Track Your Flights With Realism Maxed!

Virtual Airline SDK

Version 3.4

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Overview

FS Flight Keeper currently supports (and will extend this support in the near future) a wide range of Virtual Airline (VA) specific features. FSFK can transmit **PIREP/FREP** reports via **Email**, **File export** or directly to any available **Web Service**. You can easily customize the amount of data you need for these reports.

FSFK can also send **ACARS** ([A]ircraft [C]ommunication [A]ddressing and [R]eporting [S]ystem) **messages** to any available **Web Service** in realtime (**live ACARS)**. This means that all generated ACARS messages will be send while flying. Note that an open Internet connection is required for this to work. Currently Flight Keeper will send the following ACARS messages:

- Block messages (OUT, OFF, ON and IN)
- Touch and Go
- Go Around
- Altitude changes (Climb, Descent, Level off)
- Navigation or Position reports
- Weather reports (METARs)
- Aircraft failures
- Light
- Parking Brake
- TCAS
- Warning messages if some critical aircraft parameters (e.g. flaps, engine, etc.) or the FS time has been changed

For most messages you will get the following additional data (see sample log below):

- Position (Latitude + Longitude)
- Fuel On Board (FOB) in lbs
- Indicated Air Speed (IAS) and/or True Air Speed (TAS) in knots
- Heading in degrees
- Wind (Direction/Speed – Format 12303 stands for a wind coming from 123 with 3 knots)
- Temperature (OAT and/or TAT) in Celsius
- Distance actually flown and planned route distance

An additional optional feature is the display of your VA Traffic using the live ACARS service (**Aircraft Position reporting**). Flight Keeper will poll a given page and download all necessary aircraft information. All available VA Traffic will then be displayed on the FSFK World Map.

The ACARS service can be written in any available script language like ASP, PHP, Perl, etc. Included in this Software Development Kit (SDK) is a simple ACARS Web Service for IIS 4.0+ written in ASP (VB-Script) and a PHP (v5.2.6) / MySQL (4.1.22) sample that contains all features offered by FSFK.

This SDK assumes that you are familiar with web server administration and programming and will **not** explain how to code with ASP, PHP, etc. or how you setup a web server.

This SDK only supports Version 1.1 and higher. Older versions of FSFK are not supported.

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System Requirements

Software

- Web Server (IIS, Apache, etc.)
- Scripting Language (ASP, PHP, Perl, etc.)
- Database (MySQL, MS Access, MS SQL, etc.)

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Revision History

Changes from v3.1 to v3.4

No changes at this time.

Changes from v3.0.1 to v3.1

- Added the following fields:
  - OFFGForce
  - OFFElevatorTrim
  - OFFAileronTrim
  - OFFRuderTrim
  - ONGForce
  - ONElevatorTrim
  - ONAileronTrim
  - ONRuderTrim

Changes from v3.0 to v3.0.1

- Link references to the "Images" folder in the SDK sample were not case sensitive, so that on some server systems no images were shown
- Google Map sample used wrong map type constants

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Changes from v2.8 to v3.0

- FSFK v3.0 is now indicated by "**FLKEEPER|3.0**" in the variable [**DATA1**]
- Added support for a forced AIR TV VA profile
- Added parameters "**FPLatitudes**" and "**FPLongitudes**" to the "**BEGINFLIGHT**" method (needed, if you want to display the flight plan on a map)
- New service method "**UPDATEFLIGHTPLAN**" that which will be send whenever a new flight plan has been loaded into FSFK
- The "**TEST**" method should now return the service protocol version (example response: "1|30") – if this version is 30 or higher the new method "**UPDATEFLIGHTPLAN**" will be send, otherwise not
- Added a Google Map PHP sample that shows you how to display your live ACARS traffic on a map
- The live ACARS service now uses a Pilot table to verify the login
- Live ACARS watch script now returns flight plan waypoint positions (Lat/Lon in degrees)
- New PIREP tags "**FlightMapVerticalProfileJPG**" and "**FlightMapLandingProfileJPG**"
- New VA template parameter "**FORCE_RECORDING_OF_ALL_EVENTS**" to force the recording of all events
- A connection to the live ACARS service can now be made at any time of the flight
- Engine, Light, Parking Brake, Gear, Flaps, Exit and TCAS event messages are now send to the live ACARS service

Changes from v2.7 to v2.8

- FSFK v2.8 is now indicated by "**FLKEEPER|2.8**" in the variable [**DATA1**]
- Added the parameter "**POSITIONREPORT_EX**" to the live ACARS template to allow position reports being send with a refresh interval under one minute (the actual value is given in seconds)

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Changes from v2.6 to v2.7

- FSFK v2.7 is now indicated by "**FLKEEPER|2.7**" in the variable [**DATA1**]
- FSFK now reports POS, ALT, HDG, HDT, IAS and FOB for all BLOCK and Altitude messages to improve the flight status accuracy for web services
- Added the parameter "**TRUEHEADING**" to the "**BEGINFLIGHT**" method and the live ACARS watch
- True heading is now recorded by the samples and also reported via the live ACARS watch Aircraft headings on the World Map are now correctly displayed, if the new parameter is implemented in the ACARS web services.

Changes from v2.5 to v2.6

- FSFK v2.6 is now indicated by "**FLKEEPER|2.6**" in the variable [**DATA1**]
- New Parameter "**PICTURE_FTP_PASSIVE_MODE**" for PIREP templates to allow passive FTP transfers
- New Parameters "**LOGIN_ENCODED**" and "**PICTURE_LOGIN_ENCODED**" for the live ACARS and PIREP templates that allows to encode the server login information for improved security
- Improved live ACARS scripts for flights without a Flight Plan (e.g. VFR)
- Flights that did not send an ACARS message in the last 30 minutes will now automatically removed by the live ACARS Service samples (ASP/PHP)
- Fixed a bug in the PHP PIREP service sample, that could cause a "SQL query failed" error message returned by the PIREP service.

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Changes from v2.0 to v2.5

- FSFK v2.5 is now indicated by "**FLKEEPER|2.5**" in the variable [**DATA1**]
- New Template Tag "**PilotPassword**", which can be used to verify a login for a PIREP
- Added the parameter "**PILOTPWD**" to the "**BEGINFLIGHT**" method
  This is the pilot password set within FSFK. This value can be used to verify a pilot login into the ACARS system. Please note that you should consider supporting older FSFK clients, which don't send this parameter. The character "**|**" (pipe) is not allowed in the password and will be automatically removed by FSFK.
- New parameter "**DOWNLOADURL**" for the [Web_Config] template section
  This parameter allows VAs to automatically update the PIREP templates without the need to send them to their pilots. Also useful to avoid template modifications by a pilot.
- It is now possible to upload specific Flight Maps via HTTP/PUT or FTP
  This can be configure with five new parameters in the [Web_Config] template section.
- It is now possible to force the Date/Time format in the [Web_Config] template section
- New messages for Touch'N'Go [**TNG**] and Go Arounds [**GA**]
- Added flight plan coloring to the sample scripts, so the user can see which waypoint is the current one and which have been already flown
- SDK Samples for the live ACARS Watch now indicate the current waypoint
  Example: EDDF - FFM - HAREM – [DKB] - ANORA - WLD - EDDM
- Added column "**CurrentWaypoint**" to the live ACARS Database (see point above)
- New **Virtual Airline Template** option that allows to automatically configure the live ACARS / PIREP templates and FS realism settings
- Changed the names of the configuration section for the following templates:
  - Web: [WEB_CONFIG]
  - Email: [EMAIL_CONFIG]
  - live ACARS: [ACARS_CONFIG]
  - Virtual Airline: [VA_CONFIG]
- Added PIREP samples in ASP and PHP
- Minor bug fixes in the ASP and PHP scripts.

