

## Questions for Display on the EFB (Enroute or At Gate)

This survey addresses information specific to a particular taxi segment. It is expected to be completed for every airport, either when the aircraft is parked at the gate or en-route, as determined by the airlines and the FAA. The survey administration may be customized for some airlines that fly back and forth between the same airports several times over the course of a day.

The proposed set of questions address pilots' perceptions of whether the surface moving map with ownship position or EFB provided an operational and/or safety benefit and collects information on potential mitigating factors (e.g., visibility and lighting conditions) and any areas where the technology can be improved, either in terms of database accuracy or pilot interface/usability. The first six questions are intended to be completed by all pilots. Pilots who used the surface moving map application during taxi are then asked to answer four questions on surface moving map safety. For pilots that did not use the surface moving map (e.g., because the pilot was taxiing or if the surface moving map was not available or not needed), three questions addressing the impact of the EFB are to be completed instead.

### Title: EFB Survey

Date: \_\_\_\_\_ [Determine if this can be completed automatically.]

Crew Position: \_\_\_\_\_ Pilot Taxiing \_\_\_\_\_ Pilot Not Taxiing

Airport ID (used during taxi segment, three letters): \_\_\_\_\_

1. Was a surface moving map available for this airport? \_\_\_\_\_ Yes \_\_\_\_\_ No

2. What was the time of day?

- \_\_\_\_\_ day
- \_\_\_\_\_ dawn/dusk
- \_\_\_\_\_ night

3. What was the RVR?

- \_\_\_\_\_ 6001 ft or greater
- \_\_\_\_\_ 2501 ft to 6000 ft
- \_\_\_\_\_ 1201 ft to 2500 ft
- \_\_\_\_\_ 601 ft to 1200 ft
- \_\_\_\_\_ 600 ft or less

4. What were the surface movement conditions?

- \_\_\_\_\_ mostly dry
- \_\_\_\_\_ mostly wet
- \_\_\_\_\_ mostly snow

5. How familiar were you with the taxi route you were given on this taxi segment?

Not familiar

1

2

3

4

Very familiar

5

6. How often did you refer to the surface moving map display on this taxi segment?

Never

1

2

3

4

Very frequently

5

IF pilots responded 2 or higher to Q6, then complete Surface Moving Map Safety survey items (SMM7 – SMM10).

IF no surface moving map was available for the airport (Q1) OR if pilots did not refer to the surface moving map (response 1 to Q6), then pilots will complete survey items addressing EFB usability (EFB7 – EFB10).

**Surface Moving Map Safety** (Shown if pilots respond with 2 or higher to Q6)

SMM 7. How did the position awareness provided by the surface moving map with ownship depiction compare to a paper/electronic airport chart only?

Decreased Awareness		No Difference		Increased Awareness
1	2	3	4	5

SMM 8. How did use of the surface moving map affect other duties compared to a paper/electronic airport chart only?

More difficult to perform other duties		No Impact		Less difficult to perform other duties
1	2	3	4	5

SMM 9. What was the most significant position error of ownship or the airport map that you observed during this taxi segment?

- No errors.
- Ownship was drawn on the wrong **runway**
- Ownship was drawn on or near the edge of my **runway**
- Ownship was drawn on the wrong **taxiway**
- Ownship was drawn on or near the edge of my **taxiway**
- Ownship was drawn in the grass
- Ownship was drawn in the wrong location in the ramp areas
- Other

SMM 10. How did the surface moving map affect the safety of taxi operations on this segment?

Decreased Safety		No Difference		Increased Safety
1	2	3	4	5

NOTE: Methods for following up with pilots who note position errors (in Q SMM9) and potential critical incidents (in Q SMM10) are needed.

**EFB Usability** (shown *only* asked if pilots respond “1” to Q6)

EFB7. Was the workload required for completing a task with the EFB equal to or less than the workload for completing the task with paper?

More difficult to perform other duties		No Impact		Less difficult to perform other duties
1	2	3	4	5

EFB8. How did the addition of the EFB in the flight deck affect the time available to scan other displays?

Decreased		Did not Change		Increased
1	2	3	4	5

EFB9. Were there any problems with the EFB system hardware or software during the flight?

- No
- Yes
  - During pre-departure
  - During taxi out
  - During take-off/climb-out
  - During cruise
  - During approach/landing
  - During taxi in

EFB10. How useful was the EFB?

Worse than paper only		No Difference		Very Useful
1	2	3	4	5

NOTE: Methods for following up with pilots who note problems (in EFB9) are needed.