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PART 173

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SUBPART 1 GENERAL**Definitions for this Part**

173.01.1 (1) Definitions pertaining to this Part are contained in Document NAMCATS-FPD.

(2) Despite subregulation (1), in this Part, unless the context otherwise indicates -

“design work”, in relation to a flight procedure, means any of the following work -

- (a) designing the procedure or a part of the procedure;
- (b) verifying, maintaining, reviewing, amending or adapting the procedure;
- (c) supervising a person carrying on any work mentioned in paragraph (a) or (b);

“flight procedure design (FPD) approval” means an authorisation that

- (a) is granted by the Executive Director to a person under this Part; and
- (b) certifies that the person is approved to carry out design work on a flight procedure of a type covered by the approval subject to any conditions set out in the approval; and

“flight procedure design (FPD) organisation” means an organisation or entity to whom a flight procedure design approval has been granted in accordance with this Part and whose approval authorises the design, verification, validation, and maintenance of the particular type of flight procedure.

Applicability

173.01.2 (1) This Part -

- (a) prescribes the regulations and procedures governing the development, validation, approval, registration, publication and maintenance of flight procedures used at aerodromes;
- (b) applies to -
 - (i) the design, maintenance, revision, amendment and adaptation of flight procedures; and
 - (ii) the approval and operation of organisations conducting flight procedure design, maintenance, revision, amendment or adaptation; and
- (c) sets out certain administrative rules relating to the Executive Director in the administration of this Part.

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- (2) This Part does not apply to -
- (a) the design of flight procedures for use by aircraft in circumstances where one or more engines of the aircraft have become inoperative while on an IFR flight;
 - (b) a person that carries out flight procedure design on procedures for use by aircraft in circumstances where one or more engines of the aircraft have become inoperative while on an IFR flight;
 - (c) a person who is providing flight procedure design services to military aircraft within designated military airspaces in the course of their duties, for the Namibian Defence Force; and
 - (d) any flight procedure design services provided to military aircraft within designated military airspaces for the Namibian Defence Force.

SUBPART 2**APPROVAL TO PROVIDE FLIGHT PROCEDURE DESIGN SERVICES****Requirement for approval**

173.02.1 (1) A person may not design, maintain, review, amend or adapt flight procedures that are intended for use by civil aircraft operating within the territorial limits of Namibia, except under the authority of, and in accordance with the provisions of, a flight procedure design approval with the appropriate rating issued under this Part and in accordance with the requirements prescribed in Part 170.

- (2) The Executive Director may -
- (a) as part of the organisational functions of the Authority, provide a flight procedure design service;
 - (b) agree with one or more States to provide a joint flight procedure design service;
 - (c) delegate the provision of the service to an external agency or agencies; or
 - (d) approve an agency to provide flight procedure design service.

(3) In all cases mentioned in subregulation (2), the Executive Director remains responsible for all flight procedures for aerodromes and airspaces under the authority of Namibia.

(4) Flight procedures must be designed in accordance with the approved design criteria described in regulation 173.04.9.

(5) A flight procedure design organisation intending to design an instrument flight procedure for aerodromes or airspace under the authority of Namibia, must meet the requirements prescribed in this Part.

(6) A flight procedure design organisation must utilise a quality management system at each stage of the flight procedure design process.

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(7) A flight procedure design organisation must maintain and conduct periodic review of flight procedures for aerodromes and airspace under the authority of the Namibia and such reviews must be conducted at intervals of periods not exceeding five years.

Application for flight procedure design approval or amendment thereof

173.02.2 (1) An application for a flight procedure design approval, or an amendment thereof, must be -

- (a) made to the Executive Director in the appropriate form set out in Document NAMCATS-FPD; and
- (b) accompanied by -
 - (i) the manual of procedures referred to in regulation 173.03.1;
 - (ii) a written statement specifying the type or each type of flight procedure proposed to be covered by the flight procedure design approval;
 - (iii) a written statement setting out the name, qualifications and relevant experience of the individual who is proposed to be the chief designer for the applicant's organisation;
 - (iv) a written statement setting out the qualifications and relevant experience of any other member of the applicant's personnel whose duties would, if the approval were granted to the applicant, include carrying on design work under the approval; and
 - (v) the appropriate fee as prescribed in Part 187.

(2) Where an applicant was previously issued with a flight procedure design approval, and the approval was revoked, the applicant must include with the application any information to prove that the applicant would be in a position to comply with all requirements pertaining to the design of flight procedures of the rating or ratings concerned.

