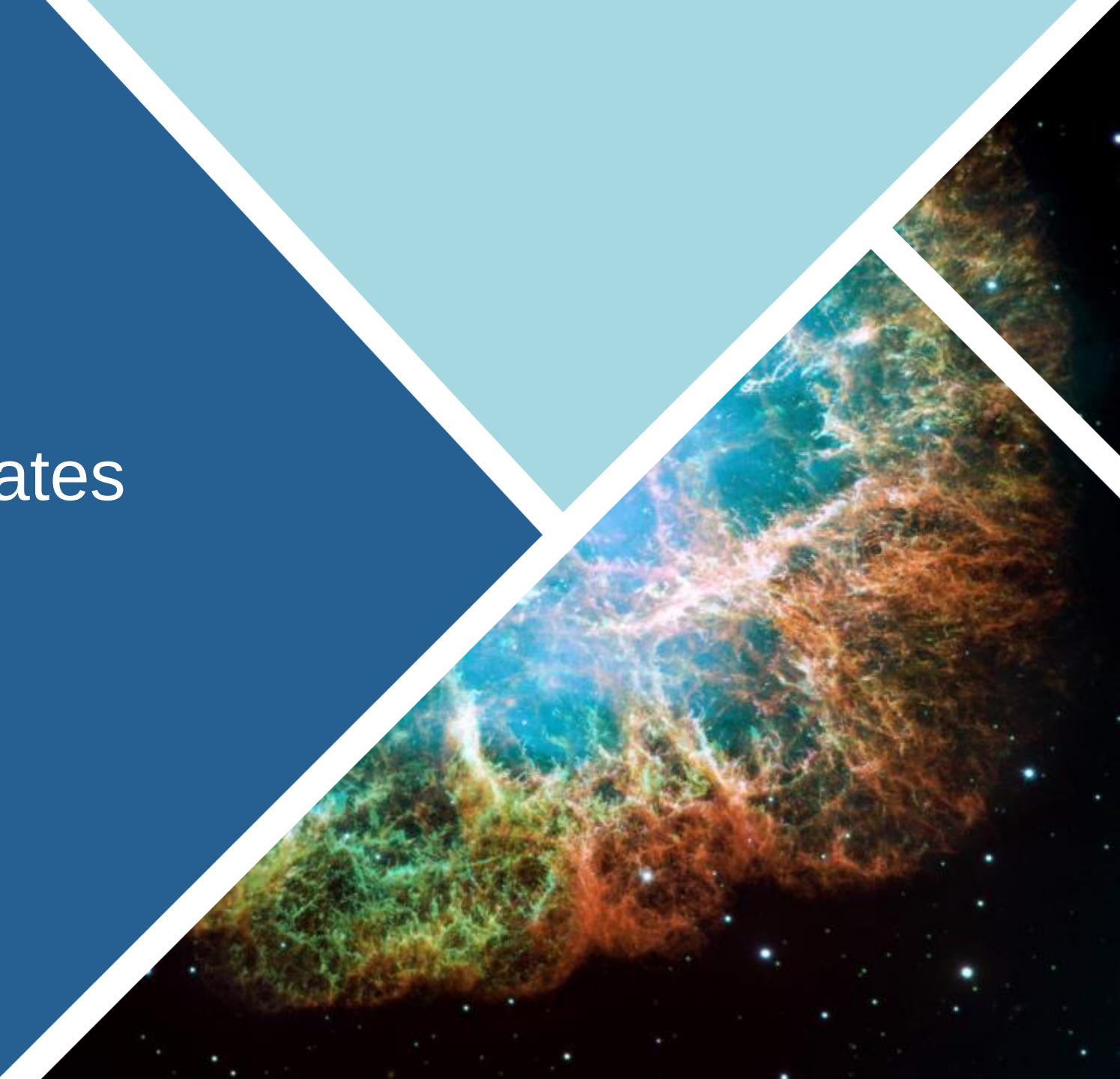
UK SPACE AGENCY

NAVISP Element 3
Support to Member States

UK Presentation

18 January 2019



Why NAVISP? What benefits does it bring?

- More space/non-space partnerships (**Grow sector**)
- More SME involvement and supporting the £100m / year **growth** in UK PNT sector
- **Develop** innovative new PNT technologies, products and services
- **Grow** the major downstream sectors, secure more business to UK companies and capture more of the market share
- Reduce technical risk (for industry and for the customer)
- **Deliver** confidence and establish trust in PNT systems for the UK
- Continue **ESA reform** and support ECSAT
- Access to ESA technical skills and international collaborative developments

What has NAVISP done for us?

Low ESA overhead (15%)

Short time to contract (target 4 months) – agile and responsive

Improved IPR and product ownership contractual terms

60% SME prime overall

Strong commercial focus in line with UK approach

Very flexible programme – support, blue skies work, product and service development

15 new UK organisations into the programme

New space/non-Space partnerships created, new research orgs funded

Importance of NAVISP is the wider PNT area

Position Navigation and Timing (PNT) technologies underpin our society

- 13% of UK GDP directly underpinned by GNSS (>£264bn) (£1.8bn/year direct income CAGR 3% on 1.7bn)
- Loss of GNSS would cause ~£1bn day economic impact (Road, maritime, Emergency/Justice biggest losers)
- The GNSS global landscape is changing, technology moving rapidly
- Extent of UK dependency highlighted by Blackett review into GNSS dependency
- Non-GNSS PNT technologies evolving – PNT is not all about GNSS

What is Element 3 (for us)?

