GPS Enhancement,

Motion Sensor Augmented GPS

or simply

PDR-Fusion

OpenStreetMap https://www.openstreetmap.org/copyrigh

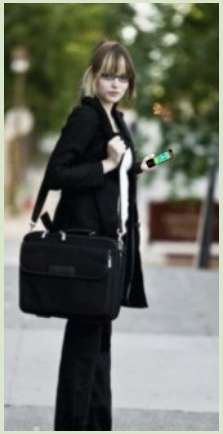
GPS PDR-Fusion

What is PDR

Pedestrian Dead-Reckoning, often abbreviated PDR, uses motion sensors to determine speed and direction. As Dead-Reckoning implies, it is a relative navigation means, which provides short term robustness.

Fusing GPS and PDR data solves the typical urban valley and city navigation problems, "jumping" position fixes.

CiMotion PDR-Fusion:



- Smooth positioning experience. Eliminates fluctuations
- Filters position fixes on Quality of Service
- Improves position fix accuracy
- Works with the smartphone build-in sensors
- Works Real-Time

Consult In Motion

Walking in town,

indoor in the mall,

no GPS signals,

what then?

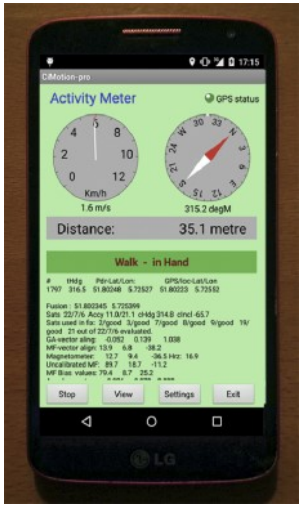
Indoor Navigation

Motion Sensor Based PDR-fusion

Contact:

Consult In Motion

www.consultinmotion.com info@consultinmotion.com



Precision Compass

Navigation grade compass with consumer sensors requires a precision alignment process and calibration of accelerometer and magnetometer together.

- Tilt Compensated Compass
- Horizontal and vertical operation
- Calibration algorithms
- Manual options for highest accuracy compass
- Also for smart-phone sensors

Platform Support

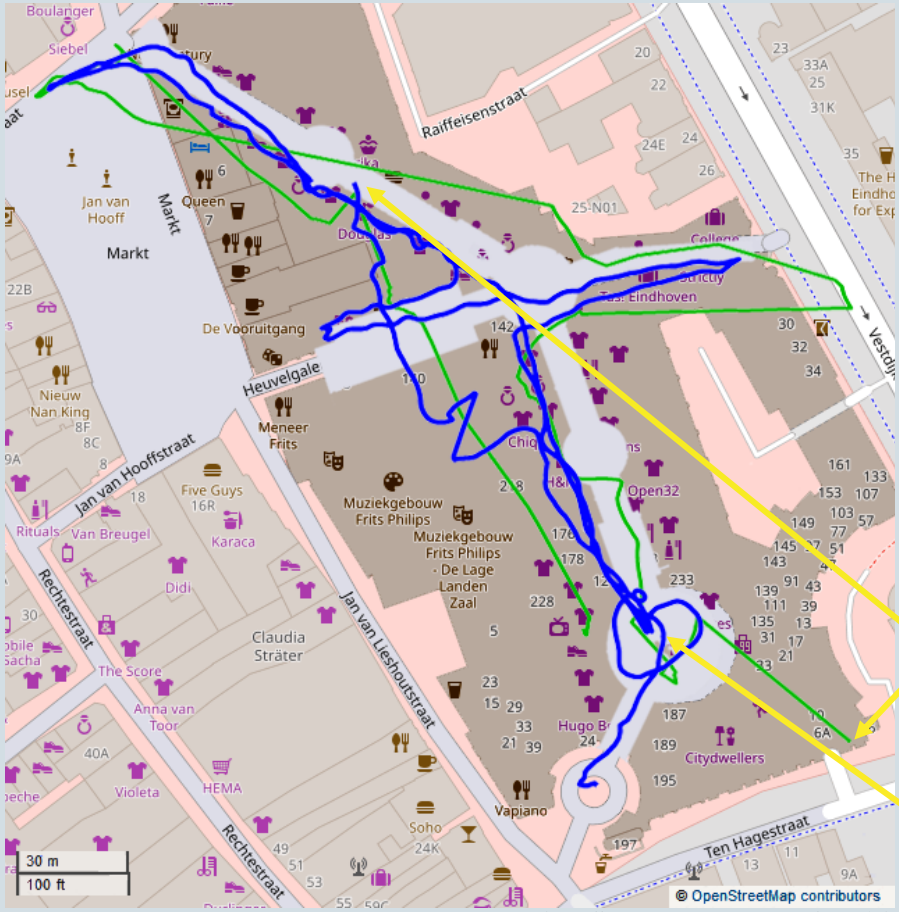
Sport Watch, e-Linux platform (example).

CiMotion PDR-Fusion technology is platform independent. The core motion sensor libraries currently supports:

- Android, smartphones (or wearables)
- Linux and embedded-Linux*
- Windows Phone/Mobile devices
- B2B

* UI for Linux is supported on customer specific basis.

Indoor Navigation - PDR-Fusion



OpenStreetMap https://www.openstreetmap.org/copyrigh

GPS PDR-Fusion

PDR-Fusion is here used inside the shopping centre. There the fusion relies heavily on the motion sensors, while GPS can have long drop-outs or "hanging" positions.

CiMotion PDR-Fusion:

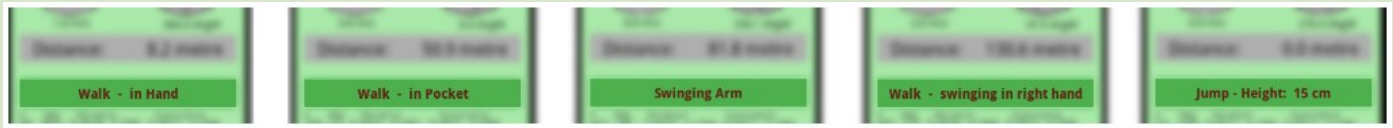
- Excellent position accuracy
- Support for Wifi positioning input
- Supports long drop-out periods
- Works real-Time

GPS stopped when driving into the underground carpark. But later, occasionally indoor GPS fixes becomes available.

Underground carpark. PDR-fusion starts with best available position fix, when leaving the car., here a WiFi fix.

PDR-fusion continuously refines the position fixes while walking around.

Context Detection



- Real-Time information about current motion, and
- how the device is carried