



Land's End ^{Airport} Skybus

Land's End ADS-B TMZ Trial ACP-2022-021

INITIAL ASSESSMENT MEETING

19th August 2022



Serving the Communities on the Isles of Scilly



**In operation since
1920**



**Year-round cargo and
passenger services.**



**Approx. 14,000 tonnes
of sea freight & 350
tonnes of air freight
annually**



**Shipping from Penzance,
flights from Lands End,
Newquay & Exeter.**



Land's End Airport
Skybus



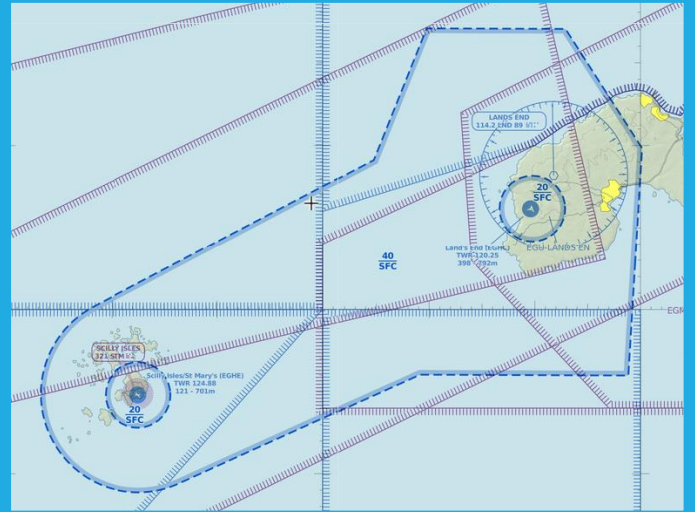
LAND'S END AIRPORT AND THE RMZ

LAND'S END AIRPORT

- 28 miles from the airport to the Isles of Scilly, around 15 minutes of flying
- Terminal facilities were upgraded in 2013
- Hardening of 4 runways in 2014
- Most popular departure point to the Isles of Scilly

THE LAND'S END RMZ

- Active since November 2021
- Reaching east to Penzance and west beyond the Isles of Scilly
- Frequently used by routine scheduled commercial traffic and other non-scheduled rescue, military and general aviation traffic.



