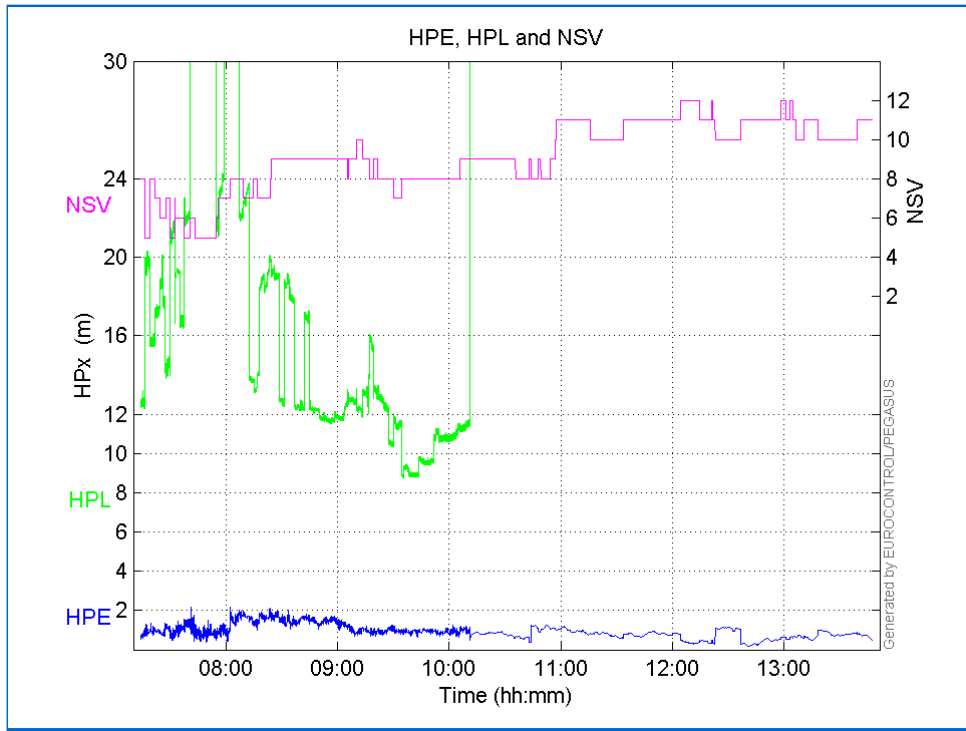
| | MI | HMI APV-1 | HMI LPV-200 | HMI CAT-1 | HMI APV-35m |
|------------|----|-----------|-------------|-----------|-------------|
| Total | 0 | 0 | 0 | 0 | 0 |
| Horizontal | 0 | 0 | 0 | 0 | 0 |
| Vertical | 0 | 0 | 0 | 0 | 0 |

Performance Summary :

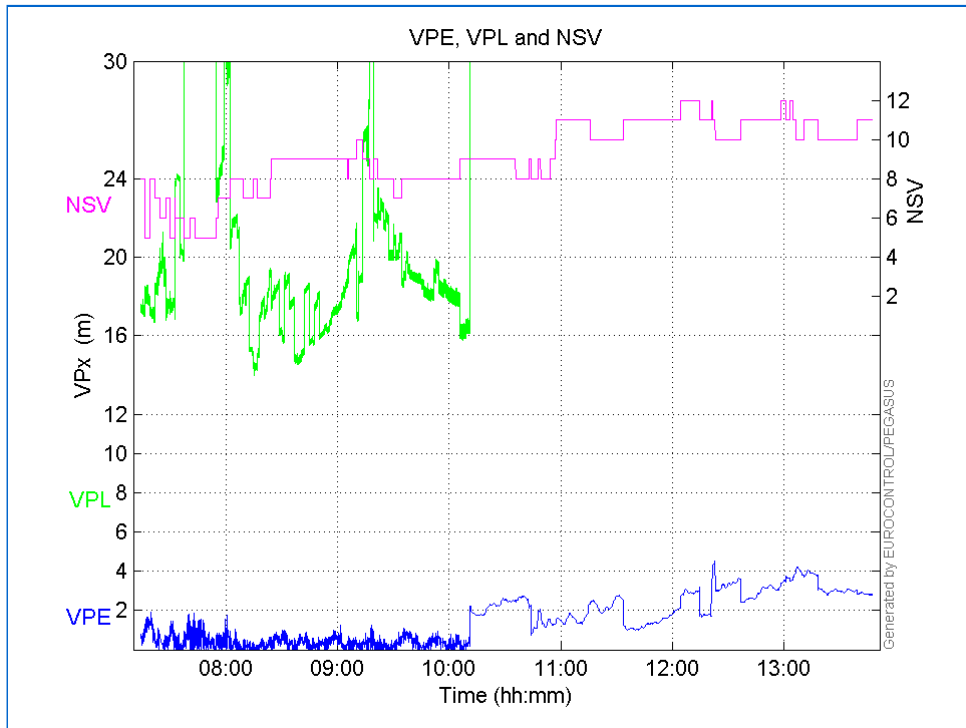
| | Valid | APV-1 | LPV-200 | CAT-1 | APV-35m |
|----------------------------------|------------|------------|------------|-------|------------|
| Samples | 10473 | 9352 | 9189 | 0 | 9189 |
| SIS Availability | 0.443658 | 0.39617 | 0.389265 | 0 | 0.389265 |
| Local Availability | 0.436976 | 0.390203 | 0.383402 | 0 | 0.383402 |
| Operational Availability | 0.436976 | 0.390203 | 0.383402 | 0 | 0.383402 |
| HPE 95% | 1.71686 | 1.71354 | 1.7141 | NaN | 1.7141 |
| HPEscale 95% | NaN | 5.08074 | 5.08319 | NaN | 5.08319 |
| VPE 95% | 0.955809 | 0.925001 | 0.910562 | NaN | 0.910562 |
| VPEscale 95% | NaN | 2.41458 | 1.69856 | NaN | 1.69856 |
| All Discontinuity Events | 1 | 19 | 42 | -- | 42 |
| Long Discontinuity Events | 1 | 3 | 3 | -- | 3 |
| Independent Discontinuity Events | 1 | 2 | 2 | -- | 2 |
| P(discontinuity) | 0.00143225 | 0.00320787 | 0.00326477 | NaN | 0.00326477 |
| P(sliding window) | 0.00143225 | 0.00834046 | 0.0119708 | NaN | 0.0119708 |
| 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:

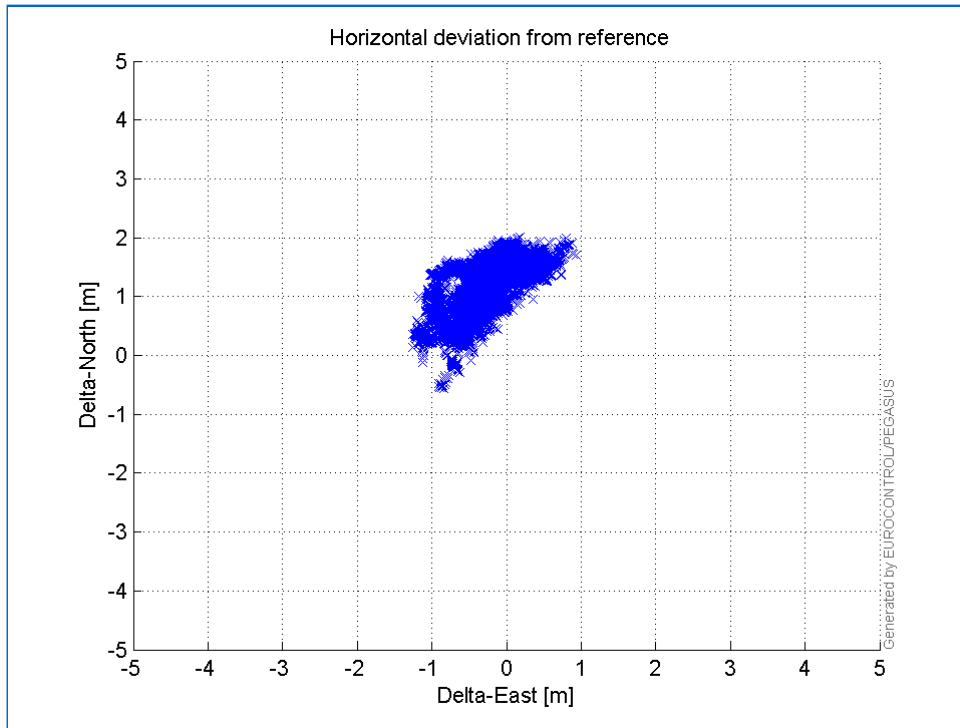


VPE, VPL and NSV:



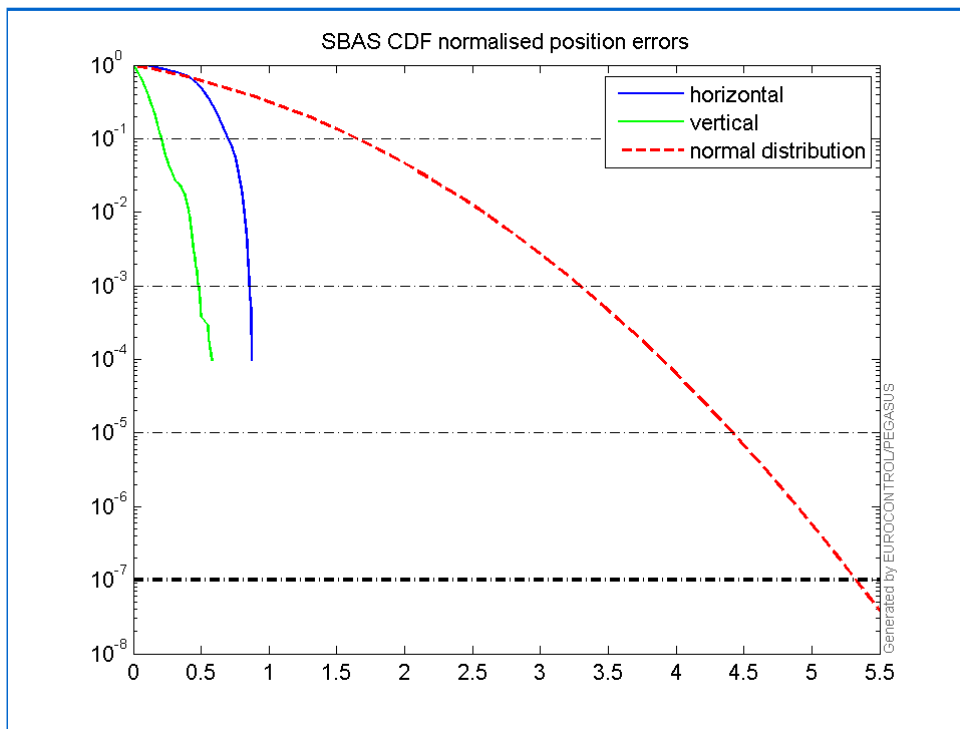
Horizontal deviation

Horizontal deviation from reference :



