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# United ATS QA Implementation in IFPD

*Sorin Dan Onitiu – IFP Chief Designer United ATS*

ICAO MID Workshop IFPs Provision & Safety Oversight

Amman, Jordan, 7-9 Dec 2025

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# UATS Quality Assurance: Consolidated Summary

**UATS QA Framework in the FPDM is built upon:**

1. A formal QMS with defined SOPs and CAPA
2. A proactive SMS with Mandatory SRAs
3. Rigorous Software Validation Methodology (ICAO Doc 9906 Vol. III)
4. Strict Document Control and Revision Management
5. Competency-based Training QA (ICAO Doc 9906 Vol. II)
6. Data integrity and Quality requirements (ICAO Annex 15/PANS AIM)
7. QA embedded in the full Procedure Design chain

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# IFPD Quality Assurance Framework

- United ATS established its own processes and procedures in accordance with the ICAO SARPs, PANS and State's (GACA) Regulatory Framework.
  - High-level guidance: ICAO Doc. 10068 "*Manual on the Development of a Regulatory Framework for IFPDS*"
  - Detailed compliance with KSA eBook Volume 8 and GACAR Part 172 "*Instrument Flight Procedure Services*"
  - Guidance: *Quality Assurance Manual for Flight Procedure design* (Doc. 9906) Series
  - "Control" the quality of the processes associated with the construction of IFPs: Doc. 8168, Vol. II PANS OPS.
- United ATS embeds Quality Assurance throughout the entire IFPD lifecycle by leveraging:
  - Dedicated oversight by the Quality & Safety Manager
  - Integrated Management System (IMS)
  - Continuous review and audits.
- United ATS and GACA maintain an excellent collaborative partnership that reinforces the safety and quality with aligning its processes and documentation to meet GACA's requirements on an initial and ongoing basis.

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# UATS Quality & Safety Policy Framework

United ATS maintains an integrated Quality Management System (QMS) & Safety Management System (SMS) as follows:

### Quality Policy Focus

- Ensuring accuracy, consistency, and standardization across all flight procedure designs.
- Maintaining documentation, audit trails, data integrity, and continual improvement.
- Ensuring all personnel follow the FPD Operation Manual and associated Standard Operating Procedures (SOPs).

### Safety Policy Focus

- Promoting a proactive safety culture.
- Ensuring risk is managed using Safety Risk Assessments mandatory (SRA): (1) New IFPs, (2) Changes in criteria, (3) Automation tool update, (4) Anomalies/non-compliance occur.
- Embedding safety considerations into every phase of the procedure design lifecycle.

# Quality, Health, Safety, and Environmental Policy



## Quality, Safety, and Environmental (QHSE) Policy

**United for Aviation Technology Services Company (United ATS)**

United ATS is fully committed to delivering exceptional, safe, and reliable aviation services through the effective implementation of an **Integrated Management System (IMS)** in line **with ISO 9001:2015, ISO 45001:2018, and ISO 14001:2015 standards.**

**Commitments:**

**United ATS shall:**

1. **Provide effective services** that contribute to a high level of aviation safety through proactive risk identification and mitigation.
2. **Comply with all applicable Laws, Regulations, and Standards**, including but not limited to:
   - ICAO Standards and Recommended Practices (SARPs).
   - Civil Aviation Authority (CAA) Regulations.
   - Commitment to continual improvement of environmental management to enhance environmental performance.
   - Commitment to consultation and participation of workers.
   - Commitment to the protection of the environmental, including prevention of pollution.
   - Relevant national and international publications and documentation.
   - Technical Operations and Aerodrome Requirements.
3. Ensure ongoing **compliance with ISO 9001:2015, ISO 45001:2018, and ISO 14001:2015**, fostering a culture of quality, safety, and environmental stewardship.

**Strategic Objectives:**

Through the active engagement of leadership and staff, United ATS aims to:

1- Build **confidence** among aviation partners, participants, and international clients.

2- Achieve **exceptional performance** across operational, financial, and service domains.

3- Place **Quality, Safety, and Environmental** performance at the core of its service delivery.

4- Ensure **full compliance in internal and external audits** by addressing gaps and adhering to best practices.

5- Stay **at the forefront of aviation technologies** and continuously improve aeronautical systems and services.

6- Enhance the **Skills, Knowledge, and Competencies** of all personnel through structured training and development programs.

7- Deliver **secure, sustainable, and high-quality services** in a timely and efficient manner.

8- Ensure a **Safe and Healthy Work Environment**, committed to zero incidents, injuries, and environmental harm.

**Responsibility & Communication:**

All United ATS personnel are expected to:

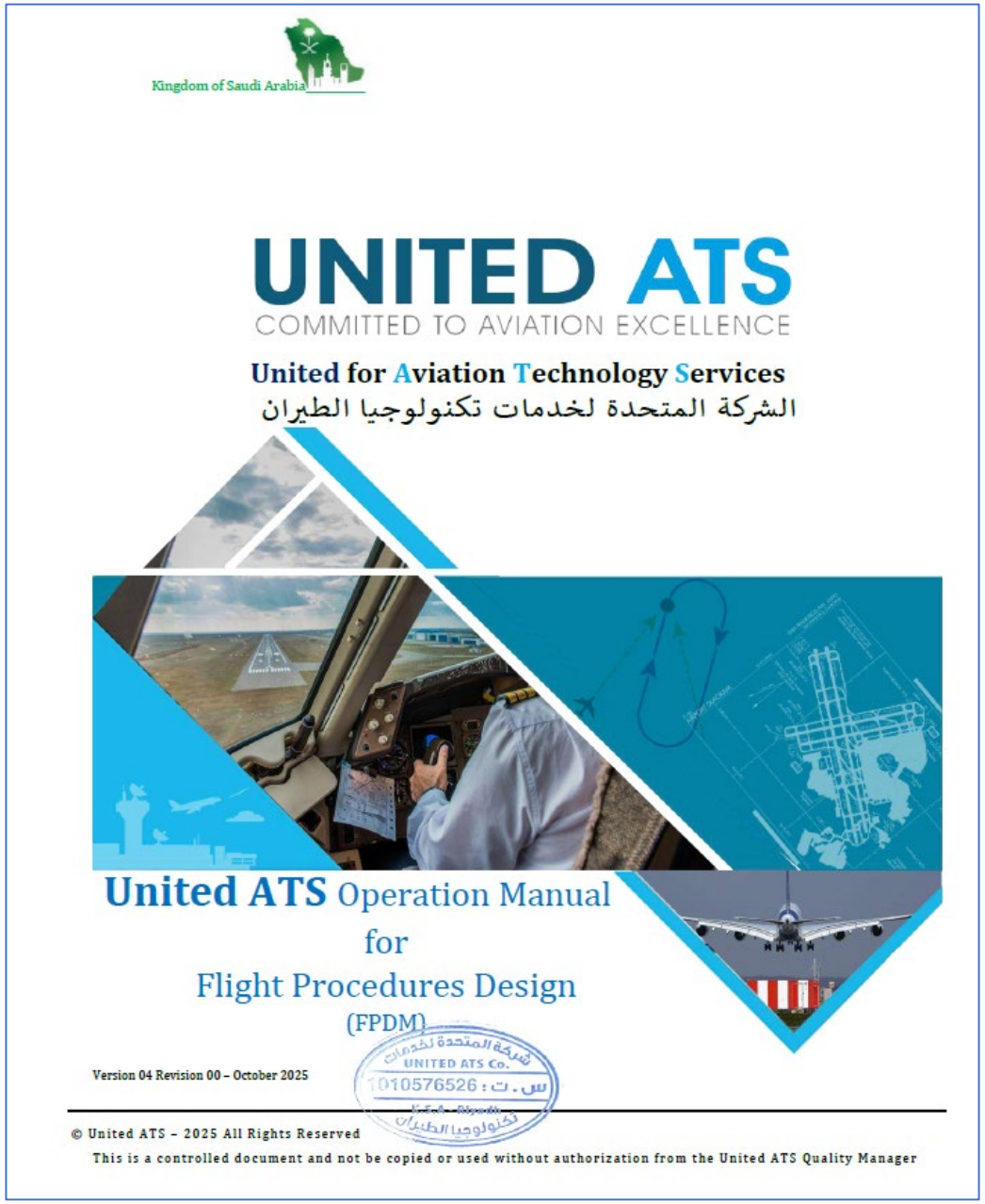
- Adhere to the **Company's Quality, Safety, and Environmental Policy**.
- Comply with the **Integrated Management System (IMS)** Documentation, including manuals, procedures, and SOPs.
- Actively support and contribute to the achievement of our strategic goals.

**Sig.**
*Ashraf Gameel*
*Accountable Executive*

شركة المتحدة لخدمات UNITED ATS Co. 1010576526 س.ت K.S.A - Riyadh تكنولوجيا الطيران

**Sig.**
*Mahmoud Salama*
*Quality and Safety Manager*

# United ATS IFPD Operation Manual



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# UATS QA Roles & Responsibilities (RACI Matrix)

| Role/ Responsibility | IFP Approval | Technical Integrity | Design | Safety Assess | AIS/Survey/ FV support | QMS/SMS Oversight | Audits | Staff Training |
|---|---|---|---|---|---|---|---|---|
| **IFP Director** | **A** | **A** | **A** | **A** | **A** | **A/R1** | **A** | **A** |
| **IFP Chief Designer** | **R1** | **R1** | **R1** | **R1** | **R1** | **R1** | **R1** | **R1** |
| **Quality & Safety Manager** | **I** | **C** | **I** | **R2** | **I** | **R2** (QMS/SMS) | **R2** | **C** (follow up the implementation) |
| **Designers** | **I** | **R2** | **R2** | **C** | **C** | **C** | **C** | **I** |
| **AIS/Survey/FV** | **I** | **R2/C** | **I** | **C** | **R2/C/I** (depending on stage) | **I** | **I** | **I** |

**R** – Responsible (**R1** = Technical authority/ **R2** = Execution responsibility)
**A** - Accountable
**C** - Consulted (SME input required)
**I** - Informed (Kept updated)

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# UATS Quality Assurance – Internal Audits

**Audit Plan:** Applies to all United ATS projects, processes, and Standard Operating Procedures (SOPs) within the IMS, covering audits across both operational and support functions.

## Audit Objectives:

- Verify IMS conformity with ISO 9001:2015, ISO 45001:2018, and ISO 14001:2015 requirements.
- Evaluate the effectiveness of SOPs in achieving QHSE objectives.
- Confirm compliance with GACA regulations and internal policies.
- Identify risks, non-conformities, and opportunities for improvement.
- Ensure effective implementation of corrective and preventive actions (CAPA).

## Audit Process (Key Steps)

1. **Program Development:** Annual audit plan set by the Safety & Quality Manager based on risk and regulatory priorities.
2. **Auditor Selection:** Competent, impartial auditors appointed.
3. **Planning:** Define audit scope, criteria, frequency, and methods.
4. **Execution:** Assess process/SOP conformity through interviews, records, and observations.
5. **Reporting:** Document and classify findings.
6. **Corrective Actions:** Implement and verify corrective actions.
7. **Management Review:** Present results for performance evaluation and improvement.