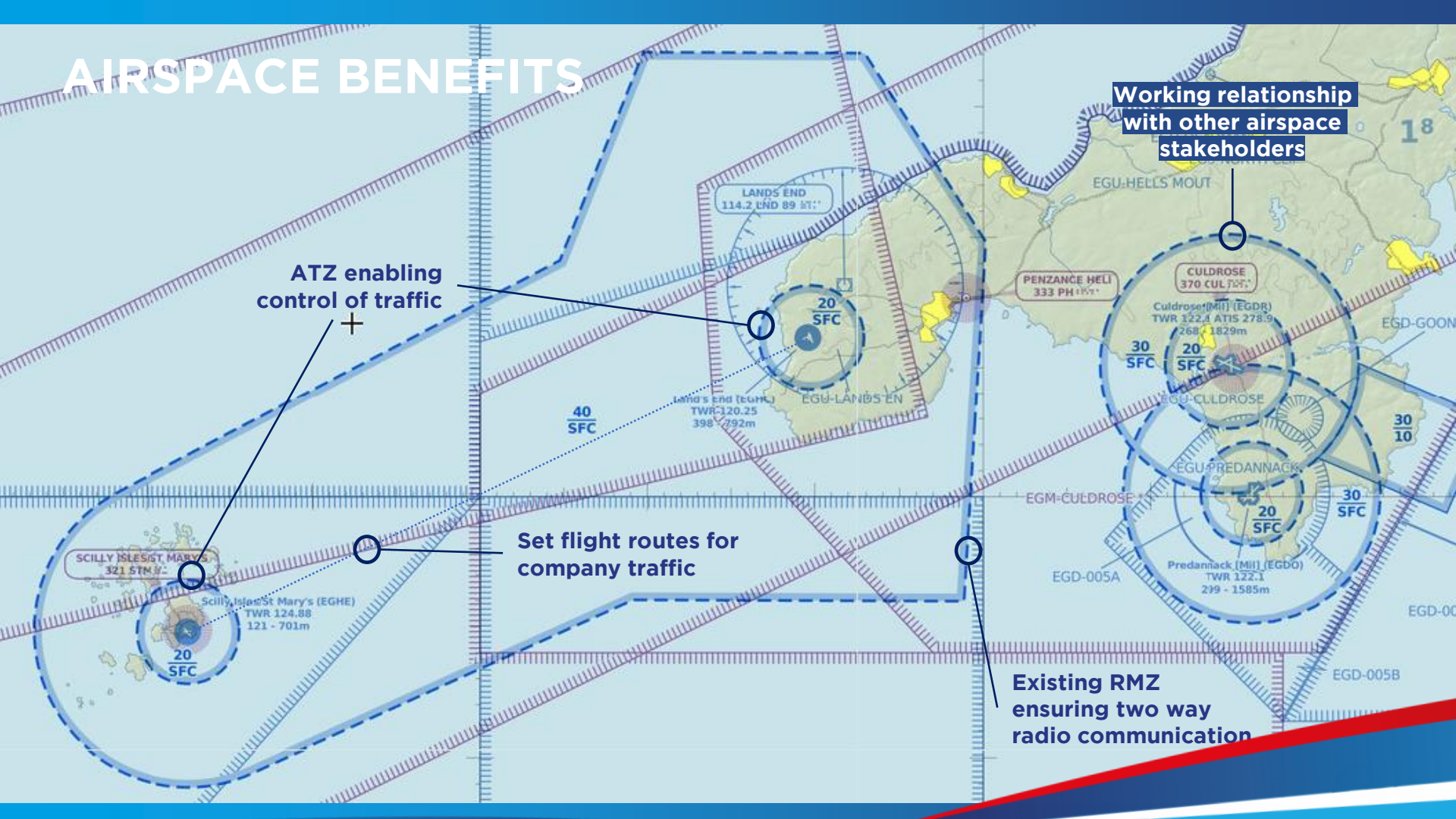
BACKGROUND TO NEED

- Increasing numbers of traffic in RMZ with multiple routine and non-routine users alongside commercial operations.
- ADS-B TMZ will aim to increase airspace situational awareness and safety.
- Conventional TMZ not possible due to lack of Primary or Secondary radar service.
- Increase of use in ADS-B and new CAA policy supporting ADS-B TMZ.
- With increasing use of RNP approaches at Land's End along with the proposed RNP and PinS approaches at St. Mary's, Tresco and Penzance, ADS-B will improve safety margins and traffic awareness.
- Support given by ATS inspectors to implement ADS-B and FIDs



- 2.5 Traditionally, a TMZ is associated only with pressure-altitude reporting secondary surveillance radar (SSR) transponders capable of operating in Mode S or, in exceptional circumstances, SSR Modes A and C. However, the advent and increasing affordability of technology such as automatic dependent surveillance – broadcast (ADS-B) means that the concept of a TMZ may now evolve to utilise alternate types of electronic conspicuity systems, where such systems are:
- deemed suitable, appropriate and proportionate;
 - prescribed as alternative provisions for that particular airspace by the ANSP; and,
 - notified in the Aeronautical Information Publication (AIP).

