

ICAO Equipment Code Explanations

Code	Name	Definition	Possible Required Subfield Entry
N	NIL	No COM/NAV approach aid equipment for the route to be flown is carried, or the equipment is unserviceable.	
S	Standard Equipment	Standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable. If the letter S is used, standard equipment is considered to be VHF RTF,VOR and ILS unless another combination is prescribed by the appropriate ATS authority. S= O+L+V	
A	GBAS landing system	Ground-Based Augmentation System (GBAS) is a safety-critical system that augments the GPS Standard Positioning and provides enhanced levels of service. It supports all phases of approach, landing, departure, and surface operations within its area of coverage.	
B	LPV (APV with SBAS)	Localizer Performance with Vertical guidance (LPV), Approach with Vertical guidance (APV-SBAS), Space Based Augmentation System (SBAS) The purpose of LPV is to fly ILS look-alike procedures published as RNAV GNSS with LPV minima, by using SBAS. These procedures with vertical guidance constitute a process to approach safety.	
C	LORAN C	Long Range Navigation (LORAN) C is a terrestrial radio navigation system using low frequency radio transmitters to determine the location and speed of the receiver.	
D	DME	Distance Measuring Equipment (DME) is a transponder-based radio navigation technology that measures distance between the equipment on ground and an aircraft by timing the propagation delay of VHF or UHF radio signals.	
E1	FMC WPR ACARS	Flight Management Computer (FMC) WayPoint Reporting (WPR) Aircraft Communications Addressing Reporting System (ACARS) A number of airlines routinely receive ACARS* position reports from their aircraft via satellite as part of their Airline Operational Control (AOC) flight monitoring. These position reports can be forwarded to an ATS provider and used to replace HF voice position reports. This method of delivery for aircraft position reports is known as FMC WPR. ACARS is a digital datalink system for transmission of short, relatively simple messages between aircraft and ground stations via radio or satellite.	REG/(Aircraft Registration Number) DAT/1PDC
E2	D-FIS ACARS	Data link (D)-Flight Information Services (FIS) Aircraft Communications Addressing Reporting System (ACARS) The flight information services provided can be weather reports and operational data. ACARS is a digital datalink system for transmission of short, relatively simple messages between aircraft and ground stations via radio or satellite.	REG/(Aircraft Registration Number) DAT/1PDC
E3	PDC ACARS	Pre-Departure Clearance (PDC) Aircraft Communications Addressing Reporting System (ACARS) Pre-departure clearance from ATC can be received in the cockpit via the ACARS. ACARS is a digital datalink system for transmission of short, relatively simple messages between aircraft and ground stations via radio or satellite.	REG/(Aircraft Registration Number) DAT/1PDC
F	ADF	Automatic Direction Finder (ADF) is a radio-navigation instrument that automatically and continuously displays the relative bearing from the aircraft to a suitable radio station.	
G	GNSS	Global Navigation Satellite System (GNSS) The term GNSS encompasses all the satellite navigation systems such as GPS, GLONASS, GALILEO	
H	HF RTF	High Frequency (HF) RadioTelephone (RTF) is mainly used during oceanic flight	
I	INS	An Inertial Navigation System (INS), Inertial Reference System (IRS) or Inertial Reference Unit (IRU) is a navigation aid that uses a computer, motion sensors (accelerometers) and rotation sensors (gyroscopes) to continuously calculate the position, orientation, and velocity (direction and speed of movement) of a plane without the need for external references.	
J1	CPDLC ATN VDL Mode 2	Controller Pilot Data Link Communications (CPDLC) Aeronautical Telecommunication Network (ATN) VHF Digital Mode 2 (VDL2) The ICAO VDL Mode 2 is the VDL version most commonly used. The EU Single European Sky rule adopted in January 2009 requires all new aircraft flying in Europe after January 1, 2014 to be equipped with CPDLC.	REG/(Aircraft Registration Number) DAT/1PDC
J2	CPDLC FANS 1/A HF DL	Controller Pilot Data Link Communications (CPDLC) Future Air Navigation Services (FANS) 1/A High Frequency Data Link (HF DL) FANS 1/A provides controller-pilot data link communications (CPDLC) and include air traffic control clearances, pilot requests and position reporting. FANS 1/A typically operates over satellite communications (SATCOM) and is mostly used in Oceanic airspace. FANS 1/A over HF DL provides air traffic control (ATC) communication coverage in the Polar region.	REG/(Aircraft Registration Number) DAT/1PDC
J3	CPDLC FANS 1/A VDL Mode A/0	Controller Pilot Data Link Communications (CPDLC) Future Air Navigation Services (FANS) 1/A VHF Data Link (VDL) Mode A FANS 1/A provides controller-pilot data link communications (CPDLC) and include air traffic control clearances, pilot requests and position reporting. FANS 1/A typically operates over satellite communications (SATCOM) and is mostly used in Oceanic airspace. VDL Mode A is also known as POA (Plain Old ACARS).	REG/(Aircraft Registration Number) DAT/1PDC
J4	CPDLC FANS 1/A VDL Mode 2	Controller Pilot Data Link Communications (CPDLC) Future Air Navigation Services (FANS) 1/A VHF Data Link (VDL) Mode 2 FANS 1/A provides controller-pilot data link communications (CPDLC) and include air traffic control clearances, pilot requests and position reporting. FANS 1/A typically operates over satellite communications (SATCOM) and is mostly used in Oceanic airspace. The ICAO VDL Mode 2 is the VDL version most commonly used. The EU Single European Sky rule adopted in January 2009 requires all new aircraft flying in Europe after January 1, 2014 to be equipped with CPDLC.	REG/(Aircraft Registration Number) DAT/1PDC
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	Controller Pilot Data Link Communications (CPDLC) Future Air Navigation Services (FANS) 1/A FANS 1/A provides controller-pilot data link communications (CPDLC) and include air traffic control clearances, pilot requests and position reporting. FANS 1/A typically operates over satellite communications and is mostly used in Oceanic airspace. This indicator specifies that the data is transiting via the INMARSAT satellite network.	REG/(Aircraft Registration Number) DAT/1PDC
J6	CPDLC FANS 1/A SATCOM (MTSAT)	Controller Pilot Data Link Communications (CPDLC) Future Air Navigation Services (FANS) 1/A FANS 1/A provides controller-pilot data link communications (CPDLC) and include air traffic control clearances, pilot requests and position reporting. FANS 1/A typically operates over satellite communications and is mostly used in Oceanic airspace. This indicator specifies that the data is transiting via the MTSAT satellite network.	REG/(Aircraft Registration Number) DAT/1PDC
J7	CPDLC FANS 1/A SATCOM (Iridium)	Controller Pilot Data Link Communications (CPDLC) Future Air Navigation Services (FANS) 1/A FANS 1/A provides controller-pilot data link communications (CPDLC) and includes air traffic control clearances, pilot requests and position reporting. FANS 1/A typically operates over satellite communications and is mostly used in Oceanic airspace. This indicator specifies that the data is transiting via the Iridium satellite network. It allows worldwide voice and data communications including the poles, oceans and airways.	REG/(Aircraft Registration Number) DAT/1PDC

