

Amendment 92 to the International Standards and Recommended Practices, *Aeronautical Telecommunications— Communication Systems*, (Annex 10, Volume III, to the Convention on International Civil Aviation) was adopted by the Council at the fifth meeting of its 231st Session on 18 March 2024. The amendments are listed below

Type of changes	Location	Amendments	Comment
New text to be inserted	CHAPTER 1. DEFINITIONS	Note 5.— Provisions related to information security can be found in the Procedures for Air Navigation Services — Information Management (PANS-IM, Doc 10199)	Can be incorporated into the ANO 10 Volume III, Part I
Text to be deleted and New text to be inserted	CHAPTER 5. SSR MODE S AIR- GROUND DATA LINK Table 5-24. Register number assignments	F1 ₁₆ Military applications F2 ₁₆ Military applications F13 ₁₆ -FF ₁₆ Unassigned	Can be incorporated into the ANO 10 Volume III, Part I
New text to replace existing text	CHAPTER 9. AIRCRAFT ADDRESSING SYSTEM APPENDIX TO CHAPTER 9. A WORLDWIDE SCHEME FOR THE ALLOCATION, ASSIGNMENT AND APPLICATION OF AIRCRAFT ADDRESSES 2. DESCRIPTION OF THE SCHEME	2.1 Table 9-1 provides for blocks of consecutive addresses available to States for assignment to aircraft. Each block is defined by a fixed pattern of the first 4, 6, 9, 11, 12 or 14 bits of the 24-bit address. Thus, blocks of different sizes (1 048 576, 262 144, 32 768, 8 192, 4 096 and 4 024 2 048 consecutive addresses, respectively) are made available	Can be incorporated into the ANO 10 Volume III, Part I
Text to be deleted	APPENDIX TO CHAPTER 9. A WORLDWIDE SCHEME FOR THE ALLOCATION, ASSIGNMENT AND APPLICATION OF AIRCRAFT ADDRESSES 4. ALLOCATION OF AIRCRAFT ADDRESSES	4.3 In the future management of the scheme, advantage shall be taken of the blocks of aircraft addresses not yet allocated. These spare blocks shall be distributed on the basis of the relevant ICAO region: Addresses starting with bit combination 00100: AFI region Addresses starting with bit combination 00101: SAM region Addresses starting with bit combination 0101: EUR and NAT regions	Can be incorporated into the ANO 10 Volume III, Part I

		<p>Addresses starting with bit combination 01100: MID region Addresses starting with bit combination 01101: ASIA region Addresses starting with bit combination 1001: NAM and PAC regions Addresses starting with bit combination 111011: CAR region In addition, aircraft addresses starting with bit combinations 1011, 1101 and 1111 have been reserved for future use</p> <p>4.4-3 Any future requirement for additional aircraft addresses shall be accommodated through coordination between ICAO and the States of Registry or common mark registering authority concerned. A request for additional aircraft addresses shall only be made by a registering authority when at least 75 per cent of the number of addresses already allocated to that registering authority have been assigned to aircraft</p> <p>4.5-4 ICAO shall allocate blocks of aircraft addresses to non-Contracting States upon request</p>	
<p>Text to be deleted and New text to be inserted</p>	<p>APPENDIX TO CHAPTER 9. A WORLDWIDE SCHEME FOR THE ALLOCATION, ASSIGNMENT AND APPLICATION OF AIRCRAFT ADDRESSES</p> <p>5. ASSIGNMENT OF AIRCRAFT ADDRESSES</p>	<p>5.1 <u>During the registration process,</u> uUsing its allocated block of addresses, the State of Registry or common mark registering authority shall assign an individual aircraft address to each suitably equipped aircraft entered on a national or international register (Table 9-1).</p> <p>... 5.2 Aircraft addresses shall be assigned to aircraft in accordance with the following principles: ... b) only one address shall be assigned to an aircraft, irrespective of the composition of equipment on board. In the case when a removable transponder is shared by several light aviation aircraft such as balloons or gliders,</p>	<p>Can be incorporated into the ANO 10 Volume III, Part I</p>

		<p>it shall be possible to assign a unique address to the removable transponder. The Registers 0816₇ and 20₁₆₇ 24₄₆, 22₄₆ and 25₄₆ of the removable transponder shall be correctly updated each time the removable transponder is installed in any aircraft;</p> <p>5.2.1 Recommendation. — <i>Any method used to assign aircraft addresses should ensure efficient use of the entire address block that is allocated to that State.</i></p> <p>5.3 Assignment of aircraft addresses to unmanned aircraft (UA)</p> <p><i>Note — States may need to consider withholding aircraft addresses to unmanned aircraft (UA) unless certain criteria have been met. Proper and efficient utilization of available bandwidth and capacity at 1 090 MHz is a key element to ensure the safe operation of aeronautical surveillance systems, including secondary surveillance radar (SSR), automatic dependent surveillance — broadcast (ADS-B) and airborne collision avoidance systems (ACAS). A large number of UA equipped with ADS-B OUT transmitters operating at 1 090 MHz may adversely affect the operation of surveillance systems in the area. Reference is made to the guidance material contained in the Aeronautical Surveillance Manual (Doc 9924), intended to assist States when validating the utilization of 1 090 MHz</i></p>	
<p>New text to be inserted</p>	<p>APPENDIX TO CHAPTER 9. A WORLDWIDE SCHEME FOR THE ALLOCATION, ASSIGNMENT AND APPLICATION OF AIRCRAFT ADDRESSES</p>	<p>6.1 The State of Registry or common mark registering authority shall administer the allocated block of aircraft addresses so that appropriate assignment of aircraft addresses within its allocated block can be maintained.</p> <p><i>Note.</i> — <i>The aircraft address is an essential element that needs to be correctly configured in an aircraft to support operation of systems and functions, such as SSR Mode S, ADS-B,</i></p>	<p>Can be incorporated into the ANO 10 Volume III, Part I</p>