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Changes from v1.2 to v2.0

- FSFK v2.0 is now indicated by "**FLKEEPER|2.0**" in the variable [**DATA1**]
- Added the parameter "**DISTANCEPLANNED**" to the "**BEGINFLIGHT**" method
  This is the total planned route distance in nautical miles.
- New '**Warning**' message (label "**WR**") that indicates critical aircraft changes (e.g. Flap Count, Engine Count/Type, etc.), scenery changes or a change of the ZULU/GMT time
- Current distance flown and total route distance are now transmitted with any waypoint / position report and the ON-Block message (Tag "**/DST**")
- The ASP and PHP samples have been modified to reflect all changes made in v2.0. All modification are commented as "**Added for v2.0**" or "**Changed for v2.0**". So you can easily find the changes and add them to your existing web service code. To additional fields have been added to the corresponding databases: "**DistanceFlown**" and "**DistancePlanned**" to store the values from the tag "**/DST**" for later usage in the "**ACARSWatch**" scripts.

Changes from v1.1 to v1.2

- Added the PHP (MySQL) Sample
- Added TAS value to the live ACARS Watch script

  Note:

  You will need to distinguish between FSFK v1.1 and v1.2 to get it working with both version of FS Flight Keeper. This can be done by checking the Variable [**DATA1**]. The value will be "**FLKEEPER|1.1**" for v1.1 and "**FLKEEPER|1.2**" for v1.2. If v1.1 or earlier has been detected you **should not** send the TAS value with the list of active traffic. Otherwise you can either send the current TAS value or not. FSFK v1.2 will check for the presents of the TAS value and will work with both service versions. The sample service (ASP or PHP) does include this check, so you can see how this version check can be done (file "**ACARSWatch.asp**" or "**ACARSWatch.php**").

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Splash Screen modifications

FS Flight Keepers allows you to change the startup splash screen. The only thing you need to do is to copy a JPEG file called "**SPLASH.JPG**" to the main program folder. FSFK will automatically display the JPEG image. The message label will be placed 31 pixels away from the image bottom using the complete width of the image (font height = 13 pixels). So you can design your splash image around this label. The font color used for the version and message label will be set by the image color at position X = 0 and Y = Image Height – 31. Dark colors will force a white font color. Any lighter colors will force a black font color.

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Flight Keeper <--> Web Service Communication Protocol

FS Flight Keeper uses standard Web-Form based HTML communication. FSFK uses the variables "**DATA1**", "**DATA2**", "**DATA3**" and "**DATA4**" to communicate with the web server. With ASP the following code would be necessary to get the actual value of "**DATA1**":

```
Request("DATA1") – ASP

$_REQUEST["DATA1"] - PHP
```

The variable "**DATA1**" will always contain the FSFK ID string **"FLKEEPER**" and the current major and minor version of FSFK delimited by the character "**|**". Example: "**FLKEEPER|3.0**". This makes it easy to use new features in upcoming releases and it is still possible to support older versions.

The character "**|**" (pipe) is very often used to separate values send by FSFK. The variables "**DATA2**", "**DATA3**" and "**DATA4**" are used differently in each service type and will be described in each section.

It is possible to use FSFK with a secure connection (**SSL**). The only thing that needs to be done is to change the URL to use "**https://**" instead of "**http://**". You can also change the port address or use pages that require user authentication (see section "**FS Flight Keeper configuration**" for more details).

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Virtual Airline Template

This templates offers Virtual Airlines an easy way to configure FSFK service templates and to restrict the pilot cheating options (e.g. slewing or using high Simulation rates). To use a VA template the pilot only needs to copy the file, together with any other required template (e.g. live ACARS or PIREP), to the FSFK **Templates** folder and select it in the Flight Keeper Options dialog. Everything else will be done automatically by FSFK in the background while flying.

"**DOWNLOADURL**"
Web address (must be a valid URL) for an automatic template download. This parameter allows VAs to automatically update the VA templates without the need to send them to their pilots. Also useful to avoid template modifications by a pilot. If FSFK detects this parameter, it will automatically download the VA template from the given URL and treats it in the same way as it would with a file based template.

Example:

```
[VA_CONFIG]
DOWNLOADURL = http://www.myva.com/FlightService/VATemplate.asp
```

Any other parameter will be ignored.

"**DOWNLOADURL_LIVEACARS_TEMPLATE**"
Web address (must be a valid URL) for an automatic live ACARS template download. This parameter allows VAs to automatically update the template without the need to send them to their pilots. Also useful to avoid template modifications by a pilot. If FSFK detects this parameter, it will automatically download the live ACARS template from the given URL and treats it in the same way as it would with a file based template.

"**DOWNLOADURL_PIREP_TEMPLATE**"
Web address (must be a valid URL) for an automatic PIREP template download. This parameter allows VAs to automatically update the template without the need to send them to their pilots. Also useful to avoid template modifications by a pilot. If FSFK detects this parameter, it will automatically download the PIREP template from the given URL and treats it in the same way as it would with a file based template.

"**DOWNLOADURL_EMAIL_TEMPLATE**"
Web address (must be a valid URL) for an automatic Email template download. This parameter allows VAs to automatically update the template without the need to send them to their pilots. Also useful to avoid template modifications by a pilot. If FSFK detects this parameter, it will automatically download the Email template from the given URL and treats it in the same way as it would with a file based template.

"**DOWNLOADURL_AIRTV_TEMPLATE**"
Web address (must be a valid URL) for an automatic Air TV profile download. This parameter allows VAs to automatically update the profile without the need to send them to their pilots. Also useful to avoid profile modifications by a pilot. If FSFK detects this parameter, it will automatically download the Air TV profile from the given URL and treats it in the same way as it would with a normal profile.

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"**LIVEACARS_TEMPLATE**"
Forces the live ACARS template to use when connected with FS. This file must be located in the FSFK **Templates** folder.

*This parameter is only used, if the parameter "**DOWNLOADURL_PIREP_TEMPLATE**" was not set previously !*

"**PIREP_TEMPLATE**"
Forces the Web (PIREP) template to use. This file must be located in the FSFK **Templates** folder, but can contain the **DownloadURL** parameter.

*This parameter is only used, if the parameter "**DOWNLOADURL_PIREP_TEMPLATE**" was not set previously !*

"**EMAIL_TEMPLATE**"
Forces the Email template to use. This file must be located in the FSFK **Templates** folder.

*This parameter is only used, if the parameter "**DOWNLOADURL_EMAIL_TEMPLATE**" was not set previously !*

"**AIRTV_TEMPLATE**"
Forces the Air TV profile to use. This file must be located in the FSFK **Templates** folder. Additionally the user has to select the profile "**### Virtual Airline Template ###**" in the Air TV options.

*This parameter is only used, if the parameter "**DOWNLOADURL_AIRTV_TEMPLATE**" was not set previously !*

"**EVENT_LOG_MODE**"
Forces the FSFK Event log mode to use. If not configured the current pilot setting will be used. Valid values are:

- "**BASIC**"
- "**NORMAL**"
- "**ADVANCED**"
- "**FULL**"
- "**FULLPLUS**"

"**FORCE_RECORDING_OF_ALL_EVENTS**"
If enabled, FSFK will force the recording of all event. This will overwrite any event recording setting the user has made. Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**AUTOCONNECT_LIVEACARS**"
If enabled, FSFK will automatically try to connect to the configured live ACARS service when connected with the Flight Simulator. Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

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"**DISABLE_DISCONNECT_LIVEACARS**"
If enabled, FSFK will not allow to disconnect from the live ACARS service until the end of a flight. Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**AUTO_WEB_PIREP**"
If enabled, FSFK will automatically send a PIREP to the configured Web service. Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**AUTO_EMAIL_PIREP**"
If enabled, FSFK will automatically send a PIREP via email. Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**AUTO_FLIGHTCRITIQUE**"
If enabled, FSFK will automatically create the Flight Critique for the flight. Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**DISABLE_WORLD_MENU**"
If enabled, FSFK will disable the World menu from the FS main bar. ***Please note that this currently does not work with FSX*.** Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**DISABLE_AIRCRAFT_MENU**"
If enabled, FSFK will disable the Aircraft menu from the FS main bar. ***Please note that this currently does not work with FSX*.** Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**DISABLE_FLIGHTS_MENU**"
If enabled, FSFK will disable the Flights menu from the FS main bar. ***Please note that this currently does not work with FSX*.** Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**DISABLE_OPTIONS_MENU**"
If enabled, FSFK will disable the Options menu from the FS main bar. ***Please note that this currently does not work with FSX*.** Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

