EGNOS Success Story

# Norwegian National Police Air Support Unit at ENTX

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Credits: Norwegian National Police

The Norwegian National Police Air Support Unit is part of the Norwegian Police's national contingency units consisting of the bomb squad, hostage negotiators, the intervention team and the air support unit. All units are located at a new National Emergency Response Centre, which entered in operations at the end of 2020, situated in Taraldrud, to the south of the Norwegian capital, Oslo. The Air Support Unit provides observation, surveillance, search for missing persons, transport of police resources and special operations.

The Emergency Response Centre has its heliport, known as ENTX in ICAO designation, featuring a short runway. The Norwegian Police has implemented all the necessary elements to facilitate its use in poor weather conditions. These elements comprise an approach lighting system in the runway, a helicopter approach path indicator (HAPI), Standard Instrumental Departure (SID) procedures from the runway and instrumental approach procedures in both runway directions that include EGNOS-based Point in Space –PinS- procedures that use the EGNOS Safety of Life (SoL) LPV-200 service level, which greatly enhances operations with lower minima compared to the also available LNAV procedures.The Air Support Unit operates three Leonardo AW169 helicopters based on ENTX. Two of them, one used for transport and the other for surveillance, are ready to be used 24/7/365 to ensure the highest operational availability for police missions. The AW169 is certified to conduct RNP APCH procedures down to LPV minima (Localiser Performance with Vertical Guidance), using Satellite Based Augmentation System (SBAS). LPV capability is standard for this helicopter, and an updated navigation database service is required to enable PBN capabilities to the Flight Management System (FMS) to optimise its use.

EGNOS enables Approaches with Vertical Guidance (APV) based on satellite navigation, without any heliport-specific navaid equipment on the ground. Additionally, it allows the pilot to use a constant descent rate down to a theoretical decision height as low as 200 ft. aboveground using the LPV procedures based on the EGNOS LPV-200 service level. In this specific case, and due to the challenging environment, with high powerlines and rugged terrain very close to the heliport, this service level provides enough lateral and vertical protection to establish the decision height at 311 ft.

These obstacles were the main reason behind using the LPV-200 service level, which enables Category I precision approaches based on the EGNOS Safety-of-Life Service, resulting from the flight procedures development process approved by the Norwegian Civil Aviation Authority. It is important to highlight that, as a request from the Norwegian CAA, the EGNOS service provider developed and implemented a Service Provision Scheme tailored for this kind of operations, defined in the EGNOS Working Agreement with the Norwegian National Police Air Support Unit.

The Police Superintendent/Chief pilot, Gunnar Arnekleiv, confirmed that "The Air Support Unit has already taken advantage of the departures as well as the PinS approaches on several occasions during live missions. The LPV approaches ensure a safe return to the base in order to restore preparedness after missions."

The nearby presence of the fjord means frequent periods with layered fog at ENTX. Therefore, the procedures were designed to "proceed visually" to the runway from the PinS point, with visibility or runway visual range as low as 800 m. In these conditions, "proceed visually" is a necessity, much safer and operationally ready than the alternative "proceed VFR", which requires far more visibility (indeed, Visual Meteorology Conditions). The visibility reduction caused by layers of fog also makes LPV an invaluable help for pilots. "The difference is huge, comparing LPV versus LNAV-minima." In addition, LNAV does not provide any vertical guidance to pilots.

Although the Air Support Unit is based at the Emergency Centre, it is allowed to use public LPV procedures published at other airports for operations, even outside the airport's regular operational hours, due to its security role. "LPV allows us to be self-contained."

This is an interesting example of how EGNOS signals and services provide benefits for citizens; in this case, by supporting the missions of police helicopters in Norway.

ESSP

EUSPA European Union Agency for the Space Programme

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