(3) The Executive Director may require demonstrations of procedures or equipment in relation to a procedure design approval.

Safety and regulatory compliance inspections and audits

173.02.3 (1) In addition to permitting the safety and regulatory compliance inspections and audits in terms of regulation 170.01.3, a flight procedure design organisation must permit an authorised officer, inspector or authorised person to -

- (a) observe the practices and procedures of the organisation in performing flight procedure design; and
- (b) inspect and test any systems and equipment used for, or in relation to, flight procedure design.

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Facilities, equipment and resource requirements

173.02.4 (1) A flight procedure design organisation must satisfy the Executive Director that it has facilities and equipment necessary to perform adequately the approved scope of flight procedure design, including -

- (a) equipment that is appropriate for the design, verification, validation, and maintenance of the types of flight procedure to be covered in its approval, including flight procedures design software and other software licensed to the flight procedures design organisation;
 - (b) access to all necessary data including, but not limited to -
 - (i) accurate and current databases or charts detailing terrain and obstacle information;
 - (ii) accurate and current navigation aid coordinate data; and
 - (iii) accurate and current aerodrome survey data;
 - (c) ready access to copies of relevant documentation comprising technical standards, practices, and instructions, and any other documentation that may be necessary for the design, design verification, validation, and maintenance of the types of flight procedures specified in its manual of procedures.
- (2) A flight procedure designer must establish a procedure for ensuring that -
- (a) personnel have access to the data referred to in subregulation (1)(b) for the types of flight procedure specified in its manual of procedures; and
 - (b) the data referred to in subregulation (1)(b) is current, traceable, and meets the required level of verifiable accuracy for the design, verification, validation and maintenance of instrument flight procedures specified in its manual of procedures.
- (3) The flight procedure organisation must, if an aeronautical database and aeronautical data is utilised for designing flight procedures, have, and put into effect, procedures to ensure the integrity of the database and the data.

Issue of flight procedure design approval

173.02.5 (1) The Executive Director may issue a flight procedure design approval, if the Executive Director is satisfied that -

- (a) the applicant meets the requirements prescribed in Part 170 and in this Part;
- (b) the applicant's personnel required by this Part are competent to perform their respective duties;
- (c) the applicant's senior personnel have not held a senior position in an organisation whose approval was revoked by the Executive Director; and

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(d) the granting of the approval is not contrary to the interests of aviation safety.

(2) The flight procedures design approval referred to in subregulation (1) is issued in the appropriate form, and contains the information, set out in Document NAM-CATS-FPD.

(3) The Executive Director may, in accordance with section 46 of the Act and Part 3, approve a variation to the requirements of this Part or of Document NAM-CATS-FPD where a flight procedure certified organisation can demonstrate an equivalent outcome and at least an equivalent level of safety.

Imposition of conditions on approval

173.02.6 The Executive Director may impose conditions on any flight procedure design approval, including a condition that restricts -

- (a) the kind of flight procedures that can be designed;
- (b) the equipment used to provide the design service; or
- (c) the method by which procedures are validated or publicised.

Renewal of flight procedure design approval

173.02.7 (1) An application for the renewal of a flight procedure design approval, must be -

- (a) made to the Executive Director on the appropriate form set out in Document NAMCATS-FPD; and
- (b) accompanied by -
 - (i) the manual of procedures referred to in 173.03.1; and
 - (ii) the appropriate fee as prescribed in Part 187.

(2) The holder of a flight procedure design approval must, if it wishes to renew the approval, at least 90 days immediately preceding the date on which a flight procedure design approval expires, apply to the Executive Director for the renewal of such approval.

Duplicate approval

173.02.8 (1) An application for a duplicate approval as contemplated in Part 170 must be -

- (a) made in the appropriate form set out in Document NAM-CATS-FPD; and
- (b) accompanied by the appropriate fee as prescribed in Part 187.

(2) A duplicate of a flight procedure design approval is issued on the appropriate form set out in Document NAM-CATS-FPD.

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Privileges of flight procedure design approval holder

173.02.9 (1) A flight procedure design approval issued under this Part authorises the holder of the approval to -

- (a) design, validate, and maintain flight procedures for use within Namibia; and
 - (b) make available for publication and operational use by aircraft, aeronautical information relating to flight procedures that have been validated and approved.
- (2) A flight procedure design approval is limited to the type of flight procedure design listed in the approval.

