Flight Safety Notification
ANS

Flight Safety Notifications (FSNs) are not mandatory in nature, but provide means such as guidance, methods, procedures and practices acceptable to the Authority for complying with regulations and other requirements in a systematic manner. These are not necessarily the only means of compliance. FSNs may also contain explanations of regulations, other guidance material, best practices or information useful to the aviation community. Unless incorporated into a regulation by reference, FSNs are not regulatory and do not create or change a regulatory requirement. A change of a regulatory requirement may come in the form of a Directive. A Flight Safety Notification is not a Directive.

Surveillance Equipment Implementation Guidelines

1. Reason for Revision

Original issue

2. Purpose

The purpose of this Flight Safety Notification is to provide guidance to Air Navigation Service Providers (ANSPs) implementing, upgrading, relocating, replacing, or significantly modifying surveillance equipment used in the provision of Air Navigation Services.

This guidance establishes the minimum information, assessments, testing, safety assurance requirements and documentation that should be provided to the Jamaica Civil Aviation Authority's Flight Safety Department (The Authority) before a surveillance system is commissioned/recommissioned and placed into operational service.

3. Applicability

This FSN applies to

- All categories of surveillance equipment
- Major software modifications
- Major hardware upgrades
- Relocation of surveillance equipment
- Integration of surveillance systems into existing CNS/ATM infrastructure

4. Effectivity

This FSN is effective immediately and shall remain in force until revised or withdrawn.

5. References

This guidance supports compliance with applicable provisions of:

- ICAO Annex 10 Vol. IV
- ICAO DOC 9924 Section 7.1
- The Civil Aviation Regulations, 2012, Schedule 24. The following regulations are particularly relevant:
  - 24.475 – Procurement of Aeronautical Telecommunications and Radio Navigation Equipment / General CNS Facilities
  - 24.343 - Approval submission
  - 24.351 - IFP Flight inspection requirements
  - 24.477 - Equipment Maintenance
  - 24.065 - Maintenance Quality System
  - 24.079(b) - Facility requirements
  - 24.063 - Authorized Equipment
  - 24.459 - Training and Checking of Staff

6. Action

6.1. MANAGEMENT OF CHANGE

The ANSP shall complete a Management of Change process via its Safety Management System (SMS). The Jamaica Civil Aviation Regulations requires that all ANSPs shall have an SMS program.

The assessment shall address:

- Operational changes;
- Technical changes;
- Organizational impacts;
- Human factors considerations;
- Training requirements;
- Interface impacts;
- Cybersecurity implications;
- Safety risks associated with the change.

6.2. OPERATIONAL REQUIREMENTS DEFINITION

The ANSP shall develop and submit to the Authority, an Operational Requirements Document containing the following:

a) Operational Need

The operational need shall identify:

- Safety objectives;
- Operational objectives;
- Efficiency objectives;
- Surveillance applications to be supported.
- Project Timelines

b) Coverage Requirements

The ANSP shall define:

- Horizontal coverage;
- Vertical coverage;
- Surveillance service areas;
- Redundancy requirements.

c) Traffic Assessment

The traffic assessment shall include:

- Current traffic levels;
- Projected traffic growth;
- IFR operations;
- VFR operations;
- Domestic operations;
- International operations

d) Performance Requirements

The required performance shall be established for:

- Accuracy
- Integrity

- Continuity
- Availability
- Reliability
- latency
- update rates

6.3. TECHNICAL AND ENVIRONMENTAL ASSESSMENT

The ANSP shall conduct a technical and environmental assessment.

a) **Site Assessment**

The assessment shall include:

- Site surveys;
- Terrain evaluation;
- Obstacle assessment;
- Infrastructure assessment.

b) **Radio Frequency Assessment**

The assessment shall include:

- Frequency assignments;
- Interference analysis;
- Spectrum availability.

c) **Interoperability Assessment**

The ANSP shall demonstrate compatibility with:

- ATS automation systems;
- Flight data processing systems;
- Communication systems;
- Existing surveillance systems;
- Surveillance data exchange networks;
- Remote monitoring systems.

