

ICAO WACAF Workshop

1st – 4th September 2015

**Quality Assurance
DOC 9906 Vol 1**

**Step 3: Conceptual
design**

Conceptual design



Conceptual design



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- Who ? A licensed procedure designer; but not only
- A conceptual design is drafted with the key elements considering the overall strategy.
- The more inputs from data collection, the more likely the conceptual design will correspond to stakeholders expectations.
- To increase efficiency, it is recommended having exchanges with operators, even at this stage.
- Coordination with interested/affected stakeholders should continue throughout the conceptual phase and the subsequent design phase of this process.

Conceptual design



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Inputs

- Data collected during Step 1 and Step 2
- Note: IFP Software tool (as applicable) to be updated to include all relevant input data such as terrain data, airspace data

Responsible

- Procedure designer

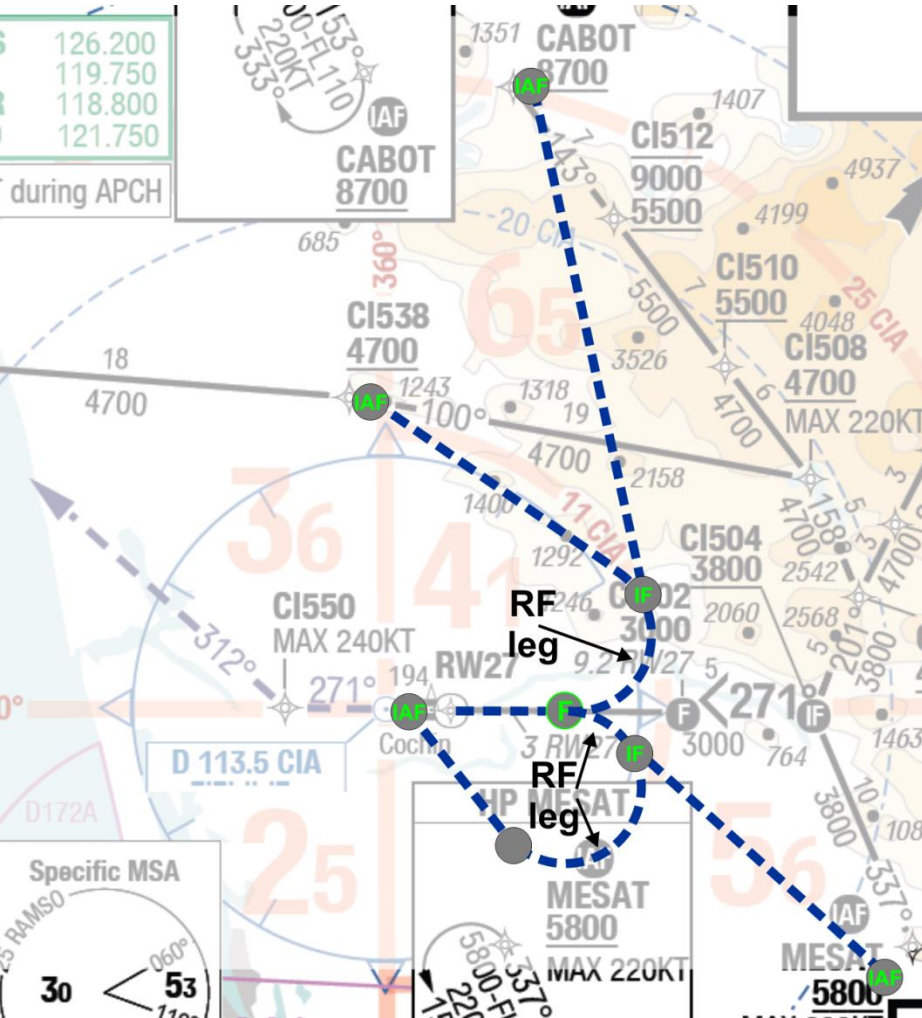
Participants

- The procedure designer is responsible for the conceptual design, with the support of additional experts as required (pilots, air traffic controllers)

