



A product by



## IBPL REPORT

Username: johnsmith  
Scenario: Example  
Start Date: 2009/05/15 (09135)  
End Date: 2009/07/27 (09208)  
Run Time: 2009/07/28-12:15:50 UTC

All times are GPS Time unless otherwise stated

QUALITY DATA, ALGORITHMS AND PRODUCTS  
FOR THE GNSS USER COMMUNITY

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# Table of Contents

1. CONFIGURATION SUMMARY ..... 3

    1.1. SETTINGS ..... 3

2. POSITION ERROR STATISTICS ..... 4

3. IBPL ACCUMULATED HISTOGRAMS ..... 5

4. IBPL PERFORMANCES ..... 6

# 1. CONFIGURATION SUMMARY

## 1.1. SETTINGS

|                               |                  |
|-------------------------------|------------------|
| Station                       | usn3             |
| Mode                          | Single-Frequency |
| Apply Ionospheric Correction  | Yes              |
| Apply TGDs                    | Yes              |
| Apply Tropospheric Correction | Yes              |
| Minimum Elevation Angle       | 10 deg           |

**Table 1. Settings**

## 2. POSITION ERROR STATISTICS

The position error is the difference between the code-based user position and the precise position (considered as truth). The precise position comes from PPP for user stations and from ITRF (or IGS) for core stations.

|      | North | East   | Up     |
|------|-------|--------|--------|
| MEAN | 0.334 | -0.126 | -0.872 |
| STD  | 0.938 | 0.703  | 1.836  |
| RMS  | 0.995 | 0.714  | 2.032  |
| CEP  | 0.959 |        |        |

Table 2. Position Error Statistics (meters)

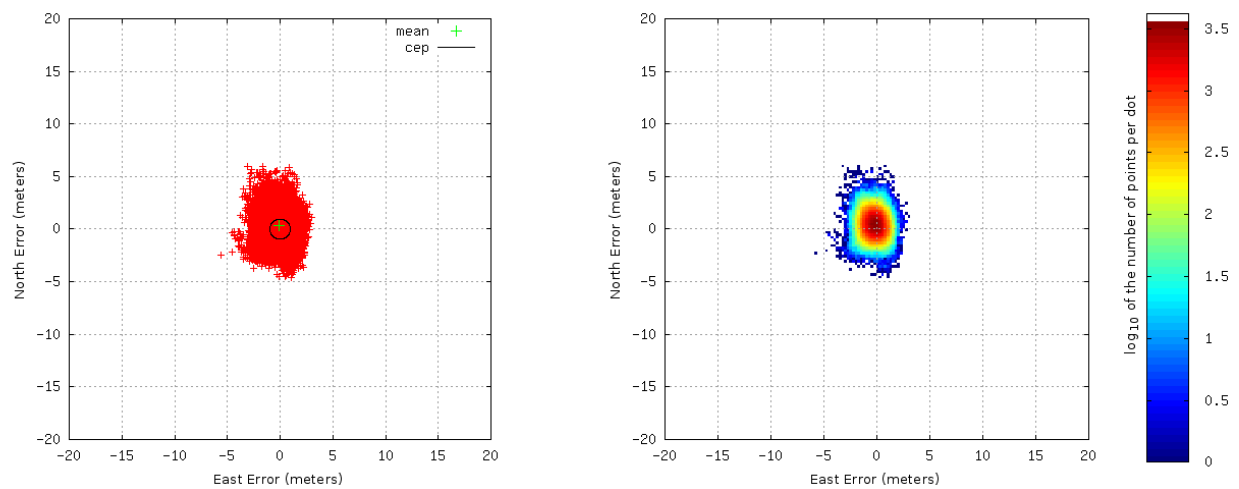
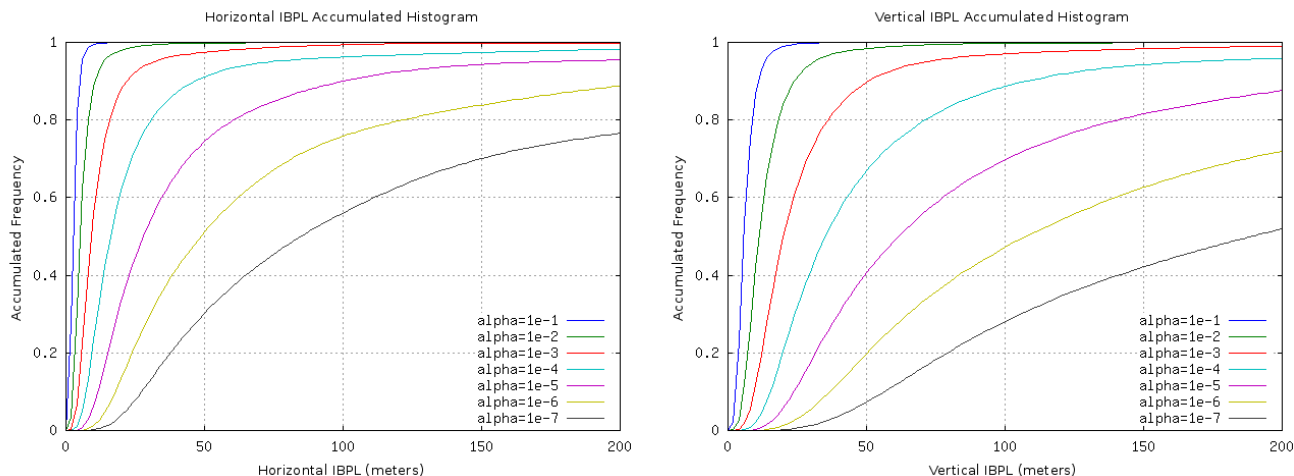