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"**DISABLE_ALL_MENUS**"
If enabled, FSFK will disable the all menus from the FS main bar. ***Please note that this currently does not work with FSX*.** Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**DISABLE_PAUSE**"
If enabled, FSFK will prevent the pilot to turn on the pause mode in FS. Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**DISABLE_SLEW**"
If enabled, FSFK will prevent the pilot to turn on the slew mode in FS. Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

"**MAX_SIM_RATE**"
Configures the maximum Simulation Rate to be used during a flight. Valid values are 1 to 64 [*DEFAULT = Unlimited*]. ***Please note that this currently does not work with FSX.***

"**FORCE_CRASH_DETECTION**"
Forces the aircraft crash detection within FS. Please note that the realism option menu in FS will still display the old realism settings, but crash detection is indeed turned on. ***Please note that this currently does not work with FSX.*** Valid values are:

- "**TRUE**" / "**1**" -> Enabled
- "**FALSE**" / "**0**" - > Disabled [*DEFAULT*]

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Example:

```
[VA_CONFIG]
LIVEACARS_TEMPLATE = LiveACARS-Service.txt
PIREP_TEMPLATE = PIREP-Service.txt

EVENT_LOG_MODE = FULLPLUS
FORCE_RECORDING_OF_ALL_EVENTS = FALSE

AUTOCONNECT_LIVEACARS = TRUE
DISABLE_DISCONNECT_LIVEACARS = TRUE
AUTO_WEB_PIREP = TRUE
AUTO_EMAIL_PIREP = FALSE
AUTO_FLIGHTCRITIQUE = TRUE

DISABLE_WORLD_MENU = TRUE
DISABLE_AIRCRAFT_MENU = TRUE
DISABLE_FLIGHTS_MENU = FALSE
DISABLE_OPTIONS_MENU = TRUE
DISABLE_ALL_MENUS = FALSE

DISABLE_PAUSE = FALSE
DISABLE_SLEW = TRUE

MAX_SIM_RATE = 2
FORCE_CRASH_DETECTION = TRUE
```


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Second Example:

```
[VA_CONFIG]
DOWNLOADURL_LIVEACARS_TEMPLATE = http://www.myva.com/FlightService/LiveACARSTemplate.asp
DOWNLOADURL_PIREP_TEMPLATE = http://www.myva.com/FlightService/PIREPTemplate.asp

EVENT_LOG_MODE = FULLPLUS
FORCE_RECORDING_OF_ALL_EVENTS = FALSE

AUTOCONNECT_LIVEACARS = TRUE
DISABLE_DISCONNECT_LIVEACARS = TRUE
AUTO_WEB_PIREP = FALSE
AUTO_EMAIL_PIREP = FALSE
AUTO_FLIGHTCRITIQUE = TRUE

DISABLE_WORLD_MENU = TRUE
DISABLE_AIRCRAFT_MENU = TRUE
DISABLE_FLIGHTS_MENU = FALSE
DISABLE_OPTIONS_MENU = TRUE
DISABLE_ALL_MENUS = FALSE

DISABLE_PAUSE = FALSE
DISABLE_SLEW = TRUE

MAX_SIM_RATE = 2
FORCE_CRASH_DETECTION = TRUE
```


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Air TV Profile/Template

The FSFK Air TV feature offers to capture images from the current screen (e.g. the FS main window) and/or a video device (these devices need to support the Microsoft CAP API, which for example most of the available webcams do) and upload the resulting images to any FTP or Web server. To minimize errors in the VA Air TV configuration FSFK allows to force a default profile with the VA template. The template looks similar to the default FSFK Air TV storage ("**AirTVProfiles.cfg**"), but only supports one profile. For security reasons (as live screenshots of the pilot are made public) the pilot needs to set the default AIR TV profile "**### Virtual Airline template ###**" in order to activate it.

List of valid profile parameters:

"**NAME**"
Name of the profile.

"**URL**"
Upload address (must be a valid URL) or folder name where captures are uploaded/saved to (e.g. "ftp://", "http://" or "C:\Captures\")

"**PORT**"
FTP/Web Server port.

"**PASSIVEMODE**"
Turns the FTP passive transfer on or off [DEFAULT]. Normally, when you connect to an FTP site, the site establishes the data connection to your PC (the client). However, some FTP sites allow passive transfers – this means that your PC establishes the data connection. Note that passive mode may be required in the following instances:

- For users on networks behind some types of router-based firewalls
- Users on networks behind a gateway requiring passive transfers
- If transfers are erratic
- If you keep getting failed data channel errors

"**LOGINENCRYPTED**"
User name and password have been encrypted using the SDK encoder tool.

"**USERNAME**"
User needed to access the ftp/web service. Can be left blank, if no authentication is required.

"**USERPASSWORD**"
Password needed to access the ftp/web service. Can be left blank, if no authentication is required.

"**STARTMODE**"
This parameter tells FSFK when to automatically start Air TV. Valid modes are:

- 0 [DEFAULT] => Manual
- 1 => On starting FSFK but this is **not** supported in the VA template
- 2 => When a connection with FS has been established

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"**STOPMODE**"
This parameter tells FSFK when to automatically stop Air TV. Valid modes are:

- 0 [DEFAULT] => Manual
- 1 => When a connection with FS has been closed

"**CAPTUREUPDATEINTERVAL**"
Defines how often captures are made and uploaded/saved (in seconds).

"**CAPTUREINFOTEXT**"
Defines the shown in the text capture overlay. This parameter supports a subset of the PIREP tags. The tags start with "**$@$**" and end with the same string. For a full list of supported tags check out the end of this SDK section. To add a carriage return simply use the string "**\r\n**" as the parameter value needs to be in one single line.

"**CAPTUREINFOTEXTBACKGROUND**"
For better readability FSFK allows to configure a background for the text overlay. Valid values are:

- 0 [DEFAULT] => None
- 1 => Shadow
- 2 => Transparent rectangle

"**CAPTUREINFOTEXTPOSITION**"
Places the text overlay somewhere on the capture. Valid values are:

- 0 [DEFAULT] => Hidden
- 1 => Top/Left
- 2 => Top/Center
- 3 => Top/Right
- 4 => Middle/Left
- 5 => Middle/Center
- 6 => Middle/Right
- 7 => Bottom/Left
- 8 => Bottom/Center
- 9 => Bottom/Right

"**CAPTUREINFOTEXTFONT**"
Font name (e.g. "Tahoma", "Consolas" [DEFAULT], etc.).

"**CAPTUREINFOTEXTFONTSIZE**"
Font size in pixel.

"**CAPTUREINFOTEXTFONTCOLOR**"
Font color as RGB value (e.g. RED => 0*65536 + 0*256 + 255 or BLUE => 255*65536 + 0*256 + 0)

"**CAPTUREOFFLINEIMAGE**"
URL to the JPG image file to upload when the pilot turns off Air TV or if the active window is not FS (see parameter "**CaptureMode**"). Leave blank if you don't want to use an offline image.

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"**CAPTURETHUMBNAILWIDTH**" and "**CAPTURETHUMBNAILHEIGHT**"
Size of the JPG thumbnail to upload. Set these values to zero if you don't want to use thumbnails. The filename of the uploaded image will have the string "**Thumb**" appended to the file name (e.g. "**MyCaptureThumb.jpg**").

"**CAPTUREMODE**"
Defines which part of your screen will be captured. Valid values are:

- 0 => Whole Screen (**remember personal data might be visible to the public!**)
- 1 => Active Window (**remember personal data might be visible to the public!**)
- 2 => FS Window – Only captures the FS window **but other windows might overlap!**
- 3 [DEFAULT] => FS Window (active) – Captures only if the FS window has got the focus. Otherwise the offline image (if configured) will be used instead.

"**CAPTUREFILENAME**"
Configures the filename to be used for the screen capture. You can use the tags "**$@$PilotID$@$**" and/or "**$@$PilotName$@$**" to give the file a unique and pilot depended name. Make sure that the name only contains characters your server/file system accepts. Leave blank if you don't want to create screen captures at all.

