NORMARC 8100

Ground Based Augmentation System

GBAS is a new satellite based landing system which can provide significant capacity, efficiency, safety and environmental benefits for airlines, airports and air navigation service providers.

One physical rack can provide service to several runways and runway ends, with several approach patterns for each runway end, and provides azimuth, elevation and distance guidance in one system. Siting flexibility and reduced requirements to flight inspection makes GBAS a cost effective alternative for the future.

Indra Navia participates in SESAR in order to define and develop concepts and systems for the Single European Sky. GBAS CAT II/III is one of these concepts.

The NORMARC 8100 GBAS System is designed to meet the ICAO Annex 10 requirements currently under development for CAT II/III conditions, and Eurocae ED-114 for CAT I conditions. It is a single constellation (GPS) single frequency system. The robust design is based on decades of experience with Instrument Landing Systems and Special Category I GPS-based landing systems.

The NORMARC 8100 provides a flexible architecture and user friendly interfaces developed through close cooperation with users of our other landing systems. The system allows up to four GPS receivers and up to four VHF transmitters/receivers, where two of the four sets can be located on a remote location to accommodate sites where VHF coverage is challenging. The architecture is selected from a safety and security perspective, aiding operational approval.

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NORMARC 8100 GROUND BASED AUGMENTATION SYSTEM (GBAS)	
TRANSMITTER	
Frequency Range	108 - 117.975 MHz
Output Power Range	20 – 80 W
Coverage:	
Laterally	28 km ± 35°, 37 km ± 10°
Vertically	0,75 - 7°
ENVIRONMENTAL CHARACTERISTICS	
Operational Temperature:	
Indoor	-10 - 50 °C
Outdoor	-40 - 55 °C
Humidity:	
Indoor	95% below 35 deg 60% above 35 deg
Outdoor	95% below 35 deg 60% above 35 deg
Rain	100 mm/h
Icing	50 mm
Wind	130 km/h
Solar radiation	1120W/m^2
ACCURACY	
Range Accuracy	ED-114 GAD C
Position Accuracy	ICAO Annex 10 (16m horizontally and 4 m vertically 95%)
BATTERY BACKUP	
Battery Operation	3 - 30 h depending on # of transmitters, output power and duty cycle
PHYSICAL CHARACTERISTICS	
Power Consumption	400-2000 W depending on # of transmitters, output power and duty cycle
Dimensions (HxWxD)	1020x600x550
Weight	100-110 kg depending on configuration, excluding battery bank and antennas
REMOTE CONTROL	
Data transmission medium	2-wire lined, 600 ohm, FSK or RS-232
MAINTENANCE & MONITORING	
PC-based over Ethernet local or remote, for configuration, alarm log, diagnostics, validation	
RECORDING	
In-rack one week of legal recording	

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