SUBPART 3
REQUIREMENTS TO BE COMPLIED WITH BY APPROVED FLIGHT PROCEDURE
DESIGN ORGANISATIONS

Manual of procedures

173.03.1 (1) A flight procedure design organisation must, at all times, maintain a manual of procedures that complies with the requirements of Part 170.

(2) The manual of procedures for a flight procedure design organisation must in addition to the requirements prescribed in Part 170, include the -

- (a) specific standards set out in Document NAM-CATS-FPD;
- (b) means of meeting equipment requirements, accessing relevant and current data and accessing copies of relevant documentation as required under this Part;
- (c) means of meeting the requirements regarding flight procedures not requiring flight validation; and
- (d) procedures required to be established under this Part.

Flight procedure design organisation

173.03.2 (1) A flight procedure design organisation must, at all times, maintain an appropriate organisation with a sound and effective management structure to enable it to provide the flight procedure design services covered by its approval.

- (2) The flight procedure design organisation must -
- (a) maintain an appropriate instrument design office to enable the instrument flight procedure designer to carry on design work in flight procedures in the design office;
 - (b) ensure that the quality and safety of the flight procedure design products are assured through the review, verification, coordination and validation at appropriate points in the process;
 - (c) ensure that the designs of the flight procedure are in accordance with -

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- (i) applicable standards set out or referred to in the current version of the ICAO Procedure for Air Navigation Procedures Flight Operations (Doc 8168); and
- (ii) applicable standards as set out in this Part;
- (d) make provision for a person trained in flight procedure designing to check and verify independently the plans of each flight procedure designed; and
- (e) ensure only the latest version of the organisation's procedures design software is used.

Personnel and qualification requirements

173.03.3 (1) A flight procedure design organisation must engage, employ or contract -

- (a) a person identified as the senior accountable manager (chief flight procedure designer) of the organisation concerned, to whom contractual authority has been granted to ensure that -
 - (i) all activities undertaken by the organisation are carried out in accordance with the applicable requirements prescribed in this Part; and
 - (ii) any flight procedure design covered by the approval is performed as prescribed in this Part;
- (b) a senior person responsible to the chief flight procedure designer to ensure that the organisation complies with its approved manual of procedures; and
- (c) sufficient qualified and competent flight procedure designers to plan, design, verify and maintain the flight procedures covered by the approval.

(2) The chief flight procedure designer, senior personnel and other personnel involved in flight procedure design must meet the minimum qualification requirements as set out in Document NAM-CATS-FPD.

(3) A flight procedure design organisation may not engage, employ or contract a person to design flight procedures for use in a designated airspace or at aerodromes within Namibia unless that person has completed approved training in the construction of visual and instrument flight procedures and has been approved by the Executive Director to do so.

- (4) A flight procedure design organisation must -
 - (a) establish a procedure for initially assessing, and for maintaining the competence of those personnel involved in planning, design, verification and maintenance of the flight procedures;
 - (b) develop job descriptions for its flight procedure design technical staff;
 - (c) ensure that the personnel referred to in paragraph (a) meet the minimum qualifications set out in Document NAM-CATS-FPD;

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- (d) carry out initial, periodic and recurrent training of the flight procedure design personnel in accordance with the standards set out in Document NAM-CATS-FPD; and
- (e) ensure that newly employed or engaged flight procedure design personnel undergo, supervised on-the-job training before undertaking unsupervised flight procedure design tasks.

Obligations of approval holder in designing flight procedures

173.03.4 (1) A flight procedure design organisation must ensure that flight procedures are designed to the appropriate standard and in accordance with this Part.

- (2) In performing flight procedure design, a flight procedure design organisation must -
 - (a) design each flight procedure in accordance with the standards set out in Document NAM-CATS-FPD;
 - (b) verify each designed flight procedure as prescribed in this Part;
 - (c) submit flight procedures designed and verified as referred to in paragraphs (a) and (b) to the Executive Director for ground and flight validation as prescribed in this Part;
 - (d) adhere to the defined approval process; and
 - (e) ensure that flight procedures submitted as required in paragraph (c) are accompanied by the appropriate fee as prescribed in Part 187.
- (3) A flight procedure design organisation must maintain each flight procedure periodically at intervals specified in regulation 173.02.1(7).
- (4) A flight procedure design organisation must ensure that a flight procedure covered by its approval does not make use of a ground-based radio-navigation aid other than one that is operated and approved in terms of Part 171.
- (5) If the flight procedure design organisation intends to cease to perform flight procedure design of a particular type, it must notify the Executive Director for an amendment of the approval in accordance with the requirements of regulation 170.02.6.
- (6) If the flight procedure design organisation ceases to be responsible for the maintenance of a flight procedure, it must give written notice to that effect to the Executive Director as soon as possible after ceasing to perform the flight procedure design concerned.