"**CAPTUREPOSITION**"
Places the screen capture into the video capture as PIP (picture in picture). For valid values check the parameter "**CAPTUREINFOTEXTPOSITION**" description.

"**CAPTURESIZERATIO**"
Defines the PIC size ratio (as double with the decimal char "**.**"). Example: a value of 0.25 means that the screen capture PIP is only a quarter of the size of the video capture.

"**CAPTUREWIDTH**" and "**CAPTUREHEIGHT**"
Defines the maximum screen capture image size in pixels. Images will be automatically resized when reaching this limit.

"**VIDEOUPDATEINTERVAL**", "**VIDEOINFOTEXT**", "**VIDEOINFOTEXTBACKGROUND**", "**VIDEOINFOTEXTPOSITION**", "**VIDEOINFOTEXTFONT**", "**VIDEOINFOTEXTFONTSIZE**", "**VIDEOINFOTEXTFONTCOLOR**", "**VIDEOOFFLINEIMAGE**", "**VIDEOTHUMBNAILWIDTH**", "**VIDEOTHUMBNAILHEIGHT**", "**VIDEOFILENAME**", "**VIDEOPOSITION**", "**VIDEOSIZERATIO**", "**VIDEOWIDTH**" and "**VIDEOHEIGHT**"
Those parameters define the options for the video capture. For more information read the description of the corresponding screen capture parameter.

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Example profile:

```
[Profile]
Name=Air TV My VA
URL=ftp://ftp.myva.com/AirTV
Port=21
PassiveMode=0
LoginEncrypted=0
UserName=airtv
UserPassword=thepwd
StartMode=0
StopMode=0
CaptureUpdateInterval=60
CaptureInfoText=<!FSFK Air TV DEMO\r\nPilot is currently not
flying!>\r\n[!FSFK Air TV DEMO\r\n$@$CurrentFSDateTime$@$ #
$@$CurrentFlightTime$@$ ($@$CurrentBlockTime$@$)\r\n$@$Pilot$@$ flies from
$@$OriginAirport$@$ to $@$DestinationAirport$@$\r\n$@$CurrentMode$@$ @
$@$CurrentPosition$@$ Waypoint: $@$CurrentWaypoint$@$\r\nALT
$@$CurrentAltitude$@$ IAS $@$CurrentIAS$@$ HDG $@$CurrentHeading$@$° WIND
$@$CurrentWind$@$ TAT $@$CurrentTAT$@$!]
CaptureInfoTextBackground=2
CaptureInfoTextPosition=7
CaptureInfoTextFont=Consolas
CaptureInfoTextFontSize=12
CaptureInfoTextFontColor=12055479
CaptureOfflineImage=http://www.myva.com/AirTV/Offline.jpg
CaptureThumbnailWidth=40
CaptureThumbnailHeight=30
CaptureMode=3
CaptureFilename=$@$PilotID$@$-$@$PilotName$@$-Capture.jpg
CaptureWidth=1024
CaptureHeight=768
CapturePosition=9
CaptureSizeRatio=0.25
VideoUpdateInterval=60
VideoInfoText=<!FSFK Air TV DEMO\r\nPilot is currently not
flying!>\r\n[!FSFK Air TV
DEMO\r\n$@$CurrentDateTime$@$/$@$CurrentFSDateTime$@$\r\nPilot
$@$Pilot$@$!]
VideoInfoTextBackground=2
VideoInfoTextPosition=7
VideoInfoTextFont=Consolas
VideoInfoTextFontSize=12
VideoInfoTextFontColor=12055479
VideoOfflineImage= http://www.myva.com/AirTV/Offline.jpg
VideoThumbnailWidth=40
VideoThumbnailHeight=30
VideoFilename=$@$PilotID$@$-$@$PilotName$@$-Video.jpg
VideoWidth=1024
VideoHeight=768
VideoPosition=1
VideoSizeRatio=0.1667
```


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Tags available for the AIR TV info text

Tag Name	Description
CurrentDateTime	Current time
CurrentFSDateTime	Current FS time
CurrentBlockTime	Total block time
CurrentFlightTime	Total flight time
CurrentPosition	Aircraft position in latitude / longitude
CurrentAltitude	Aircraft altitude
CurrentGroundAltitude	Ground altitude
CurrentGroundSpeed	Ground speed
CurrentIAS	Indicated air speed
CurrentTAS	True air speed
CurrentGrossWeight	Gross weight
CurrentFuelOnBoard	Fuel amount on board
CurrentFuelUsed	Fuel used during the flight
CurrentMode	FSFK mode (e.g. taxiing, climbing, etc.)
CurrentVerticalSpeed	Vertical speed
CurrentHeading	Magnetic heading
CurrentTrueHeading	True heading
CurrentWind	Wind magnetic heading and speed
CurrentTrueWind	Wind true heading and speed
CurrentOAT	Operating air temperature
CurrentTAT	True air temperature
CurrentWaypoint	Waypoint if a flight plan has been loaded into FSFK
CurrentFlightTotalDistance	Total flight distance calculated from the flight plan or from the origin and destination airport
CurrentFlightDistance	Distance flown
CurrentFlightPlan	Flight plan if it has been loaded into FSFK
AircraftTitle	Aircraft title
AircraftType	Aircraft type
AircraftTailNumber	Tail number
FlightType	Flight type (IFR, VFR, etc.)
AircraftAirline	Airline
FlightNumber	Flight Number
FlightLevel	Planned/Actual flight level

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Passenger	Amount of passenger
Cargo	Cargo weight
OriginAirport	Origin airport
OriginGate	Origin gate
OriginRunway	Origin runway
SID	Standard Instrument Departure used
OriginTransitionAltitude	Origin transition altitude
DestinationAirport	Destination airport
DestinationGate	Destination gate
DestinationRunway	Destination runway
STAR	Standard arrival route
DestinationTransitionAltitude	Destination transition altitude
AlternateAirport	Alternate airport
Pilot	Pilot name
Logbook	Logbook

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PIREP / FREP

To give you a high rate of flexibility for the PIREP design, FS Flight Keeper offers you to create your own report templates. These templates are used to create a single report. Each template needs to implement so called **tags**. These tags are similar to HTML-Tags, but do not have any end tag. The tags will be replaced during creating the report by the actual value. For example the tag "**$@$FlightTime$@$**" will be replaced by the actual Flight Time (e.g. "01:17"). Every tag starts with the string "**$@$**" and ends with "**$@$**". In between these two strings the actual property name is placed. A list of valid tags for each report type can be found at the end of this manual section. The templates already installed with FS Flight Keeper are mainly HTML documents. But you can use whatever text format you want. Only the templates for transmitting a flight via Email or a Web Service need to fulfill a minimum requirement. You will need to implement a configuration and data section into those templates. These sections are represented by the strings "**[WEB_CONFIG]**" and "**[DATA]**". The configuration section ("**[WEB_CONFIG]**") itself contains some properties, so FS Flight Keeper knows the address to send the flight report to.

"**DOWNLOADURL**"
Web address (must be a valid URL) for an automatic PIREP template download. This parameter allows VAs to automatically update the PIREP templates without the need to send them to their pilots. Also useful to avoid template modifications by a pilot. If FSFK detects this parameter, it will automatically download the PIREP from the given URL and treats it in the same way as it would with a file based template.

Example:

```
[WEB_CONFIG]
DOWNLOADURL = http://www.myva.com/FlightService/PIREPTemplate.asp
```

Any other parameter (also the [Data] section) will be ignored.

"**ADDRESS**"
Web Service address (must be a valid URL). Note that you can use "**HTTPS**" for a secure connection.

"**PORT**"
Web Server port.

"**LOGIN_ENCODED**"
Tells FSFK that the following two login parameters are encoded using the SDK Encoder tool. Possible values are "**TRUE**" or "**FALSE**".

"**USER**"
User needed to access the web service. Can be left blank, if no authentication is required.

"**PASSWORD**"
Password needed to access the web service. Can be left blank, if no authentication is required.