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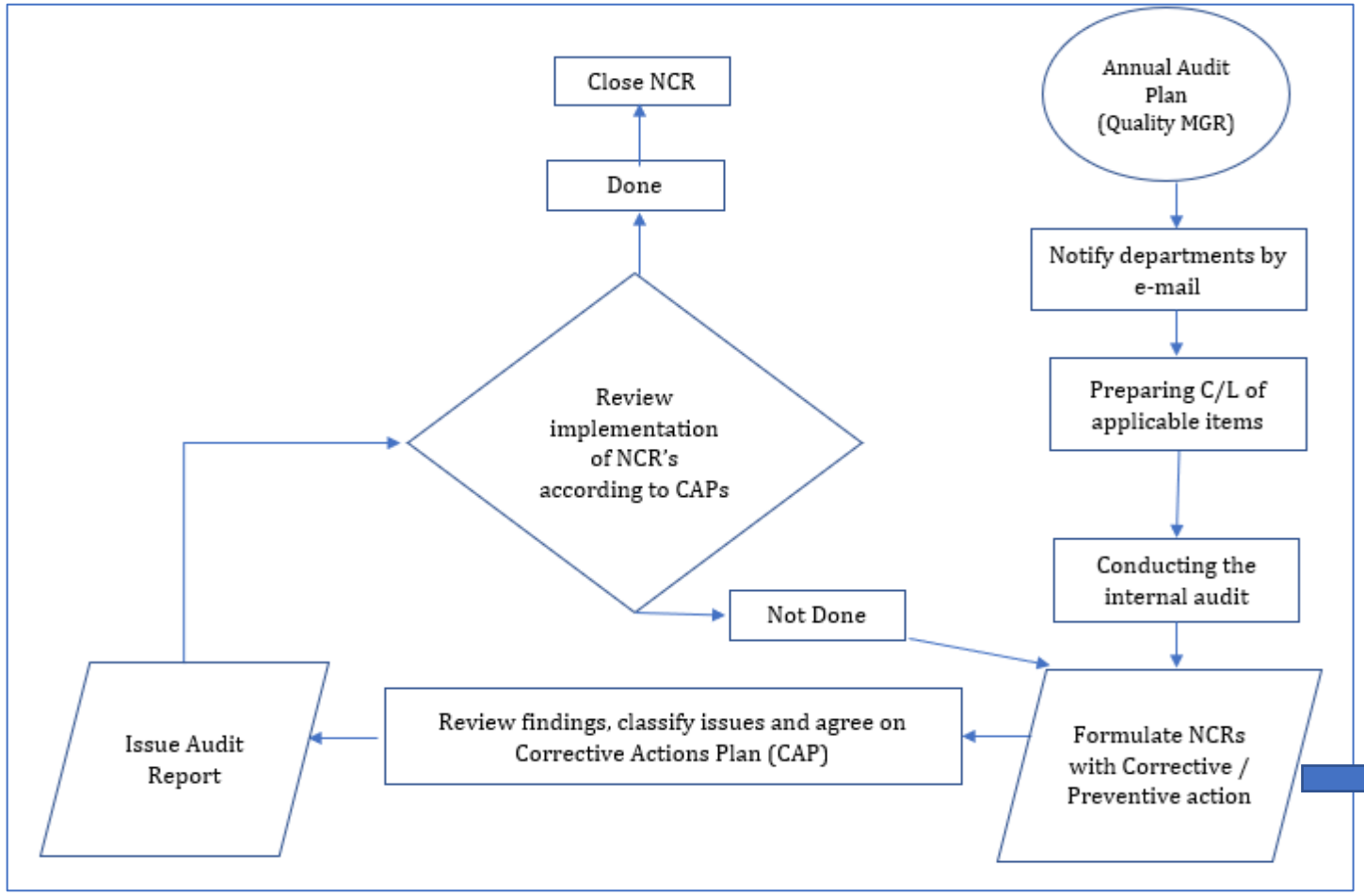
# UATS Quality Assurance – Internal Audits

## Planning and Implementation Flowchart

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**Corrective / Preventive Action**
**No. (UATS-PJ-01-25-KSA)**

**Date**: 25-Aug-25

**Activity/Department**: Projects Department

**Reference**: ☐ Internal Audit ☐ External Audit ☑ Client Comment
☐ Deviation from Project ☐ Deviation from Training ☐ Analyses of Data Output
☐ Management Review ☐ Other _____

**Non-Conformity Description:**

In the Jeddah Tower AWL study (Appendixes A, B, and C), the obstacle assessment specialist used a template for a construction tower crane model without updating its specifications. The drawing incorrectly indicated the requirement for medium-intensity lights, despite the study summary and recommendations clearly stating that high-intensity lights were required. Furthermore, the error was not detected due to the absence of technical double-checking, lack of attention from the Projects Department Manager, and the Safety and Quality Manager.

**Root Cause:**

1. Dependence on a pre-existing model template without proper adjustment to the specific case.
2. Lack of cross-verification among technical specialists, leading to inconsistencies between text recommendations and figures.
3. Inadequate managerial and quality review, as the document was perceived as a draft version.

***Quality and Safety Manager***

Name: Mahmoud Salama

Sign.: _____

**Corrective Action:**

1) Revise the AWL study Appendixes A, B, and C, immediately to correct the crane lighting requirement to high-intensity, ensuring alignment across the text, and recommendations.
2) Resubmit the updated and corrected Appendixes to the client immediately.

**Preventive Action:**

1) Implement a mandatory double-checking for all obstacle assessment studies before managerial approval, ensuring technical accuracy.
2) Develop a technical instruction for the use of templates, mandating that all pre-loaded details must be updated and validated before report finalization.

***Coverage Responsible:***

Name: Capt. Mohamed Ayman – Projects Manager

Suggested Date of Compliance: 01-Sep-25

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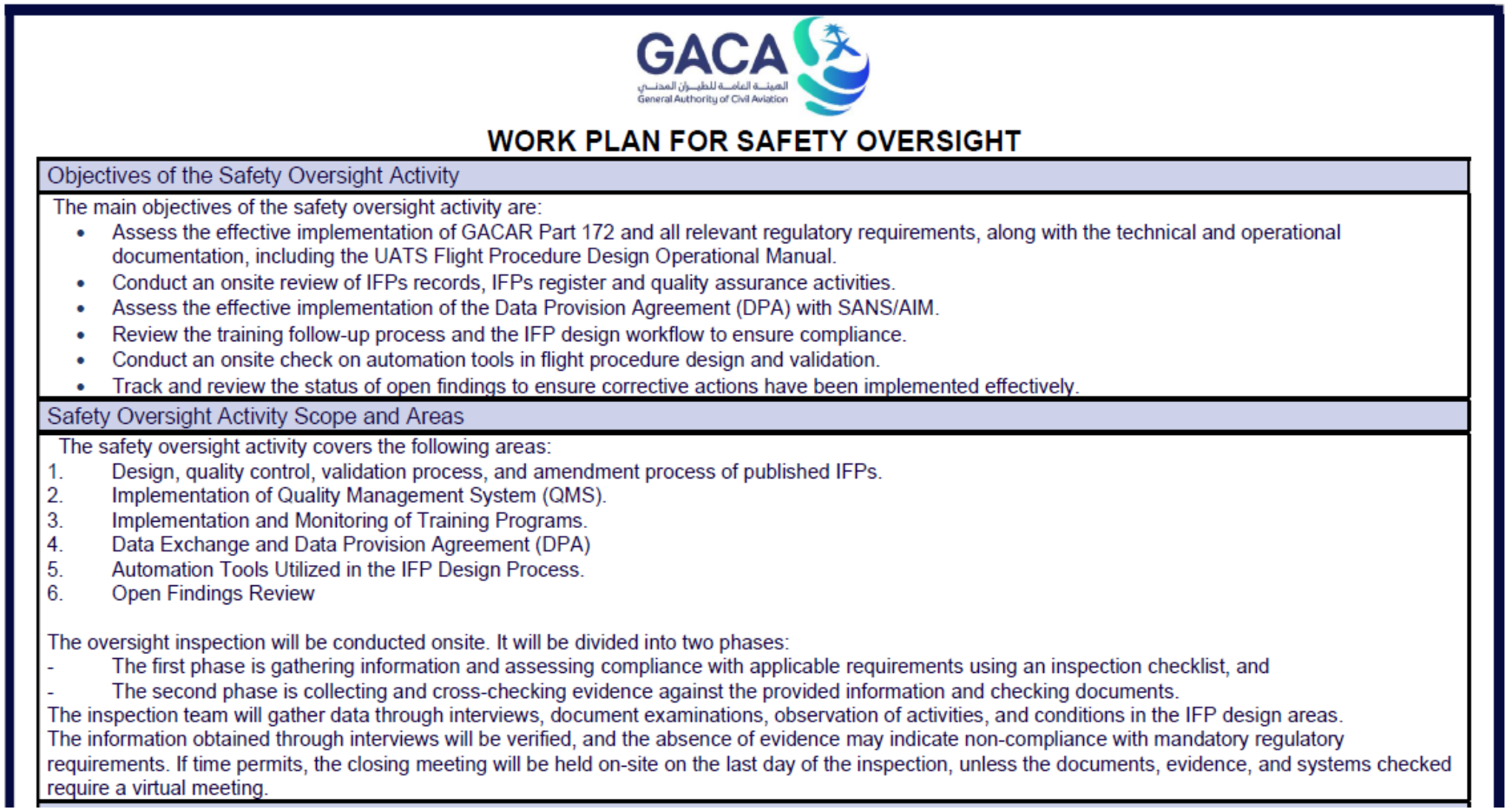
# UATS Quality Assurance – External Audits

- GACA's oversight audits United ATS's quality assurance, helping keep its IFPD services compliant, robust, and continually improving.
- GACA's oversight audits provide guidance that helps United ATS strengthen the quality and safety of its IFP design services.



GACA
General Authority of Civil Aviation

**WORK PLAN FOR SAFETY OVERSIGHT**

| Objectives of the Safety Oversight Activity |
|---|
| The main objectives of the safety oversight activity are:<br>• Assess the effective implementation of GACAR Part 172 and all relevant regulatory requirements, along with the technical and operational documentation, including the UATS Flight Procedure Design Operational Manual.<br>• Conduct an onsite review of IFPs records, IFPs register and quality assurance activities.<br>• Assess the effective implementation of the Data Provision Agreement (DPA) with SANS/AIM.<br>• Review the training follow-up process and the IFP design workflow to ensure compliance.<br>• Conduct an onsite check on automation tools in flight procedure design and validation.<br>• Track and review the status of open findings to ensure corrective actions have been implemented effectively. |
| **Safety Oversight Activity Scope and Areas** |
| The safety oversight activity covers the following areas:<br>1. Design, quality control, validation process, and amendment process of published IFPs.<br>2. Implementation of Quality Management System (QMS).<br>3. Implementation and Monitoring of Training Programs.<br>4. Data Exchange and Data Provision Agreement (DPA)<br>5. Automation Tools Utilized in the IFP Design Process.<br>6. Open Findings Review<br><br>The oversight inspection will be conducted onsite. It will be divided into two phases:<br>- The first phase is gathering information and assessing compliance with applicable requirements using an inspection checklist, and<br>- The second phase is collecting and cross-checking evidence against the provided information and checking documents.<br>The inspection team will gather data through interviews, document examinations, observation of activities, and conditions in the IFP design areas.<br>The information obtained through interviews will be verified, and the absence of evidence may indicate non-compliance with mandatory regulatory requirements. If time permits, the closing meeting will be held on-site on the last day of the inspection, unless the documents, evidence, and systems checked require a virtual meeting. |

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# Flight Procedure Design Software Validation

## Methodology & Coverage

➢ It is a major QA component (S/W acceptance) and an extensive methodology in alignment with ICAO Doc. 9906, Vol. III.

