

High-precision, cost-effective inertial navigation with tightly-coupled GNSS



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About OxTS

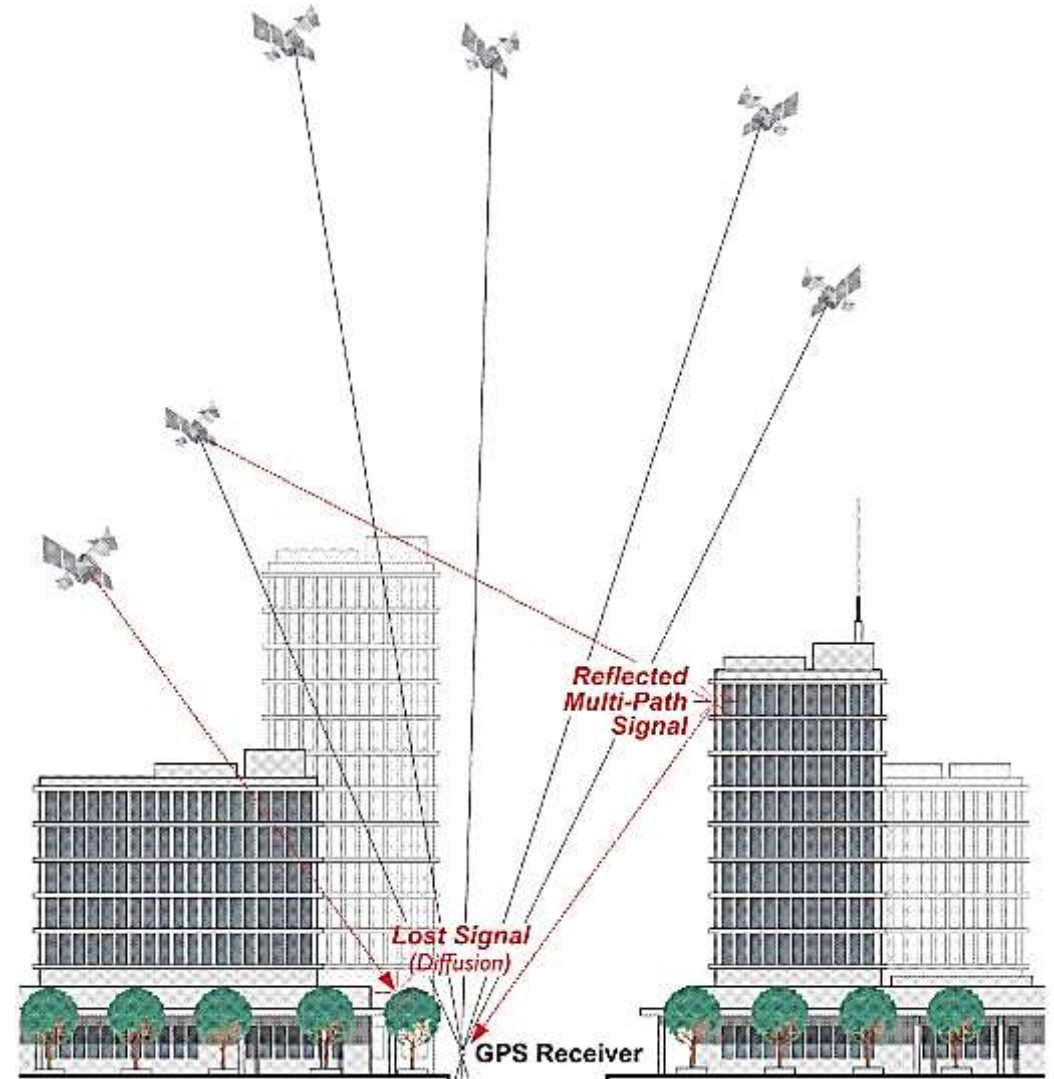
OxTS designs and manufactures precision **Inertial Navigation Systems**, combining the best of **GNSS** technology with custom built **IMUs** for robust positioning in a range of markets and applications.