Transferability of maintenance of flight procedures

173.03.5 (1) A flight procedure design organisation may transfer its responsibility for maintaining a flight procedure to another organisation whose flight procedure design approval authorises that organisation to design flight procedures of the same rating as the flight procedure concerned.

- (2) If another organisation referred to in subregulation (1) accepts responsibility for the maintenance of a flight procedure under this Part, the organisation concerned must -

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- (a) give written notice to the transferor to that effect;
 - (b) give written notice of the transfer to the Executive Director within 14 days after the transfer; and
 - (c) include in the notices referred to in paragraphs (a) and (b), the date on which the transfer takes effect.
- (3) If the flight procedure design organisation transfers its responsibility for maintaining a flight procedure, it must give written notice of the transfer to the Executive Director within 14 days after the transfer.

Training and checking programme

173.03.6 (1) A flight procedure design organisation must establish and maintain a training and checking programme for all personnel referred to in this Subpart that will ensure such personnel are adequately trained and qualified to perform their assigned duties.

(2) The Executive Director must approve the training programme referred to in subregulation (1), if the training and checking programme meets the requirements of this regulation and of Part 170.

- (3) A flight procedure design organisation must ensure that -
- (a) prior to assignment to duty, each person required to receive training in accordance with this Subpart, must, whether employed on a full or part time basis, receive such training as appropriate to his or her duties; and
 - (b) the training facilities, equipment and personnel are acceptable to the Executive Director and, in the case of training facility has been approved by the Executive Director in accordance with the standards set out in Document NAM-CATS-FPD.
- (4) The training and checking programme referred to in subregulation (1) must include a system for maintaining of training records for flight procedure design personnel.

(5) A flight procedure design organisation must develop and maintain the training and checking programme referred to in subregulation (1).

(6) A flight procedure design organisation must submit for the approval of the Executive Director its training and checking programme and any amendments to the programme.

(7) A flight procedure design organisation must provide training to its personnel that includes at least the following training components:

- (a) flight procedure design training on an initial basis pertinent to the design type listed in the approval; and
 - (b) recurrent flight procedure training.
- (8) Only approved training must be considered for the initial and recurrent training referred to in subregulation (7).

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(9) The training required by subregulation (7)(b) must be provided on a recurrent basis and at specified intervals not exceeding three years, or any period as may be determined by the Executive Director.

Quality management system

173.03.7 (1) A flight procedure design organisation must have, and put into effect, a quality assurance and quality management system that includes the policies, procedures, and practices necessary for managing design work on flight procedures under its approval.

(2) The quality assurance and management system must be in accordance with the requirements of Part 170 and the standards set out in Document NAM-CATS-FPD.

(3) The quality assurance and quality management system may be integrated with the safety management system required under Part 170.

Management of records

173.03.8 (1) A flight procedure design organisation must establish procedures for the control of documentation including identification, collection, indexing, storage, safekeeping, accessibility, maintenance and disposal of records in accordance with requirements prescribed in Part 170.

(2) A flight procedure design organisation must establish a procedure for the management of records that are required for the organisation's functions relating to the design, certification and maintenance of flight procedures.

(3) A flight procedure design organisation must establish procedures to identify, collect, index, store and maintain all records which may be necessary -

- (a) for the specified flight procedure design conducted by the organisation; and
- (b) to determine compliance with the appropriate requirements prescribed in this Part.

(4) The procedure referred to in subregulation (2) must provide for the following to be recorded for every flight procedure that is approved and maintained:

- (a) details to be published in the AIP for the flight procedure;
- (b) details of the flight procedure design carried out, including but not limited to design verification, amendment, validation, justification for not validating, and certification activities;
- (c) details of the publication and checking activities;
- (d) details of any actions taken regarding errors and non-conformances in the flight procedure; and
- (e) details of every maintenance review and validation carried out, in accordance with this Part.

(5) The procedure required by subregulation (2) must also provide that records maintained must -

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- (a) include details of the qualifications, experience, training, assessments, and authorisations, if applicable, for personnel required under this Part;
- (b) be legible, accurate, permanent, and retrievable in a legible format; and
- (c) be retained for at least five years after the associated flight procedure is withdrawn from use.

(6) The flight procedure design organisation must comply with any additional standards for the management of records set out in Document NAM-CATS-FPD.