**Validation Methodology:**

1. Initial validation before use.
2. Re-validation, whenever:
   - Software is updated.
   - New criteria are introduced.
   - New functionalities are added.

**Independent Validation:**

- A trained IFPD Validation Team repeats test scenarios independently.
- Developer may provide test datasets, but United ATS remains responsible.

**Validation Coverage includes:**

- Environment & reference system checks
- WGS-84 geodetic calculations
- Magnetic variation checks
- Terrain data integration
- Aeronautical data integration
- Criteria modeling & calculations
- Layout/graphical checks
- ARINC 424 output validation

**Documentation:**

All validation results must be:

- Recorded using forms UATS-FPD-F-121 to FPD-F-138
- Kept on United ATS server for minimum 5 years

**Accountability:**
**Chief Designer:** Technical responsibility; **IFP Director:** Final approval

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# Flight Procedure Design Software Validation

## S/W Validation Plan, Calculations Sample

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### Software Validation Predefined Plan

**Date:** 10-Apr-22

**Purpose:** Re-validation

| Module | Group | Programs | Designer Name: Naeyl Abdel Aziz — Status | Assessment Reply | De |
|---|---|---|---|---|---|
| Common | GIS | Geodesic Conversions | Done | Convert from input for drawing in WGS-84 | A |
| | | Determine a Position | Done | | A |
| | | Coordinate Reference Systems | Done | | A |
| | | Horizontal Datum and geographic coordinates | Done | | A |
| | | Projections | Done | | A |
| | | Euclidean Geometry | Done | | A |
| | | WGS84 | Done | | A |
| | | Determine Bearing and Distance | Done | | A |
| | | Determine an Intersection Point | Done | | A |
| | | Theoretical Magnetic Variation Determination | Done | | A |
| | Database | Data Search and Change | Done | | A |
| | | Database Export | Done | | A |
| | | Database Import (AIXM 4.5 & 5.1) | Done | | A |
| | | Importing Aeronautical Entities | Done | | A |
| | | Importing Obstacles from CSV file | Done | | A |
| | | Loading DTM and Image File | Done | | A |
| | Tools | **Generic Tools** | | | |
| | | Scene Management: Pan, Zoom and Fit View | Done | | A |
| | | Object Management | Done | | A |
| | | Shapefile management | Done | | A |
| | | Print Function | Done | | A |
| | | Grid and Geo borders | Done | | A |
| | | Compass and Magnetic Declination | Done | | A |
| | | Displaying Digital Terrain Models and Raster Images | Done | | A |
| | | Clipping Raster Images | Done | | A |



### Sample for Circling

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**Circling**

**Procedure and Runway Designation:** Circling - RWY 15L

**Purpose:** Re-validation

➢ **Input data**

| Input Data | |
|---|---|
| Category of aircraft | A-D |
| Aerodrome elevation | 2053FT |
| Temperature | 47.5° |
| Type of wind | Cross wind 25kt |
| IAS | 205kt |
| THR coordinates | 24 58 36.60N 046 42 07.24E |
| Bank angle | 20° |

| | Yes | No | Unknown | Out of scope | Comment |
|---|---|---|---|---|---|
| **Input Data** | | | | | |
| Category of aircraft | ✔ | | | | |
| Aerodrome elevation | ✔ | | | | |
| Temperature | ✔ | | | | |
| Type of wind | ✔ | | | | |
| IAS | ✔ | | | | |
| THR coordinates | ✔ | | | | |
| Bank angle | ✔ | | | | |

➢ **Output data**

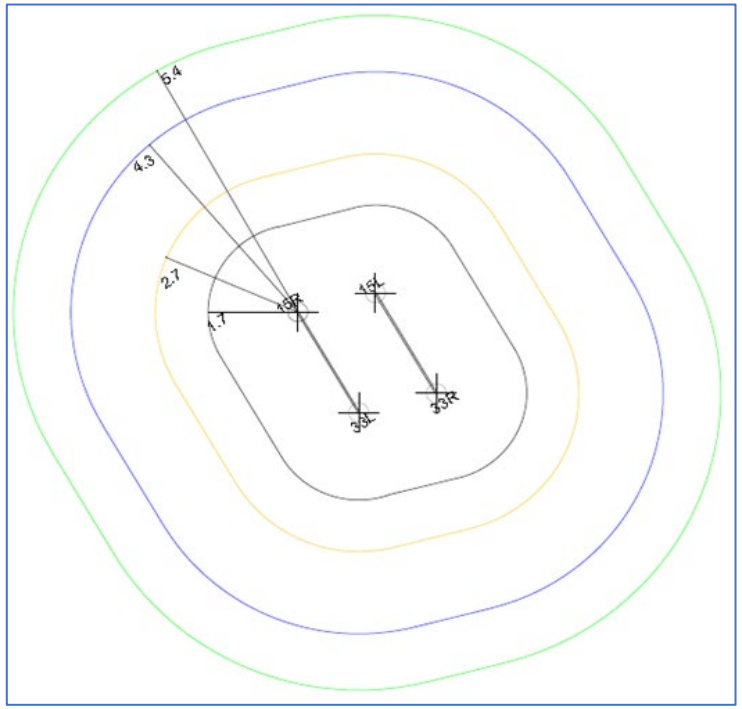
| Aircraft CAT | A | B | C | D | E |
|---|---|---|---|---|---|
| Output data | | | | | |
| V + W/V (kt) | 132.36 | 169.94 | 218.26 | 245.10 | 282.67 |
| R (°/s) | 3.00 | 2.34 | 1.82 | 1.62 | 1.41 |
| r (NM) | 0.70 | 1.16 | 1.91 | 2.41 | 3.20 |
| S SEG (NM) | 0.30 | 0.40 | 0.50 | 0.60 | 0.70 |
| Radius from THR (NM) | 1.70 | 2.71 | 4.31 | 5.41 | 7.10 |
| Radius from THR (Km) | 3.15 | 5.02 | 8.00 | 10.02 | 13.15 |

The inconsistency in units between NM and km must be noted in the check

| Output Data |
|---|
| TAS |
| Turn radius |
| Wind velocity |
| Radius from threshold |

| A/C CAT | IAS | AD+1000ft | K factor | TAS | R rate of turn | r Radius of turn | Straight Segment | R from THR | | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | 100 | 3053 | 1.073643433 | 132.3643 | 3 | 0.701932123 | 0.3 | 1.703864247 | Bank Angle | 20 |
| B | 135 | 3053 | 1.073643433 | 169.9419 | 2.338091857 | 1.156336329 | 0.4 | 2.712672658 | Wind | 25 |
| C | 180 | 3053 | 1.073643433 | 218.2558 | 1.820522774 | 1.907282731 | 0.5 | 4.314565462 | VAR | 15 |
| D | 205 | 3053 | 1.073643433 | 245.0969 | 1.621153434 | 2.405243601 | 0.6 | 5.410487202 | | |





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# Flight Procedure Design Software Validation

## S/W Validation: PANS OPS Amendment 10 Criteria

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### 11. Mitigation Measures

Risk control/mitigation measures should be developed to eliminate the potential hazard or to reduce the probability of the risk or the severity of the consequence if the risk is considered to be tolerable to a level acceptable to GACA.

| Type of Activity | Generic Hazard | Specific components of the hazard | Hazard-related consequences | Existing defenses to control risk(s) and risk index | Additional action to reduce risk(s) and resulting risk index | Responsible |
|---|---|---|---|---|---|---|
| Instrument Flight Procedure Design | Deviation from new ICAO amendment 10 criteria for design of flight procedures. | **HAZ-01:** Design issue of Radius to Fix protection area. | Protection area design issue for PBN to xLS results in wrong obstacle evaluation. | Design manually the protection areas using FPDAM tools.<br><br>Draw manually the protection areas of side surface using CAD tools and apply the correct methodology.<br><br>**Risk index: 3D**<br>**Low risk** | Extend XX OAS surfaces ATT prior the FAP WP.<br><br>The side surfaces to continue beyond FAF WP.<br><br>The primary edge of secondary areas stops at splay of 30° to LOC course.<br><br>Apply the manual evaluation for Primary and Secondary protection areas.<br><br>**Risk index: 4D**<br>**Low risk** | UATS IFP director, Chief Designer and qualified designer, UATS safety Accountable. |
| Instrument Flight Procedure Design | Deviation from new ICAO amendment 10 criteria for design of flight procedures. | **HAZ-02:** Design issue of Missed approach criteria after xLS procedures. | Protection area design issue for PBN to xLS after MA results in wrong obstacle evaluation. | Manual design of the protection areas using FPDAM tools.<br><br>Manual design using CAD tool and apply the side\flat-surface correct methodology.<br><br>**Risk index: 4D**<br>**Low risk** | Create surfaces using CAD tools to cover the missing portion of protection areas and surface extensions.<br><br>Apply the manual evaluation for Primary protection areas or Secondary protection areas<br><br>**Risk index: 5D**<br>**Low risk** | UATS IFP director, Chief Designer and qualified designer, UATS safety Accountable. |
| Instrument Flight Procedure Design | Deviation from new ICAO amendment 10 criteria for design of flight procedures. | **HAZ-03:** Design issue of GBAS CAT II and III criteria. | GBAS CAT II and III protection areas cannot be evaluated for obstacles. | CAT II Design can be obtained by using ILS CAT. II values and a phantom ILS point.<br><br>**Risk index: 4D**<br>**Low risk** | Manual design using CAD tool for the side and flat-surfaces correct methodology.<br><br>**Risk index: 5D**<br>**Low risk** | UATS IFP director, Chief Designer and qualified designer, UATS safety Accountable. |

Issue no.:
24-Nov-24

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# Flight Procedure Design Software Validation

## S/W Validation: EASA Safety Directive 2025-02

- Identifies a software error causing possible incorrect (too low) OCA/H on non-precision approaches.
- Directs NCAs and FPD providers to correct affected flight procedures and stop using the faulty software versions.

EASA
European Union Aviation Safety Agency

### Safety Directive

**SD No.:** 2025-02

**Issued:** 20 November 2025

Note: This Safety Directive (SD) is issued by EASA, acting in accordance with Art. 76(6)(b) of Regulation (EU) 2018/1139, reacting to an urgent safety problem.

**Subject:** Flight Procedure Design software used in the calculation of final approach minima for non-precision approaches

Effective Date: 25 November 2025

Supersedure: None

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**Applicability:**
National Competent Authorities (NCAs) responsible for certification and oversight of Flight Procedure Design (FPD) service providers in accordance with Regulation (EU) 2017/373 and/or Air Traffic Services (ATS) providers who contract the services of FPD service providers.

**Definitions:**
**"FPDAM":** Flight Procedure Design and Management (FPDAM) software, used for the Aeronautical Information Management (AIM) task of flight procedure design. This software is designed and provided by IDS AirNav.

**OCA/H:** Obstacle Clearance Altitude/Height.

**SDF:** Step Down Fix.

**Affected service providers:** Those FPD service providers who use the referenced software and those ATS providers who contract the services of an FPD service provider who uses the referenced software.