	<p>6. ADMINISTRATION OF THE AIRCRAFT ADDRESS ASSIGNMENTS</p>	<p><i>datalink, collision avoidance and emergency location.</i></p> <p>6.2 States shall establish and publish an administrative procedure for requesting and assigning aircraft addresses. <i>Note. — An example of an effective administrative procedure, including the indication of the aircraft address in the certificate of registration, which can be used by the State of Registry or common mark registering authority, can be found in the Aeronautical Surveillance Manual (Doc 9924).</i></p> <p>6.3 The State of Registry or common mark registering authority shall put in place measures to ensure that aircraft registered under their responsibility are flying with a correct aircraft address. <i>Note. — Examples of such measures can be found in 2.1.7 of Appendix O of the Aeronautical Surveillance Manual (Doc 9924).</i></p>	
<p>New text to replace existing text</p>	<p>7. APPLICATION OF AIRCRAFT ADDRESSES</p>	<p>6-7. APPLICATION OF AIRCRAFT ADDRESSES</p> <p>6-7.1 The aircraft addresses shall be used in applications which require the routing of information to or from individual suitably equipped aircraft. Note 1.— Examples of such applications are the aeronautical telecommunication network (ATN), SSR Mode S, ADS-B, emergency locator transmitter (ELT) and airborne collision avoidance system (ACAS). Note 2.— This Standard does not preclude assigning the aircraft addresses for special applications associated with the general applications defined therein. Examples An example of such a special applications is are the utilization of the 24-bit address in a pseudo-aeronautical earth station to monitor the aeronautical mobile satellite</p>	<p>Can be incorporated into the ANO 10 Volume III, Part I</p>

		<p>service ground earth station and in the fixed Mode S transponders (reporting the on-the-ground status as specified in Annex 10, Volume IV, 3.1.2.6.10.1.2) to monitor the Mode S ground station operation. Address assignments for special applications are to be carried out in conformance with the procedure established by the State to manage the 24-bit address assignments to aircraft.</p> <p>6-7.2 An address consisting of 24 ZEROs shall not be used for any application</p>	
New text to replace existing text	8. ADMINISTRATION OF THE TEMPORARY AIRCRAFT ADDRESS ASSIGNMENTS	<p>7-8. ADMINISTRATION OF THE TEMPORARY AIRCRAFT ADDRESS ASSIGNMENTS</p> <p>7-8.1 Temporary addresses shall be assigned to aircraft in exceptional circumstances, such as when operators have been unable to obtain an address from their individual States of Registry or Common Mark Registering Authority common mark registering authority in a timely manner. ICAO shall assign temporary addresses from the block "ICAO1" shown in Table 9-1.</p>	Can be incorporated into the ANO 10 Volume III, Part I
New text to be inserted	Table 9-1. Allocation of aircraft addresses to States	See Attachment A below	Can be incorporated into the ANO 10 Volume III, Part I

ATTACHMENT A

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	1 024	4 096	8 192	32 768	262 144	1 048 576						
Afghanistan		*					0111	00	000	000	--	-----
Albania	*						0101	00	000	001	00	-----
Algeria				*			0000	10	100	---	--	-----
Andorra	*						1100	10	010	001	0-	-----
Angola		*					0000	10	010	000	--	-----
Antigua and Barbuda	*						0000	11	001	010	00	-----
Argentina					*		1110	00	---	---	--	-----
Armenia	*						0110	00	000	000	00	-----
Australia					*		0111	11	---	---	--	-----
Austria				*			0100	01	000	---	--	-----
Azerbaijan	*						0110	00	000	000	10	-----
Bahamas		*					0000	10	101	000	--	-----
Bahrain		*					1000	10	010	100	--	-----
Bangladesh		*					0111	00	000	010	--	-----
Barbados	*						0000	10	101	010	00	-----
Belarus	*						0101	00	010	000	00	-----
Belgium				*			0100	01	001	---	--	-----
Belize	*						0000	10	101	011	00	-----
Benin	*						0000	10	010	100	00	-----
Bhutan	*						0110	10	000	000	00	-----
Bolivia (Plurinational State of)		*					1110	10	010	100	--	-----
Bosnia and Herzegovina	*						0101	00	010	011	00	-----
Botswana	*						0000	00	110	000	00	-----
Brazil					*		1110	01	---	---	--	-----
Brunei Darussalam	*						1000	10	010	101	00	-----
Bulgaria				*			0100	01	010	---	--	-----
Burkina Faso		*					0000	10	011	100	--	-----
Burundi		*					0000	00	110	010	--	-----
Cabo Verde	*						0000	10	010	110	0-	-----
Cambodia		*					0111	00	001	110	--	-----
Cameroon		*					0000	00	110	100	--	-----
Canada					*		1100	00	---	---	--	-----
Cape Verde	*						0000	10	010	110	00	-----
Central African Republic		*					0000	01	101	100	--	-----
Chad		*					0000	10	000	100	--	-----
Chile		*					1110	10	000	000	--	-----
China					*		0111	10	---	---	--	-----
Colombia		*	*				0000	10	101	100	--	-----
Comoros	*						0000	00	110	101	00	-----
Congo		*					0000	00	110	110	--	-----
Cook Islands	*						1001	00	000	001	00	-----
Costa Rica		*					0000	10	101	110	--	-----

