

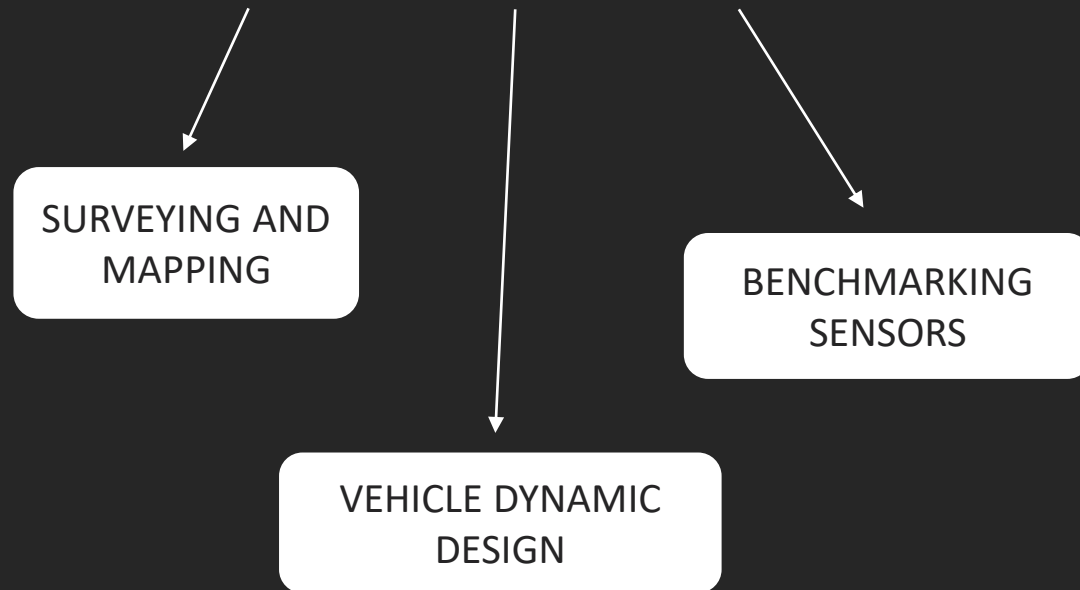
Richard Sands, Application Engineer
Oxford Technical Solutions

Generic Aiding: Flexible inputs to an Inertial Navigation System



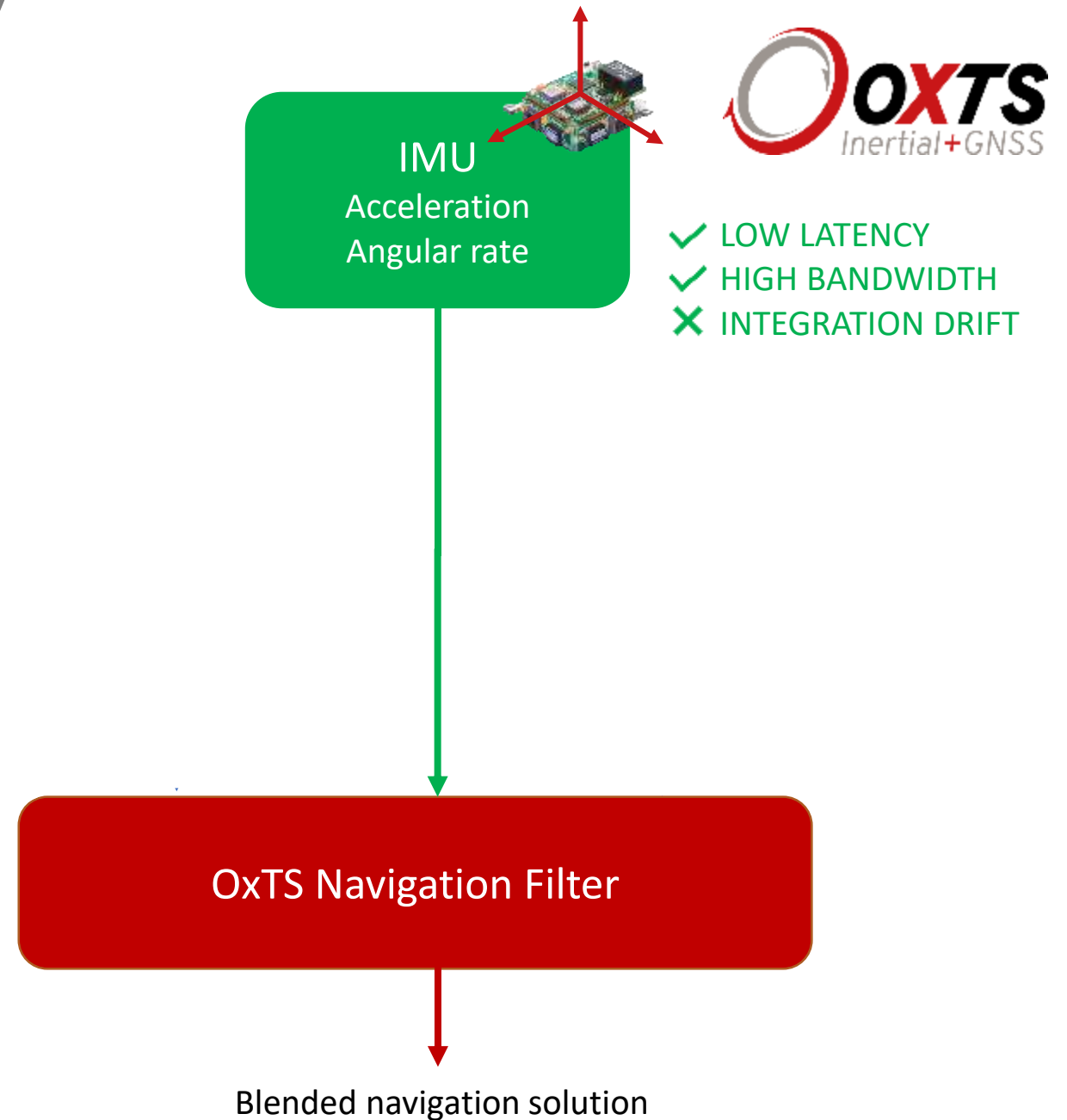
Why use an Inertial Navigation System?