**Reason:**
The Dutch Competent Authority, ILT Aviation Authority, issued a safety directive in accordance with ATM/ANS.AR.A.030 of Annex II (Part-ATM/ANS.AR) to Regulation (EU) 2017/373 as an immediate

| NPA (SDF in FINAL) | RED SEA AIRPORT | Published OCA | Current C.O location | SDF | | Controlling Obst (Final SDF-THR) | | | Resulting OCA | Procedure ALT @ OBST | Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Position | Altitude | Position | Elevation | MOC | | | |
| PUBLISHED | RNP RWY 15L | 610' | Missed App | 3NM from THLD | 1170' | 3.3NM from THLD | 183.73' | 246' | 430' | 1250' | OCA value of 610' is generated by Tower crane C.O located in MA segment. Hence, no impact. |
| | RNP RWY 33R | 610' | Missed App | 3NM from THLD | 1170' | 1NM from THLD | 377.19' | 79.15' | 460' | 540' | OCA value of 610' is generated by Tower crane C.O located in MA segment. Hence, no impact. |
| | VOR RWY 15L | 600' | Final | 3NM from THLD | 1140' | 3.1NM from THLD | 398.12' | 246' | 600' | 1174' | OCA value of 600' is safe and the C.O close to SDF is cleared by the descent plan. Hence, no impact. |

| NPA (FAF) | RED SEA AIRPORT | Published OCA (ft) | Current C.O location | FAF | | Controlling Obst | | | Resulting MOCA | Procedure ALT @ OBST | Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Position | Altitude | Position | Elevation | MOC | | | |
| PUBLISHED | RNP RWY 15L | 610' | Missed App | 5NM from THLD | 1800' | 5.2NM from THLD | 452.41' | 175.37' | 630' | 1848' | There is no impact on the published OCA, as sufficient clearance exists between the procedure altitude and the controlling obstacle + MOC, which can be disregarded as it is higher |
| | RNP RWY 33R | 610' | Missed App | 5.6NM from THLD | 2000' | 5.5NM from THLD | 390.12' | 246' | 640' | 1894' | |
| | VOR RWY 15L | 600' | Final | 5.7NM from THLD | 2000' | 5.4NM from THLD | 479.55 | 246' | 730' | 1818' | |
| | VOR RWY 33R | 600' | Final | 5.6NM from THLD | 2000' | 5.8NM from THLD | 465.88' | 231.65' | 700' | 2075' | |
| | LOC RWY 15L | 570' | Final | 5NM from THLD | 1800' | 4.7NM from THLD | 387.14' | 246' | 640' | 1871' | |
| | LOC RWY 33R | 590' | Final | 5.6NM from THLD | 2000' | 5.9NM from THLD | 475.72' | 246' | 730' | 2090' | |

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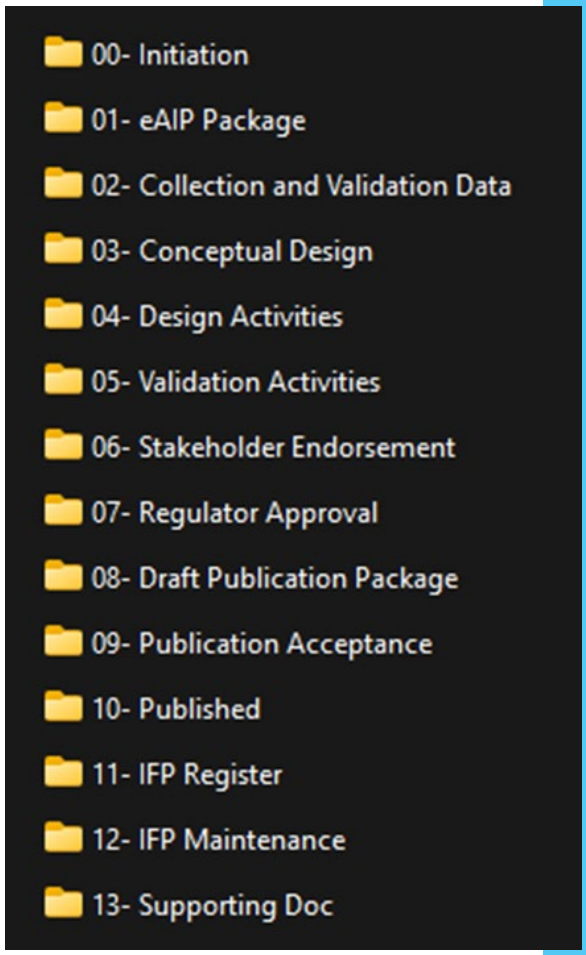
# Quality Assurance – Documentation & Archiving

- United ATS delivers a complete flight procedure design package for the Client's AIP submission.
- Submitted documentation thru Email & hyperlink to the Client including survey data, charts, maps, obstacles, design drawings, and explanation documents.
- Full IFPD design records — data verification, reports, amendments, validation, justification, promulgation, and maintenance — are retained for (at least) five (5) years after withdrawal.
- All archived design work is kept indefinitely, with unlimited long-term support.
- Electronic design files, charts, and documents are stored in the UATS-IFPD Project backup server
- Weekly data backups are made to external storage and United ATS SharePoint.
- The qualified designer prepares all documentation; Chief Designer checks and approves it.
- A controlled document identification system is used, following QPM procedures.



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# UATS Training Quality Assurance

**Goal:** Quality Assurance over Training ensures designers meet ICAO Doc 9906 Vol. II competency requirements.

**Responsibility**: (1) Chief Designer (content accuracy, resource planning) and (2) Q & S Manager (System Compliance)

## Training Process

- Training ensures compatibility between QA requirements and trainee competency to meet ICAO quality standards.
- All types of IFPD training are interdependent and considered when planning optimal training paths (in-house: Training Department/ICAO TRAINAIR Plus).
- Course duration is based on a competency-based plan, with long courses split into shorter phases when needed.
- The annual training plan accounts for upcoming certificate renewal, resource growth by onboarding external or internal (development plan), and targeted skill enhancement to support expanding business demands—ranging from seaplane and helicopter visual procedures, HEL PinS and airspace studies for construction and new airport proposals.
- On-the-job training is essential, with its duration depending on initial training performance standards.

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# UATS Training Quality Assurance

## Training Phases

- AB INITIO Training
- Initial Training
- On-Job Training (OJT)
- Advanced Training I.
- On-Job Training – Advanced I
- Advanced Training II
- On-the-Job Training – Advanced II
- Advanced Training III
- Recurrent Training
- Refresher Training (e.g., PANS OPS, V2 Amdt. 10)

## ICAO References used in the Training

- Doc. 8168, Procedures for Air Navigation Services Aircraft Operations, Vol I & Vol. II "*Construction of Visual and Instrument Flight Procedures";*
- Doc. 8697 "*Aeronautical Chart Manual*";
- Doc. 9365 "*Manual of All-Weather Operations*";
- Doc. 9613 "*Performance Based Navigation Manual*";
- Doc. 9905 "*Required Navigation Performance Authorization Required (RNP AR)*";
- Doc. 9906 "*Quality Assurance Manual for Flight Procedure Design",* Vol II.

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# UATS Training Quality Assurance

## Training Record Methodology

Training records must be:

- Legible/readable, accurate, permanent, traceable
- Standardized (Forms UATS-FPD-F-TR..)
- Stored securely (electronic)
- Hyperlinks to Certificates and CVs to ensure traceability, expiration, etc.

**IFPD Training Record**

Note:
The training record sheet includes links to all PANS-OPS individuals' resumes and their training certifications.

| Name (Linked with CV) | Date of Hiring/ KSA | Post Title | PANS-OPS Status (Select from Dropdown List) | Ab Initio/Initial PANS-OPS | | | PANS-OPS OJT | | | PANS-OPS RECURRENT 1 | | | Expiry Date (Linked with Training Plan) | PANS-OPS RECURRENT 2 | | Expiry Date (Linked with Training Plan) | PANS-OPS RECURRENT 3 | | | Expiry Date (Linked with Training Plan) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sorin Dan Ositiu | 01-Apr-24 | IFP Chief Designer | Chief Designer | Institut Par GPS Navigation | 7-Nov-97 | | | | | ICAO | 15-Aug-24 | | 14 Aug 27 | United ATS | 02-Oct-24 | 1 Oct 27 | | | | |
| | | | | DPS Training Academy | 10-Jan-96 | 21-Jan-96 | | | | | | | | | | | | | | |
| Hamid Hamouni | 01-Aug-22 | Qualified Designer | Qualified Designer | ENAC 1 | 10-Jan-05 | 11-Feb-05 | IDS | 30-Apr-19 | 3-Jun-19 | United ATS 2 | 01-Aug-22 | 03-Aug-22 | 2 Aug 25 | ICAO | 15-Aug-24 | 14 Aug 27 | United ATS | 02-Oct-24 | | 1 Oct 27 |
| | | | | ENAC 2 | 16-May-05 | 20-May-05 | United ATS 1 | 2-Apr-22 | 20-Jul-22 | | | | | | | | | | | |
| Nasrl Essa | 04-Dec-21 | AIM Manager | Qualified Designer | DFS Deutsche Flugsicherung | 17-Nov-97 | 28-Nov-97 | ICAO | 29-Sep-02 | 3-Oct-02 | WX - Switzerland 1 | 05-Jun-05 | 12-Jun-05 | 11 Jun 08 | United ATS | 02-Oct-24 | 1 Oct 27 | | | | |
| | | | | | | | United ATS 1 | 5-Dec-21 | 3-Mar-22 | United ATS 2 | 01-Aug-22 | 03-Aug-22 | 2 Aug 25 | | | | | | | |
| Abdelhammed Magdy | 01-May-19 | Qualified Designer | Qualified Designer | United ATS 1 | 23-Jan-18 | 5-Feb-18 | United ATS 3 | 7-Mar-21 | 21-Jun-21 | United ATS 5 | 25-Jul-21 | 25-Jul-21 | 24 Jul 24 | ICAO | 15-Aug-24 | 14 Aug 27 | United ATS | 02-Oct-24 | | 1 Oct 27 |
| | | | | United ATS 2 | 10-Jan-21 | 4-Mar-21 | United ATS 4 | 26-Mar-23 | 8-Jun-23 | | | | | | | | | | | |
| Abdalla Elsayed | 01-May-19 | Qualified Designer | Qualified Designer | United ATS 1 | 23-Jan-18 | 5-Feb-18 | United ATS 3 | 7-Mar-21 | 21-Jun-21 | United ATS 5 | 25-Jul-21 | 25-Jul-21 | 24 Jul 24 | ICAO | 15-Aug-24 | 14 Aug 27 | United ATS | 02-Oct-24 | | 1 Oct 27 |
| | | | | United ATS 2 | 10-Jan-21 | 4-Mar-21 | United ATS 4 | 26-Mar-23 | 8-Jun-23 | | | | | | | | | | | |
| Yasir Mohammed Ahmed | 01-Jun-24 | Qualified Designer | Qualified Designer | ENAC | 14-Oct-11 | | CDX | Jul-12 | Dec-16 | CDX | 01-Jul-12 | 01-Dec-16 | 1 Dec 19 | ICAO | 15-Aug-24 | 14 Aug 27 | United ATS | 02-Oct-24 | | 1 Oct 27 |
| | | | | TIS | 21-Jan-10 | | | | | | | | | | | | | | | |
| | | | | TIS | 26-Nov-09 | | | | | | | | | | | | | | | |
| Osman Mustafa | 01-Jun-24 | Qualified Designer | Qualified Designer | ENAC | 18-Oct-13 | | CDX | Jul-12 | Dec-16 | ENAC | 27-Jan-15 | 29-Jan-15 | 28 Jan 18 | ICAO | 15-Aug-24 | 14 Aug 27 | United ATS | 02-Oct-24 | | 1 Oct 27 |
| | | | | | | | | | | CDX | 11-Dec-19 | 24-Dec-19 | 23 Dec 22 | | | | | | | |
| | | | | | | | | | | CDX | 01-Jul-12 | 01-Dec-16 | 1 Dec 19 | | | | | | | |

Excel Sheet

**Note**: The training record sheet includes links to all PANS-OPS individuals' resumes and their training certifications.

