List Of Data Offered By vasFMC Inside X-Plane

Based on SCS 1.2

With the new Simulator Communication System (SCS) plug-in in X-Plane, various data from outside the simulator can be published inside X-Plane. vasFMC makes use of this new feature, offering FMC-internal data inside X-Plane, so other plug-ins and aircraft can use this.
Not all data is offered constantly, since SCS may switch internal behavior when certain conditions change, for example if vasFMC connection is lost or when certain 3rd-party aircraft are loaded.
Also, SCS internal state may be altered from the outside via a CAN Aerospace Module Control Service (MCS), or inside X-Plane via an interplugin message.

List of DataRefs

All DataRefs published by SCS are in the namespace
plugins/com/flightpanels/scs/
so if in the following table the DataRef ident reads **foo/bar** your call to get the handle is
XPLMFindDataRef("plugins/com/flightpanels/scs/foo/bar");

DataRef Ident	Data Type	Write-able	Meaning	Available
general				
general/vasfmc_connected	int	no	1 if a valid version of vasfmc is connected and alive, 0 otherwise	always
autopilot				
autopilot/autopilot_state	int	no	The internal state of the emulated autopilot as a bitfield. The bitfield value are as follows: ap_available : 1 ap_enabled : 2 ap_hdg_lock : 4 ap_alt_lock : 8 ap_speed_lock : 16 ap_mach_lock : 32 ap_vs_lock : 64 ap_nav1_lock : 128 ap_gs_lock : 256 ap_app_lock : 512 ap_app_bc_lock : 1024 at_toga : 2048 at_arm : 4096	always
autopilot/fgs_state	int	no	The state of the vasFMC internal Airbus-like Flight Guidance System as a bitfield: The bitfield values are as follows: fd_engaged : 1 athr_armed : 2 athr_engaged: 4 athr_speed_mode: 8	When vasFMC is connected

DataRef Ident	Data Type	Write-able	Meaning	Available
			athr_mach_mode: 16 athr_n1_mode: 32 ap_engaged: 64 ap_both_app_mode: 128 ap_horiz_hdg_mode: 256 ap_horiz_trk_mode: 512 ap_horiz_lnav_mode: 1024 ap_horiz_loc_mode: 2048 ap_vert_vs_mode: 4096 ap_vert_flch_mode: 8192 ap_vert_vnav_mode: 16384 ap_vert_alt_hold: 32768 ap_vert_fpa_mode: 65536	
cpflight				
cpflight/mcp/mcp_connected	int	no	1 if CPFlight MCP is connected via CANaerospace over UDP and connection is alive, 0 otherwise	always
cpflight/mcp/byxp	int	no	1 if MCP is connected and no vasFMC is alive, so the minimal emulated autopilot is active, 0 otherwise	When MCP is connected
cpflight/mcp/*			Detailed information on MCP driver and pricing available on request	
radionav				
radionav/ndb1_tuned	int	no	Is ADF 1 receiver actually tuned to a NDB and receiving	Always
radionav/ndb1_id	byte[5]	no	The ID of the tuned NDB on ADF1	When ndb1_tuned is 1
radionav/ndb1_name	byte[]	no	The name of the tuned NDB on ADF1	When ndb1_tuned is 1
radionav/ndb1_lat	float	no	The latitude of the tuned NDB on ADF1	When ndb1_tuned is 1
radionav/ndb1_lon	float	no	The longitude of the tuned NDB on ADF1	When ndb1_tuned is 1
The same with ndb2				
radionav/vor1_tuned	int	no	Is NAV 1 receiver actually tuned to a VOR and receiving	Always
radionav/vor1_id	byte[5]	no	The ID of the tuned VOR on NAV1	When vor1_tuned is 1
radionav/vor1_name	byte[]	no	The name of the tuned VOR on NAV1	When vor1_tuned is 1

DataRef Ident	Data Type	Write-able	Meaning	Available
radionav/vor1_lat	float	no	The latitude of the tuned VOR on NAV1	When vor1_tuned is 1
radionav/vor1_lon	float	no	The longitude of the tuned VOR on NAV1	When vor1_tuned is 1
radionav/vor1_has_loc	int	no	Is the tuned station on NAV1 actually a localizer station	When vor1_tuned is 1
radionav/vor1_crs	float	no	The localizer course of the station tuned on NAV1	When vor1_has_loc is 1
radionav/vor1_gs_incl	float	no	The glideslope inclination of the station tuned on NAV1	When vor1_has_loc is 1
The same with vor2				

List of Triggers

No triggers are offered at the moment

List of Modules

As mentioned, SCS can change its internal behavior by switching on and off the modules. This can happen from the outside by an CANaerospace MCS or from the inside by an interplugin message:

Module Control Service as of CANaerospace distribution rev.21 by flightpanels.com:

Byte 0	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7
Node-Id (UCHAR)	Data-Type (UCHAR)	Service-Code (xCHAR)	Message-Code (UCHAR)	USHORT (big-endian)		USHORT (big-endian)	
SCS node id (1)	AS_USHORT (13)	MCS (13)	Your node id	Module number		1 to enable module 0 to disable module	

CAN-Id: high priority node service request channel 0 (128)

Node-Id: SCS node id (1)
Data-Type: AS_USHORT2 (13)
Service-Code: Module Control Service (13)
Message-Code: Requester node id (your node id!)
Payload bytes 1 and 2: The number of the module to be enabled as unsigned short in network-byte-order
Payload bytes 3 and 4: 1 if module should be enabled, 0 if it should be disabled as unsigned short in network-byte-order

Interplugin message:

long message: the number of the module to be enabled in host-byte-order
void* param: a pointer to an int in host-byte-order that reads 1 if module should be enabled, 0 if it should be disabled

Note that SCS is always free to reject these requests, so test with a Module Information Service (from outside) or receiving an interplugin answer (from inside).

Module number	Module name	Description
0	CanBusConnector	Connects XP to the CANaerospace over UDP multicast bus. This module is always active and cannot be en- or disabled.
1	Radionav	Reads data about the tuned stations from the XP internal database and publishes it. This module is always active and cannot be en- or disabled.
2	APXPlane9Standard	Emulates an the common abstraction layer interface to X-Plane's standard AP. This module is enabled as long X-Plane's standard AP is used by the aircraft. Loading a supported Add-On A/C disables this module. The module cannot be en- or disabled manually.
3	APStratmann (not yet implemented in version 1.2)	Interfaces the autopilot of B. Startmanns x737. The module is enabled by loading the x737 and disables APXPlane9Standard. The module cannot be en- or disabled manually.
737	CPFlightStandalone	Handles CPFlight MCP standalone without vasFMC, so that the basic features are mapped to the XP standard autopilot. This module can not be enabled if no CPFlight MCP is present or if vasFMC is connected. Note that it is automatically enabled when MCP-messages are received (vasFMC not connected) and no alive vasFMC connection is present.