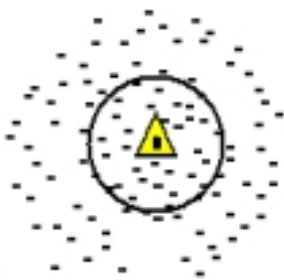
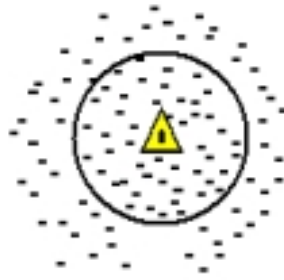


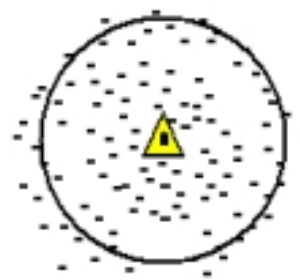
Accuracy Definitions



CEP
50%



RMS
63-68%



2D RMS
95%



Accuracy specifications can be expressed in many ways

Circular Error of Probability (CEP)

CEP is based on a 50% confidence level. If 100 positions are collected at one point, 50% of

them will be within the stated accuracy and 50% will be outside the stated accuracy.

Root Mean Square (RMS) error

RMS error is based on a 63 - 68% confidence level. If 100 positions are collected at one point, 63 - 68 of them will be within the stated accuracy, and 32 - 37 will be outside the stated accuracy.

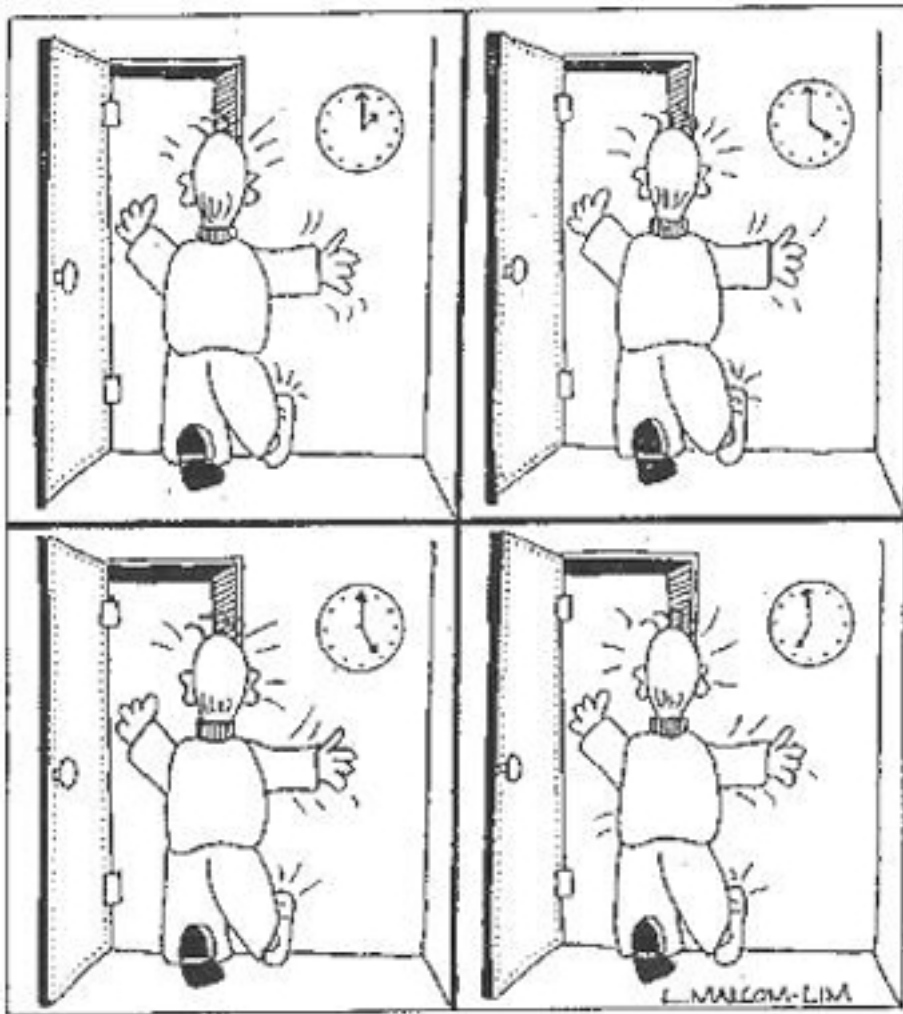
2D Root Mean Square (2D RMS) error

Two Degree Root Mean Square (2D RMS) error is based on a 95% confidence level. If 100 positions are collected at one point, 95 of the positions will be within the stated accuracy, and 5 will be outside the stated accuracy.

Vertical accuracy

Depending on the geometry of the satellite constellation, the vertical accuracy of any GPS position may be from sub-meter to 3 times larger than the horizontal accuracy. The vertical component is difficult to calculate because SVs have a limited perspective in which to measure height. If the receiver could use signals from underneath it, the vertical component could be accurately measured, but the Earth blocks these signals.

Accuracy versus precision



DESPITE MUCH PRACTICE,
ERNEST COULD BE PRECISE, BUT
NOT ACCURATE

Accuracy describes how closely the calculated value compares to the known value. **Precision** is the measure of repeatability.