# UATS Training Quality Assurance

## Training Record: IFPD Annual Plan (example)

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**PANS-OPS Team Annual Training Plan**

**Year ____2025_____**

| Course Title | Attendees Name | Training Authority | January | February | March | April | May | June | July | August | September | October | November | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GéoTITAN Software Training | Hamid Hamouni<br>Abdalla Elsayed<br>Abdelhameed Magdy<br>Nayel Abdelaziz<br>Douha Diaa<br>Ala' Ahmed | United ATS | | | | | | | | | | | | |
| New GV tools package | Nayel Abdelaziz | United ATS | | | | | | | | | | | | |
| Advanced PANS OPS II & III (Baro VNAV) and OJT | Abdalla Elsayed<br>Abdelhameed Magdy<br>Osman Mostafa<br>Yasir Mohamed | United ATS | | | | | | | | | | | | |
| Advanced PANS I & II (Conv SID/STAR/IAPs) and OJT | Hamid Hamouni | United ATS | | | | | | | | | | | | |
| Recurrent HEL PinS | Hamid Hamouni<br>Osman Mostafa<br>Yasir Mohamed<br>Abdalla Elsayed<br>Abdelhameed Magdy | United ATS | | | | | | | | | | | | |
| CAD Tool Training | Hamid Hamouni<br>Abdalla Elsayed<br>Abdelhameed Magdy<br>Nayel Abdelaziz<br>Osman Mostafa<br>Yasir Mohamed<br>Douha Diaa<br>Ala' Ahmed<br>Abdel-Rahman Salhen<br>Malik Alghamdi | United ATS | | | | | | | | | | | | |
| Refresher HEL PinS | Sorin-Dan Onitiu | | | | | | | | | | | | | |
| Safety Management System Training | Hamid Hamouni<br>Abdalla Elsayed<br>Abdelhameed Magdy<br>Nayel Abdelaziz<br>Osman Mostafa<br>Yasir Mohamed<br>Douha Diaa<br>Ala' Ahmed<br>Abdel-Rahman Salhen<br>Malik Alghamdi | United ATS | | | | | | | | | | | | |
| Initial PANS OPS | Abdel-Rahman Salhen<br>Malik Alghamdi | United ATS | | | | | | | | | | | | |
| PANS-OPS OJT | Abdel-Rahman Salhen<br>Malik Alghamdi<br>Douha Diaa<br>Ala' Ahmed | United ATS | | | | | | | | | | | | |
| Advanced training for PANS OPS v2, Amdt. 10 "GéoTITAN Tool" | Osman Mostafa<br>Yasir Mohamed | CGX AERO | | | | | | | | | | | | |

**Prepared by**
**Quality and Safety Manager**

**Reviewed by**
**IFP Chief Designer**

**Approval by**
**IFPD Director**

UATS-FPD-F-TR PL

Annual Plan Completion Rate: **81%**

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# UATS Training Quality Assurance

**Example of Recurrent Training situation**

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to Doc 81

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## Amendment 10

***Objective:*** Recur
ame

***Condition:*** In the

***Attendance:*** Qu

***Scope:*** Updates of

***Criteria:*** Based on

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TRAINAIR PLUS
ICAO ASSOCIATE

## Amendment 10 of Doc 8168

### Immediate Objectives

- By the end of the course the trainee will be familiarized with Amdt. 10
- Understand and Determine the differences to the current published criteria.

PPT 1. 3

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# Data Integrity and Quality Requirements

- Before data enters the design process:
  - Must be validated against ICAO data quality requirements
  - If incomplete or low-quality → must be replaced or verified
  - Possible validation methods:
    - Comparison with control points
    - Buffers & tolerances
    - Survey confirmations
    - Cross-checking with certified data sources

**UATS:** The agreement sets UATS's role as Data Originator in supplying and maintaining accurate aeronautical and procedure data for SANS.

**SANS:** The agreement defines SANS's responsibility to manage, validate, and publish the data provided by UATS.

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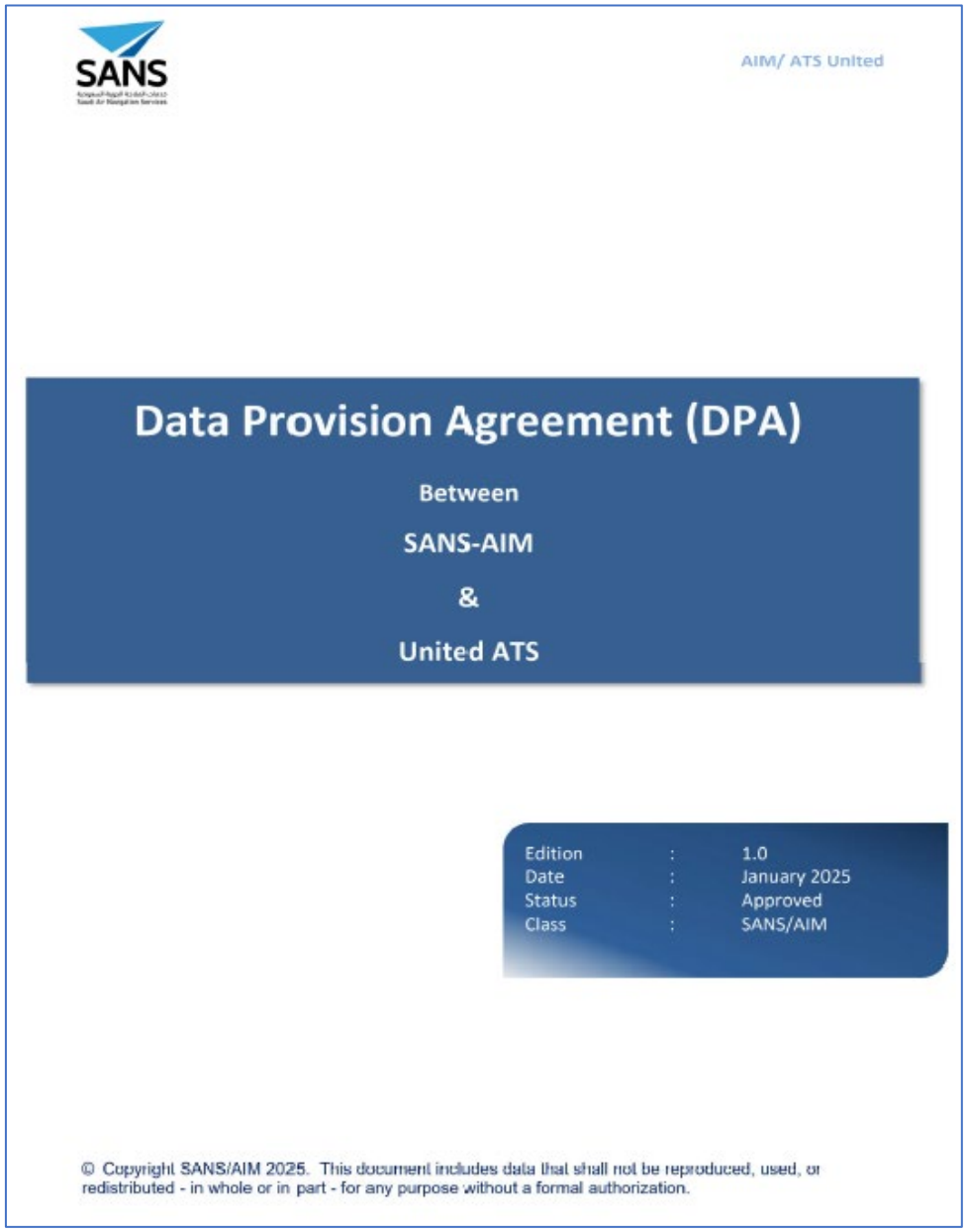
# Data Integrity and Quality Requirements

**SANS:** The agreement defines SANS's responsibility to manage, validate, and publish the data provided by UATS.

**SANS Provided Services:**

- In case of UATS IFP project, following data categories are delivered upon request:
  - Aerodrome Data
  - Airspace Data
  - Special Use Airspace
  - ATS Routes
  - Nav Aids
  - Obstacle Data
- Compliance with PANS AIM Aeronautical Data Set quality attributes
- AIXM format




**UATS**: The agreement sets UATS's role as Data Originator in supplying & maintaining accurate aeronautical and IFP data for SANS.

**UATS Provided Services:**

- ATS and IFPs data package (new or updated)
- Compliance with PANS AIM Aeronautical Data Set quality attributes
- All data submitted as AIXM files
- Draft Charts are quality checked and confirmed for publication.

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# Data Integrity and Quality Requirements

## Design: Obstacle & Terrain Cross-Analysis

- Obstacle clearance review is mandatory during GV and must be performed by an authorized designer not involved in the original design.
- GV verifies that controlling obstacles and all obstacles influencing the design are correctly identified, highlighted, and documented.
- In the Terrain & Obstacle context, GV package include:
  - Detailed obstacle & terrain mapping (plan view with obstacles, contours, and final approach obstacle evaluation template).
  - Minimum altitudes per segment derived from map studies and obstacle data.
- Pre-Flight Validation (part of GV) ensures:
  - Correct obstacle identification and evaluation.
  - Proper relationship between IFP design, terrain, obstacles, and segment MOCA.
- **KSA Vegetation Case Study**: To evaluate the application of vertical & horizontal tolerances in alignment with ICAO requirements.