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	1 024	4 096	8 192	32 768	262 144	1 048 576						
Côte d'Ivoire		*					0000	00	111	000	--	-----
Croatia	*						0101	00	000	001	1-	-----
Cuba		*					0000	10	110	000	--	-----
Cyprus	*						0100	11	001	000	0-	-----
Czechia				*			0100	10	011	---	--	-----
Czechia Republic				*			0111	00	100	---	--	-----
Democratic People's Republic of Korea		*					0000	10	001	100	--	-----
Democratic Republic of the Congo		*										
Denmark				*			0100	01	011	---	--	-----
Djibouti	*						0000	10	011	000	0-	-----
Dominica	*						1100	10	010	010	0-	-----
Dominican Republic		*					0000	11	000	100	--	-----
Ecuador		*					1110	10	000	100	--	-----
Egypt				*			0000	00	010	---	--	-----
El Salvador		*					0000	10	110	010	--	-----
Equatorial Guinea		*					0000	01	000	010	--	-----
Eritrea	*						0010	00	000	010	0-	-----
Estonia	*						0101	00	010	001	0-	-----
Eswatini	*						0000	01	111	010	0-	-----
Ethiopia		*					0000	01	000	000	--	-----
Fiji		*					1100	10	001	000	--	-----
Finland				*			0100	01	100	---	--	-----
France					*		0011	10	---	---	--	-----
Gabon		*					0000	00	111	110	--	-----
Gambia		*					0000	10	011	010	--	-----
Georgia	*						0101	00	010	100	0-	-----
Germany					*		0011	11	---	---	--	-----
Ghana		*					0000	01	000	100	--	-----
Greece				*			0100	01	101	---	--	-----
Grenada	*						0000	11	001	100	0-	-----
Guatemala		*					0000	10	110	100	--	-----
Guinea		*					0000	01	000	110	--	-----
Guinea-Bissau	*						0000	01	001	000	0-	-----
Guyana		*					0000	10	110	110	--	-----
Haiti		*					0000	10	111	000	--	-----
Honduras		*					0000	10	111	010	--	-----
Hungary				*			0100	01	110	---	--	-----
Iceland		*					0100	11	001	100	--	-----
India					*		1000	00	---	---	--	-----
Indonesia				*			1000	10	100	---	--	-----
Iran, (Islamic Republic of)				*			0111	00	110	---	--	-----
Iraq				*			0111	00	101	---	--	-----
Ireland		*					0100	11	001	010	--	-----
Israel				*			0111	00	111	---	--	-----
Italy					*		0011	00	---	---	--	-----
Jamaica		*					0000	10	111	110	--	-----
Japan				*			1000	01	---	---	--	-----
Jordan				*			0111	01	000	---	--	-----

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	1 024	4 096	8 192	32 768	262 144	1 048 576						
Kazakhstan	*						0110	10	000	011	00	-----
Kenya		*					0000	01	001	100	--	-----
Kiribati	*						1100	10	001	110	00	-----
Kuwait		*					0111	00	000	110	--	-----
Kyrgyzstan	*						0110	00	000	001	00	-----
Lao People's Democratic Republic		*					0111	00	001	000	--	-----
Latvia	*						0101	00	000	010	10	-----
Lebanon				*			0111	01	001	---	--	-----
Lesotho	*						0000	01	001	010	00	-----
Liberia		*					0000	01	010	000	--	-----
Libyan Arab Jamahiriya				*			0000	00	011	---	--	-----
Lithuania	*						0101	00	000	011	10	-----
Luxembourg	*						0100	11	010	000	00	-----
Madagascar		*					0000	01	010	100	--	-----
Malawi		*					0000	01	011	000	--	-----
Malaysia				*			0111	01	010	---	--	-----
Maldives	*						0000	01	011	010	00	-----
Mali		*					0000	01	011	100	--	-----
Malta	*						0100	11	010	010	00	-----
Marshall Islands	*						1001	00	000	000	00	-----
Mauritania	*						0000	01	011	110	00	-----
Mauritius	*						0000	01	100	000	00	-----
Mexico				*			0000	11	010	---	--	-----
Micronesia (Federated States of)	*						0110	10	000	001	00	-----
Monaco	*						0100	11	010	100	00	-----
Mongolia	*						0110	10	000	010	00	-----
Montenegro	*						0101	00	010	110	00	-----
Morocco				*			0000	00	100	---	--	-----
Mozambique		*					0000	00	000	110	--	-----
Myanmar		*					0111	00	000	100	--	-----
Namibia	*						0010	00	000	001	00	-----
Nauru	*						1100	10	001	010	00	-----
Nepal		*					0111	00	001	010	--	-----
Netherlands, Kingdom of the				*			0100	10	000	---	--	-----
New Zealand				*			1100	10	000	---	--	-----
Nicaragua		*					0000	11	000	000	--	-----
Niger		*					0000	01	100	010	--	-----
Nigeria		*					0000	01	100	100	--	-----
North Macedonia	*						0101	00	010	010	00	-----
Norway				*			0100	01	111	---	--	-----
Oman	*						0111	00	001	100	00	-----
Pakistan				*			0111	01	100	---	--	-----
Palau	*						0110	10	000	100	00	-----
Panama		*					0000	11	000	010	--	-----
Papua New Guinea		*					1000	10	011	000	--	-----
Paraguay		*					1110	10	001	000	--	-----

