

Pan-African air traffic project to improve aviation safety

Air accidents in Africa account for roughly 20% of the worldwide total even though the continent has just 3% of global air traffic. These statistics, dominated by controlled flight into terrain (CFIT) events, can be significantly mitigated via Global Navigation Satellite System (GNSS) based instrument flight procedures for which SBAS capabilities provide an underpinning solution.



[Image Source: Avanti - Hylas 2](#)

The SBAS-AFRICA project led by Avanti Communications deploys a satellite-based augmentation system testbed which uses two Avanti satellites, ARTEMIS and HYLAS 2. A navigation transponder onboard the ARTEMIS spacecraft provides navigation data broadcast services to aircraft operating over Africa. The HYLAS 2 satellite ensures reliable high-performance data communications for the SBAS infrastructure. This links GNSS monitoring stations in Africa with navigation data processing platforms in Europe.

“The project currently serves South Africa and West Africa, and will be extended to serve significant additional regions of the African continent,” says David Williams, CEO of Avanti Communications. “The programme is funded under the UK Space Agency’s International Partnership Space Programme (IPSP) and establishes a unique collaboration between the UK and South Africa via the South African National Space Agency (SANSA).”

SBAS-AFRICA, offering enhanced satellite navigation signals over Africa, demonstrates the benefits of SBAS services in the aviation sector. These benefits include the implementation of instrument approaches where none existed before due to infrastructure limitations, the consequent extension of airport operating capacity and safety enhancement, aircraft routing via more direct routes, enabling operational flexibility, lower fuel consumption, less noise and fewer delays and decommissioning of older, expensive ground-based navigation equipment.

The technology can be used for other SBAS services, as it can benefit a wide range of market sectors including: aviation, maritime, rail, road, timing and communications, agriculture (precision farming), search and rescue, land survey and a host of location-based services in the consumer marketplace. SBAS services can provide capability and efficiency gains across those market sectors to drive extensive economic benefits.

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