

FSUIPC7 Offset Status Document

Version 0.7, 11th January 2023

Legend:

Not Working
Probably Not Working
Missing from MSFS Documentation
FSUIPC Documentation Inconsistency
Probably Working
Working
Unknown / Not Tested

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0000	32				Reserved for diagnostics		
0x0020	4	GROUND ALTITUDE	Responded		Ground altitude in Metres x 256. (see also offset 0B4C)		
0x0024	256				READ: Zero terminated string giving the Start-Up situation or flight name, including the path (complete, or from the FS folder)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
					<p>WRITE: Operates a facility to “spoof” Flight Sim read-out values as supplied to all FSUIPC and WideFS client applications.</p> <p>To use this, write the following to offset 0024, as one structure (i.e. one FSUIPC_Write call):</p> <pre>struct { WORD offset; // base offset of data to be overridden WORD length; // length of data (max 252) BYTE[] data; // Up to 252 bytes of data };</pre> <p>The override is established the first time you do this for a specific offset + length combination. Any overlapping setting replaces the previous one, but re-writing the same one with different data is fast as it merely writes to the relevant offsets -- the FS data is already being diverted.</p> <p>Cancel the overrides by writing the same with no data and a length of 0. If you don't cancel, but don't update, the override will be cancelled after about 12 seconds (not counting Menu time). Avoid letting this happen, though -- always explicitly cancel when finishing.</p> <p>Note that not all FSX values can be overridden in this way, and none of the normal FSUIPC values can be permanently overridden. However, this facility does provide direct access to ALL offsets, and you can easily wreck things and ruin someone's day! Those which are normally write-protected are not so protected using this facility.</p> <p>The “Liar.lua” plug-in supplied with the Lua additions demonstrates this facility, and also shows the only way provided of reading the un-spoofed values: a privilege afforded only to the Lua ipc.readStruct facility in the Lua program which actually applies the overrides too.</p>		
0x012C	1				The name of the current Log book		
0x0130	256				The current flight Plan path & file name (in UNC format if WideFS is in use). This can be written to to load a flight. But note that this normally loads the newer fxml format flights only. With FSUIPC5, to load an FS9 format .flt file use the full filename including the .flt, but follow this with another .flt (i.e. “name.flt.flt”). The extra one will be stripped off leaving the correct name.		
0x0230	8	ABSOLUTE TIME	Responded		“Absolute Time”, in seconds, double float. This is unchecked, but is said to be the time since 12 noon on January 1 st , Year 0000 (?).		
0x0238	1	LOCAL TIME	Responded		Hour of local time in FS (0–23)		
0x0239	1	LOCAL TIME	Responded		Minute of local time in FS (0–59)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x023A	1	LOCAL TIME	Responded		Second of time in FS (0–59) <i>For setting, FSX provides "KEY_CLOCK_SECONDS_ZERO" only. No way to directly set a number of seconds.</i>		
0x023B	1	ZULU TIME	Responded		Hour of Zulu time in FS (also known at UTC or GMT)		
0x023C	1	ZULU TIME	Responded		Minute of Zulu time in FS2		
0x023D	1	ZULU DAY OF MONTH	Responded		Zulu day of month in FS (counting from 1)		
0x023E	2	ZULU DAY OF YEAR	Responded		Day number in year in FS (counting from 1)		
0x0240	2	ZULU YEAR	Responded		Zulu year in FS		
0x0242	1	ZULU MONTH OF YEAR	Responded		Zulu month of year in FS		
0x0243	1	ZULU DAY OF WEEK	Responded		Zulu day of week in FS		
0x0244	1	LOCAL MONTH OF YEAR	Responded		Local month of year in FS		
0x0245	1	LOCAL DAY OF MONTH	Responded		Local day of month in FS		
0x0246	2	TIME ZONE OFFSET	Responded		Local time offset from Zulu (minutes). +ve = behind Zulu, – ve = ahead		
0x0248	2				Season: 0=Winter, 1=Spring, 2=Summer, 3=Fall		
0x024A	2	LOCAL YEAR	Responded		Local year in FS		
0x024C	4				Available FS memory in kilobytes (updated every 10 seconds) See also offsets 0258 and 0290.		
0x0250	1				AI Airline Traffic Density % (0–100). If you increase this you will normally see an FS progress bar as it reloads traffic		
0x0251	1				AI General Aviation Traffic Density % (0–100). If you increase this you will normally see an FS progress bar as it reloads traffic		
0x0252	1				AI Ships & Ferries Traffic Density % (0–100). If you increase this you will normally see an FS progress bar as it reloads traffic		
0x0254	1				Cloud cover density: 5=LOW to 8=MAX. <i>This can be written to, and it does change the slider position, but whether it directly affects the cloud drawing isn't known at present.</i>		
0x0255	1				Cloud simple/complex flag: 0=Simple, 1=Complex. <i>This can be written to, and it does change the setting, but whether it directly affects the cloud drawing isn't known at present.</i>		
0x0256	1				Thermal visualisation setting: 0=None, 1=Natural, 2=Schematic		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0258	4				Memory currently assigned to FSUIPC4 (including WideServer) See also offset 024C. This is in Bytes.		
0x025C	4				The current total number of AI Traffic aircraft. See offsets 02A2 & 02A4 for separate ground/airborne counts.		
0x0260	2				Current Autobrake setting for A320Neo only: 0=Off, 1=Lo, 2=Med, 3=Max. Initial state may not be correct as it needs an autobrake setting change to initialise correctly		
0x0262	2				Pause control. Controls 2 pause states with flags 0x1 (pause set) and 0x2 (pause on/off) – not 'esc' or 'active' pause		
0x0264	2				Pause indicator: Shows 3 pause states with flags 0x1 (pause set), 0x2 (pause on/off) and 0x4 (esc pause)		
0x0266	2	CENTER WHEEL RPM	Responded		Centre (nose or tail) wheel RPM, as a 16-bit integer		
0x0268	2	LEFT WHEEL RPM	Responded		Left wheel RPM, as a 16-bit integer		
0x026A	2	RIGHT WHEEL RPM	Responded		Right wheel RPM, as a 16-bit integer		
0x026C	1	LOCAL DAY OF WEEK			Local day in FS		
0x026D	1	CAMERA STATE	Responded	Responded	Enum: 2 = Cockpit 3 = External/Chase 4 = Drone 5 = Fixed on Plane 6 = Environment 7 = Six DoF 8 = Gameplay 9 = Showcase 10 = Drone Aircraft 11 = Waiting 12 = World Map 13 = Hangar RTC 14 = Hangar Custom 15 = Menu RTC 16 = In-Game RTC 17 = Replay 19 = Drone Top-Down 21 = Hangar 24 = Ground 25 = Follow Traffic Aircraft		
0x0274	2				Frame rate is given by 32768/this value		
0x0278	2	AUTO COORDINATION	Responded	Responded	Auto-co-ordination ("auto-rudder"), 1=on, 0=off Different to FS9 and before: this setting cannot be changed via any of the usual controls, or the documented as "settable" SimVar. It is broken, an FSX/ESP bug!		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0280	1				Lights: this operates the NAV, TAXI, PANEL and WING lights. For separate switches see offset 0D0C		
0x0281	1				Beacon and Strobe lights. For separate switches see offset 0D0C		
0x0284	2	ADF STANDBY FREQUENCY:1	Responded		ADF1 Standby Frequency: main 3 digits, in Binary Coded Decimal. A frequency of 1234.5 will have 0x0234 here and 0x0105 in offset 0286.		
0x0286	2				Extended ADF1 Standby Frequency: the high byte contains the 1000's digit and the low byte the fraction, so, for a frequency of 1234.5 this offset will contain 0x0105.		
0x0288	2	ADF STANDBY FREQUENCY:2	Responded		ADF2 Standby Frequency: main 3 digits, in Binary Coded Decimal. A frequency of 1234.5 will have 0x0234 here and 0x0105 in offset 0286.		
0x028A	2				Extended ADF2 Standby Frequency: the high byte contains the 1000's digit and the low byte the fraction, so, for a frequency of 1234.5 this offset will contain 0x0105.		
0x028C	1				Landing lights. (See also offset 0D0C).		
0x0290	4				Maximum available FS contiguous memory block in kilobytes (updated every 10 seconds). See also offset 024C		
0x0290	4	AUTOPILOT ALTITUDE SLOT INDEX					
0x0294	4	AUTOPILOT HEADING SLOT INDEX					
0x0298	4	AUTOPILOT SPEED SLOT INDEX					
0x029B	1	ALTERNATE STATIC SOURCE OPEN	Responded		Alternate static air source (0=off, 1=on)		
0x029C	1	PITOT HEAT	Responded		Pitot Heat switch (0=off, 1=on)		
0x029D	1	APU SWITCH					
0x02A0	2	MAGVAR	Responded		Magnetic variation (signed, -ve = West). For degrees *360/65536. Convert True headings to Magnetic by <i>subtracting</i> this value, Magnetic headings to True by <i>adding</i> this value.		
0x02A2	2				he current number of AI Traffic aircraft on the ground. Also see offsets 025C (total count) & 02A4 (airborne count).		
0x02A4	2				The current number of AI Traffic aircraft in the air. Also see offsets 025C (total count) & 02A2 (ground count).		
0x02B2	2				Zoom factor: 64=x1, 128=x2 et cetera		
0x02B4	4	GROUND VELOCITY	Responded		GS: Ground Speed, as 65536*metres/sec. Not updated in Slew mode!		
0x02B8	4	AIRSPEED TRUE	Responded	Responded	TAS: True Air Speed, as knots * 128		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x02BC	4	AIRSPEED INDICATED	Responded	Responded	IAS: Indicated Air Speed, as knots * 128		
0x02C0	1	TURB ENG IGNITION SWITCH EX1:1					
0x02C1	1	TURB ENG IGNITION SWITCH EX1:2					
0x02C2	1	TURB ENG IGNITION SWITCH EX1:3					
0x02C3	1	TURB ENG IGNITION SWITCH EX1:4					
0x02C4	4	AIRSPEED BARBER POLE	Responded		Barber pole airspeed, as knots * 128		
0x02C8	4	VERTICAL SPEED	Responded		Vertical speed, signed, as 256 * metres/sec. For the more usual ft/min you need to apply the conversion *60*3.28084/256		
0x02CC	8	WISKEY COMPASS INDICATION DEGREES	Responded	Responded	Whiskey Compass, degrees in 'double' floating point format (FLOAT64)		
0x02D4	2	ADF ACTIVE FREQUENCY:2	Responded		ADF2 Frequency: main 3 digits, in Binary Coded Decimal. See also offset 02D6. A frequency of 1234.5 will have 0x0234 here and 0x0105 in offset 02D6.		
0x02D6	2	ADF ACTIVE FREQUENCY:2			Extended ADF2 frequency. The high byte contains the 1000's digit and the low byte the fraction, so, for a frequency of 1234.5 this offset will contain 0x0105.		
0x02D8	2	ADF RADIAL:2	Responded		ADF2: relative bearing to NDB (*360/65536 for degrees, – ve left, +ve right)		
0x02DC	6	ADF IDENT:2	Responded		ADF2 IDENTITY (string supplied: 6 bytes including zero terminator)		
0x02E2	25	ADF NAME:2	Responded		ADF2 name (string supplied: 25 bytes including zero terminator)		
0x02FB	1	ADF SOUND:2	Responded		ADF2 morse ID sound (1 = on, 0 = off), read for state, write to control		
0x02FC	4	AUTOPILOT VS SLOT INDEX					
0x0300	2	NAV DME:1	Responded		VOR1 DME distance, 16-bit integer, nm * 10		
0x0302	2	NAV DMESPEED:1	Responded		VOR1 DME speed, 16-bit integer, kts * 10		
0x0304	2				VOR1 DME time to station, 16-bit integer, secs * 10		
0x0306	2	NAV DME:2	Responded		VOR2 DME distance, 16-bit integer, nm * 10		
0x0308	2	NAV DMESPEED:2	Responded		VOR2 DME speed, 16-bit integer, kts * 10		
0x030A	2				VOR2 DME time to station, 16-bit integer, secs * 10		
0x030C	4	VERTICAL SPEED			Vertical speed, copy of offset 02C8 whilst airborne, not updated whilst the "on ground" flag (0366) is set. Can be used to check hardness of touchdown (but watch out for bounces which may change this).		
0x0310	8				Timer (double float, elapsed seconds including fractions, adjusted each 'tick' – i.e. 1/18 th sec). See also 0368		
0x0318	4	PRESSURIZATION CABIN ALTITUDE	Responded		Pressurisation cabin altitude at present (feet, 32-bit integer)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x031C	4	PRESSURIZATION CABIN ALTITUDE GOAL	Responded		Pressurisation cabin altitude set goal (feet, 32-bit integer)		
0x0320	4	PRESSURIZATION CABIN ALTITUDE RATE	Responded		Pressurisation cabin altitude set change rate (feet/sec, 32-bit floating point)		
0x0324	4	PRESSURIZATION PRESSURE DIFFERENTIAL	Responded		Pressurisation cabin pressure differential (lbs/sq.ft, 32-bit floating point): set – actual.		
0x0328	4	PRESSURIZATION DUMP SWITCH	Responded		Pressurisation dump switch (1 = open, 0 = closed)		
0x032C	2				“Plane is in fuel box” flag (same as Scenery BGL variable 0288)		
0x032E	2				<i>Reserved (used internally)</i>		
0x0330	2	KOHLSMAN SETTING MB	Responded	Responded	Altimeter pressure setting (“Kollsman” window). As millibars (hectoPascals) * 16		
0x0332	2	KOHLSMAN SETTING MB:2	Responded	Responded (?)	Altimeter pressure secondary setting (“Kollsman” window). As millibars (hectoPascals) * 16. This is the one used in the G1000 gauge.		
0x0334	4	PUSHBACK ANGLE	Responded		Pushback angle, radians, as a 32-bit Float.		
0x0338	4	PUSHBACK CONTACTX	Responded		Pushback X contact, feet, as a 32-bit Float.		
0x033C	4	PUSHBACK CONTACTY	Responded		Pushback Y contact, feet, as a 32-bit Float.		
0x0340	4	PUSHBACK CONTACTZ	Responded		Pushback Z contact, feet, as a 32-bit Float.		
0x0344	2	PUSHBACK WAIT	Responded		Pushback wait flag, 16-bit integer (probably only 0 or 1)		
0x0346	1	SURFACE CONDITION	Responded		Surface condition: 0=normal, 1=wet, 2=icy, 3=snow		
0x0347	1	SURFACE INFO VALID	Responded		Surface info valid flag. <i>[not working -- ignore]</i>		
0x0348	2	STRUCTURAL ICE PCT	Responded		Structural ice formation quantity, 0 – 16384		
0x034A	2	PITOT ICE PCT	Responded		Pitot ice formation quantity, 0 – 16384		
0x034C	2	ADF ACTIVE FREQUENCY:1	Responded		ADF1 Frequency: main 3 digits, in Binary Coded Decimal. See also offset 0356. A frequency of 1234.5 will have 0x0234 here and 0x0105 in offset 0356.		
0x034E	2	COM ACTIVE FREQUENCY:1	Responded		COM1 frequency, 4 digits in BCD format. A frequency of 123.45 is represented by 0x2345. The leading 1 is assumed.		
0x0350	2	NAV ACTIVE FREQUENCY:1	Responded		NAV1 frequency, 4 digits in BCD format. A frequency of 113.45 is represented by 0x1345. The leading 1 is assumed.		
0x0352	2	NAV ACTIVE FREQUENCY:2	Responded		NAV2 frequency, 4 digits in BCD format. A frequency of 113.45 is represented by 0x1345. The leading 1 is assumed.		
0x0354	2	TRANSPONDER CODE:1	Responded		Transponder setting, 4 digits in BCD format: 0x1200 means 1200 on the dials.		
0x0356	2				Extended ADF1 frequency. The high byte contains the 1000’s digit and the low byte the fraction, so, for a frequency of 1234.5 this offset will contain 0x0105.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0366	2	SIM ON GROUND	Responded		Aircraft on ground flag (0=airborne, 1=on ground). Not updated in Slew mode.		
0x0368	4				Control timer 2 (see also 0310), a 32-bit 'float'.		
0x036C	1	STALL WARNING	Responded		Stall warning (0=no, 1=stall)		
0x036D	1	OVERSPEED WARNING	Responded		Overspeed warning (0=no, 1=overspeed)		
0x036E	1	TURN COORDINATOR BALL	Responded		Turn co-ordinator ball position (slip and skid). -128 is extreme left, +127 is extreme right, 0 is balanced. (See 0374 for more accuracy)		
0x0371	1				<i>Reserved for ASE weather control flags</i>		
0x0372	2				Reliability % (0-100)		
0x0374	2				NAV1 or NAV2 select <i>[Not used for several FS releases?]</i>		
0x0378	2	SELECTED DME	Responded		DME1 or DME2 select (1=DME1, 2=DME2)		
0x037C	2	DELTA HEADING RATE	Responded	Responded	Turn Rate (for turn coordinator). 0=level, -512=2min Left, +512=2min Right (See 0384 for more accuracy)		
0x0380	4	TURN COORDINATOR BALL	Responded		32-bit floating point turn coordinator ball position, -1.0 to +1.0		
0x0384	4	DELTA HEADING RATE	Responded	Responded	32-bit floating point turn rate, degrees per second (-3.0 to +3.0 is equivalent to the 2 mins left/right range)		
0x03A0	4				1st FSUIPC monitored value (right-hand side of Logging tab), if numeric. Provided in 32-bit floating point format		
0x03A4	4				2nd FSUIPC monitored value (right-hand side of Logging tab), if numeric. Provided in 32-bit floating point format		
0x03A8	4				3rd FSUIPC monitored value (right-hand side of Logging tab), if numeric. Provided in 32-bit floating point format		
0x03AC	4				4th FSUIPC monitored value (right-hand side of Logging tab), if numeric. Provided in 32-bit floating point format		
0x03B0	8	AILERON LEFT DEFLECTION	Responded		Left aileron deflection, in radians, as a double floating point value		
0x03B8	8	AILERON RIGHT DEFLECTION	Responded		Right aileron deflection, in radians, as a double floating point value		
0x03C0	64				The current state of the buttons on actively scanned joysticks (local ones, 0 to 15). Each of the 16 DWORDS contain the 32-bit state of the joystick 0-15, in order. Button 0 is the least significant bit (bit 0) in each DWORD. Please see offset 0x7F00 for similar facilities but for joysticks with up to 128 buttons.		
0x0400	128				The filename of the last flight (or situation) saved, as an ASCII string with a zero terminator. The filetype (.flt or .stn) is not included. Use the counter at 3BD2 to determine when this has changed.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0480	8				Aileron trim axis input, 64-bit floating point (double), read-only		
0x0488	8				Rudder trim axis input, 64-bit floating point (double), read-only		
0x0490	8				Aileron trim axis required value, 64-bit floating point (double). If 2^0 is set in the byte at 04A0, then, when written, this value is copied to the FS trim (2EB0) instead of the value in 0480		
0x0498	8				Rudder trim axis required value, 64-bit floating point (double). If 2^1 is set in the byte at 04A0, then, when written, this value is copied to the FS trim (2EC0) instead of the value in 0488		
0x04A0	1				Aileron and rudder trim connection control. See offsets 480–0498 above. 2^0 = 1 to disconnect aileron trim (2EB0) from FS 2^1 = 1 to disconnect rudder trim (2EC0) from FS This byte will be cleared and the connection restored (together with the most recent axis values) within about 10 seconds of it being written non-zero, so you need to write this every few seconds.		
0x04A8	8				Elapsed seconds value, as a double. Accurate to fractions of a second but only updated frame by frame. This value counts simulated time, stopping in paused and menu modes, speeding up and slowing down according to the actual sim rate.		
0x04B0	48				Area reserved by FSUIPC.		
0x04B4	2				Was allocated to ADVENTURE WEATHER		
0x04BA	2				Was allocated to ADVENTURE WEATHER		
0x04BC	2				Was allocated to ADVENTURE WEATHER		
0x04C0	2				Was allocated to ADVENTURE WEATHER		
0x04C2	2				Was allocated to ADVENTURE WEATHER		
0x04C4	2				Was allocated to ADVENTURE WEATHER		
0x04C6	2				Was allocated to ADVENTURE WEATHER		
0x04C8	2				Dew point as degrees C *256, for the surface temperature layer, read only		
0x04CB	1				Precipitation rate, 0–5, read only.		
0x04CC	1				Precipitation type, 0=none, 1=rain, 2=snow, read only.		
0x04CD	1				Was allocated to ADVENTURE WEATHER		
0x04CE	1				Was allocated to ADVENTURE WEATHER		
0x04CF	1				Was allocated to ADVENTURE WEATHER		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x04D2	2				Precipitation control: write hi-byte=type 0–2, low byte=rate 0–5. Write 0xFFFF to release control back to FS.		
0x04D4	2				Dew point control: degrees C * 256. Sets surface layer dewpoint only, FSUIPC does rest. Write 0x8000 to release control back to FS.		
0x04D6	2				Set to 0xFADE if FSUIPC's weather interface has initialised.		
0x04D8	2				Surface layer wind speed, in knots. This may be different to the current wind speed at the aircraft—see offset 0E90.		
0x04DA	2				Surface layer wind direction, *360/65536 to get degrees MAGNETIC. This may be different to the current wind direction at the aircraft—see offset 0E92.		
0x04DE	2				Weather option control: not supported		
0x04E0	88				Area reserved for Project Magenta		
0x0538	8	DESIGN SPEED VS0	Responded		Design speed VS0 (stall speed full flaps), ft/sec, as a double (64-bit floating point).		
0x0540	8	DESIGN SPEED VS1	Responded		Design speed VS1 (stall speed clean), ft/sec, as a double (64-bit floating point).		
0x0548	8	DESIGN SPEED VC	Responded		Design speed VC (cruise speed), ft/sec, as a double (64-bit floating point).		
0x0550	8	MIN DRAG VELOCITY	Responded		Minimum drag velocity, ft/sec, as a double (64-bit floating point).		
0x0558	4				<p>INITIAL POSITION: Airspeed setting.</p> <p>Write the desired airspeed here (in knots), along with, <i>in the same IPC write</i>, those of the following fields (on-ground, LLAPBH – Lat/Lon/Alt/Pitch/Bank/Hdg) which you need to set. FSUIPC4 will use the <i>INITIAL POSITION</i> facility in FSX to place your aircraft and set the speed.</p> <p>To set the speed at the current position (but not on ground), just write this offset and FSUIPC4 will use the following values as they currently stand.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x055C	4				<p>INITIAL POSITION: On-ground setting.</p> <p>Write 0 for in-flight or 1 for on-ground here, along with, <i>in the same IPC write</i>, those of the following fields (LLAPBH – Lat/Lon/Alt/Pitch/Bank/Hdg) which you need to set. FSUIPC4 will use the <i>INITIAL POSITION</i> facility in FSX to place your aircraft. It will set the speed to 0 if the on-ground value is non-zero, but otherwise it will use the current airspeed from 02BC.</p>		
0x0560	8	PLANE LATITUDE	Responded	Responded	<p>Latitude of aircraft in FS units. (Read offset 6010 for easier conversion!)</p> <p><u>To convert to Degrees:</u> <i>If your compiler supports long long (64-bit) integers</i> then use such a variable to simply copy this 64-bit value into a double floating point variable and multiply by 90.0/ (10001750.0 * 65536.0 * 65536.0). <i>Otherwise</i> you will have to handle the high 32-bits and the low 32-bits separately, combining them into one double floating point value (say dHi). To do, copy the high part (the 32-bit int at 0564) to one double and the low part (the 32-bit unsigned int at 0560) to another (say dLo). Remember that the low part is only <i>part</i> of a bigger number, so doesn't have a sign of its own. Divide dLo by (65536.0 * 65536.0) to give it its proper magnitude compared to the high part, then either add it to or subtract it from dHi according to whether dHi is positive or negative. This preserves the integrity of the original positive or negative number. Finally multiply the result by 90.0/10001750.0 to get degrees. Either way, a negative result is South, positive North. [Can be written to move aircraft]</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0568	8	PLANE LONGITUDE	Responded	Responded	Longitude of aircraft in FS format. (Read offset 6018 for easier conversion!) <u>To convert to Degrees:</u> If your compiler supports long long (64-bit) integers then use such a variable to simply copy this 64-bit value into a double floating point variable and multiply by 360.0/(65536.0 * 65536.0 * 65536.0 * 65536.0). Otherwise you will have to handle the high 32-bits and the low 32-bits separately, combining them into one double floating point value (say dHi). To do, copy the high part (the 32-bit int at 056C) to one double and the low part (the 32-bit unsigned int at 0568) to another (say dLo). Remember that the low part is only <i>part</i> of a bigger number, so doesn't have a sign of its own. Divide dLo by (65536.0 * 65536.0) to give it its proper magnitude compared to the high part, then either add it to or subtract it from dHi according to whether dHi is positive or negative. This preserves the integrity of the original positive or negative number. Finally multiply the result by 360.0/(65536.0 * 65536.0) to get degrees. Either way, a negative result is West, positive East. If you did it all unsigned then values over 180.0 represent West longitudes of (360.0 – the value). [Can be written to move aircraft]		
0x0570	8	PLANE ALTITUDE	Responded	Responded	Altitude, in metres and fractional metres. The units are in the high 32-bit integer (at 0574) and the fractional part is in the low 32-bit integer (at 0570). [Can be written to move aircraft] (Read offset 6020 for easier conversion!)		
0x0578	4	PLANE PITCH DEGREES	Responded	Responded	Pitch, *360/(65536*65536) for degrees. 0=level, -ve=pitch up, +ve=pitch down		
0x057C	4	PLANE BANK DEGREES	Responded	Responded	Bank, *360/(65536*65536) for degrees. 0=level, -ve=bank right, +ve=bank left		
0x0580	4	PLANE HEADING DEGREES TRUE	Responded	Responded	Heading, *360/(65536*65536) for degrees TRUE.		
0x0584	4				Bits here mark which of the aircraft situation variables (LLAPBH, Lat Lon alt Pitch Bank Heading) in offsets 0560-0580 were updated by FS at the time provided in offset 0588. The bits are (bit 0 = least significant): 0 = Lat, 2 = Lon, 4 = Alt, 6 = Pitch, 7 = Bank, 8 = Heading		
0x0588	8				Double floating point value giving the elapsed real time, in seconds, at the last time any of the aircraft situation variables (LLAPBH, Lat Lon alt Pitch Bank Heading) in offsets 0560-0580 were updated by FS.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0590	4	INDICATED ALTITUDE CALIBRATED	Responded		Indicated altitude with the altimeter calibrated to current sea level pressure. In feet,		
0x05C4	4	COM ACTIVE FREQUENCY:1	Responded		Active COM1 frequency in Hz (32 bit int)		
0x05C8	4	COM ACTIVE FREQUENCY:2	Responded		Active COM2 frequency in Hz (32 bit int)		
0x05CC	4	COM STANDBY FREQUENCY:1	Responded		Standby COM1 frequency in Hz (32 bit int):		
0x05D0	4	COM STANDBY FREQUENCY:2	Responded		Standby COM2 frequency in Hz (32 bit int)		
0x05D4	2	SMOKESYSTEM AVAILABLE	Responded		Smoke system available if True		
0x05D6	1	IS GEAR WHEELS			Bit-oriented flag with the following values: 0x1 – wheels, 0x2 - skis 0x3 – floats, 0x4 – skids		
0x05D6	1	IS GEAR SKIS					
0x05D6	1	IS GEAR FLOATS					x
0x05D6	1	IS GEAR SKIDS					
0x05D8	2	SMOKE ENABLE	Responded	Responded	Smoke system enable: write 1 to switch on, 0 to switch off (see also 05D4)		
0x05DC	2	IS SLEW ACTIVE	Responded	Responded	Slew mode (indicator and control), 0=off, 1=on. (See 05DE also).		
0x05E4	2				Slew roll rate: 0=static, –ve = right roll, +ve=left roll, rate is such that 192 gives a complete 360 roll in about one minute.		
0x05E6	2				Slew yaw rate: 0=heading constant, –ve = right, +ve=left, rate is such that 24 gives a complete 360 turn in about one minute.		
0x05E8	2				lew vertical rate: 16384=no change, 16385–32767 increasing rate down, 16383–0 increasing rate up. One keypress on Q (up) or A (down) makes a change of 512 units.		
0x05EB	1				Slew forward/backward movement: +ve=backward, –ve=forward. Values 1–127 give slow to fast slewing (–128 is the fastest forward slew).		
0x05ED	1				Slew left/right movement: +ve=right, –ve=left. Values 1–127 give slow to fast sideways slewing (–128 is the fastest leftward slew).		
0x05EE	2				Slew pitch rate: 16384=no change, <16384=pitch up, >16384 pitch down, range 0–32767.		
0x05F4	2				Slew mode display: 0=off, 1=coords/hdg/spd, 2=fps, 3=all		
0x05FC	2				Flight mode display: 0=off, 1=coords/hdg/spd, 2=fps, 3=all		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0609	1	ENGINE TYPE	Responded		Engine type: 0=Piston (and some Helo models like the Robinson) 1=Jet 2=Sailplane, or anything with no engines 3=Helo (Bell) Turbine 4=Rocket (<i>unsupported</i>) 5=Turboprop		
0x060C	1	IS GEAR RETRACTABLE	Responded		Gear is retractable (1 = retractable, 0 = fixed)		
0x0614	2	RETRACT LEFT FLOAT EXTENDED	Responded		Retractable left float extension. 0=fully retracted, 16384=fully extended		
0x0616	2	RETRACT RIGHT FLOAT EXTENDED	Responded		Retractable right float extension. 0=fully retracted, 16384=fully extended		
0x0618	16				ICAO Designator: Read from aircraft.cfg file (only available when 0x3C00 contains the full path to this file)		
0x0628	4				Instant replay flag & control, 1=on, 0=off. Can write to turn on and off whilst there is still time to play (see offset 062C)		
0x062B	1	PLANE IN PARKING STATE			Contains 1 when in main menu (NOT ESC menu), 0 otherwise		
0x062C	4				Instant replay: time left to run, in seconds. Whilst this is non-zero, the flag in offset 0628 controls the playback.		
0x0658	120				<p>This area provides a table of data about the 6 nearest airports to the user aircraft, in order nearest to furthest.</p> <p>This works properly in FSX with Acceleration, and should work okay in SP2 versions. It should also work in P3D. 1.4. Each entry is 20 bytes long, consisting of 4 fields as follows:</p> <p>0 4 bytes ICAO ID of the airport. If this is 3 characters only the 4th will be zero.</p> <p>4 4 bytes Latitude of the airport, in degrees, as a 32-bit Float (N positive, S negative).</p> <p>8 4 bytes Longitude of the airport, in degrees, as a 32-bit Float (E positive, W negative).</p> <p>12 4 bytes Altitude of the airport, in feet, as a 32-bit Float.</p> <p>16 4 bytes Distance from the user aircraft, in nm.</p> <p>It is only updated when the user aircraft's Latitude or Longitude change by one minute or more. If there are less than 6 airports within the current "reality bubble" the unused entries will be all zero.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x06D0	144				Area used for operating, controlling and configuring the facilities in FSUIPC for feedback flight control (bank, pitch, speed, yaw). For full details of this please see the separate TXT documentation in the SDK.		
0x0760	4?				Video recording flag, 1=on, 0=off		
0x0764	4	AUTOPILOT AVAILABLE	Responded		Autopilot available		
0x0778	4	FLAPS AVAILABLE	Responded		Flaps available		
0x077C	4	STALL HORN AVAILABLE	Responded		Stall horn available		
0x0780	4	ENGINE MIXURE AVAILABLE	Responded		Engine mixture available		
0x0784	4	CARB HEAT AVAILABLE	Responded		Carb heat available		
0x078C	4	SPOILER AVAILABLE	Responded		Spoiler available		
0x0790	4	IS TAIL DRAGGER	Responded		Aircraft is tail dragger		
0x0794	4	STROBES AVAILABLE	Responded		Strobes available		
0x0798	4	AUTOPILOT ALTITUDE LOCK VAR:3	Responded		Autopilot target altitude value, as metres*65536. Also see offset 0x07D4,		
0x079C	4	TOE BRAKES AVAILABLE	Responded		Toe brakes available		
0x07A0	4	NAV AVAILABLE:1	Responded		NAV1 available		
0x07A4	4	NAV AVAILABLE:2	Responded		NAV2 available		
0x07A8	1	NEW FUEL SYSTEM	Responded		Will hold 1 (TRUE) if the aircraft is using the modern [FUEL_SYSTEM] or 0 (FALSE) for the legacy [FUEL] .		
0x07A9	1	NEW ELECTRICAL SYSTEM	Responded		Is the aircraft using the new Electrical System or the legacy FSX one		
0x07AA	1	EXTERNAL_POWER_AVAILABLE	Responded		This will be true if the given external power source is available.		
0x07AB	1	EXTERNAL_POWER_ON	Responded		The external power switch position, true if the switch is ON.		
0x07B6	1	FLY BY WIRE ELAC SWITCH	Responded		Fly by wire ELAC switch		
0x07B7	1	FLY BY WIRE ELAC FAILED	Responded		Fly by wire ELAC computer failed flag		
0x07B8	1	FLY BY WIRE FAC SWITCH	Responded		Fly by wire FAC switch		
0x07B9	1	FLY BY WIRE FAC FAILED	Responded		Fly by wire FAC computer failed flag		
0x07BA	1	FLY BY WIRE SEC SWITCH	Responded		Fly by wire SEC switch		
0x07BB	1	FLY BY WIRE SEC FAILED	Responded		Fly by wire SEC computer failed flag		
0x07BC	4	AUTOPILOT MASTER	Responded		Autopilot Master switch		
0x07C0	4	AUTOPILOT WING LEVELER	Responded		Autopilot wing leveller		
0x07C4	4	AUTOPILOT NAV1 LOCK	Responded		Autopilot NAV1 lock		
0x07C8	4	AUTOPILOT HEADING LOCK	Responded		Autopilot heading lock		
0x07CC	2	AUTOPILOT HEADING LOCK DIR	Responded		Autopilot heading value, as degrees*65536/360		
0x07CE	2	AUTOPILOT HEADING LOCK DIR:3	Responded		Autopilot target heading value, as degrees*65536/360		
0x07D0	4	AUTOPILOT ALTITUDE LOCK	Responded		Autopilot altitude lock		
0x07D4	4	AUTOPILOT ALTITUDE LOCK VAR	Responded		Autopilot constrained altitude value (limited by Flight Plan and flight profile as in SID), as metres*65536. Also see offset 0x0798 for target altitude value,		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x07D8	4	AUTOPILOT ATTITUDE HOLD	Responded		Autopilot attitude hold		
0x07DC	4	AUTOPILOT AIRSPEED HOLD	Responded		Autopilot airspeed hold		
0x07E2	2	AUTOPILOT AIRSPEED HOLD VAR	Responded		Autopilot airspeed value, in knots		
0x07E4	4	AUTOPILOT MACH HOLD	Responded		Autopilot mach hold		
0x07E8	4	AUTOPILOT MACH HOLD VAR	Responded		Autopilot mach value, as Mach*65536		
0x07EC	4	AUTOPILOT VERTICAL HOLD	Responded		Autopilot vertical speed hold		
0x07F2	2	AUTOPILOT VERTICAL HOLD VAR	Responded		Autopilot vertical speed value, as ft/min: Write reported as working but only after sending an AP VS SET control (only once)		
0x07F4	4	AUTOPILOT RPM HOLD	Responded		Autopilot RPM (N1) hold		
0x07FA	2	AUTOPILOT RPM HOLD VAR	Responded		Autopilot RPM (N1) hold value, 16384 = 100% N1. Writing rounds to the nearest whole %		
0x07FC	4	AUTOPILOT GLIDESLOPE HOLD	Responded		Autopilot GlideSlope hold N.B. setting this also sets 0800, approach hold. To clear both you need to write 0 to them in the same FSUIPC process call, as if they are separated by an FS frame, an interlock stops them clearing.		
0x0800	4	AUTOPILOT APPROACH HOLD	Responded		Autopilot Approach hold. See the note above, for offset 07FC.		
0x0804	4	AUTOPILOT BACKCOURSE HOLD	Responded		Autopilot Back course hold. The note for offset 07FC may also apply here.		
0x0808	4	AUTOPILOT YAW DAMPER	Responded		Yaw damper		
0x080C	4	AUTOPILOT TAKEOFF POWER ACTIVE	Responded		Autothrottle TOGA (take off power)		
0x0810	4	AUTOPILOT THROTTLE ARM	Responded		Autothrottle Arm		
0x0814	4				Flight analysis mode (0=Off, 1=Landing, 2=Course tracking, 3=Manoeuvres)		
0x0818	4	AUTOPILOT ALTITUDE LOCK VAR:3	Responded		Held as a signed dword (int). Divide by 65536 to get the correct value when reading. When writing, write in feet.		
0x081C	1	IS ALTITUDE FREEZE ON	Responded		Not currently populated correctly		
0x081D	1	IS ATTITUDE FREEZE ON	Responded		Not currently populated correctly		
0x081E	1	ROTOR BRAKE ACTIVE	Responded		Rotor Brake Active (0 = off, 1 = on). Applicable to Robinson model helicopter only		
0x081F	1	ROTOR CLUTCH ACTIVE	Responded		Rotor Clutch Active (0 = off, 1 = on). Applicable to Robinson model helicopter only		
0x0820	1	ROTOR CHIP DETECTED	Responded		Rotor Chip Detected (0 = off, 1 = on). Applicable to Robinson model helicopter only		
0x0821	1	ROTOR GOV ACTIVE	Responded		Rotor Gov Active (0 = off, 1 = on). Applicable to Robinson model helicopter only		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0822	2	ROTOR BRAKE HANDLE POS	Responded		Rotor brake application (0 to 16384). Applicable to Robinson model helicopter only. Writing: there appears no way to set the level of braking directly. The only way to influence it is to send Rotor Brake controls. In an attempt to achieve the written value, FSUIPC4 send Rotor Brake controls to FSX on every FS frame whilst the read-out for the rotor braking value is less than that last written to 0822. There is an exception—if the read-out remains zero for 4 such attempts, the written value is reset to zero too. This is to infallibly cope with aircraft with no implemented rotor brake, avoiding continuous useless control applications.. This was intended to achieve the result of a sustained brake pressure oscillating close to the value being written, but unfortunately the Rotor Brake control imposes immediate maximum brake pressure but with a fast reduction. The result, therefore, is an oscillation between maximum and just under the requested value.		
0x0824	2	ROTOR LATERAL TRIM PCT	Responded		Rotor lateral trim (0 to 16384). Applicable to Robinson model helicopter only		
0x0826	1	ROTOR GOV SWITCH POS	Responded		Rotor Gov switch (0 = off, 1 = on). Applicable to Robinson model helicopter only		
0x0828	8	ROTOR TEMPERATURE	Responded		Rotor transmission temperature (64-bit double float, in degrees Rankine). Possibly only applicable to Robinson model helicopter, but no success in seeing this!		
0x0830	2				Action on crash (not working). For FS2004 and before this was a 4-byte value. Now the two high bytes are used for flags as shown in the next two entries.		
0x0832	1	REALISM CRASH DETECTION	Responded		Crash detection: 1=Crash detection is on, 0 = off		
0x0833	1	REALISM CRASH WITH OTHERS	Responded		Crash detection: 1=Crash with other aircraft is on, 0 = off		
0x0834	4	NAV DME LATLONALT:2	Responded		DME2 Latitude when available separately. Same units as in 085C below.		
0x0838	4	NAV DME LATLONALT:2	Responded		DME2 Longitude when available separately. Same units as in 0864 below.		
0x083C	4	NAV DME LATLONALT:2	Responded		DME2 elevation in metres when available separately.		
0x0840	2				Crashed flag.		
0x0842	2				Vertical speed in metres per minute, but with –ve for UP, +ve for DOWN. Multiply by 3.28084 and reverse the sign for the normal fpm measure.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0844	2	NAV LOCALIZER:2	Responded		NAV2 ILS localiser inverse runway heading if VOR2 is ILS. Convert to degrees by *360/65536. This is 180 degrees different to the direction of flight to follow the localiser.		
0x0846	2	NAV RAW GLIDE SLOPE:2	Responded		NAV2 ILS glideslope inclination if VOR2 is ILS. Convert to degrees by *360/65536.		
0x084C	4	NAV VOR LATLONALT:2	Responded		VOR2 Latitude, as in 085C below, except when NAV2 is tuned to an ILS, in which case this gives the localiser Latitude.		
0x0850	4	NAV VOR LATLONALT:2	Responded		VOR2 Longitude, as in 0864 below, except when NAV2 is tuned to an ILS, in which case this gives the localiser Longitude.		
0x0854	4	NAV VOR LATLONALT:2	Responded		VOR2 Elevation, in metres, except when NAV2 is tuned to an ILS, in which case this gives the localiser Elevation.		
0x0858	4	NAV GS LATLONALT:2	Responded		VOR2 Latitude in FS form. Convert to degrees by *90/10001750. If NAV2 is tuned to an ILS this gives the glideslope transmitter Latitude.		
0x085C	4	NAV GS LATLONALT:1	Responded		VOR1 Latitude in FS form. Convert to degrees by *90/10001750. If NAV1 is tuned to an ILS this gives the glideslope transmitter Latitude.		
0x0860	4		Responded		VOR2 Longitude in FS form. Convert to degrees by *360/(65536*65536). If NAV2 is tuned to an ILS this gives the glideslope transmitter Longitude.		
0x0864	4		Responded		VOR1 Longitude in FS form. Convert to degrees by *360/(65536*65536). If NAV1 is tuned to an ILS this gives the glideslope transmitter Longitude.		
0x0868	4		Responded		VOR2 Elevation in metres. If NAV2 is tuned to an ILS this gives the glideslope transmitter Elevation.		
0x086C	4		Responded		VOR1 Elevation in metres. If NAV1 is tuned to an ILS this gives the glideslope transmitter Elevation.		
0x0870	2	NAV LOCALIZER:1	Responded		NAV1 ILS localiser inverse runway heading if VOR1 is ILS. Convert to degrees by *360/65536. This is 180 degrees different to the direction of flight to follow the localiser.		
0x0872	2	NAV RAW GLIDE SLOPE:1	Responded		NAV1 ILS glideslope inclination if VOR1 is ILS. Convert to degrees by *360/65536		
0x0874	4	NAV VOR LATLONALT:1	Responded		VOR1 Latitude, as in 085C above, except when NAV1 is tuned to an ILS, in which case this gives the localiser Latitude.		
0x0878	4	NAV VOR LATLONALT:1	Responded		VOR1 Longitude, as in 0864 above, except when NAV1 is tuned to an ILS, in which case this gives the localiser Longitude.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x087C	4	NAV VOR LATLONALT:1	Responded		VOR1 Elevation, as in 086C above, except when NAV1 is tuned to an ILS, in which case this gives the localiser Elevation.		
0x0880	4	NAV DME LATLONALT:1	Responded		DME1 Latitude when available separately. Same units as in 085C above.		
0x0884	4	NAV DME LATLONALT:1	Responded		DME1 Longitude when available separately. Same units as in 0864 above.		
0x0888	1	ENGINE CONTROL SELECT	Responded	Responded	Active engine (select) flags. Bit 0 = Engine 1 selected ... Bit 3 = Engine 4 selected. See notes against offset 0892.		
0x0889	1	ROTOR CLUTCH SWITCH POS	Responded		Rotor clutch switch, when applicable. 1=On, 0=Off. Can be read and written.		
0x088A	2				DME1 Elevation in metres, when available separately.		
0x088C	2	GENERAL ENG THROTTLE LEVER POSITION:1	Responded	Responded	Engine 1 Throttle lever, -4096 to +16384 [Programs controlling throttle directly from user inputs should write to 089A instead if the input should be disconnectable via offset 310A (e.g. for auto-throttle management)]		
0x088E	2	GENERAL ENG PROPELLER LEVER POSITION:1	Responded	Responded	Engine 1 combustion flag (TRUE if engine firing)		
0x0890	2	GENERAL ENG MIXTURE LEVER POSITION:1	Responded	Responded	Engine 1 Mixture lever, 0 – 16384		
0x0892	2	GENERAL ENG STARTER:1	Responded		Engine 1 Starter switch position (Magnetos), Jet/turbojet: 0=Off, 1=Start, 2=Gen/Alt Prop: 0=Off, 1=right, 2=Left, 3=Both, 4=Start Don't forget to switch fuel on to start (mixture to max).		
0x0894	2	GENERAL ENG COMBUSTION:1	Responded	Responded	Engine 1 combustion flag (TRUE if engine firing)		
0x0896	2	TURB ENG N2:1	Responded	Responded	Engine 1 Jet N2 as 0 – 16384 (100%). This also appears to be the Turbine RPM % for proper helo models (and now also for the FS2004 Robinson model and derivatives)		
0x0898	2	TURB ENG N1:1	Responded	Responded	Engine 1 Jet N1 as 0 – 16384 (100%), or Prop RPM (derive RPM by multiplying this value by the RPM Scaler (see 08C8) and dividing by 65536). Note that Prop RPM is signed and negative for counter-rotating propellers. In FS2004 this also now gives the Robinson model's RPM, when scaled by the RPM scaler.		
0x089A	2				Engine 1 Throttle lever, -4096 to +16384, same as 088C above except that values written here are treated like axis inputs and are disconnectable via offset 310A, and have the last written value obtainable from offset 3330		
0x08A0	2	RECIP ENG FUEL FLOW:1	Responded	Responded	Engine 1 Fuel Flow PPH SSL (pounds per hour, standardised to sea level). Don't know units, but it seems to match some gauges if divided by 128. Not maintained in all cases.		
0x08A2	1				Slope value for aileron		
0x08A3	1				Slope value for elevator		
0x08A4	1				Slope value for rudder		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x08A5	1				Slope value for Steering Tiller		
0x08A0	2	TURB ENG CORRECTED FF:1	Responded	Responded			
0x08B2	2	GENERAL ENG ANTI ICE POSITION:1	Responded		Engine 1 Anti-Ice or Carb Heat switch (1=On)		
0x08B8	2	GENERAL ENG OIL TEMPERATURE:1	Responded	Responded	Engine 1 Oil temperature, 16384 = 140 C.		
0x08BA	2	GENERAL ENG OIL PRESSURE:1	Responded	Responded	Engine 1 Oil pressure, 16384 = 55 psi. Note that in some aircraft (eg the B777) this can exceed the 16-bit capacity of this location. FSUIPC limits it to fit, i.e.65535 = 220 psi		
0x08BC	2	TURB ENG PRESSURE RATIO:1	Responded	Responded	Engine 1 Pressure Ratio (where calculated): 16384 = 1.60		
0x08BE	2	GENERAL ENG EXHAUST GAS TEMPERATURE:1	Responded	Responded	Engine 1 EGT, 16384 = 860 C. [Note that for Props this value is not actually correct. You will get the correct value from 3B70. The value here has been derived by FSUIPC to be compatible with FS2004, FS2002 et cetera]		
0x08C0	2	RECIP ENG MANIFOLD PRESSURE:1	Responded	Responded	Engine 1 Manifold Pressure: Inches Hg * 1024		
0x08C8	2				Engine 1 RPM Scaler: For Props, use this to calculate RPM – see offset 0898 <i>(On turboprops this will give the shaft RPM, since there is currently no Gear Reduction Ratio available to fix values on such aircraft. I will fix this when I can)</i>		
0x08D0	4	GENERAL ENG OIL LEAKED PERCENT:1	Responded		Engine 1 Oil Quantity: 16384 = 100%		
0x08D4	4	TURB ENG VIBRATION:1	Responded		Engine 1 Vibration: 16384 = 5.0. This is a relative measure of amplitude from the sensors on the engine which when too high is an indication of a problem. The value at which you should be concerned varies according to aircraft and engine.		
0x08D8	4	HYDRAULIC PRESSURE:1	Responded		Engine 1 Hydraulic pressure: appears to be 4*psi		
0x08DC	4	HYDRAULIC RESERVOIR PERCENT:1	Responded	Responded	Engine 1 Hydraulic quantity: 16384 = 100%		
0x08E8	8	RECIP ENG CYLINDER HEAD TEMPERATURE:1	Responded	Responded	Engine 1 CHT, degrees F in double floating point (FLOAT64)		
0x08F0	4	ENG TURBINE TEMPERATURE:1	Responded		Engine 1 Turbine temperature: degree C *16384 (Helos?)		
0x08F0	4	RECIP ENG TURBINE INLET TEMPERATURE:1	Responded	Responded	<i>(Turbine engine ITT)</i>		
0x08F4	4	TURB ENG MAX TORQUE PERCENT:1	Responded	Responded	Engine 1 Torque % (16384 = 100%). This is correct for true Helo models like the Bell. Other prop-based models have this computed by FSUIPC4 from the actual torque in 0920, assuming a maximum of 600 ft-lbs.		
0x08F8	4	GENERAL ENG FUEL PRESSURE:1	Responded	Responded	Engine 1 Fuel pressure, psf (i.e. psi*144): for legacy aircraft		
0x08F8	4	FUELSYSTEM ENGINE PRESSURE:1	Responded		The pressure of the fuel coming to engine 1. For aircraft using the modern fuel component system.		
0x08FC	4	ENG ELECTRICAL LOAD:1	Responded		Engine 1 Electrical Load. (some sort of percentage as a proportion of 16k or 64k?). True helo models only I think.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0900	4	ENG TRANSMISSION PRESSURE:1	Responded		Engine 1 Transmission oil pressure (psi * 16384): for true helos		
0x0904	4	ENG TRANSMISSION TEMPERATURE:1	Responded		Engine 1 Transmission oil temperature (degrees C * 16384): for true helos		
0x0908	4	ROTOR RPM PCT	Responded		Engine 1 Rotor RPM % (16384=100%): for true helos		
0x090C	4	GENERAL ENG FUEL USED SINCE START:1	Responded		Engine 1 fuel used since start (in pounds, 32-bit float)		
0x0910	4	GENERAL ENG ELAPSED TIME:1	Responded		Engine 1 elapsed time (in hours, 32-bit float)		
0x0918	8	RECIP ENG FUEL FLOW:1	Responded	Responded	Engine 1 Fuel Flow Pounds per Hour, as floating point double (FLOAT64)		
0x0920	4	ENG TORQUE:1	Responded		Engine 1 Torque in foot-pounds, as a 32-bit Float. (Not jets)		
0x0924	2	GENERAL ENG THROTTLE LEVER POSITION:2	Responded	Responded	Engine 2 Throttle lever, -4096 to +16384 [Programs controlling throttle directly from user inputs should write to 0932 instead if the input should be disconnectable via offset 310A (e.g. for auto-throttle management)]		
0x0926	2	GENERAL ENG PROPELLER LEVER POSITION:2	Responded	Responded	Engine 2 Prop lever, -4096 to +16384		
0x0928	2	GENERAL ENG MIXTURE LEVER POSITION:2	Responded	Responded	Engine 2 Mixture lever, 0 – 16384		
0x092A	2	GENERAL ENG STARTER:2	Responded		Engine 2 Starter switch position (Magnetos), Jet/turbo: 0=Off, 1=Start, 2=Gen; Prop: 0=Off, 1=right, 2=Left, 3=Both, 4=Start (See Notes in Engine 1 entry)		
0x092C	2	GENERAL ENG COMBUSTION:2	Responded	Responded	Engine 2 combustion flag (TRUE if engine firing)		
0x092E	2	TURB ENG N2:2	Responded	Responded	Engine 2 Jet N2 as 0 – 16384 (100%)		
0x0930	2	TURB ENG N1:2	Responded	Responded	Engine 2 Jet N1 as 0 – 16384 (100%), or Prop RPM (derive RPM by multiplying this value by the RPM Scaler (see 08C8) and dividing by 65536). Note that Prop RPM is signed and negative for counter-rotating propellers.		
0x0932	2				Engine 2 Throttle lever, -4096 to +16384, same as 088C above except that values written here are treated like axis inputs and are disconnectable via offset 310A, and have the last written value obtainable from offset 3332		
0x0938	2	RECIP ENG FUEL FLOW:2	Responded	Responded	Engine 2 Fuel Flow PPH SSL (pounds per hour, standardised to sea level). Don't know units, but it seems to match some gauges if divided by 128. Not maintained in all cases.		
0x0938	2	TURB ENG CORRECTED FF:2	Responded	Responded			
0x094A	2	GENERAL ENG ANTI ICE POSITION:2	Responded		Engine 2 Anti-Ice or Carb Heat switch (1=On)		
0x0950	2	GENERAL ENG OIL TEMPERATURE:2	Responded	Responded	Engine 2 Oil temperature, 16384 = 140 C.		
0x0952	2	GENERAL ENG OIL PRESSURE:2	Responded	Responded	Engine 2 Oil pressure, 16384 = 55 psi. Note that in some aircraft (e.g. the B777) this can exceed the 16-bit capacity of this location. FSUIPC limits it to fit, i.e. 65535 = 220 psi		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0954	2	TURB ENG PRESSURE RATIO:2	Responded	Responded	Engine 2 Pressure Ratio (where calculated): 16384 = 1.60		
0x0956	2	GENERAL ENG EXHAUST GAS TEMPERATURE:2	Responded	Responded	Engine 2 EGT, 16384 = 860 C. [Note that for Props this value is not actually correct. You will get the correct value from 3AB0. The value here has been derived by FSUIPC to be compatible with FS2004, FS2002 et cetera]		
0x0958	2	RECIP ENG MANIFOLD PRESSURE:2	Responded	Responded	Engine 2 Manifold Pressure: Inches Hg * 1024		
0x0960	2				Engine 2 RPM Scaler: For Props, use this to calculate RPM – see offset 0930 <i>(On turboprops this will give the shaft RPM, since there is currently no Gear Reduction Ratio available to fix values on such aircraft. I will fix this when I can)</i>		
0x0968	4	GENERAL ENG OIL LEAKED PERCENT:2	Responded		Engine 2 Oil Quantity: 16384 = 100%		
0x096C	4	TURB ENG VIBRATION:2	Responded		Engine 2 Vibration: 16384 = 5.0. This is a relative measure of amplitude from the sensors on the engine which when too high is an indication of a problem. The value at which you should be concerned varies according to aircraft and engine.		
0x0970	4	HYDRAULIC PRESSURE:2	Responded		Engine 2 Hydraulic pressure: appears to be 4*psi		
0x0974	4	HYDRAULIC RESERVOIR PERCENT:2	Responded	Responded	Engine 2 Hydraulic quantity: 16384 = 100%		
0x0980	8	RECIP ENG CYLINDER HEAD TEMPERATURE:2	Responded	Responded	Engine 2 CHT, degrees F in double floating point (FLOAT64)		
0x0988	4	RECIP ENG TURBINE INLET TEMPERATURE:2	Responded	Responded	Engine 2 Turbine temperature: degree C *16384		
0x0988	4	TURB ENG ITT:2	Responded	Responded			
0x098C	4	TURB ENG MAX TORQUE PERCENT:2	Responded	Responded	Engine 2 Torque % (16384 = 100%)		
0x0990	4	GENERAL ENG FUEL PRESSURE:2	Responded	Responded	Engine 2 Fuel pressure, psf (i.e. psi*144): not all aircraft files provide this.		
0x0990	4	FUELSYSTEM ENGINE PRESSURE:2	Responded		The pressure of the fuel coming to engine 2. For aircraft using the modern fuel component system.		
0x0994	4	ENG ELECTRICAL LOAD:2	Responded				
0x0998	4	ENG TRANSMISSION PRESSURE:2	Responded				
0x099C	4	ENG TRANSMISSION TEMPERATURE:2	Responded				
0x09A0	4	ENG ROTOR RPM:2	Responded				
0x09A4	4	GENERAL ENG FUEL USED SINCE START:2	Responded		Engine 2 fuel used since start (in pounds, 32-bit float)		
0x09A8	4	GENERAL ENG ELAPSED TIME:2	Responded		Engine 2 elapsed time (in hours, 32-bit float)		
0x09B0	8	RECIP ENG FUEL FLOW:2	Responded	Responded	Engine 2 Fuel Flow Pounds per Hour, as floating point double (FLOAT64)		
0x09B8	4	ENG TORQUE:2	Responded		Engine 2 Torque in foot-pounds, as a 32-bit Float. (Not jets)		
0x09BC	2	GENERAL ENG THROTTLE LEVER POSITION:3	Responded	Responded	Engine 3 Throttle lever, –4096 to +16384 [Programs controlling throttle directly from user inputs should write to 09CA instead if the input should be disconnectable via offset 310A/B (e.g. for auto-throttle management)]		
0x09BE	2	GENERAL ENG PROPELLER LEVER POSITION:3	Responded	Responded	Engine 3 Prop lever, –4096 to +16384		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x09C0	2	GENERAL ENG MIXTURE LEVER POSITION:3	Responded	Responded	Engine 3 Mixture lever, 0 – 16384		
0x09C2	2	GENERAL ENG STARTER:3	Responded		Engine 3 Starter switch position (Magnetos), Jet/turbo: 0=Off, 1=Start, 2=Gen; Prop: 0=Off, 1=right, 2=Left, 3=Both, 4=Start (see Notes in Engine 1 entry)		
0x09C4	2	GENERAL ENG COMBUSTION:3	Responded	Responded	Engine 3 combustion flag (TRUE if engine firing)		
0x09C6	2	TURB ENG N2:3	Responded	Responded	Engine 3 Jet N2 as 0 – 16384 (100%)		
0x09C8	2	TURB ENG N1:3	Responded	Responded	Engine 3 Jet N1 as 0 – 16384 (100%), or Prop RPM (derive RPM by multiplying this value by the RPM Scaler (see 08C8) and dividing by 65536). Note that Prop RPM is signed and negative for counter-rotating propellers.		
0x09CA	2				Engine 3 Throttle lever, –4096 to +16384, same as 088C above except that values written here are treated like axis inputs and are disconnectable via offset 310A/B, and have the last written value obtainable from offset 3334		
0x09D0	2	RECIP ENG FUEL FLOW:3	Responded	Responded	Engine 3 Fuel Flow PPH SSL (pounds per hour, standardised to sea level). Don't know units, but it seems to match some gauges if divided by 128. Not maintained in all cases.		
0x09D0	2	TURB ENG CORRECTED FF:3	Responded	Responded			
0x09D2	16				ICAO Manufacturer: Read from aircraft.cfg file (only available when 0x3C00 contains the full path to this file)		
0x09E2	2	GENERAL ENG ANTI ICE POSITION:3	Responded		Engine 3 Anti-Ice or Carb Heat switch (1=On)		
0x09E8	2	GENERAL ENG OIL TEMPERATURE:3	Responded	Responded	Engine 3 Oil temperature, 16384 = 140 C.		
0x09EA	2	GENERAL ENG OIL PRESSURE:3	Responded	Responded	Engine 3 Oil pressure, 16384 = 55 psi. Note that in some aircraft (eg the B777) this can exceed the 16-bit capacity of this location. FSUIPC limits it to fit, i.e.65535 = 220 psi		
0x09EC	2	TURB ENG PRESSURE RATIO:3	Responded	Responded	Engine 3 Pressure Ratio (where calculated): 16384 = 1.60		
0x09EE	2	GENERAL ENG EXHAUST GAS TEMPERATURE:3	Responded	Responded	Engine 3 EGT, 16384 = 860 C. [Note that for Props this value is not actually correct. You will get the correct value from 39F0. The value here has been derived by FSUIPC to be compatible with FS2004, FS2002 et cetera]		
0x09F0	2	RECIP ENG MANIFOLD PRESSURE:3	Responded	Responded	Engine 3 Manifold Pressure: Inches Hg * 1024		
0x09F8	2				Engine 3 RPM Scaler: For Props, use this to calculate RPM – see offset 09C8 <i>(On turboprops this will give the shaft RPM, since there is currently no Gear Reduction Ratio available to fix values on such aircraft. I will fix this when I can)</i>		
0x0A00	4	GENERAL ENG OIL LEAKED PERCENT:3	Responded		Engine 3 Oil Quantity: 16384 = 100%		
0x0A04	4	TURB ENG VIBRATION:3	Responded		Engine 3 Vibration: 16384 = 5.0. This is a relative measure of amplitude from the sensors on the engine which when too high is an indication of a problem. The value at which you should be concerned varies according to aircraft and engine.		
0x0A08	4	HYDRAULIC PRESSURE:3	Responded		Engine 3 Hydraulic pressure: appears to be 4*psi		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0A0C	4	HYDRAULIC RESERVOIR PERCENT:3	Responded	Responded	Engine 3 Hydraulic quantity: 16384 = 100%		
0x0A18	8	RECIP ENG CYLINDER HEAD TEMPERATURE:3	Responded	Responded	Engine 3 CHT, degrees F in double floating point (FLOAT64)		
0x0A20	4	ENG TURBINE TEMPERATURE:3	Responded		Engine 3 Turbine temperature: degree C *16384		
0x0A20	4	RECIP ENG TURBINE INLET TEMPERATURE:3	Responded	Responded			
0x0A20	4	TURB ENG ITT:3	Responded	Responded			
0x0A24	4	TURB ENG MAX TORQUE PERCENT:3	Responded	Responded	Engine 3 Torque % (16384 = 100%)		
0x0A28	4	GENERAL ENG FUEL PRESSURE:3	Responded	Responded	Engine 3 Fuel pressure, psf (i.e. psi*144): not all aircraft files provide this.		
0x0A28	4	FUELSYSTEM ENGINE PRESSURE:3	Responded		The pressure of the fuel coming to engine 3. For aircraft using the modern fuel component system.		
0x0A2C	4	ENG ELECTRICAL LOAD:3	Responded				
0x0A30	4	ENG TRANSMISSION PRESSURE:3	Responded				
0x0A34	4	ENG TRANSMISSION TEMPERATURE:3	Responded				
0x0A38	4	ENG ROTOR RPM:3	Responded				
0x0A3C	4	GENERAL ENG FUEL USED SINCE START:3	Responded		Engine 3 fuel used since start (in pounds, 32-bit float)		
0x0A40	4	GENERAL ENG ELAPSED TIME:3	Responded		Engine 3 elapsed time (in hours, 32-bit float)		
0x0A48	8	RECIP ENG FUEL FLOW:3	Responded	Responded	Engine 3 Fuel Flow Pounds per Hour, as floating point double (FLOAT64)		
0x0A50	4	ENG TORQUE:3	Responded		Engine 3 Torque in foot-pounds, as a 32-bit Float. (Not jets)		
0x0A54	2	GENERAL ENG THROTTLE LEVER POSITION:4	Responded	Responded	Engine 4 Throttle lever, -4096 to +16384 [Programs controlling throttle directly from user inputs should write to 0A62 instead if the input should be disconnectable via offset 310A/B (e.g. for auto-throttle management)]		
0x0A56	2	GENERAL ENG PROPELLER LEVER POSITION:4	Responded	Responded	Engine 4 Prop lever, -4096 to +16384		
0x0A58	2	GENERAL ENG MIXTURE LEVER POSITION:4	Responded	Responded	Engine 4 Mixture lever, 0 – 16384		
0x0A5A	2	GENERAL ENG STARTER:4	Responded		Engine 4 Starter switch position (Magnetos), Jet/turbo: 0=Off, 1=Start, 2=Gen; Prop: 0=Off, 1=right, 2=Left, 3=Both, 4=Start (see Notes in Engine 1 entry)		
0x0A5C	2	GENERAL ENG COMBUSTION:4	Responded	Responded	Engine 4 combustion flag (TRUE if engine firing)		
0x0A5E	2	TURB ENG N2:4	Responded	Responded	Engine 4 Jet N2 as 0 – 16384 (100%)		
0x0A60	2	TURB ENG N1:4	Responded	Responded	Engine 4 Jet N1 as 0 – 16384 (100%), or Prop RPM (derive RPM by multiplying this value by the RPM Scaler (see 08C8) and dividing by 65536). Note that Prop RPM is signed and negative for counter-rotating propellers.		
0x0A62	2				Engine 4 Throttle lever, -4096 to +16384, same as 088C above except that values written here are treated like axis inputs and are disconnectable via offset 310A/B, and have the last written value obtainable from offset 3336		
0x0A68	2	RECIP ENG FUEL FLOW:4	Responded	Responded	Engine 4 Fuel Flow PPH SSL (pounds per hour, standardised to sea level). Don't know units. but it seems to		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0A68	2	TURB ENG CORRECTED FF:4	Responded	Responded	match some gauges if divided by 128. Not maintained in all cases.		
0x0A7A	2	GENERAL ENG ANTI ICE POSITION:4	Responded		Engine 4 Anti-Ice or Carb Heat switch (1=On)		
0x0A80	2	GENERAL ENG OIL TEMPERATURE:4	Responded	Responded	Engine 4 Oil temperature, 16384 = 140 C.		
0x0A82	2	GENERAL ENG OIL PRESSURE:4	Responded	Responded	Engine 4 Oil pressure, 16384 = 55 psi. Note that in some aircraft (eg the B777) this can exceed the 16-bit capacity of this location. FSUIPC limits it to fit, i.e.65535 = 220 psi		
0x0A84	2	TURB ENG PRESSURE RATIO:4	Responded	Responded	Engine 4 Pressure Ratio (where calculated): 16384 = 1.60		
0x0A86	2	GENERAL ENG EXHAUST GAS TEMPERATURE:4	Responded	Responded	Engine 4 EGT, 16384 = 860 C. <i>[Note that for Props this value is not actually correct. You will get the correct value from 3930. The value here has been derived by FSUIPC to be compatible with FS2004, FS2002 et cetera]</i>		
0x0A88	2	RECIP ENG MANIFOLD PRESSURE:4	Responded	Responded	Engine 4 Manifold Pressure: Inches Hg * 1024		
0x0A90	2				Engine 4 RPM Scaler: For Props, use this to calculate RPM – see offset 0A60 <i>(On turboprops this will give the shaft RPM, since there is currently no Gear Reduction Ratio available to fix values on such aircraft. I will fix this when I can)</i>		
0x0A98	4	GENERAL ENG OIL LEAKED PERCENT:4	Responded		Engine 4 Oil Quantity: 16384 = 100%		
0x0A9C	4	TURB ENG VIBRATION:4	Responded		Engine 4 Vibration: 16384 = 5.0. This is a relative measure of amplitude from the sensors on the engine which when too high is an indication of a problem. The value at which you should be concerned varies according to aircraft and engine.		
0x0AA0	4	HYDRAULIC PRESSURE:4	Responded		Engine 4 Hydraulic pressure: appears to be 4*psi		
0x0AA4	4	HYDRAULIC RESERVOIR PERCENT:4	Responded	Responded	Engine 4 Hydraulic quantity: 16384 = 100%		
0x0AA8	1	FUELSYSTEM PUMP ACTIVE:11	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps > 10.		
0x0AA9	1	FUELSYSTEM PUMP SWITCH:11	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps > 10.		
0x0AB0	8	RECIP ENG CYLINDER HEAD TEMPERATURE:4	Responded	Responded	Engine 4 CHT, degrees F in double floating point (FLOAT64)		
0x0AB8	4	ENG TURBINE TEMPERATURE:4	Responded		Engine 4 Turbine temperature: degree C *16384		
0x0AB8	4	RECIP ENG TURBINE INLET TEMPERATURE:4	Responded	Responded			
0x0AB8	4	TURB ENG ITT:4	Responded	Responded			
0x0ABC	4	TURB ENG MAX TORQUE PERCENT:4	Responded	Responded	Engine 4 Torque % (16384 = 100%)		
0x0AC0	4	GENERAL ENG FUEL PRESSURE:4	Responded	Responded	Engine 4 Fuel pressure, psf (i.e. psi*144): not all aircraft files provide this.		
0x0AC0	4	FUELSYSTEM ENGINE PRESSURE:4	Responded		The pressure of the fuel coming to engine 4. For aircraft using the modern fuel component system.		
0x0AC4	4	ENG ELECTRICAL LOAD:4	Responded				
0x0AC8	4	ENG TRANSMISSION PRESSURE:4	Responded				
0x0ACC	4	ENG TRANSMISSION TEMPERATURE:4	Responded				