"**TIMEFORMAT**"
Tells FSFK which time zone to use for any time values. Possible values are "**ZULU**" or "**LOCAL**".

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"**DATETIME_FORMAT_STRING**"
Sets the default Date/Time format in the PIREP.

"**TIME_FORMAT_STRING**"
Sets the default Time format (e.g. for all Event Times).

The following table identifies characters you can use to create user-defined date/time formats:

Character	Description
(**:**)	Time separator. In some locales, other characters may be used to represent the time separator. The time separator separates hours, minutes, and seconds when time values are formatted. The actual character used as the time separator in formatted output is determined by your system settings.
(**/**)	Date seperator. In some locales, other characters may be used to represent the date separator. The date separator separates the day, month, and year when date values are formatted. The actual character used as the date separator in formatted output is determined by your system settings.
(****)	Display the next character in the format string. To display a character that has special meaning as a literal character, precede it with a backslash (\). The backslash itself isn't displayed. Using a backslash is the same as enclosing the next character in double quotation marks. To display a backslash, use two backslashes (\\). Examples of characters that can't be displayed as literal characters are the date-formatting and time-formatting characters (a, c, d, h, m, n, p, q, s, t, w, y, / and :) and the numeric-formatting characters (#, 0, %, E, e, comma, and period).
("ABC")	Display the string inside the double quotation marks (" ").
d	Display the day as a number without a leading zero (1 – 31).
dd	Display the day as a number with a leading zero (01 – 31).
ddd	Display the day as an abbreviation (Sun – Sat).
dddd	Display the day as a full name (Sunday – Saturday).
ddddd	Display the date as a complete date (including day, month, and year), formatted according to your system's short date format setting. The default short date format is m/d/yy.
dddddd	Display a date serial number as a complete date (including day, month, and year) formatted according to the long date setting recognized by your system. The default long date format is mmmm dd, yyyy.
w	Display the day of the week as a number (1 for Sunday through 7 for Saturday).
ww	Display the week of the year as a number (1 – 54).
m	Display the month as a number without a leading zero (1 – 12). If m immediately follows h or hh, the minute rather than the month is displayed.

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mm	Display the month as a number with a leading zero (01 – 12). If m immediately follows h or hh, the minute rather than the month is displayed.
mmm	Display the month as an abbreviation (Jan – Dec).
mmmm	Display the month as a full month name (January – December).
q	Display the quarter of the year as a number (1 – 4).
y	Display the day of the year as a number (1 – 366).
yy	Display the year as a 2-digit number (00 – 99).
yyyy	Display the year as a 4-digit number (100 – 9999).
h	Display the hour as a number without leading zeros (0 – 23).
Hh	Display the hour as a number with leading zeros (00 – 23).
N	Display the minute as a number without leading zeros (0 – 59).
Nn	Display the minute as a number with leading zeros (00 – 59).
S	Display the second as a number without leading zeros (0 – 59).
Ss	Display the second as a number with leading zeros (00 – 59).
AM/PM	Use the 12-hour clock and display an uppercase AM with any hour before noon; display an uppercase PM with any hour between noon and 11:59 P.M.
am/pm	Use the 12-hour clock and display a lowercase AM with any hour before noon; display a lowercase PM with any hour between noon and 11:59 P.M.
A/P	Use the 12-hour clock and display an uppercase A with any hour before noon; display an uppercase P with any hour between noon and 11:59 P.M.
a/p	Use the 12-hour clock and display a lowercase A with any hour before noon; display a lowercase P with any hour between noon and 11:59 P.M.
AMPM	Use the 12-hour clock and display the AM string literal as defined by your system with any hour before noon; display the PM string literal as defined by your system with any hour between noon and 11:59 P.M. AMPM can be either uppercase or lowercase, but the case of the string displayed matches the string as defined by your system settings. The default format is AM/PM.

Examples:

MM\/dd\/yyyy HHnn -> 07/14/2004 15:11 (this forces a slash as the date separator!)
MM/dd/yyyy -> 07.14.2004
hh:nn AM/PM -> 03:11 PM
HH\.nn -> 15.11 (this forces a dot as the time seperator!)

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Flight Map Uploading

With FSFK v2.5+ it is possible to upload specific Flight Maps pictures (in JPEG format) with a PIREP. Flight Keeper will automatically create the configured Flight Maps during creating the PIREP (like it does for the Flight Exports) and will upload all newly created JPG files **before** sending the PIREP to the web server, so the files are directly accessible for the PIREP service.

"**PICTURE_ADDRESS**"
HTTP or FTP Server address with the upload directory. The address must start with either "**http://**" or "**ftp://**" or FSFK will not upload the files. This is used to indicate the type of method used for uploading the pictures.

"**PICTURE_PORT**"
HTTP or FTP Server port (e.g. **80** for HTTP or **21** for FTP).

"**PICTURE_LOGIN_ENCODED**"
Tells FSFK that the following two login parameters are encoded using the SDK Encoder tool. Possible values are "**TRUE**" or "**FALSE**".

"**PICTURE_USER**"
User needed to access the server. Can be left blank, if no authentication is required.

"**PICTURE_PASSWORD**"
Password needed to access the server. Can be left blank, if no authentication is required.

"**PICTURE_FTP_PASSIVE_MODE**"
Turns the FTP passive transfer on or off [DEFAULT]. Normally, when you connect to an FTP site, the site establishes the data connection to your PC (the client). However, some FTP sites allow passive transfers – this means that your PC establishes the data connection. Note that passive mode may be required in the following instances:

- For users on networks behind some types of router-based firewalls
- Users on networks behind a gateway requiring passive transfers
- If transfers are erratic
- If you keep getting failed data channel errors

"**PICTURE_TYPES**"
This parameter defines which Flight Maps will be uploaded to the given HTTP or FTP Server. Valid entries are:

- FlightMapJPG: Uploads the default Flight Map
- FlightMapEventsJPG: Uploads the Flight Map with Events
- FlightMapWeatherJPG: Uploads the Flight Map with Weather
- FlightMapAllJPG: Uploads the Flight Map with Events and Weather
- FlightMapTaxiOutJPG: Uploads the Flight Map with the complete taxiway path at the origin airport
- FlightMapTaxiInJPG: Uploads the Flight Map with the complete taxiway path at the destination airport
- FlightMapVerticalProfileJPG: Uploads the Flight Map with Events and vertical profile
- FlightMapLandingProfileJPG: Uploads the Flight Map with Events and the approach/ILS profile

You can upload more than one map by separating the Map types with a comma (see Example below).

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Example:

```
[WEB_CONFIG]
ADDRESS=http://www.myva.com/FlightService/LogFlight.asp
PORT=80
LOGIN_ENCODED=FALSE
USER=pilotname
PASSWORD=pwd

TIMEFORMAT=ZULU
DATETIME_FORMAT_STRING=dd/MM/yyyy HHnn
TIME_FORMAT_STRING=HHnn

PICTURE_ADDRESS=http://www.myva.com/FlightService/Upload
PICTURE_PORT=80
PICTURE_LOGIN_ENCODED=FALSE
PICTURE_USER=pilotname
PICTURE_PASSWORD=pwd
PICTURE_TYPES=FlightMapJPG, FlightMapWeatherJPG

or for a FTP upload:

PICTURE_ADDRESS=ftp://ftp.myva.com/PIREP/Upload
PICTURE_PORT=21
PICTURE_LOGIN_ENCODED=FALSE
PICTURE_USER=pilotname
PICTURE_PASSWORD=pwd
PICTURE_FTP_PASSIVE_MODE=True
PICTURE_TYPES=FlightMapJPG, FlightMapWeatherJPG
```

Flight Keeper will send the PIREP to "**http://www.myva.com/FlightService/LogFlight.asp**" using the user "**pilotname**" and the password "**pwd**". All time values will be converted to Zulu (GMT+0) time. Two Flight Maps (in JPG format) will be automatically generated and uploaded via HTTP/PUT to the server directoy "**http://www.myva.com/FlightService/Upload**".