Table 3. Horizontal position errors

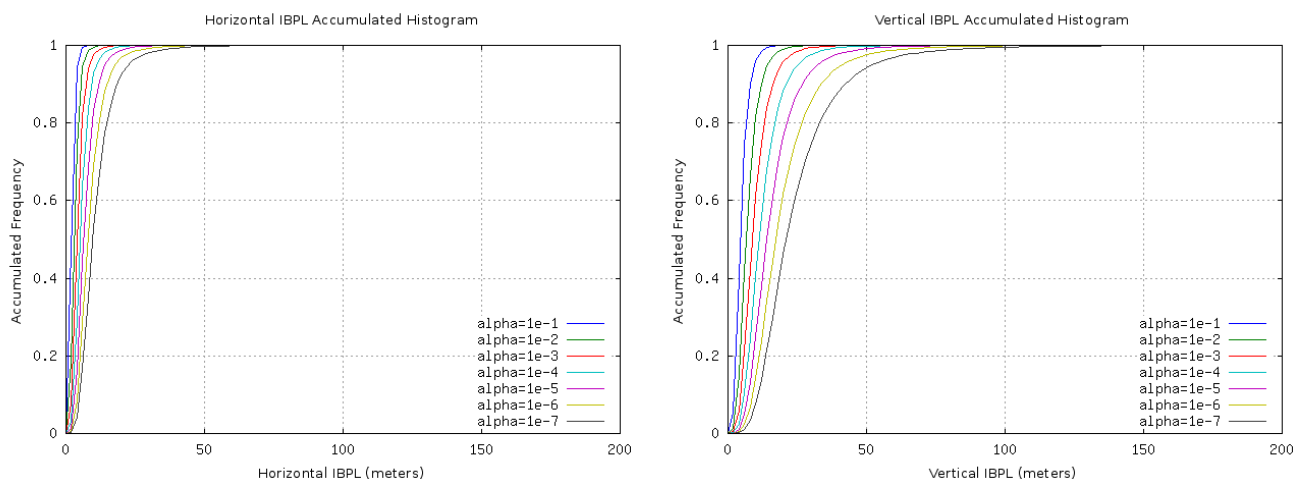
### 3. IBPL ACCUMULATED HISTOGRAMS

The following figures show the accumulated histograms of the horizontal and vertical Protection Levels from IBPL for the GPS-only solution. Seven confidence levels ( $\alpha$ ) from  $10^{-1}$  to  $10^{-7}$  are considered.