- Experts in sensor fusion, positioning and navigation
- Founded 15+ years ago by two Oxford University graduates
- Based in Oxfordshire, UK
- In-house manufacturing and calibration facilities
- 900+ customers in over 40 countries
- World class products, service, and support



Problems with standalone GNSS

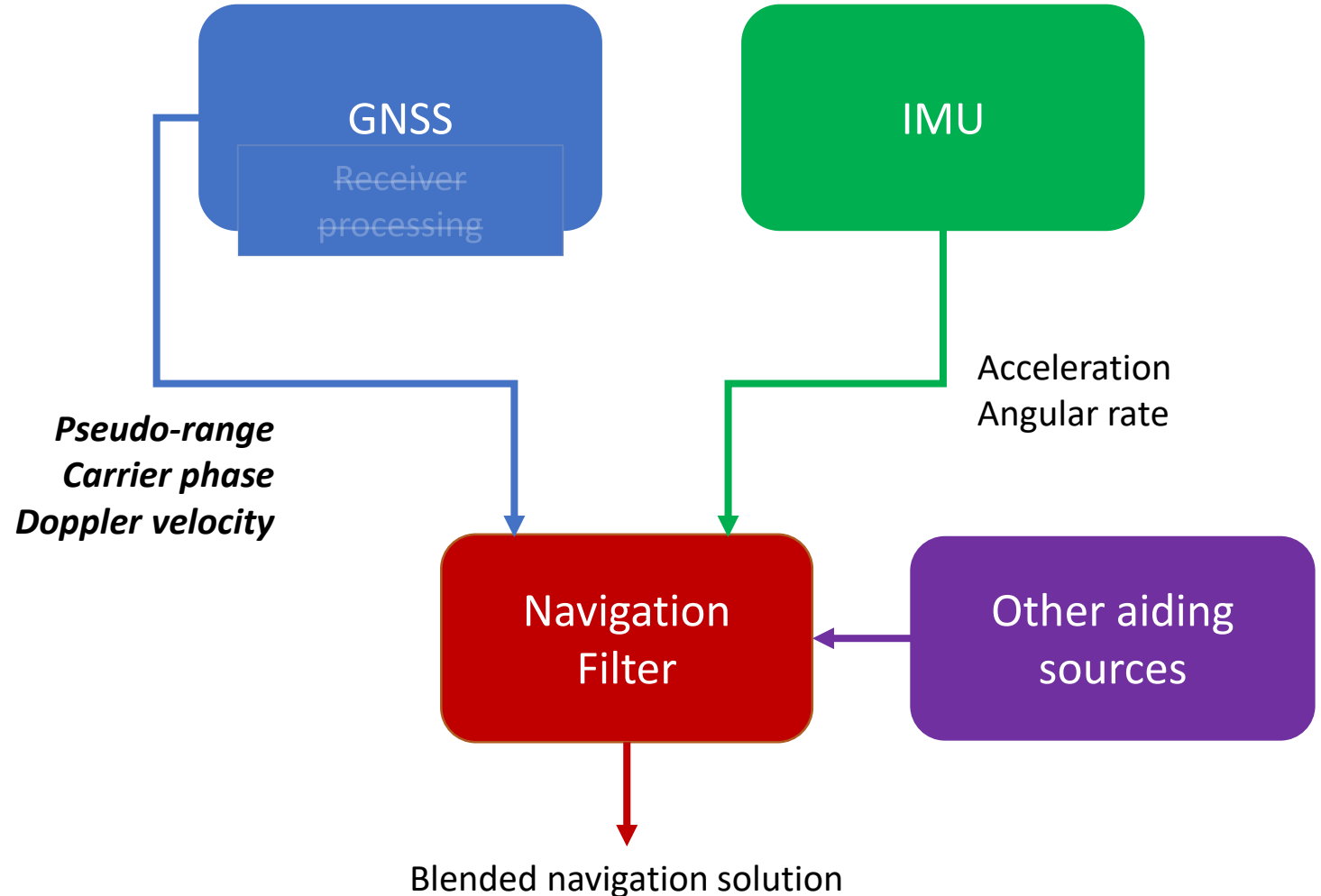
- Works fine in open sky
- Susceptible to obstructions
- Urban canyons, vegetation, bridges, tunnels etc. block or reflect signals
- Poor signals degrade performance
- <4 satellites in view loses solution completely

