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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 1 | **Block - Module** | B0 - ACDM | **Date** | Month Day, 2016 |
| **Module Description:** Implements collaborative applications that will allow the sharing of surface operations data among the different stakeholders on the airport. This will improve surface traffic management reducing delays on movement and manoeuvring areas and enhance safety, efficiency and situational awareness. |
| **Element Implementation Status** |
| **1** | **Element Description:**Airport CDM procedures | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:** Airport CDM tools | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**Collaborative departure queue management | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 1 | **Block - Module** | B0 - APTA | **Date** | Month Day, 2016 |
| **Module Description:** The use of Performance-based Navigation (PBN) and ground-based augmentation system (GBAS) landing system (GLS) procedures to enhance the reliability and predictability of approaches to runways, thus increasing safety, accessibility and efficiency. This is possible through the application of basic global navigation satellite system (GNSS), Baro-vertical navigation (VNAV), satellite-based augmentation system (SBAS) and GLS. The flexibility inherent in PBN approach design can be exploited to increase runway capacity. |
| **Element Implementation Status** |
| **1** | **Element Description:**PBN Approach Procedures with vertical guidance (LPV, LNAV/VNAV minima, using SBAS and Baro VNAV) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**PBN Approach Procedures without vertical guidance (LP, LNAV minima; using SBAS) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**GBAS Landing System (GLS) Approach procedures | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 1 | **Block - Module** | B0 - RSEQ | **Date** | Month Day, 2016 |
| **Module Description:** Manage arrivals and departures (including time-based metering) to and from a multi-runway aerodrome or locations with multiple dependent runways at closely proximate aerodromes, to efficiently utilize the inherent runway capacity. |
| **Element Implementation Status** |
| **1** | **Element Description:**AMAN via controlled time of arrival to a reference fix | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**AMAN via controlled time of arrival at the aerodrome | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**Departure management | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **4** | **Element Description:**Departure flow management | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **5** | **Element Description:**Point merge | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 1 | **Block - Module** | B0 - SURF | **Date** | Month Day, 2016 |
| **Module Description:** Basic advanced-surface movement guidance and control systems (A-SMGCS) provides surveillance and alerting of movements of both aircraft and vehicles at the aerodrome, thus improving runway/aerodrome safety.Automatic dependent surveillance-broadcast (ADS-B) information is used when available (ADS-B APT). |
| **Element Implementation Status** |
| **1** | **Element Description:**A-SMGCS with at least one cooperative surface surveillance system | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**Including ADS-B APT as an element of A-SMGCS | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:****A**-SMGCS alerting with flight identification information | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **4** | **Element Description:**Airport vehicles equipped with transponders | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 1 | **Block - Module** | B0 - WAKE | **Date** | Month Day, 2016 |
| **Module Description:** Improved throughput on departure and arrival runways through optimized wake turbulence separation minima, revised aircraft wake turbulence categories and procedures. |
| **Element Implementation Status** |
| **1** | **Element Description:**New PANS-ATM wake turbulence categories and separation minima | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**Dependent diagonal paired approach procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**Wake independent departure and arrival procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **4** | **Element Description:**Wake turbulence mitigation for departures procedures for parallel runways with centrelines spaced less than 760 meters (2,500 feet) apart | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **5** | **Element Description:**6 wake turbulence categories and separation minima | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 2 | **Block - Module** | B0 - AMET | **Date** | Month Day, 2016 |