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0AD0	4	ENG ROTOR RPM:4	Responded				
0x0AD4	4	GENERAL ENG FUEL USED SINCE START:4	Responded		Engine 4 fuel used since start (in pounds, 32-bit float)		
0x0AD8	4	GENERAL ENG ELAPSED TIME:4	Responded		Engine 4 elapsed time (in hours, 32-bit float)		
0x0AE0	8	RECIP ENG FUEL FLOW:4	Responded	Responded	Engine 4 Fuel Flow Pounds per Hour, as floating point double (FLOAT64)		
0x0AE8	4	ENG TORQUE:4	Responded		Engine 4 Torque in foot-pounds, as a 32-bit Float. (Not jets)		
0x0AEC	2	NUMBER OF ENGINES	Responded		Number of Engines		
0x0AEE	1	FUELSYSTEM PUMP ACTIVE:10	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is > 9.		
0x0AEF	1	FUELSYSTEM PUMP SWITCH:10	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is > 9.		
0x0AF0	2				Propeller pitch control: 0=Fixed, 1=Auto, 2=Manual, but on FS2004 it was 0=fixed pitch, 1=constant speed, no differentiation between auto and manual.		
0x0AF2	1	FUELSYSTEM PUMP ACTIVE:12	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is > 11.		
0x0AF3	1	FUELSYSTEM PUMP SWITCH:12	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is > 11.		
0x0AF4	2	FUEL WEIGHT PER GALLON	Responded		Fuel weight as pounds per gallon * 256		
0x0AF6	1	FUELSYSTEM PUMP ACTIVE:13	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is > 12.		
0x0AF7	1	FUELSYSTEM PUMP SWITCH:13	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is > 12.		
0x0AF8	2	FUEL TANK SELECTOR:1	Responded		Fuel tank selector: 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main (Engine 1 only—see also separate Engine selectors)		
0x0AFA	1	FUELSYSTEM PUMP ACTIVE:14	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is > 13.		
0x0AFB	1	FUELSYSTEM PUMP SWITCH:14	Responded		Whether or not the indexed pump is enabled. . This is only available when the ini parameter NumberOfPumps is > 13.		
0x0AFC	1	FUELSYSTEM PUMP ACTIVE:15	Responded		Whether or not the indexed pump is actually active. . This is only available when the ini parameter NumberOfPumps is > 14.		
0x0AFD	1	FUELSYSTEM PUMP SWITCH:15	Responded		Whether or not the indexed pump is enabled. . This is only available when the ini parameter NumberOfPumps is > 14.		
0x0AFE	1	FUELSYSTEM PUMP ACTIVE:16	Responded		Whether or not the indexed pump is actually active. . This is only available when the ini parameter NumberOfPumps is > 15.		
0x0AFF	1	FUELSYSTEM PUMP SWITCH:16	Responded		Whether or not the indexed pump is enabled. . This is only available when the ini parameter NumberOfPumps is > 15.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0B00	2	THROTTLE LOWER LIMIT	Responded		Throttle lower limit, 16384=100%. (e.g. for aircraft with reverse thrust this is normally -4096 indicating 25% in reverse)		
0x0B02	1	FUELSYSTEM PUMP ACTIVE:1	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is not defined or > 0.		
0x0B03	1	FUELSYSTEM PUMP SWITCH:1	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is not defined or > 0.		
0x0B04	1	FUELSYSTEM PUMP ACTIVE:2	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is not defined or > 1.		
0x0B05	1	FUELSYSTEM PUMP SWITCH:2	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is not defined or > 1.		
0x0B06	1	FUELSYSTEM PUMP ACTIVE:3	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is not defined or > 2.		
0x0B07	1	FUELSYSTEM PUMP SWITCH:3	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is not defined or > 2.		
0x0B08	1	FUELSYSTEM PUMP ACTIVE:4	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is not defined or > 3.		
0x0B09	1	FUELSYSTEM PUMP SWITCH:4	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is not defined or > 3.		
0x0B0A	1	FUELSYSTEM PUMP ACTIVE:5	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is not defined or > 4.		
0x0B0B	1	FUELSYSTEM PUMP SWITCH:5	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is not defined or > 4.		
0x0B0C	4	MACH MAX OPERATE	Responded		Mach Max Operating speed *20480		
0x0B10	1	FUELSYSTEM PUMP ACTIVE:6	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps is not defined or > 5.		
0x0B11	1	FUELSYSTEM PUMP SWITCH:6	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps is not defined or > 5.		
0x0B12	1	FUELSYSTEM PUMP ACTIVE:7	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps > 6.		
0x0B13	1	FUELSYSTEM PUMP SWITCH:7	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps > 6.		
0x0B14	1	FUELSYSTEM PUMP ACTIVE:8	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps > 7.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0B15	1	FUELSYSTEM PUMP SWITCH:8	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps > 7.		
0x0B16	1	FUELSYSTEM PUMP ACTIVE:9	Responded		Whether or not the indexed pump is actually active. This is only available when the ini parameter NumberOfPumps > 8.		
0x0B17	1	FUELSYSTEM PUMP SWITCH:9	Responded		Whether or not the indexed pump is enabled. This is only available when the ini parameter NumberOfPumps > 8.		
0x0B18	8	SUCTION PRESSURE	Responded	Responded	Gyro suction in inches of mercury (Hg), floating point double (FLOAT64)		
0x0B20	2				Sound control: 0 to switch off, 1 to switch on		
0x0B24	2				Sound flag: reads 0 if off, 1 if on		
0x0B26	32				ICAO Model: Read from aircraft.cfg file (only available when 0x3C00 contains the full path to this file, and the file is readable)		
0x0B46	1	TRANSPONDER STATE:1			Transponder State: 0 = Off, 1 = Standby, 2 = Test, 3 = On, 4 = Alt, 5 = Ground		
0x0B47	1	COM SPACING MODE:1			COM1 frequency spacing: 0=25kHz, 1=8.33kHz		
0x0B48	1	COM SPACING MODE:2			COM2 frequency spacing: 0=25kHz, 1=8.33kHz		
0x0B49	1	AUTOPILOT FLIGHT LEVEL CHANGE					
0x0B4A	1				Toggle Throttle Reverse Thrust flag		
0x0B4C	2				Ground altitude (metres). See 0020 for more accuracy.		
0x0B4E	1	FLAP SPEED EXCEEDED	Responded				
0x0B4F	1	GEAR SPEED EXCEEDED	Responded				
0x0B50	1	BLEED AIR SOURCE CONTROL	Responded		Bleed air source control. <i>Documented as 0=Min, 1=auto, 2=Off, 3=APU, 4=Engines</i> <i>But in the FSX A321 these work:</i> <i>0=Auto, 1=Shut (off), 2=APU, 3=Engines</i>		
0x0B51	1	APU GENERATOR SWITCH	Responded		APU generator switch		
0x0B52	1	APU GENERATOR ACTIVE	Responded		APU generator active flag		
0x0B53	1	APU ON FIRE DETECTED	Responded		APU on fire flag		
0x0B54	4	APU PCT RPM	Responded		APU RPM as percentage of maximum, 32-bit float		
0x0B58	4	APU PCT STARTER	Responded		APU Starter as percentage (of what?), 32-bit float. FSUIPC4 interprets writes here as start /stop APU requests. Just write any Non-Zero value to start, or all zero to stop.		
0x0B5C	4	APU VOLTS	Responded		APU generator voltage level, 32-bit float		
0x0B60	2				Scenery complexity level, 0 – 5		
0x0B62	1				Fail mode, 0 ok, Hydraulics failure = 1		
0x0B63	1				Fail mode, 0 ok, Brakes failures: Bit 0 = Left brake Bit 1 = Right brake Bit 2 = Total brake failure		
0x0B64	1	PARTIAL PANEL ADF	Responded	Responded	Fail mode: 0 ok, ADF gauge inoperable = 1 (both ADFs)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0B65	1	PARTIAL PANEL AIRSPEED	Responded	Responded	Fail mode: 0 ok, ASI gauge inoperable = 1		
0x0B66	1	PARTIAL PANEL ALTIMETER	Responded	Responded	Fail mode: 0 ok, Altimeter gauge inoperable = 1		
0x0B67	1	PARTIAL PANEL ATTITUDE	Responded	Responded	Fail mode: 0 ok, Attitude Indicator gauge inoperable = 1		
0x0B68	1	PARTIAL PANEL COMM	Responded	Responded	Fail mode: 0 ok, COM radio gauges inoperable = 1 See also 3BD6		
0x0B69	1	PARTIAL PANEL COMPASS	Responded	Responded	Fail mode: 0 ok, Mag Compass inoperable = 1		
0x0B6A	1	PARTIAL PANEL ELECTRICAL	Responded	Responded	Fail mode: 0 ok, Electrics inoperable = 1		
0x0B6B	1	GENERAL ENG FAILED:1	Responded		Fail mode: 0 ok, Engine inoperable = 1, extended for up to 4 individual engines: bit 0 =Engine 1 ... bit 3= Engine 4.		
0x0B6B	0	GENERAL ENG FAILED:2	Responded				
0x0B6B	0	GENERAL ENG FAILED:3	Responded				
0x0B6B	0	GENERAL ENG FAILED:4	Responded				
0x0B6C	1	PARTIAL PANEL FUEL INDICATOR	Responded		Fail mode: 0 ok, Fuel indicators inoperable = 1		
0x0B6D	1	PARTIAL PANEL HEADING	Responded	Responded	Fail mode: 0 ok, Direction Indicator gauge inoperable = 1		
0x0B6E	1	PARTIAL PANEL VERTICAL VELOCITY	Responded	Responded	Fail mode: 0 ok, VSI gauge inoperable = 1		
0x0B6F	1	PARTIAL PANEL TRANSPONDER	Responded	Responded	Fail mode: 0 ok, Transponder gauge inoperable = 1		
0x0B70	1	PARTIAL PANEL NAV	Responded	Responded	Fail mode: 0 ok, NAV radio gauges inoperable = 1 See also 3BD6		
0x0B71	1	PARTIAL PANEL PITOT	Responded	Responded	Fail mode: 0 ok, Pitot inoperable = 1		
0x0B72	1	PARTIAL PANEL TURN COORDINATOR	Responded		Fail mode: 0 ok, Turn coordinator gauge inoperable = 1		
0x0B73	1	PARTIAL PANEL VACUUM	Responded	Responded	Fail mode: 0 ok, Vacuum gauge inoperable = 1		
0x0B74	4	FUEL TANK CENTER LEVEL	Responded	Responded	Fuel: centre tank level, % * 128 * 65536		
0x0B78	4	FUEL TANK CENTER CAPACITY	Responded		Fuel: centre tank capacity: US Gallons (see also offsets 1244– for extra fuel tanks)		
0x0B7C	4	FUEL TANK LEFT MAIN LEVEL	Responded	Responded	Fuel: left main tank level, % * 128 * 65536		
0x0B80	4	FUEL TANK LEFT MAIN CAPACITY	Responded		Fuel: left main tank capacity: US Gallons		
0x0B84	4	FUEL TANK LEFT AUX LEVEL	Responded	Responded	Fuel: left aux tank level, % * 128 * 65536		
0x0B88	4	FUEL TANK LEFT AUX CAPACITY	Responded		Fuel: left aux tank capacity: US Gallons		
0x0B8C	4	FUEL TANK LEFT TIP LEVEL	Responded	Responded	Fuel: left tip tank level, % * 128 * 65536		
0x0B90	4	FUEL TANK LEFT TIP CAPACITY	Responded		Fuel: left tip tank capacity: US Gallons		
0x0B94	4	FUEL TANK RIGHT MAIN LEVEL	Responded	Responded	Fuel: right main tank level, % * 128 * 65536		
0x0B98	4	FUEL TANK RIGHT MAIN CAPACITY	Responded		Fuel: right main tank capacity: US Gallons		
0x0B9C	4	FUEL TANK RIGHT AUX LEVEL	Responded	Responded	Fuel: right aux tank level, % * 128 * 65536		
0x0BA0	4	FUEL TANK RIGHT AUX CAPACITY	Responded		Fuel: right aux tank capacity: US Gallons		
0x0BA4	4	FUEL TANK RIGHT TIP LEVEL	Responded	Responded	Fuel: right tip tank level, % * 128 * 65536		
0x0BA8	4	FUEL TANK RIGHT TIP CAPACITY	Responded		Fuel: right tip tank capacity: US Gallons		
0x0BAC	2	INNER MARKER	Responded	Responded	Inner Marker: activated when TRUE		
0x0BAE	2	MIDDLE MARKER	Responded	Responded	Middle Marker: activated when TRUE		
0x0BB0	2	OUTER MARKER	Responded	Responded	Outer Marker: activated when TRUE		
0x0BB2	2	ELEVATOR POSITION	Responded	Responded	Elevator control input: –16383 to +16383		
0x0BB4	2	ELEVATOR DEFLECTION PCT	Responded		Elevator position indicator (maybe adjusted from input!)		
0x0BB6	2	AILERON POSITION	Responded	Responded	Aileron control input: –16383 to +16383		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0BB8	2	AILERON LEFT DEFLECTION PCT	Responded		Aileron position indicator (maybe adjusted from input!) <i>(Note that FSX provides left and right values. Only the left is used here)</i>		
0x0BBA	2	RUDDER POSITION	Responded	Responded	Rudder control input: -16383 to +16383		
0x0BBC	2	RUDDER DEFLECTION PCT	Responded		Rudder position indicator (maybe adjusted from input!)		
0x0BBE	2				Helo pitch (elevator) trim control: -16383 to +16383, but only when "ApplyHeloTrim" set.		
0x0BC0	2	ELEVATOR TRIM PCT	Responded		Elevator trim control input: -16383 to +16383 (NB. Write uses ELEVATOT_TRIM_SET axis control)		
0x0BC2	2	ELEVATOR TRIM INDICATOR	Responded		Elevator trim indicator (follows input)		
0x0BC4	2	BRAKE LEFT POSITION	Responded	Responded	Left brake application read-out (0 off, 32767 full: parking brake=32767). You can also apply a fixed brake pressure here, or else use the byte at 0C01 to apply brakes emulating the keypress. <i>Note that the values READ here run from 0 to 32767, but will not match exactly the values written. They seem to follow an exponential curve, being much lower at the low end (e.g. only 33% of what is written), gradually catching up to meet at the top.</i>		
0x0BC6	2	BRAKE RIGHT POSITION	Responded	Responded	Right brake application read-out (0 off, 32767 full: parking brake=32767). You can apply a fixed brake pressure here, or else use the byte at 0C00 to apply brakes emulating the keypress. <i>Note that the values READ here run from 0 to 32767, but will not match exactly the values written. They seem to follow an exponential curve, being much lower at the low end (e.g. only 33% of what is written), gradually catching up to meet at the top.</i>		
0x0BC8	2	BRAKE PARKING POSITION	Responded	Responded	Parking brake: 0=off, 32767=on		
0x0BCA	2	BRAKE INDICATOR	Responded		Braking indicator: brake applied if non-zero (1=Left, 2=Right, 3=both)		
0x0BCC	4	SPOILERS ARMED	Responded		Spoilers arm (0=off, 1=arm for auto deployment)		
0x0BD0	4	SPOILERS HANDLE POSITION	Responded	Responded	Spoilers control, 0 off, 4800 arm, then 5620 (7%) to 16383 (100% fully deployed). The 4800 value is set by arming. Values from 0 to somewhere close to, but below, 4800 do nothing. The percentage extension is the proportion of the distance in the range 4800 to 16383, even though values 4800 to 5619 cannot be used—7% seems to be the minimum.		
0x0BD4	4	SPOILERS LEFT POSITION	Responded		Spoiler Left position indicator (0-16383)		
0x0BD8	4	SPOILERS RIGHT POSITION	Responded		Spoiler Right position indicator (0-16383)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0BDC	4	FLAPS HANDLE PERCENT	Responded		Flaps control, 0=up, 16383=full. The “notches” for different aircraft are spaced equally across this range: calculate the increment by 16383/(number of positions-1), ignoring fractions. See also offset 3BFA below. N.B. Do not expect to read this and see 100% accurate values.		
0x0BE0	4	TRAILING EDGE FLAPS LEFT PERCENT	Responded	Responded	Flaps position indicator (left). This gives the proportional amount, with 16383=full deflection. It doesn't correspond to the equally spaced notches used for the control lever. If you know the maximum deflection angle you can derive the current angle by ((max * position indicator) / 16383). This only gives the (inboard?) trailing edge flaps. Please see offsets 30E0–30FF for greater details where needed.		
0x0BE4	4	TRAILING EDGE FLAPS RIGHT PERCENT	Responded	Responded	Flaps position indicator (right). This gives the correct proportional amount, with 16384=full deflection. It doesn't correspond to the equally spaced notches used for the control lever. This only gives the inboard trailing edge flaps. Please see offsets 30E0–30FF for greater details where needed.		
0x0BE8	4	GEAR HANDLE POSITION	Responded	Responded	Gear control: 0=Up, 16383=Down		
0x0BEC	4	GEAR CENTER POSITION	Responded	Responded	Gear position (nose): 0=full up, 16383=full down		
0x0BF0	4	GEAR RIGHT POSITION	Responded	Responded	Gear position (right): 0=full up, 16383=full down		
0x0BF4	4	GEAR LEFT POSITION	Responded	Responded	Gear position (left): 0=full up, 16383=full down		
0x0BF8	4				Unlimited visibility value, as 1600* statute miles. This is the value set in the Display Quality Settings.		
0x0BFC	1	FLAPS HANDLE INDEX	Responded	Responded	Flaps handle index (0 full up)		
0x0BFD	1	ANTISKID BRAKES ACTIVE	Responded		Anti-skid Brake active indicator, non-zero when active		
0x0C00	1				Right toe brake control: 0 – 200, proportional braking with timed decay		
0x0C01	1				Left toe brake control: 0 –200, proportional braking with timed decay		
0x0C02	2	AILERON TRIM PCT	Responded	Responded	Aileron trim value/control: –16383 to +16383		
0x0C04	2	RUDDER TRIM PCT	Responded	Responded	Rudder trim value/control: –16383 to +16383		
0x0C06	2				Helo bank (aileron) trim control: –16383 to +16383, but only when “ApplyHeloTrim” set to ‘Both’.		
0x0C08	2				Steering tiller input value (FSUIPC optional axis), -16384 to +16383, if calibrated		
0x0C0A	2				Rudder input value, -16384 to +16383, if calibrated		
0x0C0C	4	MAX RATED ENGINE RPM	Responded				
0x0C10	4	GEAR STEER ANGLE					