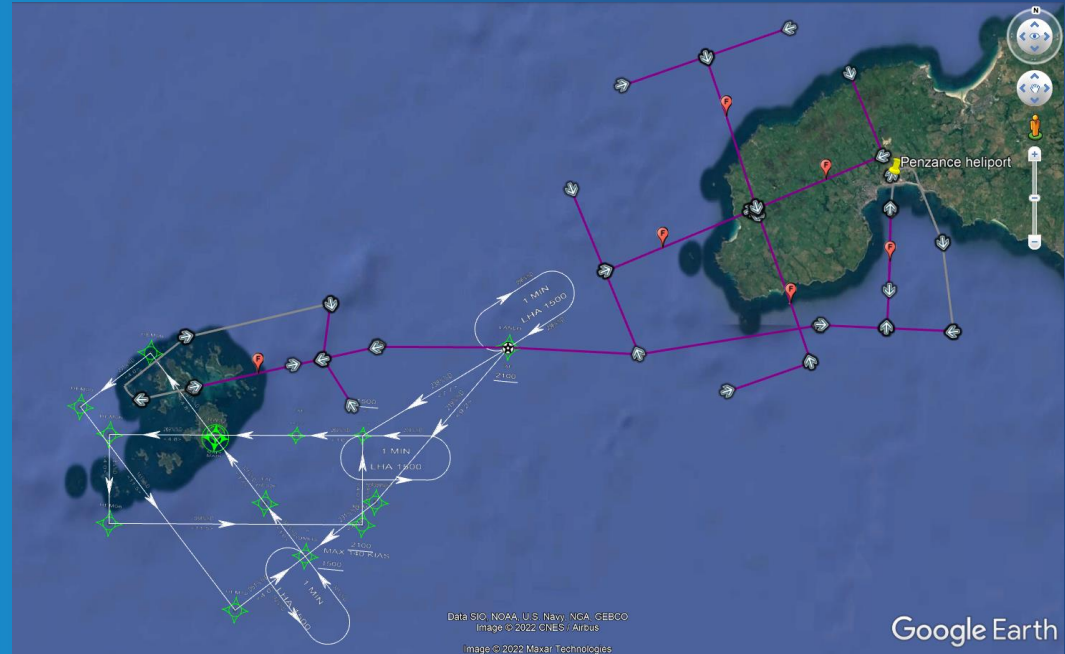
AIRSPACE BENEFITS



AIRSPACE ACTIVITY



- Current Land's End RNP approaches
- Proposed St. Mary's RNP approaches
- Proposed Tresco and Penzance PinS approaches



TRIAL PROPOSAL

- 6 Month ADS-B TMZ in current RMZ boundaries.
- Active during Land's End Airport's hours of operation.
- Testing viability of ADS-B technology for better situational awareness for commercial operators, regular users and infrequent visitors.



ST. MARY'S AIRPORT TRIAL RESPONSE

“We are fully supportive of the Trial ADS-B TMZ within the existing LERMZ which will bring significant improvements to ATS services and to the CAT airspace users as a whole.

As the provider of the bulk of Approach Control (Procedural) service between the Islands and Land's End Airport, this will provide improvements in the following (not an exhaustive list):

- an improved airspace picture using approved Flight Information Displays (FID's);*
- improved protection to CAT services;*
- enhanced safety in ATS, particularly in marginal and IFR conditions (when see and avoid is less effective or not possible);*
- assist with the increasingly complex airspace as more RNP IAPs being proposed for Heliports;*
- safety enhancement to the existing IAP's (both NDB & RNP).*

We look forward to working in partnership with Land's End Airport/Isles of Scilly Steamship Company and would welcome more formal joint involvement at a suitable time with Land's End and the CAA.”



TRIAL CONSIDERATIONS

- Types of airspace users
- Surveillance equipment required for the implementation of an ADS-B TMZ
 - The use of airborne surveillance equipment to increase aircrew situational awareness
 - Ground ADS-B surveillance equipment for ATS and its reliability, accuracy and coverage in the airspace
- The potential for additional workload to ATS with the use of ADS-B and Flight Information Displays (FIDs)
- The minimum equipment required for entry into the TMZ, including pressure altitude reporting
- The use of ADS-B 'In' in conjunction with TCAS/TAS