| **Module Description:** Global, regional and local meteorological information:a) forecasts provided by world area forecast centres (WAFC), volcanic ash advisory centres (VAAC) and tropical cyclone advisory centres (TCAC);b) aerodrome warnings to give concise information of meteorological conditions that could adversely affect all aircraft at an aerodrome including wind shear; andc) SIGMETs to provide information on occurrence or expected occurrence of specific en-route weather phenomena which may affect the safety of aircraft operations and other operational meteorological (OPMET) information, including METAR/SPECI and TAF, to provide routine and special observations and forecasts of meteorological conditions occurring or expected to occur at the aerodrome.This information supports flexible airspace management, improved situational awareness and collaborative decision making, and dynamically optimized flight trajectory planning.This module includes elements which should be viewed as a subset of all available meteorological information that can be used to support enhanced operational efficiency and safety. |
| **Element Implementation Status** |
| **1** | **Element Description:**WAFS | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**IAVW | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**TCAC forecasts | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **4** | **Element Description:**Aerodrome warnings | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **5** | **Element Description:**Wind shear warnings and alerts | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **6** | **Element Description:**SIGMET | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **7** | **Element Description:**Other OPMET information (METAR, SPECI and/or TAF) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **8** | **Element Description:**QMS for MET | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 2 | **Block - Module** | B0 - DATM | **Date** | Month Day, 2016 |
| **Module Description:** The initial introduction of digital processing and management of information through, aeronautical information service (AIS)/aeronautical information management (AIM) implementation, use of aeronautical exchange model (AIXM), migration to electronic aeronautical information publication (AIP) and better quality and availability of data. |
| **Element Implementation Status** |
| **1** | **Element Description:**Aeronautical Information Exchange Model (AIXM) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**eAIP | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**Digital NOTAM | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **4** | **Element Description:**eTOD | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **5** | **Element Description:** (Identified by NACC) WGS-84 | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **6** | **Element Description:**QMS for AIM | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 2 | **Block - Module** | B0 - FICE | **Date** | Month Day, 2016 |
| **Module Description:** Improves coordination between air traffic service units (ATSUs) by using ATS interfacility data communication (AIDC) defined by the ICAO Manual of Air Traffic Services Data Link Applications (Doc 9694). The transfer of communication in a data link environment improves the efficiency of this process, particularly for oceanic ATSUs. |
| **Element Implementation Status** |
| **1** | **Element Description:**AIDC to provide initial flight data to adjacent ATSUs | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**AIDC to update previously coordinated flight data | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**AIDC for control transfer | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **4** | **Element Description:**AIDC to transfer CPDLC logon information to the Next Data Authority | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 3 | **Block - Module** | B0 - ACAS | **Date** | Month Day, 2016 |
| **Module Description:** Provides short-term improvements to existing airborne collision avoidance systems (ACAS) to reduce nuisance alerts while maintaining existing levels of safety. This will reduce trajectory deviations and increase safety in cases where there is a breakdown of separation. |
| **Element Implementation Status** |
| **1** | **Element Description:**ACAS II (TCAS version 7.1) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**Auto Pilot/Flight Director (AP/FD) TCAS | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**TCAS Alert Prevention (TCAP) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 3 | **Block - Module** | B0 - ASEP | **Date** | Month Day, 2016 |
| **Module Description:** Two air traffic situational awareness (ATSA) applications which will enhance safety and efficiency by providing pilots with the means to enhance traffic situational awareness and achieve quicker visual acquisition of targets:a) AIRB (basic airborne situational awareness during flight operations).b) VSA (visual separation on approach). |
| **Element Implementation Status** |
| **1** | **Element Description:**ATSA-AIRB | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**ATSA-VSA | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 3 | **Block - Module** | B0 - ASUR | **Date** | Month Day, 2016 |
| **Module Description:** Provides initial capability for lower cost ground surveillance supported by new technologies such as ADS-B OUT and wide area multilateration (MLAT) systems. This capability will be expressed in various ATM services, e.g. traffic information, search and rescue and separation provision. |
| **Element Implementation Status** |
| **1** | **Element Description:**ADS-B | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**MLAT | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 3 | **Block - Module** | B0 - FRTO | **Date** | Month Day, 2016 |