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4.1.3.8 Based on the **Case Study: Vertical Accuracy/Vegetation Tolerance to be Applied during IFP Design** conducted by United ATS and Best Survey Practices utilized by the Company, the following Vertical Buffers associated with the Terrain & Obstacle Digital Data will be added to the surveyed height as follows:

| Type of Object | Vertical Buffer (m) |
|---|---|
| DTM | Survey Accuracy, but not less than 3m |
| DEM | Survey Accuracy, but not less than 3m |
| DSM | Survey Accuracy, but not less than 5m |
| SRTM | Survey Accuracy, but not less than 16m |
| Identified Vegetation Area 1 & 2 as part of DEM or DSM (compact area) | Penetration level + reported Survey Accuracy |
| Identified Vegetation Area 1 & 2 as obstacle (single tree, hedge, or small polygons technique – refer to paragraph 8.7) | Reported Survey Accuracy |
| Obstacles Area 1 | Reported Survey Accuracy (see Note [1]) |
| Obstacles Area 2 (including 2a, 2b, 2c, 2d, T/O flight path area & OLS) | Reported Survey Accuracy (see Note [1]) |
| Obstacles Area 3 | Reported Survey Accuracy (see Note [1]) |
| Obstacles Area 4 | Reported Survey Accuracy (see Note [1]) |

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# Quality Assurance – IFPD Development Process

## Assignment, Work Order, Statement

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**DESIGN AND DEVELOP**

| ORDER NUMBER | OERS-IFPD-2025-01 | ORDER DATE | 20-Feb- |
|---|---|---|---|
| PROJECT NAME | IFPs Design Maintenance 2025 for Red Sea Interr | | |

REQUIRED ACTION

| Task Description |
|---|
| Complete maintenance work of OERS IFPs package based on |

ADDITIONAL COMMENTS

The work will collaborative between the two IFPD qualified experts v
The expected date above is for finalization of the design itself (co
coordinate GV activity and draft Charts, respectively.

| Assigned BY | Sorin Dan Onitiu | PRIORITY |
|---|---|---|

LIST ALL INDIVIDUALS RESPONSIBLE FOR REVIEWING / PROOFING

| | |
|---|---|
| Capt. Nayel Essa | GV |
| Mr. Yasser Mohamed | Co |
| Capt. Nayel Essa | Co |

| WORK AUTHORIZED BY | Sorin Dan Onitiu |
|---|---|

DELIVERY S

| WORK DESCRIPTION |
|---|
| |

| WORK COMPLETED BY | | DATE DELIVE |
|---|---|---|

Form Code: UATS-FPD-F-108 Ver. 03 Rev. 04 Dat

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Date: 20-Feb-25

**Subject**: Authorization and Delegation Letter

**Role**: Maintenance IFPs 2025

**Project Name**: Red Sea International Airport (OERS)

**Dear Mr. Hamid,**

I am writing to officially authorize and delegate you to p

Sea International Airport (OERS) according to UATS sch

For the overall task, you will be teaming with Mr. Ab

support.

Many thanks for your constant commitment and I wis

improvements in this area.

Sincerely,

**Sorin Dan Onitiu**
IFP Chief Designer

United ATS

Registered in KSA, Al Malqa District, Riy
Tel.: +966(0)1140681
email: info@unitedа

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**IFPs Statement for Qualified Designers**

Date: 18-Nov-25

**Re: Compliance with GACAR Part 172 Appendix A II - Written Statement for Qualified Designers:**

**I Sorin Dan Onitiu**, in my capacity as the **Chief Designer at United for Aviation Technology Services (United ATS)**, am writing to fulfill the requirements stipulated in **GACAR Part 172 Appendix A II (d)** regarding the provision of a written statement for our qualified designer, **Mr. Abdelhameed Magdy**.

In accordance with the aforementioned regulation, I hereby provide the necessary information for **Mr. Abdelhameed Magdy**, who is engaged in the IFPs design of **Mukamalah Airports (9 Airports)** to validate the following types of procedures:

1- Pump Station 6 Airport (OEPF) types of Procedures:
   - RNP RWY 17
   - RNP RWY 35
2- Pump Station 10 Airport (OEPJ) types of Procedures:
   - RNP RWY 18
   - RNP RWY 36
3- Shaibah Airport (OESB) types of Procedures:
   - RNP RWY 09
   - RNP RWY 27
   - RNP1 SID RWY 09
   - RNP1 SID RWY 27
   - RNP1 STAR RWY 09
   - RNP1 STAR RWY 27
4- Ras Tanura Airport (OERT) types of Procedures:
   - RNP RWY 15
   - RNP RWY 33
5- Ras Tanajib Airport (OETN) types of Procedures:
   - RNP RWY 15
   - RNP RWY 33
   - RNP1 SID RWY 15
   - RNP1 SID RWY 33
   - RNP1 STAR RWY 15
   - RNP1 STAR RWY 33
6- Harad Airport (OEHR) types of Procedures:
   - RNP RWY 16
   - RNP RWY 34
7- Al Hawtah Airport (OEHW) types of Procedures:
   - RNP RWY 15
   - RNP RWY 33
8- Pump Station 3 Airport (OEPC) types of Procedures:
   - RNP RWY 14
   - RNP RWY 32
9- Khurais Airport (OEKN) types of Procedures:
   - RNP RWY 16
   - RNP RWY 34

These are the specific types of procedures for which Mr. Abdelhameed is approved to validate. Additionally, there are no limitations or supervision requirements applicable to Mr. Abdelhameed in his capacity as a validator, and he is not approved to supervise other design staff at this time.

I have reviewed Mr. Abdelhameed' s qualifications and confirm that he is a qualified designer as per the requirements outlined in GACAR Part 172 Appendix A II.

This written statement is provided to you in compliance with the regulations, and I am available for any further inquiries or documentation that may be required to ensure compliance with GACAR Part 172.

**Sorin Dan Onitiu**
IFPs Chief Designer

Registered in KSA, Al Malqa District, Riyadh, Anas Ibn Malek St. 2992 Business Park, office 102
Tel.: +966(0)114068141, +966(0)540308855 and +966(0)545805452

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(United ATS)

Statement

zation

ical background has been reviewed, and you have successfully passed
ed by the Chief Designer. This assessment has been reviewed in

continue as a qualified Procedure Designer and are eligible to design

rtures

9. APV/Baro VNAV Approach Procedure
10. HEL ~~PinS~~ Approach
11. Base turn (reversal)
12. Racetrack (reversal)
13. MSA (Conventional & RNAV).
14. Conventional / RNAV / RNP Holding Procedures.
15. VOR/DME with holding overhead procedure.

ent to excellence in procedure design and look forward to your

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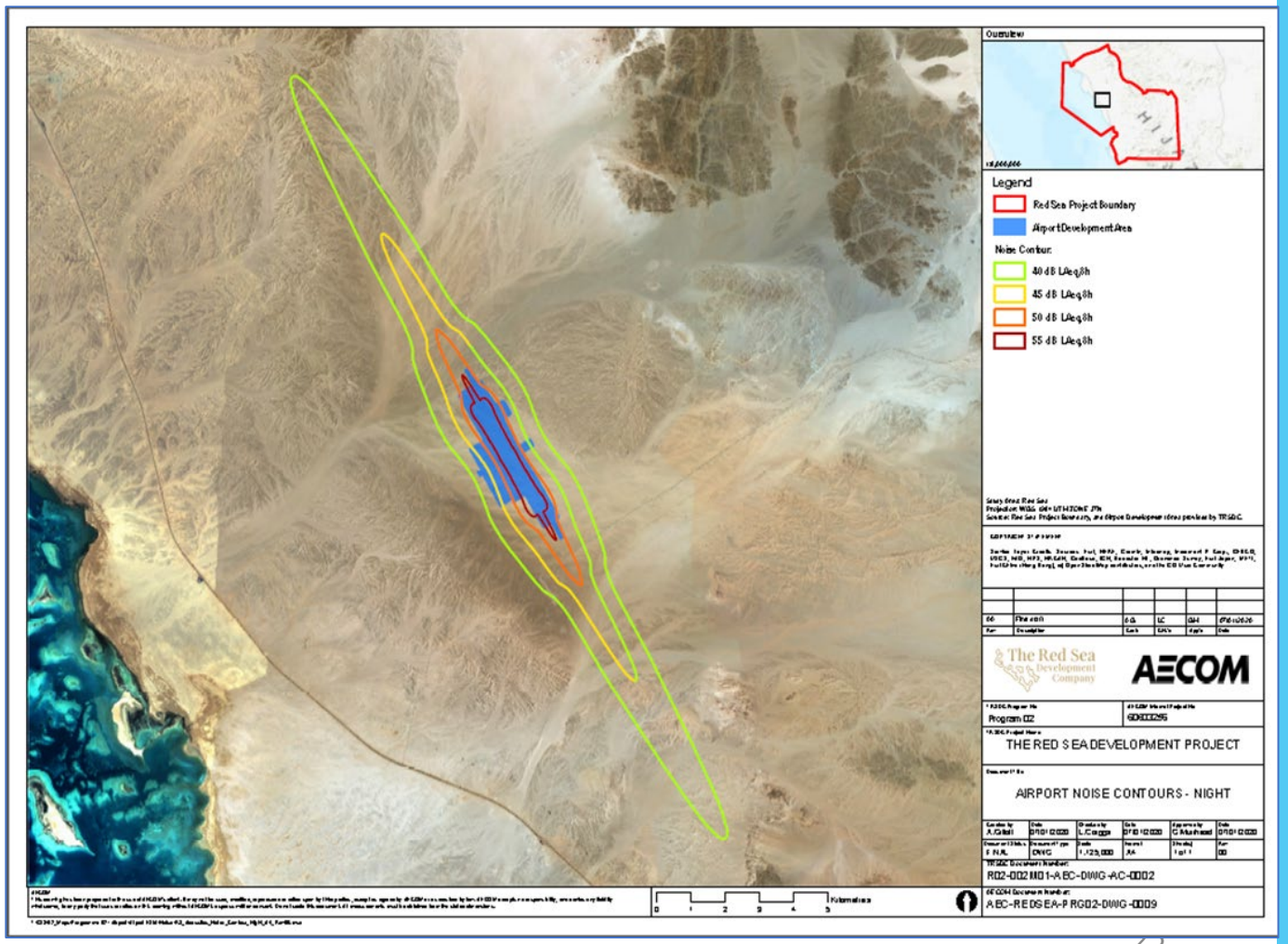
# Quality Assurance – IFPD Development Process

## Concept Design: Aircraft Noise Study

- UATS takes steps during the development of IFPs by considering to minimize the disturbance to the local population caused by aircraft noise.

- Noise Study are requested and included in the planning and introduction of new departure routes.



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# Quality Assurance – IFPD Development Process

**Concept Design: Aircraft Noise Mitigations (Sample at OERS)**

**To reduce the aircraft noise impact at Red Sea airport, UATS implements the following IFPs:**

- RNP APCHs.
- RNP transitions to ILS.
- Conventional APCHs.

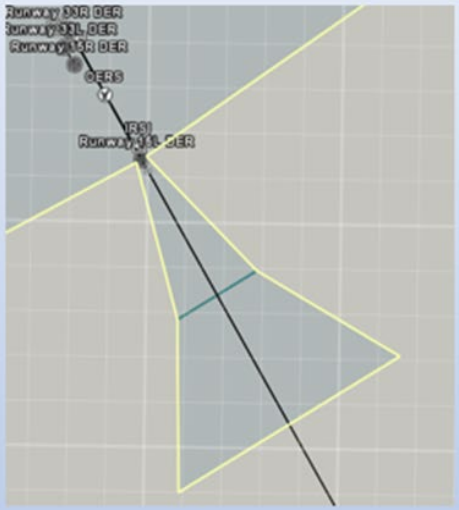
**With application of:**

- Speed limitations.
- Turns restriction.
- Circling restriction.

**Omnidirectional Departures:** Restricted earlier turns

**OMNI 1A RWY 15L**
Climb on the runway heading at or above 1000 ft then on track climbing to Enroute safety altitude/MSA.

**Restrictions**
No turns before DER are allowed. No right turns are allowed until passing 1000 ft.



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# Quality Assurance – IFPD Development Process

**Ground Validation: UATS Flight Simulator**

- Ground Validation is mandatory for every IFP, is conducted prior to any flight validation and performed by a designer independent of the original design, using the IFP Ground Validation Report.
- Ensures correct use of PANS-OPS criteria, data accuracy, coding integrity, and conformance with stakeholder expectations.
- **UATS In-house flight simulator** is forming an integral part of the validation process:
  - Import aerodrome and navigation data, prepare ARINC 424 coding, and load data into UATS FMS simulator.
  - Introduce IFP scenario in the internal simulator with a qualified Instructor Pilot to replicate operational execution.
  - Evaluate: Waypoint positions, P/Ts, course accuracy, altitude/speed constraints, segment transitions, turn anticipation, flight path predictability, PBN system performance using test database (when applicable).
  - Verify navaid coverage, aerodrome infrastructure requirements, obstacle clearance, and coding correctness.
  - Identify and document any deviations, with mitigations defined and applied before progressing to flight validation.
  - Evaluation of flyability in context of terrain and obstacle environment, especially for challenging areas.
- Validation results are documented as quality records and may trigger redesign and rechecking.

