UK Framework for PNT Resilience and Innovation – AltPNT Strategy

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NAVISP

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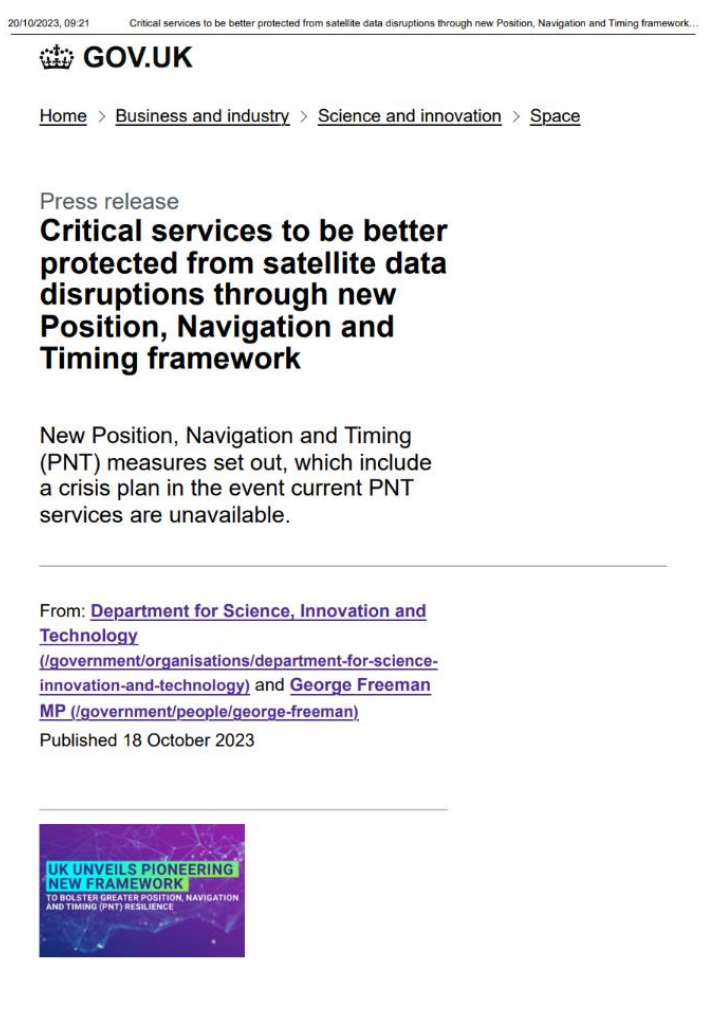
UK PNT Framework announced by HM Government on 18 Oct 2023

Department for Science, Innovation & Technology

Background

- The UK economy and society would suffer severe consequences from a major disruption to Global Navigation Satellite Systems (GNSS) providing PNT services. **Timing is the most critical element**.
- The PNT Office Concept Demonstrator Project was set-up in July 2022 to deepen understanding of the threats and risks, and to develop an appropriate policy response and actions.
- **We could not and did not do this alone**. Engagement with our European Allies, AUS/CAN/NZL/USA, Academia, Industry and NAVISP was essential.
- The project was crucially not driven by an objective to build an alternative technology. Instead, focusing on Critical National Infrastructure (CNI) PNT use cases, impacts, and solutions.
- The outcome is a System of Systems strategy closely integrating traditional and AltPNT capabilities - the framework that provides highest resilience and economic opportunity.



20/10/2023, 09:21 Critical services to be better protected from satellite data disruptions through new Position, Navigation and Timing framework...

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Press release

Critical services to be better protected from satellite data disruptions through new Position, Navigation and Timing framework

New Position, Navigation and Timing (PNT) measures set out, which include a crisis plan in the event current PNT services are unavailable.

From: Department for Science, Innovation and Technology (/government/organisations/department-for-science-innovation-and-technology) and George Freeman MP (/government/people/george-freeman)

Published 18 October 2023

The UK National PNT Resilience Framework (strategy!)