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0C14	4	ADF SIGNAL:2	Responded		ADF2 signal strength		
0x0C18	2	UNITS OF MEASURE	Responded		International units: 0=US, 1=Metric+feet, 2=Metric+metres		
0x0C1A	2	SIMULATION RATE	Responded		Simulation rate *256 (i.e. 256=1x). <i>(The Sim Rate values can't be written to directly, and the SIM_RATE_SET control does nothing. At present, FSUIPC4 tries to accommodate writes to this value by using INCR and DECR. This gives powers of two values, range 64 to 32768 – i.e. 1/4X to 128X. If you use intermediate values you will get the next one up or down).</i>		
0x0C1C	4	ADF SIGNAL:1	Responded		ADF1 signal strength		
0x0C20	9				Local time in character format: “hh:mm:ss” (with zero terminator)		
0x0C29	5				DME1 distance as character string, either “nn.n” or “nnn.” (when > 99.9 nm). The 5 th character may be a zero or a space. Don't rely on it.		
0x0C2E	5				DME1 speed as character string, “nnn” followed by either space then zero or just zero.		
0x0C33	5				DME2 distance as character string, either “nn.n” or “nnn.” (when > 99.9 nm). The 5 th character may be a zero or a space. Don't rely on it.		
0x0C38	5				DME2 speed as character string, “nnn” followed by either space then zero or just zero.		
0x0C3E	2	GYRO DRIFT ERROR	Responded		Gyro drift amount (*360/65536 for degrees). Note that whilst it may appear that the value is accurate to fractions of a degree, the actual setting capability (via an event) is based on whole degrees, just like the INC/DEC controls. Any value written here will normally be read back slightly differently, based upon this granularity.		
0x0C40	2	NAV MAGVAR:1	Responded		NAV1 Mag Var (*360/65536 for degrees) <i>(Note that there are two different data sources for MagVars, and this may not agree with the airport MagVar for airport-based VORs)</i>		
0x0C42	2	NAV MAGVAR:2	Responded		NAV2 Mag Var (*360/65536 for degrees) <i>(Note that there are two different data sources for MagVars, and this may not agree with the airport MagVar for airport-based VORs)</i>		
0x0C44	2	REALISM	Responded	Responded	Realism setting, 0 – 100		
0x0C46	1	AUTOBRAKES ACTIVE					
0x0C47	1	LIGHT BRAKE ON					
0x0C48	1	NAV CDI:1	Responded		NAV1 Localiser Needle: –127 left to +127 right		
0x0C49	1	NAV GSI:1	Responded		NAV1 Glideslope Needle: –119 up to +119 down		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0C4A	1				NAV1 Back Course flags: 0 BC available 1 Localiser tuned in 2 On Back Course (<i>Not found for FSX</i>) 7 Station active (even if no BC)		
0x0C4B	1	NAV TOFROM:1	Responded		NAV1 To/From flag: 0=not active, 1=To, 2=From		
0x0C4C	1	NAV GS FLAG:1	Responded		NAV1 GS flag: TRUE if GS alive		
0x0C4D	1	NAV BACK COURSE FLAGS:1	Responded		NAV1 code flags, bits used as follows:		
0x0C4D	1	NAV HAS DME:1	Responded		0 DME available		
0x0C4D	1	NAV HAS GLIDE SLOPE:1	Responded		1 TACAN (<i>Not found for FSX</i>)		
0x0C4D	1	NAV HAS LOCALIZER:1	Responded		2 Voice available (<i>Not found for FSX</i>)		
0x0C4D	1	NAV HAS NAV:1	Responded		3 No signal available		
0x0C4E	2	NAV OBS:1	Responded		4 DME/GS co-located (<i>Not found for FSX</i>)		
0x0C50	2	NAV RADIAL:1	Responded		NAV1 OBS setting (degrees, 0–359)		
0x0C52	4	NAV SIGNAL:1	Responded		NAV1 radial (*360/65536 for degrees). Note that this is in degrees Magnetic for a VOR, but TRUE for an ILS LOC.		
0x0C56	2	NAV RELATIVE BEARING TO STATION:1	Responded		NAV1 signal strength: For Localisers, seems to be either 0 or 256 For VORs varies from 0 to over 1,000,000 when really close!		
0x0C59	1	NAV CDI:2	Responded		NAV1: relative bearing to VOR1, in degrees (0–359)		
0x0C5A	1				NAV2 Localiser Needle: –127 left to +127 right		
0x0C5B	1	NAV TOFROM:2	Responded		NAV2 Back Course flags: 0 BC available 1 Localiser tuned in 2 On Back Course (<i>Not found for FSX</i>) 7 Station active (even if no BC)		
0x0C5C	2	NAV RELATIVE BEARING TO STATION:2	Responded		NAV2 To/From flag: 0=not active, 1=To, 2=From		
0x0C5E	2	NAV OBS:2	Responded		NAV2: relative bearing to VOR2, in degrees (0–359)		
0x0C60	2	NAV RADIAL:2	Responded		NAV2 OBS setting (degrees, 0–359)		
0x0C62	4	NAV SIGNAL:2	Responded		NAV2 radial (*360/65536 for degrees). Note that this is in degrees Magnetic for a VOR, but TRUE for an ILS LOC.		
0x0C6A	2	ADF RADIAL:1	Responded		NAV2 signal strength: For Localisers, seems to be either 0 or 256 For VORs varies from 0 to over 1,000,000 when really close!		
0x0C6C	2	ADF CARD	Responded		ADF1: relative bearing to NDB (*360/65536 for degrees, –ve left, +ve right)		
0x0C6E	1	NAV GSI:2	Responded		ADF1: dial bearing, where adjustable (in degrees, 1–360)		
					NAV2 Glideslope Needle: –127 up to +127 down		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0C6F	1	NAV GS FLAG:2	Responded		NAV2 GS flag: TRUE if GS alive		
0x0C70	1	NAV BACK COURSE FLAGS:2	Responded		NAV2 code flags, bits used as follows: 0 DME available 1 TACAN <i>(Not found for FSX)</i> 2 Voice available <i>(Not found for FSX)</i> 3 No signal available 4 DME/GS co-located <i>(Not found for FSX)</i>		
0x0C70	1	NAV HAS DME:2	Responded				
0x0C70	1	NAV HAS GLIDE SLOPE:2	Responded				
0x0C70	1	NAV HAS LOCALIZER:2	Responded				
0x0C70	1	NAV HAS NAV:2	Responded				
0x0C71	1	BUS LOOKUP INDEX					
0x0C72	1	BUS CONNECTION ON:6					
0x0C73	8	SIMULATION TIME					
0x0C7B	1	AUTOPILOT GLIDESLOPE ARM					
0x0C7C	1	AUTOPILOT GLIDESLOPE ACTIVE					
0x0C7D	1	GPS OVERRIDDEN	Responded	Responded	When it is active, all sim GPS system updates are suspended. This must be set to TRUE to be able to correctly set to any other GPS SimVar.		
0x0C92	2				Texture quality, 0–3, as on slider in Display Quality		
0x0D0C	2	LIGHT NAV	Responded		Lights, a switch for each one (bits from lo to hi): 0 Navigation 1 Beacon 2 Landing 3 Taxi 4 Strobes 5 Instruments 6 Recognition 7 Wing 8 Logo 9 Cabin		
0x0D0C	2	LIGHT BEACON	Responded				
0x0D0C	2	LIGHT LANDING	Responded				
0x0D0C	2	LIGHT TAXI	Responded				
0x0D0C	2	LIGHT STROBE	Responded				
0x0D0C	2	LIGHT PANEL	Responded				
0x0D0C	2	LIGHT RECOGNITION	Responded				
0x0D0C	2	LIGHT WING	Responded				
0x0D0C	2	LIGHT LOGO	Responded				
0x0D0C	2	LIGHT CABIN	Responded				
0x0D50	24				The Tower Latitude (8 bytes), Longitude (8 bytes) and Altitude (8 bytes) in the same format as 0560–0577 above.		
0x0D6C	4				Parameter associated with any Macro, Lua or L:Var request sent to the following offset (0D70)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0D70	128				<p><u>Macros and Lua requests</u></p> <p>Write here the complete identity string of a Macro control or Lua program control in order to have FSUIPC execute it. For a Macro, the string should begin with up to 16 characters giving the .MCRO file name (just the name part, not the type), and then, separated by a ':' character, the macro name within that file—again, up to 16 characters. Spaces either side of the ':' are optional. For a Lua program operation, the actual Lua control should be provided, followed (with one space or ':' separator) by the Lua program name (without the .Lua suffix). The valid Lua controls are:</p> <p style="padding-left: 40px;">Lua, LuaDebug, LuaKill, LuaSet, LuaClear, LuaToggle</p> <p>Note that a parameter should always be written first for the Set, Clear and Toggle controls as this specifies the flag to be changed (0–31). A parameter is never used with "Lua Kill".</p> <p>If a parameter is to be supplied, it should first be written to offset 0D6C, above. Otherwise whatever was last written there will be supplied.</p> <p><u>L:Var read, write and create requests</u></p> <p>First write the offset address to which the resulting value (an 8-byte double or FLT64) will be written (for a Read) or the value to be written can be found (for a Write and Create). This MUST be one of the user offsets, i.e. in the range 0x66C0 to 0x66F8 (or up to 0x66FF depending on the next setting).</p> <p>This offset value only occupies the low 16-bits (LOWORD) of the 32-bit value. The high part specifies the value format. Assuming the offset is 'nnnn', the options are:</p> <p style="padding-left: 40px;">0x0nnnn for 64-bit double (as before) 0x1nnnn for 32-bit float (FLT) 0x2nnnn for 32-bit signed integer (SD) 0x3nnnn for 32-bit unsigned integer (UD) 0x4nnnn for 16-bit signed integer (SW) 0x5nnnn for 16-bit unsigned integer (UW) 0x6nnnn for 8-bit signed integer (SB) 0x7nnnn for 8-bit unsigned integer (UB)</p> <p>With reads into a fixed point value (the last 6 above), the floating point value provided from the Gauge system is rounded to the nearest integer (up for positive numbers, down for negative).</p> <p>Then write to 0D70 the name of the LVar, preceded by just one : (colon) character for a read, :: (two colons) for a write, and ::: (three colons) for a create (and initialise). It should also be terminated by a zero byte.</p> <p>The reason for the use of user offsets is to avoid corruption when more than one application is running which reads L:Vars in this way. It is a matter for the programs, probably with user cooperation, to avoid clashes. Both 0D6C and 0D70 can be written together or at least in one Process call, and the result of a read can be read immediately, even in the same Process call. For a write the value to be written can be placed in the stated offset in the same Process call</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0D98	2				International N/S setting: 2=North, 3=South		
0x0D9C	2				International E/W setting: 0=East, 1=West		
0x0DD6	2				Scenery BGL variable "usrvar" (originally 0312h in BGL)		
0x0DD8	2				Scenery BGL variable "usrvr2" (originally 0314h in BGL)		
0x0DDA	2				Scenery BGL variable "usrvr3" (originally 0316h in BGL)		
0x0DDC	2				Scenery BGL variable "usrvr4" (originally 0318h in BGL)		
0x0DDE	2				Scenery BGL variable "usrvr5" (originally 031Ah in BGL)		
0x0E00	2	Display Scale					
0x0E02	2	EFIS Mode					
0x0E04	2	MapItem Shown					
0x0E06	2	EFIS VORADF1					
0x0E08	2	EFIS VORADF2					
0x0E0A	2	MFD Centered					
0x0E0C	2	IAS Mach Pressed					
0x0E0E	2	Display Mode					
0x0E10	2	VOR 1 Switch					
0x0E12	2	VOR 2 Switch					
0x0E14	2	HPA Button					
0x0E16	2	ILS Mode					
0x0E18	2	SPD MACH Pressed					
0x0E1A	2	AP ALT CHG RATE					
0x0E80	4				ICAO id of nearest weather station		
0x08E4	1				At aircraft altitude: cloud type		
0x0E85	1				At aircraft altitude: Cloud coverage		
0x0E86	2				At aircraft altitude: Cloud icing level		
0x0E88	2				At aircraft altitude: Cloud turbulence level		
0x0E8A	2				Ambient Visibility		
0x0E8C	2	AMBIENT TEMPERATURE	Responded		At aircraft altitude: cloud icing level, 0-4		
0x0E8E					Dew point		
0x0E90	2	AMBIENT WIND VELOCITY	Responded		Ambient wind speed (at aircraft) in knots		
0x0E92	2	AMBIENT WIND DIRECTION	Responded		Ambient wind direction (at aircraft), *360/65536 to get degrees True.		
0x0E94	2				At aircraft altitude: wind gusting value		
0x0E96	2				At aircraft altitude: wind directional variation		
0x0E98	2				At aircraft altitude: wind turbulence value		
0x0E9A	112				FS98 style Current Aircraft Weather		
0x0E9A	2						
0x0E9C	2						
0x0E9E	2						
0x0EA0	2						
0x0EA2	2						
0x0EA4	2						

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x0EA6	2						
0x0EA8	2						
0x0EAA	2						
0x0EAC	2						
0x0EAE	2						
0x0EB0	2						
0x0EB2	2						
0x0EB4	2						
0x0EB6	2						
0x0EB8	2						
0x0EBA	2						
0x0EBC	2						
0x0EBE	2						
0x0EC0	2						
0x0EC2	2						
0x0EC4	2						
0x0EC6	2	SEA LEVEL PRESSURE	Responded				
...							
0x0f8C	2				Visibility setting		
0x0FF0	16				This was previously the Path and Filename reading facility, as follows, for reading into offset 1000 one of:: 1. The default Flight path 2. The AI traffic pathname for a specified AI aircraft (see parameter) [FS2004 only] The filename (no path) of the last saved Flight (FLT) file. However, since version 3.47 of FSUIPC, the filename of the last saved flight has been readable directly at offset 0400. So it really isn't needed here with a complex protocol, and at present there are no plans to support the AI traffic pathname option in FSX or beyond (though if it requested I would look at placing it elsewhere). So, there's only one use for the area at 1000 now and that is as shown below. Consequently, for compatibility, FSUIPC will now always set 0FF0 to zero and continually change the timestamp at 0FFC		
0x1000	256				The full path to the folder where FS will save flights, in UNC format (i.e. \\pcname\ ...) if possible and WideFS is in use, otherwise local PC format (drive:\ ...).		
0x1100	4	INNER MARKER LATLONALT	Responded		Inner Marker Latitude in FS form. Convert to degrees by *90/10001750.		
0x1104	4	INNER MARKER LATLONALT	Responded		Inner Marker Longitude in FS form. Convert to degrees by *360/(65536*65536).		
0x1108	4	INNER MARKER LATLONALT	Responded		Inner Marker Altitude in metres		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x110C	4?	MIDDLE MARKER LATLONALT	Responded		Middle Marker Latitude in FS form. Convert to degrees by *90/10001750.		
0x1110	4	MIDDLE MARKER LATLONALT	Responded		Middle Marker Longitude in FS form. Convert to degrees by *360/(65536*65536).		
0x1114	4	MIDDLE MARKER LATLONALT	Responded		Middle Marker Altitude in metres		
0x1118	4	OUTER MARKER LATLONALT	Responded		Outer Marker Latitude in FS form. Convert to degrees by *90/10001750.		
0x111C	4	OUTER MARKER LATLONALT	Responded		Outer Marker Longitude in FS form. Convert to degrees by *360/(65536*65536).		
0x1120	4	OUTER MARKER LATLONALT	Responded		Outer Marker Altitude in metres		
0x1124	4	ADF LATLONALT:1	Responded		ADF1 Latitude in FS form. Convert to degrees by *90/10001750.		
0x1128	4	ADF LATLONALT:1	Responded		ADF1 Longitude in FS form. Convert to degrees by *360/(65536*65536).		
0x112C	4	ADF LATLONALT:1	Responded		ADF1 Altitude in metres		
0x1130	4	ADF LATLONALT:2	Responded		ADF2 Latitude in FS form. Convert to degrees by *90/10001750.		
0x1134	4	ADF LATLONALT:2	Responded		ADF2 Longitude in FS form. Convert to degrees by *360/(65536*65536).		
0x1138	4	ADF LATLONALT:2	Responded		ADF2 Altitude in metres		
0x1140	8	G FORCE	Responded	Responded	G-Force: the full 'raw' value from FS's SimConnect		
0x115E	1	TIME OF DAY	Responded		Time of day indicator, 0=Dawn, 1=Day, 2=Dusk, 3=Night. Set according to the local time, read for lighting effects and so on in BGLs. (Note change from FS9: both dawn and dusk were 2, and night was 4, not 3)		
0x11A2	1				Ground scenery shadows on/off (1=On, 2=Off).		
0x11A4	2				Aircraft shadows on/off. Can write to this to control them (1= On, 0=Off).		
0x11B6	1				Aircraft reflections on/off. (2=On, 1=Off).		
0x11B8	2				G Force: copy of 11BA on touchdown.		
0x11BA	2	G FORCE	Responded	Responded	G Force: units unknown, but /624 seems to give quite sensible values. See also offset 1140		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x11BE	2	ANGLE OF ATTACK INDICATOR	Responded		<p>Angle of Attack Indicator angle, with 360 degrees = 65536. The value 32767 is 180 degrees Angle of Attack. The angle is expressed in the usual FS 16-bit angle units (360 degrees = 65536), with 180 degrees pointing to the 0.0 position (right and down about 35 degrees in a Boeing type AofA indicator). Note that the indicator angle actually decreases as the wing AofA increases.</p> <p>The FS9 and earlier interpretation was documented as a relative value, giving in %*32767 the difference between the current AofA and the maximum angle of attack for the current aircraft,</p> <p>Really this revised understanding does not conflict with this, as the indicator would presumably vary from aircraft to aircraft in any case.</p>		
0x11C6	2	AIRSPEED MACH	Responded		Mach speed *20480.		
0x11D0	2	TOTAL AIR TEMPERATURE	Responded		Total Air Temperature (TAT), degrees Celsius * 256		
0x123E	1	NUM FUEL SELECTORS	Responded		Fuel: number of fuel selectors available in this aircraft		
0x123F	1	UNLIMITED FUEL	Responded		Fuel: unlimited fuel is set in "realism" if this is non-zero		
0x1240	4	FUEL TOTAL CAPACITY	Responded		Fuel: total capacity in gallons (32-bit integer)		
0x1244	4	FUEL TANK CENTER2 LEVEL	Responded	Responded	Fuel: centre 2 tank level, % * 128 * 65536		
0x1248	4	FUEL TANK CENTER2 CAPACITY	Responded		Fuel: centre 2 tank capacity: US Gallons		
0x124C	4	FUEL TANK CENTER3 LEVEL	Responded	Responded	Fuel: centre 3 tank level, % * 128 * 65536		
0x1250	4	FUEL TANK CENTER3 CAPACITY	Responded		Fuel: centre 3 tank capacity: US Gallons		
0x1254	4	FUEL TANK EXTERNAL1 LEVEL	Responded	Responded	Fuel: external 1 tank level, % * 128 * 65536		
0x1258	4	FUEL TANK EXTERNAL1 CAPACITY	Responded		Fuel: external 1 tank capacity: US Gallons		
0x125C	4	FUEL TANK EXTERNAL2 LEVEL	Responded	Responded	Fuel: external 2 tank level, % * 128 * 65536		
0x1260	4	FUEL TANK EXTERNAL2 CAPACITY	Responded		Fuel: external 2 tank capacity: US Gallons		
0x1264	4	FUEL TOTAL QUANTITY	Responded		Fuel: total quantity in gallons (32-bit integer)		
0x1268	4	FUEL SELECTED QUANTITY	Responded		Fuel: selected quantity in gallons (32-bit integer)		
0x126C	4	FUEL TOTAL QUANTITY WEIGHT	Responded		Fuel: total quantity weight in pounds (32-bit integer)		
0x1270	4	ESTIMATED FUEL FLOW	Responded		Estimated fuel flow at cruise, in pounds per hour (32-bit integer)		
0x1274	2				Text display mode (eg for ATIS): =0 static, =1 scrolling		
0x132C	4	GPS DRIVES NAV1	Responded	Responded	NAV/GPS switch. 0=NAV, 1=GPS		
0x1330	4	EMPTY WEIGHT	Responded		Empty weight, lbs * 256. This is the aircraft weight without the payload and fuel.		
0x1334	4	MAX GROSS WEIGHT	Responded		Max Gross weight, lbs * 256. This is the maximum aircraft weight including payload and fuel.		
0x13FC	4	PAYLOAD STATION COUNT	Responded		Count of Payload Stations		
0x1400	8	PAYLOAD STATION WEIGHT:1	Responded	Responded	A set of Payload Station data, 48 bytes for each payload station (the count is in 13FC above). Each 48 byte entry		
0x1420	16	PAYLOAD STATION NAME:1	Responded				

