Part 60 General Questions and Answers
Answers to ARINC/FSEMC Visual Database Working Group
June 9, 2009

Revision 1 (June 26, 2009)
- Clarification made to question 6 concerning responsibility in checking Class II airport models.

1. **Question:**
   Are visual databases required to be accurate to Jeppesen charts? The CURRENT release, or a reasonable past version?

   FAA-NSP Response:
   Visual database models (Class I and Class II) should be accurate to the current charts in all required features associated with airport model updates required under the rule (Appendix A, Attachment 3, paragraph 1.f.). For example, if a runway is extended in the real world airport, this change will be required to be reflected in the model within 90 days. Note that this does not preclude the sponsor from defining the affected runway as "not in use" which would relieve the requirement for the detailed modeling of the runway.

   Any other visual model content requirements (in Table A3B) associated with an "in-use" runway should be updated to the current airport charts/diagrams within a reasonable timeframe as coordinated with the NSP, but are not subject to the time limits imposed in paragraph 1.f.

2. **Question:**
   Reference the Table A3B, item 5:
   Is there are requirement for a "round trip" for taxiing from EOR to parking location?

   FAA-NSP Response:
   There is no explicit requirement for a round trip taxi route in the Class I requirements. One taxi route to parking is required for each "in-use" runway and may be used for both taxi directions (to and from the runway). See Table A3B, paragraph 2.i. Parallel taxiways and lead offs associated with each "in-use" runway should be modeled as well (Table A3B, section 5.b.2 and 5.b.3).

   Parking area definition: Gate, ramp, or designated remote parking area.

3. **Question:**
   Reference page 26559, Table A3B, item 2M:
   For depiction of terrain and obstacles (25 miles around airport), is this required to be PRECISE representation of ALL features?

   FAA-NSP Response:

Significant terrain and obstacle depictions should be reasonably accurate within the capabilities of the system and scope of the training programs being conducted in the simulator.

4. **Question:**
Reference page 26559, Table A3B, item 2A:
In the approval process for the TPAA, the TPAA approves the OPS spec, but not the 3 scenes necessarily. Is this to be the 3 scenes currently used in training, or just scenes approved by the TPAA? What does "acceptable to the TPAA" mean?

FAA-NSP Response:
This requirement is meant to allow the TPAA an option to specify which airport models are evaluated by the NSP on an initial or recurrent basis (qualification models) which are consistent with the training program(s) being conducted in the simulator and satisfy the qualification requirements identified in the table.

5. **Question:**
Reference page 26559, Table A3B, item 2I:
How are legacy simulator systems held to the standard in a situation that is outside the legacy system's capability? (i.e., Taxi edge lines currently use lights a representations; having more detailed lines will overload the image generators)

FAA-NSP Response:
First, it is important to note that Table A3B (Class I) requirements are applicable only to those simulators qualified with Part 60 as their Qualification Basis. *Qualification* models for existing (grandfathered) FSTDs only have to meet the requirements under which they were originally qualified (AC 120-40B, AC 121-14C, etc). The only new requirements for existing devices are those outlined in FSTD Directive #1 (Class II and Class III requirements) for other airport models used in training, checking, and testing. There are several references in both FSTD Directive #1 and Table A3C (Class II requirements) that limit the required scene content detail within the capabilities of the currently qualified system.

6. **Question:**
Reference page 26559, Table A3B, first introduction para: Is it necessary for the TPAA to inspect each Class 2 airport model?

FAA-NSP Response:
No. FSTD Directive #1 places the burden on the *certificate holder* conducting training checking, or testing in the FSTD (not the FSTD sponsor) to ensure that the airport visual models being used for training, checking, or testing meet the Class II or Class III requirements. The method that the certificate holder uses for keeping its instructors and evaluators notified as to which models have been checked against Class II or Class III requirements must be available for review by the TPAA for that certificate holder. There is no specific requirement that the TPAA individually inspect each Class II model, but the models may be spot checked at any time by either the NSP or the TPAA as necessary.

7. **Question:**
   Reference page 26559, Table A3B, line 4b: With regards to VASI and/or PAPI inoperable, does either disqualify the model?

   FAA-NSP Response:
   No. However, if a VASI/PAPI is inoperative, missing, or misplaced, it may have an impact on certain types of training and should be corrected within a reasonable timeframe. The inoperative VASI/PAPI must be recorded in the FSTD discrepancy log in order for FSTD users to determine potential impact to the training program(s) in accordance with the Missing, Malfunctioning, or Inoperative (MMI) component requirements in 60.25 and Appendix A, section 18.