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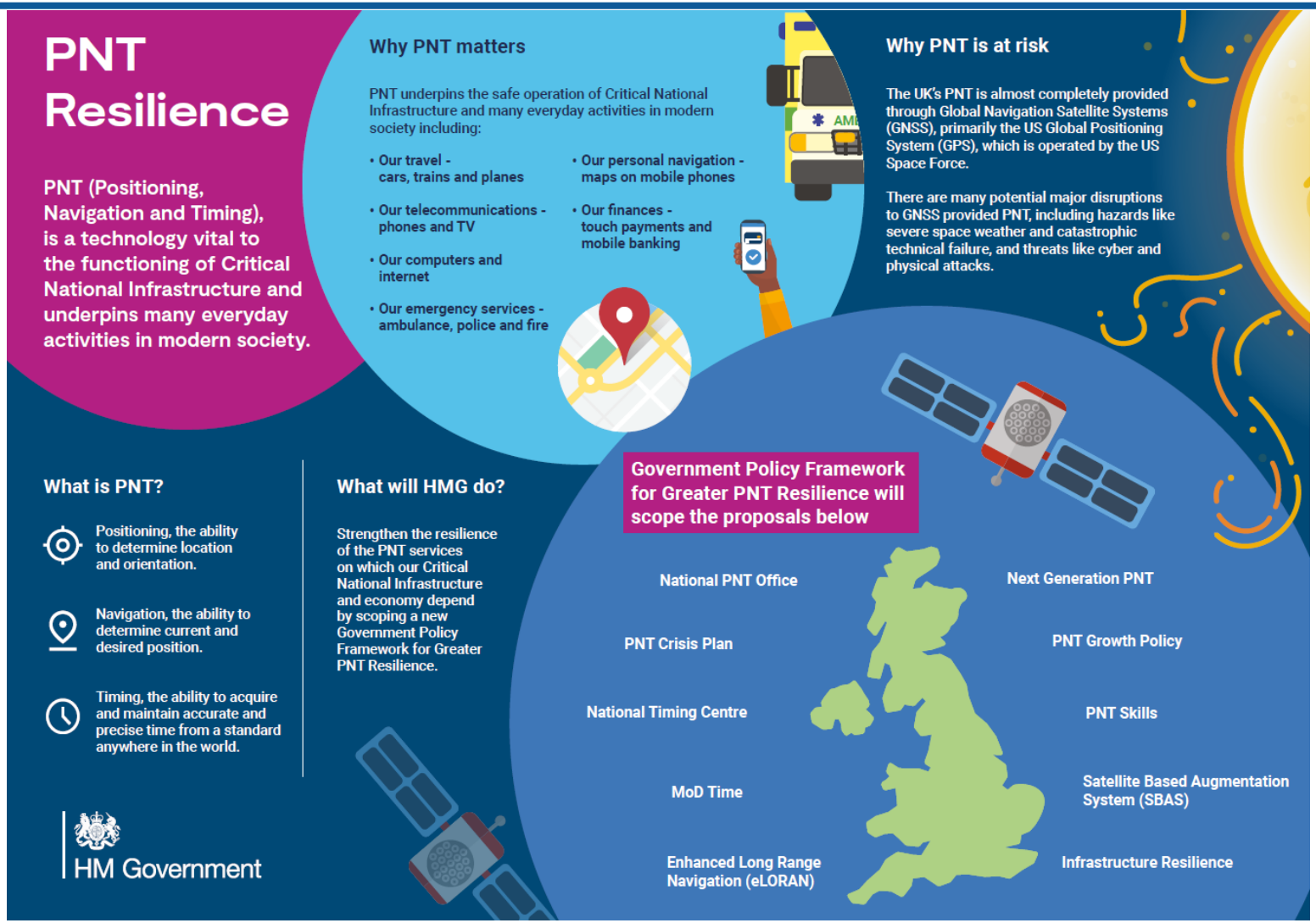

System of Systems: EPOCH 1 – The PNT Policy Framework would create a PNT System of Systems within the next few years