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	4 024 2 048	4 096	8 192	32 768	262 144	1 048 576						
Peru		*					1 110	10	0 01	1 00	--	-----
Philippines				*			0 111	01	0 11	---	--	-----
Poland				*			0 100	10	0 01	---	--	-----
Portugal				*			0 100	10	0 10	---	--	-----
Qatar	▲	*					0 000	01	1 01	0 10	0 0	-----
Republic of Korea				*			0 111	00	0 11	---	--	-----
Republic of Moldova		*					0 101	00	0 00	1 00	1 1	-----
Romania				*			0 100	10	1 00	---	--	-----
Russian Federation						*	0 001	--	---	---	--	-----
Rwanda		*					0 000	01	1 01	1 10	--	-----
Saint Kitts and Nevis	*						1 100	10	0 10	0 11	0	-----
Saint Lucia	*						1 100	10	0 01	1 00	0 0	-----
Saint Vincent and the Grenadines	*						0 000	10	1 11	1 00	0 0	-----
Samoa	*						1 001	00	0 00	0 10	0 0	-----
San Marino	*						0 101	00	0 00	0 00	0 0	-----
Sao Tome and Principe	*						0 000	10	0 11	1 10	0 0	-----
Saudi Arabia				*			0 111	00	0 10	---	--	-----
Senegal		*					0 000	01	1 10	0 00	--	-----
Serbia				*			0 100	11	0 00	---	--	-----
Seychelles	*						0 000	01	1 10	1 00	0 0	-----
Sierra Leone	*						0 000	01	1 10	1 10	0 0	-----
Singapore				*			0 111	01	1 01	---	--	-----
Slovakia	*						0 101	00	0 00	1 01	1 1	-----
Slovenia	*						0 101	00	0 00	1 10	1 1	-----
Solomon Islands	*						1 000	10	0 10	1 11	0 0	-----
Somalia		*					0 000	01	1 11	0 00	--	-----
South Africa				*			0 000	00	0 01	---	--	-----
South Sudan	*						1 100	10	0 10	1 00	0	-----
Spain					*		0 011	01	---	---	--	-----
Sri Lanka				*			0 111	01	1 10	---	--	-----
Sudan		*					0 000	01	1 11	1 00	--	-----
Suriname		*					0 000	11	0 01	0 00	--	-----
Swaziland	▲						0 000	01	1 11	0 10	0 0	-----
Sweden				*			0 100	10	1 01	---	--	-----
Switzerland				*			0 100	10	1 10	---	--	-----
Syrian Arab Republic				*			0 111	01	1 11	---	--	-----
Tajikistan	*						0 101	00	0 10	1 01	0 0	-----
Thailand				*			1 000	10	0 00	---	--	-----
The former Yugoslav Republic of Macedonia	▲						0 101	00	0 10	0 10	0 0	-----
Timor-Leste	*						1 100	10	0 10	1 01	0	-----
Togo		*					0 000	10	0 01	0 00	--	-----
Tonga	*						1 100	10	0 01	1 01	0 0	-----
Trinidad and Tobago		*					0 000	11	0 00	1 10	--	-----
Tunisia				*			0 000	00	1 01	---	--	-----
Türkiye (Turkey)				*			0 100	10	1 11	---	--	-----
Turkmenistan	*						0 110	00	0 00	0 01	1 0	-----
Tuvalu	*						1 100	10	0 10	1 11	0	-----
Uganda		*					0 000	01	1 01	0 00	--	-----

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	4 024 2 048	4 096	8 192	32 768	262 144	1 048 576						
Ukraine				*			0 101	00	0 01	---	--	-----
United Arab Emirates		*					1 000	10	0 10	1 10	--	-----
United Kingdom					*		0 100	00	---	---	--	-----
United Republic of Tanzania		*					0 000	10	0 00	0 00	--	-----
United States						*	1 010	--	---	---	--	-----
Uruguay		*					1 110	10	0 10	0 00	--	-----
Uzbekistan	*						0 101	00	0 00	1 11	1 1	-----
Vanuatu	*						1 100	10	0 10	0 00	0 0	-----
Venezuela (Bolivarian Republic of)				*			0 000	11	0 11	---	--	-----
Viet Nam				*			1 000	10	0 01	---	--	-----
Yemen		*					1 000	10	0 10	0 00	--	-----
Zambia		*					0 000	10	0 01	0 10	--	-----
Zimbabwe	*						0 000	00	0 00	1 00	0 0	-----
Other allocations												
ICAO ¹				*			1 111	00	0 00	---	--	-----
ICAO ²	*						1 000	10	0 11	0 01	0 0	-----
ICAO ³	*						1 111	00	0 01	0 01	0 0	-----

1. ICAO administers this block for assigning temporary aircraft addresses as described in section 8.

2. Block allocated for special use in the interest of flight safety.

**NOTES ON THE PRESENTATION OF
AMENDMENT 92 TO ANNEX 10, VOLUME III**

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:

~~Text to be deleted is shown with a line through it.~~

text to be deleted

New text to be inserted is highlighted with grey shading.

new text to be inserted

~~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

TEXT OF AMENDMENT 92

TO THE

**INTERNATIONAL STANDARDS
AND RECOMMENDED PRACTICES**

AERONAUTICAL TELECOMMUNICATIONS

ANNEX 10

TO THE CONVENTION ON INTERNATIONAL CIVIL AVIATION

VOLUME III

COMMUNICATION SYSTEMS

...

PART I – DIGITAL DATA COMMUNICATION SYSTEMS

CHAPTER 1. DEFINITIONS

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Note 5.— Provisions related to information security can be found in the Procedures for Air Navigation Services — Information Management (PANS-IM, Doc 10199).

