
1 Introduction and general rules

1.1 Background

1.1.1 General

Off Air Routes Flight Planning has been available within Australian Administered Airspace since the 1990's, initially in the form of Flex Tracks between Sydney and the US West Coast and then as User Preferred Routes (UPRs). In 2003 Flex Tracks commenced from Dubai in the Middle East to Sydney. This progressed to flights in both directions between the Middle East and Brisbane and in time included Sydney and Melbourne. In 2005, the Australian Organised Track Structure (AUSOTS) commenced producing daily Flex Tracks in both directions between South East Asia and Brisbane, Sydney and Melbourne. Since then additional Flex Tracks and UPRs have been created and in some cases Flex Tracks have transitioned into UPRs.

1.1.2 UPRs

A UPR is a track generated by an Aircraft Operator. The strategy used to create the routes includes airframe specific information, meteorological and other atmospheric variables, availability of airspace, Minimum Fuel Track (MFT), time, cost and even minimum workload. The creation of a UPR is more complex and time consuming therefore on some days the fixed route option (least work) may be the best optimum choice. There is no right or wrong UPR, the track requested by an Operator is the right track for them on that day.

UPR operations are currently limited to areas of low traffic density in oceanic airspace.

1.1.3 Flex Track

Flex Track routes are published daily between specific city pairs. They are created by Airservices Australia (Airservices) 'Trackmasters' within Australian Administered Airspace. The tracks are created either:

- a) as a MFT using the Federal Aviation Authority (FAA) Dynamic Oceanic Track System (DOTS) software; or
- b) based on a track proposed by one of the participating airlines.

The tracks are published and are either sent directly to registered airlines via AFTN, or promulgated to the aviation industry as a whole by NOTAM and by notification on the Airservices website. While the tracks are created as a city pair they are available to any operator that can gain a benefit but all users must fly the complete Flex Track from gate to gate.

Airservices facilitates the development and design of each individual Flex Track. This input ensures the integrity of the air route system is maintained and permits the provision of separation with existing ATC system tools and standards.

1.2 UPRs

UPRs are available within Australian Administered Airspace which includes the following Flight Information Regions (FIRs):

- a) Melbourne (YMMM) FIR;
- b) Brisbane (YBBB) FIR;
- c) Honiara (AGGG) FIR; and
- d) Nauru (ANAU) FIR.

Aircraft equipment and capabilities must include:

- a) RNAV10/RNP10 or RNP4;
- b) HF communications; and
- c) ADS-B for Continental.

Flight Planning requirements for operating on UPRs within Australian Administered Airspace:

- a) UPRs must be constructed:
 - i) between approved gates. These gates will be either on an external FIR boundary or an established airport departure or arrival fix; and
 - ii) via published waypoints, navigation aids or latitude and longitudes (not limited to whole degrees).
- b) UPRs may include air routes;
- c) Time intervals between waypoints must not exceed 80 minutes;
- d) Include a reporting point on a FIR boundary:
 - i) Reporting point must be a published high level waypoint or a latitude and longitude not limited to whole degrees (format 2911S16300E) is acceptable;
 - ii) Not required between YBBB and AGGG FIRs; and
 - iii) Not required between AGGG and ANAU FIRs.

1.3 Flex Tracks

1.3.1 Track Definition Message (TDM) - format

The Airservices Trackmaster uses the TDM format in accordance with procedures used by the FAA for the generation of the PACOTS on the Pacific Ocean.

The TDM consists of:

- a) Track identifier;
- b) Validity period;
- c) Track description;
- d) RTS section; and
- e) RMK section.

Flex Track are defined between gates and/or between gates and UPR Airspace. These gates are defined on the boundary of neighbouring FIRs and at established Australian airport departure or arrival fixes. RTS are approved routes to and from the gates at the Australian end of Flex Tracks.

All Waypoints used in a TDM will be either:

- a) published High Level Waypoints; or
- b) Latitude/Longitude Waypoints not limited to whole degrees (format 2911S16300E) is acceptable.

Between the Australian Aerodrome and the gate the track planned must be in accordance with the Australian AIP. The RTS described in the TDM is an example of a permissible route.

Airservices will not normally specify the flight planning requirements outside Australian Administered Airspace

Aircraft operators preferring to automatically receive the TDMs should contact the Trackmaster via email on Trackmaster@airservicesaustralia.com or via AFTN: YMMMZQZ.

1.3.2 Aircraft requirements

Aircraft equipment and capabilities must include:

- a) RNAV10/RNP10 approval;
- b) HF communications; and
- c) ADS-B.

TDM structure
<p>TDM TRK (Flex Track Identifier) * (Creation time and version number) AMDT** (Flex Track validity start time) (Flex Track validity end time) (Flex Track details) RTS/RTS are the required routes to and from the gates at the Australian end of the Flex Track RMK/(Specific comments affecting the use of the Flex Track) NNNN</p>
Example
<p>(TDM TRK SY1 ^ 050101200001 0501020515 0501022200 AGETA WDH BOU VINAX TNK 17S130E 15S126E ONOXA RTS/YSSY SY H202 AGETA RMK/O) NNNN</p>

* Maximum of four alpha/numeric characters.