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x1430	8	PAYLOAD STATION WEIGHT:2	Responded	Responded	<p>contains:</p> <ul style="list-style-type: none"> 0 double weight (lbs) 8 double, lat dist from datum (ft) 16 double vert dist from datum (ft) 24 double longl dist from datum (ft) 32 char Name[16], zero at end <p>There's room for up to 61 such stations here. If there are more you can't access them this way.</p> <p>These loadings can be changed, and this does have some effect, but are changes are being promulgated to the overall weights (offsets 30C0, 30C8, 3BFC) and balance (2EF8)? Needs checking <i>in MSFS</i>.</p>		
0x1450	16	PAYLOAD STATION NAME:2	Responded				
0x1460	8	PAYLOAD STATION WEIGHT:3	Responded	Responded			
0x1480	16	PAYLOAD STATION NAME:3	Responded				
0x1490	8	PAYLOAD STATION WEIGHT:4	Responded	Responded			
0x14B0	16	PAYLOAD STATION NAME:4	Responded				
0x14C0	8	PAYLOAD STATION WEIGHT:5	Responded	Responded			
0x14E0	16	PAYLOAD STATION NAME:5	Responded				
0x14F0	8	PAYLOAD STATION WEIGHT:6	Responded	Responded			
0x1510	16	PAYLOAD STATION NAME:6	Responded				
0x1520	8	PAYLOAD STATION WEIGHT:7	Responded	Responded			
0x1540	16	PAYLOAD STATION NAME:7	Responded				
0x1550	8	PAYLOAD STATION WEIGHT:8	Responded	Responded			
0x1570	16	PAYLOAD STATION NAME:8	Responded				
0x1580	8	PAYLOAD STATION WEIGHT:9	Responded	Responded			
0x15A0	16	PAYLOAD STATION NAME:9	Responded				
0x15B0	8	PAYLOAD STATION WEIGHT:10	Responded	Responded			
0x15D0	16	PAYLOAD STATION NAME:10	Responded				
0x15E0	8	PAYLOAD STATION WEIGHT:11	Responded	Responded			
0x1600	16	PAYLOAD STATION NAME:11	Responded				
0x1610	8	PAYLOAD STATION WEIGHT:12	Responded	Responded			
0x1630	16	PAYLOAD STATION NAME:12	Responded				
0x1640	8	PAYLOAD STATION WEIGHT:13	Responded	Responded			
0x1660	16	PAYLOAD STATION NAME:13	Responded				
0x1670	8	PAYLOAD STATION WEIGHT:14	Responded	Responded			
0x1690	16	PAYLOAD STATION NAME:14	Responded				
0x16A0	8	PAYLOAD STATION WEIGHT:15	Responded	Responded			
0x16C0	16	PAYLOAD STATION NAME:15	Responded				
0x16D0	8	PAYLOAD STATION WEIGHT:16	Responded	Responded			
0x16F0	16	PAYLOAD STATION NAME:16	Responded				
0x1700	8	PAYLOAD STATION WEIGHT:17	Responded	Responded			
0x1720	16	PAYLOAD STATION NAME:17	Responded				
0x1730	8	PAYLOAD STATION WEIGHT:18	Responded	Responded			
0x1750	16	PAYLOAD STATION NAME:18	Responded				
0x1760	8	PAYLOAD STATION WEIGHT:19	Responded	Responded			
0x1780	16	PAYLOAD STATION NAME:19	Responded				
0x1790	8	PAYLOAD STATION WEIGHT:20	Responded	Responded			
0x17B0	16	PAYLOAD STATION NAME:20	Responded				
0x17C0	8	PAYLOAD STATION WEIGHT:21	Responded	Responded			
0x17E0	16	PAYLOAD STATION NAME:21	Responded				
0x17F0	8	PAYLOAD STATION WEIGHT:22	Responded	Responded			
0x1810	16	PAYLOAD STATION NAME:22	Responded				
0x1820	8	PAYLOAD STATION WEIGHT:23	Responded	Responded			

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x1840	16	PAYLOAD STATION NAME:23	Responded				
0x1850	8	PAYLOAD STATION WEIGHT:24	Responded	Responded			
0x1870	16	PAYLOAD STATION NAME:24	Responded				
0x1880	8	PAYLOAD STATION WEIGHT:25	Responded	Responded			
0x18A0	16	PAYLOAD STATION NAME:25	Responded				
0x18B0	8	PAYLOAD STATION WEIGHT:26	Responded	Responded			
0x18D0	16	PAYLOAD STATION NAME:26	Responded				
0x18E0	8	PAYLOAD STATION WEIGHT:27	Responded	Responded			
0x1900	16	PAYLOAD STATION NAME:27	Responded				
0x1910	8	PAYLOAD STATION WEIGHT:28	Responded	Responded			
0x1930	16	PAYLOAD STATION NAME:28	Responded				
0x1940	8	PAYLOAD STATION WEIGHT:29	Responded	Responded			
0x1960	16	PAYLOAD STATION NAME:29	Responded				
0x1970	8	PAYLOAD STATION WEIGHT:30	Responded	Responded			
0x1990	16	PAYLOAD STATION NAME:30	Responded				
0x19A0	8	PAYLOAD STATION WEIGHT:31	Responded	Responded			
0x19C0	16	PAYLOAD STATION NAME:31	Responded				
0x19D0	8	PAYLOAD STATION WEIGHT:32	Responded	Responded			
0x19F0	16	PAYLOAD STATION NAME:32	Responded				
0x1A00	8	PAYLOAD STATION WEIGHT:33	Responded	Responded			
0x1A20	16	PAYLOAD STATION NAME:33	Responded				
0x1A30	8	PAYLOAD STATION WEIGHT:34	Responded	Responded			
0x1A50	16	PAYLOAD STATION NAME:34	Responded				
0x1A60	8	PAYLOAD STATION WEIGHT:35	Responded	Responded			
0x1A80	16	PAYLOAD STATION NAME:35	Responded				
0x1A90	8	PAYLOAD STATION WEIGHT:36	Responded	Responded			
0x1AB0	16	PAYLOAD STATION NAME:36	Responded				
0x1AC0	8	PAYLOAD STATION WEIGHT:37	Responded	Responded			
0x1AE0	16	PAYLOAD STATION NAME:37	Responded				
0x1AF0	8	PAYLOAD STATION WEIGHT:38	Responded	Responded			
0x1B10	16	PAYLOAD STATION NAME:38	Responded				
0x1B20	8	PAYLOAD STATION WEIGHT:39	Responded	Responded			
0x1B40	16	PAYLOAD STATION NAME:39	Responded				
0x1B50	8	PAYLOAD STATION WEIGHT:40	Responded	Responded			
0x1B70	16	PAYLOAD STATION NAME:40	Responded				
0x1B80	8	PAYLOAD STATION WEIGHT:41	Responded	Responded			
0x1BA0	16	PAYLOAD STATION NAME:41	Responded				
0x1BB0	8	PAYLOAD STATION WEIGHT:42	Responded	Responded			
0x1BD0	16	PAYLOAD STATION NAME:42	Responded				
0x1BE0	8	PAYLOAD STATION WEIGHT:43	Responded	Responded			
0x1C00	16	PAYLOAD STATION NAME:43	Responded				
0x1C10	8	PAYLOAD STATION WEIGHT:44	Responded	Responded			
0x1C30	16	PAYLOAD STATION NAME:44	Responded				

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x1C40	8	PAYLOAD STATION WEIGHT:45	Responded	Responded			
0x1C60	16	PAYLOAD STATION NAME:45	Responded				
0x1C70	8	PAYLOAD STATION WEIGHT:46	Responded	Responded			
0x1C90	16	PAYLOAD STATION NAME:46	Responded				
0x1CA0	8	PAYLOAD STATION WEIGHT:47	Responded	Responded			
0x1CC0	16	PAYLOAD STATION NAME:47	Responded				
0x1CD0	8	PAYLOAD STATION WEIGHT:48	Responded	Responded			
0x1CF0	16	PAYLOAD STATION NAME:48	Responded				
0x1D00	8	PAYLOAD STATION WEIGHT:49	Responded	Responded			
0x1D20	16	PAYLOAD STATION NAME:49	Responded				
0x1D30	8	PAYLOAD STATION WEIGHT:50	Responded	Responded			
0x1D50	16	PAYLOAD STATION NAME:50	Responded				
0x1D60	8	PAYLOAD STATION WEIGHT:51	Responded	Responded			
0x1D80	16	PAYLOAD STATION NAME:51	Responded				
0x1D90	8	PAYLOAD STATION WEIGHT:52	Responded	Responded			
0x1DB0	16	PAYLOAD STATION NAME:52	Responded				
0x1DC0	8	PAYLOAD STATION WEIGHT:53	Responded	Responded			
0x1DE0	16	PAYLOAD STATION NAME:53	Responded				
0x1DF0	8	PAYLOAD STATION WEIGHT:54	Responded	Responded			
0x1E10	16	PAYLOAD STATION NAME:54	Responded				
0x1E20	8	PAYLOAD STATION WEIGHT:55	Responded	Responded			
0x1E40	16	PAYLOAD STATION NAME:55	Responded				
0x1E50	8	PAYLOAD STATION WEIGHT:56	Responded	Responded			
0x1E70	16	PAYLOAD STATION NAME:56	Responded				
0x1E80	8	PAYLOAD STATION WEIGHT:57	Responded	Responded			
0x1EA0	16	PAYLOAD STATION NAME:57	Responded				
0x1EB0	8	PAYLOAD STATION WEIGHT:58	Responded	Responded			
0x1ED0	16	PAYLOAD STATION NAME:58	Responded				
0x1EE0	8	PAYLOAD STATION WEIGHT:59	Responded	Responded			
0x1F00	16	PAYLOAD STATION NAME:59	Responded				
0x1F10	8	PAYLOAD STATION WEIGHT:60	Responded	Responded			
0x1F30	16	PAYLOAD STATION NAME:60	Responded				
0x1F40	8	PAYLOAD STATION WEIGHT:61	Responded	Responded			
0x1F60	16	PAYLOAD STATION NAME:61	Responded				