- Absolute position accuracy of 1cm
- 250Hz inertial measurement rate
- Pitch, roll and heading accuracy up to 0.03°



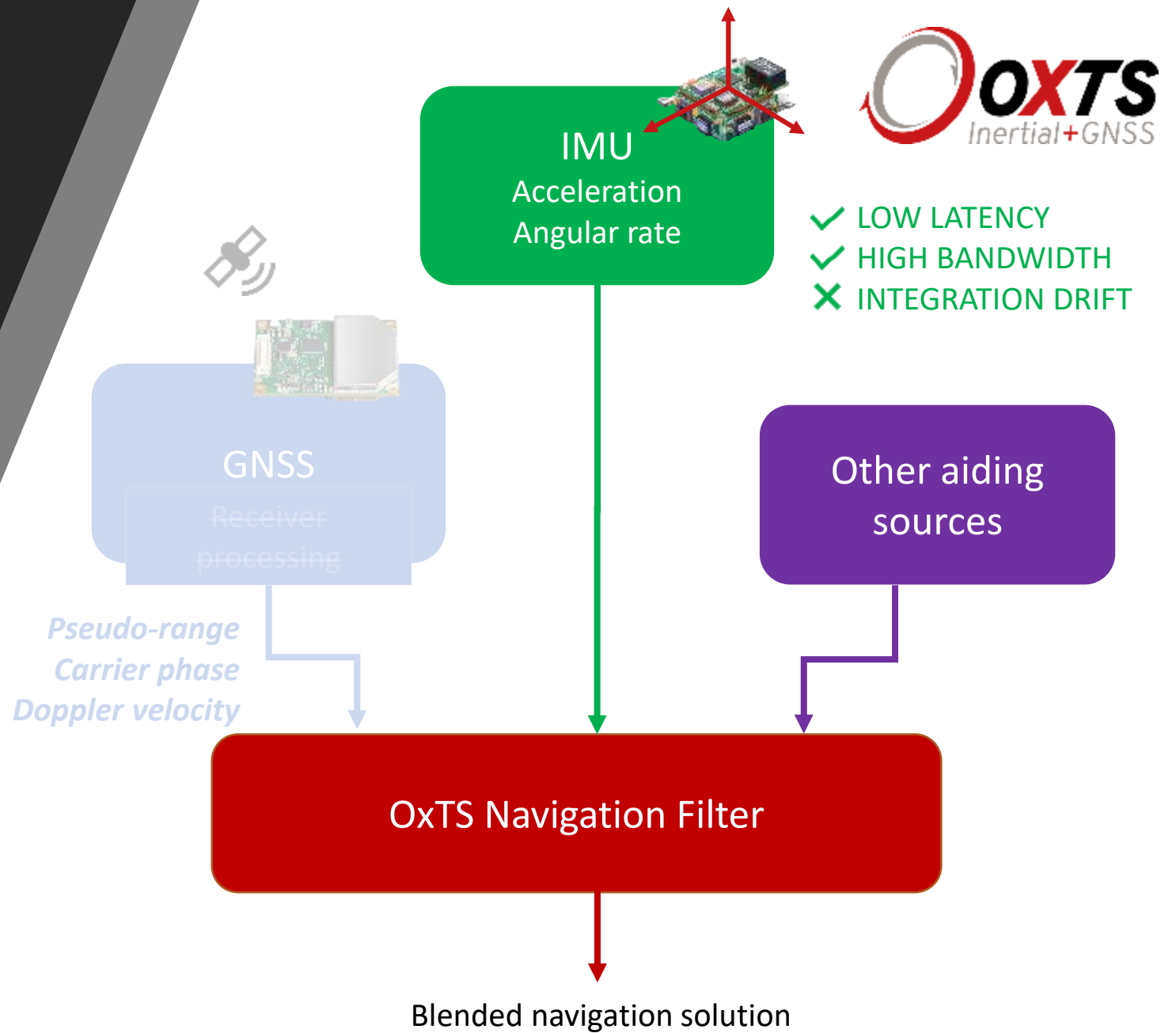
How our INS works

- Blend of GNSS and IMU
- Uses raw GNSS observables (ignoring receiver solution)
- Each satellite in view is individually integrated into our solution
- Solution still updated when <4 satellites in view



Generic aiding

- Interface to add additional inputs to Navigation Filter
- Fast and convenient to add new sources of information
- Can be used to both supplement and replace GNSS



Indoor navigation

- Simple and precise absolute positioning system
- Position accuracy < 1 cm
- Uses OxTS Generic Aiding interface

Other aiding sources



Detects laser reflection from series of surveyed retro-reflective strips