6.4. SYSTEM DESIGN AND ENGINEERING ANALYSIS

The ANSP shall provide:

a) **System Design Documentation**

Including:

- System architecture;
- Network diagrams;
- Interface specifications;
- Equipment specifications;
- Site layouts.

b) **Reliability and Resilience Analysis**

The analysis shall identify:

- Single points of failure;
- Redundancy arrangements;
- Failover capability;
- Recovery mechanisms.

c) **Contingency Arrangements**

Procedures shall be established for:

- Degraded mode operations;
- System failures;
- Emergency operation;
- Restoration of service.
- Contingency Procedures.

6.5. SAFETY ASSESSMENT

A formal Safety Assessment shall be conducted.

a) **Hazard Identification**

The assessment shall identify:

- Technical hazards;
- Operational hazards;
- Procedural hazards;
- Human factors hazards.

b) **Risk Assessment**

The analysis shall evaluate:

- Severity;
- Likelihood;
- Existing controls;
- Residual risks.

c) **Risk Mitigation**

The ANSP shall demonstrate that identified risks have been eliminated or reduced to an acceptable level.

d) **Safety Case**

A Safety Case shall be submitted to the Authority demonstrating that the proposed surveillance system is safe for operational use.

6.6. CYBERSECURITY ASSESSMENT

The ANSP shall conduct a cybersecurity assessment addressing:

- Provisions to protect against Cyber related threats
- Cyber threat mitigation.

Cybersecurity risks affecting surveillance service provision shall be mitigated prior to commissioning.

6.7. HUMAN FACTORS AND TRAINING

The ANSP shall complete a human factors assessment addressing:

- controller workload;
- human-machine interfaces;
- display functionality;
- operational procedures;
- situational awareness.

Training programs shall be provided for:

- Air Traffic Controllers;
- ATSEP Maintenance Personnel;

Training Records shall be maintained, and evidence of training and competency shall be submitted to the Authority.

6.8. TESTING AND VALIDATION

The ANSP shall conduct the following activities.

a) **Factory Acceptance Testing (FAT)**

Verification that equipment satisfies procurement and operational specifications.

b) **Site Acceptance Testing (SAT)**

Verification that equipment performs correctly within the operational environment.

c) **Integration Testing**

Testing shall verify compatibility with:

- ATS systems;
- communication systems;
- surveillance processing systems;
- monitoring systems.

d) **Operational Validation**

The ANSP shall demonstrate:

- operational suitability;
- procedural effectiveness;
- controller acceptance;
- effectiveness of contingency arrangements.

e) Flight Inspection and Performance Verification

Flight inspection, validation flights or surveillance performance monitoring shall be conducted to demonstrate compliance with operational requirements.

6.9. MAINTENANCE AND CONTINUED SERVICEABILITY

The ANSP shall establish:

- maintenance programmes;
- preventive maintenance schedules;
- fault reporting systems;
- spare parts management;
- reliability monitoring programs.

Records shall be maintained and made available to the Authority upon request.

Soft copies of the Manufacturer's Manuals shall be submitted to the Authority.

6.10. COMMISSIONING APPROVAL

Operational commissioning shall not occur until the Authority is satisfied that:

1. Regulatory requirements have been met;
2. Safety risks have been appropriately managed;
3. Safety Case is satisfactory.
4. Performance requirements have been demonstrated;
5. Personnel are competent and appropriately trained;
6. Operational readiness has been established;
7. Maintenance arrangements are adequate;
8. Cybersecurity risks have been addressed.

6.11. POST-IMPLEMENTATION MONITORING

Following commissioning, the ANSP shall:

- Monitor system performance.
- Monitor service availability and continuity.
- Conduct periodic safety reviews.
- Conduct preventive maintenance.
- Report significant failures and occurrences to the Authority.
- Maintain records of maintenance and performance monitoring.