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x1F80	40				<p>Write-only area for a TCAS_DATA structure, used to add entries to the TCAS data tables (but NOT to create AI aircraft, please note!). The 40-byte format is as for the TCAS_DATA structure (see offset F080). You need to write it all as one FSUIPC_Write block. You cannot read back what you have written here.</p> <p>You can add more writes to the same (or other) offsets before actually sending them (e.g. via FSUIPC_Process). The only important thing is that the whole TCAS_DATA structure is written in one block, with the length obviously set to 40.</p> <p>The data this structure should contain is as follows:</p> <p>id Any id number UNIQUE to all aircraft you supply. It does not have to be unique to the AI aircraft. FSUIPC keeps an internal flag to distinguish the two types. <i>[Note that if in the future this field is re-used for other indications, FSUIPC may have to adjust the value supplied].</i></p> <p>lat, lon, alt, hdg, gs, vs, com1</p> <p>As possible: all would be good, but obviously a minimum of lat/lon/alt.</p> <p>idATC Any string of up to 14, plus a zero terminator, to identify the aircraft. This doesn't need to be unique but it could be rather confusing to the user if it isn't.</p> <p>To erase an aircraft provide the specific id for that entry, and set the idATC field to null (i.e. zero length string, just a zero).</p> <p>In any case, FSUIPC will automatically erase any externally supplied aircraft after about 8–12 seconds if it receives no further updates in that time. Even if the aircraft is static you'll need to supply updates for it regularly.</p> <p>Apart from the user-adjustable range, which is applied, FSUIPC is not performing any filtering for these aircraft—i.e. you can include aircraft on the ground if required. However, once the airborne TCAS table is full (current capacity 96) whether with AI aircraft, MP aircraft, or a mixture, no others will be accepted until slots become free. So in this sense slot management is up to you.</p>		
0x2000	8	TURB ENG N1:1	Responded	Responded	Turbine Engine 1 N1 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2008	8	TURB ENG N2:1	Responded	Responded	Turbine Engine 1 N2 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2010	8	TURB ENG CORRECTED N1:1	Responded	Responded	Turbine Engine 1 corrected N1 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2018	8	TURB ENG CORRECTED N2:1	Responded	Responded	Turbine Engine 1 corrected N2 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2020	8	TURB ENG CORRECTED FF:1	Responded	Responded	Turbine Engine 1 corrected fuel flow (pounds per hour) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2028	8	TURB ENG MAX TORQUE PERCENT:1	Responded	Responded	Turbine Engine 1 max torque fraction (range 0.0–1.0) as a double (FLOAT64).		
0x2030	8	TURB ENG PRESSURE RATIO:1	Responded	Responded	Turbine Engine 1 EPR as a double (FLOAT64). This is for jets and turboprops.		
0x2038	8	TURB ENG ITT:1	Responded	Responded	Turbine Engine 1 ITT (interstage turbine temperature) in degrees Rankine, as a double (FLOAT64). This is for jets and turboprops.		
0x2048	4	TURB ENG AFTERBURNER:1	Responded		Turbine Engine 1 Afterburner switch (1 = on, 0 = off)		
0x204C	8	TURB ENG JET THRUST:1	Responded		Turbine Engine 1 jet thrust, in pounds, as a double (FLOAT64). This is the jet thrust. See 2410 for propeller thrust (turboprops have both).		
0x2054	4	TURB ENG TANK SELECTOR:1	Responded		turbine Engine 1 Tank Selector: 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main		
0x2058	4	TURB ENG TANKS USED:1	Responded		Turbine Engine 1 Tanks Used, a bit mask: 0 Center 1 1 Center 2 2 Center 3 3 Left Main 4 Left Aux 5 Left Tip 6 Right Main 7 Right Aux 8 Right Tip 9 External 1 10 External 2		
0x205C	4	TURB ENG NUM TANKS USED:1	Responded		Turbine Engine 1, number of fuel tanks available		
0x2060	8	TURB ENG FUEL FLOW PPH:1	Responded		Turbine Engine 1 fuel flow (pounds per hour) as a double (FLOAT64). This is for jets and turboprops		
0x2068	4	TURB ENG FUEL AVAILABLE:1	Responded		Turbine Engine 1 Fuel Available flag		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x206C	8	TURB ENG BLEED AIR:1	Responded		Turbine Engine 1 bleed air pressure (pounds per square inch) as a double (FLOAT64). This is for jets and turboprops.		
0x207C	8	TURB ENG REVERSE NOZZLE PERCENT:1	Responded		Turbine Engine 1 reverser fraction, a double (FLOAT64), in the range 0.0–1.0, providing the reverse as a proportion of the maximum reverse throttle position.		
0x2084	8	TURB ENG VIBRATION:1	Responded		Turbine Engine 1 Vibration		
0x208C	4	TURB ENG IGNITION SWITCH:1	Responded		Turbine Engine 1 Ignition Switch		
0x2090	8	TURB ENG PRIMARY NOZZLE PERCENT:1	Responded				
0x2098	1	TURB ENG MASTER STARTER SWITCH	Responded				
0x2100	8	TURB ENG N1:2	Responded	Responded	Turbine Engine 2 N1 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2108	8	TURB ENG N2:2	Responded	Responded	Turbine Engine 2 N2 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2110	8	TURB ENG CORRECTED N1:2	Responded	Responded	Turbine Engine 2 corrected N1 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2118	8	TURB ENG CORRECTED N2:2	Responded	Responded	Turbine Engine 2 corrected N2 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2120	8	TURB ENG CORRECTED FF:2	Responded	Responded	Turbine Engine 2 corrected fuel flow (pounds per hour) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2128	8	TURB ENG MAX TORQUE PERCENT:2	Responded	Responded	Turbine Engine 2 max torque fraction (range 0.0–1.0) as a double (FLOAT64)		
0x2130	8	TURB ENG PRESSURE RATIO:2	Responded	Responded	Turbine Engine 2 EPR as a double (FLOAT64). This is for jets and turboprops.		
0x2138	8	TURB ENG ITT:2	Responded	Responded	Turbine Engine 2 ITT (interstage turbine temperature) in degrees Rankine, as a double (FLOAT64). This is for jets and turboprops.		
0x2148	4	TURB ENG AFTERBURNER:2	Responded		Turbine Engine 2 Afterburner switch (1 = on, 0 = off)		
0x214C	8	TURB ENG JET THRUST:2	Responded		Turbine Engine 2 jet thrust, in pounds, as a double (FLOAT64). This is the jet thrust. See 2510 for propeller thrust (turboprops have both).		
0x2154	4	TURB ENG TANK SELECTOR:2	Responded		Turbine Engine 2 tank selector: 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2158	4	TURB ENG TANKS USED:2	Responded		Turbine Engine 2 tanks used, a bit mask: 0 Center 1 1 Center 2 2 Center 3 3 Left Main 4 Left Aux 5 Left Tip 6 Right Main 7 Right Aux 8 Right Tip 9 External 1 10 External 2		
0x215C	4	TURB ENG NUM TANKS USED:2	Responded		Turbine Engine 2, number of fuel tanks available		
0x2160	8	TURB ENG FUEL FLOW PPH:2	Responded		Turbine Engine 2 fuel flow (pounds per hour) as a double (FLOAT64). This is for jets and turboprops.		
0x2168	4	TURB ENG FUEL AVAILABLE:2	Responded		Turbine Engine 2 fuel available flag		
0x216C	8	TURB ENG BLEED AIR:2	Responded		Turbine Engine 2 bleed air pressure (pounds per square inch) as a double (FLOAT64). This is for jets and turboprops.		
0x217C	8	TURB ENG REVERSE NOZZLE PERCENT:2	Responded		Turbine Engine 2 reverser fraction, a double (FLOAT64), in the range 0.0–1.0, providing the reverse as a proportion of the maximum reverse throttle position.		
0x2184	8	TURB ENG VIBRATION:2	Responded		Turbine Engine 2 vibration		
0x218C	4	TURB ENG IGNITION SWITCH:2	Responded		Turbine Engine 2 Ignition Switch		
0x2190	8	TURB ENG PRIMARY NOZZLE PERCENT:2	Responded				
0x2200	8	TURB ENG N1:3	Responded	Responded	Turbine Engine 3 N1 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2208	8	TURB ENG N2:3	Responded	Responded	Turbine Engine 3 N2 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2210	8	TURB ENG CORRECTED N1:3	Responded	Responded	Turbine Engine 3 corrected N1 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2218	8	TURB ENG CORRECTED N2:3	Responded	Responded	Turbine Engine 3 corrected N2 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2220	8	TURB ENG CORRECTED FF:3	Responded	Responded	Turbine Engine 3 corrected fuel flow (pounds per hour) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2228	8	TURB ENG MAX TORQUE PERCENT:3	Responded	Responded	Turbine Engine 3 max torque fraction (range 0.0–1.0) as a double (FLOAT64).		
0x2230	8	TURB ENG PRESSURE RATIO:3	Responded	Responded	Turbine Engine 3 EPR as a double (FLOAT64). This is for jets and turboprops.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2238	8	TURB ENG ITT:3	Responded	Responded	Turbine Engine 3 ITT (interstage turbine temperature) in degrees Rankine, as a double (FLOAT64). This is for jets and turboprops.		
0x2248	4	TURB ENG AFTERBURNER:3	Responded		Turbine Engine 3 Afterburner switch (1 = on, 0 = off)		
0x224C	8	TURB ENG JET THRUST:3	Responded		Turbine Engine 3 jet thrust, in pounds, as a double (FLOAT64). This is the jet thrust. See 2610 for propeller thrust (turboprops have both).		
0x2254	4	TURB ENG TANK SELECTOR:3	Responded		Turbine Engine 3 tank selector: : 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main		
0x2258	4	TURB ENG TANKS USED:3	Responded		Turbine Engine 3 tanks used, a bit mask: 0 Center 1 1 Center 2 2 Center 3 3 Left Main 4 Left Aux 5 Left Tip 6 Right Main 7 Right Aux 8 Right Tip 9 External 1 10 External 2		
0x225C	4	TURB ENG NUM TANKS USED:3	Responded		Turbine Engine 3, number of fuel tanks available		
0x2260	8	TURB ENG FUEL FLOW PPH:3	Responded		Turbine Engine 3 fuel flow (pounds per hour) as a double (FLOAT64). This is for jets and turboprops.		
0x2268	4	TURB ENG FUEL AVAILABLE:3	Responded		Turbine Engine 3 fuel available flag		
0x226C	8	TURB ENG BLEED AIR:3	Responded		Turbine Engine 3 bleed air pressure (pounds per square inch) as a double (FLOAT64). This is for jets and turboprops.		
0x227C	8	TURB ENG REVERSE NOZZLE PERCENT:3	Responded		Turbine Engine 3 reverser fraction, a double (FLOAT64), in the range 0.0–1.0, providing the reverse as a proportion of the maximum reverse throttle position.		
0x2284	8	TURB ENG VIBRATION:3	Responded		Turbine Engine 3 vibration		
0x228C	4	TURB ENG IGNITION SWITCH:3	Responded		Turbine Engine 3 Ignition Switch		
0x2290	8	TURB ENG PRIMARY NOZZLE PERCENT:3	Responded				
0x2300	8	TURB ENG N1:4	Responded	Responded	Turbine Engine 4 N1 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2308	8	TURB ENG N2:4	Responded	Responded	Turbine Engine 4 N2 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2310	8	TURB ENG CORRECTED N1:4	Responded	Responded	Turbine Engine 4 corrected N1 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2318	8	TURB ENG CORRECTED N2:4	Responded	Responded	Turbine Engine 4 corrected N2 value (%) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2320	8	TURB ENG CORRECTED FF:4	Responded	Responded	Turbine Engine 4 corrected fuel flow (pounds per hour) as a double (FLOAT64). This is for jets and turboprops—it has no meaning on reciprocating prop aircraft.		
0x2328	8	TURB ENG MAX TORQUE PERCENT:4	Responded	Responded	Turbine Engine 4 max torque fraction (range 0.0–1.0) as a double (FLOAT64).		
0x2330	8	TURB ENG PRESSURE RATIO:4	Responded	Responded	Turbine Engine 4 EPR as a double (FLOAT64). This is for jets and turboprops.		
0x2338	8	TURB ENG ITT:4	Responded	Responded	Turbine Engine 4 ITT (interstage turbine temperature) in degrees Rankine, as a double (FLOAT64). This is for jets and turboprops.		
0x2348	4	TURB ENG AFTERBURNER:4	Responded		Turbine Engine 4 Afterburner switch (1 = on, 0 = off)		
0x234C	8	TURB ENG JET THRUST:4	Responded		Turbine Engine 4 jet thrust, in pounds, as a double (FLOAT64). This is the jet thrust. See 2710 for propeller thrust (turboprops have both).		
0x2354	4	TURB ENG TANK SELECTOR:4	Responded		Turbine Engine 4 tank selector: 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main		
0x2358	4	TURB ENG TANKS USED:4	Responded		Turbine Engine 4 tanks used, a bit mask: 0 Center 1 1 Center 2 2 Center 3 3 Left Main 4 Left Aux 5 Left Tip 6 Right Main 7 Right Aux 8 Right Tip 9 External 1 10 External 2		
0x235C	4	TURB ENG NUM TANKS USED:4	Responded		Turbine Engine 4, number of fuel tanks available		
0x2360	8	TURB ENG FUEL FLOW PPH:4	Responded		Turbine Engine 4 fuel flow (pounds per hour) as a double (FLOAT64). This is for jets and turboprops.		
0x2368	4	TURB ENG FUEL AVAILABLE:4	Responded		Turbine Engine 4 fuel available flag		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x236C	8	TURB ENG BLEED AIR:4	Responded		Turbine Engine 4 bleed air pressure (pounds per square inch) as a double (FLOAT64). This is for jets and turboprops.		
0x237C	8	TURB ENG REVERSE NOZZLE PERCENT:4	Responded		Turbine Engine 4 reverser fraction, a double (FLOAT64), in the range 0.0–1.0, providing the reverse as a proportion of the maximum reverse throttle position.		
0x2384	8	TURB ENG VIBRATION:4	Responded		Turbine Engine 4 vibration		
0x238C	4	TURB ENG IGNITION SWITCH:4	Responded		Turbine Engine 4 Ignition Switch		
0x2390	8	TURB ENG PRIMARY NOZZLE PERCENT:4	Responded				
0x2400	8	GENERAL ENG RPM:1	Responded		Propeller 1 RPM as a double (FLOAT64). This value is for props and turboprops and is negative for counter-rotating propellers.		
0x2400	8	PROP RPM:1	Responded	Responded	(On turboprops this will give the shaft RPM, since there is currently no Gear Reduction Ratio available to fix values on such aircraft. I will fix this when I can)		
0x2408	8	GENERAL ENG PCT MAX RPM:1	Responded		Propeller 1 RPM as a fraction of the maximum RPM.		
0x2408	8	PROP MAX RPM PERCENT:1	Responded		(double)		
0x2410	8	PROP THRUST:1	Responded		Propeller 1 thrust in pounds, as a double (FLOAT64). This is for props and turboprops.		
0x2418	8	PROP BETA:1	Responded		Propeller 1 Beta blade angle in radians, as a double (FLOAT64). This is for props and turboprops.		
0x2420	4	PROP FEATHERING INHIBIT:1	Responded		Propeller 1 feathering inhibit		
0x2424	4	PROP FEATHERED:1	Responded		Propeller 1 feathered flag		
0x2428	8	PROP SYNC DELTA LEVER:1	Responded		Propeller 1 sync delta lever		
0x2430	4	PROP AUTO FEATHER ARMED:1	Responded		Propeller 1 autofeather armed flag		
0x2434	4	PROP FEATHER SWITCH:1	Responded		Propeller 1 feather switch		
0x2438	4	PANEL AUTO FEATHER SWITCH:1	Responded		Propeller 1 panel auto-feather switch (There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)		
0x243C	4	PROP SYNC ACTIVE:1	Responded		Propeller 1 sync active (There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)		
0x2440	4	PROP DEICE SWITCH:1	Responded		Propeller 1 de-ice switch (There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)		
0x2500	8	GENERAL ENG RPM:2	Responded		Propeller 2 RPM as a double (FLOAT64). This value is for props and turboprops and is negative for counter-rotating propellers.		
0x2500	8	PROP RPM:2	Responded	Responded	(On turboprops this will give the shaft RPM, since there is currently no Gear Reduction Ratio available to fix values on such aircraft. I will fix this when I can)		
0x2508	8	GENERAL ENG PCT MAX RPM:2	Responded		Propeller 2 RPM as a fraction of the maximum RPM.		
0x2508	8	PROP MAX RPM PERCENT:2	Responded		(double)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2510	8	PROP THRUST:2	Responded		Propeller 2 thrust in pounds, as a double (FLOAT64). This is for props and turboprops.		
0x2518	8	PROP BETA:2	Responded		Propeller 2 Beta blade angle in radians, as a double (FLOAT64). This is for props and turboprops.		
0x2520	4	PROP FEATHERING INHIBIT:2	Responded		Propeller 2 feathering inhibit		
0x2524	4	PROP FEATHERED:2	Responded		Propeller 2 feathered flag		
0x2528	8	PROP SYNC DELTA LEVER:2	Responded		Propeller 2 sync delta lever		
0x2530	4	PROP AUTO FEATHER ARMED:2	Responded		Propeller 2 autofeather armed flag		
0x2534	4	PROP FEATHER SWITCH:2	Responded		Propeller 2 feather switch		
0x2538	4	PANEL AUTO FEATHER SWITCH:2	Responded		Propeller 2 panel auto-feather switch <i>(There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)</i>		
0x253C	4	PROP SYNC ACTIVE:2	Responded		Propeller 2 sync active <i>(There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)</i>		
0x2540	4	PROP DEICE SWITCH:2	Responded		Propeller 2 de-ice switch <i>(There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)</i>		
0x2544	184				Free for general use		
0x2600	8	GENERAL ENG RPM:3	Responded		Propeller 3 RPM as a double (FLOAT64). This value is for props and turboprops and is negative for counter-rotating propellers.		
0x2600	8	PROP RPM:3	Responded	Responded	<i>(On turboprops this will give the shaft RPM, since there is currently no Gear Reduction Ratio available to fix values on such aircraft. I will fix this when I can)</i>		
0x2608	8	GENERAL ENG PCT MAX RPM:3	Responded		Propeller 3 RPM as a fraction of the maximum RPM.		
0x2608	8	PROP MAX RPM PERCENT:3	Responded		(double)		
0x2610	8	PROP THRUST:3	Responded		Propeller 3 thrust in pounds, as a double (FLOAT64). This is for props and turboprops.		
0x2618	8	PROP BETA:3	Responded		Propeller 3 Beta blade angle in radians, as a double (FLOAT64). This is for props and turboprops.		
0x2620	4	PROP FEATHERING INHIBIT:3	Responded		Propeller 3 feathering inhibit		
0x2624	4	PROP FEATHERED:3	Responded		Propeller 3 feathered flag		
0x2628	8	PROP SYNC DELTA LEVER:3	Responded		Propeller 3 sync delta lever		
0x2630	4	PROP AUTO FEATHER ARMED:3	Responded		Propeller 3 autofeather armed flag		
0x2634	4	PROP FEATHER SWITCH:3	Responded		Propeller 3 feather switch		
0x2638	4	PANEL AUTO FEATHER SWITCH:3	Responded		Propeller 3 panel auto-feather switch <i>(There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)</i>		
0x263C	4	PROP SYNC ACTIVE:3	Responded		Propeller 3 sync active <i>(There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)</i>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2640	4	PROP DEICE SWITCH:3	Responded		Propeller 3 de-ice switch (There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)		
0x2644	184				Free for general use		
0x2700	8	GENERAL ENG RPM:4	Responded		Propeller 4 RPM as a double (FLOAT64). This value is for props and turboprops and is negative for counter-rotating propellers. (On turboprops this will give the shaft RPM, since there is currently no Gear Reduction Ratio available to fix values on such aircraft. I will fix this when I can)		
0x2700	8	PROP RPM:4	Responded	Responded			
0x2708	8	GENERAL ENG PCT MAX RPM:4	Responded		Propeller 4 RPM as a fraction of the maximum RPM. (double)		
0x2708	8	PROP MAX RPM PERCENT:4	Responded				
0x2710	8	PROP THRUST:4	Responded		Propeller 4 thrust in pounds, as a double (FLOAT64). This is for props and turboprops.		
0x2718	8	PROP BETA:4	Responded		Propeller 4 Beta blade angle in radians, as a double (FLOAT64). This is for props and turboprops.		
0x2720	4	PROP FEATHERING INHIBIT:4	Responded		Propeller 4 feathering inhibit		
0x2724	4	PROP FEATHERED:4	Responded		Propeller 4 feathered flag		
0x2728	8	PROP SYNC DELTA LEVER:4	Responded		Propeller 4 sync delta lever		
0x2730	4	PROP AUTO FEATHER ARMED:4	Responded		Propeller 4 autofeather armed flag		
0x2734	4	PROP FEATHER SWITCH:4	Responded		Propeller 4 feather switch		
0x2738	4	PANEL AUTO FEATHER SWITCH:4	Responded		Propeller 4 panel auto-feather switch (There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)		
0x273C	4	PROP SYNC ACTIVE:4	Responded		Propeller 4 sync active (There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)		
0x2740	4	PROP DEICE SWITCH:4	Responded		Propeller 4 de-ice switch (There appears to be only one control, not one for each prop, so changing any of these 4 changes all 4)		
0x2744	216				Free for general use		
0x281C	4	ELECTRICAL MASTER BATTERY	Responded	Responded	Master battery switch (1=On, 0=Off). Currently not working for the 747-8: always shows on. Can switch off, but not back on		
0x2824	8	ELECTRICAL TOTAL LOAD AMPS	Responded	Responded	Total load amps		
0x282C	8	ELECTRICAL BATTERY LOAD	Responded	Responded	Battery load		
0x2834	8	ELECTRICAL BATTERY VOLTAGE	Responded	Responded	Battery voltage		
0x2840	8	ELECTRICAL MAIN BUS VOLTAGE	Responded	Responded	Main bus voltage		
0x2848	8	ELECTRICAL MAIN BUS AMPS	Responded	Responded	Main bus amps		
0x2850	8	ELECTRICAL AVIONICS BUS VOLTAGE	Responded	Responded	Avionics bus voltage		
0x2858	8	ELECTRICAL AVIONICS BUS AMPS	Responded	Responded	Avionics bus amps		
0x2860	8	ELECTRICAL HOT BATTERY BUS VOLTAGE	Responded	Responded	Hot battery bus voltage		
0x2868	8	ELECTRICAL HOT BATTERY BUS AMPS	Responded	Responded	Hot battery bus amps		
0x2870	8	ELECTRICAL BATTERY BUS VOLTAGE	Responded	Responded	Battery bus voltage		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2878	8	ELECTRICAL BATTERY BUS AMPS	Responded	Responded	Battery bus amps		
0x2880	8	ELECTRICAL GENALT BUS VOLTAGE:1	Responded	Responded	Generator alternator 1 bus voltage		
0x2888	8	ELECTRICAL GENALT BUS AMPS:1	Responded	Responded	Generator alternator 1 bus amps		
0x2890	8	ELECTRICAL GENALT BUS VOLTAGE:2	Responded	Responded	Generator alternator 2 bus voltage		
0x2898	8	ELECTRICAL GENALT BUS AMPS:2	Responded	Responded	Generator alternator 2 bus amps		
0x28A0	8	ELECTRICAL GENALT BUS VOLTAGE:3	Responded	Responded	Generator alternator 3 bus voltage		
0x28A8	8	ELECTRICAL GENALT BUS AMPS:3	Responded	Responded	Generator alternator 3 bus amps		
0x28B0	8	ELECTRICAL GENALT BUS VOLTAGE:4	Responded	Responded	Generator alternator 4 bus voltage		
0x28B8	8	ELECTRICAL GENALT BUS AMPS:4	Responded	Responded	Generator alternator 4 bus amps		
0x28C0	8	AMBIENT DENSITY	Responded		Ambient air density, in slugs per cubic foot, double floating point.		
0x28C8	8	AMBIENT PRESSURE	Responded		Ambient air pressure, in lbs per square foot, double floating point.		
0x28D0	8	AMBIENT TEMPERATURE	Responded		Static air temperature, in degrees Fahrenheit, double floating point.		
0x28D8	8	AMBIENT TEMPERATURE	Responded		Static air temperature, in degrees Rankine, double floating point.		
0x28E0	8				“Theta”, or standard temperature ratio (i.e ambient air temperature divided by the ISO standard sea level air temperature), double floating point. <i>(In FSX this is currently calculated by FSUIPC)</i>		
0x28E8	8				“Delta”, or standard pressure ratio (ambient pressure divided by the ISO standard sea level pressure), double floating point. <i>(In FSX this is currently calculated by FSUIPC)</i>		
0x28F0	8				“Sigma”, or standard density ratio (ambient density divided by the ISO standard sea level density), double floating point. <i>(In FSX this is currently calculated by FSUIPC)</i>		
0x28F8	8				Obsolete AI traffic control, only retained for compatibility. <i>Do not use!</i> See 2900 following:		
0x2900	12				A.I. traffic control. Write all 3 32-bit values (i.e. 12 bytes) together to send an FS control to a specific AI aircraft. The values needed are: Bytes 0–3: Aircraft Id (from the TCAS table) Bytes 4–7: The FS Control (see published lists) Bytes 8–11: A parameter for the control, if needed Note that most of the many hundreds of FS controls will have no noticeable affect on the AI aircraft. Experimentation is needed. If folks find out what does what, please let me know and I’ll try to publish a collated guide as an appendix later. Note that you can write these values in separate FSUIPC Writes, but if you do the ID must be last, as it is only when this is written that the control is activated. The special control value 0xFFFF (65535) is supported as a request to delete the specified aircraft. <i>(This currently uses a hack into the FS code).</i>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x290C	4?				Number of Hot Joystick Button slots available for Application Programs to use. Currently this is fixed at 56, representing the 56 DWORDs available in the following offsets:		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2910	224				<p>56 DWORDs containing zero (when free for use), or a Hot Joystick Button specification. See also 32FF below.</p> <p>This “HOT BUTTON” facility allows programs to detect selected joystick button presses. This facility is very similar to the Hot Key system described for offset 3210. Up to 56 such hot buttons can be specified, but this number is shared by all running applications. The facility operates using these offsets: 56 32-bit values (“DWORDs”) from Offset 0x2910 onwards (i.e. 0x2910, 0x2914 ...) are ‘slots’ for Applications to specify Hot Keys. These will be zero initially, and zero if free. The application must search through to find an empty slot, then set this into it: Byte 0 (bits 0-7): Joystick number (0-15) + 128. In other words 128 for Joystick 0, 129 for joystick 1, etc. Joysticks are numbered from 0. (Note that Windows ‘Game Controllers’ numbers from 1). Byte 1 (bits 8-15): Button number (0-39) Again buttons are numbered here from 0. Buttons 0–31 are the normal buttons, numbers 32–39 are a representation of the 8 “Points of View” at 45 degree angles supported by some joystick drivers for the POV Hats. Byte 2 (bits 16-23): Flags from application. This byte indicates which change is to be notified: = 0 for Off to On = 1 for On to Off = 2 for both Off to On and On to Off = 3 for Off to On but repeating about 6 times per second whilst it is on. Byte 3 (bits 24-31): Flags from FSUIPC. Bit 0 (value 1) is set when the specified Hot Button change occurs. Needs to be cleared by Application when seen so it can detect another. (No queuing). Bit 1 (value 2) is set when bit 0 is set only if the button is still pressed. This can be used to differentiate the two events when Byte 2 is given as “2” for both off-on and on-off events. Note: If the same Hot button is listed more than once (for instance by several applications), every copy for the same Hot button will get the flag set. Use: Having found an empty slot, write the above value into it, then monitor the highest byte of that same slot for Non-Zero. That's the button event. Clear that byte to detect it again. If you register several HotKey Buttons it will be more efficient to only scan the slots themselves when a hot button actually occurs. To detect this, just monitor the one byte at offset 32FF. (This can be paired with 32FE to scan for buttons and keys). When it changes, read and check the flags in your slots. (The count at 32FF may change without any of your buttons occurring, of course, if other applications are trapping other hot buttons).</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x29F0	4?				This DWORD provides a facility to set, clear or toggle any of the virtual buttons at offset 3340 without needing to read anything first. To do this, write to offset 29F0 a 32-bit value (4 bytes) made up as follows: Byte 0: Button Number on Joystick (0 - 31) Byte 1: Virtual Joystick Number (64 - 72) Byte 2: Action: 0 = Toggle 1 = Set (Press/On) 2 = Clear (Release/Off). Byte 3: 0 (Reserved)		
0x2A00	8	ELEVON DEFLECTION:1	Responded		Elevon 1 deflection		
0x2A08	8	ELEVON DEFLECTION:2	Responded		Elevon 2 deflection		
0x2A10	8	ELEVON DEFLECTION:3	Responded		Elevon 3 deflection		
0x2A18	8	ELEVON DEFLECTION:4	Responded		Elevon 4 deflection		
0x2A20	8	ELEVON DEFLECTION:5	Responded		Elevon 5 deflection		
0x2A28	8	ELEVON DEFLECTION:6	Responded		Elevon 6 deflection		
0x2A30	8	ELEVON DEFLECTION:7	Responded		Elevon 7 deflection		
0x2A38	8	ELEVON DEFLECTION:8	Responded		Elevon 8 deflection		
0x2A48	8	FOLDING WING LEFT PERCENT	Responded	Responded	Folding wing (for reading), left percent, as double float.		
0x2A50	8	FOLDING WING RIGHT PERCENT	Responded	Responded	Folding wing (for reading), right percent, as double float.		
0x2A70	8	CANOPY OPEN	Responded	Responded	Canopy open, as double float.		
0x2A78	8	WATER LEFT RUDDER EXTENDED	Responded		Water left rudder extended (double float)		
0x2A80	8	WATER RIGHT RUDDER EXTENDED	Responded		Water right rudder extended (double float)		
0x2A88	4	WATER RUDDER HANDLE POSITION	Responded	Responded	Water rudder handle position (100% = 16384)		
0x2A90	4	TAILWHEEL LOCK ON	Responded		Tail wheel lock (BOOLEAN, 1= locked, 0= unlocked)		
0x2AAC	4	NAV CDI:1	Responded		NAV1 course deviation needle (CDI), 32-bit float value, – 127.0 left to +127.0 right		
0x2AB0	4	NAV GSI:1	Responded		NAV1 glideslope needle (GSI), 32-bit float value, –119.0 up to +119s.0 down		
0x2AB4	4	NAV CDI:2	Responded		NAV2 course deviation needle (CDI), 32-bit float value, – 127.0 left to +127.0 right		
0x2AB8	4	NAV GSI:2	Responded		NAV2 glideslope needle (GSI), 32-bit float value, –127.0 up to +127.0 down		
0x2ABC	68				Free for general use		
0x2B00	8	PLANE HEADING DEGREES GYRO	Responded	Responded	Gyro compass heading (magnetic), including any drift. 64-bit floating point.		
0x2B08	8				Hydraulics1 pressure psf		
0x2B1C	8				Hydraulics1 reservoir pct		
0x2C08	8				Hydraulics2 pressure psf		
0x2C1C	8				Hydraulics2 reservoir pct		
0x2D08	8				Hydraulics3 pressure psf		
0x2D1C	8				Hydraulics3 reservoir pct		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2DC6	2				Helicopter “beep” (whatever that is—something to do with the governor). This value is also controlled by the <i>Increase Heli Beep</i> and <i>Decrease Heli Beep</i> FS controls. It appears to change from 0 to 16313 then more slowly to 16368.		
0x2DC8	8	AIRCRAFT WIND X	Responded		The wind at the aircraft in the lateral (X) axis—relative to the aircraft orientation, in feet per second, as a 64-bit double. (+ve Right Crosswind, -ve Left)		
0x2DD0	8	AIRCRAFT WIND Y	Responded		The wind at the aircraft in the vertical (Y) axis—relative to the aircraft orientation, in feet per second, as a 64-bit double. (+ve pushing on aircraft's under surfaces, -ve over surfaces)		
0x2DD8	8	AIRCRAFT WIND Z	Responded		The wind at the aircraft in the longitudinal (Z) axis—relative to the aircraft orientation, in feet per second, as a 64-bit double. (+ve Headwind, -ve Tailwind)		
0x2DE0	8	AMBIENT WIND DIRECTION	Responded		Wind direction at the aircraft, in degrees True, as a 64-bit double floating point – for writing, not reading. See 3490 for reading. This can be written to directly affect the wind direction at the aircraft.		
0x2DE8	8	AMBIENT WIND VELOCITY	Responded		Wind speed at the aircraft, in knots, as a 64-bit double floating point – for writing, not reading. See 3488 for reading. This can be written to directly affect the wind direction at the aircraft.		
0x2DF0	8	AMBIENT VISIBILITY	Responded		Visibility at the aircraft, in metres, as a 64-bit double floating point – for reading.		
0x2DF8	4	AMBIENT IN CLOUD	Responded		<i>Ambient in cloud ... BOOLEAN new value found for FSX. Not sure what it is yet – it should be TRUE when the user aircraft is in cloud, but it doesn't appear to work like that.</i>		
0x2E00	4	AMBIENT PRECIP STATE	Responded		<i>Ambient precip state ... new value found for FSX. Not sure what it is yet.</i>		
0x2E04	4	AUTOPILOT MAX BANK	Responded		<i>Autopilot max bank ... degrees. Works for the default FSX 737. (Writing here uses the AP MAX BANK INC and DEC controls to try to approximate to the angle written.)</i>		
0x2E08	8				Hydraulics4 pressure psf		
0x2E1C	8				Hydraulics4 reservoir pct		
0x2E78	8	CG PERCENT LATERAL	Responded		<i>CG percent laterally, as a double (FLOAT64). This is the position of the actual CoG as a fraction (%/100) of MAC (Mean Aerodynamic Chord).</i>		
0x2E80	4	AVIONICS MASTER SWITCH	Responded		Master avionics switch (0=Off, 1=On). Switched to using AVIONICS_MASTER_SET (was TOGGLE_AVIONICS_MASTER)		
0x2E88	4	PANEL AUTO FEATHER SWITCH:1	Responded		Panel auto-feather arm switch (0=Off, 1=On) <i>(This is for #1 propeller, not all?)</i>		
0x2E90	4	CIRCUIT STANDY VACUUM ON	Responded		Standby vacuum circuit on		
0x2E98	8	ELEVATOR DEFLECTION	Responded		Elevator deflection, in radians, as a double (FLOAT64). Up positive, down negative.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2EA0	8	ELEVATOR TRIM POSITION	Responded	Responded	Elevator trim deflection, in radians, as a double (FLOAT64). Up positive, down negative.		
0x2EA8	8	AILERON AVERAGE DEFLECTION	Responded		Aileron deflection, in radians, as a double (FLOAT64). Right turn positive, left turn negative. <i>(This is the average of left and right)</i>		
0x2EB0	8	AILERON TRIM	Responded		Aileron trim deflection, in radians, as a double (FLOAT64). Right turn positive, left turn negative. <i>(for write, converted to proportion assuming max .2 and written via 0C02)</i>		
0x2EB8	8	RUDDER DEFLECTION	Responded		Rudder deflection, in radians, as a double (FLOAT64).		
0x2EC0	8	RUDDER TRIM	Responded		Rudder trim deflection, in radians, as a double (FLOAT64). <i>(for write, converted to proportion assuming max .2 and written via 0C04)</i>		
0x2EC8	4	PROP SYNC ACTIVE:1	Responded		Prop sync active (1=Active, 0=Inactive)		
0x2ED0	8	INCIDENCE ALPHA	Responded		ncidence “alpha”, in radians, as a double (FLOAT64). This is the aircraft <i>body</i> angle of attack (AoA) not the <i>wing</i> AoA. Note that it has been found that that FS disregards wing incidence and twist effects (in the Aircraft.CFG file), so this value is actually the wing AofA as well.		
0x2ED8	8	INCIDENCE BETA	Responded		Incidence “beta”, in radians, as a double (FLOAT64). This is the side slip angle.		
0x2EE0	4	AUTOPILOT FLIGHT DIRECTOR ACTIVE	Responded		Flight Director Active, control and indicator. 1=active, 0=inactive.		
0x2EE8	8	AUTOPILOT FLIGHT DIRECTOR PITCH	Responded		Flight director pitch value, in degrees. Double floating point format, only when FD is active.		
0x2EF0	8	AUTOPILOT FLIGHT DIRECTOR BANK	Responded		Flight director bank value, in degrees. Double floating point format, right is negative, left positive.		
0x2EF8	8	CG PERCENT	Responded		CG percent, as a double (FLOAT64). This is the position of the actual CoG as a fraction (%/100) of MAC (Mean Aerodynamic Chord).		
0x2F00	8	CG AFT LIMIT	Responded		CG aft limit (%/100)		
0x2F08	8	CG FWD LIMIT	Responded		CG fwd limit (%/100)		
0x2F10	8	CG MAX MACH	Responded		CG max mach		
0x2F18	8	CG MIN MACH	Responded		CG min mach		
0x2F20	8	CONCORDE VISOR NOSE HANDLE	Responded		Concorde visor nose handle (%)		
0x2F28	8	CONCORDE VISOR POSITION PERCENT	Responded		Concorde visor pos pct (%)		
0x2F30	8	CONCORDE NOSE ANGLE	Responded		Concorde nose angle (Rads)		
0x2F38	8	GEAR TAIL POSITION	Responded		Gear pos tail		
0x2F40	8	AUTOPILOT MAX SPEED HOLD			Autopilot max speed (hold?). Not documented in MSFS SDK		
0x2F48	8	AUTOPILOT CRUISE SPEED HOLD			Autopilot cruise speed (hold?). Not documented in MSFS SDK		
0x2F50	8	BARBER POLE MACH	Responded		Barber pole mach		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2F58	4	FUEL SELECTED TRANSFER MODE	Responded		Selected fuel transfer mode: 0=Off, 1=Auto, 2=Fwd, 3=Aft		
0x2F60	8	HYDRAULIC SYSTEM INTEGRITY	Responded		Hydraulic system integrity (%)		
0x2F68	4	ATTITUDE CAGE	Responded		Attitude cage button		
0x2F70	8	ATTITUDE INDICATOR PITCH DEGREES	Responded		Attitude indicator pitch value, in degrees. Double floating point format.		
0x2F78	8	ATTITUDE INDICATOR BANK DEGREES	Responded		Attitude indicator bank value, in degrees. Double floating point format.		
0x2F80	1	AUTO BRAKE SWITCH CB	Responded		Panel autobrake switch Read to check setting, write to change it. NB. Offset value returns to 0 in A320Neo after being set correctly 0=RTO, 1=Off, 2=brake1, 3=brake2, 4=brake3, 5=max		
0x2F88	8	HSI CDI NEEDLE	Responded		HSI CDI needle position, -127.0 to +127.0 double floating point. Full range represents -10 to +10 degrees for a VOR, -2.5 to +2.5 degrees for a LOC		
0x2F90	8	HSI GSI NEEDLE	Responded		HSI GSI needle position, -119.0 to +119.0 double floating point. Full range represents -0.7 to +0.7 degrees		
0x2F98	8	HSI SPEED	Responded		HSI speed, as a double floating point. I think it should be in metres/sec, but it doesn't look right – feedback please!		
0x2FA0	8	HSI DISTANCE	Responded		HSI distance, as a double floating point. In metres.		
0x2FA8	2	HSI BEARING	Responded		HSI bearing. In degrees? Doesn't seem to work. Feedback?		
0x2FAA	1	HSI CDI NEEDLE VALID	Responded		HSI CDI valid flag. Doesn't appear to work?		
0x2FAB	1	HSI GSI NEEDLE VALID	Responded		HSI GSI valid flag.		
0x2FAC	1	HSI BEARING VALID	Responded		HSI bearing valid flag. (Not seen this set yet – see 2FA8)		
0x2FAD	1	HSI TF FLAGS	Responded		HSI To/From flag: 0=off, 1=To, 2=From		
0x2FAE	1	HSI HAS LOCALIZER	Responded		HSI has localiser flag		
0x2FB0	6	HSI STATION IDENT	Responded		HSI ident string		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x2FE0	32				<p>FS “Add-Ons” menu access for Applications: This facility allows an application to add an entry to the Add-Ons menu. The Application finds a free Hot Key slot, then sets it up to receive notification on menu access, and writes the text needed for the menu item to another location. When the menu item is selected, the flag in the hot key slot is set just as when a hot key is used. This way of accessing the menu has the advantage that it will also work when the application is running on another PC, via WideFS. Of course, any response to that menu selection will occur on whichever PC the application is running.</p> <p>To avoid having menu items relating to applications that have crashed or terminated without tidying up correctly, each menu item added is subjected to a time-out. Applications have to refresh a count in the Hot Key slot at regular intervals (10 seconds or less) otherwise the menu item is deleted and the Hot Key slot freed. The time-out is suspended when FS is paused, and there is an option to have FS pause automatically when the menu entry is selected.</p> <p>Note that FS subjects the number of entries in the Add-Ons menu to a maximum of 16. FSUIPC is already using one for itself. If the maximum is already reached your entry will simply <i>not</i> appear. There is no error indication of this provided back to the Application, though a SimConnect exception may appear in the FSUIPC Log file if exception logging is enabled.</p> <p>This is the way this facility is used:</p> <p>Find a free Hot Key slot (i.e. search the 56 DWORDs at offset 0x3210 for a zero value). Say slot <i>I</i> is the one found.</p> <p>Write 0x0000FFFF to the slot (i.e. to the DWORD at offset 0x3210 + 4*<i>I</i>). If you want FS to pause when the menu item is selected, write 0x0002FFFF instead. The 02 part is the flag indicating that a pause is required.</p> <p>Write the text for the menu entry required to offset 0x2FE0, with the first byte set to the slot number (<i>I</i>). For example, for an entry “UIPC Hello” (H being the shortcut) you would set the string to be written to 0x2FE0 as follows:</p> <pre>static chMenuEntry[] = “?UIPC &Hello”; chMenuEntry[0] = I;</pre> <p>The ‘&’ in the string tells Windows which character to underscore, and this denotes the shortcut key, but this is optional.</p> <p>The string is limited to 31 characters, including the slot number at the beginning, plus a zero terminator. In other words the offset range is 0x2FE0–0x2FFF inclusive. This area is “write only”. Don’t expect to be able to read back what you write here.</p> <p>The write to 0x2FE0 triggers FSUIPC into asking FS to add the menu entry to the Add-Ons main menu item, but this is dependent upon the slot it references being</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3000	6	NAV IDENT:1	Responded		VOR1 IDENTITY (string supplied: 6 bytes including zero terminator)		
0x3006	25	NAV NAME:1	Responded		VOR1 name (string supplied: 25 bytes including zero terminator)		
0x301F	6	NAV IDENT:2	Responded		VOR2 IDENTITY (string supplied: 6 bytes including zero terminator)		
0x3025	25	NAV NAME:2	Responded		VOR2 name (string supplied: 25 bytes needed including zero terminator)		
0x303E	6	ADF IDENT:1	Responded		ADF1 IDENTITY (string supplied: 6 bytes including zero terminator)		
0x3044	25	ADF NAME:1	Responded		ADF1 name (string supplied: 25 bytes including zero terminator)		
0x305D					Count of "Toggle aircraft name display" controls seen, 0-255, wrapping back to 0 after 255.		
0x3060	8	ACCELERATION BODY X	Responded	Responded	X (lateral, or left/right) acceleration in ft/sec/sec relative to the body axes in double floating point format.		
0x3068	8	ACCELERATION BODY Y	Responded	Responded	Y (vertical, or up/down) acceleration in ft/sec/sec relative to the body axes in double floating point format.		
0x3070	8	ACCELERATION BODY Z	Responded	Responded	Z (longitudinal, or forward/backward) acceleration in ft/sec/sec relative to the body axes in double floating point format.		
0x3078	8	STRUCT BODY ROTATION ACCELERATION	Responded	Responded	Pitch acceleration in radians/sec/sec relative to the body axes in double floating point format.		
0x3080	8	STRUCT BODY ROTATION ACCELERATION	Responded	Responded	Roll acceleration in radians/sec/sec relative to the body in double floating point format.		
0x3088	8	STRUCT BODY ROTATION ACCELERATION	Responded	Responded	Yaw acceleration in radians/sec/sec relative to the body in double floating point format.		
0x3090	8	VELOCITY BODY Z	Responded	Responded	Z (longitudinal, or forward/backward) GS-velocity in ft/sec relative to the body axes in double floating point format.		
0x3098	8	VELOCITY BODY X	Responded	Responded	X (lateral, or left/right) GS-velocity in ft/sec relative to the body axes in double floating point format.		
0x30A0	8	VELOCITY BODY Y	Responded	Responded	Y (vertical, or up/down) GS-velocity in ft/sec relative to the body axes in double floating point format.		
0x30A8	8	ROTATION VELOCITY BODY X	Responded	Responded	Pitch velocity in rads/sec relative to the body axes in double floating point format.		
0x30B0	8	ROTATION VELOCITY BODY Z	Responded	Responded	Roll velocity in rads/sec relative to the body axes in double floating point format.		
0x30B8	8	ROTATION VELOCITY BODY Y	Responded	Responded	Yaw velocity in rads/sec relative to the body axes in double floating point format.		
0x30C0	8	TOTAL WEIGHT	Responded		Current loaded weight in lbs in double floating point format. Reported as working in some aircraft but not updating in others. e.g. A320 Neo		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x30C8	8	TOTAL WEIGHT	Responded		Plane's current mass, in slugs (1 slug = 1lb*G = 32.174049 lbs) mass. This is in double floating point format (FLOAT64). The current mass = current loaded weight (as in 30C0) * G, where G is 32.174049. Working in some aircraft but not updating in others. e.g. A320 Neo		
0x30D0	8				Vertical acceleration in G's. This is in double floating point format (FLOAT64).		
0x30D8	8	DYNAMIC PRESSURE	Responded		Dynamic pressure (lbs/sqft). [FS2k/CFS2/FS2002 only]		
0x30E0	2	TRAILING EDGE FLAPS0 LEFT PERCENT			Trailing edge left inboard flap extension as a percentage of its maximum, with 16383 = 100%		
0x30E2	2	TRAILING EDGE FLAPS1 LEFT PERCENT			Trailing edge left outboard flap extension as a percentage of its maximum, with 16383 = 100%		
0x30E4	2	TRAILING EDGE FLAPS0 RIGHT PERCENT			Trailing edge right inboard flap extension as a percentage of its maximum, with 16383 = 100%		
0x30E6	2	TRAILING EDGE FLAPS1 RIGHT PERCENT			Trailing edge right outboard flap extension as a percentage of its maximum, with 16383 = 100%		
0x30E8	2	LEADING EDGE FLAPS0 LEFT PERCENT			Leading edge left inboard flap extension as a percentage of its maximum, with 16383 = 100%		
0x30EA	2	LEADING EDGE FLAPS1 LEFT PERCENT			Leading edge left outboard flap extension as a percentage of its maximum, with 16383 = 100%		
0x30EC	2	LEADING EDGE FLAPS0 RIGHT PERCENT			Leading edge right inboard flap extension as a percentage of its maximum, with 16383 = 100%		
0x30EE	2	LEADING EDGE FLAPS1 RIGHT PERCENT			Leading edge right outboard flap extension as a percentage of its maximum, with 16383 = 100%		
0x30F0	2	TRAILING EDGE FLAPS0 LEFT ANGLE			Trailing edge left inboard flap extension in degrees * 256		
0x30F2	2	TRAILING EDGE FLAPS1 LEFT ANGLE			Trailing edge left outboard flap extension in degrees * 256		
0x30F4	2	TRAILING EDGE FLAPS0 RIGHT ANGLE			Trailing edge right inboard flap extension in degrees * 256		
0x30F6	2	TRAILING EDGE FLAPS1 RIGHT ANGLE			Trailing edge right outboard flap extension in degrees * 256		
0x30F8	2	LEADING EDGE FLAPS0 LEFT ANGLE			Leading edge left inboard flap extension in degrees * 256		
0x30FA	2	LEADING EDGE FLAPS1 LEFT ANGLE			Leading edge left outboard flap extension in degrees * 256		
0x30FC	2	LEADING EDGE FLAPS0 RIGHT ANGLE			Leading edge right inboard flap extension in degrees * 256		
0x30FE	2	LEADING EDGE FLAPS1 RIGHT ANGLE			Leading edge right outboard flap extension in degrees * 256		
0x3100	1	RECIP ENG PRIMER:1	Responded	Responded	Engine primer (just write a non-zero byte to operate the primer. This is a one-shot and reading it is meaningless)		
0x3101	1	GENERAL ENG MASTER ALTERNATOR:1	Responded		Alternator (1 = on, 0 = off), read for state, write to control (This is for Alternator 1)		
0x3102	1	ELECTRICAL MASTER BATTERY	Responded	Responded	Battery (1 = on, 0 = off), read for state, write to control		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3103	1	AVIONICS MASTER SWITCH	Responded		Avionics (1 = on, 0 = off), read for state, write to control. Switched to using AVIONICS_MASTER_SET (was TOGGLE_AVIONICS_MASTER)		
0x3104	1	GENERAL ENG FUEL PUMP SWITCH:1	Responded		Fuel pump (1 = on, 0 = off), read for state, write to control. For separate switches for separate fuel pumps see offset 3125. (This is for Pump 1)		
0x3105	1	NAV SOUND:1	Responded		VOR1 morse ID sound (1 = on, 0 = off), read for state, write to control (see also 3122)		
0x3106	1	NAV SOUND:2	Responded		VOR2 morse ID sound (1 = on, 0 = off), read for state, write to control (see also 3122)		
0x3107	1	ADF SOUND	Responded		ADF1 morse ID sound (1 = on, 0 = off), read for state, write to control (see also 3122)		
0x3108	1				Write 1 here to disable FSUIPC's "AutoTune ADF1" facility, if this has been enabled by the user in FSUIPC.INI.		
0x3109	1				<p>This is a bit-oriented control flag byte. These bits are allocated so far:</p> <p>2⁰ (1) = 1 to disable AxisCalibration even if enabled in FSUIPC.INI. Note that this "AxisCalibration" is the one specifically concerned with direct offset values—see the Advanced User's guide for the description of the INI parameter for more details.</p> <p>2¹ (2) = 1 to allow the older (FS98-compatible) axis controls to remain connected even when the main axis controls are disconnected via bits in 310A and 310B below. These are AILERON_SET, ELEVATOR_SET, ELEVATOR_TRIM_SET, RUDDER_SET, THROTTLE_SET and the four THROTTLEn_SET controls. Allowing these through will let autopilot of FBW programs control the relevant values without writing direct to the appropriate offsets, but take care also that the THROTTLEn_SET controls aren't being calibrated in the user's 4-throttle option (page 3 in FSUIPC options).</p> <p>2⁷(128) is reserved for external applications to use as they wish.</p> <p>In order to protect the user from a broken or crashed application, the 2¹ flag is cleared 10 seconds after it has been set, so applications will need to repeat the setting every few seconds.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x310A	1				<p>Controls the joystick connection to the main flight controls. Normally all zero, set the following bits to actually disconnect the specific joystick axes (from least significant bit = 0):</p> <ul style="list-style-type: none"> 0 Elevator 1 Aileron 2 Rudder 3 Throttles (all). 4 <i>See below (throttle sync control)</i> 5 Elevator trim 6 Throttle #1 7 Throttle #2 (see next byte for others) <p>This feature is intended for use in protecting autopilot flight from interference from axis flutter. In order to protect the user from a broken or crashed application, all the flags are cleared 10 seconds after they have been set, so applications will need to repeat the setting every few seconds.</p> <p>If the user option is set to automatically disconnect the trim axis in FS A/P vertical modes, the disconnection of Elevator inputs via bit 0 above also disconnects Trim even if bit 5 is not also set. This allows existing A/P or fly-by-wire applications to work with those user implementations using a trim axis.</p> <p>Additionally, bit 2^4 is available to switch “throttle sync” on. In this mode all throttles are driven from the main throttle or throttle 1 inputs, and other throttle inputs are discarded. (The same option can also be used from an optional Hot Key).</p> <p>See also offset 3109 above, and also offsets 3328–3339, which provide the live axis values, post calibration. These would have been applied to FS if not prevented by the flags above. Applications can use these facilities to provide a responsive “fly-by-wire” control.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x310B	1				<p>Controls the joystick connection to the slewing controls, and the other two separate throttle controls.</p> <p>Normally all zero, set the following bits to actually disconnect the specific axes (from least significant bit = 0):</p> <ul style="list-style-type: none"> 0 Slew Ahead 1 Slew Side 2 Slew Heading 3 Slew Altitude 4 Slew Bank 5 Slew Pitch 6 Throttle #3 (see previous byte for #1, #2) 7 Throttle #4 <p>In order to protect the user from a broken or crashed application, all the flags are cleared 10 seconds after they have been set, so applications will need to repeat the setting every few seconds. See also offset 3109 above.</p>		
0x310C	4				<i>Reserved</i>		
0x3110	8				<p>Operates a facility to send any 'controls' to Flight simulator. This works with <i>all</i> versions of FS & CFS. Write all 8 bytes for controls which use a value (axes and all _SET controls), but just 4 will do for 'button' types.</p> <p>This is really two 32-bit integers. The first contains the Control number (normally 65536 upwards), as seen in my FS Controls lists. The second integer is used for the parameter, such as the scaled axis value, where this is appropriate. Always write all 8 bytes in one IPC block if a parameter is used, as FSUIPC will fire the control when you write to 3110.</p> <p>Since version 3.40, FSUIPC-added controls (other than the offset ones) can be used via these offsets too. See the Advanced User's Guide for a current list. Preset controls can also be used since version 7.2.16 – please see the relevant section in the Advanced User Guide.</p>		
0x3118	2	COM ACTIVE FREQUENCY:2	Responded		COM2 frequency, 4 digits in BCD format. A frequency of 123.45 is represented by 0x2345. The leading 1 is assumed.		
0x311A	2	COM STANDBY FREQUENCY:1	Responded		COM1 standby frequency, 4 digits in BCD format. A frequency of 123.45 is represented by 0x2345. The leading 1 is assumed.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x311C	2	COM STANDBY FREQUENCY:2	Responded		COM2 standby frequency, 4 digits in BCD format. A frequency of 123.45 is represented by 0x2345. The leading 1 is assumed.		
0x311E	2	NAV STANDBY FREQUENCY:1	Responded		NAV1 standby frequency, 4 digits in BCD format. A frequency of 113.45 is represented by 0x1345. The leading 1 is assumed.		
0x3120	2	NAV STANDBY FREQUENCY:2	Responded		NAV2 standby frequency, 4 digits in BCD format. A frequency of 113.45 is represented by 0x1345. The leading 1 is assumed.		
0x3122	1	ADF SOUND	Responded		Radio audio switches. Read/write bit settings as follows: 2^7 COM1 transmit 2^6 COM2 transmit 2^5 COM receive both 2^4 NAV1 sound 2^3 NAV2 sound 2^2 Marker sound 2^1 DME sound 2^0 ADF1 sound		
0x3122	0	COM RECEIVE ALL	Responded				
0x3122	0	COM TRANSMIT:1	Responded				
0x3122	0	COM TRANSMIT:2	Responded				
0x3122	0	DME SOUND	Responded				
0x3122	0	MARKER SOUND	Responded				
0x3122	0	NAV SOUND:1	Responded				
0x3122	0	NAV SOUND:2	Responded				
0x3123	1				For ADF2 sound on FS2004, see offset 02FB. For ADF2 sound on FS2004, see offset 02FB. Radio audio switches, write 0x5 to operate toggles. Don't bother to read it, there's no meaning to anything read. 2^3 COM1 swap 2^2 COM2 swap 2^1 NAV1 swap 2^0 NAV2 swap		
0x3124	1				The specific version of the FS being used. Will contain 110 for MSFS2020. Set when connected to sim, and contains 0 when not connected, so can be used to determine connection status.		
0x3125	1	GENERAL ENG FUEL PUMP SWITCH:1	Responded		Separate switches for up to 4 Fuel Pumps (one for each engine). Bit 2^0=Pump1, 2^1=Pump2, 2^2=Pump3, 2^4=Pump4. (see also offset 3104)		
0x3125	0	GENERAL ENG FUEL PUMP SWITCH:2	Responded				
0x3125	0	GENERAL ENG FUEL PUMP SWITCH:3	Responded				
0x3125	0	GENERAL ENG FUEL PUMP SWITCH:4	Responded				
0x3126	1				Set view direction (write only, current view not detected). 0 = FORWARD 1-7 = FORWARD RIGHT and 45 degree views, clockwise 8 = DOWN 9 = UP 10-17 = FORWARD UP then 45 degree UP views, clockwise all other values = RESET		
0x3127	9				FSUIPC weather option control area: not planned for FSX		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3130	8	ATC FLIGHT NUMBER	Responded	Fail	ATC flight number string for currently loaded user aircraft, as declared in the AIRCRAFT.CFG file. This is limited to a maximum of 12 characters, including a zero terminator. <i>SimConnect allows this SimVar to be written, but this may not change the Flight Number being used by ATC unless a flight plan has been loaded too (see offset 0130).</i>		
0x313C	10	ATC ID	Responded	Fail	ATC identifier (tail number) string for currently loaded user aircraft, as declared in the AIRCRAFT.CFG file. This is limited to a maximum of 12 characters, including a zero terminator. <i>(SimConnect seems to allow this SimVar to be written, but whether this does actually change the Tail Number being used by ATC, I don't yet know)</i>		
0x3148	23	ATC AIRLINE	Responded	Fail	ATC airline name string for currently loaded user aircraft, as declared in the AIRCRAFT.CFG file. This is limited to a maximum of 24 characters, including a zero terminator. <i>(SimConnect seems to allow this SimVar to be written, but whether this does actually change the Airline Name being used by ATC, I don't yet know)</i>		
0x3160	23	ATC TYPE	Responded		ATC aircraft type string for currently loaded user aircraft, as declared in the AIRCRAFT.CFG file. This is limited to a maximum of 24 characters, including a zero terminator.		
0x3178	8	RELATIVE WIND VELOCITY BODY Z	Responded		Z (longitudinal, or forward/backward) TAS-velocity in ft/sec relative to the body axes. This is in double floating point format (FLOAT64).		
0x3180	8	RELATIVE WIND VELOCITY BODY X	Responded		X (lateral, or left/right) TAS-velocity in ft/sec relative to the body axes in double floating point format (FLOAT64).		
0x3188	8	RELATIVE WIND VELOCITY BODY Y	Responded		Y (vertical, or up/down) TAS-velocity in ft/sec relative to the body axes in double floating point format (FLOAT64).		
0x3190	8	VELOCITY WORLD Z	Responded	Responded	Z (longitudinal, or forward/backward) GS-velocity in ft/sec relative to world axes in double floating point format (FLOAT64).		
0x3198	8	VELOCITY WORLD X	Responded	Responded	X (lateral, or left/right) GS-velocity in ft/sec relative to world axes in double floating point format (FLOAT64).		
0x31A0	8	VELOCITY WORLD Y	Responded	Responded	Y (vertical, or up/down) GS-velocity in ft/sec relative to world axes in double floating point format (FLOAT64).		
0x31A8	8	STRUCT WORLD ROTATION VELOCITY	Responded		Pitch velocity in rads/sec relative to world axes in double floating point format (FLOAT64).		
0x31B0	8	STRUCT WORLD ROTATION VELOCITY	Responded		Roll velocity in rads/sec relative to world axes in double floating point format (FLOAT64).		
0x31B8	8	STRUCT WORLD ROTATION VELOCITY	Responded		Yaw velocity in rads/sec relative to world axes in double floating point format (FLOAT64).		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x31C0	8	ACCELERATION WORLD X	Responded	Responded	X (lateral, or left/right) acceleration in ft/sec/sec relative to the world axes in double floating point format (FLOAT64).		
0x31C8	8	ACCELERATION WORLD Y	Responded	Responded	Y (vertical, or up/down) acceleration in ft/sec/sec relative to the world axes in double floating point format (FLOAT64).		
0x31D0	8	ACCELERATION WORLD Z	Responded	Responded	Z (longitudinal, or forward/backward) acceleration in ft/sec/sec relative to the world axes in double floating point format (FLOAT64).		
0x31D8	2				Slew mode lateral axis (i.e. left/right) input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310B)		
0x31DA	2				Slew mode lateral axis (i.e. left/right) input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310B)		
0x31DC	2				Slew mode yaw axis (i.e. heading) input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310B)		
0x31DE	2				Slew mode vertical axis (i.e. altitude) input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310B)		
0x31E0	2				Slew mode roll axis (i.e. bank) input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310B)		
0x31E2	2				Slew mode pitch axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310B)		
0x31E4	4	RADIO HEIGHT	Responded		Radio altitude in metres * 65536		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x31E8	4	SURFACE TYPE	Responded		Surface type as a 32-bit integer. I think this only applies when the aircraft is on the ground. The values probably correspond to the surface encoding in the scenery files, thus: <div><div>CONCRETE0</div><div>GRASS1soft, bumpy ground (landable)</div><div>WATER2</div><div>GRASS BUMPY3very bumpy grass & mud (crashable)</div><div>ASPHALT4</div><div>SHORT GRASS5</div><div>LONG GRASS6</div><div>HARD TURF7</div><div>SNOW8</div><div>ICE9</div><div>URBAN10</div><div>FOREST11</div><div>DIRT12</div><div>CORAL13</div><div>GRAVEL14</div><div>OIL TREATED15tar & chip</div><div>STEEL MATS16steel mesh temporary runways</div><div>BITUMINUS17</div><div>BRICK18</div><div>MACADAM19</div><div>PLANKS20</div><div>SAND21</div><div>SHALE22</div><div>TARMAC23</div><div>UNKNOWN254</div></div>		
0x31EC	4	SURFACE CONDITION	Responded		Surface condition as a 32-bit integer, probably as follows: <div><div>NORMAL0</div><div>WET1</div><div>ICY2</div><div>SNOW3snow on a non-snow surface</div></div>		
0x31F0	4				Pushback status 3=off, 0=pushing back, 1=pushing back, tail to swing to left (port), 2=pushing back, tail to swing to right (starboard)		
0x31F4	4	PUSHBACK STATE	Responded	Responded	Pushback control. Write 0–3 here to set pushback operation, as described for the status, above.		
0x31F8	4				Tug Heading control, for gliders I assume. <i>[write only]</i> . The units appear to be the same as the aircraft heading units (see offset 0580).		
0x31FC	4				Tug Speed control, for gliders I assume. <i>[write-only]</i> . Units not confirmed, but possible ft/sec.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3200	12				<p>These locations operate the FSUIPC facility to send keystrokes to FS. For this to operate correctly the PC must be using Windows 98, ME, 2000, XP or Vista. The facilities used just do not exist in Windows 95 or NT.</p> <p>3200 message (WM_KEYDOWN or WM_KEYUP)</p> <p>3204 wParam for the message</p> <p>3208 lParam for the message</p> <p>All 12 bytes must be written in one IPC write.</p>		
0x320C	4				<p>Number of Hot Key slots available for Application Programs to use. Currently this is fixed at 56, representing the 56 DWORDs available in the following offsets:</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3210	224				<p>56 DWORDs containing zero (when free for use), or a Hot Key specification. See also 32FE below.</p> <p>Note that although up to 56 such hot keys can be specified, but this number is shared by all running applications. However, an extra key pressed before the main hotkey is released can be requested and supplied, multiplying the number of possibilities immensely without needing many slots.</p> <p>The facility operates using 56 32-bit values ("DWORDs") from offset 0x3210 onwards (i.e. 0x3210, 0x3214 ...). Each of these is a 'slot' for Applications to specify Hot Keys. These will be zero initially, and zero if free. The application must search through to find an empty slot, then set this into it:</p> <p>Byte 0 (bits 0-7): Virtual Keycode (see the list in my FS Controls documents or the FSUIPC Advanced Users Guide).</p> <p>Byte 1 (bits 8-15): Shift state indicator</p> <p>Bit 0, the least significant, = shift</p> <p>Bit 1= ctrl</p> <p>Bit 2= alt (but use of alt strongly discouraged, see Note 1)</p> <p>Bit 3= "expect another keypress". If this bit is set then when the Hot Key is detected FSUIPC waits for the KEYUP or another key press first. The virtual keycode for that keypress is then returned in Byte 3, below.</p> <p>Bit 4= tab (provided as an extra "shift", for more key press flexibility)</p> <p>Byte 2 (bits 16-23): Flags from application.</p> <p>Bit 0 (1)=reserved. This was originally used to control the next option, but it was implemented incorrectly in FSUIPC, so now, to avoid problems, the bit is deliberately ignored.</p> <p>Bit 1 (2)= set if Hot Key should be passed through to FS, else it will be trapped. See Notes 1 & 2.</p> <p>Byte 3 (bits 24-31): Flags or results from FSUIPC.</p> <p>This byte needs to be cleared by the application so that it can detect when the Hot Key occurs. There is no queuing. If the Hot Key alone is seen, this byte is set to 1. If bit 3 was set in Byte 1 above <i>and</i> another key was pressed before the hotkey was released, then the virtual keycode for the extra key (2-255) is provided here.</p> <p>Note 1: ALT key combinations are not a good idea, and cannot be stopped from passing to FS. You can get them, but FS will open the menu in any case.</p> <p>Note 2: If the same Hot key is listed more than once (for instance by several applications), every copy for the same Hot Key will get the flag set, irrespective of the pass-through option. The option only applies to finally passing it to FS. If any one Hot Key user says that the key is <i>not</i> to be passed to FS (i.e. by leaving Flag Bit 1 unset), then it isn't passed through.</p> <p>Note 3: FSUIPC hotkeys. allocated in its "HotKeys"</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x32F0	4				This DWORD controls some protected mode facilities in FSUIPC, designed to set known conditions in FSUIPC and prevent access to specific menus, whilst an application is running. Support in FSX not planned yet, and not assured.		
0x32F4	2				The 16-bit ID of the last menu command item accessed in FS. Not planned for FSX.		
0x32F6	2				<p>FSUIPC selected technical option inhibits.</p> <p>Set bits here to turn <i>off</i> specific options and prevent the user turning them back on, for a limited time (max 14 seconds). To keep options turned off you need to write this mask at regular intervals (e.g. every 5 seconds).</p> <p>Note that this is not obeyed if the user has selected to option to disallow all external control of his options. If he has done this, you can detect it by reading this location back within the time limit. If it is zero, not the value written, then the user is preventing your control over his settings.</p> <p>Bits allocated are as follows (bit 0 = 2^0 bit), but support for most of these isn't planned for FSX at present in any case.</p> <ul style="list-style-type: none"> 0 Reverse elevator trim sense 1 Fix control accelerations 2 Rudder spike elimination 3 Elevator spike elimination 4 Aileron spike elimination 5 Autopilot altitude fix (enable V/S sign corr.) 6 Extend battery life 7 FS clock seconds sync 		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x32F8	1				<p>This provides options to inhibit certain aircraft operations, for use in breakdown or precise control implementations. Set individual bits for individual subsystems. Currently the following are available, all related to hydraulic power:</p> <p>2^0 Set to inhibit flap operation 2^1 Set to inhibit spoiler operation 2^2 Set to inhibit gear operation 2^3 <i>reserved</i> 2^4 Set to inhibit Engine #1 reverser 2^5 Set to inhibit Engine #2 reverser 2^6 Set to inhibit Engine #3 reverser 2^7 Set to inhibit Engine #4 reverser</p> <p>Note that these stop operation from axis and button controls very well, and also from key presses and mouse clicks—but in these latter two cases it is done by detecting a change in the system and changing it back. This works, but the device will sometimes try to move, and this can be noticeable, especially for some reason with the flaps—the indicator gives a little jump and the noise briefly starts.</p>		
0x32F9	1				<p>Brakes being used flag. This is non-zero if the user has pressed the brakes (left, right or both) recently. It stays non-zero for a second after the last brake control or significant axis increase seen. It does <i>not</i> stay set for continued constant brake pressure via the axis inputs. It operates also for increasing values written to offset 0C00 or 0C01.</p>		
0x32FA	2				<p>Text display control word. You can display messages from an external program just like an Adventure. Write the message as a zero-terminated string to offset 3380 (see below), subject to the maximum of 128 characters <i>including</i> the zero terminator, then write a number to this offset, 32FA, as follows:</p> <p>0 display till replaced +n display for n seconds, or until replaced -1 display and scroll, or until replaced -n display and scroll, or for n seconds, or until replaced</p> <p>In the last two cases, whether the message scrolls or not depends upon the setting of the “Options—Settings—General—Text Display” option (?). The time limit only applies when scrolling is off, otherwise the message simply expires when fully scrolled off the screen.</p>	SimConnect_Text function not functioning correctly in MSFS	