Safety management system

173.03.9 A flight procedure design organisation must establish, implement, and maintain a system for safety management in accordance with Parts 140 and 170 and the standards set out in Document NAM-CATS-FPD.

**SUBPART 4
REQUIREMENTS FOR DESIGN OF FLIGHT PROCEDURES****General requirements**

173.04.1 (1) A flight procedure design organisation must develop flight procedures to be used by aircraft operating in the designated airspace and aerodromes covered by its approval.

(2) A flight procedure design organisation providing a flight procedure service must establish procedures for ensuring that every flight procedure is -

- (a) designed or amended using methods which ensure that the procedure meets the applicable requirements of this Part;
- (b) independently verified before validation where applicable, by a qualified person who is not the person directly responsible for the design;
- (c) validated by a qualified person who is not the person directly responsible for the design to ensure that -
 - (i) the flight procedure allows aircraft using the procedure to manoeuvre consistently within safe operating practices and pilot workloads for the categories of aircraft that the procedure is intended for;
 - (ii) the flight procedure provides azimuth and distance information, and vertical guidance information for a precision approach, for the operation of aircraft to ensure that an aircraft using the procedure remains clear of obstacles; and
 - (iii) visual guidance systems and cues for the runway are appropriate for the flight procedure and are not confused by lighting, laser sky displays or any other visual distraction.

(3) A flight procedure design organisation must comply with the requirements of regulation 173.04.2, and the standards set out in Document NAM-CATS-FPD.

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Standards for design of flight procedures

173.04.2 (1) A flight procedure design organisation designing an instrument flight procedure under the organisation's procedure design approval must ensure that the procedure is designed in accordance with -

- (a) the design requirements set out in the current version of the ICAO PANS-OPS (Doc 8168);
- (b) the design requirements set out or referred to in the current version of the ICAO Required Navigation Performance Authorisation Required Procedure Design Manual (Doc 9905);
- (c) the quality assurance, training, and validation and associated requirements set out in the current version of the ICAO Quality Assurance Manual for Flight Procedure Design (Doc 9906) – Volume 1 to Volume 6; and
- (d) any applicable standards and requirements set out in Document NAM-CATS-FPD.

(2) A flight procedure design organisation must establish procedures for ensuring that the processes of design, maintenance, or transfer of data of a flight procedure comply with the standards specified or referred to in Document NAM-CATS-FPD.

(3) A flight procedure design organisation may use alternative standards equivalent to the standards specified in this Part provided that the standards are acceptable to the Executive Director.

Verification of flight procedures

173.04.3 (1) A flight procedure design organisation must establish a procedure for verifying every flight procedure that it proposes to design, make available for operational use, and publish the flight procedure in the AIP.

(2) The procedure required by subregulation (1) must include -

- (a) details of the checks to be carried out by a senior person, who is authorised to verify and certify the particular type of flight procedure, to ensure that the flight procedure meets the applicable requirements and standards prescribed by this Part; and
- (b) the means for providing the Executive Director with the information required under this Part for approval of the procedure and for the entry of the flight procedure into the register.

(3) A person who is authorised to verify and certify a flight procedure may not verify or certify a flight procedure that the person has designed.

(4) In this Part, a reference to verifying a flight procedure is a reference to the process of checking the procedure, including all data, computations and drawings for the procedure, in accordance with any applicable standards set out in this Part.

Procedures for validation of flight procedures

173.04.4 (1) A flight procedure design organisation must ensure that the designed flight procedures undergo the validation process as applicable in accordance with the standards set out in Document NAM-CATS-FPD and subject to any conditions as are specified in the approval.

(2) Where a flight procedure design organisation has been approved to conduct validation of flight procedures, it must ensure that each flight procedure designed under its approval is validated in accordance with this Part and applicable standards set out in Document NAM-CATS-FPD.

(3) Where a flight procedure design organisation has not been approved to conduct validation of flight procedures, the organisation must ensure that each flight procedure it designs is validated by an approved flight procedure design entity prior to being submitted to the Executive Director for approval.

(4) A flight procedure design organisation that has been approved to conduct validation of flight procedures must establish procedures for conducting the validation of flight procedures as required under this Part.

(5) The procedures established in accordance with subregulation (4) must include the use of equipment that -

- (a) has the precision, and accuracy traceable to appropriate standards, that are necessary for the validation being performed;
- (b) has known measurement uncertainties including, but not limited to, the software, firmware and crosswind uncertainties;
- (c) where flight validation is required, records the actual flight path of the validation aircraft; and
- (d) is checked before being released for use, and at intervals not exceeding the calibration intervals recommended by the manufacturer, to establish that the system is capable of verifying the integrity of the flight procedure.