6.12. COMMISSIONING PACKAGE

The ANSP shall submit to the Authority, the following documentation:

1. Operational Requirements Document.
2. Management of Change Assessment.
3. Technical and Environmental Assessment.
4. System Design & Engineering Analysis documentation.
5. Safety Assessment
6. Safety Case
7. Human Factors Assessment
8. Training & Competency Programs (including Training Certificates)
9. All Testing and Validation Reports
10. Maintenance & Continued Serviceability documentation.
11. Post-Implementation testing reports.
12. Final implementation status report

6.13. DOCUMENT SUBMISSION SCHEDULE

The ANSP shall submit to the Authority, the Surveillance Equipment Implementation Checklist attached below along with all the required documentation outlined in each Category and the respective project phases.

Project Phases	Action Categories
Initial Phase	Management Of Change
	Operational Requirements Definition
	Technical And Environmental Assessment
Planning Phase	System Design and Engineering Analysis
	Safety Assessment
	Safety Case
	Cybersecurity Assessment
Execution Phase	Human Factors and Training
	Testing And Validation
Monitoring & Control Phase	Maintenance And Continued Serviceability
Closing Phase	Final Status Report

Approved by: _____ Date: (20/October/2026)

Noel Ellis
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Jamaica Civil Aviation Authority

Surveillance Equipment Implementation Checklist

The Flight Safety Department requires the ANSP to submit the following documents for review and approval throughout the implementation and commissioning process of Aeronautical Surveillance Equipment.

Surveillance System Type: _____

Project Initial Phase		
Requirement	**Compliance (Y/N)**	**Remarks**
Management Of Change Assessment		
Operational Requirements		
Operational Need		
Coverage Requirements		
Traffic Assessment		
Performance Requirements		
Technical And Environmental Assessment		
Site Assessment		
Radio Frequency Assessment		
Interoperability Assessment		

Note: Attach this checklist along with the complete documentation submission for each project phase.

Project Lead: _____

Submission Date: _____

Surveillance Equipment Implementation Checklist

The Flight Safety Department requires the ANSP to submit the following documents for review and approval throughout the implementation and commissioning process of Aeronautical Surveillance Equipment.

Surveillance System Type: _____

Project Planning Phase		
Requirement	**Compliance (Y/N)**	**Remarks**
System Design and Engineering Analysis		
System Design Documentation		
Reliability And Resilience Analysis		
Contingency Arrangements		
Safety Assessment		
Hazard Identification		
Risk Assessment		
Risk Mitigation		
Safety Case		
Cybersecurity Assessment		

Note: Attach this checklist along with the complete documentation submission for each project phase.

Project Lead: _____

Submission Date: _____

Surveillance Equipment Implementation Checklist

The Flight Safety Department requires the ANSP to submit the following documents for review and approval throughout the implementation and commissioning process of Aeronautical Surveillance Equipment.

Surveillance System Type: _____

Project Execution Phase		
Requirement	**Compliance (Y/N)**	**Remarks**
Human Factors And Training		
Human Factors Assessment		
Training & Competency Programs		
Testing And Validation		
Factory Acceptance Testing (Fat)		
Site Acceptance Testing (Sat)		
Integration Testing		
Operational Validation		
Flight Inspection And Performance Verification		
Maintenance And Continued Serviceability		

Note: Attach this checklist along with the complete documentation submission for each project phase.

Project Lead: _____

Submission Date: _____

Surveillance Equipment Implementation Checklist

The Flight Safety Department requires the ANSP to submit the following documents for review and approval throughout the implementation and commissioning process of Aeronautical Surveillance Equipment.

Surveillance System Type: _____

Project Monitoring & Control Phase		
Requirement	Compliance (Y/N)	Remarks
Post-Implementation Monitoring		

Note: Attach this checklist along with the complete documentation submission for each project phase.

Project Lead: _____

Submission Date: _____

Surveillance Equipment Implementation Checklist

The Flight Safety Department requires the ANSP to submit the following documents for review and approval throughout the implementation and commissioning process of Aeronautical Surveillance Equipment.

Surveillance System Type: _____

Project Closing Phase		
Requirement	**Compliance (Y/N)**	**Remarks**
Final Implementation Status Report		

Note: Attach this checklist along with the complete documentation submission for each project phase.

Project Lead: _____

Submission Date: _____