K	MLS	Microwave Landing System (MLS) is an aviation approach and landing system providing most accurate and reliable information for safe landings. This system overcomes the possible limitations of the ILS.	
L	ILS	Instrument Landing System (ILS) is a ground-based instrument approach system that provides precision guidance to an aircraft approaching and landing on a runway.	
M1	ATC RTF SATCOM (INMARSAT)	Air Traffic Control (ATC) RadioTelephone (RTF) SATellite COMmunications (SATCOM) with data transiting via the INMARSAT satellite network	REG/(Aircraft Registration Number) DAT/1PDC
M2	ATC RTF (MTSAT)	Air Traffic Control (ATC) RadioTelephone (RTF) SATellite COMmunications (SATCOM) with data transiting via the MTSAT satellite network	REG/(Aircraft Registration Number) DAT/1PDC
M3	ATC RTF (Iridium)	Air Traffic Control (ATC) RadioTelephone (RTF) SATellite COMmunications (SATCOM) with data transiting via the Iridium satellite network	REG/(Aircraft Registration Number) DAT/1PDC
O	VOR	VHF Omni directional Range (VOR) is a type of radio navigation system for aircraft	
R	PBN approved	R indicates the Performance Based Navigation (PBN) levels that can be met and is used by ATC for clearance and routing purposes. The insertion of R in the field 10a requires PBN/ to be present in field 18. The PBN sub-field contains the RNAV and/or RNP certifications and operational approvals applicable for the flight.	PBN/
T	TACAN	Tactical Air Navigation (TACAN) is a navigation system in UHF, giving the air crew continuous information as to its range and bearing from a beacon, primarily used by military aircraft.	
U	UHF RTF	Ultra High Frequency (UHF) RadioTelephone (RTF) Radio equipment onboard the aircraft	
V	VHF RTF	Very High Frequency (VHF) RadioTelephone (RTF) Radio equipment onboard the aircraft	
W	RVSM approved	Reduced Vertical Separation Minima (RVSM) of 300m (1000ft) separation between aircraft RVSM provides six additional cruising levels between FL 290 and FL 410, resulting in substantial reductions in fuel costs and in-flight delays.	
X	MNPS approved	Minimum Navigation Performance Specification (MNPS) a set of standards, which require aircraft to have a minimum navigation performance capability in order to operate in MNPS designated airspace. The airspace is vertically defined between FL285 and FL410 and horizontally includes the following control areas: REYKJAVIK, SHANWICK, GANDER and SANTA MARIA OCEANIC plus the portion of NEW YORK OCEANIC which is North of 27N but excluding the area which is west of 60°W & south of 38°30'N.	
Y	Indicates 8.33 kHz radio band spacing	Very High Frequency (VHF) with 8.33 kHz spacing channel	
Z	Other equipment carried or other capabilities	Indicates that other equipment or capabilities, which are not specified in that Item, apply to the flight. These additional equipment or capabilities shall be specified in Item 18 preceded COM/, NAV/, DAT/	NAV/, COM/, DAT/