(6) A flight procedure design organisation must ensure that all flight procedures that it designs undergo ground validation and flight validation.

(7) Despite the requirement of subregulation (6), the flight validation of a flight procedure design may be excluded where the flight procedure design organisation can verify through ground validation, the accuracy and completeness of all obstacle and navigation data considered in the procedure design, and any other factors normally considered in the flight validation.

(8) The process to be used for ground and flight validation must be as described in Document NAM-CATS-FPD.

(9) Conditions under which flight validation is required must be as set out in Document NAM-CATS-FPD.

Process for approval of flight procedures

173.04.5 (1) Each flight procedure intended for use by aircraft operating within the territorial limits of Namibia must be approved by the Executive Director.

(2) The procedures for design submission and approval must be as set out in Document NAM-CATS-FPD.

(3) Before approving a flight procedure the Executive Director must be satisfied that the flight procedure -

- (a) has been developed and validated in compliance with the applicable requirements of this Part, and any standards set out in Document NAM-CATS-FPD;
- (b) has been developed and validated by a flight procedure design organisation approved by, and in compliance with regulations and standards of, another State acceptable to the Executive Director;
- (c) is safe for use in aviation generally; and
- (d) will be maintained by an approved flight procedures organisation.

(4) The Executive Director must indicate approval of each flight procedure in writing.

(5) An approval granted under this Part, is valid for a maximum period of two years unless it is suspended or revoked in accordance with Part 170.

(6) An approval granted under this Part is not transferable.

Entry of flight procedures into register

173.04.6 (1) The Executive Director must enter or cause to be entered each flight procedure intended for use by aircraft operating under IFR within the territorial limits of Namibia into the register referred to in regulation 71.10.1.

(2) For the purpose of subregulation (1), the following information is required by the Executive Director for every entry of a flight procedure into the register:

- (a) the name or other appropriate identifier that is acceptable to the Executive Director to uniquely identify the flight procedure;
- (b) aeronautical data that is acceptable to the Executive Director to define and describe the flight procedure;
- (c) the date that the flight procedure is intended to come into effect;
- (d) a statement signed by the senior person referred to in regulation 173.04.3(2)(a), certifying that the flight procedure meets the applicable standards and requirements prescribed by this Part; and

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- (e) a statement signed by a senior person referred to in paragraph (d), of the appropriate flight procedure organisation certifying that the flight procedure is to be maintained in accordance with the organisation's procedures required by this Part.

Publication of flight procedures

173.04.7 (1) A flight procedure design organisation must give -

- (a) each flight procedure designed under its approval; and
- (b) a certificate by the flight procedure design organisation's chief designer to the effect that the procedure is designed and validated in accordance with any applicable requirements prescribed in this Part and the standards set out in Document NAMCATS-FPD,

to the aeronautical information service (AIS) for publication of the flight procedure in the AIP.

(2) A flight procedure design organisation must establish procedures to ensure that -

- (a) a flight procedure is not published or made available for operational use, unless it has been validated and approved by the Executive Director;
- (b) the initial publication of, or any change to, a flight procedure has been accurately published;
- (c) the date that the flight procedure is intended to come into effect is clearly stated;
- (d) the flight procedures designs or charts, are provided to the Aeronautical Information Service (AIS) provider for publication in the AIP; and
- (e) the designs or charts published in the AIP are produced in accordance with the standards set out in Document NAM-CATS-FPD.

(3) The procedure required in subregulation (2) must include details of the means -

- (a) for coordinating with the aeronautical information service provider and the publishing of the flight procedure in the AIP; and
- (b) to check that the initial publication of, or any change to, a flight procedure published under subregulation (1) has been accurately published in the AIP.

(4) A flight procedure design organisation must -

- (a) keep the aeronautical charts included in the AIP up-to-date by means of replacement sheets, where necessary; and
- (b) clearly indicate in the revised charts, any significant amendments or revisions in the flight procedure.

(5) Where required, coding of flight procedures will be conducted in accordance with the standards set out in NAM-CATS-FPD.

Maintenance of flight procedures

173.04.8 (1) A flight procedure design organisation must maintain a flight procedure in accordance with the schedule set out in Document NAM-CATS-FPD.