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x32FC	2				AIR file change counter (incremented by FSUIPC whenever the AIR file as defined at offset 3C00 changes). This is also incremented when the FS control to “reload user aircraft” is detected—assign it to a joystick button or to a Key in FSUIPC for this.		
0x32FE	1				Hot Key change counter, incremented by FSUIPC whenever any of the Hot Keys defined in the table at offset 3210 occurs and therefore has its flag set by FSUIPC.		
0x32FF	1				Hot Button change counter, incremented by FSUIPC whenever any of the Hot Buttons defined in the table at offset 2910 changes state in the right way, and therefore has its flag set by FSUIPC.		
0x3300	2				Additional radio and autopilot status indicators (read only access). Allocation by bits which are set when true. Bit 0 = least significant (value 1): 0 = reserved 1 = good NAV1 2 = good NAV2 3 = good ADF1 4 = NAV1 has DME 5 = NAV2 has DME 6 = NAV1 is ILS 7 = AP NAV1 radial acquired 8 = AP ILS LOC acquired (incl BC—see 10) 9 = AP ILS GS acquired 10=AP ILS LOC is BC 11=good ADF2 12=NAV2 is ILS 13–15 reserved		
0x3302	2				Assorted FSUIPC options, set by user parameters: read-only via the IPC. None yet applicable for FSX.		
0x3304	4				FSUIPC version number: The HIWORD (i.e. bytes 3306-7) gives the main version as BCD x 1000: e.g. 0x1998 for 1.998 The LOWORD (bytes 3304-5) gives the Interim build letter: 0=none, 1-26=a-z: e.g. 0x0005 = 'e'		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3308	2				FS version, as determined by FSUIPC: Currently only one of these: 1 = FS98 2 = FS2000 3 = CFS2 4 = CFS1 5 = reserved 6 = FS2002 7 = FS2004 "A Century of Flight" 8 = FSX 32-bit 9 = ESP 10=P3D 32-bit 11=FSX 64-bit 12=P3D 64-bit 13=MSFS2020 64-bit		
0x330A	2				Fixed <i>read-only</i> pattern, set to 0xFADE. Use this to check that the values in 3304-3308 are valid (Note: the supplied LIB writes its version number here, but this has no effect and is only for assistance when viewing LOG files).		
0x330C	2				Assorted status flags, the only ones which are of use to applications being: 2^1 When set this indicates that programs have full access to the IPC not. This can be read without triggering the message box to users which tells them of an unaccredited access attempt. Note that on WideClient it will always be set, assuming WideServer is registered on the FS PC. (<i>should always be 1 in FSUIPC4</i>) 2^2 Set if the user has fully registered FSUIPC 2^4 Set when the user Throttle Sync option (in the Hot Keys page of FSUIPC options) is enabled.		
0x330E	1				Count of external IPC applications seen connecting since the session began. Keeps increasing till it gets to 255 then stays at that value.		
0x330F	17				Reserved area for WideFS KeySend facility		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3320	2				<p>This word is used to activate a facility supported by WideFS to automatically shut down the PCs running WideServer (i.e. this one) and WideClient. The .ini files of each WideFS component which is to activate the shutdown needs the “AllowShutdown=Yes” parameter included. The application performing the shut down action must write 0xABCD to this offset.</p> <p>WideServer automatically resets this word to zero 5 seconds afterwards, before it initiates its own PC’s shutdown if specified. This delay is to ensure the Clients get the message before the host dies, and the clearing to zero is done so that the survivors can continue.</p> <p>WideFS also provides the lesser option “AllowShutdown=App” which only closes down the WideClient or, in the case of WideServer, the FS session. Later still the “AppOnly” variation was added, which keeps WideClient running, ready to reload the applications when FS restarts.</p> <p>A hot key facility to invoke this WideFS shutdown from the FS keyboard is provided via WideServer’s INI parameters.</p> <p>The pattern 0xDCBA written here invokes a “close application” action. On all WideFS PCs with any form of shutdown allowed, this pattern closes only those applications loaded by WideFS and leaves WideClient running ready to reload them. On the Server, if it is allowed, it closes FS itself. A hot key facility is provided for this variant, too.</p>		
0x3322	2				<p>WideServer version number, if enabled. Otherwise this is zero.</p> <p>This is a BCD value giving the version number x 1000, for example 0x5110 means version 5.110.</p> <p>See also offset 333C.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3324	4	INDICATED ALTITUDE	Responded	Responded	<p>This is the altimeter reading in feet (or metres, if the user is running with the preference for altitudes in metres), as a 32-bit signed integer. Please check offset 0C18 to determine when meters are used (0C18 contains '2').</p> <p>The same value can be calculated from the actual altitude and the difference between the QNH and the altimeter "Kollsman" pressure setting, but this value ensures agreement.</p> <p>Also see offset 0x0590, which holds the Indicated Altitude calibrated to current sea level pressure.</p>		
0x3328	2				Elevator Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A).		
0x332A	2				Aileron Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A).		
0x332C	2				Rudder Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A).		
0x332E	2				Throttle Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A). This is the single throttle, applied to whichever engines are denoted by the bits in offset 0888.		
0x3330	2				Throttle 1 Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A).		
0x3332	2				Throttle 2 Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A).		
0x3334	2				Throttle 3 Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A).		
0x3336	2				Throttle 4 Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A).		
0x3338	2				Elevator Trim Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 310A).		
0x333A	2	THROTTLE LOWER LIMIT	Responded		Throttle lower limit. This is normally 0 if no reverse is available, otherwise gives the reverse limit such as -4096 (for 25%).		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x333C	2				WideFS flags: those used so far are: 2^0 1 =if TCP is being used, 0 if SPX 2^1 1 if connected at all, 0 is waiting for connections See offset 3322 for WideFS version number, which also confirms that WideServer is registered and running.		
0x333E	2				Weather clear count: This is incremented every time FS's "clear weather" routine is called, for whatever reason.		
0x3340	36				This area is used for externally signaled "joystick button" control, a set of 288 "virtual buttons". Each DWORD or 32 bits represents one "joystick" with 32 buttons. If an external program sets or clears a bit in any of these 9 DWORDS the "Buttons" page in FSUIPC will register the change as a button operation on one of Joystick numbers 64 to 72 (corresponding to the 9 DWORDs). So, FSUIPC can be used to program whatever actions the user wants. See also offset 29F0.		
0x3364	1				FS2004 "Ready to Fly" indicator. This is non-zero when FS is loading, or reloading a flight or aircraft or scenery, and becomes zero when flight mode is enabled (even if the simulator is paused or in Slew mode). <i>(Note that in FSX it tends to only be set during initial loading. Use together with 3365)</i>		
0x3365	1				"In Menu or Dialog" flag. This byte is non-zero when FS is effectively paused because the user accessed the Menu, or is in a dialogue resulting from menu or other selection activity. The non-zero values are: 1 = FS in a menu (simulation stopped) 2 = FS in a dialogue (simulation probably stopped) Both bits may be set in dialogues accessed through the menu. Note that the 2 bit may flicker a little on exit from the dialogue, due to the way it is detected. <i>Only supports in-menu. See also 0x062B</i>		
0x3366	1	ENG ON FIRE:1	Responded	Responded	This byte reflects the FS2004 "Engine on Fire" flags. I'm not sure if FS actually simulates such events, but it appears to have allocated Gauge-accessible variables to indicate them. This byte uses bits 2^0–2^3 as flags for fires in Engines 1 to 4, respectively.		
0x3366	0	ENG ON FIRE:2	Responded	Responded			
0x3366	0	ENG ON FIRE:3	Responded	Responded			
0x3366	0	ENG ON FIRE:4	Responded	Responded			

