Navigation Database File Format

The files are held in the "Captain_Sim/navigation" subfolder of FS installation folder

The format for the three files is identical. The data within the files is organised into blocks, each block describing a single SID or STAR procedure. Each such block is identified by a header enclosed in braces, which has this format:

{BIKF;RW02;ALD1A;ALDAN}

Which specifies, the Airport, the Runway to which the procedure applies (this can be ALL meaning this procedure exists for all runways), the Procedure name, and the Transition waypoint.

Each block then contains several lines each describing a leg in the procedure.

SID and STAR

SID are held in SIDs.db file.
STARs are held in STARs.db file.
IAPs are held in IAPs.db file.

The format for the three files is identical:
{Airport;applicable runways;SID name;transition name}
Alt1;Alt2;AltType;ArcRadius;Bearing;Distance;Fix;FixLat;FixLon;MagCourse;Path;RecNav;RteDist;RouteType;Speed;TransitionAlt;TransitionID;Turn;

<u>Where:</u>

Alt1 - is the altitude constraint

Alt2 - is the second altitude constraint for BETWEEN type constraints

AltType - describes the type of following altitude constraints and can be "+" for AT OR ABOVE, "-" for AT OR BELOW, "B" for BETWEEN or " " for AT type constraints

ArcRadius - is radius for RF type legs

Bearing - is the radial for CR and VR legs

Distance - is distance for CD, FC, FD or VD legs

Fix - is a fix or waypoint this leg is based on (for example Track to Fix type leg, this field shows the name of the fix in question)

FixLat and *FixLon* - are the coordinates of this fix, where applicable. The current database lists 91.00 / 181.00 where such coordinates are not defined (for example Heading to Altitude leg), but exact values are not important.

MagCourse - is course or heading where it is required

Path - describes the leg path type and can be one of the following standard AIRAC types:

HA	Hold one circle
HF	Hold until altitude reached
HM	Hold with manual termination
IF	Initial fix
PI	Procedure turn
TF	Track between fixes

CA	Course to altitude
CD	Course to DME distance
CI	Course to leg
CR	Course to radial termination
CF	Course to fix
DF	Track to fix
FA	Course from fix to altitude
FC	Course from fix to given distance
FD	Course from fix to DME distance
FM	Course from fix to manual termination
RF	Constant radius to fix
VA	Heading to altitude
VD	Heading to DME distance
VI	Heading to leg
VM	Heading to manual termination
VR	Heading to radial termination

RecNav - is Recommended Navaid for this leg. This is used for legs such as Course from Fix to DME Distance or Course to Radial Termination and lists the navaid name which is to be tuned to and checked for DME distance or radial.

RteDist - is route distance

RouteType - describes which part of the procedure this leg belongs to: 1 = SID runway transition, 2 = SID common part, 3 = SID enroute transition, 4 = STAR runway transition, 5 = STAR common part, 6 = STAR enroute transition. For example, there can exist several versions of a SID for different runways, they will have the same lines with RouteType of 2 or 3 and different lines with RouteType of 1 describing paths from different runways. Or, SID blocks with different lines of RouteType 3 show similar SIDs with different enroute transition waypoints.

Speed - is speed restriction at this leg

TransitionAlt - is Transition altitude for this procedure.

TransitionID - is the name of transition waypoint this procedure applies to

Turn - can be "L" or "R" for left or right turns as demanded by procedure

Airports

Held in Airports.db file.

File format:
Elevation;ICAO;Latitude;Longitude

Airways

Held in Airways.db file.

File format:
AirwayName;Bidirectional;Latitude;Longitude;Type;WaypointName;

Bidirectional – equals to either '1' or '0'
Type:

ATLANTIC	1
BAHAMA	2

CORRIDOR	3
ADVISORY	4
DIRECT	5
MILITARY	6
NORTHAMERICAN	7
OCEANIC	8
RNAV	9
SUBSTITUTE	10
TACAN	11
AIRWAY	12

Root points

Held in Fixes.db file.

File format:
ID;Latitude;Longitude;UsageCode

UsageCode:

HL	1
LL	2
BOTH	3
RNAV	4
TERMINAL	5

Stations (VOR and NDB)

Held in Navaids.db file

File format:
Altitude;Frequecny;ID;Latitude;Longitude;Type;UsageCode

Type:

VOR	1
VORTAC	2
TACAN	3
VORDME	4
NDB	5
NDBDME	7
DME	9

Runways

Held in Runways.db file.

File format:
AirportICAO;GS_Angle;ILS_Frequency;Latitude;LengthFeet;Longitude;Name;TrueHeading;