(2) A flight procedure design organisation providing maintenance of a flight procedure must record, investigate, correct, and report, any identified error, and any identified non-conformance or suspected non-conformance in accordance with the standards set out in Document NAM-CATSFPD.

Design criteria for flight procedures

173.04.9 (1) A flight procedure design organisation must design, validate and publish every flight procedure in accordance with the requirements of this Part and in accordance with the appropriate design processes, standards, guidelines, and aeronautical data quality requirements contained in the following materials:

- (a) the current versions of ICAO Documents -
 - (i) Procedures for Air Navigation Services - Aircraft Operations - Volume I Flight Procedures and Volume II, Construction of Visual and Instrument Flight Procedures (Doc 8168);
 - (ii) Aeronautical Chart Manual (Doc 8697);
 - (iii) Manual of All-Weather Operations (Doc 9365);
 - (iv) Performance-Based Navigation Manual - Volume I Concept and Implementation Guidance and Volume II Implementing RNAV and RNP (Doc 9613);
 - (v) Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information (Doc 9881);
 - (vi) Manual on the Use of the Collision Risk Model (CRM) for ILS operations (Doc 9274 - .AN/904);
 - (vii) Instrument Flight Procedure Construction Manual (Doc 9368 - AN/911);
 - (viii) Quality Assurance Manual for Flight Procedure Design (Doc 9906 - AN/472);
 - (ix) World Geodetic System 1984 (WGS-84) Manual (Doc 9674 - AN/946);
 - (x) Manual on Airspace Planning Methodology for the Determination of Separation Minima (Doc 9689);
 - (xi) Global Navigation Satellite System (GNSS) Manual (Doc 9849);
- (b) the applicable requirements of Parts 91, 139, 172 and 175; and
- (c) any other guideline or standard that is applicable to a particular type of flight procedure.

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(2) The design criteria for flight procedures must be in accordance with the criteria described in ICAO Doc 8168 referred to in subregulation (1)(a)(i) for the development of -

- (a) standard instrument departure (SID) and standard instrument arrival (STAR) procedures;
- (b) approach procedures;
- (c) circling procedures;
- (d) en-route procedures;
- (e) holding procedures;
- (f) noise abatement procedures;
- (g) altimeter setting procedures; and
- (h) procedures for simultaneous operations on parallel runways.

(3) A flight procedure design organisation for the development of flight procedures, including the procedures listed in subregulation (2), must submit to the Executive Director the procedures for publication in the AIP in the format prescribed in Part 175.

- (4) For purposes of subregulations (1), (2) and (3), the applicable -
 - (a) design processes, standards, guidelines, to be used must meet the criteria set out in Document NAM-CATS-FPD; and
 - (b) aeronautical data quality and integrity requirements, must meet the criteria prescribed in Part 175.
- (5) The design of a procedure must -
 - (a) be coordinated with all appropriate air traffic service providers;
 - (b) be compatible with any air traffic service and associated procedure that is provided within the area or areas of airspace where the instrument flight procedure is intended to be established;
 - (c) comply with -
 - (i) noise abatement and environmental requirements described in ICAO Document 9888: Noise Abatement Procedures; and
 - (ii) any other legislation restricting aircraft operations;
 - (d) not impact on any adjacent airspace that may be affected by the procedure, unless appropriate coordination has been undertaken during the design phase; and
 - (e) take into account the effect that the proposed flight procedure may have on any other flight procedure established in the same airspace.

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- (6) A flight procedure may not be designed using a ground based ATEL facility unless the -
- (a) ATEL facility is installed and operated under the authority of an aeronautical telecommunication service provider certificate issued under Part 171; and
 - (b) ATEL service provider agrees in writing that the ATEL facility can be used for the intended flight procedure.
- (7) A flight procedure design organisation must ensure that the accuracy and integrity of data is maintained throughout the data process in accordance with the standards prescribed in Part 175.
- (8) A flight procedure may not be designed for an aerodrome or heliport, unless the operator of the aerodrome or heliport agrees in writing that the aerodrome or heliport may be used for IFR and VFR operations using the intended flight procedure.

Information acquisition

173.04.10 (1) A flight procedure design organisation must ensure that the survey and, the collection of data or information and subsequent flight procedure design activities and processes are controlled and monitored by a person or persons trained in flight procedure design.

