



International Civil Aviation Organization

**SIXTEENTH MEETING OF THE  
COMMUNICATIONS/NAVIGATION/SURVEILLANCE AND  
METEOROLOGY SUB-GROUP (CNS/MET SG/16) OF APANPIRG**

Bangkok, Thailand, 23 – 27 July 2012

**Agenda Item 6: Surveillance**

**IMPLEMENTATION OF ADDRESSING SCHEME FOR SURVEILLANCE EXCHANGE  
[SYSTEM AREA CODE (SAC) AND SYSTEM IDENTIFICATION CODE (SIC)]**

(Presented by India – Airports Authority of India)

**SUMMARY**

This paper presents the addressing scheme of Surveillance Exchange for India controlled Surveillance Infrastructure. Every surveillance system (i.e. radar sensor, ADS-B sensor, radar data processing system, and server) shall have a unique identification to represent either a radar source or a sink, participating in the surveillance data exchange. Surveillance Data Integration and Implementation of ADS-B in India calls for implementation of addressing scheme for System Area Code (SAC) and System Identification Code (SIC) for various Surveillance sensors and Automation systems. This scheme under implementation in India is as per the guidelines provided in the regional supplement to the ASTERIX Interface Control Document (ICD) for the ASIA/PAC region second edition September 2003

This paper relates to –

**Strategic Objectives:**

**A: Safety** - Enhance global civil aviation safety

**C: Environmental Protection and Sustainable Development of Air Transport** - Foster harmonized and economically viable development of international civil aviation that does not unduly harm the environment

**Global Plan Initiatives:**

GPI-9 Situational awareness

GPI-12 Functional integration of ground systems with airborne systems

GPI-17 Data link applications

GPI-22 Communication infrastructure

**1. INTRODUCTION**

1.1 In order to avoid ambiguity, every surveillance system (i.e. radar sensor, ADS-B sensor, radar data processing system, server) shall have a unique identification to represent either a radar source or a sink, participating in the surveillance data exchange.

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1.2 The format of System Identifier field of radar data exchange is composed of two subfields as illustrated below:

SAC	SIC
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	<b>Field Name</b>	<b>Element Type</b>	<b>Field Size</b>
SAC	System Area Code	Binary	One octet
SIC	System Identification Code	Binary	One octet

1.3 The System Area Code (SAC) field shall consist of an eight-bit number assigned to a country or a territory. The System Identification Code (SIC) shall consist of an eight-bit number assigned to each radar system (radar sensor, processing system, server, etc.) located in the country or territory as defined by the SAC. Individual SICs are assigned by the National Administration concerned within the area identified by the SAC.

1.4 SAC (System Area Code) assigned as per “International Civil Aviation Organization Asia Pacific Office –Regional Supplement to the Asterix ICD for the Asia/Pacific Region (II Edition)” to India is 30 (Hexad) i.e. 00110000 (Binary representation).

1.5 The SIC (System Identification Code) shall consist of an eight-bit number assigned to each radar system (radar sensor, processing system, server, etc.) located in the country or territory as defined by the SAC.

SIC (Decimal)	Surveillance System	Data	Surveillance Type	Code (Binary)
<b>Surveillance Systems in Terminal Area and En-route Airspace</b>				
017	Chennai (Porur)		MSSR	00010001
018	Bellary		MSSR	00010010
019	Vizag		MSSR	00010011
020	Chennai		PSR/MSSR	00010100
021	Trivandrum		PSR/MSSR	00010101
022	Cochin *		PSR/MSSR	00010110
023	Mangalore		MSSR	00010111
024	Hyderabad (HIAL)		PSR/MSSR	00011000
025	Bangaluru (BIAL)		PSR/MSSR	00011001
033	Trivandrum *		ADS-B	00100001
034		00100010		
035	Cochin *		ADS-B	00100011
036		00100100		
037	Mangalore *		ADS-B	00100101
038		00100110		
039	Calicut *		ADS-B	00100111
040		00101000		
041	Coimbatore *		ADS-B	00101001
042		00101010		
049	Delhi (S-Band) – I		PSR/MSSR	00110001
051	Delhi (S-Band) – II *		PSR/MSSR	00110011
053	Delhi (L-Band)		ARSR/MSSR	00110101
055	Amritsar *		PSR/MSSR	00110111
057	Lucknow *		PSR/MSSR	00111001
059	Varanasi		MSSR	00111011
061	Udaipur		MSSR	00111101

065	Varanasi *	ADS-B	01000001
066			01000010
067	Amritsar*	ADS-B	01000011
068			01000100
069	Jaipur *	ADS-B	01000101
070			01000110
071	Lucknow *	ADS-B	01000111
072			01001000
081	Ahmedabad	PSR/MSSR	01010001
083	Mumbai (S-Band) – I	PSR/MSSR	01010011
085	Mumbai (S-Band) – II *	PSR/MSSR	01010101
087	Mumbai (L-Band)	ARSR/MSSR	01010111
089	Nagpur	MSSR	01011001
091	Porbandar	MSSR	01011011
097	Ahmedabad *	ADS-B	01100001
098			01100010
099	Nagpur *	ADS-B	01100011
100			01100100
113	Kolkata	PSR/MSSR	01110001
115	Behrampur	MSSR	01110011
117	Jharsuguda	MSSR	01110101
119	Katihar	MSSR	01110111
121	Kolkata (Badu)	MSSR	01111001
123	Guwahati	PSR/MSSR	01111011
129	Port Blair *	ADS-B	10000001
130			10000010
133	Guwahati *	ADS-B	10000101
134			10000110
135	Agartala *	ADS-B	10000111
136			10001000
<b>Processing System</b>			
201	Chennai	Automation System	11001001
202	Delhi	Automation System	11001010
203	Kolkata *	Automation System	11001011
204	Mumbai	Automation System	11001100

\* Planned / Under Implementation

### 3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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