8. **Question:**
   Reference page 26560, Table A3B, items 5 and 2g: There is guidance for required marking for Class 1 taxiway and runway, but no guidance for apron. What is the requirement for Class 1 apron markings?

   FAA-NSP Response:
   Representative gate/apron and route to parking requirements are listed under section 2.g. and 2.i. in Table A3B. If the required primary taxi route to parking (Table A3B, section 5) crosses the apron, then the taxiway marking/lighting requirements (sections 5.b.2 and 5.b.3) would apply in that case.

9. **Question:**
   Reference page 26559, Table A3B, item 2j: With regards for legacy systems requirements, are "follow me" trucks required in Class 1 (daylight)?

   FAA-NSP Response:
   No, for two reasons. First, the Class I requirements do not apply to "legacy" systems previously qualified before Part 60 became effective. In the event a "legacy" system could meet the current standards under Part 60 for a new qualification, this section only cites some examples of a required low visibility taxi route (any of which may be used).

10. **Question:**
    Reference page 26559, Table A3B, 2c: With regards to Class 1 model representation of elevations and slopes in taxiways/runways, is the requirement to just match the thresholds? What about the taxiways and aprons?
    Including matching slope changes throughout the length of these?
    Is demonstration of a sloping taxiway required for Class 1 qualification of a simulator?

    FAA-NSP Response:
    The requirement is for "sufficient correlation" with the elevation at the thresholds. Any sloping surfaces (runway, taxiway, or apron) as part of a required taxi route (associated with an "in-use runway) should not have distracting or unrealistic effects (excessive stepping in

terrain height). A flat terrain approximation for minor elevation differences may be considered as "sufficient correlation" if determined as insignificant for training and not recognizable to the pilot.

If in the future, GPS systems expect elevations to correspond with the latitude / longitude of the aircraft on moving map type displays in the cockpit, this could become an issue.

There is no specific Class I requirement to demonstrate a sloping taxiway.

11. Question:
Reference page 26559, Table A3B, item 2:
Is scene content of ALL markings required on ALL 3 models, or only 1 scene?

FAA-NSP Response:
No. At a minimum, each required model must contain at least one "in-use" runway and associated taxi route (section 5). Other runways that do not contain the correct markings in accordance with Table A3B, may be listed as "not in use" on the Statement of Qualification.

12. Question:
Reference page 26599, Table A3B, items 2Q and 8A:
When using a legacy Class 1 simulator, what is the requirement for runway surface contaminants? (i.e., this could be too much detail for the image generators)

FAA-NSP Response:
As mentioned before, the Class I requirements in Table A3B only apply to new simulators qualified with Part 60 as their Qualification Basis. Any previously qualified device will retain grandfather rights for qualification models and do not have to meet the Part 60 Class I requirements. In this case, the advisory circular under which the device was originally qualified would be the applicable document.

13. Question:
Reference page 26783, Appendix F, for Class 3 definitions:
If we don't have an actual airport Class 1 or 2 scene, is a generic Class 3 scene acceptable?
Does the regulation allow the use of generic airports under low visibility conditions?

FAA-NSP Response:
No, a generic scene cannot be used as a Class I or Class II (by definition). Class I and Class II must be either real world or fictional (see Appendix F, definitions). For a new device qualified under the Part 60 rule, three Class I scenes are required (Table A3B, section 2.a) for qualification at the requested level (Levels C and D). Grandfathered devices do not have to meet Class I requirements, but must contain the minimum number of qualification models as described in the standard the device was originally qualified under (ex. AC 120-40B).

Generic (Class III) models may be acceptable for training beyond the minimum required Class I models. The sponsor's TPAA will evaluate and approve the use of Class III models.

14. Question:
Reference page 26559, Table A3B, items 5b (2-3):
With regards to taxiway markings associated with an applicable runway, what is expected for a visual model for parallel taxiways?

FAA-NSP Response:
The Class I standards require one taxi route to parking for each "in-use" runway (section 5) as well as associated taxiways which would include the parallel taxiways adjacent to the runway.(section 5.b.2 and 5.b.3).

15. Question:
Reference page 26785, Appendix F, definitions:
Please define the distinction between "primary in-use runway" and "in-use runway".

FAA-NSP Response:
I do not see the term "primary in-use runway" used in the document. Please provide further information.