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# Quality Assurance – IFPD Development Process

## Ground Validation: UATS Flight Simulator

### Flight Simulation Report (Red Sea - ILS or LOC 33R)

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**FLIGHT SIMULATION EVALUATION CHECKLIST**
**FIXED WING-IFP NON-RNAV**

Date: 12-Feb-24

| | | | |
|---|---|---|---|
| Validation Type: | ✔ New ☐ Amended Procedure | Airport: | OERS |
| Organization: | GACA | Runway: | 33R |
| Procedure Title: | ILS to LOC RWY 33R | Evaluator's Name: | Capt. Khaled Osman |
| Location: | HANAK | PBN Specification: | ILS |

| Item | Satisfactory Yes | Satisfactory No | Comments |
|---|---|---|---|
| **1. Flight inspection Report** | ✔ | ☐ | |
| 2. **Provide simulator documentation:** | | | |
| a. FMS software User Manual | ✔ | ☐ | |
| b. United ATS Flight Tracker Tools User Manual. | ✔ | ☐ | |
| 3. **Assessed faster and/or slower than charted.** | | | |
| a. Descend Gradient | ✔ | ☐ | |
| b. Climb Gradient | ✔ | ☐ | |
| c. Check Altitudes Restrictions | ✔ | ☐ | |
| 4. **Assessed Procedure** | | | |
| a. Sequence of fixes | ✔ | ☐ | |
| b. Transition Route Identifier | ✔ | ☐ | |
| c. Rec. Navaids | ✔ | ☐ | |
| d. Fix ident | ✔ | ☐ | |
| e. Course Angle | ✔ | ☐ | |
| f. Turn | ✔ | ☐ | |
| g. Altitude limit | ✔ | ☐ | |
| h. Speed limit | ✔ | ☐ | |
| i. Distance | ✔ | ☐ | |
| j. Bearing and distance fix to fix | ✔ | ☐ | |
| k. Role of the Fix | ✔ | ☐ | |

OMSPEIIEM.147 Page 1 of 3

### Flight Simulation Report (Red Sea - ILS or LOC 33R)

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| Item | Satisfactory Yes | Satisfactory No | Comments |
|---|---|---|---|
| d. Distance to runway at decision altitude/height or minimum descent altitude/height that is likely to be applied by operators. | ✔ | ☐ | |
| e. Evaluate the ability to execute a landing with normal maneuvering | ✔ | ☐ | |
| f. Evaluate the proposed charting for correctness, clarity and ease of interpretation | ✔ | ☐ | |
| g. Evaluate TAWS warnings | ✔ | ☐ | |
| h. Speed Restrictions | ✔ | ☐ | |
| i. Note the maximum bank angle achieved during any RF segments | ✔ | ☐ | |
| 8. **Human Factors assessment** | | | |
| a. Cockpit Workload | ✔ | ☐ | |
| b. Evaluate the IFP complexity | ✔ | ☐ | |
| c. Evaluate the ability to execute a landing with normal maneuvering. | ✔ | ☐ | |
| d. Any unique requirements | ✔ | ☐ | |

| | |
|---|---|
| **Additional Remarks:** | NIL |

**Procedure:** ✔ Pass ☐ Fail **Evaluator's Signature:** *Khaled*

### Flight Simulation Path (Red Sea - ILS or LOC 33R)

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# Quality Assurance – IFPD Development Process

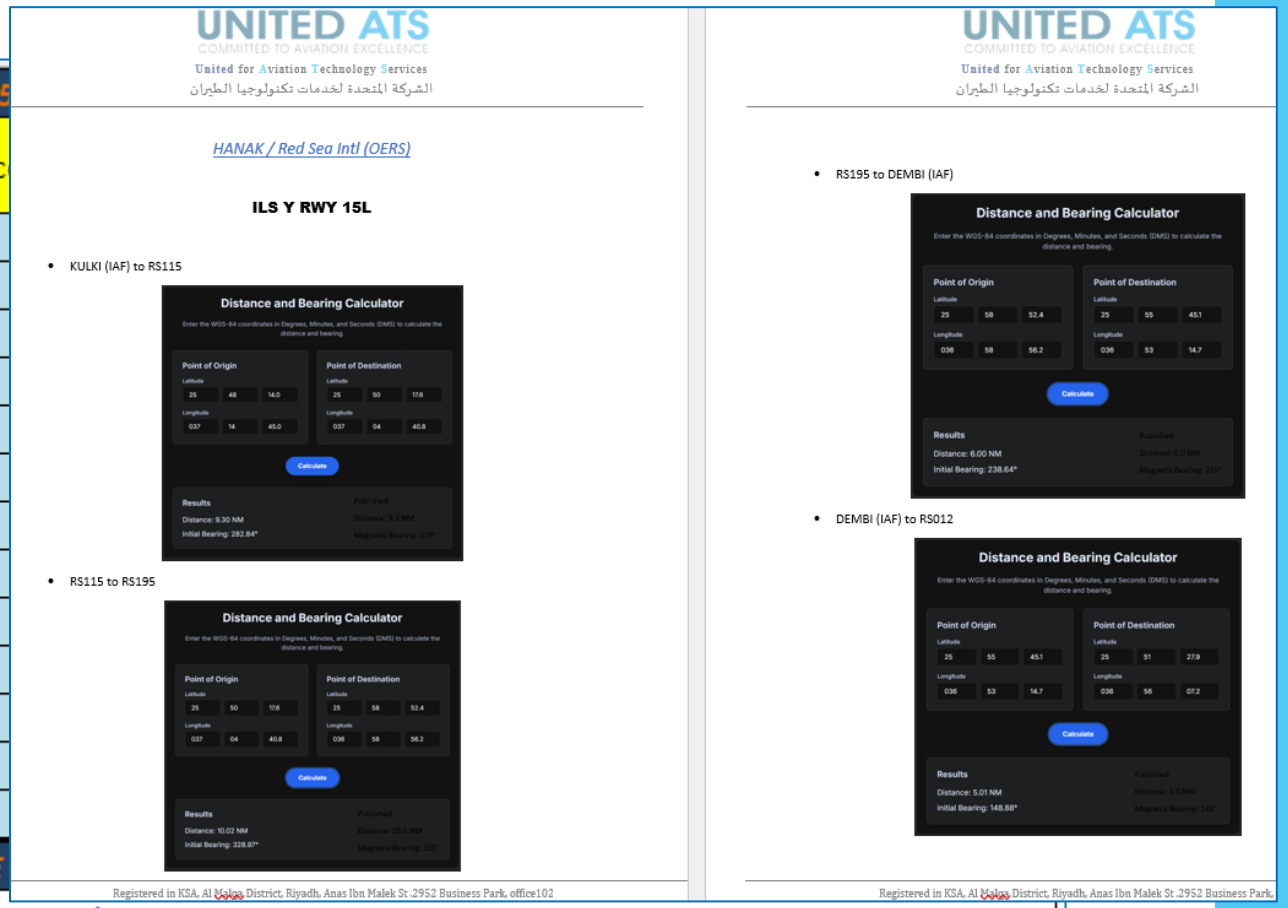
## Ground Validation: Calculation Routines

- United ATS has developed dedicated calculation routines that systematically document all ground-validation checks performed during the procedure design process enhancing accuracy, repeatability, and the overall quality assurance.

Descent Gradient (NPA PBN APCH) Review

| ILS Y RWY 15 | | | |
|---|---|---|---|
| FROM Waypoint | TO Waypoint | Distance (NM) | Published Distanc |
| KULKI (IAF) | RS115 | 9.30 | 9.3 |
| RS115 | RS195 | 10.02 | 10.0 |
| RS195 | DEMBI (IAF) | 6.00 | 6.0 |
| DEMBI (IAF) | RS012 | 5.01 | 5.0 |
| RS012 | RS011 (IF) | 5.01 | 5.0 |
| RS011 (IF) | LUDUR (FAP) | 5.03 | 5.0 |
| LUDUR (FAP) | THR RWY 15L | 5.05 | 5.0 |
| ORGIM (IAF) | TUGRU | 23.31 | 23.3 |
| TUGRU | RS011 (IF) | 8.44 | 8.4 |
| THR RWY 15 | RS880 | 8.02 | 8.0 |
| RS880 | RS515 | 10.28 | 10.3 |
| RS515 | OBSEG (MAHF) | 13.35 | 13.3 |
| OBSEG (MAHF) | RS790 | 10.02 | 10.0 |
| EVIDENCE | | | |

Calculation / Document



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# Quality Assurance – IFPD Development Process

**Maintenance: Consolidated Summary of the Process**

- United ATS maintains all custodial IFPs whenever data, PANS OPS criteria/regulatory changes, MV, stakeholder inputs, errors, or ≤5-year cycle require updates.
- Each IFP has an assigned qualified designer who monitors it continuously, checks AIRAC differences, records discrepancies, and validates all relevant data before updating.
- Updated work files and reports are stored on the IFPD server, with all actions logged in the IFP Register and shared with AIM (SANS).
- SRAs are performed for any issues, with critical safety errors immediately reported to GACA and AIM/NOF for action.
- Ground validation is required for all updates; flight validation is done when required by GACAR 172, followed by coordination with GACA/AIM (SANS) for publication.

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# Quality Assurance – IFPD Development Process

**Maintenance: Post Publication review**

- Designers must review each custodian IFP every AIRAC cycle, identify any differences from the submitted versions, and record all discrepancies.

- Post-publication activities aim to:

  (1) detect errors in the published procedure,
  (2) identify any issues arising during publication.

- In the event of post-publication errors (#1 above), United ATS must report them, assess the safety impact, implement corrective actions, and issue any required NOTAM or AIP updates.