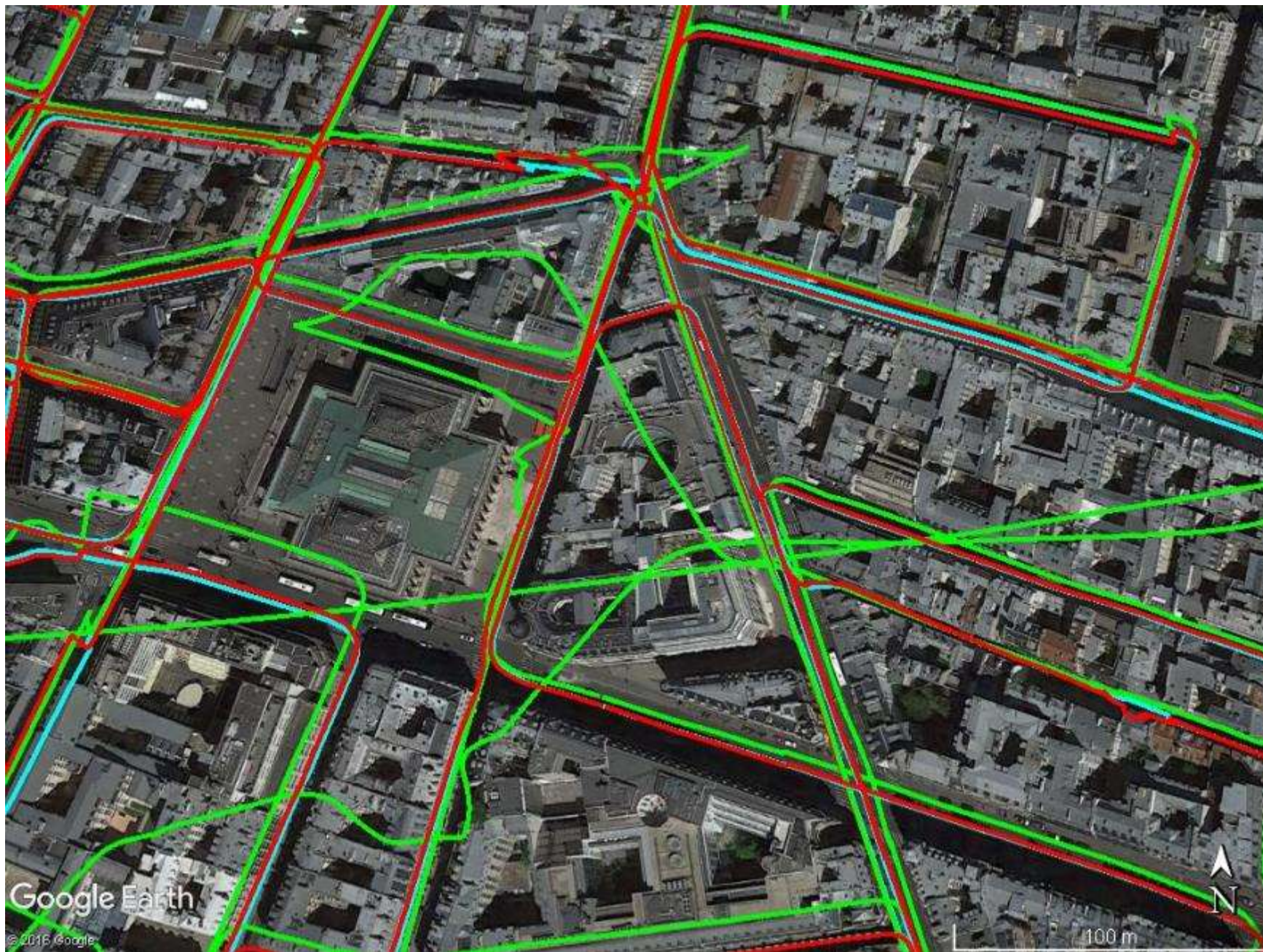





The OxTS algorithm: gx/ix™

Tight coupling

- gx/ix™ ignores GNSS solution and uses raw observables
- Each satellite in view individually integrated into solution
- Solution still updated when <4 satellites in view