16. Question:
Reference page 26559, Table A3B, item 2b:
-- quote "two parallel runways, with at least one cross runway"; does the crossing runway have to be a physically crossing runway, or a runway where the approach or departure intersect BEYOND the airfield?

FAA-NSP Response:
Yes, the runways must physically cross. The intent of the requirement was to have the runways physically cross (i.e., where a specific section of the surface is common to both runways, which may be at any point on either runway) to facilitate training for land and hold short operations.

17. Question:
Reference Attachment A to Appendix A:
With regards to date expectations, does the date expected of currency begin with the Jeppesen chart release/publication?

FAA-NSP Response:
Appendix A, Attachment 3, paragraph 1.f states "…within 90 days of the opening for use…or within 90 days of the closure of the runway or taxiway", "…within 45 days of the activation of the new or modified approach light system", or "…within 180 days of the opening of the new or changed facility or structure".

18. Question:

General Topic: Runway Status Lighting System (RWSL) Modeling

Question: After the RWSL system design is finalized and to minimize visual modeling and system resources **would it be acceptable to designate only one runway end for Runway Intrusion Training and to implement the RWSL system at this one runway end only?** The THLs would be modeled at this runway end with the RELs modeled at select runway entrances. The RWSL operation would be IOS controlled. All other RWSL systems on available models would not be active. Ground traffic routes would be independent of the RWSL operation.

Reference: The FAA is developing a system to reduce the frequency of runway incursions and to warn departing and approaching aircraft of an incursion. To determine the final version various projects are underway at a few large airports around the country. At KDFW runway 18L/36R the RWSL consists of:
Runway Entrance Lighting (RELs): Light RED when it is unsafe to enter or cross a runway (aircraft in take-off position).
Takeoff Hold Lights (THLs): Light RED when unsafe to take-off or to continue take-off roll (other aircraft or vehicle crossing/blocking runway).
KDFW Jeppesen Charts, 5Sep08

FAA-NSP Response:
If the system is a permanent installation which is to be used in training or checking, it should be modeled correctly in the FSTD as part of the runway lighting requirements.

19. **Question:**

General Topic: Final Approach Runway Occupancy Signal (FAROS) Modeling

Question: Would it be acceptable to select one runway approach to implement the flashing PAPI and to have this under IOS control? All other FAROS systems on available models would not be active.

Reference: Final Approach Runway Occupancy Signal (FAROS): PAPI approach lights flashing when approach runway occupied by aircraft or vehicle.
KDFW Jeppesen Charts, 5Sep08

FAA-NSP Response:
If the system is a permanent installation which is to used in training or checking, it should be modeled correctly in the FSTD as part of the runway/approach lighting requirements.

20. **Question:**

General Topic: In Ground Pavement Runway Guard Light Modeling

Question: Runway Hold Positions (active runway) are designated by either In Ground Pavement Runway Guard Lights or Elevated Guard Lights. **Would it be acceptable to substitute the Elevated lights for the In Pavement lights?** This would not be as "real world" but would serve the same purpose.

Background: Our modelers sometimes find it faster and easier to model the Elevated Guard Lights.

FAA-NSP Response:
A real world airport would require the proper simulation - changing the location of the lights referenced would be essentially the same as relocating the PAPI lights – and would be inappropriate.

21. **Question:**

General Topic: Legacy Visual System Limitations

Question: Some operators are still using old Legacy visual systems; In particular, SP3T, SP2, SP1T, SPX200, SPX500 etc. Can the FAA publish a summary of limitations they have determined for each Legacy system?

Background: N/A

FAA-NSP Response:
Since there is a combination of limitations on the visual systems that can interact with each other, it is not practical to identify specifics for what a given system can, or cannot do. An acceptable airport model is determined by getting the best compromise between the model detail or content representing the airport, and the quality and acceptability of the displayed image. Prior to the FAA providing a list of limitations on individual visual systems, we should be given the opportunity to review a list of limitations provided by the manufacturer of those systems.

22. **Question:**
In table A1A, section 6.p. (general requirements), daylight visual scenes are required for a Level C device, but the Class I requirements (Table A3B, section 2.a.2) indicate that a daylight scene is not required for a Level C device.

FAA-NSP Response:

The daylight visual requirement was intended to be included for Level C FSTDs (consistent with the international standards). The entry in Table A3B, section 2.a.2 is in error and should be checked for both Level C and Level D devices.