



ICAO

International Civil Aviation Organization

**THE FOURTH MEETING OF MODE S DOWNLINKED
AIRCRAFT PARAMETERS WORKING GROUP
(MODE S DAPs WG/4)**

Video Teleconference, 29 – 31 March 2021

Agenda Item 3: Sharing of State's implementation on Mode S and related issues, including the experience in Mode S Interrogator Identifier (II) Code usage in APAC region

PRACTICE FOR ALLOCATION OF MODE S INTERROGATOR CODES

(Presented by Australia)

SUMMARY

Australia has adopted the European Region practice for the allocation of Mode S Interrogator Codes. This practice reserves Interrogator Identification (II) 14 for test, research and development of Mode S Radar and II 15 for military deployable and shipborne radar. This approach provides flexibility in testing and military applications and removes the need to de-conflict civil operational radars. It is proposed that the Asia Pacific Region adopt the practice.

1. INTRODUCTION

- 1.1 The European Region in recognizing the limited availability of Interrogator Codes (IC) being either Interrogator Identification (II) codes or Surveillance Identifier (SI) codes, has introduced a centralized Mode S interrogator code allocation (MICA) service in charge of coordinating interrogator code allocations. The MICA service¹ is provided by EUROCONTROL for the European Region and ICAO Middle-East Region. The allocation service is supported by practices to avoid conflicting allocations and facilitate testing, research and military applications.
- 1.2 Airservices Australia coordinates ICs for civil and military application in Australia. In undertaking this task, MICA practices are adopted for the allocation of ICs, but the MICA service is not used.
- 1.3 It has been discussed within Asia Pacific that the management of ICs could be managed through the Frequency Finder application supported by ICAO. If this approach was to be adopted, the MICA practices could be used for practices in making allocations.

¹ [EUROCONTROL Specification for the Mode S IC Allocation Coordination and IC Conflict Management](#)

2. DISCUSSION

2.1 The following table details the allocation of II and SI codes based on Interrogator (IC) Code and Code Label (CL) as specified in Annex 10 Volume 4.

IC (Interrogator code, An10Vol4,3.1.2.5.2.1.2)	CL (Code Label, An10Vol4, 3.1.2.5.2.1.3)							
	000	001	010	011	100	101	110	111
0000	II 0		SI 16	SI 32	SI 48			
0001	II 1	SI 1	SI 17	SI 33	SI 49			
0010	II 2	SI 2	SI 18	SI 34	SI 50			
0011	II 3	SI 3	SI 19	SI 35	SI 51			
0100	II 4	SI 4	SI 20	SI 36	SI 52			
0101	II 5	SI 5	SI 21	SI 37	SI 53			
0110	II 6	SI 6	SI 22	SI 38	SI 54			
0111	II 7	SI 7	SI 23	SI 39	SI 55			
1000	II 8	SI 8	SI 24	SI 40	SI 56			
1001	II 9	SI 9	SI 25	SI 41	SI 57			
1010	II 10	SI 10	SI 26	SI 42	SI 58			
1011	II 11	SI 11	SI 27	SI 43	SI 59			
1100	II 12	SI 12	SI 28	SI 44	SI 60			
1101	II 13	SI 13	SI 29	SI 45	SI 61			
1110	II 14	SI 14	SI 30	SI 46	SI 62			
1111	II 15	SI 15	SI 31	SI 47	SI 63			

- 2.2 **II code 0 and matching SI Codes** – The MICA service does not allocated II 0 or matching SI codes. II 0 is reserved for Mode S interrogators that have not been assigned a unique discrete IC such as MLAT and WAM systems, and mobile Mode S interrogators for which it is not practical to allocate an IC.
- 2.3 **II code 14 and SI codes matching II code 14 (SI 14, SI 30, SI 46 and SI 62)** are allocated to test, research and development of Mode S radar in the ICAO EUR region and the ICAO MID region.
- 2.4 **II Code 15 and matching SI Codes (SI 15, SI 31, SI 47 and SI 63)** are reserved in the European Region for military operations for non-fixed deployable military radars and the management of these codes is delegated to military agencies.
- 2.5 The allocation of II 0 and matching SIs is consistent with Standards and Recommended Practices (SARPs) and should be followed in Asia Pacific management of IIs and SIs.
- 2.6 The allocation of II 14 and matching SIs is provided for testing and research by States without the need to coordinate unique code allocations. It is envisaged that utilisation of these codes by States will be time limited for the duration of the testing or research activity. States using these codes are not able to claim protection from other users of II 14 and matching SIs.

- 2.7 The delegation of II 15 and matching SIs to military agencies for allocation and management removes the coordination responsibility from the civil aviation agencies. The allocation is for deployable radars including shipborne systems. Fixed military radars should be coordinated with the civil aviation authority with II codes in the range 1 to 13 and matching SI codes allocated. Military radars operating with II 15 or matching SIs cannot claim protection from other military radars also operating with II 15 or matching SIs.

Conclusion XX/XX - Practices for the allocation of Interrogator Codes (IC) being either Interrogator Identification (II) code or Surveillance Identifier (SI).	
<p>What: That Asia Pacific States adopt the practices of the European Region and Mid East Region for the allocation and management Interrogator Codes (IC) inclusive of Interrogator Identification (II) codes and Surveillance Identifier (SI) codes;</p> <p>Reserve II 14 and matched SIs for research and testing, and;</p> <p>Delegate allocation and management of II 15 and matched SIs to State military agencies for deployable and shipborne radars.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p>Why: Consistency with European and Mid East Regions. Provide flexibility for testing, research and military activities.</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>
<p>When: 29-Mar-21</p>	<p>Status: Draft to be adopted by PIRG</p>
<p>Who: <input checked="" 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</p>	

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to review the proposed conclusion and develop a regional practice for the allocation and management of Interrogator Codes (IC) inclusive of Interrogator Identification (II) codes and Surveillance Identifier (SI) codes.