ICAO Surveillance/ADS Code Explanations

Code	Name	Definition
N	Nil	Indicates that no surveillance equipment for the route to be flown is carried or the equipment is unserviceable
A	Mode A	Transponder - Mode A
C	Modes A and C	Transponder - Mode A and Mode C
E	Mode S, ID, Alt and Squitter	Transponder Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) capability
H	Mode S, ID, Alt and Enhanced Surveillance	Transponder Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability
I	Mode S, ID no Altitude	Transponder Mode S, including aircraft identification, but no pressure-altitude capability
L	Mode S, ID, Alt, Squitter and Enhanced Surveillance	Transponder Mode S, including aircraft identification, pressure-altitude and extended squitter (ADS-B) and enhanced surveillance capability
P	Mode S, Altitude no ID	Transponder Mode S, including pressure-altitude, but no aircraft identification capability
S	Mode S, ID and Altitude	Transponder Mode S, including both pressure-altitude and aircraft identification capability Mode S establishes selective and addressed interrogations with aircraft within its coverage. Such selective interrogation improves the quality and integrity of the detection, identification and altitude reporting.
X	Mode S, No ID, No Altitude	Transponder Mode S, with neither pressure-altitude nor aircraft identification capability
B1	ADS-B, Dedicated 1090MHz Out	Automatic Dependent Surveillance-Broadcast (ADS-B)
B2	ADS-B, Dedicated 1090MHz Out and In	Automatic Dependent Surveillance-Broadcast (ADS-B)
U1	ADS-B, UAT Out	Automatic Dependent Surveillance-Broadcast (ADS-B) Universal Access Transceiver (UAT) ADS-B Out and In functions are the same as described in B1/B2
U2	ADS-B, UAT Out and In	Automatic Dependent Surveillance-Broadcast (ADS-B) Universal Access Transceiver (UAT) ADS-B Out and In functions are the same as described in B1/B2
V1	ADS-B, VDL Mode 4 Out	Automatic Dependent Surveillance-Broadcast (ADS-B) VHF Data Link (VDL)
V2	ADS-B, VDL Mode 4 Out and In	Automatic Dependent Surveillance-Broadcast (ADS-B) VHF Data Link (VDL)
D1	ADS-C, FANS	Automatic Dependent Surveillance-Broadcast (ADS-C) Future Air Navigation System (FANS) The basic concept of the ADS-C application is that the ground system will set up a contract with the aircraft such that the aircraft will automatically provide information obtained from its own on-board sensors, and pass this information to the ground system under specific circumstances dictated by the ground system. Contracts are INITIATED BY THE GROUND (ATC or Airlines Centre) and CANNOT be modified by the pilot. FANS is an avionics system which provides direct data link communication between the pilot and the Air Traffic Controller. In the present use, the communication is "position reporting".
G1	ADS-C, ATN	Automatic Dependent Surveillance-Broadcast (ADS-C) Aeronautical Telecommunication Network (ATN) ADS-C functions are the same as in D1