TRIAL AIMS

- Test procedures for usage of ADS-B Flight Information Display (FID) within operational ATC environment.
- Logging of all traffic identified by ground-based ADS-B to be correlated with transiting traffic numbers, testing accuracy and reliability of ground based ADS-B stations
- To confirm and validate procedures for enabling non-routine transiting of ADS-B TMZ for aircraft without compliant equipment, similar to non-radio RMZ procedures
- To test ADS-B coverage of certified ADS-B transponders and off the shelf non-certified/portable/CAP1391 ADS-B Electronic Conspicuity devices within boundaries of the current RMZ
- Engaging with airspace stakeholders to ascertain feedback to potential future permanent airspace

Trial success will be determined from the result of the above aims



TRIAL PLAN



SKYBUS

Adding ADS-B “In” capability to our fleet of 4 Twin Otter and 3 Islander aircraft, to increase aircrew situational awareness.



LAND'S END AND ST. MARY'S AIRPORT

Dual ADS-B ground stations to provide ADS-B coverage of aircraft in area.



Land's End
Airport
Skybus

- Potential data connection between two systems to give combined Air Traffic picture in air corridor
- Ground ADS-B is crucial to the trial, and is reliant on the issue of CAP670 and CAP493 amendments for ATC services, to ensure the equipment for the trial is compliant.