**RNP RWY 20R**

| ID | UATS Version for Publication | Published Version (SANS) |
|---|---|---|
| 1 |  | The obstacle that affects the IF was removed |
| 2 |  | CTR and related information box was removed |

**RNP RWY 20L**

| ID | UATS Version for Publication | Published Version (SANS) |
|---|---|---|
| 1 | SN101-SN096 segment length is 6.0NM in tabular data | SN101-SN096 segment length is 6.6NM in tabular data |
| 2 | MAX IAS 230 kt in MISSED APPROACH text | Changed to be MAX IAS 210 kt.in MISSED APPROACH text |
| 3 |  | CTR CTR information box is removed |

**RNP RWY 02L**

| ID | UATS Version for Publication | Published Version (SANS) |
|---|---|---|
| 1 |  | CTR and related information box was removed |

**RNP RWY 02R**

| ID | UATS Version for Publication | Published Version (SANS) |
|---|---|---|

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# Quality Assurance – IFPD Development Process

## Maintenance: Annual & 5-year Plans

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### UATS Maintenance Plan for IFP Des

**Date:** 01-Jan-25

**Airport Name:** Red Sea International Airport / RSI-OERS

| Ser. | Procedure Name | 20 |
|---|---|---|
| | | 1st QRT | 2nd QRT |
| 1 | RNP APCH 15L | | |
| 2 | RNP APCH 33R | | |
| 3 | OMNI DEP RWY 15L | | |
| 4 | OMNI DEP RWY 33R | | |
| 5 | ILS Y RWY 15L | | |
| 6 | ILS Y RWY 33R | | |
| 7 | ILS or LOC Z RWY 15L | | |
| 8 | ILS or LOC Z RWY 33R | | |
| 9 | VOR Rwy 15L | | |
| 10 | VOR Rwy 33R | | |

IFPD Scheduled Maintenance

IFP Chief Designer
Sorin-Dan Onitiu
Signature

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United for Aviation Technology Services
الشركة المتحدة لخدمات تكنولوجيا الطيران

### UATS Five Year Plan for IFP Design

**Date:** 01-Jan-25

**Airport Name:** Red Sea International Airport / RSI-OERS

**Year:** 2025-2029

| Ser. | Procedure Name | 2025 | | | | 2026 | | | | 2027 | | | | 2028 | | | | 2029 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1st QRT | 2nd QRT | 3rd QRT | 4th QRT | 1st QRT | 2nd QRT | 3rd QRT | 4th QRT | 1st QRT | 2nd QRT | 3rd QRT | 4th QRT | 1st QRT | 2nd QRT | 3rd QRT | 4th QRT | 1st QRT | 2nd QRT | 3rd QRT | 4th QRT |
| 1 | RNP APCH 15L | | | | | | | | | | | | | | | | | | | | |
| 2 | RNP APCH 33R | | | | | | | | | | | | | | | | | | | | |
| 3 | OMNI DEP RWY 15L | | | | | | | | | | | | | | | | | | | | |
| 4 | OMNI DEP RWY 33R | | | | | | | | | | | | | | | | | | | | |
| 5 | ILS Y RWY 15L | | | | | | | | | | | | | | | | | | | | |
| 6 | ILS Y RWY 33R | | | | | | | | | | | | | | | | | | | | |
| 7 | ILS or LOC Z RWY 15L | | | | | | | | | | | | | | | | | | | | |
| 8 | ILS or LOC Z RWY 33R | | | | | | | | | | | | | | | | | | | | |
| 9 | VOR Rwy 15L | | | | | | | | | | | | | | | | | | | | |
| 10 | VOR Rwy 33R | | | | | | | | | | | | | | | | | | | | |
| 11 | SID Conv (VOR) | | | | | | | | | | | | | | | | | | | | |
| 12 | STAR Conv (VOR) | | | | | | | | | | | | | | | | | | | | |

IFPD Scheduled Maintenance
Initial IFPD
Obstacle Assessment Resurvey
Actual

IFP Chief Designer
Signature

IFP Director
Signature

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# Quality Assurance – IFPD Development Process

## Maintenance: Regulatory Changes e.g., PANS OPS, Amdt. 10 to Vol. II for OERS

OPS Type: AIRCRAFT

| ICAO AMENDMENT ITEMS | | | Impact (Yes / No / NA) | | | | | | | | Comment (Impact cases) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NUM | REF | DESCRIPTION | RNP 15L | RNP 33R | ILS Y 15L | ILS Y 33R | ILS Z 15L | ILS Z 33R | VOR 15L | VOR 33R | |
| 1 | I.5.2.2.2 | Final segment - Maximum lateral displacement | NA | NA | NA | NA | NA | NA | No | No | |
| 2 | I.5.2.2.3 | Minimum distance for Final segment | NA | NA | NA | NA | NA | NA | No | No | |
| 3 | II.1.4.7 (b) - ILS | Runway strip for basic ILS | NA | NA | NA | NA | NA | NA | NA | NA | |
| 4 | II.3.4.7 (b) - MLS | Runway strip for basic ILS | NA | NA | NA | NA | NA | NA | NA | NA | |
| 5 | III.2.2.3 | Area semi-width | No | No | No | No | No | No | No | No | |
| 6 | III.3.1.1 | Final approach track not aligned with rwy | NA | NA | NA | NA | NA | NA | No | No | |
| 7 | III.3.1.5 | Enabeling Entry via holding pattern | No | No | No | No | NA | NA | NA | NA | |
| 8 | III.3.2.2.2 | MSA/TAA (Single omnidirection MSA sector is not mandatory for GNSS) | Yes | Yes | Yes | Yes | No | No | No | No | MSA for PBN has only one sector. Due to the change, PBN MSA could have same sectors as Conventional MSA. Therefore, the current PBN MSA altitude has the conservative value. |
| 9 | III.3.2.2.3.1.2 | Initial approach area length (Min and Max length) | Yes | Yes | Yes | Yes | NA | NA | NA | NA | The minimum segment length for Initial Segment corresepond at least to the Track Distance TRD of the segment. All segment lengths are choosed to comply with the validated Conceptual Design with no impact. |
| 10 | III.3.5.4.5.9.3 (c) | XE computation for APV SBAS (Fixed wings and helicopters) | No | No | No | No | No | No | No | No | |
| 11 | III.3.5: AP to Ch 5 (1.2) | Special Approval for helicopter restricted speed and/or steep GP angle | No | No | No | No | No | No | No | No | |
| 12 | III.3.5: AP to Ch 5 (2.2) | XE computation for APV SBAS (for helicopters) | No | No | No | No | No | No | No | No | |
| 13 | III.3.7.1.2.1 | RNP holding area | NA | NA | NA | NA | NA | NA | NA | NA | |
| 14 | III.3.7.Ap A to Ch 7 (3.2.2.2c) | Minimum value for holding outbound distance | NA | NA | NA | NA | NA | NA | NA | NA | |
| 15 | III.3.7.Ap B to Ch 7 | RNP Holding (New part) | Yes | Yes | Yes | Yes | NA | NA | NA | NA | All RNAV Holdings will be replaced by RNP holding and re-assessed. |
| | | En-Route Procedures | | | | | | | | | |

# Quality Assurance – IFPD Development Process

## Regulatory Environment: Monitoring Obstacles Restrictions & Removal

Under GACA Part 172, UATS—as the Terminal IFP custodian—must provide Aerodrome Operators with the required data, information, and drawings for the aerodrome area.

Under GACAR Part 139, an Aerodrome Operator must monitor any object or structure that may infringe the OLS and PANS-OPS airspace, respectively associated with the published IFPs.

As a supportive service of UATS, a DPA is formalized & established with the AO of Red Sea International airport (OERS):

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**4. ATTACHEMENTS**

**Attachment A: List of Files and Features Guidance**

**1. List of Files**

| KMZ FILE NAME | DESCRIPTION |
|---|---|
| ILS Y RWY 15L | RNP to ILS RWY 15L IFP |
| ILS Y RWY 33R | RNP to ILS RWY 33R IFP |
| ILS Z or LOC RWY 15L | ILS or LOC RWY 15L IFP |
| ILS Z or LOC RWY 33R | ILS or LOC RWY 33R IFP |
| VOR RWY 15L | VOR RWY 15L IFP |
| VOR RWY 33R | VOR RWY 33R IFP |
| RNP RWY 15L | RNP RWY 15L IFP |
| RNP RWY 33R | RNP RWY 33R IFP |
| OLS | Obstacle Limitation Surfaces |

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daa International

**Data Provision Arrangement (DPA)**

**Between**

**United for Aviation Technology Services (United ATS), KSA**

**&**

**DAA International (DAAi) – Red Sea International Airport**

Edition : 1.0
Date : December 2024
Status : Approved
Class : UATS/IFPD

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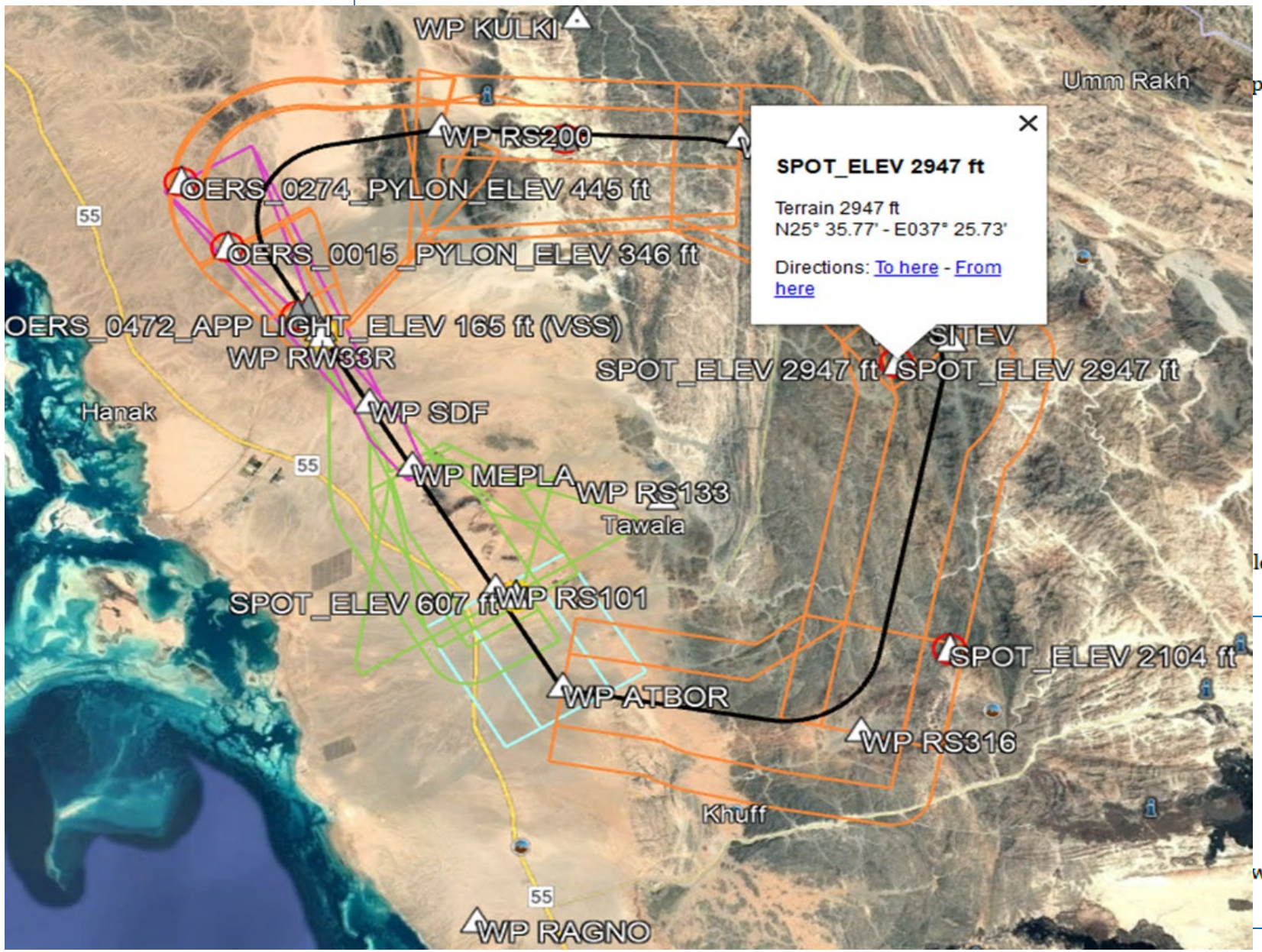
# Monitoring Obstacles: Red Sea IFP – ILS Y RWY 33R

2.1 Structure of the KMZ file:

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# Thank You


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