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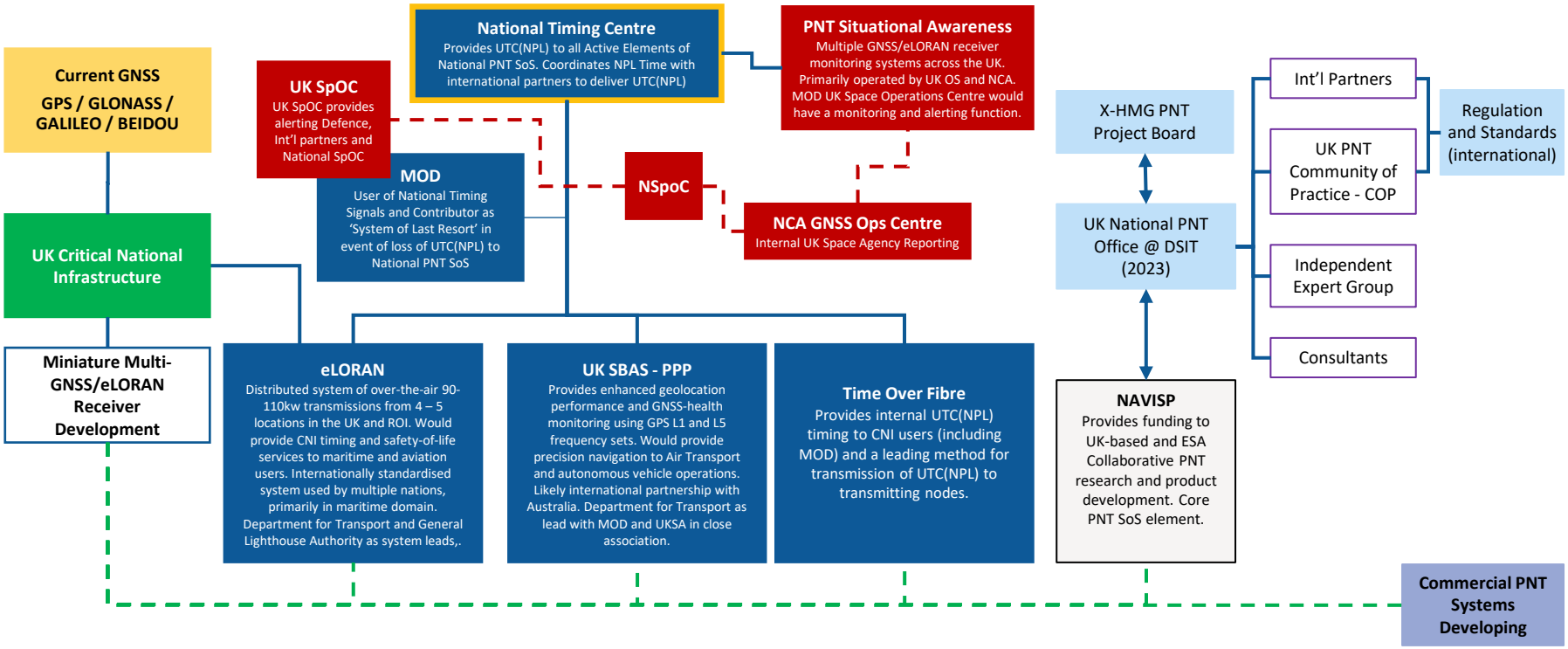
UK PNT System of Systems (SoS) Epoch 1 utilises current and proposed or partially funded capabilities. UK-sourced timing from NTC RETSI is provided by assured means to a UK Space-Based Augmentation Systems, a terrestrial broadcast eLORAN network, over fibre and to national GNSS interference monitoring systems. These systems compliment and ensure current GNSS services. Development of follow-on components for an Epoch 2 SoS is guided by a National PNT Office directly and through NAVISP.