Application Engineering Team

- We develop bespoke applications using the OxTS Navigation Engine
- Love exploring new opportunities and sectors
- Keen to realise full potential of our core technology in the UK Space Industry and beyond

Other aiding sources

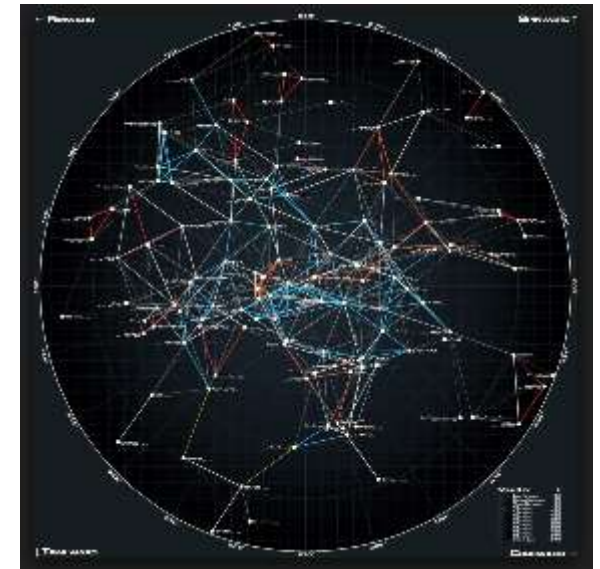


Wheel speed encoder



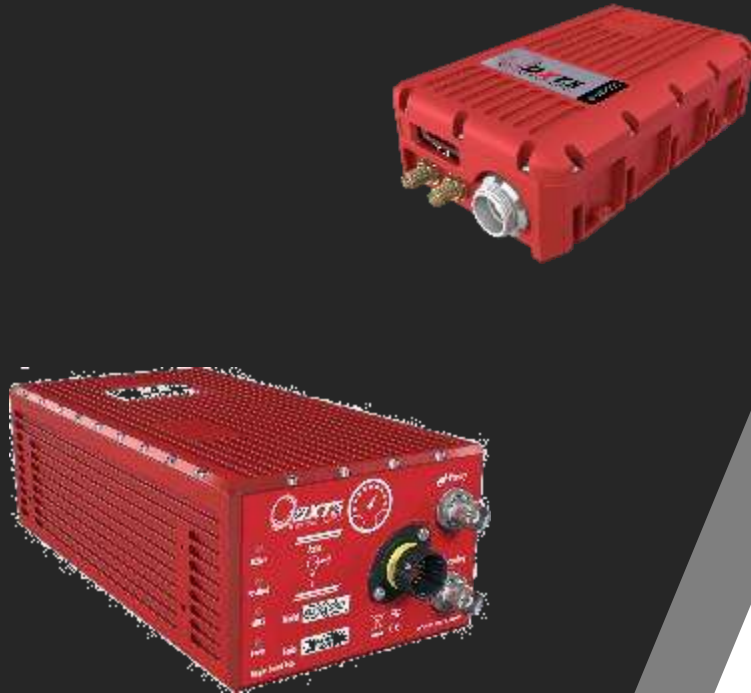
Surveyed reflective strips

Our next generic aiding input...?



Summary

Oxford Technical Solutions



- Our Inertial Navigation System is centred around its IMU
- IMU integration drift is corrected by GNSS, or other inputs, for an accurate absolute position
- We have a Generic Aiding interface to our Navigation Filter

Thank you

Richard Sands, Application Engineer

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