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3367	1	EXIT OPEN:0	Responded	Responded	This byte shows doors that are open, one bit per door: 2^0 = Exit1 ... 2^3 = Exit 4. <i>Doors' states depend upon aircraft position (e.g. ramp, gate, or connected to jetway) and don't respond. Further information / Asobo support required. See https://forum.simflight.com/topic/90252-door-offset-not-functioning for further info.</i>		
0x3367	0	EXIT OPEN:1	Responded	Responded			
0x3367	0	EXIT OPEN:2	Responded	Responded			
0x3367	0	EXIT OPEN:3	Responded	Responded			
0x3367	0	EXIT OPEN:4	Responded	Responded			
0x3367	0	EXIT OPEN:5	Responded	Responded			
0x3367	0	EXIT OPEN:6	Responded	Responded			
0x3367	0	EXIT OPEN:7	Responded	Responded			
0x3368	4				Reserved for PFC.DLL events.		
0x336C	2				Frame rate calling counter. This is simply a number that is incremented each time FSUIPC is entered from FS using the entry related to frame rates.		
0x336E	2				Toe brake axes have been selected as "Set" in FSUIPC's joystick pages if this is non-zero. Byte 336E is non-zero for Left Brake, byte 336F for Right Brake. Note that this only means that the user has told FSUIPC to handle the toe braking, by pressing "Set". It will only actually do so if it sees brake messages.		
0x3370	4				Four single byte PFC driver "alive" counters: 3370 = COM port read thread alive and running 3371 = Elevator trim motor action (0=off, 1=up, 2=dn) 3372 = COM port write thread alive 3373 = Main FS chain alive N.B. without the main FS chain running the other three aren't maintained in any case, so mean nothing.		
0x3374	4				This is the "live" millisecond count as used in the FSUIPC Log. It is updated on each FS chained call to FSUIPC.		
0x3378	4				This is the millisecond timestamp value of the most recent line in the current FSUIPC Log. It is updated when each line is logged.		
0x337C	1	PROP DEICE SWITCH:1	Responded		Propeller de-ice switches, (1 = on, 0 = off), read for state, write to control: one bit for each prop, bits 0—3 = Props 1—4		
0x337C	0	PROP DEICE SWITCH:2	Responded				
0x337C	0	PROP DEICE SWITCH:3	Responded				
0x337C	0	PROP DEICE SWITCH:4	Responded				
0x337D	1	STRUCTURAL DEICE SWITCH	Responded		Structural de-ice switch, (1 = on, 0 = off), read for state, write to control.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x337E	2				FSUIPC activity count. Simply a number that is incremented every time FSUIPC receives a call or message from Flight Simulator. This can be used through WideFS to check if FS is still active, for example. Note that when FS is loading aircraft or scenery/textures, this value may not change for many seconds as FSUIPC is then not getting any processor time at all.		
0x3380	128				<p>Message text area:</p> <p>The text is truncated if longer than 127 characters, there always being a zero terminator provided.</p> <p>You can <i>write</i> messages to this area, always zero terminated, for display on the FS windshield <i>or</i> via ShowText or other applications. After placing the message text, you must write the 16-bit timer value to offset 32FA to make FSUIPC send the message (see 32FA above).</p>	SimConnect_Text function not functioning correctly in MSFS	
0x3400	2				<p>FSUIPC logging options, reading and setting, bit-oriented with bits used as follows (bit numbers from bit 0 = least significant):</p> <p>0 = logging enabled (ignored, as logging is always enabled nowadays)</p> <p>1 = weather</p> <p>2 = IPC writes</p> <p>3 = IPC reads</p> <p>4 = Extras</p> <p>5 = Extended, technical button and key logging</p> <p>6 = VRI comms</p> <p>7 = com HID</p> <p>8 = L:Vars</p> <p>9 = Axes</p> <p>10 = Events</p> <p>11 = Button/key standard logging</p> <p>12 = Lua logging separate</p> <p>Note that FSUIPC revents writes to this offset <i>unless</i> the User allows it to happen. This is via the [General] section parameter:</p> <p>LogOptionsProtect =Yes</p> <p>If you need to allow programs to change the logging, change this to 'No' before running FS.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3402	2				<p>Current P3D4 mode, indicated by a flag bit as follows (by bit number, 0 = 2^0):</p> <ul style="list-style-type: none"> 0 Pause 1 Slew 2 Disabled 3 Crash 4 Freeze position 5 Freeze attitude 6 Freeze altitude 7 Freeze Lat/Lon 8 SimDirector 9 SimDirector World Editor 10 Recording active 11 Recording playback 12 Instant replay <p>Note that initially all 16 bits will be set. By the time a program reads this it should reflect the above modes. If it remained all set (-1 or 0xFFFF) then something has failed interfacing to the PDK. In this case other things in FSUIPC won't be working either.</p>		
0x3410	2				<p>Assorted indicator flags. These are the only ones currently set (bit numbers, bit 0 = 2^0):</p> <ul style="list-style-type: none"> 4 Engine 1 Reverser is set but inhibited* 5 Engine 2 Reverser is set but inhibited* 6 Engine 3 Reverser is set but inhibited* 7 Engine 4 Reverser is set but inhibited* <p>* Reverser inhibits are set in offset 32F8. Note that these flags will be cleared only when the inhibit is removed or the relevant throttle input goes positive (i.e. not just to idle).</p>		
0x3412	2				Spoiler Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 341A). Copy this to 0BD0 for normal spoiler action.		
0x3414	2				Flaps Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 341A). Copy this to 0BDC for normal flaps action.		
0x3416	2				Left Brake Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 341A). Copy this to 0BC4 for normal left brake action.		
0x3418	2				Right Brake Axis input value, post calibration, just before being applied to the simulation (if allowed to by the byte at offset 341A). Copy this to 0BC6 for normal right brake action.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x341A	1				<p>Controls the joystick connection for ancillary axis controls, currently Left and Right brake, flaps and spoiler axes. Normally all zero, set the following bits to actually disconnect the specific joystick axes (from least significant bit = 0):</p> <p>0 Left brake ("Axis Left Brake Set") 1 Right Brake ("Axis Right Brake Set") 2 Flaps 3 Spoilers</p> <p>This feature is intended for use in simulating relevant subsystem failures or partial failures. Programs can read the input axis values from offsets 3412–3418 above, and apply them, after appropriate modification, to the relevant FS axis offsets (at 0BC4 and 0BC6 for Brakes, 0BDC for Flaps or 0BD0 for Spoiler.</p> <p>In order to protect the user from a broken or crashed application, the flags are cleared 10 seconds after they have been set, so applications will need to repeat the setting every few seconds.</p> <p>Note that this byte is effectively "write only". Upon reading it will always appear to contain zero.</p>		
0x341C	1	CABIN NO SMOKING ALERT SWITCH	Responded	Responded	No smoking alert switch (1 = on, 0= off)		
0x341D	1	CABIN SEATBELTS ALERT SWITCH	Responded	Responded	Seat belts alert switch (1 = on, 0 = off)		
0x341E	1	HYDRAULIC SWITCH	Responded		Hydraulic switches, one bit for each: 2^0=pump1 ... 2^3=pump3		
0x341F	1	FUEL CROSS FEED	Responded		Fuel cross feed switch		
0x3420	4	RAD INS SWITCH	Responded		Rad ins switch		
0x3424	4				Low height warning		
0x3428	8	DECISION HEIGHT	Responded		Decision height in metres (64-bit floating point double		
0x3438	8	ENG FUEL FLOW BUG POSITION:1	Responded		Engine 1 fuelflow bug position		
0x3440	8	ENG FUEL FLOW BUG POSITION:2	Responded		Engine 2 fuelflow bug position		
0x3448	8	ENG FUEL FLOW BUG POSITION:3	Responded		Engine 3 fuelflow bug position		
0x3450	8	ENG FUEL FLOW BUG POSITION:4	Responded		Engine 4 fuelflow bug position		
0x3458	8	AUTOPILOT AIRSPEED HOLD VAR	Responded		Panel autopilot speed setting (But see preferred offset 07E2)		
0x3460	8	LINEAR CL ALPHA	Responded		LINEAR CL ALPHA, Float64, per radian		
0x3468	8	ZERO LIFT ALPHA	Responded		ZERO LIFT ALPHA, Float64, radians		
0x3470	8	AMBIENT WIND X	Responded		Ambient wind X component, double float, m/sec (+ve West, -ve East)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3478	8	AMBIENT WIND Y	Responded		Ambient wind Y component, double float, m/sec (+ve Up, -ve Down)		
0x3480	8	AMBIENT WIND Z	Responded		Ambient wind Z component, double float, m/sec (+ve South, -ve North)		
0x3488	8	AMBIENT WIND VELOCITY	Responded		Ambient wind velocity, double float, m/sec		
0x3490	8	AMBIENT WIND DIRECTION	Responded		Ambient wind direction, double float, True		
0x3498	8	AMBIENT PRESSURE	Responded		Ambient pressure, double float.		
0x34A0	8	SEA LEVEL PRESSURE	Responded		Sea level pressure (QNH), double float		
0x34A8	8	AMBIENT TEMPERATURE	Responded		Ambient temperature, double float		
0x34B0	8	PRESSURE ALTITUDE	Responded		Pressure Altitude (metres), double float. This is the indicated altitude when the altimeter Kollsman setting is 1013.2 hPa (29.92").		
0x34B8	8	STANDARD ATM TEMPERATURE	Responded		Standard ATM Temperature, degrees Rankine, double float. This is the expected temperature at the actual AMSL in the International Standard Atmosphere model.		
0x34C0	8	SIGMA SQRT	Responded		Sigma Square Root , double float. This is actually the square root of the Sigma value as provided at offset 28F0.		
0x34C8	8	TOTAL WORLD VELOCITY	Responded		Total velocity, ft/sec, double float. This is the resultant velocity of the three X,Y,Z orthogonal velocities given in offsets 3178, 3180 and 3188.		
0x34D0	8	MAX G FORCE	Responded		G force maximum		
0x34D8	8	MIN G FORCE	Responded		G force minimum		
0x34E8	4	GENERAL ENG MAX REACHED RPM:1	Responded		Engine1 max rpm (<i>Appears to mean max RPM actually reached</i>)		
0x34EC	4	GENERAL ENG MAX REACHED RPM:2	Responded		Engine2 max rpm (<i>Appears to mean max RPM actually reached</i>)		
0x34F0	4	GENERAL ENG MAX REACHED RPM:3	Responded		Engine3 max rpm (<i>Appears to mean max RPM actually reached</i>)		
0x34F4	4	GENERAL ENG MAX REACHED RPM:4	Responded		Engine4 max rpm (<i>Appears to mean max RPM actually reached</i>)		
0x34F8	2				PFCFSX left brake application (0 – 16383)		
0x34FA	2				PFCFSX right brake application (0 - 16383)		
0x3500	23	ATC MODEL	Responded		ATC aircraft model string for currently loaded user aircraft, as declared in the AIRCRAFT.CFG file. This is limited to a maximum of 24 characters, including a zero terminator.		
0x3518	8				This double provides the FS-set "Ambient Wind Y" value within about one second of offset 3478 being written by an application, to control up and down drafts. This allows such a program to monitor FS/scenery arranged updrafts and adjust its actions accordingly.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3520	2				Earliest version number of connected WideClients (or clients which have been connected). Zero if no connections have been made, or if all connected clients have been version 6.441 or before.		
0x3540	1	IS LATITUDE LONGITUDE FREEZE ON	Responded		<p>This operates the FSUIPC “freeze flight position” facility. This keeps the aircraft at the same latitude and longitude for as long as it is engaged. The altitude and attitude of the aircraft is free to change, and, in fact, the aircraft flies as normal except for not changing its position over the ground. This is apparently a very useful facility for training environments.</p> <p>For program control, write a non-zero values to this one byte offset. This acts as a timer. The freeze will last for as long as this byte is non-zero. It is used as a time, counting down 1 every timer tick of 55 mSecs or so. To retain the freeze for a good time, write 255 here and do so every 5–10 seconds. Allow for WideFS delays.</p> <p>Note that if FS is paused, then the freeze lasts until the pause is released and re-engaged.</p>		
0x3542	2				Standby altimeter pressure setting (“Kollsman” window). As millibars (hectoPascals) * 16. [<i>This is used by FSUIPC to maintain offset 3544. It is not used by FS at all</i>]		
0x3544	4				<p>This is the standby altimeter reading in feet (or metres, if the user is running with the preference for altitudes in metres), as a 32-bit signed integer. Please check offset 0C18 to determine when metres are used (0C18 contains ‘2’).</p> <p>This value is maintained by FSUIPC using the pressure setting supplied in offset 3542. It isn’t used in FS itself, but is supplied for additional gauges and external altimeters so that the standby can be kept at the correct (or last notified) QNH whilst the main altimeter is used for Standard settings (for airliners flying Flight Levels).</p>		
0x3548	8	ATTITUDE BARS POSITION	Responded		Horizon bars offset, as a percentage of maximum, in floating point double format. (–100.0 down to +100.0 up). On the default Cessnas the maximum offset is 10 degrees.		
0x3550	56				<i>Reserved for FSUIPC diagnostics related to Gauge Mousing</i>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3590	4	GENERAL ENG FUEL VALVE:1	Responded		Engine 1 Fuel Valve, 1 = open, 0 = closed. Not working (read/write) in 747-8 and 747-10, Ok in A320 Neo with 1 for close and 0 for open		
0x3594	4	GENERAL ENG FUEL VALVE:2	Responded		Engine 2 Fuel Valve, 1 = open, 0 = closed. Not working (read/write) in 747-8 and 747-10		
0x3598	4	GENERAL ENG FUEL VALVE:3	Responded		Engine 3 Fuel Valve, 1 = open, 0 = closed. Not working (read/write) in 747-8 and 747-10		
0x359C	4	GENERAL ENG FUEL VALVE:4	Responded		Engine 4 Fuel Valve, 1 = open, 0 = closed. Not working (read/write) in 747-8 and 747-10		
0x35A0	8	AIRSPEED MACH	Responded		Airspeed Mach value, double float.		
					RECIPROCATING ENGINE 4 DATA		
0x35A8	8	RECIP ENG MANIFOLD PRESSURE:4	Responded	Responded	Reciprocating engine 4 manifold pressure, in lbs/sqft, as a double (FLOAT64). Divide by 70.7262 for inches Hg.		
0x35B0	8	RECIP ENG COWL FLAP POSITION:4	Responded	Responded	Engine 4 cowl flap position, as a double float: 0.0=fully closed, 1.0=fully open. Can be used to handle position and set it.		
0x35B8	8				Reciprocating engine 4 carb heat pos (<i>"alternate air" instead?</i>)		
0x35C0	8	RECIP ENG ALTERNATE AIR POSITION:4	Responded	Responded	Reciprocating engine 4 alternate air pos		
0x35C8	8	RECIP ENG COOLANT RESERVOIR PERCENT:4	Responded	Responded	Reciprocating engine 4 coolant reservoir percent		
0x35D0	4	RECIP ENG LEFT MAGNETO:4	Responded	Responded	Reciprocating engine 4, left magneto select (1 = on, 0 = off)		
0x35D4	4	RECIP ENG RIGHT MAGNETO:4	Responded	Responded	Reciprocating engine 4, right magneto select (1 = on, 0 = off)		
0x35D8	8	RECIP MIXTURE RATIO:4	Responded	Responded	Reciprocating engine 4 fuel/air mass ratio, as a double (FLOAT64).		
0x35E0	8	RECIP ENG BRAKE POWER:4	Responded	Responded	Reciprocating engine 4 brake power in ft-lbs, as a double (FLOAT64). Divide by 550 for HP.		
0x35E8	8	RECIP CARBURETOR TEMPERATURE:4	Responded	Responded	Reciprocating engine 4 carburetor temperature, in degrees Rankine, as a double (FLOAT64).		
0x35F0	8	RECIP ENG STARTER TORQUE:4	Responded	Responded	Reciprocating engine 4 starter torque		
0x35F8	4	RECIP ENG TURBOCHARGER FAILED:4	Responded	Responded	Reciprocating engine 4 turbocharger failed		
0x35FC	4	RECIP ENG EMERGENCY BOOST ACTIVE:4	Responded	Responded	Reciprocating engine 4 emergency boost active flag (32-bit BOOLEAN). On some aircraft this controls whether the supercharger is active or not.		
0x3600	8	RECIP ENG EMERGENCY BOOST ELAPSED TIME:4	Responded	Responded	Reciprocating engine 4 emergency boost elapsed time in seconds, as a double (FLOAT64). This counts how long the boost has been engaged, when it is made active by an FS control. FS turns it off when reaching 312. You can keep it going by occasionally writing 0 here.		
0x3608	8	RECIP ENG WASTEGATE POSITION:4	Responded	Responded	Reciprocating engine 4 wastegate position (read-only, effectively)		
0x3610	8	RECIP ENG TURBINE INLET TEMPERATURE:4	Responded	Responded	Reciprocating engine 4 TIT degrees Rankine		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3618	8	RECIP ENG CYLINDER HEAD TEMPERATURE:4	Responded	Responded	Reciprocating engine 4 CHT degrees Rankine, FLOAT64		
0x3620	8	RECIP ENG RADIATOR TEMPERATURE:4	Responded	Responded	Reciprocating engine 4 Radiator temperature degrees Rankine		
0x3628	8	GENERAL ENG FUEL PRESSURE:4	Responded	Responded	Reciprocating engine 4 fuel pressure (double or FLOAT64)		
0x3630	8	RECIP ENG PRIMER:4	Responded	Responded			
0x3640	4	RECIP ENG FUEL TANK SELECTOR:4	Responded		Reciprocating engine 4 tank selector: : 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main		
0x3644	4	RECIP ENG FUEL TANKS USED:4	Responded	Responded	Reciprocating engine 4 tanks used, a bit mask: 0 Center 1 1 Center 2 2 Center 3 3 Left Main 4 Left Aux 5 Left Tip 6 Right Main 7 Right Aux 8 Right Tip 9 External 1 10 External 2		
0x3648	4	RECIP ENG FUEL NUMBER TANKS USED:4	Responded		Reciprocating engine 4, number of fuel tanks supplying fuel.		
0x3654	4	RECIP ENG FUEL AVAILABLE:4	Responded	Responded	Reciprocating engine 4 fuel available flag (0 or 1).		
					RECIPROCATING ENGINE 3 DATA		
0x3668	8	RECIP ENG MANIFOLD PRESSURE:3	Responded	Responded	Reciprocating engine 3 manifold pressure, in lbs/sqft, as a double (FLOAT64). Divide by 70.7262 for inches Hg.		
0x3670	8	RECIP ENG COWL FLAP POSITION:3	Responded	Responded	Engine 3 cowl flap position, as a double float: 0.0=fully closed, 1.0=fully open. Can be used to handle position and set it.		
0x3678	8				Reciprocating engine 3 carb heat pos		
0x3680	8	RECIP ENG ALTERNATE AIR POSITION:3	Responded	Responded	Reciprocating engine 3 alternate air pos		
0x3688	8	RECIP ENG COOLANT RESERVOIR PERCENT:3	Responded	Responded	Reciprocating engine 3 coolant reservoir percent		
0x3690	4	RECIP ENG LEFT MAGNETO:3	Responded	Responded	Reciprocating engine 3, left magneto select (1 = on, 0 = off)		
0x3694	4	RECIP ENG RIGHT MAGNETO:3	Responded	Responded	Reciprocating engine 3, right magneto select (1 = on, 0 = off)		
0x3698	8	RECIP MIXTURE RATIO:3	Responded	Responded	Reciprocating engine 3 fuel/air mass ratio, as a double (FLOAT64).		
0x36A0	8	RECIP ENG BRAKE POWER:3	Responded	Responded	Reciprocating engine 3 brake power in ft-lbs, as a double (FLOAT64). Divide by 550 for HP.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x36A8	8	RECIP CARBURETOR TEMPERATURE:3	Responded	Responded	Reciprocating engine 3 carburettor temperature, in degrees Rankine, as a double (FLOAT64).		
0x36B0	8	RECIP ENG STARTER TORQUE:3	Responded	Responded	Reciprocating engine 3 starter torque		
0x36B8	4	RECIP ENG TURBOCHARGER FAILED:3	Responded	Responded	Reciprocating engine 3 turbocharger failed		
0x36BC	4	RECIP ENG EMERGENCY BOOST ACTIVE:3	Responded	Responded	Reciprocating engine 3 emergency boost active flag (32-bit BOOLEAN). On some aircraft this controls whether the supercharger is active or not.		
0x36C0	8	RECIP ENG EMERGENCY BOOST ELAPSED TIME:3	Responded	Responded	Reciprocating engine 3 emergency boost elapsed time in seconds, as a double (FLOAT64). This counts how long the boost has been engaged, when it is made active by an FS control. FS turns it off when reaching 312. You can keep it going by occasionally writing 0 here.		
0x36C8	8	RECIP ENG WASTEGATE POSITION:3	Responded	Responded	Reciprocating engine 3 wastegate position (read-only, effectively)		
0x36D0	8	RECIP ENG TURBINE INLET TEMPERATURE:3	Responded	Responded	Reciprocating engine 3 TIT degrees Rankine		
0x36D8	8	RECIP ENG CYLINDER HEAD TEMPERATURE:3	Responded	Responded	Reciprocating engine 3 CHT degrees Rankine, FLOAT64		
0x36E0	8	RECIP ENG RADIATOR TEMPERATURE:3	Responded	Responded	Reciprocating engine 3 Radiator temperature degrees Rankine		
0x36E8	8	GENERAL ENG FUEL PRESSURE:3	Responded	Responded	Reciprocating engine 3 fuel pressure (double or FLOAT64)		
0x36F0	8	RECIP ENG PRIMER:3	Responded	Responded			
0x3700	4	RECIP ENG FUEL TANK SELECTOR:3	Responded		Reciprocating engine 3 tank selector: 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main		
0x3704	4	RECIP ENG FUEL TANKS USED:3	Responded	Responded	Reciprocating engine 3 tanks used, a bit mask: 0 Center 1 1 Center 2 2 Center 3 3 Left Main 4 Left Aux 5 Left Tip 6 Right Main 7 Right Aux 8 Right Tip 9 External 1 10 External 2		
0x3708	4	RECIP ENG FUEL NUMBER TANKS USED:3	Responded		Reciprocating engine 3, number of fuel tanks supplying fuel.		
0x3714	4	RECIP ENG FUEL AVAILABLE:3	Responded	Responded	Reciprocating engine 3, fuel available flag (0 or 1).		
					RECIPROCATING ENGINE 2 DATA		
0x3728	8	RECIP ENG MANIFOLD PRESSURE:2	Responded	Responded	Reciprocating engine 2 manifold pressure, in lbs/sqft, as a double (FLOAT64). Divide by 70.7262 for inches Hg.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3730	8	RECIP ENG COWL FLAP POSITION:2	Responded	Responded	Engine 2 cowl flap position, as a double float: 0.0=fully closed, 1.0=fully open. Can be used to handle position and set it.		
0x3738	8				Reciprocating engine 2 carb heat pos		
0x3740	8	RECIP ENG ALTERNATE AIR POSITION:2	Responded	Responded	Reciprocating engine 2 alternate air pos		
0x3748	8	RECIP ENG COOLANT RESERVOIR PERCENT:2	Responded	Responded	Reciprocating engine 2 coolant reservoir percent		
0x3750	4	RECIP ENG LEFT MAGNETO:2	Responded	Responded	Reciprocating engine 2, left magneto select (1 = on, 0 = off)		
0x3754	4	RECIP ENG RIGHT MAGNETO:2	Responded	Responded	Reciprocating engine 2, right magneto select (1 = on, 0 = off)		
0x3758	8	RECIP MIXTURE RATIO:2	Responded	Responded	Reciprocating engine 2 fuel/air mass ratio, as a double (FLOAT64).		
0x3760	8	RECIP ENG BRAKE POWER:2	Responded	Responded	Reciprocating engine 2 brake power in ft-lbs, as a double (FLOAT64). Divide by 550 for HP.		
0x3768	8	RECIP CARBURETOR TEMPERATURE:2	Responded	Responded	Reciprocating engine 2 carburettor temperature, in degrees Rankine, as a double (FLOAT64).		
0x3770	8	RECIP ENG STARTER TORQUE:2	Responded	Responded	Reciprocating engine 2 starter torque		
0x3778	4	RECIP ENG TURBOCHARGER FAILED:2	Responded	Responded	Reciprocating engine 2 turbocharger failed		
0x377C	4	RECIP ENG EMERGENCY BOOST ACTIVE:2	Responded	Responded	Reciprocating engine 2 emergency boost active flag (32-bit BOOLEAN). On some aircraft this controls whether the supercharger is active or not.		
0x3780	8	RECIP ENG EMERGENCY BOOST ELAPSED TIME:2	Responded	Responded	Reciprocating engine 2 emergency boost elapsed time in seconds, as a double (FLOAT64). This counts how long the boost has been engaged, when it is made active by an FS control. FS turns it off when reaching 312. You can keep it going by occasionally writing 0 here.		
0x3788	8	RECIP ENG WASTEGATE POSITION:2	Responded	Responded	Reciprocating engine 2 wastegate position (read-only, effectively)		
0x3790	8	RECIP ENG TURBINE INLET TEMPERATURE:2	Responded	Responded	Reciprocating engine 2 TIT degrees Rankine		
0x3798	8	RECIP ENG CYLINDER HEAD TEMPERATURE:2	Responded	Responded	Reciprocating engine 2 CHT degrees Rankine, FLOAT64		
0x37A0	8	RECIP ENG RADIATOR TEMPERATURE:2	Responded	Responded	Reciprocating engine 2 Radiator temperature degrees Rankine		
0x37A8	8	GENERAL ENG FUEL PRESSURE:2	Responded	Responded	Reciprocating engine 2 fuel pressure (double or FLOAT64)		
0x37B0	8	RECIP ENG PRIMER:2	Responded	Responded			
0x37C0	4	RECIP ENG FUEL TANK SELECTOR:2	Responded		Reciprocating engine 2 tank selector: 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x37C4	4	RECIP ENG FUEL TANKS USED:2	Responded	Responded	Reciprocating engine 2 tanks used, a bit mask: 0 Center 1 1 Center 2 2 Center 3 3 Left Main 4 Left Aux 5 Left Tip 6 Right Main 7 Right Aux 8 Right Tip 9 External 1 10 External 2		
0x37C8	4	RECIP ENG FUEL NUMBER TANKS USED:2	Responded		Reciprocating engine 2, number of fuel tanks supplying fuel.		
0x37D4	4	RECIP ENG FUEL AVAILABLE:2	Responded	Responded	Reciprocating engine 2, fuel available flag (0 or 1)		
					RECIPROCATING ENGINE 1 DATA		
0x37E8	8	RECIP ENG MANIFOLD PRESSURE:1	Responded	Responded	Reciprocating engine 1 manifold pressure, in lbs/sqft, as a double (FLOAT64). Divide by 70.7262 for inches Hg.		
0x37F0	8	RECIP ENG COWL FLAP POSITION:1	Responded	Responded	Engine 1 cowl flap position, as a double float: 0.0=fully closed, 1.0=fully open. Can be used to handle position and set it.		
0x37F8	8				Reciprocating engine 1 carb heat pos		
0x3800	8	RECIP ENG ALTERNATE AIR POSITION:1	Responded	Responded	Reciprocating engine 1 alternate air pos		
0x3808	8	RECIP ENG COOLANT RESERVOIR PERCENT:1	Responded	Responded	Reciprocating engine 1 coolant reservoir percent		
0x3810	4	RECIP ENG LEFT MAGNETO:1	Responded	Responded	Reciprocating engine 1, left magneto select (1 = on, 0 = off)		
0x3814	4	RECIP ENG RIGHT MAGNETO:1	Responded	Responded	Reciprocating engine 1, right magneto select (1 = on, 0 = off)		
0x3818	8	RECIP MIXTURE RATIO:1	Responded	Responded	Reciprocating engine 1 fuel/air mass ratio, as a double (FLOAT64).		
0x3820	8	RECIP ENG BRAKE POWER:1	Responded	Responded	Reciprocating engine 1 brake power in ft-lbs, as a double (FLOAT64). Divide by 550 for HP.		
0x3828	8	RECIP CARBURETOR TEMPERATURE:1	Responded	Responded	Reciprocating engine 1 carburetor temperature, in degrees Rankine, as a double (FLOAT64).		
0x3830	8	RECIP ENG STARTER TORQUE:1	Responded	Responded	Reciprocating engine 1 starter torque		
0x3838	4	RECIP ENG TURBOCHARGER FAILED:1	Responded	Responded	Reciprocating engine 1 turbocharger failed		
0x383C	4	RECIP ENG EMERGENCY BOOST ACTIVE:1	Responded	Responded	Reciprocating engine 1 emergency boost active flag (32-bit BOOLEAN). On some aircraft this controls whether the supercharger is active or not.		
0x3840	8	RECIP ENG EMERGENCY BOOST ELAPSED TIME:1	Responded	Responded	Reciprocating engine 1 emergency boost elapsed time in seconds, as a double (FLOAT64). This counts how long the boost has been engaged, when it is made active by an FS control. FS turns it off when reaching 312. You can keep it going by occasionally writing 0 here.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3848	8	RECIP ENG WASTEGATE POSITION:1	Responded	Responded	Reciprocating engine 1 wastegate position (read-only, effectively)		
0x3850	8	RECIP ENG TURBINE INLET TEMPERATURE:1	Responded	Responded	Reciprocating engine 1 TIT degrees Rankine		
0x3858	8	RECIP ENG CYLINDER HEAD TEMPERATURE:1	Responded	Responded	Reciprocating engine 1 CHT degrees Rankine, FLOAT64		
0x3860	8	RECIP ENG RADIATOR TEMPERATURE:1	Responded	Responded	Reciprocating engine 1 Radiator temperature degrees Rankine		
0x3868	8	GENERAL ENG FUEL PRESSURE:1	Responded	Responded	Reciprocating engine 1 fuel pressure (double or FLOAT64)		
0x3870	8	RECIP ENG PRIMER:1	Responded	Responded	Engine 1 primer		
0x3880	4	RECIP ENG FUEL TANK SELECTOR:1	Responded		Reciprocating engine 1 tank selector: 0=None, 1=All, 2=Left, 3=Right, 4=LeftAux, 5=RightAux, 6=Centre, 7=Centre2, 8=Centre3, 9=External1, 10=External2, 11=Right Tip, 12=Left Tip, 13=Crossfeed, 14=Crossfeed LtoR, 15=Crossfeed RtoL, 16=Crossfeed both, 17=External, 18=Isolate, 19=Left Main, 20=Right Main		
0x3884	4	RECIP ENG FUEL TANKS USED:1	Responded	Responded	Reciprocating engine 1 tanks used, a bit mask: 0 Center 1 1 Center 2 2 Center 3 3 Left Main 4 Left Aux 5 Left Tip 6 Right Main 7 Right Aux 8 Right Tip 9 External 1 10 External 2		
0x3888	4	RECIP ENG FUEL NUMBER TANKS USED:1	Responded		Reciprocating engine 1, number of fuel tanks supplying fuel.		
0x3894	4	RECIP ENG FUEL AVAILABLE:1	Responded	Responded	Reciprocating engine 1, fuel available flag (0 or 1).		
					GENERAL ENGINE 4 DATA		
0x38A0	4	GENERAL ENG FAILED:4	Responded		General engine 4 failure (0=none, 1=full)		
0x38A4	4	GENERAL ENG COMBUSTION:4	Responded	Responded	General engine 4 combustion		
0x38A8	8	GENERAL ENG THROTTLE LEVER POSITION:4	Responded	Responded	General engine 4 throttle lever position, as a double (FLOAT64). 0.0=idle, 1.0=max		
0x38B0	8	GENERAL ENG MIXTURE LEVER POSITION:4	Responded	Responded	General engine 4 mixture lever position, as a double (FLOAT64). 0.0=cutoff, 1.0=full rich		
0x38B8	8	GENERAL ENG PROPELLER LEVER POSITION:4	Responded	Responded	General engine 4 propeller lever position, as a double (FLOAT64). 0-1		
0x38C0	4	GENERAL ENG STARTER:4	Responded		General Engine 4 Starter		
0x3918	8	GENERAL ENG OIL TEMPERATURE:4	Responded	Responded	General engine 4 oil temperature in degrees Rankine, as a double (FLOAT64).		
0x3920	8	GENERAL ENG OIL PRESSURE:4	Responded	Responded	General engine 4 oil pressure in lbs/sqft, as a double (FLOAT64). Divide by 144 for PSI.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3928	8	GENERAL ENG OIL LEAKED PERCENT:4	Responded		Reciprocating engine 4 oil leak percent, as a double (FLOAT64)		
0x3930	8	GENERAL ENG EXHAUST GAS TEMPERATURE:4	Responded	Responded	General engine 4 EGT in degrees Rankine, as a double (FLOAT64). Convert to Fahrenheit by Rankine – 459.67. FS default gauges show Centigrade.		
0x3938	4	GENERAL ENG GENERATOR SWITCH:4	Responded		Engine 4 generator switch, a 32-bit BOOL (0 = off, 1= on)		
0x393C	4	GENERAL ENG GENERATOR ACTIVE:4	Responded	Responded	Engine 4 generator active, a 32-bit BOOL (0 = off, 1= on), Goes to 0 when engine stops.		
0x3940	8	GENERAL ENG DAMAGE PERCENT:4	Responded		Reciprocating engine 4 damage percent, 64-bit floating point.		
0x3948	8	GENERAL ENG COMBUSTION SOUND PERCENT:4	Responded		Reciprocating engine 4 combustion sound percent, 64-bit floating point.		
0x3958	4	GENERAL ENG FUEL PUMP SWITCH:4	Responded		Engine 4 fuel pump switch, a 32-bit BOOL (0 = off, 1= on)		
					GENERAL ENGINE 3 DATA		
0x395C	4	GENERAL ENG MASTER ALTERNATOR:4	Responded				
0x3960	4	GENERAL ENG FAILED:3	Responded		General engine 3 failure (0=none, 1=full)		
0x3964	4	GENERAL ENG COMBUSTION:3	Responded	Responded	General engine 3 combustion		
0x3968	8	GENERAL ENG THROTTLE LEVER POSITION:3	Responded	Responded	General engine 3 throttle lever position, as a double (FLOAT64). 0.0=idle, 1.0=max		
0x3970	8	GENERAL ENG MIXTURE LEVER POSITION:3	Responded	Responded	General engine 3 mixture lever position, as a double (FLOAT64). 0.0=cutoff, 1.0=full rich		
0x3978	8	GENERAL ENG PROPELLER LEVER POSITION:3	Responded	Responded	General engine 3 propeller lever position, as a double (FLOAT64). 0–1		
0x3980	4	GENERAL ENG STARTER:3	Responded		General Engine 3 Starter		
0x39D8	8	GENERAL ENG OIL TEMPERATURE:3	Responded	Responded	General engine 3 oil temperature in degrees Rankine, as a double (FLOAT64).		
0x39E0	8	GENERAL ENG OIL PRESSURE:3	Responded	Responded	General engine 3 oil pressure in lbs/sqft, as a double (FLOAT64). Divide by 144 for PSI.		
0x39E8	8	GENERAL ENG OIL LEAKED PERCENT:3	Responded		Reciprocating engine 3 oil leak percent, as a double (FLOAT64)		
0x39F0	8	GENERAL ENG EXHAUST GAS TEMPERATURE:3	Responded	Responded	General engine 3 EGT in degrees Rankine, as a double (FLOAT64). Convert to Fahrenheit by Rankine – 459.67. FS default gauges show Centigrade.		
0x39F8	4	GENERAL ENG GENERATOR SWITCH:3	Responded		Engine 3 generator switch, a 32-bit BOOL (0 = off, 1= on)		
0x39FC	4	GENERAL ENG GENERATOR ACTIVE:3	Responded	Responded	Engine 3 generator active, a 32-bit BOOL (0 = off, 1= on), Goes to 0 when engine stops.		
0x3A00	8	GENERAL ENG DAMAGE PERCENT:3	Responded		Reciprocating engine 3 damage percent, 64-bit floating point.		
0x3A08	8	GENERAL ENG COMBUSTION SOUND PERCENT:3	Responded		Reciprocating engine 3 combustion sound percent, 64-bit floating point.		
0x3A18	4	GENERAL ENG FUEL PUMP SWITCH:3	Responded		Engine 3 fuel pump switch, a 32-bit BOOL (0 = off, 1= on)		
0x3A1C	4	GENERAL ENG MASTER ALTERNATOR:3	Responded				
					GENERAL ENGINE 2 DATA		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3A20	4	GENERAL ENG FAILED:2	Responded		General engine 2 failure (0=none, 1=full)		
0x3A24	4	GENERAL ENG COMBUSTION:2	Responded	Responded	Reciprocating engine 2 combustion		
0x3A28	8	GENERAL ENG THROTTLE LEVER POSITION:2	Responded	Responded	General engine 2 throttle lever position, as a double (FLOAT64). 0.0=idle, 1.0=max		
0x3A30	8	GENERAL ENG MIXTURE LEVER POSITION:2	Responded	Responded	General engine 2 mixture lever position, as a double (FLOAT64). 0.0=cutoff, 1.0=full rich		
0x3A38	8	GENERAL ENG PROPELLER LEVER POSITION:2	Responded	Responded	General engine 2 propeller lever position, as a double (FLOAT64). 0-1		
0x3A40	4	GENERAL ENG STARTER:2	Responded		General Engine 2 Starter		
0x3A98	8	GENERAL ENG OIL TEMPERATURE:2	Responded	Responded	General engine 2 oil temperature in degrees Rankine, as a double (FLOAT64).		
0x3AA0	8	GENERAL ENG OIL PRESSURE:2	Responded	Responded	General engine 2 oil pressure in lbs/sqft, as a double (FLOAT64). Divide by 144 for PSI.		
0x3AA8	8	GENERAL ENG OIL LEAKED PERCENT:2	Responded		Reciprocating engine 2 oil leak percent, as a double (FLOAT64)		
0x3AB0	8	GENERAL ENG EXHAUST GAS TEMPERATURE:2	Responded	Responded	General engine 2 EGT in degrees Rankine, as a double (FLOAT64). Convert to Fahrenheit by Rankine - 459.67. FS default gauges show Centigrade.		
0x3AB8	4	GENERAL ENG GENERATOR SWITCH:2	Responded		Engine 2 generator switch, a 32-bit BOOL (0 = off, 1= on)		
0x3ABC	4	GENERAL ENG GENERATOR ACTIVE:2	Responded	Responded	Engine 2 generator active, a 32-bit BOOL (0 = off, 1= on), Goes to 0 when engine stops.		
0x3AC0	8	GENERAL ENG DAMAGE PERCENT:2	Responded		Reciprocating engine 2 damage percent, 64-bit floating point.		
0x3AC8	8	GENERAL ENG COMBUSTION SOUND PERCENT:2	Responded		Reciprocating engine 2 combustion sound percent, 64-bit floating point.		
0x3AD8	4	GENERAL ENG FUEL PUMP SWITCH:2	Responded		Engine 2 fuel pump switch, a 32-bit BOOL (0 = off, 1= on) <i>(Note that it only copes with off-lo on the Baron)</i>		
0x3ADC	4	GENERAL ENG MASTER ALTERNATOR:2	Responded				
					GENERAL ENGINE 1 DATA		
0x3AE0	4	GENERAL ENG FAILED:1	Responded		General engine 1 failure (0=none, 1=full)		
0x3AE4	4	GENERAL ENG COMBUSTION:1	Responded	Responded	Reciprocating engine 1 combustion		
0x3AE8	8	GENERAL ENG THROTTLE LEVER POSITION:1	Responded	Responded	General engine 1 throttle lever position, as a double (FLOAT64). 0.0=idle, 1.0=max		
0x3AF0	8	GENERAL ENG MIXTURE LEVER POSITION:1	Responded	Responded	General engine 1 mixture lever position, as a double (FLOAT64). 0.0=cutoff, 1.0=full rich		
0x3AF8	8	GENERAL ENG PROPELLER LEVER POSITION:1	Responded	Responded	General engine 1 propeller lever position, as a double (FLOAT64). 0-1		
0x3B00	4	GENERAL ENG STARTER:1	Responded		General Engine 1 Starter		
0x3B58	8	GENERAL ENG OIL TEMPERATURE:1	Responded	Responded	General engine 1 oil temperature in degrees Rankine, as a double (FLOAT64).		
0x3B60	8	GENERAL ENG OIL PRESSURE:1	Responded	Responded	General engine 1 oil pressure in lbs/sqft, as a double (FLOAT64). Divide by 144 for PSI.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3B68	8	GENERAL ENG OIL LEAKED PERCENT:1	Responded		Reciprocating engine 1 oil leak percent, as a double (FLOAT64)		
0x3B70	8	GENERAL ENG EXHAUST GAS TEMPERATURE:1	Responded	Responded	General engine 1 EGT in degrees Rankine, as a double (FLOAT64). Convert to Fahrenheit by Rankine – 459.67. FS default gauges show Centigrade.		
0x3B78	4	GENERAL ENG GENERATOR SWITCH:1	Responded		Engine 1 generator switch, a 32-bit BOOL (0 = off, 1= on)		
0x3B7C	4	GENERAL ENG GENERATOR ACTIVE:1	Responded	Responded	Engine 1 generator active, a 32-bit BOOL (0 = off, 1= on), Goes to 0 when engine stops.		
0x3B80	8	GENERAL ENG DAMAGE PERCENT:1	Responded		Reciprocating engine 1 damage percent, 64-bit floating point.		
0x3B88	8	GENERAL ENG COMBUSTION SOUND PERCENT:1	Responded		Reciprocating engine 1 combustion sound percent, 64-bit floating point.		
0x3B98	4	GENERAL ENG FUEL PUMP SWITCH:1	Responded		Engine 1 fuel pump switch, a 32-bit BOOL (0 = off, 1= on) <i>(Note that it only copes with off-lo on the Baron)</i>		
0x3B9C	4	GENERAL ENG MASTER ALTERNATOR:1	Responded				
0x3BA0	8	TAILHOOK POSITION	Responded	Responded	The tailhook position, as a double floating point value (0.0=fully retracted, 1.0=fully lowered).		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status																																																
0x3BA8	40				<p>Area used by PFCFSX.DLL for axis input, for optional assignment and calibration in FSUIPC.</p> <p>When the PFC driver is not being used, other programs can make use of these offsets to input axis values directly to FSUIPC, which also can then be assigned in FSUIPC and thence calibrated. Note that by default FSUIPC assumes that the normal input here is in the range 0–127, and scales it accordingly. For applications supplying a greater range, possibly up to the maximum allowed for joysticks (–16383 to +16383) you can either use the “RAW” option, or, better, let FSUIPC adjust its scaling to suit the range being input. It will adjust this automatically upon seeing the extreme values, or you can preset the scaling using a parameter added to the axis assignments line in the INI file.</p> <p>When the PFC driver is running, application programs or modules can access the raw PFC axis values at these offsets, which are assigned to the hardware as listed below. One 16-bit word is allowed for each (although the PFC axes have a maximum range of 0 to 127). The axes are:</p> <table><tr><td>3BA8</td><td>0</td><td>Aileron</td></tr><tr><td>3BAA</td><td>1</td><td>Elevator</td></tr><tr><td>3BAC</td><td>2</td><td>Rudder</td></tr><tr><td>3BAE</td><td>3</td><td>Quadrant axis 5</td></tr><tr><td>3BB0</td><td>4</td><td>Quadrant axis 3</td></tr><tr><td>3BB2</td><td>5</td><td>Quadrant axis 1</td></tr><tr><td>3BB4</td><td>6</td><td>Left toe brake</td></tr><tr><td>3BB6</td><td>7</td><td>Quadrant axis 6</td></tr><tr><td>3BB8</td><td>8</td><td>Quadrant axis 4</td></tr><tr><td>3BBA</td><td>9</td><td>Quadrant axis 2</td></tr><tr><td>3BBC</td><td>10</td><td>Right toe brake</td></tr><tr><td>3BBE</td><td>11</td><td>Elevator trim</td></tr><tr><td>3BC0</td><td>12</td><td>Aileron trim</td></tr><tr><td>3BC2</td><td>13</td><td>Rudder trim</td></tr><tr><td>3BC4</td><td>14</td><td>Steering tiller</td></tr><tr><td>3BC6</td><td>15</td><td><i>not used</i></td></tr></table> <p>There are control flags (to disconnect these axes) at offset 3BC8. Each bit, 2^0 to 2^15 can be set to disconnect the equivalent numbered axis above.</p>	3BA8	0	Aileron	3BAA	1	Elevator	3BAC	2	Rudder	3BAE	3	Quadrant axis 5	3BB0	4	Quadrant axis 3	3BB2	5	Quadrant axis 1	3BB4	6	Left toe brake	3BB6	7	Quadrant axis 6	3BB8	8	Quadrant axis 4	3BBA	9	Quadrant axis 2	3BBC	10	Right toe brake	3BBE	11	Elevator trim	3BC0	12	Aileron trim	3BC2	13	Rudder trim	3BC4	14	Steering tiller	3BC6	15	<i>not used</i>		
3BA8	0	Aileron																																																					
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3BC4	14	Steering tiller																																																					
3BC6	15	<i>not used</i>																																																					
0x3BD0	1				Reserved																																																		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3BD2	2				This is a 16-bit counter that is incremented each time a FLT file is saved in FS. This applies to flights saved through FS Flights menu, the shortcut key (:), AutoSave, and via the FSUIPC flight saving facilities. The filenames of the saved flights can be read at offset 0400, or (historically) by using the path reading facility at offset 0FF0 and following.		
0x3BD6	1	PARTIAL PANEL ADF	Responded	Responded	Panel failure modes (FS2002 and FS2004 only): one byte flag/control for each of the following “partial panel” gauge modes: 3BD6 ADF (both on FS2004) 3BD7 ASI 3BD8 Altimeter 3BD9 Attitude Indicator 3BDA COM (both COM1/2 in FSX) <i>(Not writable – SimC?)</i> 3BDB AVIONICS (was COM2 pre-FSX) <i>(Not writable – SimC?)</i> 3BDC Compass 3BDD Electrical (new in FSX) 3BDE Engine (see 0B6B for separate engines) 3BDF Fuel Indicator <i>(Not writable – SimC?)</i> 3BE0 Heading Indicator 3BE1 NAV (both NAV1/2 in FSX) <i>(Not writable – SimC?)</i> 3BE2 NAV (ditto) <i>(Not writable – SimC?)</i> 3BE3 Pitot heat		
0x3BD7	1	PARTIAL PANEL AIRSPEED	Responded	Responded			
0x3BD8	1	PARTIAL PANEL ALTIMETER	Responded	Responded			
0x3BD9	1	PARTIAL PANEL ATTITUDE	Responded	Responded			
0x3BDA	1	PARTIAL PANEL COMM	Responded	Responded			
0x3BDB	1	PARTIAL PANEL AVIONICS	Responded				
0x3BDC	1	PARTIAL PANEL COMPASS	Responded	Responded			
0x3BDD	1	PARTIAL PANEL ELECTRICAL	Responded	Responded			
0x3BDE	1	PARTIAL PANEL ENGINE	Responded	Responded			
0x3BDF	1	PARTIAL PANEL FUEL INDICATOR	Responded				
0x3BE0	1	PARTIAL PANEL HEADING	Responded	Responded			
0x3BE1	1	PARTIAL PANEL NAV	Responded	Responded			
0x3BE2	1	PARTIAL PANEL NAV	Responded	Responded			
0x3BE3	1	PARTIAL PANEL PITOT	Responded	Responded			
0x3BE4	1	PARTIAL PANEL TRANSPONDER	Responded	Responded			
0x3BE5	1	PARTIAL PANEL TURN COORDINATOR	Responded				
0x3BE6	1	PARTIAL PANEL VACUUM	Responded	Responded			
0x3BE7	1	PARTIAL PANEL VERTICAL VELOCITY	Responded	Responded			
0x3BF6	2				SimConnect re-connection count. This is incremented each time FSUIPC4 succeeds in connecting or re-connecting to SimConnect. Re-connection is sometimes needed if SimConnect starves FSUIPC of information for longer than the timeout (set by the INI parameter SimConnectStallTime, defaulting to 1 second), other than during normal flight loading or menu stoppage times (i.e. between Stop and Start notifications).		
0x3BF8	2	FLAPS NUM HANDLE POSITIONS	Responded		Number of flap positions not including flaps full up.		
0x3BFA	2				Flaps détente increment. The full range of flap movement is 0–0x3FFF (16383). Each détente position or “notch” is spaced equally over this range, no matter what flap angle is represented—a table in the AIR file gives those. To obtain the number of détentes, divide this increment value into 16383 and add 1. For example 2047 (0x7FF) would be the increment for 9 positions.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3BFC	4				<p>Zero Fuel Weight, lbs * 256. This is the aircraft weight plus the payload weight, minus fuel. This changes as the payload is adjusted.</p> <p>Note that this value fluctuates slightly. It is not clear whether this a bug, or an artefact of the physics simulation, but the empty weight (1330) and the payload data (1400) may be used to get a static value.</p>		
0x3C00	256				<p>Full pathname of the current AIR file [aircraft.cfg] (in UNC form when applicable *). This is zero padded to fill the 256 bytes available.</p> <p>When this changes the 16-bit counter at 32FC is incremented, so interested programs don't have to keep on reading the whole 256 bytes to check. Note that this should be the full path, but is a relative path when FSUIPC7 is started and an aircraft is already loaded in the FS. Reported to Asobo.</p>		
0x3D00	256	TITLE	Responded		Name of the current aircraft (from the "title" parameter in the AIRCRAFT.CFG file).		
0x3E00	256				<p>Path of the Flight Simulator installation, down to and including the FS main folder and a following \ character. If the PC is on a Network and WideFS is in use, then if possible the full UNC (universal naming convention) path is given. Examples are:</p> <p>D:\MSFS2020\ (non-Network)</p> <p>\\MyMainPC\drive\MSFS2020\ (Network, named PC and named shared drive))</p>		
0x3F00	2				<p>To load or save a Flight (.FLT) you first set up the pathname (and optional description) at offset 3F04 below, then write here. Write one of these values:</p> <p>0 to simply load the specified flight/situation.</p> <p>1 to save the flight/situation with no description</p> <p>257 to save the flight/situation with a description</p> <p>Flights are saved in the location specified by MSFS. For Steam installations, this will be under your user' AppData\Roaming\Microsoft Flight Simulator. For MS Store installations, this is under your user' AppData\Local\Packages\Microsoft.FlightSimulator_8weky b3d8bbwe\LocalState\FlightPlans.</p> <p>If you are Loading a file, please allow time for the file to load before expecting any further meaningful response across the FSUIPC interface. FSUIPC will probably not be able to respond for several seconds even on the fastest machines.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x3F02	2				<p>FLT/STN file loading counter (incremented by FSUIPC whenever the FLT file, as defined at offset 3F04 changes or the same FLT is reloaded).</p> <p>If FSUIPC re-initialises the SimConnect link at any time (e.g. because of timeout), the flight name provided may change at the same time, due to the way SimConnect operates and FSUIPC obtains the flight names. The value in offset 3BF6 also updates when SimConnect is re-initialised, so this may help distinguish the cause of the change.</p>		
0x3F04	252				<p>READ: Pathname of the currently loaded FLT file, excluding the FS main path (see 3E00) if applicable, else the full path, in UNC format if WideFS is in use. This is zero padded to fill the 252 bytes available, or truncated if longer.</p> <p>When this changes (or simply reloaded) the 16-bit counter at 3F02 is incremented, so interested programs don't have to keep on reading the whole 252 bytes to check.</p> <p>WRITE: Write the file name for the FLT+WX file you wish to Load or Save. The name can include the final ".flt" but this will be discarded in any case. You can specify a folder (existing within FS's main folder) for Loading, but files can only be saved to your "My Documents" FS folder. If you give a path for saving, it is discarded. There must be a zero terminator.</p> <p>If you are writing the file, a description can also be specified, following the pathname and its zero terminator. Obviously this is limited by the space available. It must also be terminated by a zero byte, and indicated in the value written to 3F00 above.</p> <p>See 3F00 above for details of actually Loading or Saving the Flight or Situation so identified.</p>		
0x4000	256				Reserved: Marc's area for FS_Meteo gauge, etc		
0x4100	256				Jean-Michael Biston ("Michael") for Airbus gauges (PART 1)		
0x4200	256				Reserved (ESOUND Sound Playing Interface)		
0x4300	512				Reserved: Hans G. Schuetz: 744 system simulator panel		
0x4500	256				Don LaFontaine's FreeFDS (to be confirmed!)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x4600	256				Holger Johannsen ("Flypage"), for Canadair RJ-700 Project		
0x4700	128				Alexey Morozov (Russian Federation: Interstate Aviation Committee)		
0x4780	128				Andreas Kraft, TUTOR project		
0x4800	256				Steffen Herberg, EPIC project		
0x4900	256				John Dekker, Radar Contact		
0x5000	128				Alex Kuznetsov, Gauges for PSS and Aerosoft integration		
0x5080	64				Chris Barnett. LAS - 737NG Project		
0x50C0	64				Oleksiy Frolov Dash8+EPIC Project		
0x5100	256				SimConnect menu facilities. Write zero terminated strings here to create a SimConnect menu. The first string will be the title, and the second string the prompt. After that, you can write up to 10 more strings (offset size of 256 bytes permitting) for the menu entries text (no item numbers) of items 1-9 and 0. Write 0 to byte 5100 to close the menu unanswered. When a selection is made, FSUIPC will write 0 to byte 5100 and the menu item selection number to byte 5101.		
0x5200	3584				<i>Reserved:</i> 5200-527F = Ferry van Aesch (Asst CEO British Airways Virtual) 5280-52FF: Andrew McLean: Aerosoft Hardware 5300-53FF: Mark Hastings B777 Systems Simulator 5400-5FFF: Enrico's Project Magenta		
0x6000	512				GPS data area—only known offsets listed below:		
0x6004	4	GPS IS ACTIVE FLIGHT PLAN	Responded		GPS flags (bits numbered from least significant):		
0x6004	0	GPS IS ACTIVE WAY POINT	Responded		0 not used		
0x6004	0	GPS IS ACTIVE WP LOCKED	Responded		1 Active Plan		
0x6004	0	GPS IS APPROACH ACTIVE	Responded		2 Active Way point		
0x6004	0	GPS IS APPROACH LOADED	Responded		3 Arrived		
0x6004	0	GPS IS ARRIVED	Responded		4 not used		
0x6004	0	GPS IS DIRECT TO FLIGHTPLAN	Responded		5 Direct To		
0x6010	8	GPS POSITION LAT	Responded		6 not used		
0x6018	8	GPS POSITION LON	Responded		GPS: aircraft latitude, floating point double, in degrees (+ve = N, -ve = S).		
0x6020	8	GPS POSITION ALT	Responded		GPS: aircraft longitude, floating point double, in degrees (+ve = E, -ve = W).		
0x6028	8	GPS MAGVAR	Responded		GPS: aircraft altitude, floating point double, in metres.		
					GPS: magnetic variation at aircraft, floating point double, in radians (add to magnetic for true, subtract from true for magnetic).		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x6030	8	GPS GROUND SPEED	Responded		GPS: aircraft ground speed, floating point double, metres per second.		
0x6038	8	GPS GROUND TRUE HEADING	Responded		GPS: aircraft true heading, floating point double, in radians.		
0x6040	8	GPS GROUND MAGNETIC TRACK	Responded		GPS: aircraft magnetic track, floating point double, in radians.		
0x6048	8	GPS WP DISTANCE	Responded		GPS: distance to next waypoint, floating point double, in metres.		
0x6050	8	GPS WP BEARING	Responded		GPS: magnetic bearing to next waypoint, floating point double, in radians.		
0x6058	8	GPS WP CROSS TRK	Responded		GPS: cross track error, floating point double, in metres.		
0x6060	8	GPS WP TRUE REQ HDG	Responded		GPS: required true heading, floating point double, in radians.		
0x6068	8	GPS WP TRACK ANGLE ERROR	Responded		GPS: track error, floating point double, in radians.		
0x6078	8	GPS WP VERTICAL SPEED	Responded		GPS: aircraft vertical speed		
0x6080	1	GPS WP PREV VALID	Responded		GPS: previous waypoint valid flag (=0 if not valid)		
0x6081	8	GPS WP PREV ID	Responded		GPS: string ID of previous way point, zero terminated		
0x608C	8	GPS WP PREV LAT	Responded		GPS: previous waypoint latitude, floating point double, in degrees (+ve = N, -ve = S).		
0x6094	8	GPS WP PREV LON	Responded		GPS: previous waypoint longitude, floating point double, in degrees (+ve = E, -ve = W).		
0x609C	8	GPS WP PREV ALT	Responded		GPS: previous waypoint aircraft altitude, floating point double, in metres.		
0x60A4	8	GPS WP NEXT ID	Responded		GPS: string ID of next waypoint, zero terminated		
0x60AC	8	GPS WP NEXT LAT	Responded		GPS: next way point latitude, floating point double, in degrees (+ve = N, -ve = S).		
0x60B4	8	GPS WP NEXT LON	Responded		GPS: next waypoint longitude, floating point double, in degrees (+ve = E, -ve = W).		
0x60BC	8	GPS WP NEXT ALT	Responded		GPS: next waypoint aircraft altitude, floating point double, in metres.		
0x60E4	4	GPS WP ETE	Responded		GPS: Next waypoint ETE as 32-bit integer, in seconds		
0x60E8	4	GPS WP ETA	Responded		GPS: Next waypoint ETA as 32-bit integer in seconds, local time		
0x60EC	8	GPS WP DISTANCE	Responded		GPS: Distance to next waypoint, floating point double, in metres.		
0x60F4	8				GPS: Distance between previous and next waypoints, floating point double, in metres		
0x60FC	4	GPS APPROACH MODE	Responded		GPS: Approach mode, as 32-bit integer		
0x6100	4	GPS APPROACH WP TYPE	Responded		GPS: Approach way point type, as 32-bit integer		
0x6104	4	GPS APPROACH SEGMENT TYPE	Responded		GPS: Approach segment type, as 32-bit integer		
0x6108	1	GPS APPROACH IS WP RUNWAY	Responded		GPS: Approach mode, flag indicating approach waypoint is the runway		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x610C	8	GPS COURSE TO STEER	Responded		GPS: Course to set (CTS), floating point double, in radians		
0x6120	4	GPS FLIGHT PLAN WP COUNT	Responded		GPS: Flight Plan, total number of waypoints, as 32-bit integer		
0x6128	4	GPS APPROACH WP COUNT	Responded		GPS: Approach way point count, as 32-bit integer		
0x6137	5	GPS APPROACH AIRPORT ID	Responded		GPS: Flight plan destination airport ID		
0x613C	4	GPS APPROACH WP INDEX	Responded		GPS: Approach way point index, as 32-bit integer		
0x6140	8	GPS APPROACH APPROACH ID	Responded		GPS: Approach name		
0x6150	4	GPS APPROACH TRANSITION INDEX	Responded		GPS: Approach transition index, as 32-bit integer. -1 means not valid.		
0x6154	8	GPS APPROACH TRANSITION ID	Responded		GPS: Approach transition name		
0x615C	1	GPS APPROACH IS MISSED	Responded		GPS: Approach is missed flag		
0x6160	4	GPS APPROACH APPROACH TYPE	Responded		GPS: Approach type		
0x6168	4	GPS APPROACH TIMEZONE DEVIATION	Responded		GPS: Approach time zone deviation, as 32-bit integer		
0x616C	4	GPS FLIGHT PLAN WP INDEX	Responded		GPS: Current way point index, starting at 1, as 32-bit integer		
0x6170	4	GPS APPROACH APPROACH INDEX	Responded		GPS: Approach current way point index, as 32-bit integer		
0x6174	28				Free for general use		
0x6190	4				GPS: Time last waypoint was crossed, seconds since Zulu midnight		
0x6198	4	GPS ETE	Responded		GPS: Destination ETE as 32-bit integer, in seconds		
0x619C	4	GPS ETA			GPS: Destination ETA as 32-bit integer, in seconds, local time		
0x61A0	8				GPS: Route total distance, double floating point, in metres		
0x61A8	8				GPS: Estimated fuel burn, double floating point, in gallons		
0x61B0	4				GPS: Time of last update to 61B8 (seconds since Zulu midnight)		
0x61B8	4				GPS: Count updated every 5 seconds.		
0x6200	1216				Reserved: 6200-62FF = PMDG projects (Lefteris Kalamaras) fixed [PT1] 6300-63FF = Josef Dirnberger (TrafficBoard) 6400-641F = Dave March FlightDeck Companion		
0x6420	512				Reserved for PMDG data		
0x66C0	64				Free for general use , for example in button or keys programming.		
0x6700	1632				Reserved: 6700-67FF = Jean-Michael Biston ("Michael") for Airbus gauges (PART 2) 6800-6BFF = Robert Fischer, FS-Communicator		
0x6C00	256				Reserved for PMDG data		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x6D60	32				FSUIPC message window title—up to 32 characters including a zero terminator. The message window title can be set by the program using it, but as only one such Window is supported only one title is available. The first program writing it <i>and then</i> a multiline message wins! This only needs doing once, immediately before any multiline messages are sent to 3380.		
0x6D80	1504				Reserved: 6D60-6D87 = Mapped for FSUIPC display window title 6D88-6DAF = USED BY XPUIPC!!! 6DB0-6DCF = free 6DD0-6DEF = Alex Wemmer, for "vasFMC", 29/10/07 6DF0-6DFF = Robert Fischer for FSCommunicator 6E00-6EFF = Flight Deck Software (Bart Devriendt) 6F00-6FFF = Reserved for XPUIPC use (to avoid clashes) 7000-70FF = Daniel Gagne: Simul-Air Sim737 Overhead Module 7100-72FF = Thomas Richter application (commercial) tba PART 3 7300-731F = Laurent Ferrari (The Gauges Factory) Freeware Gauges 7320-735F = Arten Crum, string interchange area for LINDA		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x7360	12				<p>This are provides an offset method of setting friction values, similar to that offered by the ipc.SetFriction function for Lua plug-ins. This uses the 12 bytes as follows</p> <p>7360 4 bytes 32-bit float value (FLT) to be written*</p> <p>7364 1 byte The "class" value, 0-6</p> <p>7365 1 byte The surface type, 0-24</p> <p>7366 1 byte The direction, 0 or 1</p> <p>7367 1 byte The condition, 0-3</p> <p>7368 4 bytes 32-bit float value (FLT)</p> <p>giving the previous value (read only)</p> <p>The complete 8 bytes, 7360-7367 must either be written at once, i.e. as a single structure, or the FLT value must be written to 7360 last. It is that write which triggers the action.</p> <p>The saved original frictions can be restored by setting the Class value in 7364 to 255 (0xFF) then just writing anything to 7360.</p> <p>The 4 single byte values are as follows:</p> <p>Class: 0 BRAKE</p> <p> 1 WHEEL</p> <p> 2 SCRAPE</p> <p> 3 SKID</p> <p> 4 FLOAT</p> <p> 5 WRUDDER</p> <p> 6 SKI</p> <p>Surface: 0 CONCRETE</p> <p> 1 GRASS</p> <p> 2 WATER</p> <p> 3 GRASS_BUMPY</p> <p> 4 ASPHALT</p> <p> 5 SHORT_GRASS</p> <p> 6 LONG_GRASS</p> <p> 7 HARD_TURF</p> <p> 8 SNOW</p> <p> 9 ICE</p> <p> 10 URBAN</p> <p> 11 FOREST</p> <p> 12 DIRT</p> <p> 13 CORAL</p> <p> 14 GRAVEL</p> <p> 15 OIL_TREATED</p> <p> 16 STEEL_MATS</p> <p> 17 BITUMINUS</p> <p> 18 BRICK</p> <p> 19 MACADAM</p> <p> 20 PLANKS</p> <p> 21 SAND</p> <p> 22 SHALE</p> <p> 23 TARMAC</p> <p> 24 WRIGHT_FLYER_TRA</p> <p>Direction:0 ROLLING</p> <p> 1 SLIDING</p> <p>Condition:0 DRY</p> <p> 1 RAIN</p> <p> 2 ICE</p> <p> 3 SNOW</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x736C	2				Unsigned 16-bit word giving the distance in nm to the nearest ground AI aircraft		
0x736E	2				Unsigned 16-bit word giving the distance in nm to the nearest airborne AI aircraft		
0x7370	2448				Reserved: 7370-738F = Andrew Maclean, aeroSystems software 7390-73CF = Jean Luc Nitard for A320 FMGS freeware (see also 78E8) 73D0-73DF = Jason of FlightDeckSoft for Primus 1000 and Jet45 (2nd) 73E0-73EF = Dave Ault for "Learjet45Chimera" Project 73F0-73FF = Jason of FlightDeckSoft for Primus 1000 and Jet45 (1st) 7400-781F = FollowMe interface, reserved space -- REASSIGNED to PMDG NGX 7820-783F = SSTSim AFCS, Gordon Roxburgh 7840-785F = Jason of FlightDeckSoft for Primus 1000 and Jet45 (3rd) 7860-789F = Simon Kelly "FS Overhead Utility" 78A0-78BF = Daniel Gagne: Simul-Air Sim737 Fire Panel Module 78C0-78CF = Daniel Gagne: Simul-Air Sim737 Overhead Module 2 78D0-78E7 = Achilles Philippopoulos for BTMS (Brake Temp Monitor System) 78E8-78EE = Jean Luc Nitard for A320 standby instruments freeware (see also 7390) 78EF = FSUIPC4 FS window display memory (for reloads) 78F0-790F = Dave March FDE 7910-792F = Uwe Schneider GmbH, Cockpitsonic Driver 7930-7A0F = Free 7A10-7A1F = Patrick Waugh, Benchmark Avionics, helo panel control switches 7A20-7A5F = DVA/AFV ("Aviation Francais Virtuel") ACARS (luke@sce.net) 7A60-7A7F = Alexander Wemmer, for vasFMC. 7A80-7B7F = PMDG projects (Lefteris Kalamaras) fixed [PT2] 7B80-7BFF = Squawkbox 3 (Joel DeYoung)		
0x7C00	8	EMPTY WEIGHT PITCH MOI			Empty weight pitch moment of inertia (slugs per feet squared)		
0x7C08	8	EMPTY WEIGHT ROLL MOI			Empty weight roll moment of inertia (slugs per feet squared)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x7C10	8	EMPTY WEIGHT YAW MOI			Empty weight yaw moment of inertia (slugs per feet squared)		
0x7C18	8	EMPTY WEIGHT CROSS COUPLED MOI			Empty weight pitch moment of inertia (slugs per feet squared)		
0x7C20	8	TOTAL WEIGHT PITCH MOI			Total weight pitch moment of inertia (slugs per feet squared)		
0x7C28	8	TOTAL WEIGHT ROLL MOI			Total weight roll moment of inertia (slugs per feet squared)		
0x7C30	8	TOTAL WEIGHT YAW MOI			Total weight yaw moment of inertia (slugs per feet squared)		
0x7C38	8	TOTAL WEIGHT CROSS COUPLED MOI			Total weight cross coupled moment of inertia (slugs per feet squared)		
0x7C50	72				<p>Area for setting lvars, activating hvars, calling presets and executing calculator code.</p> <p>To set and lvar value, first write the value to offset 0x0780 as a string, up to 8 characters in length (including the string terminator, so max 7 characters). Then write the lvar name, preceeded by 'L:', to offset 0x7C50, maximum of 64 characters (including string terminator character).</p> <p>To call a preset, first write the preset parameter (if needed) to offset 0x7C80 as a 32-bit integer value, then write the preset name, preceeded by 'P:' to offset 0x7C50.</p> <p>To activate a hvar, write the hvar name preceeded by 'H:' to offset 0x7C50. Mo parameter is needed or used.</p> <p>Lvars, hvars and presets must be known to FSUIPC when using this facility. If it is not known, you can still use this offset but use the calculator code version.</p> <p>Any string found not starting with 'L:', 'H:' or 'P:' is taken to be calculator code and will be executed as such.</p>		
0x7F00	256				<p>The current state of the buttons on actively scanned joysticks (local ones, 0 to 15). Each of the 16 16-byte areas contain the 128-bit state of the joystick 0-15, in order. Button 0 is the least significant bit (bit 0) in each 16-byte.</p> <p>For joysticks with up to 32 buttons, also see offsets 0x03C0.</p>		
0x8000	768				<i>Reserved for FSUIPC and WideFS internals</i>		
0x8300	256				Area in FS2002 and FS2004 reporting and controlling assorted views. Details of those values known follow. This information has been supplied by Matthias Neusinger.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x8320	1				Byte value, the view mode: 1=cockpit, 2=virtual cockpit, 4=external, 5=top down		
0x832C	2				Zoom setting for selected window in cockpit mode (64 = 1x), read/write		
0x832E	2				Zoom setting for selected window in virtual cockpit mode (64 = 1x), read/write		
0x8330	2				Zoom setting for selected window in tower mode (64 = 1x), read/write		
0x8334	2				Zoom setting for selected window in spot plane mode (64 = 1x), read/write		
0x8336	2				Zoom setting for selected window in top down mode (64 = 1x), read/write		
0x833C	2				Relative direction of spot plane from user aircraft, read/write (in degrees in usual 360 = 65536 format).		
0x8340	4				Distance of spot plane from user aircraft, read/write (in metres * 256).		
0x8345	1				Spot plane transition: gradual is 0, instant if 1. (read/write)		
0x8348	4				Relative altitude of spot plane from user aircraft, read/write (in metres * 256).		
0x83BC	24				Active View Point latitude/longitude/altitude. Read only.		
0x83D4	12				View point pitch, bank and heading, in same format as that for the user's aircraft at offset 0578. Read only, FS2004 only.		
0x8638	4				ActiveSky needed: Ambient turbulence at aircraft (0-1000), 32-bit float		
0x863C	4				ActiveSky needed: Exported ambient visibility (metres), 32-bit float (-ve if not supported)		
0x8640	1				ActiveSky needed: Exported precipitation type (0 none, 1 rain, 2 snow, 3 hail), 8-bit integer (Byte)		
0x8641	1				ActiveSky needed: Exported precipitation rate (0-4), 8-bit integer (Byte)		
0x8642	1				ActiveSky needed: In cloud flag (non-zero if aircraft is in cloud), Byte		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x8670	16				<p>Surface detail request area: the area is used as follows:</p> <p>8670int 32bit Resulting altitude AMSL in metres. Also the “trigger” (see below)</p> <p>8674float 32 Latitude, in degrees 8678float 32 Longitude, in degrees 867C byte Surface type: value (same encoding as in offset 31E8) 867D byte Surface condition value (same encoding as in offset 31EC) 867E word 16bit Flags: 2¹⁵ = 1 when valid result is supplied 2⁰ = 1 if surface is a platform 2¹ = 1 if platform is moving</p> <p>To use this, first write the Lat/Lon to the assigned locations, and zero to 867E, then write anything to offset 8670 (the act of writing to it triggers the query to P3D4). The result is available in offsets 8670 and 867E when 867E is non-zero. The action should only take a few milliseconds, so if 867E remains zero for, say, half a second, then the request has failed.</p>		
0x8680	32				<p>Camera name for use with the following facility (Prepar3D version 2 or later, only).</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x86A0	24				<p>This provides a way to use the SimConnect_CameraSetRelative6DOF function to manipulate the current camera. Please refer to SimConnect SDK documentation for details of this function.</p> <p>Offsets 86A0, 86A4, 86A8, 86AC, 86B0 and 86B4 (ie 6 consecutive 32-bit values) should be written with the 6 float parameters for SimConnect_CameraSetRelative6DOF. The action is triggered by a write to 86A0, so either write that parameter last, or, better, write all 24 bytes as one structure, in one Write. If you are using VB remember that hex values like 86A0 will be rendered as FFFF86A0 unless you take steps to ensure no sign propagation.</p> <p>When used with Prepar3D version 2 or later you can also select the specific camera, by name. To do this, before writing the 6 float values to offsets 86A0-86B4 as described above, write a zero byte to offset 8680. This will make it refer to the default camera. Alternatively you can first write the Camera Name to offset 8680-869F, as a zero-terminated ASCIIZ character string of up to 32 bytes (including terminator). This will then make FSUIPC use the function SimConnect_CameraSetRelative6DofByName instead of the default camera version.</p> <p>Note that, for this extra facility to work, you must be using Prepar3D version 2 or later (earlier versions do not have this function), and FSUIPC must be able to load the newer versions of SimConnectP3D2.DLL (or SimConnectP3D3.dll for P3Dv3).</p>		
0x86E0	2				Traffic Limiter: limit value		
0x86E2	1				Traffic Limiter: target frame rate value		
0x86E3	1				Traffic Limiter: ground preference value		
0x86E4	1				Traffic Limiter: planned airports preference value		
0x86E5	1				Traffic Limiter: airports preference value		
0x86E6	1				Traffic Limiter: near preference value		
0x86E7	1				Traffic Limiter: reserved		
0x9540	64				Current aircraft Profile name (63 chars aSCII + zero term).		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0x9690	24				Details of the nearest ground AI aircraft, as follows: <u>Byte</u> <u>Size</u> <u>Content</u> 0 4 32-bit integer identifying the aircraft (FSUIPC type ID) 4 4 Latitude as 32-bit float 8 4 Longitude as 32-bit float 12 4 Altitude as 32-bit float 16 2 Heading as 16-bit integer 18 2 Ground speed as 16-bit integer 20 2 Vertical speed as 16-bit integer 22 2 COM1 frequency (1dd.dd where 0xdddd is the value here)		
0x96A8	24				Details of the nearest airborne AI aircraft, same data as above		
0x9800	1024				Used by Wideclient's Lua display control		
0x9C00	1024				Used for the ASE Weather reading facilities		
0xA000	512				Free for general use , for example in button or keys programming.		
0xA200	3584				Reserved		
0xB000	4096				FSX and beyond: METAR weather reading and writing (i.e. using the special FSX extended METAR strings of up to 2000 characters each): B000–B7FF = Weather writing area (WRITE) Just write string in FSX METAR format. B800–BFFF = Weather at requested location (READ) For ICAO ID or Lat/Lon written in CCxx area. Note: see next entry for other use of B000-B7FF when READING instead of WRITING.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status																		
0xB000	2048				<p>This area is used to hold the <code>event.textmenu()</code> data for WideClient Lua plug-ins. It can be accessed by FSUIPC applications wishing to process menus and messages themselves, without having to use a Lua plug-in.</p> <p>The format is as follows:</p> <table><tr><td>B000</td><td>4 bytes</td><td>changed indicator (tick count at time)</td></tr><tr><td>B004</td><td>4 bytes</td><td>type value (as documented for Lua)</td></tr><tr><td>B008</td><td>4 bytes</td><td>display duration in secs (32-bit float)</td></tr><tr><td>B00C</td><td>4 bytes</td><td>the ID of the SimConnect event</td></tr><tr><td>B010</td><td>4 bytes</td><td>the length of the data following</td></tr><tr><td>B014</td><td></td><td>the text data received</td></tr></table> <p>(≤ 2028 bytes)</p> <p>The text data is in the format provided to SimConnect for text displays and menus. The latter is a series of zero-terminated ASCII strings, with the title as the first string. The numbers displayed on screen are not included.</p>	B000	4 bytes	changed indicator (tick count at time)	B004	4 bytes	type value (as documented for Lua)	B008	4 bytes	display duration in secs (32-bit float)	B00C	4 bytes	the ID of the SimConnect event	B010	4 bytes	the length of the data following	B014		the text data received		
B000	4 bytes	changed indicator (tick count at time)																							
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B010	4 bytes	the length of the data following																							
B014		the text data received																							