| **Module Description:** Allow the use of airspace which would otherwise be segregated (i.e. Special Use Airspace) along with flexible routing adjusted for specific traffic patterns. This will allow greater routing possibilities, reducing potential congestion on trunk routes and busy crossing points, resulting in reduced flight lengths and fuel burn. |
| **Element Implementation Status** |
| **1** | **Element Description:**CDM incorporated into airspace planning | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**Flexible Use of Airspace (FUA) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**Flexible route systems | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **4** | **Element Description:**CPDLC used to request and receive re-route clearances | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 3 | **Block - Module** | B0 - NOPS | **Date** | Month Day, 2016 |
| **Module Description:** Air traffic flow management (ATFM) is used to manage the flow of traffic in a way that minimizes delays and maximizes the use of the entire airspace. ATFM can regulate traffic flows involving departure slots, smooth flows and manage rates of entry into airspace along traffic axes, manage arrival time at waypoints or flight information region (FIR)/sector boundaries and re-route traffic to avoid saturated areas. ATFM may also be used to address system disruptions including a crisis caused by human or natural phenomena. |
| **Element Implementation Status** |
| **1** | **Element Description:**ATFM | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 3 | **Block - Module** | B0 - OPFL | **Date** | Month Day, 2016 |
| **Module Description:** Enables aircraft to reach a more satisfactory flight level for flight efficiency or to avoid turbulence for safety. The main benefit of ITP is significant fuel savings and the uplift of greater payloads. |
| **Element Implementation Status** |
| **1** | **Element Description:**ITP using ADS-B | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 3 | **Block - Module** | B0 - SNET | **Date** | Month Day, 2016 |
| **Module Description:** Monitors the operational environment during airborne phases of flight to provide timely alerts on the ground of an increased risk to flight safety. In this case, short-term conflict alert, area proximity warnings and minimum safe altitude warnings are proposed. Ground-based safety nets make an essential contribution to safety and remain required as long as the operational concept remains human centred. |
| **Element Implementation Status** |
| **1** | **Element Description:**Short Term Conflict Alert (STCA) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**Area Proximity Warning (APW) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**Minimum Safe Altitude Warning (MSAW) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **4** | **Element Description:**Medium Term Conflict Alert (MTCA) | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 4 | **Block - Module** | B0 - CCO | **Date** | Month Day, 2016 |
| **Module Description:** Implements continuous climb operations (CCO) in conjunction with Performance-based Navigation (PBN) to provide opportunities to optimize throughput, improve flexibility, enable fuel-efficient climb profiles, and increase capacity at congested terminal areas. |
| **Element Implementation Status** |
| **1** | **Element Description:**Procedure changes to facilitate CCO | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**Route changes to facilitate CCO | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**PBN SIDs | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 4 | **Block - Module** | B0 - CDO | **Date** | Month Day, 2016 |
| **Module Description:** Performance-based airspace and arrival procedures allowing aircraft to fly their optimum profile using continuous descent operations (CDOs). This will optimize throughput, allow fuel efficient descent profiles, and increase capacity in terminal areas. |
| **Element Implementation Status** |
| **1** | **Element Description:**Procedure changes to facilitate CDO | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**Route changes to facilitate CDO | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **3** | **Element Description:**PBN STARs | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |

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| **[STATE] ASBU Air Navigation Reporting Form (ANRF)** |
| **PIA** | 4 | **Block - Module** | B0 - TBO | **Date** | Month Day, 2016 |
| **Module Description:** Implements an initial set of data link applications for surveillance and communications in air traffic control (ATC), supporting flexible routing, reduced separation and improved safety. |
| **Element Implementation Status** |
| **1** | **Element Description:**ADS-C over oceanic and remote areas | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **2** | **Element Description:**Continental CPDLC | **Date Planned/Implemented** | **Status** |
| **Status Details** |
| **Achieved Benefits** |
| *Access and Equity* |
| *Capacity* |
| *Efficiency* |
| *Environment* |
| *Safety* |
| **Implementation Challenges** |
| *Ground system Implementation* |
| *Avionics Implementation* |
| *Procedures Availability* |
| *Operational Approvals* |
| **Notes** |