

CBRS Experimental License for Cell on Wings PoC Trials

Background Briefing





1 Executive Summary

Purpose

This document provides background information to support the FCC's consideration of an experimental license for SAS-coordinated, limited airborne use of CBRS spectrum.

Scope of Experimental License

The proposed airborne license scope would enable proof-of-concept trials that evaluate new mission-critical communications capabilities (MCX) using airborne platforms. Future operational uses beyond proof-of-concept would use spectrum that does not include prohibitions on airborne operations.

Expected Public Interest Benefits

- Enhance national security through improved deployable communications capabilities.
- Provide first responders with new options for rapid, resilient field communications.
- Strengthen safeguards for critical infrastructure by enabling communications coverage in difficult-to-reach or disrupted environments.

Proof-of-Concept Objective

The Proof of Concept (PoC) will demonstrate how the Skyways UAV platform, combined with Ericsson's Digital Airspace 3GPP cellular network solutions, can support high-value mission-critical use cases across defense, public safety, and utility environments.

Skyways UAV Capabilities

These capabilities make the Skyways UAV well suited for mission-critical applications that require rapid deployment, extended reach, integrated communications, and support for specialized airborne payloads.

- Vertical takeoff and landing with efficient horizontal flight.
- Long-range flight capability exceeding 1,000 miles.
- Payload capacity of up to 100 lbs.
- Onboard Starlink connectivity and 48 VDC power availability.
- Autonomous flight operations
- Ability to loiter over a target area using tight circular flight patterns.



Initial PoC Scope

The initial PoC will focus on deploying cellular coverage from a SkyCell, or “Cell on Wings,” to validate the feasibility of long-range, rapid-response mission-critical communications using an autonomous drone platform.

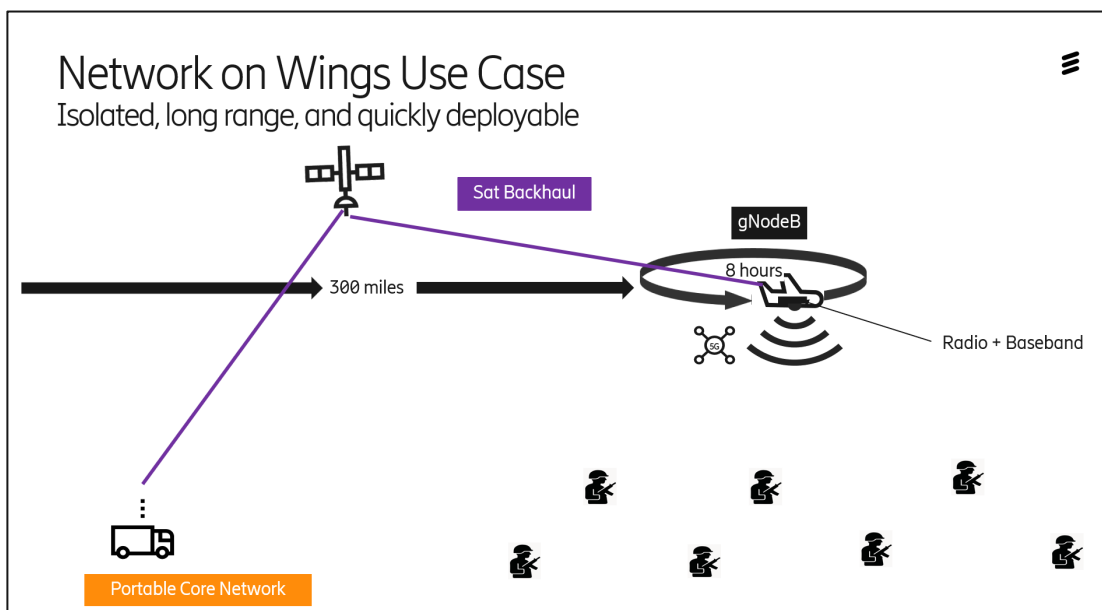
The trial will demonstrate Mission Critical Push-to-Talk services between first responders operating beneath an airborne coverage umbrella connected to an isolated private cellular network.

The trial will be limited to UAVs operating 400 feet AGL or below, consistent with FAA requirements.

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SkyCell Comms Use Case

This use case expands first responder MCX coverage beyond the constraints of current tethered drone solutions by integrating an Ericsson radio and baseband (eNodeB) into a Skyways UAV. The airborne eNodeB enables rapid, long-range MCX deployment in inaccessible areas, while an external antenna provides coverage beneath the aircraft as it circles the response team. A backhaul connection, such as Starlink, links an eNodeB to a remote core network, supporting continuous LTE or 5G -based MCX service throughout flight operations.





3 PoCTrials: Phases and Timing

The PoC trials are planned across three phases. Phase 1 is targeted for Q3 2026 and will focus on initial solution integration, feasibility validation, and flight testing at Skyways' Austin test range, with participation limited to Ericsson and Skyways.

Phase 2 is planned as a demonstration for US Army organization, either at the Austin test range or at a US Army facility.

Phase 3 PoCs would use Skyways version 3 aircraft, expected to enter production in early 2027.

The authorizations for Phase 2 and Phase 3 testing will be submitted as separate applications at a future point in time.

Ericsson will be coordinating all three phases of these trials with SAS Operator Federated Wireless to prevent any harmful interference to CBRN operations, and incumbent spectrum users in the CBRN band. The Stop Buzzer point of contact for this testing will be Kevin Linehan, 708-704-7296.

One or more national first responder communications providers are expected to participate in the Phase 3 PoCs.

4 Phase 1: Test Case KPIs

4.1 Remote MCX Coverage

MCX Fidelity and Reliability

- PTT
- Data
- Video

Throughput Statistics

Latency Statistics

Dynamic Coverage Mapping

- Drone Circling - Loitering Effects

Starlink Backhaul Statistics