(2) In the obstacle survey for procedure design, the flight procedure design organisation must consider that -

- (a) all obstacles be accounted for, and items, such as trees and heights of tall buildings must be accounted for either by physical examination of the site or by addition of a suitable margin above terrain contours; and
 - (b) the accuracy of the vertical and horizontal data obtained may be adjusted by adding an amount equal to the specified survey error to the height of all measured obstructions and by making a corresponding adjustment for specified horizontal error.
- (3) The procedure design information must be coordinated with all relevant stakeholders, and as input for the procedure design process the following aspects need to be assessed:
- (a) airport, navigation aid, obstacle, terrain coordinate and elevation data, based on verified surveys;
 - (b) airspace requirements;
 - (c) user requirements - the needs of air traffic service provider and operators who will use this procedure;
 - (d) airport infrastructure such as runway classification, lighting, communications, runway markings, and availability of local altimeter setting;
 - (e) environmental considerations; and
 - (f) any other potential issue associated with the procedure.
- (4) For the purpose of this regulation, “stakeholder” includes -

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- (a) the Authority;
- (b) air navigation services providers;
- (c) air traffic service providers;
- (d) aircraft operators;
- (e) aerodrome and airport operators;
- (f) aviation associations;
- (g) environmental authorities responsible for administering or regulation of matters relating to the environment;
- (h) flight procedure design organisations; and
- (i) any other persons or entities determined to be stakeholders by the Executive Director for the purpose of this regulation.

Procedure design automation

173.04.11 (1) A flight procedure design organisation must ensure that the software packages used in the design of procedures has been validated.

(2) A flight procedure design organisation must ensure that a description of the procedures to be used to ensure that all equipment, including software is operated in accordance with the manufacturer's operating instructions and manuals, is readily available to the flight procedure designer.

(3) The flight procedure design organisation must ensure that the provisions of ICAO Doc 9906 referred to in regulation 173.04.9(1)(a)(viii) are adhered to in terms of software validation and use.

General criteria and procedures for establishment of aerodrome operating minima

173.04.12 A flight procedure design organisation must comply with the General Criteria and Procedures for the establishment of the Aerodrome Operating Minima specified in Document NAM-CATS-FPD.

SUBPART 5**GENERAL OPERATING REQUIREMENTS****Continued compliance**

- 173.05.1** (1) A flight procedure design organisation must -
- (a) hold at least one complete and current copy of its manual of procedures at the organisation's principal location;
 - (b) comply with every procedure and standard detailed in its manual of procedures;

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- (c) make each applicable part of the exposition available to personnel who require the applicable part to carry out their duties;
 - (d) continue to meet the standards and comply with the requirements of this Part and the standards set out in NAM-CATS-FPD and the requirements of Part 170; and
 - (e) notify the Executive Director of any change in its postal address, address for service, telephone number, email address or facsimile number within 14 days of the change.
- (2) The flight procedure design organisation must -
- (a) ensure that its manual of procedures is amended in accordance with the requirements of Part 170 so that it remains a current description of the holder's organisation;
 - (b) ensure that any amendment made to its exposition meets the applicable requirements of Part 170;
 - (c) comply with the amendment procedures contained in its manual of procedures;
 - (d) forward to the Executive Director for retention a copy of each amendment that the organisation makes to its exposition as soon as possible after the amendment is incorporated into its manual of procedures; and
 - (e) amend its manual of procedures as the Executive Director may consider necessary in the interests of aviation safety.
- (3) Before a flight procedure design organisation changes any of the following, prior written approval by the Executive Director is required -
- (a) the person identified as the senior accountable manager in accordance with Part 170;
 - (b) the title or name of any senior person specified in the manual of procedures;
 - (c) the types of flight procedure specified on the organisation's approval; and
 - (d) the system for safety management, if the change is a material change.
- (4) The Executive Director may impose conditions under which the flight procedure design organisation must operate during or following any of the changes specified in subregulation (3).
- (5) The flight procedure design organisation must comply with any condition imposed by the Executive Director under subregulation (4).
- (6) Where any of the changes under subregulation (3) requires an amendment to the flight procedure approval, the flight procedure design organisation must submit the approval to the Executive Director for endorsement of the change as soon as possible.

Cessation of maintenance of flight procedure service

173.05.2 Where a flight procedure design organisation that has been approved by the Executive Director for the maintenance of flight procedure design wishes to discontinue the maintenance of a flight procedure as required under this Part, the organisation must notify the Executive Director in writing of the intention to discontinue the maintenance at least 90 days before the expiry of the procedure's scheduled maintenance period.

Design submission template

173.05.3 A flight procedure design organisation must, when submitting a flight procedure, do so using a template set out in Document NAM-CATS-FPD.bv