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CHAPTER 5. SSR MODE S AIR-GROUND DATA LINK

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Table 5-24. Register number assignments

<i>Transponder register No.</i>	<i>Assignment</i>
00 ₁₆	Not valid
01 ₁₆	Unassigned
02 ₁₆	Linked Comm-B, segment 2
03 ₁₆	Linked Comm-B, segment 3
04 ₁₆	Linked Comm-B, segment 4
05 ₁₆	Extended squitter airborne position
06 ₁₆	Extended squitter surface position
07 ₁₆	Extended squitter status
08 ₁₆	Extended squitter identification and type
09 ₁₆	Extended squitter airborne velocity
0A ₁₆	Extended squitter event-driven information
0B ₁₆	Air/air information 1 (aircraft state)

<i>Transponder register No.</i>	<i>Assignment</i>
0C ₁₆	Air/air information 2 (aircraft intent)
0D ₁₆ -0E ₁₆	Reserved for air/air state information
0F ₁₆	Reserved for ACAS
10 ₁₆	Data link capability report
11 ₁₆ -16 ₁₆	Reserved for extension to data link capability reports
17 ₁₆	Common usage GICB capability report
18 ₁₆ -1F ₁₆	Mode S specific services capability reports
20 ₁₆	Aircraft identification
21 ₁₆	Aircraft and airline registration markings
22 ₁₆	Antenna positions
23 ₁₆	Reserved for antenna position
24 ₁₆	Reserved for aircraft parameters
25 ₁₆	Aircraft type
26 ₁₆ -2F ₁₆	Unassigned
30 ₁₆	ACAS active resolution advisory
31 ₁₆ -3F ₁₆	Unassigned
40 ₁₆	Selected vertical intention
41 ₁₆	Next waypoint identifier
42 ₁₆	Next waypoint position
43 ₁₆	Next waypoint information
44 ₁₆	Meteorological routine air report
45 ₁₆	Meteorological hazard report
46 ₁₆	Reserved for flight management system Mode 1
47 ₁₆	Reserved for flight management system Mode 2
48 ₁₆	VHF channel report
49 ₁₆ -4F ₁₆	Unassigned
50 ₁₆	Track and turn report
51 ₁₆	Position report coarse
52 ₁₆	Position report fine
53 ₁₆	Air-referenced state vector
54 ₁₆	Waypoint 1
55 ₁₆	Waypoint 2
56 ₁₆	Waypoint 3
57 ₁₆ -5E ₁₆	Unassigned
5F ₁₆	Quasi-static parameter monitoring
60 ₁₆	Heading and speed report
61 ₁₆	Extended squitter emergency/priority status
62 ₁₆	Reserved for target state and status information
63 ₁₆	Reserved for extended squitter
64 ₁₆	Reserved for extended squitter
65 ₁₆	Aircraft operational status
66 ₁₆ -6F ₁₆	Reserved for extended squitter
70 ₁₆ -75 ₁₆	Reserved for future aircraft downlink parameters
76 ₁₆ -E0 ₁₆	Unassigned
E1 ₁₆ -E2 ₁₆	Reserved for Mode S BITE
E3 ₁₆	Transponder type/part number
E4 ₁₆	Transponder software revision number
E5 ₁₆	ACAS unit part number
E6 ₁₆	ACAS unit software revision number
E7 ₁₆ -F0 ₁₆	Unassigned
F1 ₁₆	Military applications
F2 ₁₆	Military applications
F3 ₁₆ -FF ₁₆	Unassigned

...

CHAPTER 9. AIRCRAFT ADDRESSING SYSTEM

...

APPENDIX TO CHAPTER 9. A WORLDWIDE SCHEME FOR THE ALLOCATION, ASSIGNMENT AND APPLICATION OF AIRCRAFT ADDRESSES

...

2. DESCRIPTION OF THE SCHEME

2.1 Table 9-1 provides for blocks of consecutive addresses available to States for assignment to aircraft. Each block is defined by a fixed pattern of the first 4, 6, 9, 11, 12 or 14-13 bits of the 24-bit address. Thus, blocks of different sizes (1 048 576, 262 144, 32 768, 8 192, 4 096 and 1-024-2 048 consecutive addresses, respectively) are made available.

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4. ALLOCATION OF AIRCRAFT ADDRESSES

...

~~4.3 In the future management of the scheme, advantage shall be taken of the blocks of aircraft addresses not yet allocated. These spare blocks shall be distributed on the basis of the relevant ICAO region:~~

~~Addresses starting with bit combination 00100: AFI region~~

~~Addresses starting with bit combination 00101: SAM region~~

~~Addresses starting with bit combination 0101: EUR and NAT regions~~

~~Addresses starting with bit combination 01100: MID region~~

~~Addresses starting with bit combination 01101: ASIA region~~

~~Addresses starting with bit combination 1001: NAM and PAC regions~~

~~Addresses starting with bit combination 111011: CAR region~~

~~In addition, aircraft addresses starting with bit combinations 1011, 1101 and 1111 have been reserved for future use.~~

4.4-3 Any future requirement for additional aircraft addresses shall be accommodated through coordination between ICAO and the States of Registry or common mark registering authority concerned. A request for additional aircraft addresses shall only be made by a registering authority when at least 75 per cent of the number of addresses already allocated to that registering authority have been assigned to aircraft.

4.5-4 ICAO shall allocate blocks of aircraft addresses to non-Contracting States upon request.

5. ASSIGNMENT OF AIRCRAFT ADDRESSES

5.1 **During the registration process,** Using its allocated block of addresses, the State of Registry or common mark registering authority shall assign an individual aircraft address to each suitably equipped aircraft entered on a national or international register (Table 9-1).