UK National Timing Resilience Mechanisms and Pathways

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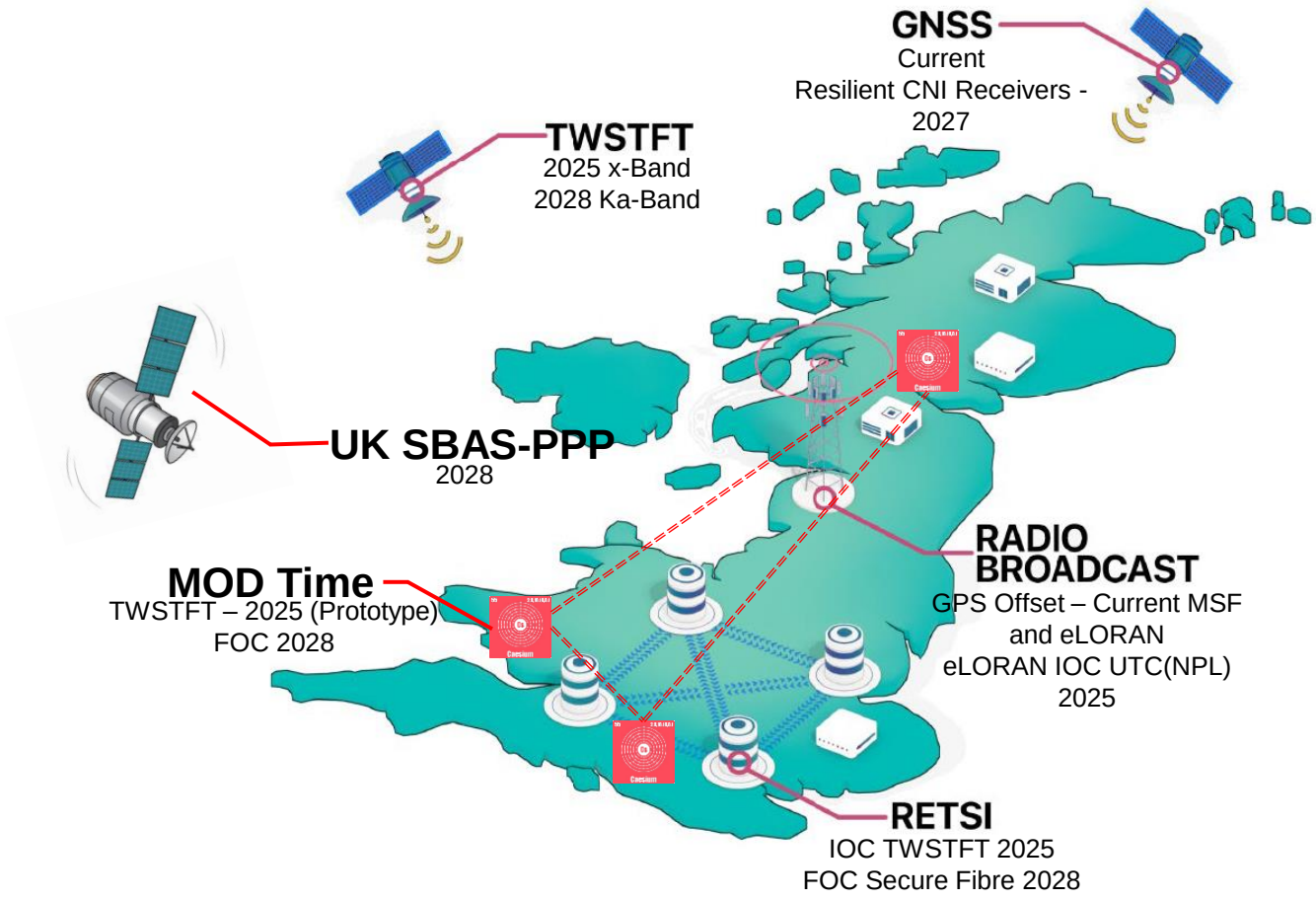

System of Systems: EPOCH 2 – Taken together the PNT policies proposed in this Policy Framework would create a PNT System of Systems, this diagram shows how the system develops in future years