AIRSPACE & NOISE

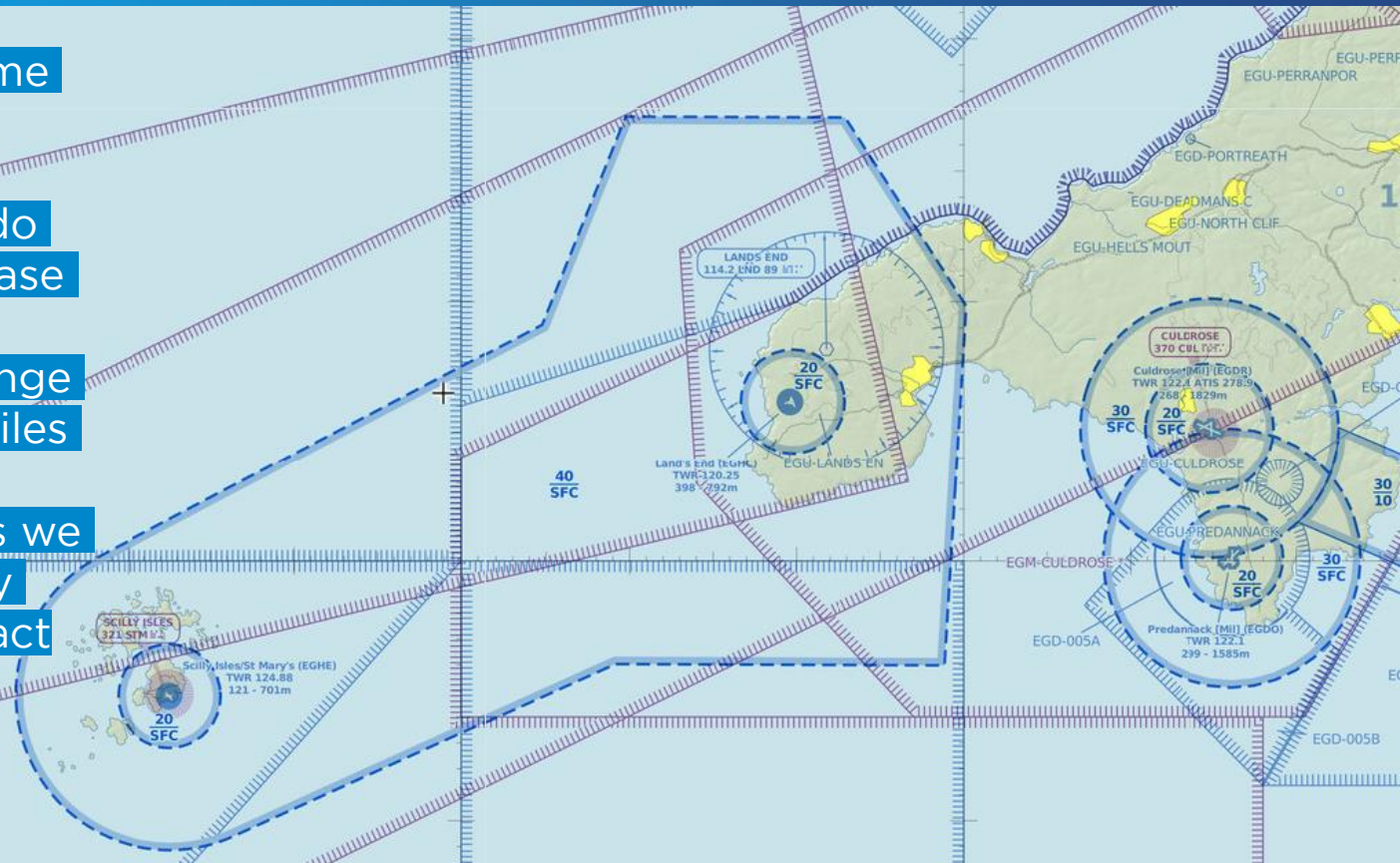


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TMZ will take the same boundaries as the existing RMZ

Because of this, we do not expect any increase in current traffic numbers, or any change in existing flight profiles caused by the trial.

Due to these reasons we do not anticipate any change in noise impact



AIRSPACE USERS



Skybus Twin Otters & Islanders



Coastguard Sikorsky S92

Trinity House EC135T2



Penzance Helicopters AW139



AIRSPACE USERS

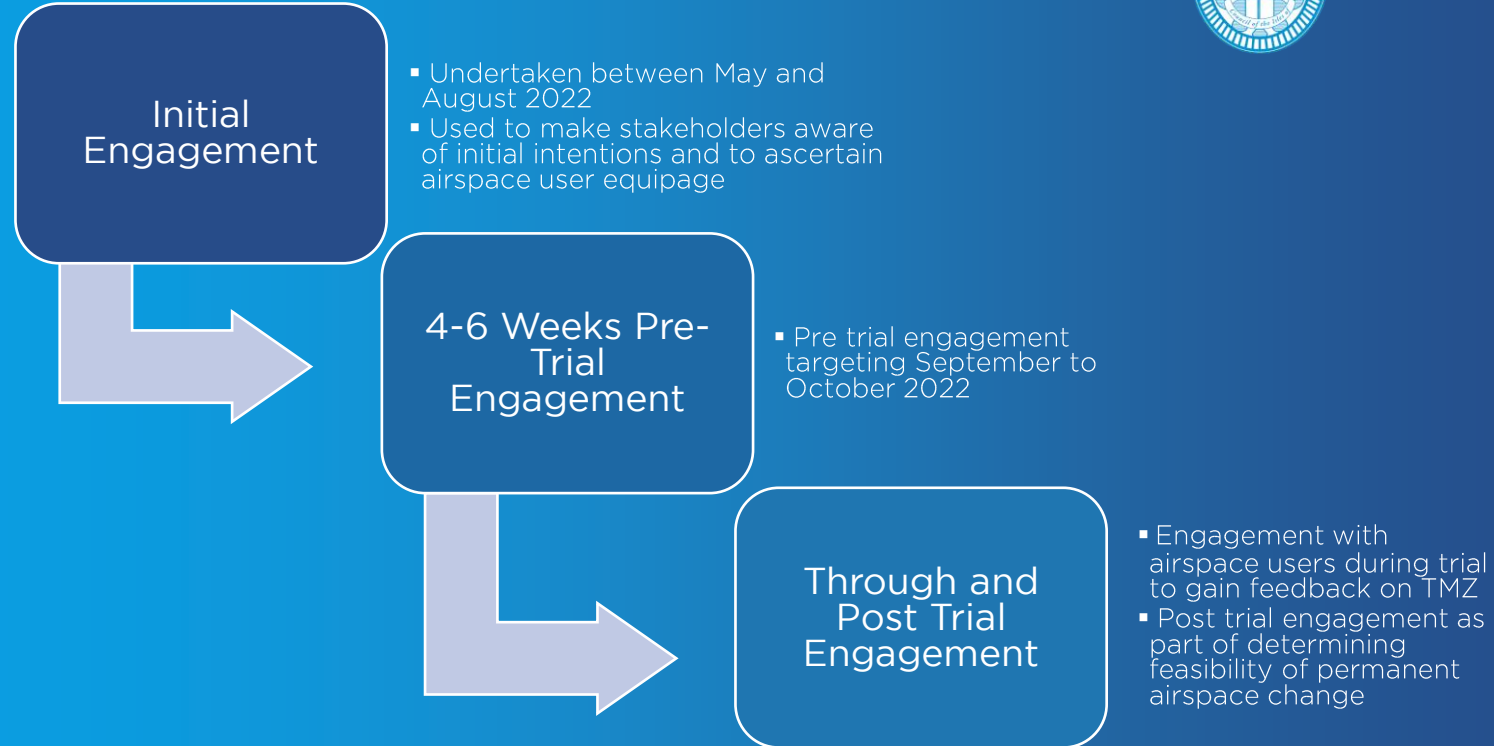
- Skybus Twin Otters and Islanders
- Penzance Helicopters
- Coastguard helicopter
- Trinity House (PDG) helicopters
- Air Ambulance
- Flight schools (Perranporth, Newquay, Bodmin)
- Local and Scilly-based GA
- Royal Navy (RNAS Culdrose)
- Police helicopter
- Scenic flight helicopters