...

5.2 Aircraft addresses shall be assigned to aircraft in accordance with the following principles:

...

b) only one address shall be assigned to an aircraft, irrespective of the composition of equipment on board. In the case when a removable transponder is shared by several light aviation aircraft such as balloons or gliders, it shall be possible to assign a unique address to the removable transponder. ~~The registers 08₁₆, and 20₁₆, 24₁₆, 22₁₆ and 25₁₆~~ of the removable transponder shall be correctly updated each time the removable transponder is installed in any aircraft;

...

5.2.1 **Recommendation.**— *Any method used to assign aircraft addresses should ensure efficient use of the entire address block that is allocated to that State.*

5.3 Assignment of aircraft addresses to unmanned aircraft (UA)

Note — States may need to consider withholding aircraft addresses to unmanned aircraft (UA) unless certain criteria have been met. Proper and efficient utilization of available bandwidth and capacity at 1 090 MHz is a key element to ensure the safe operation of aeronautical surveillance systems, including secondary surveillance radar (SSR), automatic dependent surveillance — broadcast (ADS-B) and airborne collision avoidance systems (ACAS). A large number of UA equipped with ADS-B OUT transmitters operating at 1 090 MHz may adversely affect the operation of surveillance systems in the area. Reference is made to the guidance material contained in the Aeronautical Surveillance Manual (Doc 9924), intended to assist States when validating the utilization of 1 090 MHz.

6. ADMINISTRATION OF THE AIRCRAFT ADDRESS ASSIGNMENTS

6.1 The State of Registry or common mark registering authority shall administer the allocated block of aircraft addresses so that appropriate assignment of aircraft addresses within its allocated block can be maintained.

Note. — The aircraft address is an essential element that needs to be correctly configured in an aircraft to support operation of systems and functions, such as SSR Mode S, ADS-B, datalink, collision avoidance and emergency location.

6.2 States shall establish and publish an administrative procedure for requesting and assigning aircraft addresses.

Note. — *An example of an effective administrative procedure, including the indication of the aircraft address in the certificate of registration, which can be used by the State of Registry or common mark registering authority, can be found in the Aeronautical Surveillance Manual (Doc 9924).*

6.3 The State of Registry or common mark registering authority shall put in place measures to ensure that aircraft registered under their responsibility are flying with a correct aircraft address.

Note. — *Examples of such measures can be found in 2.1.7 of Appendix O of the Aeronautical Surveillance Manual (Doc 9924).*

6.7. APPLICATION OF AIRCRAFT ADDRESSES

6.7.1 The aircraft addresses shall be used in applications which require the routing of information to or from individual suitably equipped aircraft.

Note 1.— *Examples of such applications are the aeronautical telecommunication network (ATN), SSR Mode S, ADS-B, emergency locator transmitter (ELT) and airborne collision avoidance system (ACAS).*

Note 2.— *This Standard does not preclude assigning the aircraft addresses for special applications associated with the general applications defined therein. ~~Examples—An example of such a special applications is are the utilization of the 24-bit address in a pseudo-aeronautical earth station to monitor the aeronautical mobile satellite service ground earth station and in the fixed Mode S transponders (reporting the on-the-ground status as specified in Annex 10, Volume IV, 3.1.2.6.10.1.2) to monitor the Mode S ground station operation. Address assignments for special applications are to be carried out in conformance with the procedure established by the State to manage the 24-bit address assignments to aircraft.~~*

6.7.2 An address consisting of 24 ZEROs shall not be used for any application.

7.8. ADMINISTRATION OF THE TEMPORARY AIRCRAFT ADDRESS ASSIGNMENTS

7.8.1 Temporary addresses shall be assigned to aircraft in exceptional circumstances, such as when operators have been unable to obtain an address from their individual States of Registry or ~~Common Mark Registering Authority~~ common mark registering authority in a timely manner. ICAO shall assign temporary addresses from the block “ICAO¹” shown in Table 9-1.

Editorial Note.—Renumber subsequent paragraphs

...

Table 9-1. Allocation of aircraft addresses to States

Note.— The left-hand column of the 24-bit address patterns represents the most significant bit (MSB) of the address.

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	1 024 2 048	4 096	8 192	32 768	262 144	1 048 576						
Afghanistan		*					0111	00	000	000	--	-----
Albania	*						0101	00	000	001	00	-----
Algeria				*			0000	10	100	---	--	-----
Andorra	*						1100	10	010	001	0-	-----
Angola		*					0000	10	010	000	--	-----
Antigua and Barbuda	*						0000	11	001	010	00	-----
Argentina					*		1110	00	---	---	--	-----
Armenia	*						0110	00	000	000	00	-----
Australia					*		0111	11	---	---	--	-----
Austria				*			0100	01	000	---	--	-----
Azerbaijan	*						0110	00	000	000	10	-----
Bahamas		*					0000	10	101	000	--	-----
Bahrain		*					1000	10	010	100	--	-----
Bangladesh		*					0111	00	000	010	--	-----
Barbados	*						0000	10	101	010	00	-----
Belarus	*						0101	00	010	000	00	-----
Belgium				*			0100	01	001	---	--	-----
Belize	*						0000	10	101	011	00	-----
Benin	*						0000	10	010	100	00	-----
Bhutan	*						0110	10	000	000	00	-----
Bolivia (Plurinational State of)		*					1110	10	010	100	--	-----
Bosnia and Herzegovina	*						0101	00	010	011	00	-----
Botswana	*						0000	00	110	000	00	-----
Brazil					*		1110	01	---	---	--	-----
Brunei Darussalam	*						1000	10	010	101	00	-----
Bulgaria				*			0100	01	010	---	--	-----
Burkina Faso		*					0000	10	011	100	--	-----
Burundi		*					0000	00	110	010	--	-----
Cabo Verde	*						0000	10	010	110	0-	-----
Cambodia		*					0111	00	001	110	--	-----
Cameroon		*					0000	00	110	100	--	-----
Canada					*		1100	00	---	---	--	-----
Cape Verde	*						0000	10	010	110	00	-----
Central African Republic		*					0000	01	101	100	--	-----
Chad		*					0000	10	000	100	--	-----
Chile		*					1110	10	000	000	--	-----
China					*		0111	10	---	---	--	-----
Colombia		*	*				0000	10	101	100	--	-----
Comoros	*						0000	00	110	101	00	-----
Congo		*					0000	00	110	110	--	-----
Cook Islands	*						1001	00	000	001	00	-----
Costa Rica		*					0000	10	101	110	--	-----