**Table 4. IBPL Accumulated Histograms**

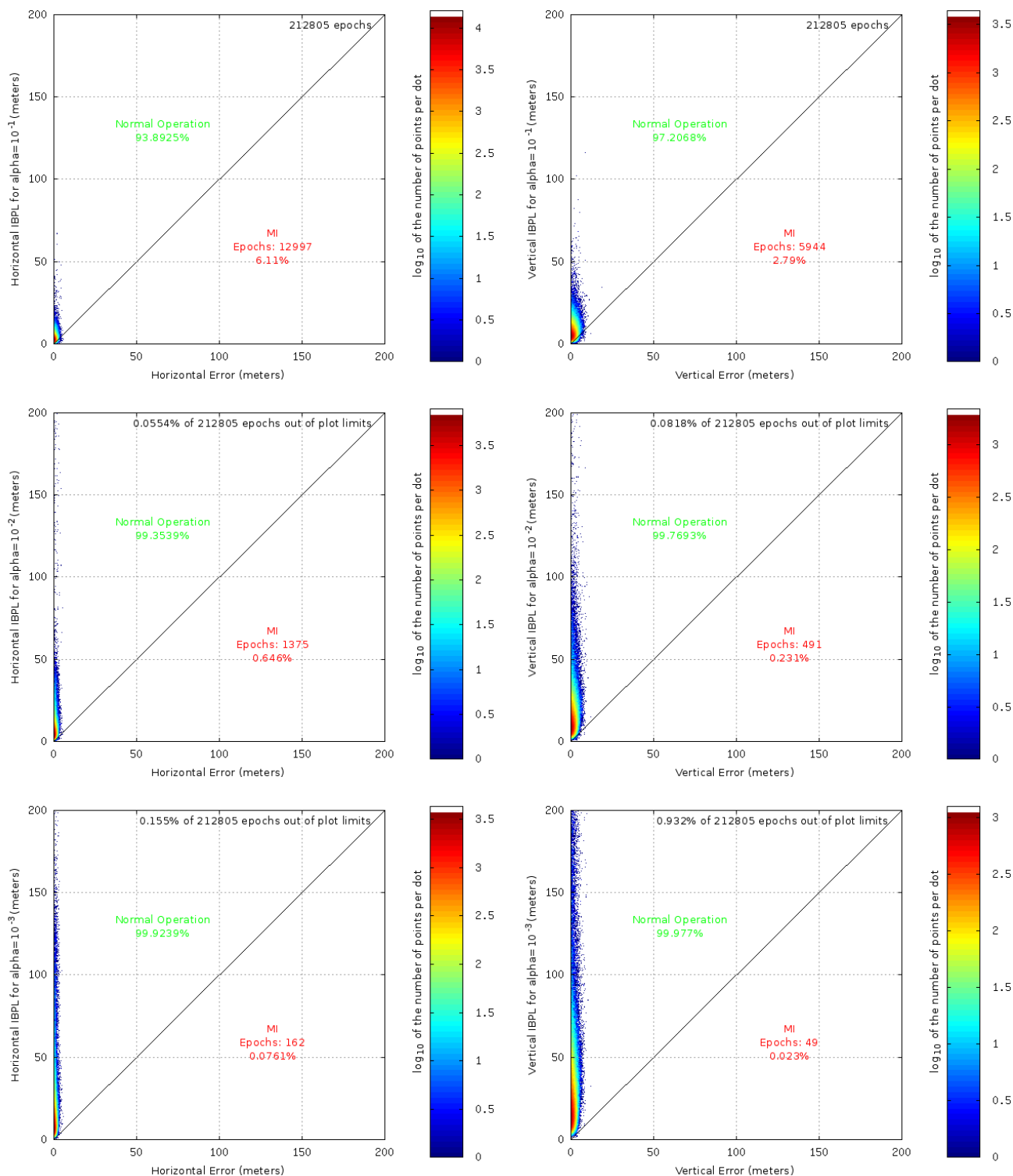
The following figures show the extrapolation to a GPS+GLONASS/Galileo scenario. The extrapolation only affects the IBPL computation (not the position error) and simply assumes a higher number of satellites in view.