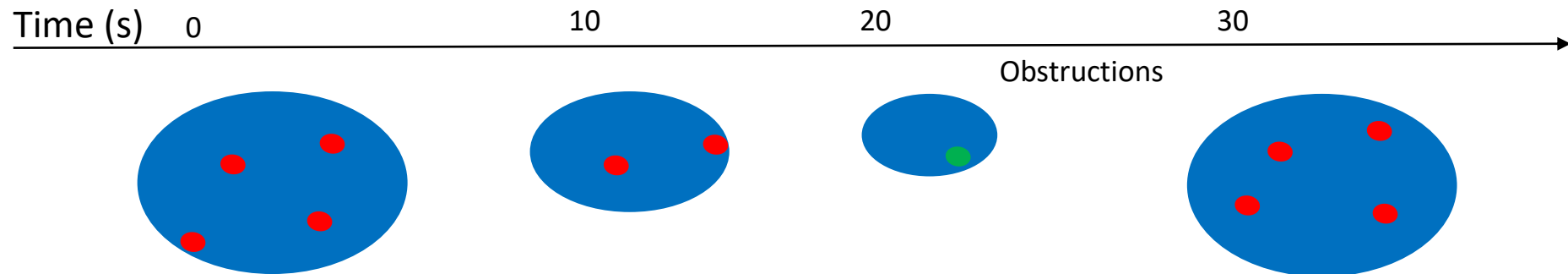




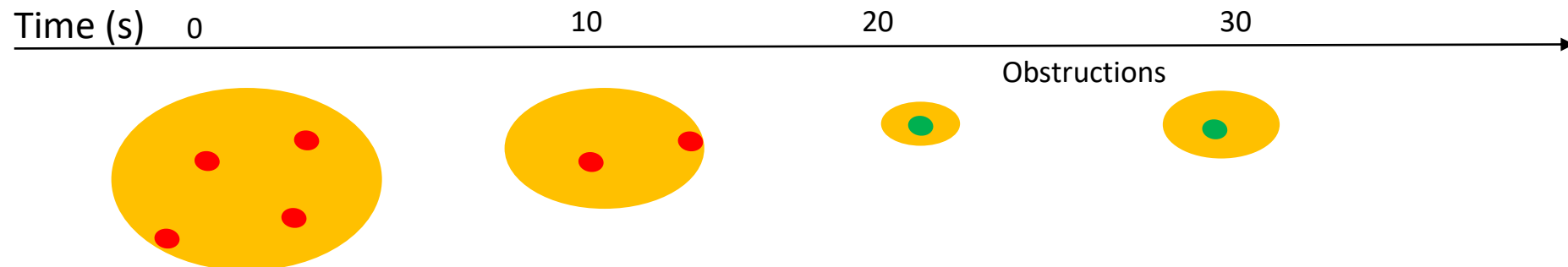
-  Receiver mode
-  gx/ix real-time
-  gx/ix post-processed

RTK and inertial relock

- With normal RTK, when signal is lost ambiguity search restarts from scratch



- With ix processing, solution is constrained by inertial measurements



Looking to new applications

- Code is generic
 - IMU at the core of the Navigation Engine
 - Not reliant on GNSS
 - Indoor solutions possible
- Current applications:
 - Surveying
 - Vehicle dynamics
 - Chassis development
 - Automotive active safety testing
 - Benchmarking external sensors

Summary

- OxTS gx/ix™:
 - Tightly-coupled IMU + GNSS
 - Not reliant on GNSS
 - Fast solution re-lock

- OxTS:
 - Experience in a range of markets, especially automotive
 - Experts in sensor fusion, positioning, orientation and motion
 - Looking for new Inertial Navigation applications

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