Example of conceptual design documentation



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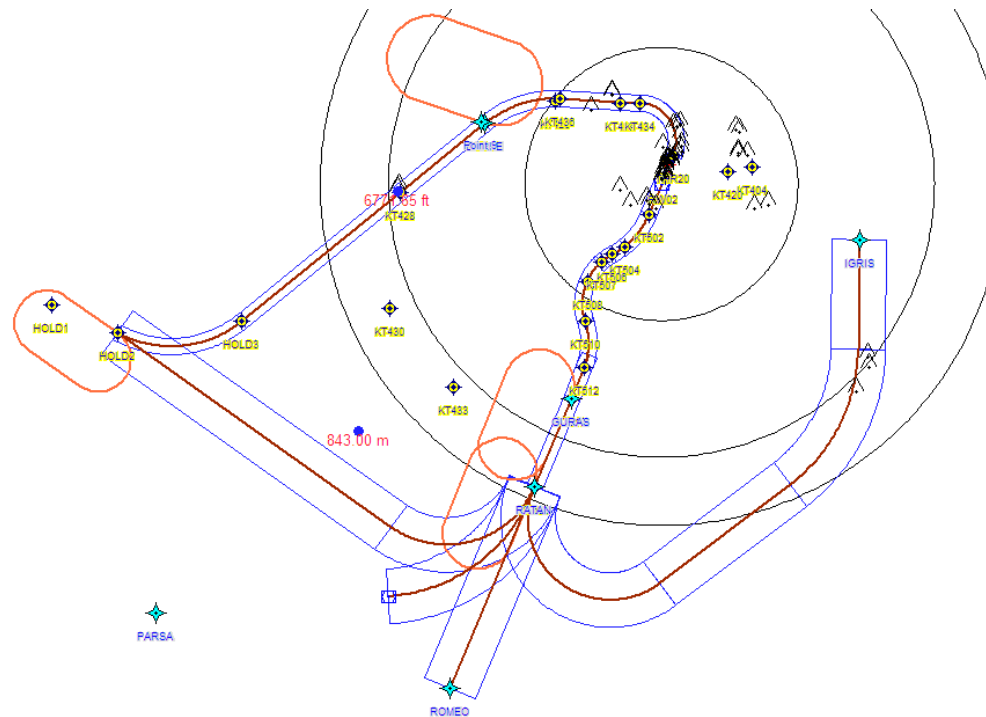


- Study different options
- Use existing material
- Request additional data if needed
- Search for expected results
 - Minima
 - Altitude and speed constraints
 - Track distance
 - Etc.

Create conceptual design

Documentation

- The initial conceptual design is documented in a format suitable to the organisation and is used as a baseline for discussion with all stakeholders during the Conceptual Design Review Meeting
- The different design iterations and reasons for selected options should be recorded



Stakeholder review



Conceptual design review by stakeholders

- The objective is to provide a forum in which all stakeholders can reach a **consensus, make sure all necessary inputs are gathered from recognized sources, discuss and agree on the final conceptual design, and establish a timeline for the implementation of the proposed PBN procedure(s) based on available resources**
- The following topics should be addressed :
 - Roles and responsibilities of the various stakeholders
 - Preliminary assessment of the environmental impact, when applicable
 - Agree on final PBN procedure design concept and design criteria to be used
 - Status on project timeline based on available resources and other projects that may have an impact on procedure implementation

Conceptual design review by stakeholders

Responsible

- Procedure designer

Participants

- All stakeholders
 - State aviation authorities, air navigation or air traffic service providers, airport authorities, air operator(s)...
 - Representative of local communities, as relevant, should be involved to identify any issue early in the process

Review



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- Formally approved conceptual design or formal decision to discontinue, updated with any consequential changes, if applicable.
- Planned implementation AIRAC date, based on available resources and any other technical/ operational/ training constraints.
- This step must be completed and obtain all identified stakeholders agreement to pursue the project.
- This is not an approval of the procedures but a commitment to the scope and a validation of the assumptions and process.

Conceptual design review by stakeholders

Documentation

- The discussions and outcomes of the conceptual design review, included the agreed procedure design concept, should be documented in a format suitable to the organisation
 - The reasons for any required changes to the initial proposal(s) should be recorded
 - Having this document or the minutes of meeting validated by the stakeholders might be considered
- The agreed conceptual design will be used as a baseline for the detailed design phase

Outputs



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Project specifications document

- Validated by:
 - State
 - Air operators
 - Airport
 - Designing entity (if not state)

Conclusion



Conclusion

- The conceptual design is under the responsibility of the procedure designer
- It is based on the inputs of the stakeholders gathered at project initiation and overall strategy
- It should be discussed and agreed with all stakeholders through a collaborative process BEFORE the detailed design phase is launched
 - In too many projects, the design is shared with stakeholders very late in the process leading to:
 - Publication not meeting the operational requirements
 - Rework of the procedure late in the process leading to significant workload for the designers and cost for the organization
- It is strongly recommended to keep trace of the discussions and rejected options to facilitate procedure approval and to be used as lessons learnt

Quality Assurance Introduction



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Any Questions?