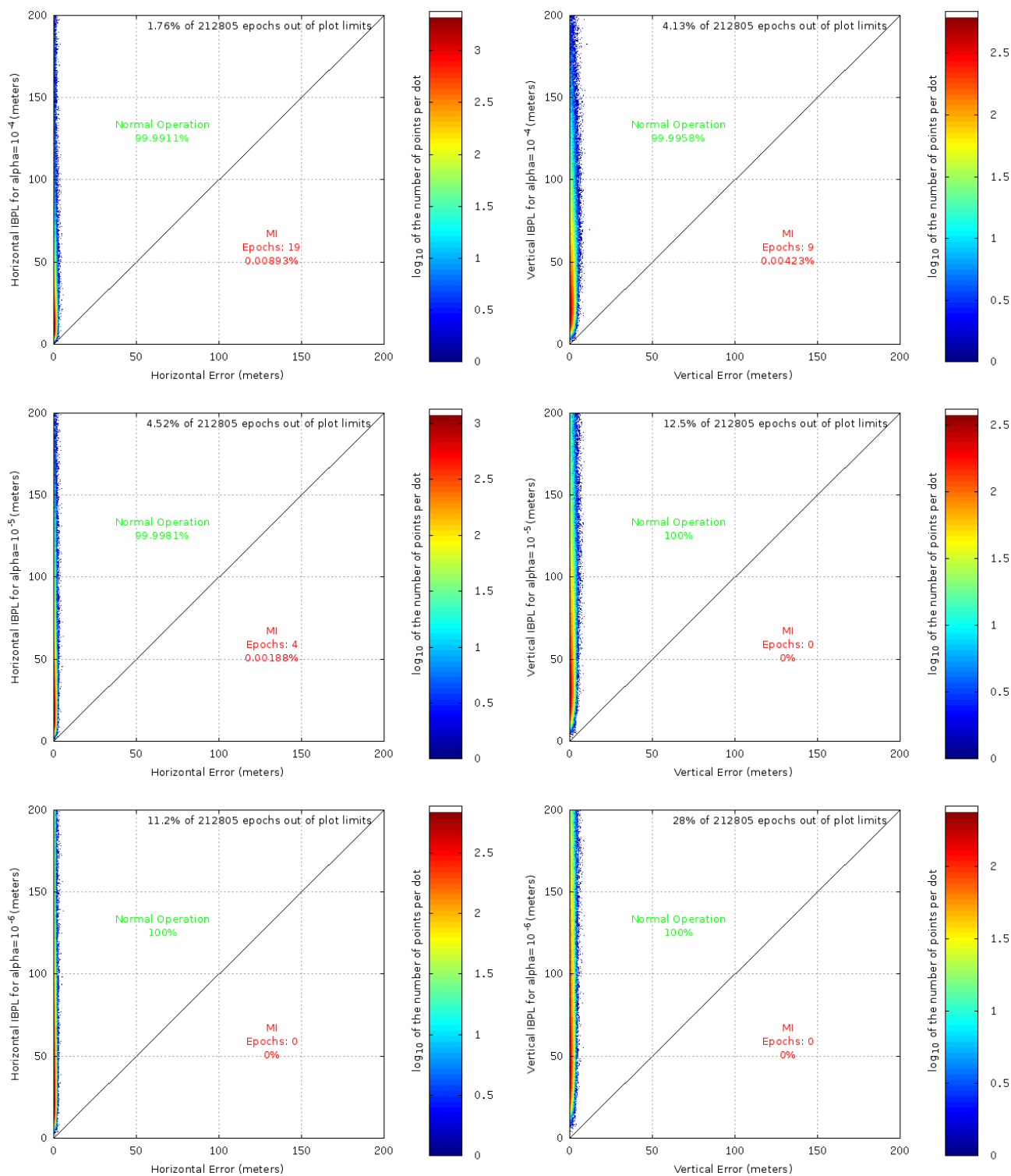


**Table 5. Extrapolated IBPL Accumulated Histograms**

## 4. IBPL PERFORMANCES

The following Stanford diagrams represent the Protection Level versus the position error for the different confidence levels.





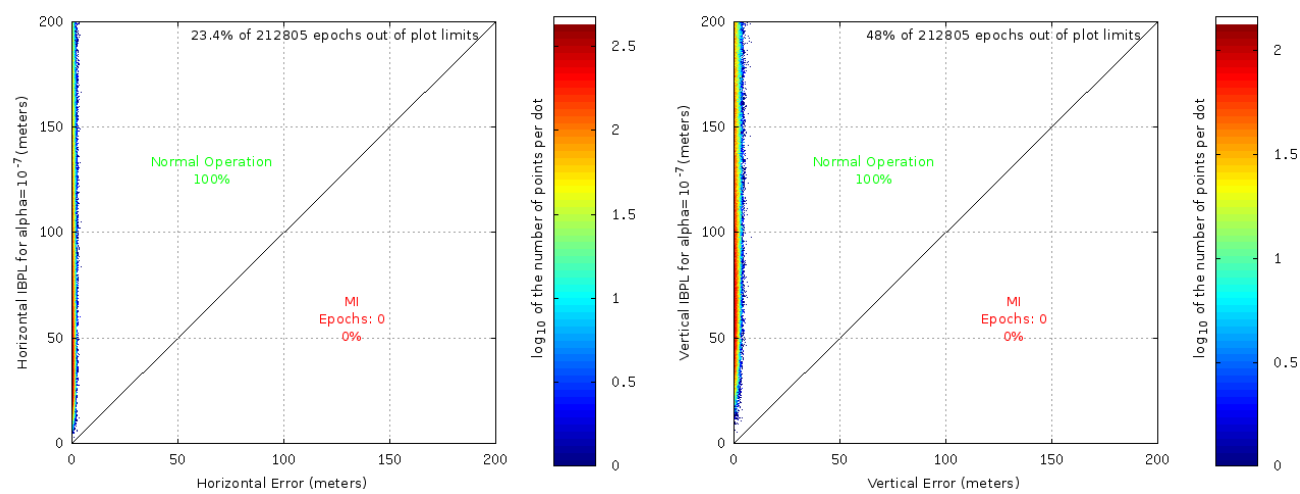


Table 6. IBPL Integrity and Availability

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