CDF position

SBAS CDF position domain:



Statistics

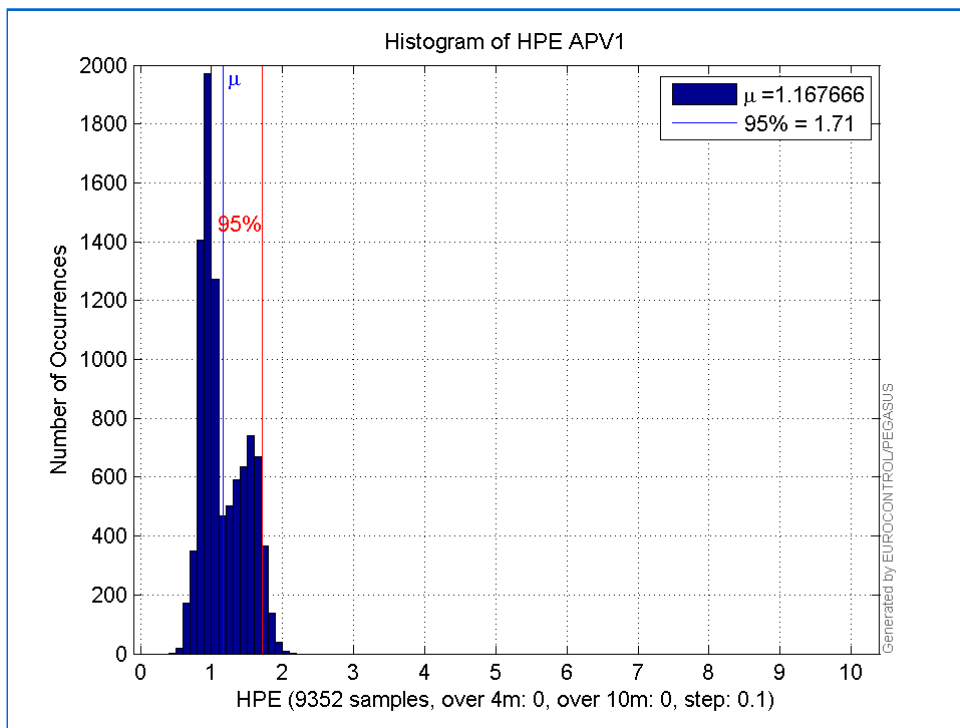
| | |
|------------------|-----------|
| number | 9352 |
| sum | 10920.011 |
| sum2 | 13666.711 |
| prctile95 | 1.7135354 |
| prctile99 | 1.8510484 |
| number | 9352 |
| sum | 3594.5685 |
| sum2 | 2204.6548 |

prctile95 0.92500095
prctile99 1.3881421
number 9352
sum 134314.01
sum2 2095574.3
prctile95 22.25599
prctile99 24.051386
number 9352
sum 180748.02
sum2 3665501.9
prctile95 26.14599
prctile99 35.571452
number 9352
sum 800.7747
sum2 74.17593
prctile95 0.12701856
prctile99 0.13652564
number 9352
sum 189.67652
sum2 6.2141107
prctile95 0.048291679
prctile99 0.07759695
number 9189
sum 10729.797
sum2 13433.861
prctile95 1.7140999
prctile99 1.8519026
number 9189
sum 3478.5341
sum2 2100.4293
prctile95 0.91056188
prctile99 1.3726924
number 9189
sum 130238.66
sum2 1991003.7
prctile95 22.03755
prctile99 23.647891
number 9189
sum 174205.68
sum2 3395858.8
prctile95 25.16633
prctile99 31.583829
number 9189
sum 792.78344
sum2 73.743261
prctile95 0.12707983
prctile99 0.13656977
number 9189
sum 186.66219
sum2 6.1398572
prctile95 0.048530177
prctile99 0.077782081

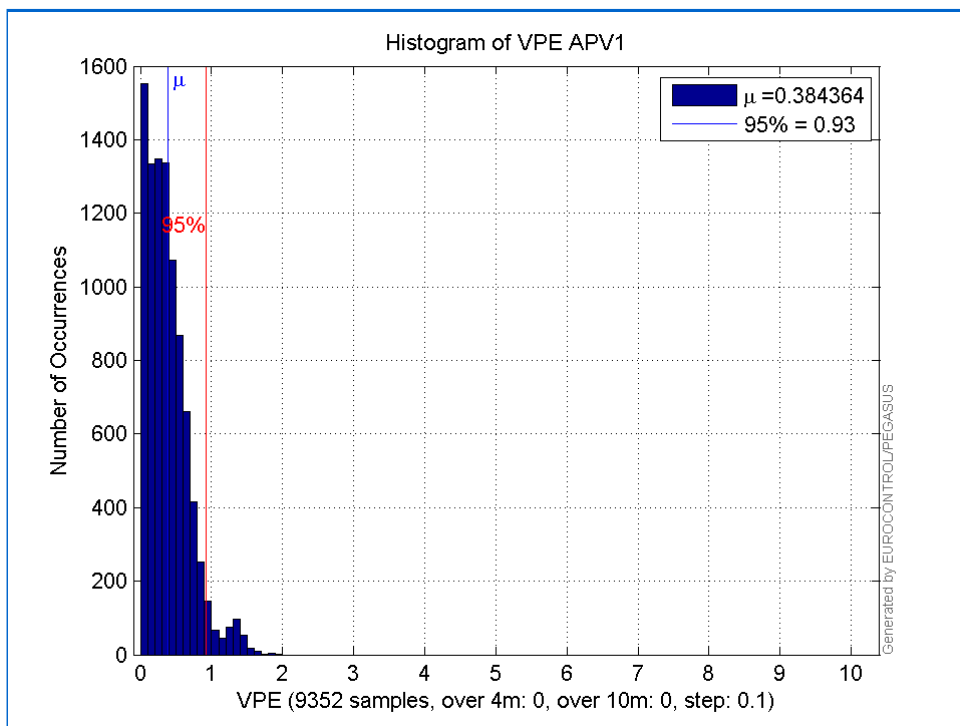
Error and XPL Statistics :

| | Mean Value | Standard Deviation | 50% Value | 95% Value | 99% Value | RMS Value |
|------------|------------|--------------------|-----------|-----------|-----------|-----------|
| HPE | 1.16767 | 0.312945 | 1.05497 | 1.71354 | 1.85105 | 1.20887 |
| HPL | 14.3621 | 4.22028 | 12.5888 | 22.256 | 24.0514 | 14.9692 |
| VPE | 0.384364 | 0.296674 | 0.331037 | 0.925001 | 1.38814 | 0.485532 |
| VPL | 19.3272 | 4.29064 | 18.3549 | 26.146 | 35.5715 | 19.7977 |

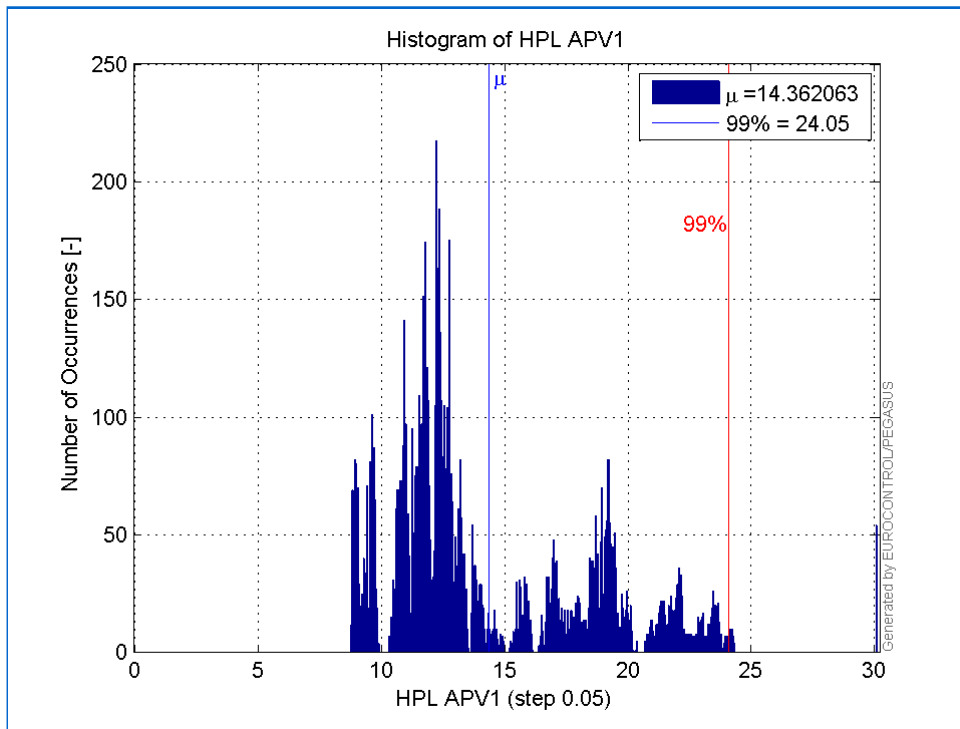
Histogram of HPE APV1:



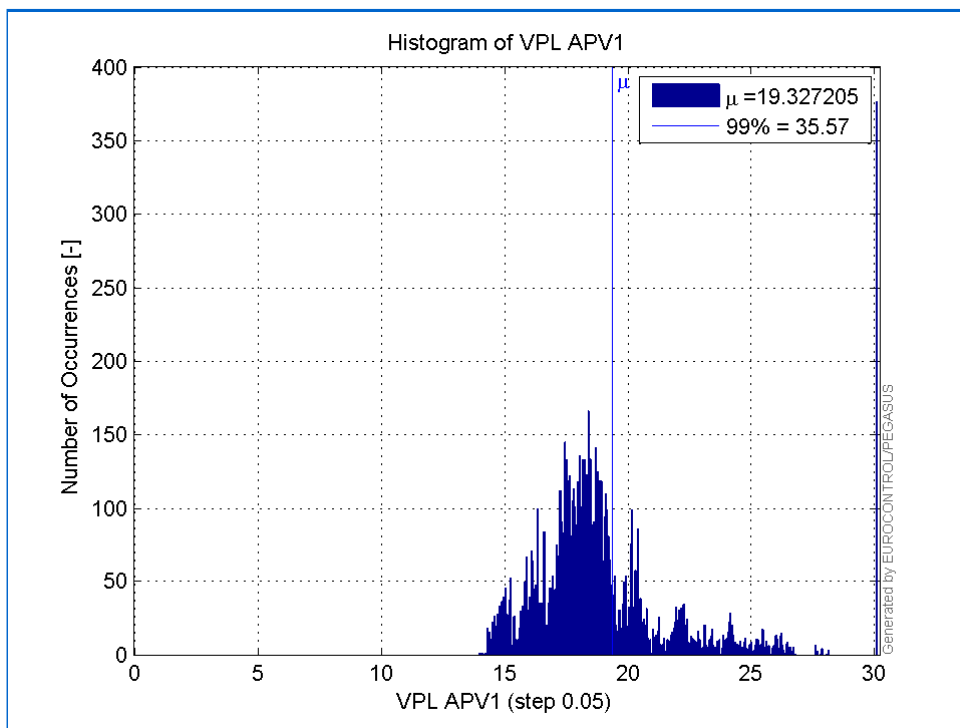
Histogram of VPE APV1:



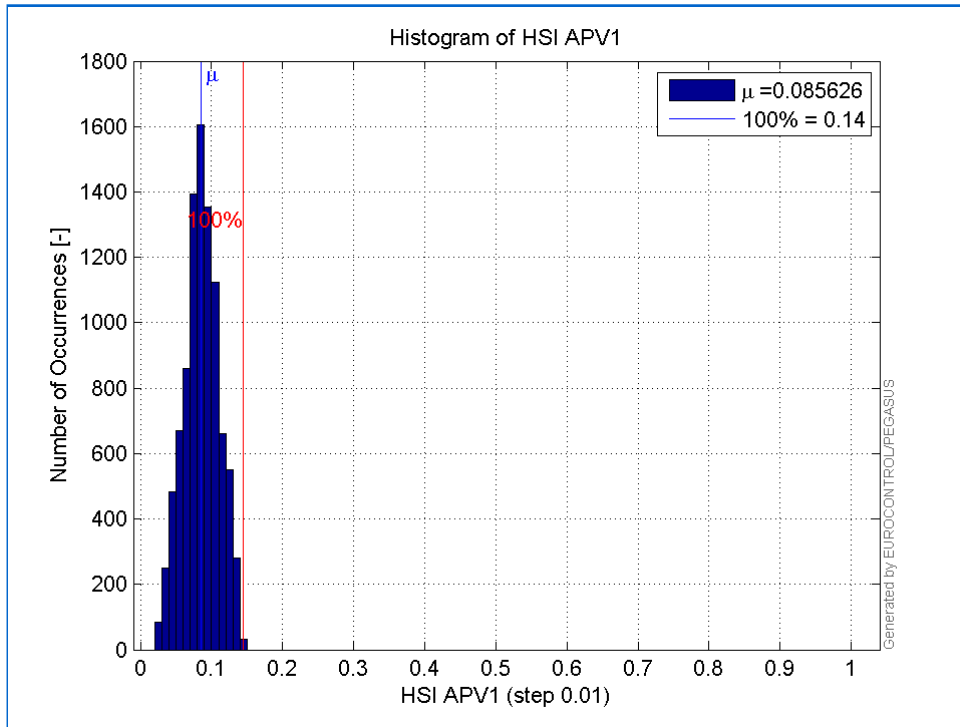
Histogram of HPL APV1:



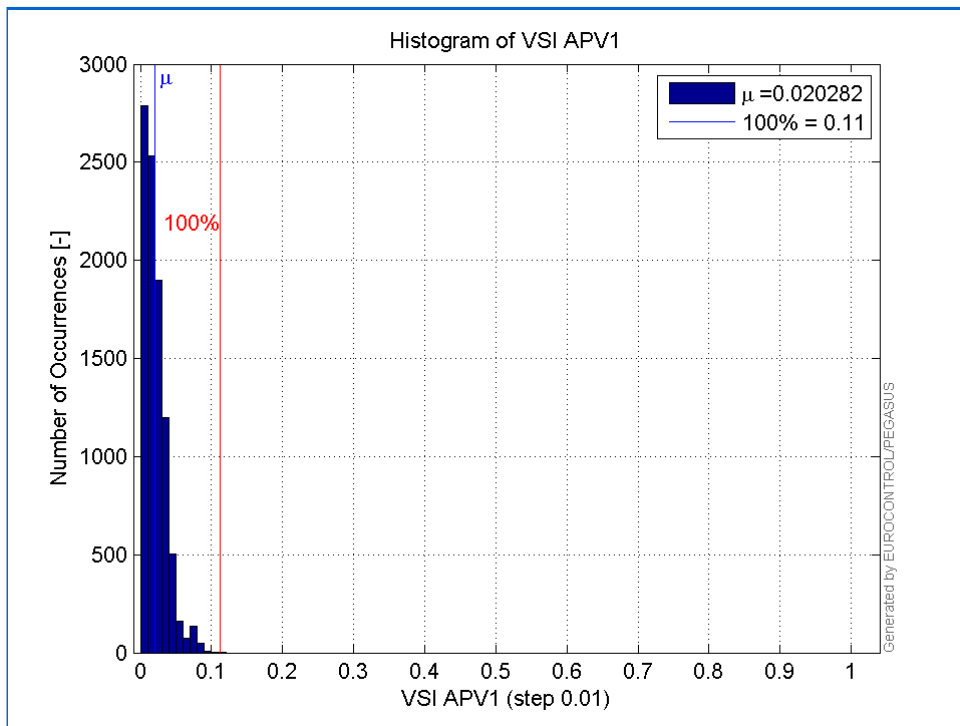
Histogram of VPL APV1:



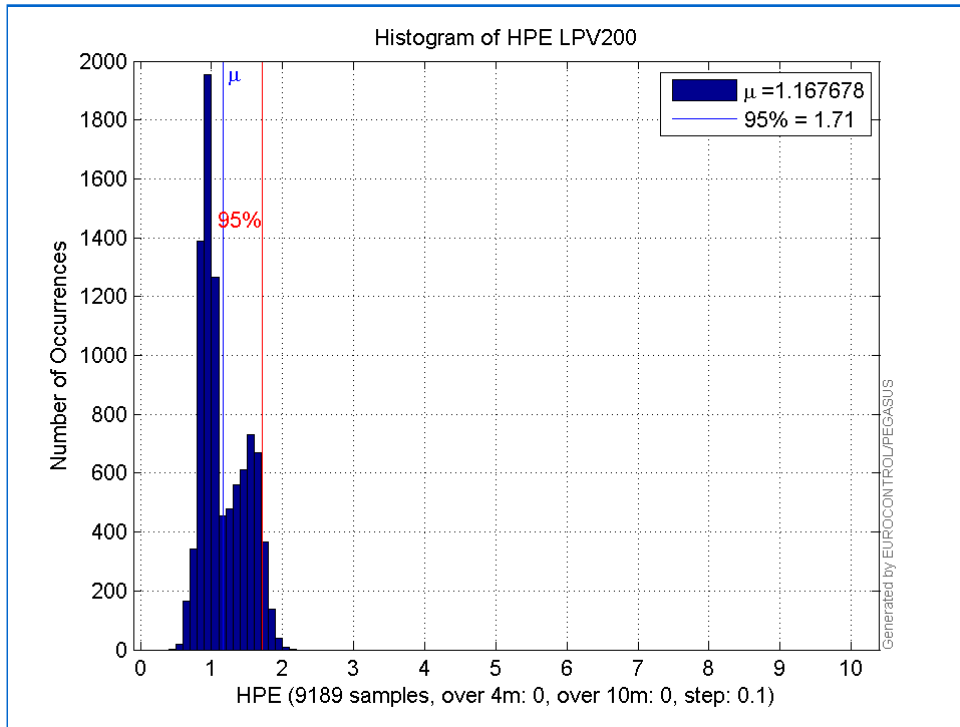
Histogram of HSI APV1:



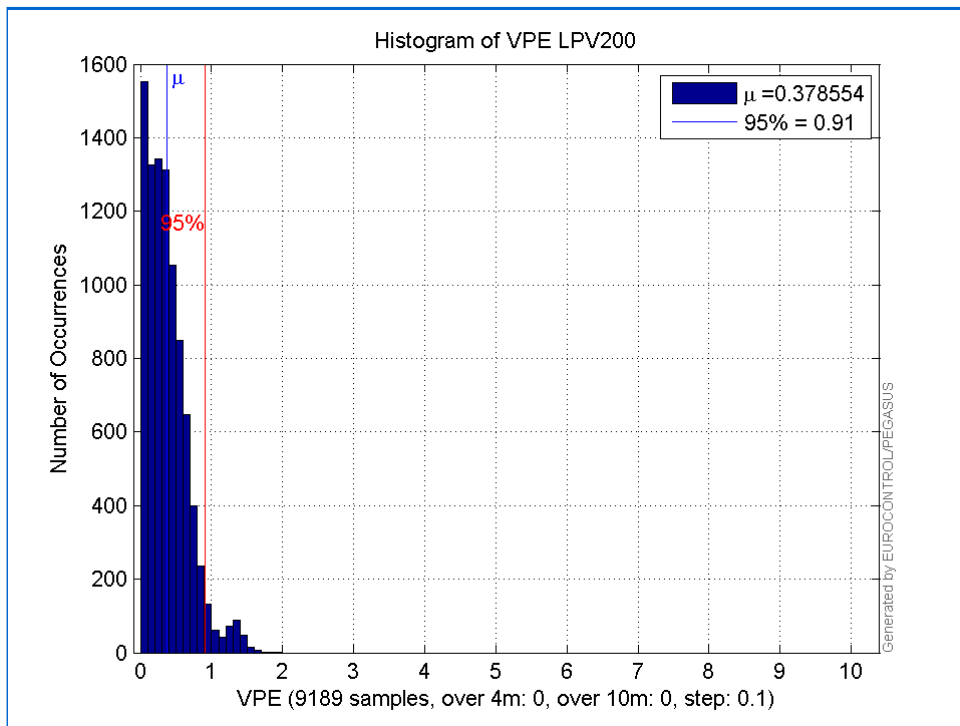
Histogram of VSI APV1:



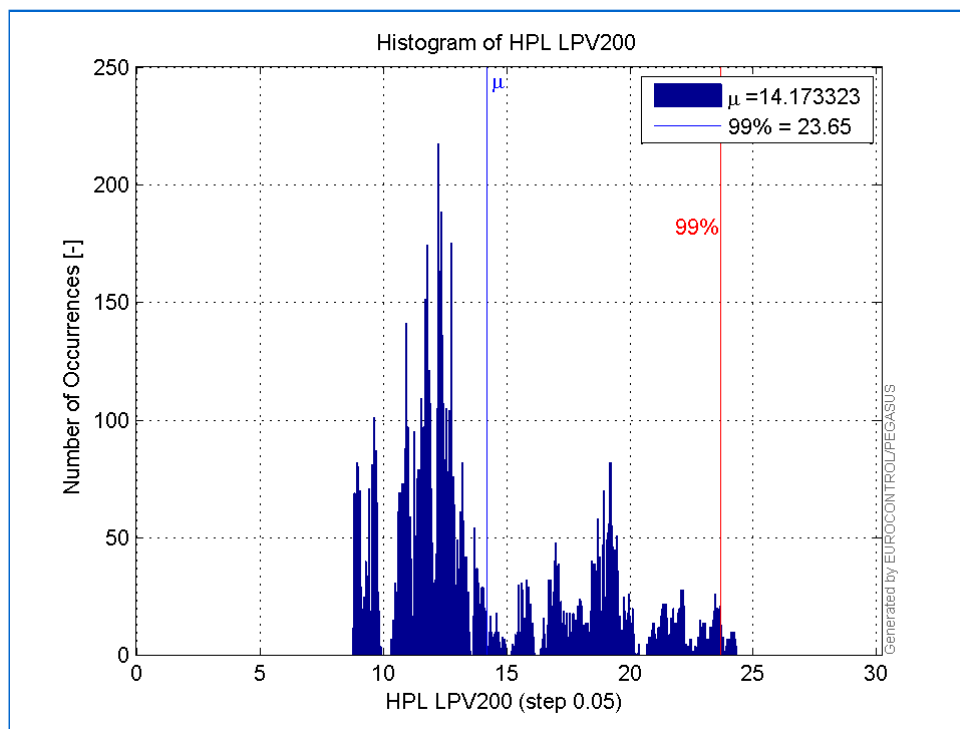
Histogram of HPE LPV200:



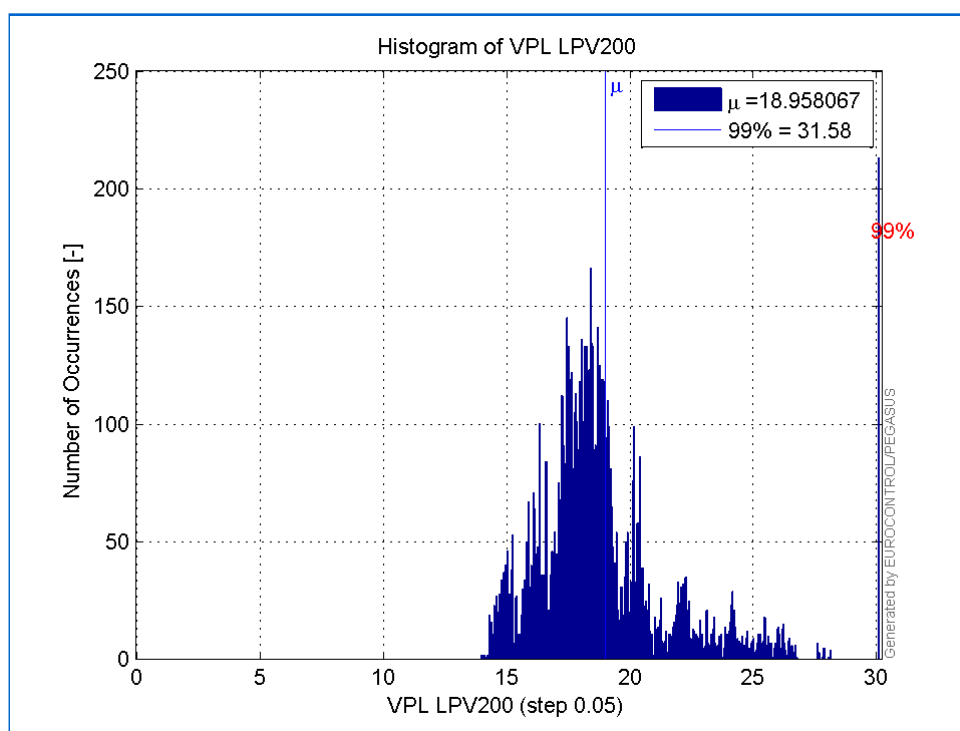
Histogram of VPE LPV200:



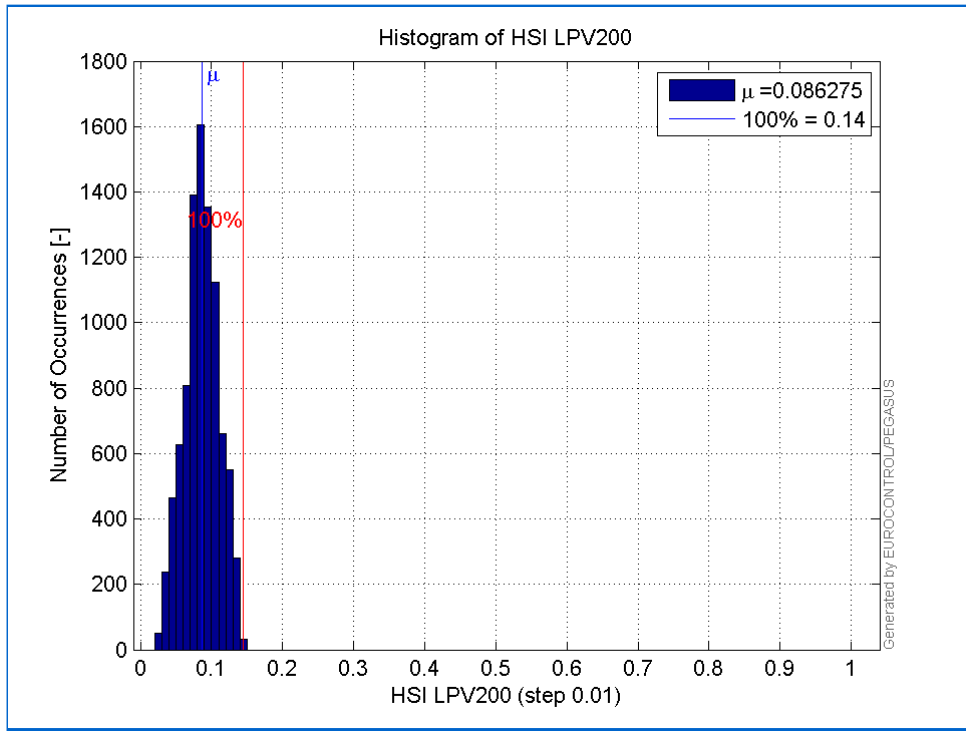
Histogram of HPL LPV200:



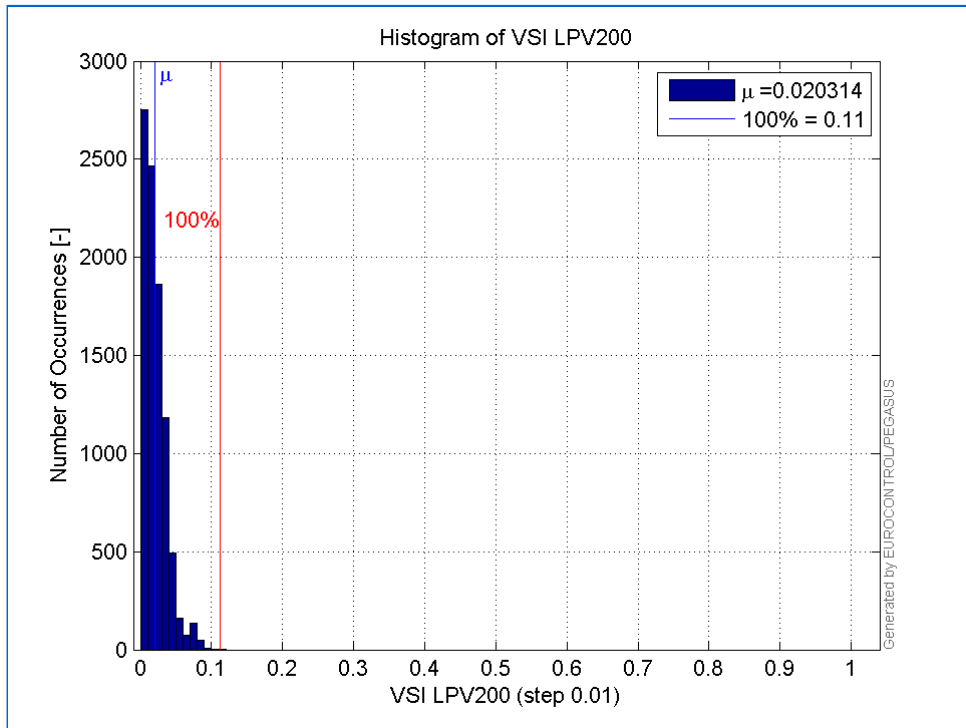
Histogram of VPL LPV200:



Histogram of HSI LPV200:

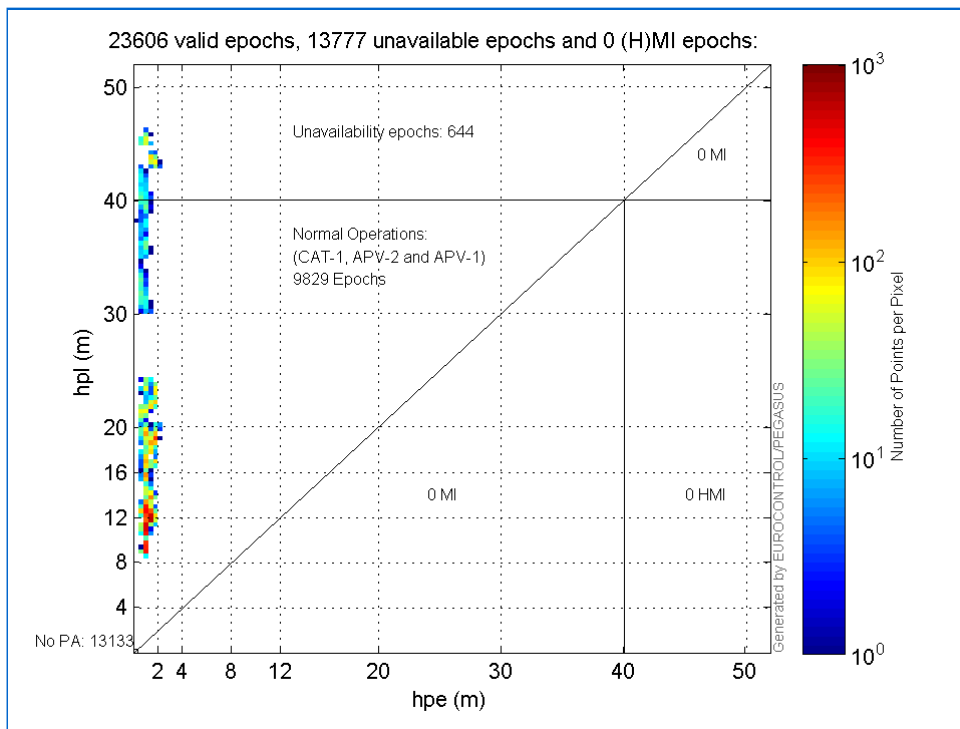


Histogram of VSI LPV200:

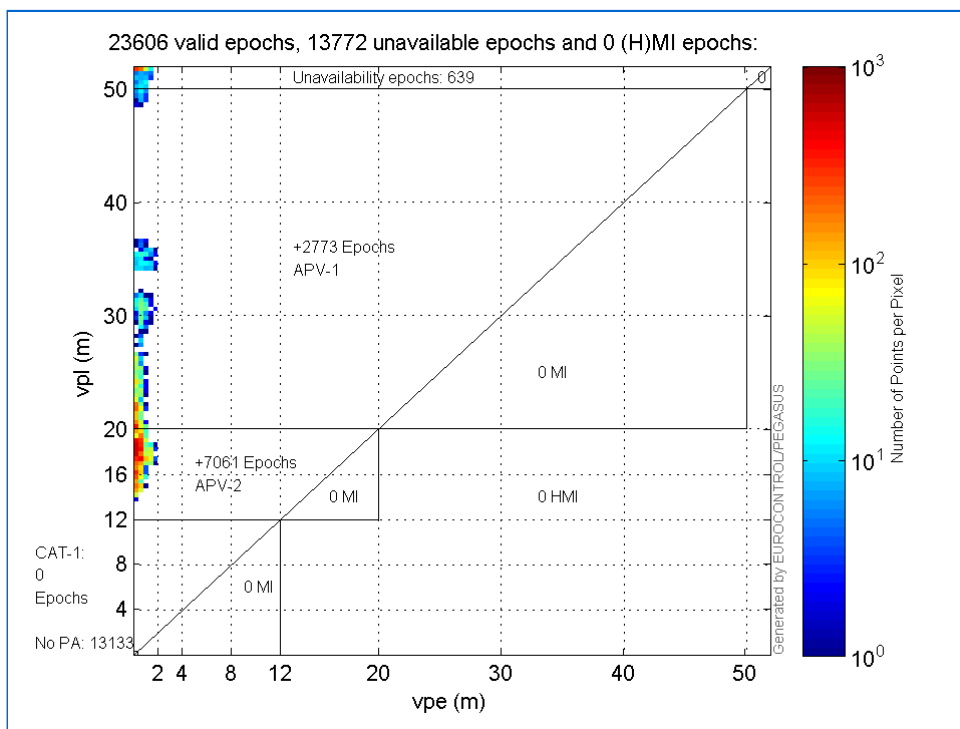


Stanford Plots

Horizontal_Stanford_Plot_SBAS:



Vertical_Stanford_Plot_SBAS:



Parameters

system

| Name | Section | Value |
|---------------|---------|--|
| name | system | GNSS_Solution |
| version | system | 4.8.2.1 |
| input_prefix | system | D:/PEGASUS_DAT_job/JOB/2015_09_09EGNOS/02_Convertor/02_Convertor |
| output_prefix | system | D:/PEGASUS_DAT_job/JOB/2015_09_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 | 30.4297 |
| init_alt | results | 217.9884 |
| mi_numbers | results | 0 |

Range Domain

start: 07:08:08 09.09.2015 (week: 1861 sec: 284888)
end: 13:47:34 09.09.2015 (week: 1861 sec: 308854)
duration: 06:39:27 ..

quality

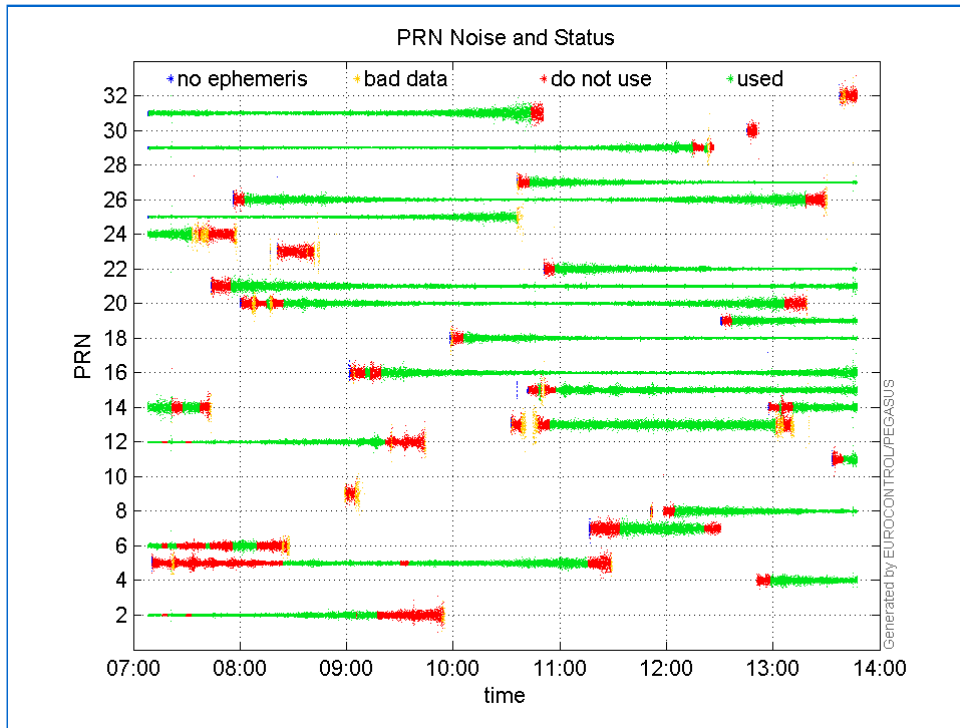
valid samples 23967
total samples 23967

PRN overview

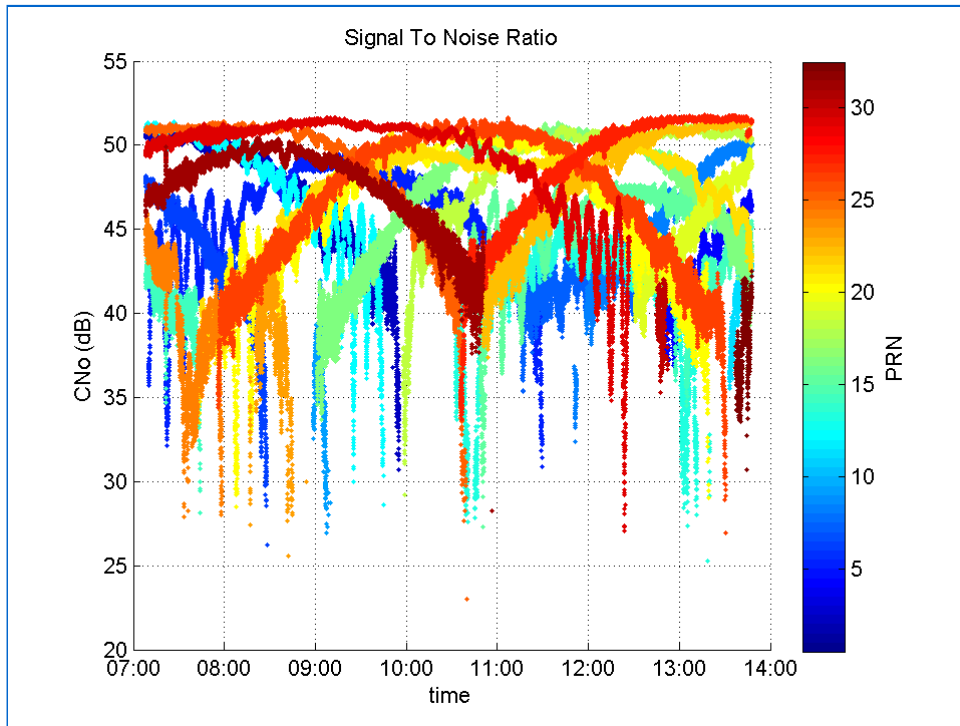
Number of Visible GPS Satellites 27
Number of Visible SBAS Satellites 2

signal quality and status

PRN Noise and Status:



Signal To Noise Ratio:



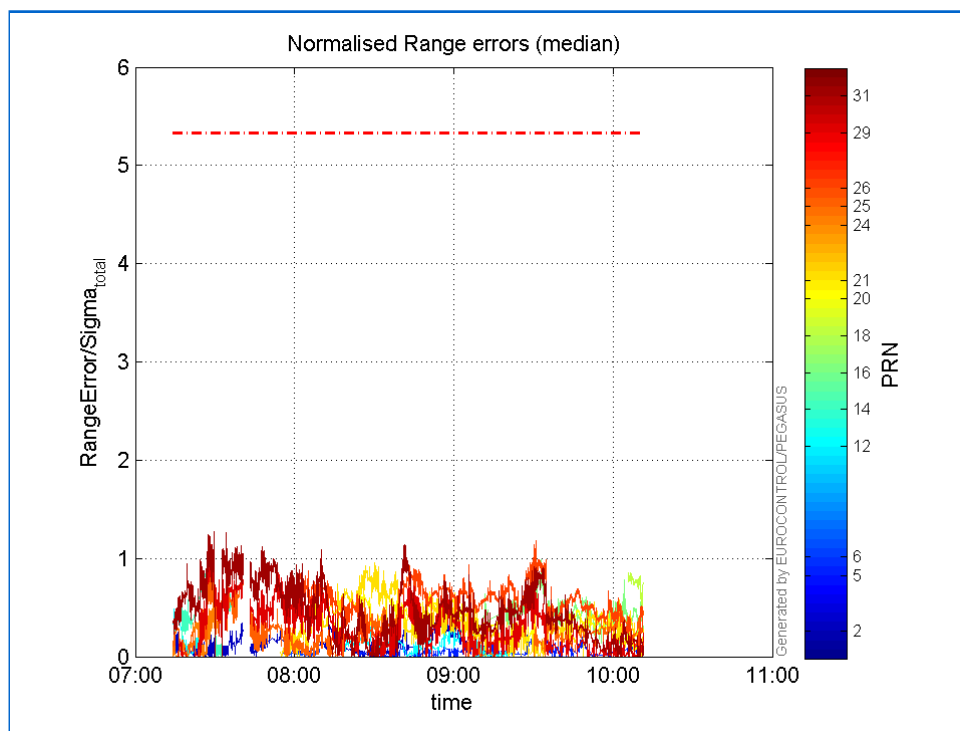
range errors

Number of Overbounding Norm Errors 0

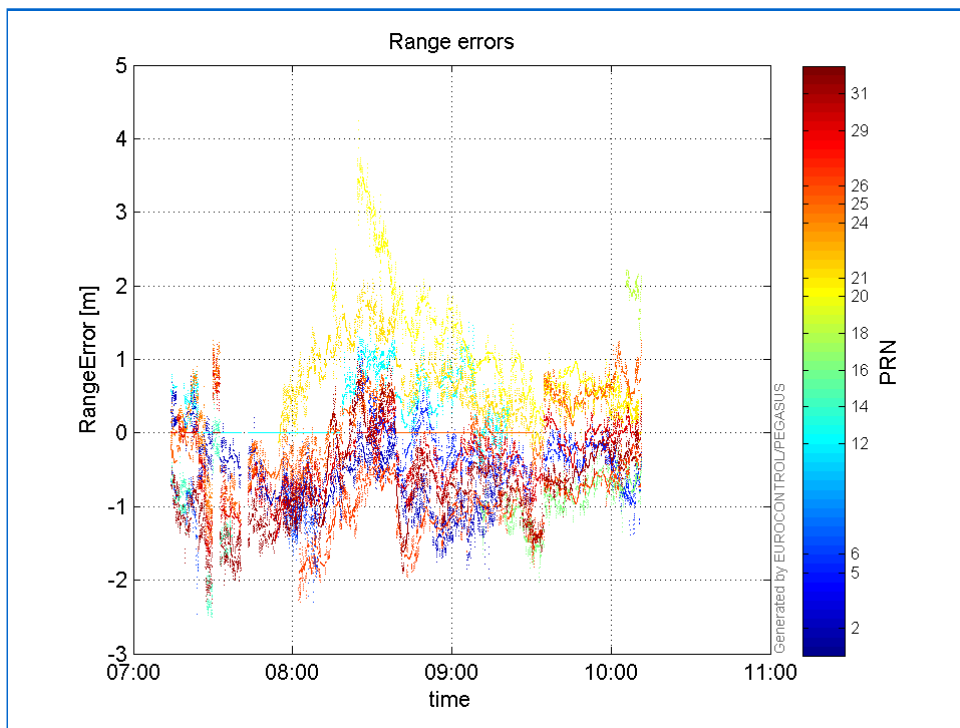
Max Norm Errors :

| GPS Week | GPS Second | PRN | Norm Error | Range Error | Sigma |
|----------|------------|-----|------------|-------------|---------|
| 1861 | 291250 | 2 | 0.391371 | -1.75124 | 4.47463 |
| 1861 | 294191 | 5 | 0.229839 | -0.592985 | 2.58001 |
| 1861 | 285850 | 6 | 0.124677 | -2.46619 | 19.7807 |
| 1861 | 285284 | 12 | 0.485082 | 0.80091 | 1.65108 |
| 1861 | 286094 | 14 | 1.03757 | -2.47719 | 2.38749 |

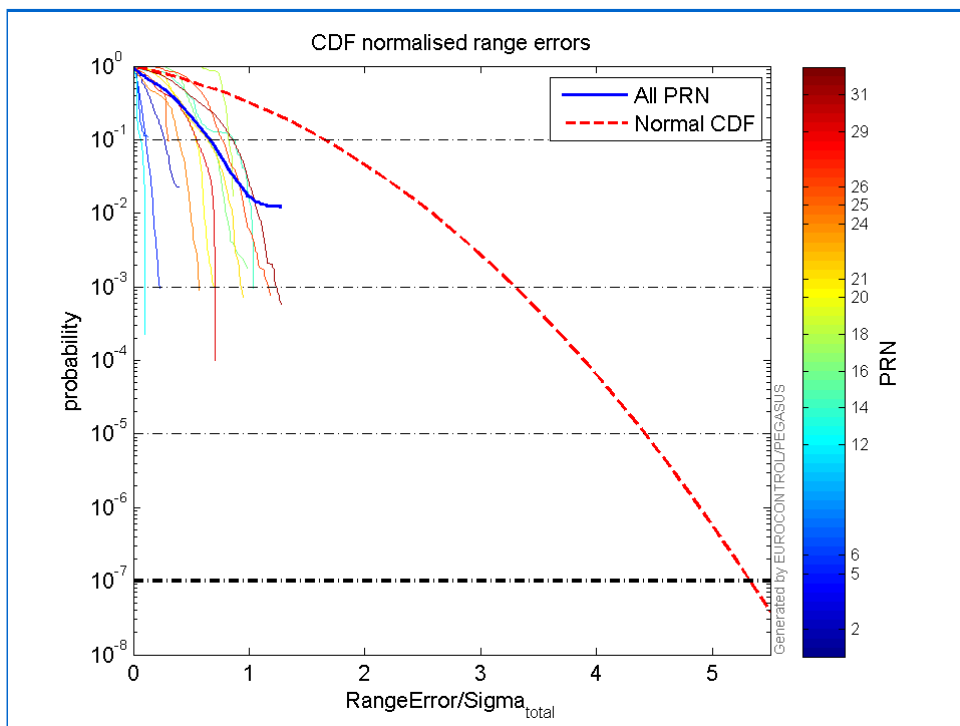
| | | | | | |
|------|--------|----|----------|----------|---------|
| 1861 | 293569 | 16 | 0.985675 | -2.02728 | 2.05674 |
| 1861 | 295587 | 18 | 0.85759 | 2.15693 | 2.51511 |
| 1861 | 289491 | 20 | 0.70925 | 4.24953 | 5.99158 |
| 1861 | 289819 | 21 | 0.950954 | 2.09127 | 2.19912 |
| 1861 | 286166 | 24 | 0.587411 | -1.35362 | 2.30439 |
| 1861 | 286042 | 25 | 1.03148 | -1.56302 | 1.51531 |
| 1861 | 293453 | 26 | 1.18074 | -1.82294 | 1.54389 |
| 1861 | 286114 | 29 | 1.13638 | -1.665 | 1.46517 |
| 1861 | 286184 | 31 | 1.27509 | -2.3138 | 1.81462 |

Normalised Range errors (median):


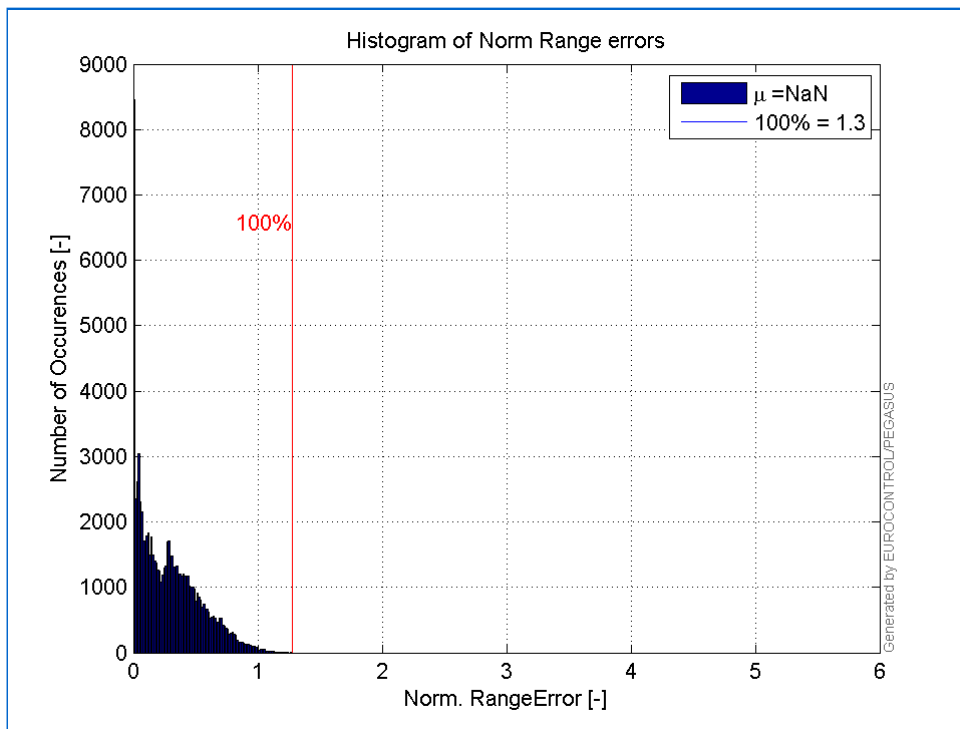
Range errors:



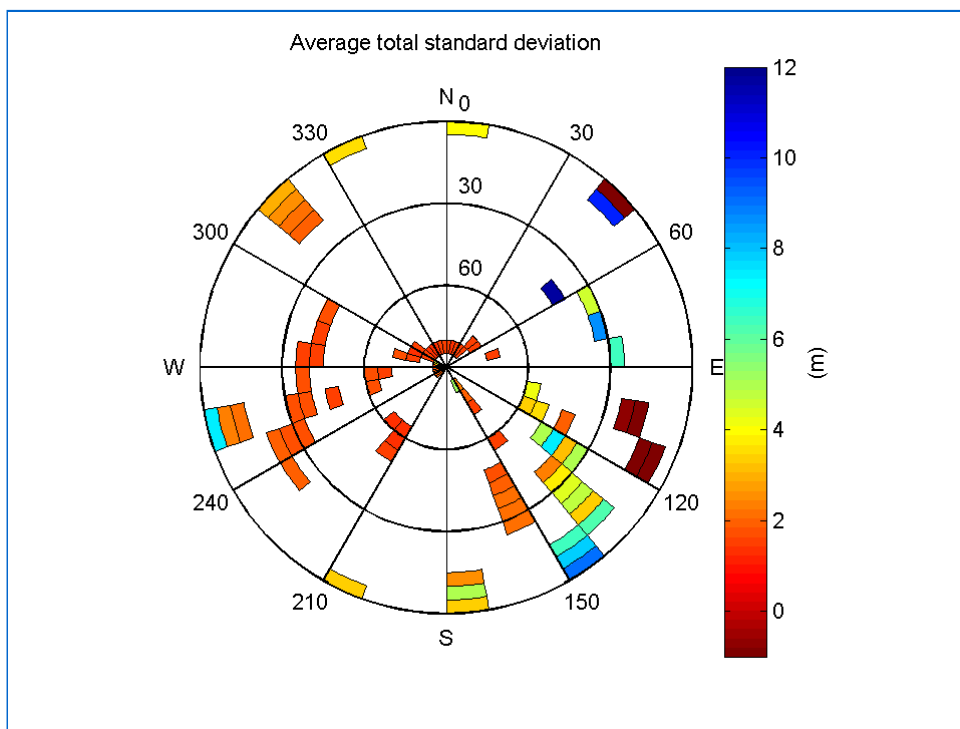
CDF normalised range errors:



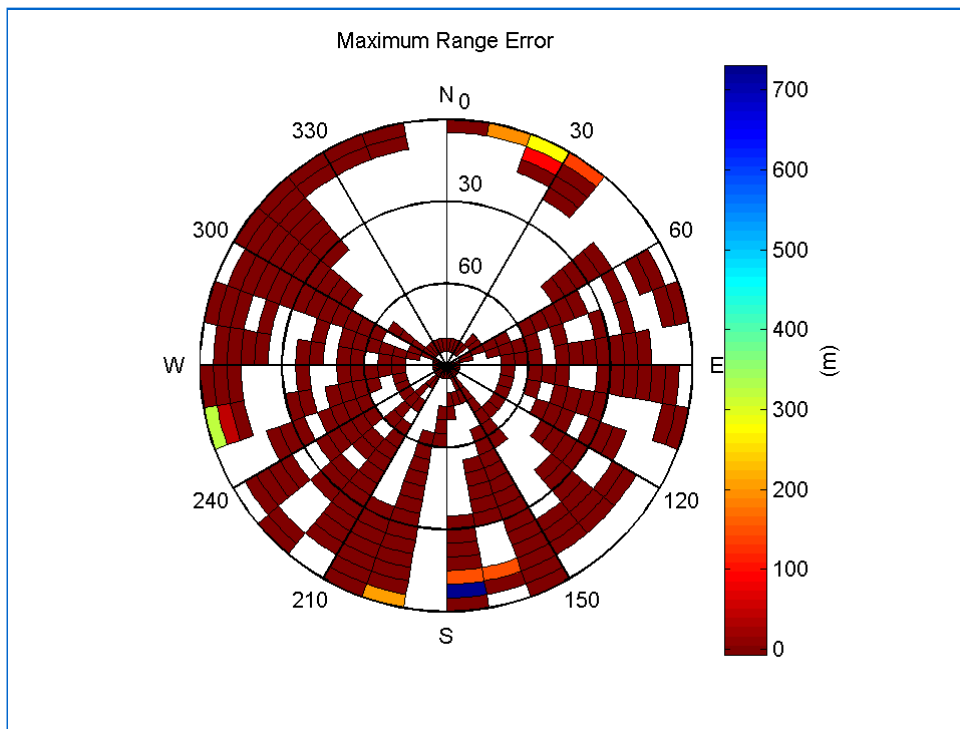
Histogram of Norm Range errors:



Sigma Sky Plot:

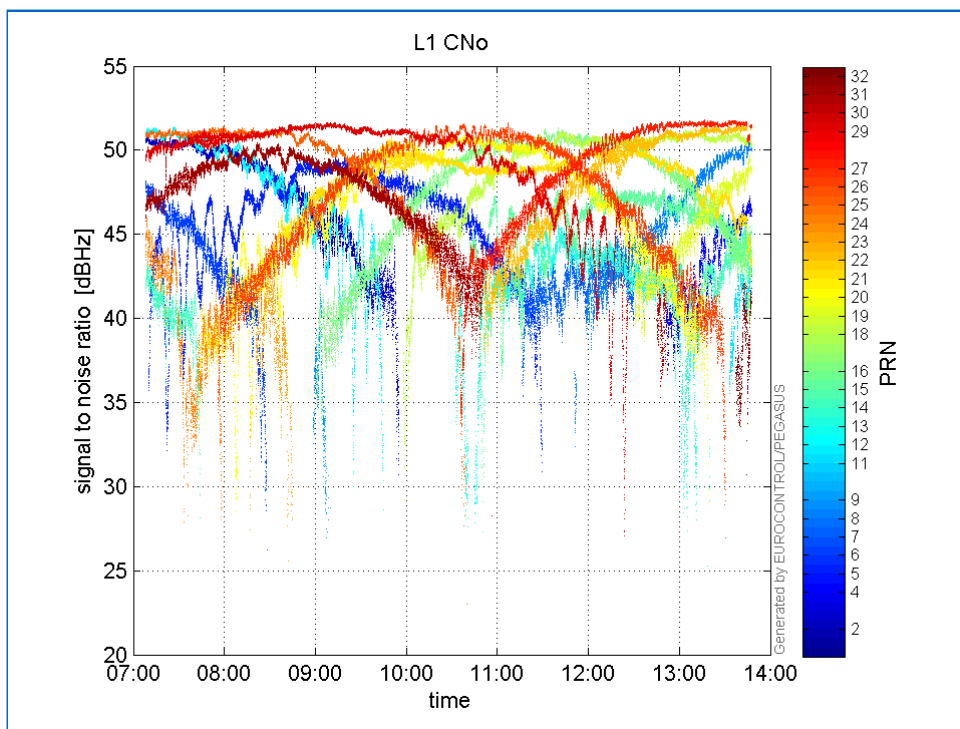


Norm Error Sky Plot:

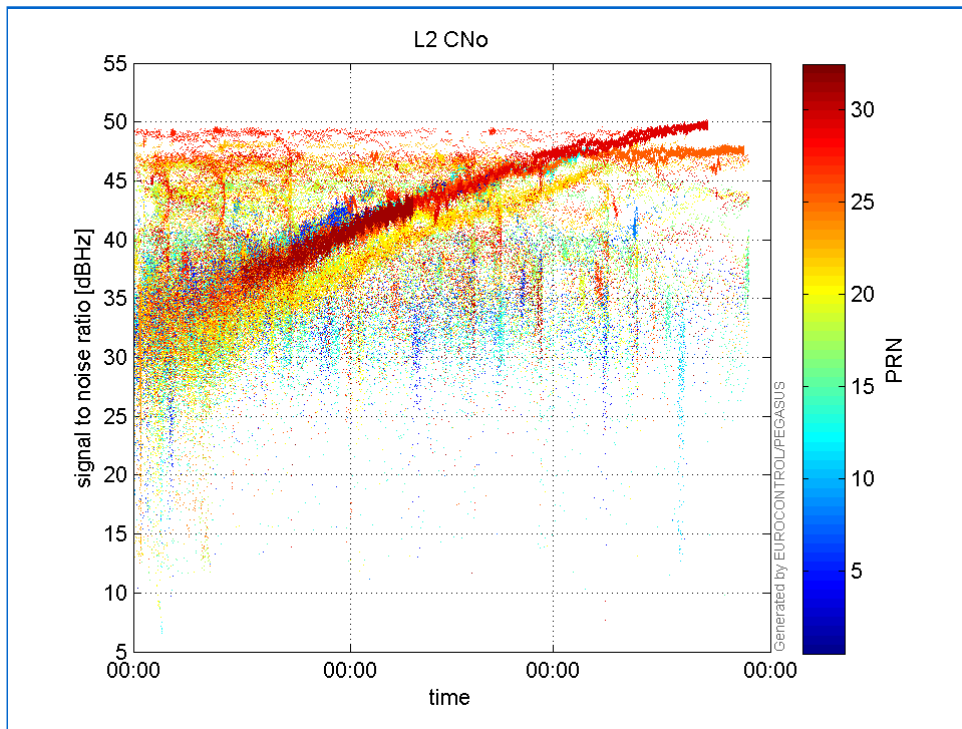


signal quality

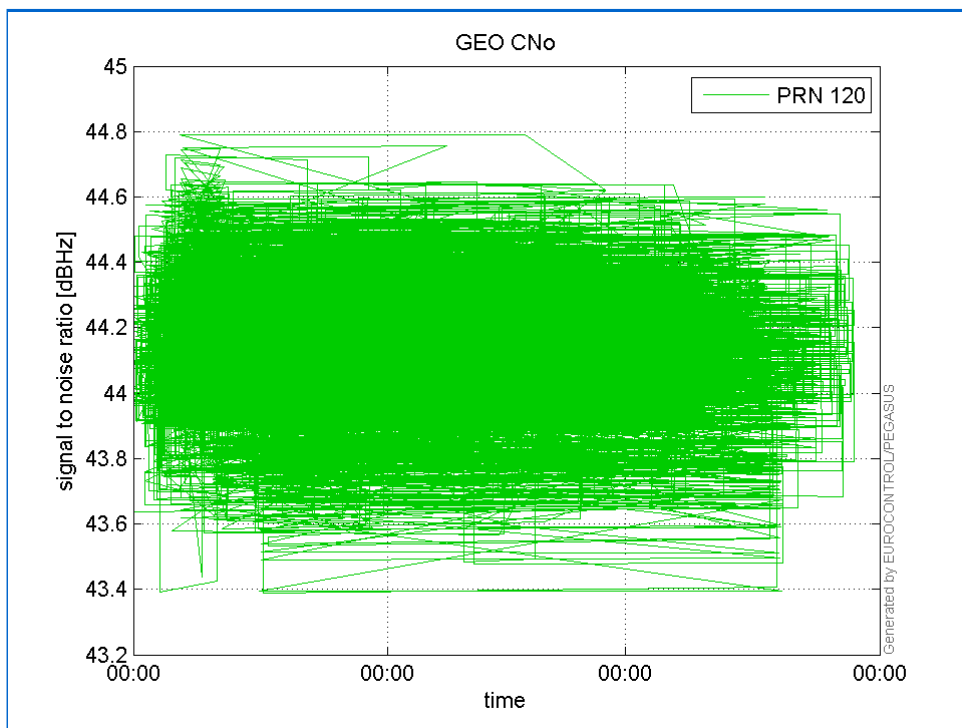
L1 CNo:



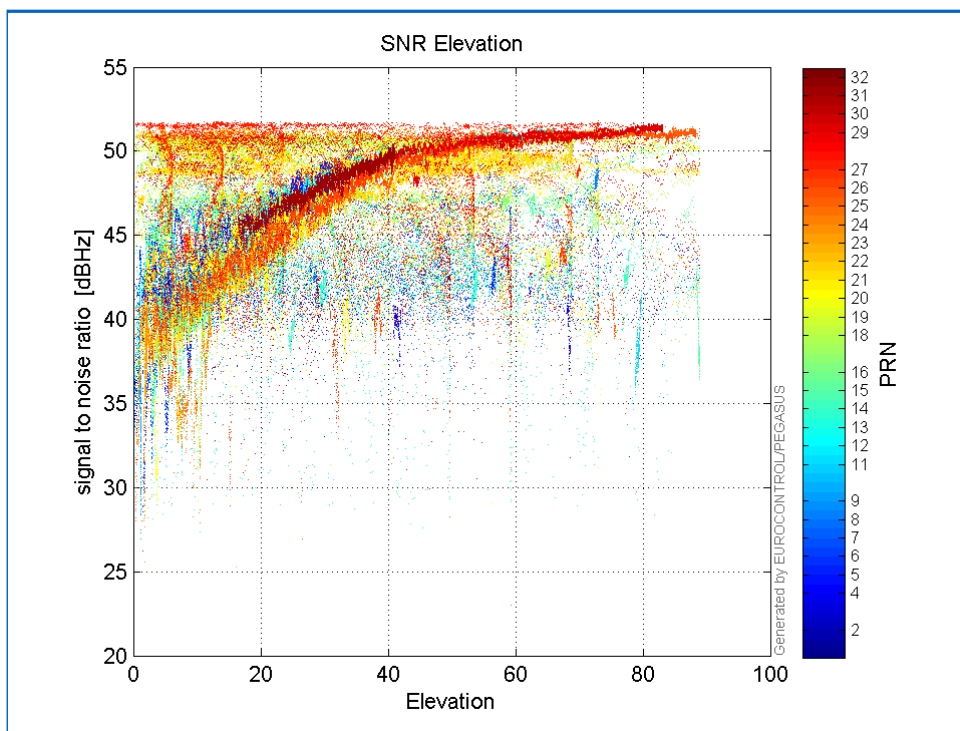
L2 CNo:



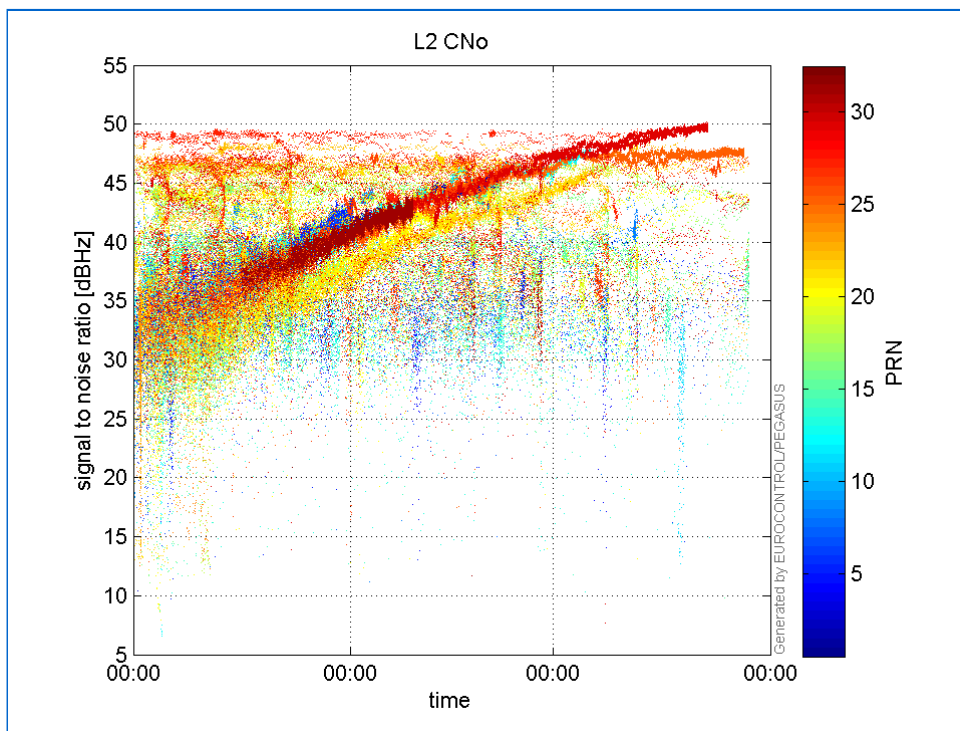
GEO CNo:



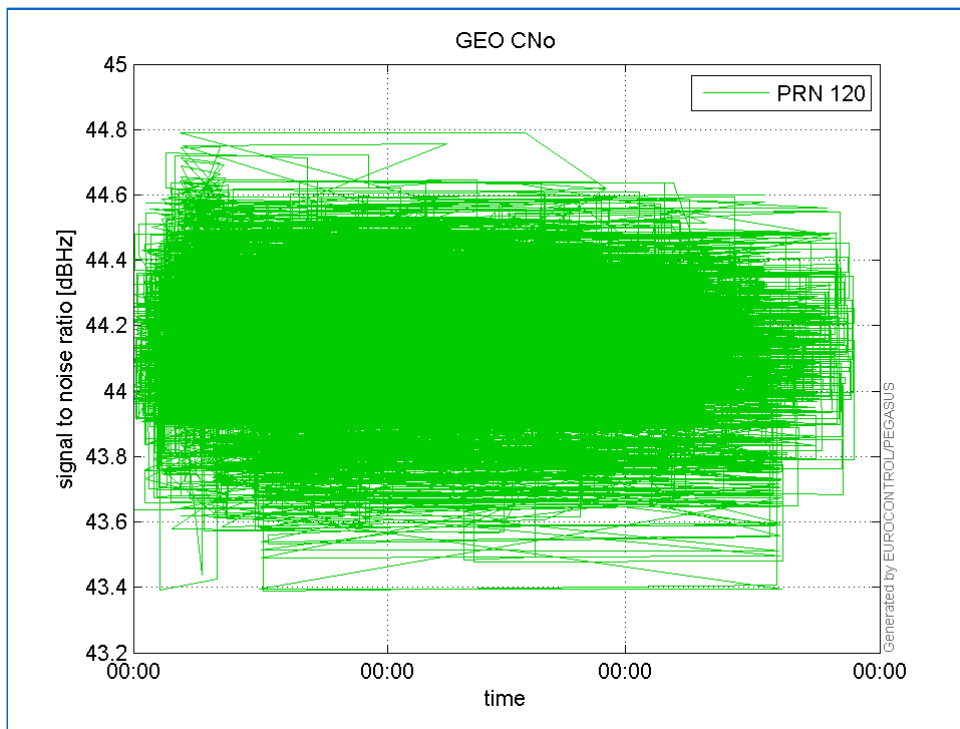
SNR Elevation:



L2 CNo:

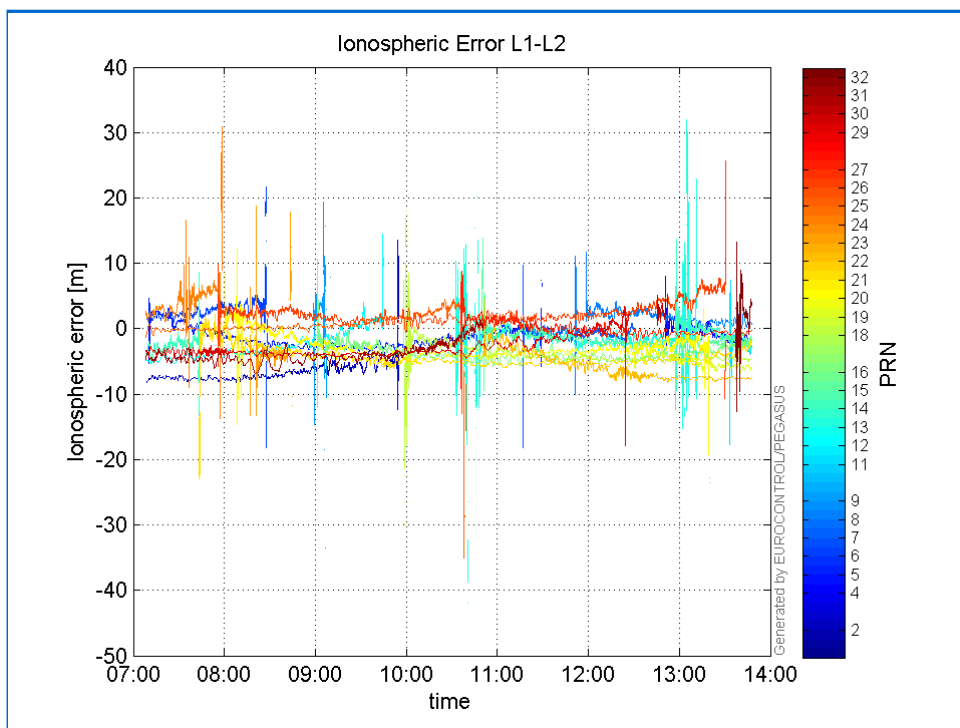


GEO CNo:



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:/PEGASUS_DAT_job/JOB/2015_09_09EGNOS/02_Convertor/02_Convertor |
| output_prefix | system | D:/PEGASUS_DAT_job/JOB/2015_09_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 | 30.4297 |
| init_alt | results | 217.9884 |
| mi_numbers | results | 0 |