The data for the web service will be placed in two Web-Form variables "**DATA1**" and "**DATA2**", which can then be accessed in your server script. "**DATA1**" contains the FS Flight Keeper identifier string ("**FLKEEPER**") and the version delimited by the character string "**|**" (e.g. "**FLKEEPER|3.0**"). "**DATA2**" contains the actual flight data you have defined in your template. The Flight Plan data uses a carriage return as the row delimiter and the character "**|**" as the column delimiter. The Flight Event data uses a carriage return as the row delimiter and the character "**~**" as the column delimiter. FS Flight Keeper will save and display the web server response. Please note that the response should not contain any images or style sheets with relative paths, because those files will not be downloaded automatically. Use full paths instead and everything will work fine.

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In the data section ("**[DATA]**") the actual template is placed. Example:

```
[DATA]
$@$PilotID~$@$AircraftTitle$@$~$@$AircraftType$@$~$@$AircraftTailNumber$@$~
$@$FlightType$@$~$@$AircraftAirline$@$~$@$FlightNumber$@$~$@$FlightLevel$@$
~$@$Passenger$@$~$@$Cargo$@$~$@$OriginICAO$@$~$@$OriginGate$@$~$@$OriginRun
way$@$~$@$SID$@$~$@$OriginTransitionAltitude$@$~$@$DestinationICAO$@$~$@$De
stinationGate$@$~$@$DestinationRunway$@$~$@$STAR$@$~$@$DestinationTransitio
nAltitude$@$~$@$AlternateICAO$@$$@$ZFW$@$~$@$OUTTime$@$~$@$OUTFuel$@$~$@$OF
FTime$@$~$@$OFFFuel$@$~$@$ONTime$@$~$@$ONFuel$@$~$@$INTime$@$~$@$INFuel$@$~
$@$FlightTIME$@$~$@$FlightFuel$@$~$@$BlockTime$@$~$@$BlockFuel$@$~$@$Flight
Distance$@$~$@$RouteDistance$@$~$@$DayFlightTime$@$~$@$NightFlightTime$@$
```

Possible result (**DATA2**):

```
001~Airbus A320 Real Air~A320~D-ABCD~IFR~Real Air~RA111~FL310~150~7000
lbs~EDDF~A 36~18/36~N/A~5000~EDDM~A
2~8L/26R~N/A~5000~EDDN~127850~12:00~18000~12:12~17000~13:05~9000~13:17~8000
~00:53~9000~01:17~10000~250~245~00:53~00:00
```

Flight Plan data order

Field
Sequence Number
Point Name
Point Type (Unknown / Airport / Intersection / NDB / VOR)
ZULU Time
Fuel in lbs
IAS in kts
Altitude in ft
Heading
Wind (Direction / Speed in kts)
OAT in Celsius

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Flight Weather data order

Field
Sequence Number
Point Name
Planned Weather
Flight Weather
TAF
ALOFT

Flight Event data order

Field
Sequence Number
Event Type
Event Value
ZULU Time
Fuel in lbs
IAS in kts
Altitude in ft
Heading
Wind (Direction / Speed in kts)
OAT in Celsius
True Heading (Reported as "-1", if the flight has been recorded with v2.6 or earlier)

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Tags available for PIREPs

Tag Name	Description
CreatedOn	Flight created on
ChangedOn	Flight changed on
AircraftTitle	Automatically filled with the FS value from the "**Aircraft.cfg**" property "**title**".
AircraftType	Automatically filled with the FS value from the **"Aircraft.cfg**" property "**atc_type**".
AircraftTailNumber	Automatically filled with the FS value from the "**Aircraft.cfg**" property "**atc_id**".
FlightType	Possible values: Visual Flight Rules (**VFR**) or Instrument Flight Rules (**IFR**). Default value is **IFR**.
AircraftAirline	Automatically filled with the FS value from the "**Aircraft.cfg**" property "**atc_airline**".
FlightNumber	Automatically filled with the FS value from the "**Aircraft.cfg**" property "**atc_flight_number**".
FlightLevel	The flight level will be automatically calculated, if you don't enter some value.
Passenger	Amount of passengers for this flight.
Cargo	Amount of cargo you are taking with you.
OriginICAO	Origin airport ICAO code
OriginGate	This drop down box will be automatically filled, if you enabled the **FS Scenery support**.
OriginRunway	This drop down box will be automatically filled, if you enabled the **FS Scenery support**.
SID	Standard Instrument Departure (**SID**) used after takeoff.
DestinationICAO	Destination airport ICAO code
DestinationGate	This drop down box will be automatically filled, if you enabled the **FS Scenery support**.
DestinationRunway	This drop down box will be automatically filled, if you enabled the **FS Scenery support**.
STAR	Standard Instrument Departure (**SID**) used after takeoff.
AlternateICAO	Alternate airport ICAO code
Pilot	Assigned Pilot
Logbook	Assigned Logbook
ZFW	Zero Fuel Weight (**ZFW**) for the aircraft used.
OUTTime	This time is recorded when the parking brake is first released. This time is also referred to as the 'off gate' time.
OUTTimeZone	Block OUT time zone

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TAW	Aircraft Taxi Weight (**TAW**) is calculated by adding the ZFW and the OUT Fuel.
OUTFuel	Fuel left after releasing the parking brake.
OFFTime	This time is recorded when the aircraft becomes airborne. This time is also referred to as the 'wheels up'.
OFFTimeZone	Block OFF time zone
TOW	Aircraft Takeoff Weight (**TOW**) is calculated by adding the ZFW and the OFF Fuel.
OFFFuel	Fuel left after taking off.
TOIAS	Indicated Air Speed (**IAS**) during takeoff.
ONTime	This time is recorded when the aircraft lands and all wheels are on the ground.
ONTimeZone	Block ON time zone
LAW	Aircraft Landing Weight (**LAW**) is calculated by adding the ZFW and the ON Fuel.
ONFuel	Fuel left after landing.
LAIAS	Indicated Air Speed (**IAS**) during landing.
INTime	This time is recorded based on your "End of flight" selection in the **options**.
INTimeZone	Block IN time zone
RAW	Aircraft Ramp Weight (**RAW**) is calculated by adding the ZFW and the IN Fuel.
INFuel	Fuel left after "End of flight".
StartMode	Flight mode after a connection has been established with FS. Depending on the current aircraft airborne status.
EndMode	Flight mode after the flight has been finished.
BlockTime	The Block Time is the difference between the OUT and IN time.
BlockFuel	The Block Fuel is the difference between the OUT and IN fuel.
DayFlightTime	Time flown during day.
NightFlightTime	Time flown during night, dawn and dusk.
FlightDistance	The flight distance will be automatically calculated by FS Flight Keeper after the flight has been finished. If you have a flight plan assigned to the current flight, then the distance between each **reached** navigation point is used to calculate the distance. Otherwise the distance between the origin and destination airport will be used.
RouteDistance	The actual route (planned) distance.
FlightTime	The Flight Time is the difference between the OFF and ON time.

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FlightFuel	The Flight Fuel is the difference between the OFF and ON fuel.
OriginPosition	Latitude and Longitude of the aircraft at the origin airport.
OriginAltitude	Altitude of the aircraft at the origin airport.
OriginSeason	FS season at the origin airport. Possible values: Winter / Spring / Summer / Fall.
OriginTimeOfDay	FS time of the day at the origin airport. Possible values: Day / Dawn / Dusk / Night.
OriginTransponder	Assigned Transponder code.
OriginMaxGS	Maximum Ground Speed (**GS**) during taxiing at the origin airport.
OFFEngineSettings	Depending on the engine type the N1/N2 or RPM settings during takeoff of each engine is displayed.
OFFFlaps	Flap setting during takeoff.
OFFVS	Vertical Speed (**VS**) during takeoff.
OFFPitch	Pitch angle during takeoff. Negative values mean nose is up, otherwise down.
OFFBank	Bank angle during takeoff. Negative values mean aircraft is turning right, otherwise left.
OFFRunway	The runway used for takeoff.
OFFSurface	Runway surface and condition. Possible values for the surface: • Unknown • Concrete • Grass • Water • Grass bumpy • Asphalt • Short Grass • Long Grass • Hard Turf • Snow • Ice • Urban • Forest • Dirt • Corva • Gravel • Oil treated • Steel Mat • Bitumus • Brick • Macadam • Planks • Sand • Shale • Tarmac Possible values for the surface condition:

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	• Normal • Wet • Icy • Snow
OFFHeading	Aircraft heading during takeoff.
OFFOAT	Operating Air Temperature (**OAT**) during takeoff.
OFFDewPoint	Dew point during takeoff.
OFFWind	Ambient wind direction and speed during takeoff.
OFFVisibility	Visibility condition during takeoff. Contains the maximum visibility range and if rain or snow is falling.
OFFPressure	Pressure in millibars during takeoff.
OFFAltimeter	Aircraft altimeter settings in millibars during takeoff.
OFFTimeOfDay	FS time of the day during takeoff. Possible values: Day / Dawn / Dusk / Night.
OFFSpoilers	Spoiler setting in percent or the string "**Armed**".
OFFAutobrakes	Autobrake setting during takeoff. Possible values are: RTO / OFF / 1 / 2 / 3 / MAX.
OFFAntiIce	Engine Anti-Ice setting during takeoff.
OFFDirector	Flight director setting during takeoff.
OFFLights	Displays the lights turned on during takeoff. Possible values are (any combination): • Navigation (**NAV**) • Beacon (**BCN**) • Landing (**LAND**) • Taxi (**TAXI**) • Strobe (**STROBE**) • Instruments (**INST**) • Recognition (**RECOG**) • Wing (**WING**) • Logo (**LOGO**)
OFFAutothrottle	Autothrottle setting during takeoff. Possible values are: Armed / Off / TOGA.
OFFGearUp	This field indicates when the gear up event occurred.
OFFFlapsUp	This field indicates when the flaps up event occurred.
OFFAutopilotOn	This field indicates when the autopilot was turned on.
DestinationPosition	Latitude and Longitude of the aircraft at the destination airport.
DestinationAltitude	Altitude of the aircraft at the destination airport.
DestinationSeason	FS season at the destination airport. Possible values: Winter / Spring / Summer / Fall.

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DestinationTimeOfDay	FS time of the day at the destination airport. Possible values: Day / Dawn / Dusk / Night.
DestinationTransponder	Assigned Transponder code.
DestinationMaxGS	Maximum Ground Speed (**GS**) during taxiing at the destination airport.
ONEngineSettings	Depending on the engine type the N1/N2 or RPM settings during landing of each engine is displayed.
ONFlaps	Flap setting during landing.
ONVS	Vertical Speed (**VS**) during landing.
ONPitch	Pitch angle during landing. Negative values mean nose is up, otherwise down.
ONBank	Bank angle during landing. Negative values mean aircraft is turning right, otherwise left.
ONRunway	The runway used for landing.
ONSurface	Runway surface and condition. Possible values for the surface: • Unknown • Concrete • Grass • Water • Grass bumpy • Asphalt • Short Grass • Long Grass • Hard Turf • Snow • Ice • Urban • Forest • Dir • Corva • Gravel • Oil treated • Steel Mat • Bitumus • Brick • Macadam • Planks • Sand • Shale • Tarmac Possible values for the surface condition: • Normal • Wet • Icy • Snow

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ONHeading	Aircraft heading during landing.
ONOAT	Operating Air Temperature (**OAT**) during landing.
ONDewPoint	Dew point during landing.
ONWind	Ambient wind direction and speed during landing.
ONVisibility	Visibility condition during landing. Contains the maximum visibility range and if rain or snow is falling.
ONPressure	Pressure in millibars during landing.
ONAltimeter	Aircraft altimeter settings in millibars during landing.
ONTimeOfDay	FS time of the day during landing. Possible values: Day / Dawn / Dusk / Night.
ONSpoilers	Spoiler setting in percent or the string "**Armed**".
ONAutobrakes	Autobrake setting during landing. Possible values are: RTO / OFF / 1 / 2 / 3 / MAX.
ONAntiIce	Engine Anti-Ice setting during landing.
ONDirector	Flight director setting during landing.
ONLights	Displays the lights turned on during landing. Possible values are (any combination): • Navigation (**NAV**) • Beacon (**BCN**) • Landing (**LAND**) • Taxi (**TAXI**) • Strobe (**STROBE**) • Instruments (**INST**) • Recognition (**RECOG**) • Wing (**WING**) • Logo (**LOGO**) • Cabin (**CABIN**)
ONAutothrottle	Autothrottle setting during landing. Possible values are: Armed / Off / TOGA.
ONGearDown	This field indicates when the gear down event occurred.
ONFlapsDown	This field indicates when the flaps down event occurred.
ONAutopilotOff	This field indicates when the autopilot was turned off.
AVGFPS	Average Frames Per Second (**FPS**) during the flight.
AVGTAS	Average True Air Speed (**TAS**) during the takeoff and landing.
MAXTAS	Maximum True Air Speed (**TAS**) during the takeoff and landing.
MAXIASDeparture	Maximum Indicated Air Speed (**IAS**) below FL100 during departure.
MAXIASApproach	Maximum Indicated Air Speed (**IAS**) below FL100 during approach.
AVGClimb	Average vertical speed during all climb modes.

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MAXClimb	Maximum vertical speed during all climb modes.
AVGDescent	Average vertical speed during all descent modes.
MaxDescent	Maximum vertical speed during all descent modes.
MAXPitch	Maximum pitch angle during the flight.
AVGGForce	Average G-Force during the flight.
MinGForce	Minimum G-Force during the flight.
MaxGForce	Maximum G-Force during the flight.
MAXBank	Maximum bank angle during the flight.
MAXEGT	Maximum Engine Temperature (**EGT**) during the flight.
MAXEngineSetting	Maximum Engine setting during the flight.
MAXEngineVibration	Maximum Engine vibration during the flight.
OriginWX	Weather Report (**METAR**) for the origin airport.
OriginWXDecoded	Decoded METAR for the origin airport.
DestinationWX	Weather Report (**METAR**) for the destination airport.
DestinationWXDecoded	Decoded METAR for the destination airport
AlternateWX	Weather Report (**METAR**) for the alternate airport.
AlternateWXDecoded	Decoded METAR for the alternate airport.
FlightPlan	Assigned Flight Plan.
FlightWeather	Downloaded Flight Weather.
FlightEvents	Flight Events.
CustomField1-10	Custom Fields 1-10 caption as defined in the assigned Logbook.
CustomFieldValue1-10	Actual Custom Fields 1-10 values.
Comment	Flight remarks.
FlightCritique	Flight critique summary.
FlightScore	Total flight score in percent.
PilotName	Assigned Pilot.
PilotEMail	Email for the assigned Pilot (**see Pilot Editor**).
PilotID	ID for the assigned Pilot (**see Pilot Editor**).
PilotPassword	Password for the assigned Pilot (**see Pilot Editor**).
FlightMapJPG	Returns the filename of the default Flight Map uploaded via HTTP/PUT or FTP. Naming convention used for the filename: PilotID-YYYY_MM_DD_HHMMSS-FlightNumber[+MapType].jpg Example: ID001-2004_07_13_075500-FLIGHT4068.jpg