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	1 024 2 048	4 096	8 192	32 768	262 144	1 048 576						
Côte d'Ivoire		*					0000	00	111	000	--	-----
Croatia	*						0101	00	000	001	11	-----
Cuba		*					0000	10	110	000	--	-----
Cyprus	*						0100	11	001	000	00	-----
Czechia					*		0100	10	011	---	--	-----
Democratic People's Republic of Korea				*			0111	00	100	---	--	-----
Democratic Republic of the Congo		*					0000	10	001	100	--	-----
Denmark				*			0100	01	011	---	--	-----
Djibouti	*						0000	10	011	000	00	-----
Dominica	*						1100	10	010	010	0-	-----
Dominican Republic		*					0000	11	000	100	--	-----
Ecuador		*					1110	10	000	100	--	-----
Egypt				*			0000	00	010	---	--	-----
El Salvador		*					0000	10	110	010	--	-----
Equatorial Guinea		*					0000	01	000	010	--	-----
Eritrea	*						0010	00	000	010	00	-----
Estonia	*						0101	00	010	001	00	-----
Eswatini	*						0000	01	111	010	0-	-----
Ethiopia		*					0000	01	000	000	--	-----
Fiji		*					1100	10	001	000	--	-----
Finland				*			0100	01	100	---	--	-----
France					*		0011	10	---	---	--	-----
Gabon		*					0000	00	111	110	--	-----
Gambia		*					0000	10	011	010	--	-----
Georgia	*						0101	00	010	100	00	-----
Germany					*		0011	11	---	---	--	-----
Ghana		*					0000	01	000	100	--	-----
Greece				*			0100	01	101	---	--	-----
Grenada	*						0000	11	001	100	00	-----
Guatemala		*					0000	10	110	100	--	-----
Guinea		*					0000	01	000	110	--	-----
Guinea-Bissau	*						0000	01	001	000	00	-----
Guyana		*					0000	10	110	110	--	-----
Haiti		*					0000	10	111	000	--	-----
Honduras		*					0000	10	111	010	--	-----
Hungary				*			0100	01	110	---	--	-----
Iceland		*					0100	11	001	100	--	-----
India					*		1000	00	---	---	--	-----
Indonesia				*			1000	10	100	---	--	-----
Iran, (Islamic Republic of)				*			0111	00	110	---	--	-----
Iraq				*			0111	00	101	---	--	-----
Ireland		*					0100	11	001	010	--	-----
Israel				*			0111	00	111	---	--	-----
Italy					*		0011	00	---	---	--	-----
Jamaica		*					0000	10	111	110	--	-----
Japan					*		1000	01	---	---	--	-----
Jordan				*			0111	01	000	---	--	-----

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	1 024 2 048	4 096	8 192	32 768	262 144	1 048 576						
Kazakhstan	*						0110	10	000	011	00	-----
Kenya		*					0000	01	001	100	--	-----
Kiribati	*						1100	10	001	110	00	-----
Kuwait		*					0111	00	000	110	--	-----
Kyrgyzstan	*						0110	00	000	001	00	-----
Lao People's Democratic Republic		*					0111	00	001	000	--	-----
Latvia	*						0101	00	000	010	11	-----
Lebanon				*			0111	01	001	---	--	-----
Lesotho	*						0000	01	001	010	00	-----
Liberia		*					0000	01	010	000	--	-----
Libyan Arab Jamahiriya				*			0000	00	011	---	--	-----
Lithuania	*						0101	00	000	011	11	-----
Luxembourg	*						0100	11	010	000	00	-----
Madagascar		*					0000	01	010	100	--	-----
Malawi		*					0000	01	011	000	--	-----
Malaysia				*			0111	01	010	---	--	-----
Maldives	*						0000	01	011	010	00	-----
Mali		*					0000	01	011	100	--	-----
Malta	*						0100	11	010	010	00	-----
Marshall Islands	*						1001	00	000	000	00	-----
Mauritania	*						0000	01	011	110	00	-----
Mauritius	*						0000	01	100	000	00	-----
Mexico				*			0000	11	010	---	--	-----
Micronesia, (Federated States of)	*						0110	10	000	001	00	-----
Monaco	*						0100	11	010	100	00	-----
Mongolia	*						0110	10	000	010	00	-----
Montenegro	*						0101	00	010	110	00	-----
Morocco				*			0000	00	100	---	--	-----
Mozambique		*					0000	00	000	110	--	-----
Myanmar		*					0111	00	000	100	--	-----
Namibia	*						0010	00	000	001	00	-----
Nauru	*						1100	10	001	010	00	-----
Nepal		*					0111	00	001	010	--	-----
Netherlands, Kingdom of the				*			0100	10	000	---	--	-----
New Zealand				*			1100	10	000	---	--	-----
Nicaragua		*					0000	11	000	000	--	-----
Niger		*					0000	01	100	010	--	-----
Nigeria		*					0000	01	100	100	--	-----
North Macedonia	*						0101	00	010	010	0-	-----
Norway				*			0100	01	111	---	--	-----
Oman	*						0111	00	001	100	00	-----
Pakistan				*			0111	01	100	---	--	-----
Palau	*						0110	10	000	100	00	-----
Panama		*					0000	11	000	010	--	-----
Papua New Guinea		*					1000	10	011	000	--	-----
Paraguay		*					1110	10	001	000	--	-----