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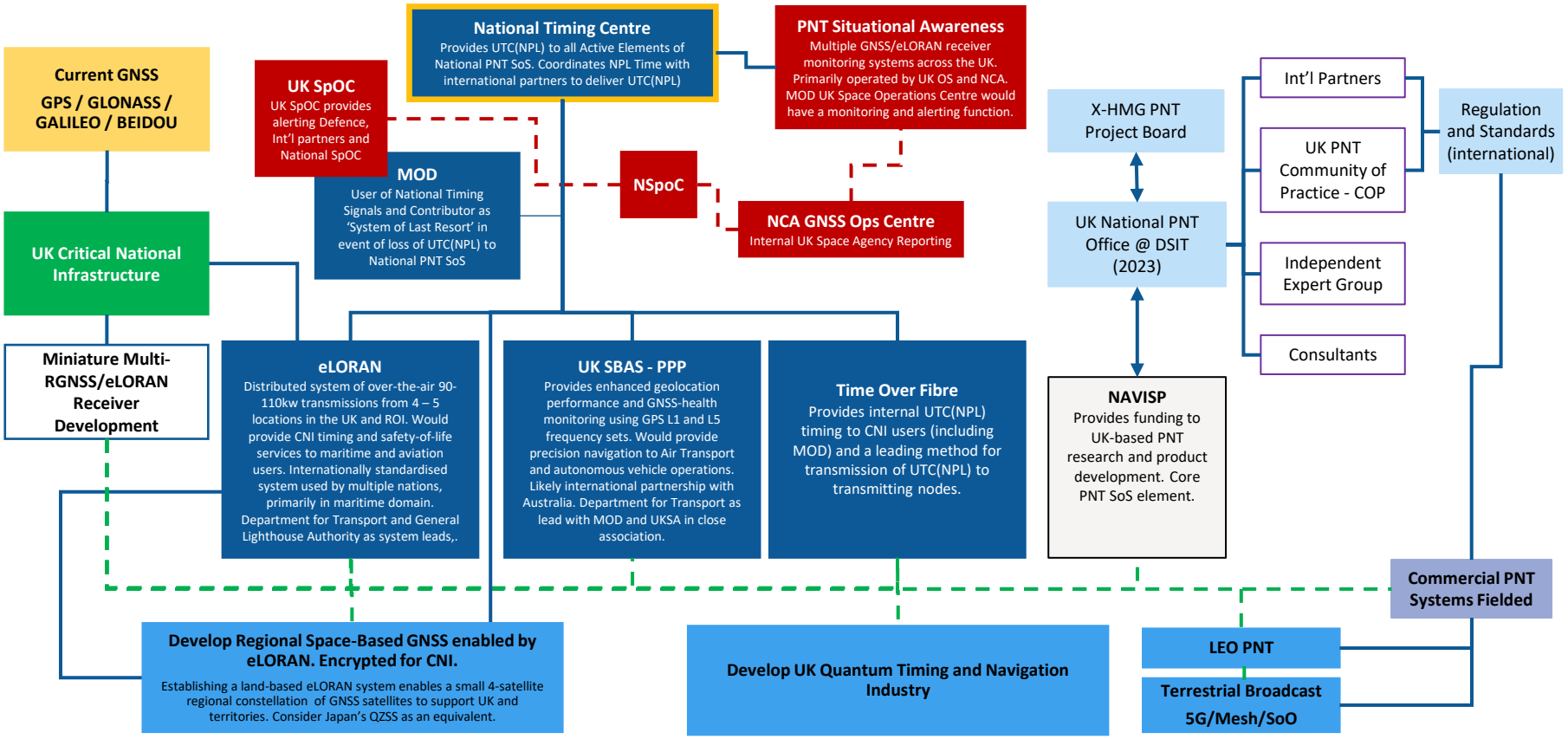
UK PNT System of Systems (SoS) Epoch 2 utilises all elements of Epoch 1 current, planned-funded or partially funded capabilities. UK-sourced timing from NTC RETSI is provided by assured means to a UK Space-Based Augmentation Systems a terrestrial broadcast eLORAN network, over fibre, via TWSTFT and to national GNSS interference monitoring systems. These systems compliment and ensure current GNSS services. Development of follow-on components for an Epoch 2 SoS is guided by a National PNT Office directly and through NAVISP.



DISCUSSION

Image of a Trapped Ion Optical Clock made at the National Physical Laboratory

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