- Has enabled us to address the most difficult challenges, a catalyst
- MARINAV the first funded work
- Two or three other activities in early forming stage
- Key areas are flexibility and agility
- Although sometimes ESA is ahead of industry in this area!

Blackett Review Implementation Group

- Policy focused cross-government formal group
- Chaired by the Cabinet Office
- Reporting to the National Security Framework

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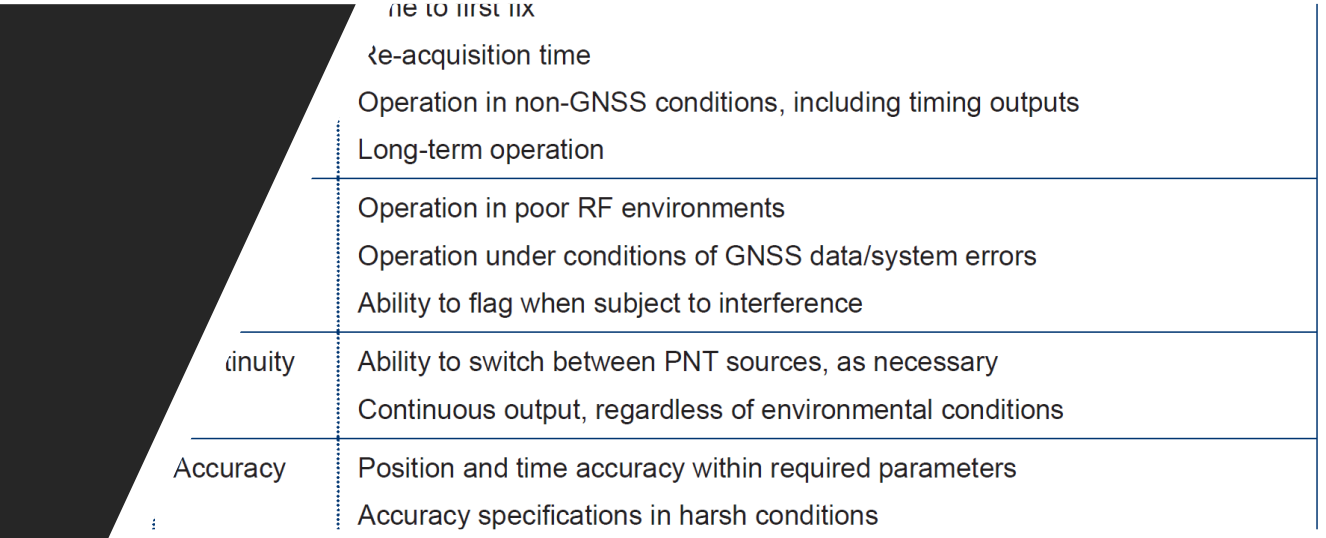
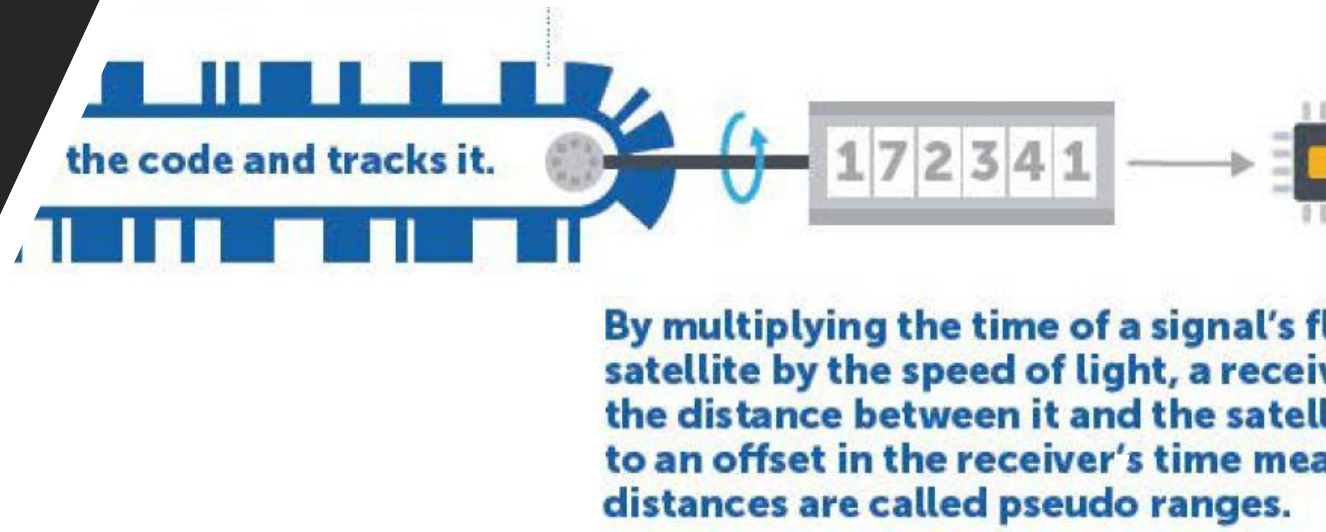
Other work - PNT Technical Group

- Fully formed
- Academia, Industry & Government Partnership
- Currently addressing awareness, guidance standards and evidence
  - Will be via Element 3
- Co-Chaired by Royal Institute of Navigation





Summary

- The UK continues to support all elements of NAVISP
- Element 3 is a catalyst to getting things done — Not always at my speed
- Need to address coherently new PNT technology development to ensure continued UK leadership and economic success.
- Programme is PNT (not GNSS), and combines space and non-space technologies (unique in ESA).
- Complimentary with UK GNSS ambitions, and exploitation of space systems.
- It’s working!