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0xC000	4096				<p>FS2004 style NWI (“New Weather Interface”) areas, allowing both local and global weather data to be read and written.</p> <p>C000–C3FF = Interpolated weather at aircraft (READ)</p> <p>C400–C7FF = Global weather “GLOB” (READ)**</p> <p>C800–CBFF = Weather writing area (WRITE)</p> <p>For GLOB or ICAO ID as specified.</p> <p>CC00–CFFF = Weather at requested location (READ)</p> <p>For ICAO ID or Lat/Lon as specified.</p> <p>The “read at requested location” facility is extended to read the weather at the user aircraft position, by giving an ICAO of ‘????’. This is the same as giving the aircraft’s Lat/Lon, but a bit easier. (Global is read by ‘GLOB’, as before). Additionally, the ICAO field can be set to “<??>” to get the weather set at the nearest weather station to the user aircraft. The ICAO id of that station is returned in the ICAO field.</p> <p>** A facility is also provided to force FSX into global-only weather, so that instructor stations, for example, can set weather reliably. This is also automatic for the AWI and FS98 interfaces.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0xD000	20				<p>Detecting runways in use</p> <p><u>This facility gives applications a better chance of detecting the runways in use at any selected airport in range (i.e. within 85nm or so of the user aircraft). The Weatherset2 program provided with FSUIPC makes use of this to show any runways currently assigned when AI traffic is active at a weather station selected by ICAO code.</u></p> <p><u>This is the interface for this:</u></p> <p>D000 32-bit signature (see below)</p> <p>D004 4 character ICAO of airport</p> <p>D008 32-bit timestamp</p> <p>D00C 4 bytes giving up to 2 departure runways, format: Number (1 byte), Designator (1 byte)</p> <p>D010 4 bytes giving up to 2 arrival runways, format: Number (1byte), Designator (1 byte)</p> <p><u>Runway numbers: 1–36 plus 37=N, 38=Ne, 39=E, 40=Se, 41=S, 42=Sw, 43=W, 44=Nw</u></p> <p><u>Designators: 0=none, 1=L, 2=R, 3=C, 4=W</u></p> <p><u>Procedure:</u></p> <p><u>Write your signature value (generated by your program, to prevent simultaneous access by others), and the ICAO at the same time. If you use separate writes, write the ICAO first, but use one FSUIPC_Process call.</u></p> <p><u>Read the timestamp. This is best done in the same FSUIPC_Process call as the writes.</u></p> <p><u>Read the ICAO, timestamp and 8 bytes of runway details until the timestamp changes (or until you time-out). Then check that the ICAO you read is the one you want. If so, then the runway bytes are either zero (if there aren't any known) or they are filled in for you. Write zero to the signature to free the interface for others. If you don't do this, FSUIPC will clear it in any case within about 12-15 seconds of action 1 above.</u></p> <p><u>Notes:</u></p> <p><u>The runways are gleaned from the data in the tables at D040 and D840, described below, but FSUIPC is here looking through ALL the traffic, i.e. all traffic within FS's own 80–90nm radius. It is not restricted by the user-set radius, nor the smaller ground limit.</u></p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0xD000	16				<p><u>Reading full AI Traffic identity strings</u></p> <p>The offset area at D000 can also be used to read full AI aircraft data strings. To do this, proceed as follows:</p> <p>Write the selected command, from list below, to D004 (32-bit DWORD)</p> <p>Read the timestamp at D008 (32-bit DWORD)</p> <p>Write the AI id (from the TCAS table, see earlier) to D00C (32-bit DWORD)</p> <p>Write a signature to D000 (32-bit DWORD)</p> <p>It is probably best to do all that in one FSUIPC Process call—in recent versions of WideFS the read should be separated out for you in any case. The order isn't important except that you must write the signature last.</p> <p>If you want to do another within 14 seconds, use the same signature. Use a signature of zero to allow anyone to do the same thing at the same time, but then be aware that your data may not be what you asked for.</p> <p>Wait till the timestamp in D008 changes.</p> <p>Read string result (up to 48 bytes including terminating zero) from D010.</p> <p>The command values available are:</p> <p>1 = Tail Number</p> <p>2 = Airline name + Flight number</p> <p>3 = ATC aircraft type, plus ATC aircraft model *</p> <p>4 = Aircraft title</p> <p>5 = ATC aircraft type + last 3 digits of tail number</p> <p>* The aircraft type is one zero-terminated string, and the model is another, following immediately. If either are missing you'll still get the null string (i.e. just the zero terminator).</p> <p>Except for the last case where 3 digits are extracted deliberately (in accordance with ATC practice), none of these strings are likely to be abbreviated, except perhaps any long Aircraft Titles. In other words don't expect the string read in command 2 to be the same as the 14 character version in the TCAS tables—though the beginning and end will be, of course.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0xD040	1920				<p>AI ground aircraft additional traffic data. An array of 96 x 20 byte structures as follows:</p> <p>TCAS DATA2</p> <p>BYTE bGateName This is a numeric representation of the gate name, when one is assigned. Otherwise it is zero. The values are as in the BGL, as follows:</p> <p>0 No name 1 Ramp parking 2 N Ramp parking 3 NE Ramp parking 4 E Ramp parking 5 SE Ramp parking 6 S Ramp parking 7 SW Ramp parking 8 W Ramp parking 9 NW Ramp parking 10 Gate 11 Dock 12–37 Gate A to Gate Z</p> <p>BYTE bGateType This is a numeric representation of the gate type, when one is assigned. Otherwise it is zero. The values are as in the BGL, as follows:</p> <p>1 Ramp (GA) 2 Ramp small 3 Ramp medium 4 Ramp large 5 Ramp Cargo 6 Ramp Military Cargo 7 Ramp Military Combat 8 Gate small 9 Gate medium 10 Gate heavy 11 Dock (GA)</p> <p>WORD wGateN This is the gate number, if it is actually numbered.</p> <p>4 WORD wSpare Reserved for future use 6 short sPitch Aircraft pitch in degrees * 65536 / 360 8 char chICAO[4] Departure airport ICAO Identifier 12 char chICAO[4] Arrival airport ICAO identifier 16 BYTE runway 0 if not assigned for take-off or landing. Else 1-36, or one of 37=N, 38=NE, 39=E, 40=SE, 41=S, 42=SW, 43=W, 44=NW 17 BYTE runwaydes 0 or runway designator: 1=L, 2=R, 3=C, 4=W (water) 18 short sBank Aircraft bank in degrees * 65536 / 360</p> <p>Note that only those slots marked as valid in the <i>equivalent</i> slot in the main TCAS ground tables at E080 are valid here. You should check there first, before using any of this data.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0xD840	1920				AI airborne aircraft additional traffic data (same format as the entry for D040). The equivalent main TCAS tables start at F080.		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0xE000	64				<p>All ground aircraft tables, housekeeping information as follows:</p> <p>E000 WORD this gives the size of each slot (currently 40)</p> <p>E002 WORD maximum number of slots which will be used (N=96)</p> <p>E004 WORD number of slots used so far (keeps increasing, never decreases)</p> <p>E006 WORD changes count: incremented every time <i>any</i> slot is changed</p> <p>E008 BYTE slotChanges[]: an array of N bytes, each one being incremented when relevant slot is changed</p> <p>E068 BYTE[8] option settings for Ground tables. See * below.</p> <p>E07E WORD the FSUIPC offset for the slot with the nearest ground aircraft to the user aircraft.</p> <p>* The 8 bytes at offset E068 contain the current option settings for Ground aircraft. They are used as follows:</p> <p>Byte 0 Range in nm (0 = unlimited). For ground, this is the range when the user aircraft is airborne. Default is 6nm.</p> <p>Byte 1 Range in nm (0 = unlimited) for Ground aircraft, when the User aircraft is also on the ground. Default is 3 nm.</p> <p>Byte 2 The TCASid option setting, thus:</p> <p>0 = Tail number</p> <p>1 = Airline + Flight number</p> <p>2 = Type</p> <p>3 = Title</p> <p>4 = Type + last 3 digits or tail number</p> <p>5 = Model</p> <p>Byte 3 = 0 normally, giving preference to nearer aircraft when the table is full</p> <p>≠ 0 to give preference to active aircraft. An aircraft is considered inactive if it is in states x80 or x81 (initialising or sleeping).</p> <p>Bytes 4–7 Reserved.</p> <p>Normally most of these options will be as set by the user via the FSUIPC options dialogue or INI file. Applications can change them by writing to these bytes, independently for ground and airborne traffic (the latter at F068). However, FSUIPC will automatically re-instate the user's settings in approximately 20 seconds after the last write to any one of these bytes (airborne or ground). If an application wants to continue with changed settings it must re-write that changed setting at regular intervals. I would suggest using an interval of no more than 5 seconds in order to allow for delays when Networking is being used or FS is under other loads.</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0xE080	3840				<p>AI ground aircraft traffic data. An array of 96 x 40 byte structures as follows:</p> <p>TCAS DATA</p> <p>0 DWORD id 0 = empty, otherwise this is an FS-generated ID. FSUIPC makes this negative to distinguish FS entries from user added ones.</p> <p>4 float lat 32-bit float, degrees, -ve = South</p> <p>8 float lon 32-bit float, degrees, -ve = West</p> <p>12 float alt 32-bit float, in feet</p> <p>16 WORD hdg Heading. 360 degrees == 65536 format. Note that this is degrees TRUE, not MAG</p> <p>18 WORD gs Knots Ground Speed</p> <p>20 short vs signed feet per minute V/S</p> <p>22 char idATC[15] Zero terminated string identifying the aircraft. By default this is the Airline & Flt No., or Tail no.</p> <p>37 BYTE bState a status indication—see list below.</p> <p>38 WORD com1 the COM1 frequency set in the AI aircraft's radio. (0Xaabb as in 1aa.bb). NOTE that this is set to 0x9999 whilst the aircraft is in "SLEW" mode rather than normal flight mode.</p> <p>The "state" byte provides this information:</p> <p>0x80 128 Initialising</p> <p>0x81 129 Sleeping</p> <p>0x82 130 Filing flight plan</p> <p>0x83 131 Obtaining clearance</p> <p>0x84 132 Pushback (back?)</p> <p>0x85 133 Pushback (turn?)</p> <p>0x86 134 Starting up</p> <p>0x87 135 Preparing to taxi</p> <p>0x88 136 Taxiing out</p> <p>0x89 137 Take off (prep/wait?)</p> <p>0x8A 138 Taking off</p> <p>0x8B 139 Departing</p> <p>0x8C 140 Enroute</p> <p>0x8D 141 In the pattern</p> <p>0x8E 142 Landing</p> <p>0x8F 143 Rolling out</p> <p>0x90 144 Going around</p> <p>0x91 145 Taxiing in</p> <p>0x92 146 Shutting down</p>		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
0xF000	64				<p>AI airborne aircraft tables, housekeeping information as follows:</p> <p>F000 WORD this gives the size of each slot (currently 40)</p> <p>F002 WORD maximum number of slots which will be used (N=96)</p> <p>F004 WORD number of slots used so far (keeps increasing, never decreases)</p> <p>F006 WORD changes count: incremented every time <i>any</i> slot is changed</p> <p>F008 BYTE slotChanges[]: an array of N bytes, each one being incremented when relevant slot is changed</p> <p>F068 BYTE[8] option settings for Airborne tables. See * below.</p> <p>F07E WORD the FSUIPC offset for the slot with the nearest airborne aircraft to the user aircraft.</p> <p>* The 8 bytes at offset F068 contain the current option settings for Airborne aircraft. They are used as follows:</p> <p>Byte 0 Range in nm (0 = unlimited). Default is 40nm.</p> <p>Byte 1 Not used.</p> <p>Byte 2 The TCASid option setting, thus:</p> <p> 0 = Tail number</p> <p> 1 = Airline + Flight number</p> <p> 2 = Type</p> <p> 3 = Title</p> <p> 4 = Type + last 3 digits or tail number</p> <p> 5 = Model</p> <p>Byte 3 Not used</p> <p>Bytes 4–7 Reserved.</p> <p>Normally most of these options will be as set by the user via the FSUIPC options dialogue or INI file. Applications can change them by writing to these bytes, independently for ground and airborne traffic. However, FSUIPC will automatically re-instate the user's settings in approximately 20 seconds after the last write to any one of these bytes (airborne or ground). If an application wants to continue with changed settings it must re-write that changed setting at regular intervals. I would suggest using an interval of no more than 5 seconds in order to allow for delays when Networking is being used or FS is under other loads.</p>		
0xF080	3840				AI airborne aircraft traffic data (same format as the entry for E080)		

Offset	Size	Simulator Variable Name	MSFS SDK Read Response	MSFS SDK Write Response	Use	Read Status	Write Status
<p>Note that any MSFS simvar can be added to an FSUIPC offset that is designated 'free for general use'. Please see the Advanced User Guide for details. Check the MSFS documentation for available simvars, their units and meaning:</p> <p>https://docs.flightsimulator.com/html/Programming_Tools/SimVars/Simulation_Variables.htm</p>							