** AMDT - Amendment will be added to message if modified.

1.3.3 TDM - track identifier format

1.3.3.1 Character 1 and 2 - identifiers

Characters 1 and 2 represent the direction of the Flex Track, which is either a track between two specified airports or between an airport and an area/region. Specific airports or area/region.

A	Adelaide
B	Brisbane
C	Christchurch
D	Denpasar
M	Melbourne
N	Auckland
P	Perth
S	Sydney
X	Middle East
Y	Singapore area of Southeast Asia
Z	India
K	Bangkok area of Southeast Asia
V	East Asia

1.3.3.2 Character 3 - track number

Character 3 represents the track number for a specific track identifier. This number is generally one unless additional Flex Tracks are generated and becomes valid during the same day. These additional tracks could be valid either concurrently to provide for congestion on a single track or become valid throughout the day to take advantage of the changing wind conditions.

1.3.3.3 Character 4 - day of creation

The fourth character (^ as shown below) will be a number from 1-7, representing the day of the week that the Flex Track is created starting with Monday - 1, Tuesday - 2, etc.

The following is the list of TDMs published by the Trackmaster:

	City pair	Track designator
1	Singapore to Brisbane	YB1 ^
2	Singapore to Sydney	YS1 ^
3	Singapore to Melbourne	YM1 ^
4	Brisbane to Singapore	BY1 ^
5	Sydney to Singapore	SY1 ^
6	Melbourne to Singapore	MY1 ^ and MY2 ^
7	Bangkok to Sydney	KS1 ^
8	Sydney to Bangkok	SK1 ^
9	Brisbane to Perth	BP1 ^
10	Perth to Brisbane	PB1 ^

	City pair	Track designator
11	Middle East to Sydney	XS1 ^
12	Middle East to Melbourne	XM1 ^
13	Sydney to Middle East	SX1 ^ and SX2 ^
14	Melbourne to Middle East	MX1 ^
15	Middle East to Brisbane	XB1 ^
16	Brisbane to Middle East	BX1 ^
17	Hong Kong to Melbourne	VM1 ^
18	Melbourne to Hong Kong	MV1 ^

Note 1: *XB11 - ... represents the first Flex Track created between the Middle East and Brisbane, created on a Monday.*

Note 2: *YS22 - ... represent the second Flex Track created between Singapore and Sydney on a Tuesday.*

Note 3: *SX23 - ... represents the second Flex Track created between Sydney and the Middle East on a Wednesday.*

1.3.4 Flight planning

All waypoints published in the original TDM are to be included in item 15 of the ICAO ATS Flight Plan. Flex Track designators and ATS route designators (within the Flex Track area) shall not be shown in the filed Flight Plan.

Aircraft operating on the AUSOTS must have reached the published exit gate waypoint or be outbound within Indian and Southern Ocean UPR Airspace prior to termination of the Flex Track validity period. Aircraft that cannot complete the Flex Track portion of the flight during the published validity period must flight plan via the fixed ATS Route structure. However, when a flight is unexpectedly delayed and this delay would cause the aircraft to still be on the Flex Track, but outside the validity period, approval can be granted from the Operations Room Manager in the relevant Centre. If approval is not granted, the flight is required to re-plan via the fixed ATS Route structure or the relevant published Flex Tracks, if available. Airline Operators may flight plan, using the Flex Tracks, even when not intending to land at the Flex Track designated destinations. However, they may not diverge from the Flex Tracks prior to the approved exit gate.

The Flex Track is also available for aircraft departing from an Australian airport different than described in the TDM, however the Flex Track must be flight planned as published from the entry to the exit gates.

1.3.5 Flex Tracks

The general validity period for Flex Tracks is specified in each part of this manual however the legal validity period is published in the TDM.

1.4 Non-Extended Diversion Time Operations (EDTO) flights

1.4.1 EDTO waiver

In accordance with [AIP ENR](#) 1.1 para 20.1, flights must be approved by ATC if they do not comply with applicable flight planning requirements. This requirement is waived if guidelines for non-EDTO are published in the appropriate regional section of this manual.

1.5 Change process

1.5.1 Changes to Flex Track and/or UPRs

When new off air route flight planning options are implemented or existing options are amended the associated rules will be updated. Change notification will be via relevant documentation such as [AIP SUP](#) and/or NOTAM.

1.5.2 Industry requests

Use the approved template [Airspace, Air Route and Flight Planning - Industry Proposal](#) to submit requests for amendments to:

- a) airspace;
- b) air routes, including fixed routes, UPRs, Flex Tracks and direct route segments;
- c) ERSA flight planning requirements; and
- d) Instrument procedures within controlled airspace, including SIDs and STARs.

Email completed forms to: initiatives.delivery@airservicesaustralia.com.

1.6 Contact

1.6.1 Further information

Further information or assistance may be obtained from email: initiatives.delivery@airservicesaustralia.com.