All contacted, with data collection underway on current ADS-B equipage, current feedback suggest a majority are already ADS-B 'Out' equipped.

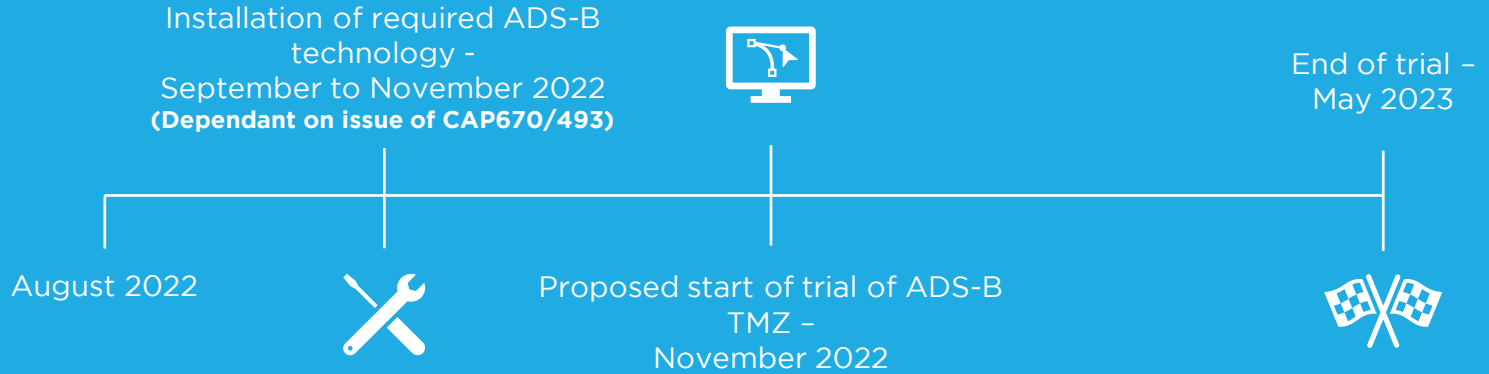


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STAKEHOLDER ENGAGEMENT



PROPOSED TIMELINE





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THANK YOU

Any Questions?