



ICAO

International Civil Aviation Organization

**THE THIRD MEETING OF MODE S DOWNLINKED
AIRCRAFT PARAMETERS WORKING GROUP
(MODE S DAPs WG/3)**

Web-conference, 12 – 15 May 2020

Agenda Item 7: Review Guidance Material of implementation of Mode S DAPs

AMENDMENTS TO THE GUIDANCE MATERIAL FOR MANDATES

(Presented by Singapore)

SUMMARY

The existing guidance document provided examples of mandates of elementary and enhance mode S for versions 0 and 1 transponders. A proposal is made to update the guidance document to include examples for version 2 transponder.

1. INTRODUCTION

1.1 The Mode S Downlink Aircraft Parameters Implementation and Operations Guidance Document contains some examples on how Mandates can be drafted.

1.2 However, the examples are based on the older versions of transponders (i.e. version 0 and version 1). In view that aircraft are now delivered with version 2 transponders by default, there is a need to update the examples in the guidance document.

2. DISCUSSION

Text for equipment standard for version 0 and version 1

2.1 For version 0 and version 1 transponders, the following standard may be stated for elementary surveillance: *Joint Aviation Authorities (JAA) Temporary Guidance Leaflets (TGL) 13 Revision 1*.

2.2 For version 0 and version 1 transponders, the following standard may be stated for enhanced surveillance: *European Aviation Safety Agency (EASA) Acceptable Means of Compliance (AMC) 20-13*.

Text for equipment standard for version 2

2.3 For version 2 transponders, the following standard may be stated for elementary surveillance: *Elementary surveillance (ELS) requirements stated in European Aviation Safety Agency (EASA) CS-ACNS-Subpart D, Section 2 (i.e. CS ACNS.D.ELS)*.

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2.4 For version 2 transponders, the following standard may be stated for enhanced surveillance: *Enhanced surveillance (EHS) requirements stated in European Aviation Safety Agency (EASA) CS-ACNS-Subpart D, Section 3 (i.e. CS ACNS.D.EHS).*

2.5 It may be noted that, for aircraft that has been certified for Elementary or Enhanced Mode S, the following text will appear in the Aircraft Flight Manual:

Elementary Surveillance - Version 2 Transponder: *The installed transponder system is able to respond to interrogations in Mode A, C and S and is fully compliant with the requirements of CS ACNS.D.ELS (Mode S Elementary Surveillance).*

Enhanced Surveillance - Version 2 Transponder: *The installed transponder system is able to respond to interrogations in Mode A, C and S and is fully compliant with the requirements of CS ACNS.D.EHS (Mode S Enhanced Surveillance).*

Changes to the guidance document

2.6 **Annex A** shows the proposed changes to the guidance document to include the above information.

Conclusion/Decision XX/XX - Amendments to Mode S Downlink Aircraft Parameters Implementation and Operations Guidance Document	
What: To include additional examples on the text to mandate Elementary Surveillance and Enhanced Surveillance for version 2 transponders.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: The existing guidance document provides examples of Elementary and Enhanced Surveillance only for version 0 and version 1. As aircraft are now delivered with version 2 transponders, it will be useful to have information on version 2 transponders in the guidance document.	Follow-up: <input type="checkbox"/> Required from States
When: 12-Mar-19	Status: Draft to be adopted by PIRG
Who: <input type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: XXXX	

3. ACTION BY THE MEETING

3.1 The meeting is invited to review and comment on the proposed changes.

ANNEX A
PROPOSED AMENDMENT TO
AERONAUTICAL SURVEILLANCE MANUAL (DOC9924)

NOTES ON THE PRESENTATION OF THE PROPOSED AMENDMENT

The text of the amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

- | | | |
|----|---|-----------------------------------|
| a) | Text to be deleted is shown with a line through it. | text to be deleted |
| b) | New text to be inserted is highlighted with grey shading. | new text to be inserted |
| c) | Text to be deleted is shown with a line through it
followed by the replacement text which is highlighted with grey shading. | new text to replace existing text |

7. REGULATIONS AND PROCEDURES

7.1 Mandating Mode S DAPs

e) In publishing mandate/regulations, States should:

1) Define the standards applicable to the State.

i. E.g. *Joint Aviation Authorities (JAA) Temporary Guidance Leaflets (TGL) 13 Revision 1* for Elementary Surveillance in version 0 and version 1 transponders; or

ii. E.g. *European Aviation Safety Agency (EASA) Acceptable Means of Compliance (AMC) 20-13* for Enhanced Surveillance in version 0 and version 1 transponders; or

iii. E.g. *Elementary Surveillance (ELS) requirements stated in European Aviation Safety Agency (EASA) CS-ACNS-Subpart D, Section 2 (i.e. CS ACNS.D.ELS)* for Elementary Surveillance in version 2 transponder; or

iv. E.g. *Enhanced Surveillance (EHS) requirements stated in European Aviation Safety Agency (EASA) CS-ACNS-Subpart D, Section 3 (i.e. CS ACNS.D.EHS)* for Enhanced Surveillance in version 2 transponder

v. E.g. *Mode S level 2* if the requirement is simply for Airport Surface Multilateration.