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	1 024 2 048	4 096	8 192	32 768	262 144	1 048 576						
Peru		*					1 110	10	001	100	--	-----
Philippines				*			0111	01	011	---	--	-----
Poland				*			0100	10	001	---	--	-----
Portugal				*			0100	10	010	---	--	-----
Qatar	*	*					0000	01	101	010	00	-----
Republic of Korea				*			0111	00	011	---	--	-----
Republic of Moldova	*						0101	00	000	100	11	-----
Romania				*			0100	10	100	---	--	-----
Russian Federation					*		0001	--	---	---	--	-----
Rwanda		*					0000	01	101	110	--	-----
Saint Kitts and Nevis	*						1100	10	010	011	0-	-----
Saint Lucia	*						1100	10	001	100	00	-----
Saint Vincent and the Grenadines	*						0000	10	111	100	00	-----
Samoa	*						1001	00	000	010	00	-----
San Marino	*						0101	00	000	000	00	-----
Sao Tome and Principe	*						0000	10	011	110	00	-----
Saudi Arabia				*			0111	00	010	---	--	-----
Senegal		*					0000	01	110	000	--	-----
Serbia				*			0100	11	000	---	--	-----
Seychelles	*						0000	01	110	100	00	-----
Sierra Leone	*						0000	01	110	110	00	-----
Singapore				*			0111	01	101	---	--	-----
Slovakia	*						0101	00	000	101	11	-----
Slovenia	*						0101	00	000	110	11	-----
Solomon Islands	*						1000	10	010	111	00	-----
Somalia		*					0000	01	111	000	--	-----
South Africa				*			0000	00	001	---	--	-----
South Sudan	*						1100	10	010	100	0-	-----
Spain					*		0011	01	---	---	--	-----
Sri Lanka				*			0111	01	110	---	--	-----
Sudan		*					0000	01	111	100	--	-----
Suriname		*					0000	11	001	000	--	-----
Swaziland	*						0000	01	111	010	00	-----
Sweden				*			0100	10	101	---	--	-----
Switzerland				*			0100	10	110	---	--	-----
Syrian Arab Republic				*			0111	01	111	---	--	-----
Tajikistan	*						0101	00	010	101	00	-----
Thailand				*			1000	10	000	---	--	-----
The former Yugoslav Republic of Macedonia	*						0101	00	010	010	00	-----
Timor-Leste	*						1100	10	010	101	0-	-----
Togo		*					0000	10	001	000	--	-----
Tonga	*						1100	10	001	101	00	-----
Trinidad and Tobago		*					0000	11	000	110	--	-----
Tunisia				*			0000	00	101	---	--	-----
Türkiye Turkey				*			0100	10	111	---	--	-----
Turkmenistan	*						0110	00	000	001	10	-----
Tuvalu	*						1100	10	010	111	0-	-----
Uganda		*					0000	01	101	000	--	-----

State	Number of addresses in block						Allocation of blocks of addresses (a dash represents a bit value equal to 0 or 1)					
	1 024 2 048	4 096	8 192	32 768	262 144	1 048 576						
Ukraine				*			0 1 0 1	0 0	0 0 1	---	--	-----
United Arab Emirates		*					1 0 0 0	1 0	0 1 0	1 1 0	--	-----
United Kingdom					*		0 1 0 0	0 0	---	---	--	-----
United Republic of Tanzania		*					0 0 0 0	1 0	0 0 0	0 0 0	--	-----
United States						*	1 0 1 0	--	---	---	--	-----
Uruguay		*					1 1 1 0	1 0	0 1 0	0 0 0	--	-----
Uzbekistan	*						0 1 0 1	0 0	0 0 0	1 1 1	1 1	-----
Vanuatu	*						1 1 0 0	1 0	0 1 0	0 0 0	0 0	-----
Venezuela (Bolivarian Republic of)				*			0 0 0 0	1 1	0 1 1	---	--	-----
Viet Nam				*			1 0 0 0	1 0	0 0 1	---	--	-----
Yemen		*					1 0 0 0	1 0	0 1 0	0 0 0	--	-----
Zambia		*					0 0 0 0	1 0	0 0 1	0 1 0	--	-----
Zimbabwe	*						0 0 0 0	0 0	0 0 0	1 0 0	0 0	-----
Other allocations												
ICAO ¹				*			1 1 1 1	0 0	0 0 0	---	--	-----
ICAO ²	*						1 0 0 0	1 0	0 1 1	0 0 1	0 0	-----
ICAO ²	*						1 1 1 1	0 0	0 0 1	0 0 1	0 0	-----

1. ICAO administers this block for assigning temporary aircraft addresses as described in section 8.

2. Block allocated for special use in the interest of flight safety.

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— END —