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FlightMapWeatherJPG	Returns the filename of the Flight Map (with Weather) uploaded via HTTP/PUT or FTP (**see above**). Example: ID001-2004_07_13_075500-FLIGHT4068-Weather.jpg
FlightMapEventsJPG	Returns the filename of the Flight Map (with Events) uploaded via HTTP/PUT or FTP (**see above**). Example: ID001-2004_07_13_075500-FLIGHT4068-Events.jpg
FlightMapAllJPG	Returns the filename of the Flight Map (with Events and Weather) uploaded via HTTP/PUT or FTP (**see above**). Example: ID001-2004_07_13_075500-FLIGHT4068-All.jpg
FlightMapTaxiOutJPG	Returns the filename of the Flight Map (with Origin Taxipath) uploaded via HTTP/PUT or FTP (**see above**). Example: ID001-2004_07_13_075500-FLIGHT4068-TaxiOut.jpg
FlightMapTaxiInJPG	Returns the filename of the Flight Map (with Destination Taxipath) uploaded via HTTP/PUT or FTP (**see above**). Example: ID001-2004_07_13_075500-FLIGHT4068-TaxiIn.jpg
New tags in v3.0	
OilUsed	Returns the oil used during the flight.
HydraulicUsed	Returns the hydraulic used during the flight.
MaxOilTemperature	Maximum Oil Temperature during the flight.
MaxOilPressure	Maximum Oil Pressure during the flight.
MinOilPressure	Minimum Oil Pressure during the flight.
MaxHydraulicPressure	Maximum Hydraulic Pressure during the flight.
MinHydraulicPressure	Minimum Hydraulic Pressure during the flight.
MaxCHT	Maximum Cylinder Head Temperature (**CHT**) during the flight.
MaxManifoldPressure	Maximum Manifold Pressure during the flight.
FlightMapVerticalProfileJPG	Returns the filename of the Flight Map (with vertical profile) uploaded via HTTP/PUT or FTP (**see above**). Example: ID001-2004_07_13_075500-FLIGHT4068-VerticalProfile.jpg
FlightMapLandingProfileJPG	Returns the filename of the Flight Map (with approach/ILS profile) uploaded via HTTP/PUT or FTP (**see above**). Example: ID001-2004_07_13_075500-FLIGHT4068-LandingProfile.jpg

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New tags in v3.1	
OFFGForce	G-Force during takeoff.
OFFElevatorTrim	Elevator trim setting on takeoff.
OFFAileronTrim	Aileron trim setting on takeoff.
OFFRuderTrim	Ruder trim setting on takeoff.
ONGForce	G-Force during landing.
ONElevatorTrim	Elevator trim setting on touchdown.
ONAileronTrim	Aileron trim setting on touchdown.
ONRuderTrim	Ruder trim setting on touchdown.

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Live ACARS

ACARS ([A]ircraft [C]ommunication [A]ddressing and [R]eporting [S]ystem) is commonly used by all airlines all over the world to be able to track the current status of their flights (aircraft). For this purpose FSFK offers a similar feature called **live ACARS**. With this feature the VA Management and all pilots are able to track the status of all active flights.

Communication Protocol

FS Flight Keeper defines a standard protocol for the communication with the ACARS (Web) server. This is done by using four **DATA** variables and sending specific message types.

"**DATA1**"
FLKEEPER|VERSION – Example: "**FLKEEPER|3.0**"

"**DATA2**"
Method (function) name - Possible values are:

- "**TEST**": First message from FSFK to test the connection
- "**BEGINFLIGHT**": Starts a Flight
- "**PAUSEFLIGHT**": Pause a Flight
- "**ENDFLIGHT**": Ends a Flight
- "**MESSAGE**": Sends a ACARS message

"**DATA3**"
Data - Login data or Flight ID (returned by the service)

Login data format (one single line):

IDPilot|Email|FlightNumber|Aircraft|Airline|FlightPlan (delimited by the character "**~**")
|Position|Altitude|Passenger|Cargo|ZFW|FOB|Heading|Wind|OAT|FlightType|DistancePlanned|PilotPWD|TrueHeading|FPLatitudes|FPLongitudes (both fields delimited by the character "**~**" and in degrees for each waypoint [40.4432 or 8.3154])

Example:

001|thomas@molitor-home.de|RA111|Airbus A321|Real Air|EDDF~RID~HAREM~DKB~WLD~EDDM|N50 2.9447 E8 35.4417|314|150|7000 lbs|127850|20000|120|22005|15|IFR|164|MyPassword|120

"**DATA4**"
Value - ACARS Message for method "**MESSAGE**" or any other values defined by a method

The service has to return a value to tell FSFK if a method was successful or not. The value "**1**" means successful, whereas "**0**" means that an error occurred. In those cases you can send an extra error message to FSFK, which will be displayed on the client.

For example: "**0|Login failed (Unknown Pilot ID or wrong Password)**"

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A typical service FSFK / Web Service communication:

- FSFK sends "**TEST**" with "**DATA3**" = **IDPilot**. Service must return the value "**1|30**", where the value "30" represents the service protocol version.

- FSFK sends "**BEGINFLIGHT**" with "**DATA3**" = **LoginData** delimited by "**|**" (see sample above). The service must return the value "**1|**" + **IDFlight** used to identify the flight later. The ID must be a unique value. Good to use a Database primary key here.

- FSFK sends all ACARS messages (see sample below)

- FSFK sends "**PAUSEFLIGHT**" with "**DATA3**" = **IDPilot** and "**DATA4**" = "**0**" or "**1**" whenever a pilot turns on/off the pause or slew mode in FS. The SDK sample service will hide those paused flights from the ACARS and live watch view.

- FSFK sends "**ENDFLIGHT**" to end the flight.

When writing the service you should care of timeout problems or possible FS crashes, that might lead to not receiving any message for a specific flight. To avoid such "**dead**" flights it's a good idea to implement a timeout for each flight. After reaching the given timeout you should automatically mark or delete those flights from your database. So they will not going to be displayed any longer.

To prevent losing ACARS messages FSFK will go automatically into a special suspend mode, whenever an error (e.g. timeout or similar problem) occurs. The pilot can then try to resume the ACARS or close the live ACARS connection. If resuming was successful FSFK will send all messages that occurred during the suspend time. So no message will be lost, if for example the Internet connection gets temporarily closed.

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Live ACARS Traffic Watch (Aircraft Position Reporting)

Virtual Airline Traffic (via the live ACARS) can be displayed by the FSFK World Map. You will need to return all available flights in a special text format:

Version 1.1 and earlier

```
IDFlight|IDPilot|Pilot|FlightCaption|Aircraft|OriginAirport|DestinationAirp
ort|Latitude|Longitude|Altitude|Heading|IAS|ZFW|FOB|Status|FlightTime|Block
Time|Passenger|Cargo|Wind|OAT|FlightType|FlightPlan
```

Version 1.2 and later

```
IDFlight|IDPilot|Pilot|FlightCaption|Aircraft|OriginAirport|DestinationAirp
ort|Latitude|Longitude|Altitude|Heading|IAS|TAS|ZFW|FOB|Status|FlightTime|B
lockTime|Passenger|Cargo|Wind|OAT|FlightType|FlightPlan
```

Version 2.0 and later

```
IDFlight|IDPilot|Pilot|FlightCaption|Aircraft|OriginAirport|DestinationAirp
ort|Latitude|Longitude|Altitude|Heading|IAS|TAS|ZFW|FOB|Status|FlightTime|B
lockTime|Passenger|Cargo|Wind|OAT|FlightType|FlightPlan|DistanceFlown|Dista
ncePlanned
```

Version 2.7 and later

```
IDFlight|IDPilot|Pilot|FlightCaption|Aircraft|OriginAirport|DestinationAirp
ort|Latitude|Longitude|Altitude|Heading|IAS|TAS|ZFW|FOB|Status|FlightTime|B
lockTime|Passenger|Cargo|Wind|OAT|FlightType|FlightPlan|DistanceFlown|Dista
ncePlanned|TrueHeading
```

Version 3.0 and later

```
IDFlight|IDPilot|Pilot|FlightCaption|Aircraft|OriginAirport|DestinationAirp
ort|Latitude|Longitude|Altitude|Heading|IAS|TAS|ZFW|FOB|Status|FlightTime|B
lockTime|Passenger|Cargo|Wind|OAT|FlightType|FlightPlan|DistanceFlown|Dista
ncePlanned|TrueHeading|FPLatitudes|FPLongitudes
```

Each flight needs to be separated by a carriage return (ASCI codes 10+13) and must be on a single line. Example:

```
001|RA030|Thomas Molitor|Real Air 4430|Airbus A320 D-ABCD|EDDF|LEMG|N50
49.8826|E9 51.3858|31000ft|225|250 kts|450 kts|127.850 lbs|19.000 lbs|Level
off|00:25|00:40|150|7.000 lbs|240/65|-50|IFR|Not available|44nm|1062nm
002|RA031|Test Pilot| Real Air 030|Airbus A321 D-ABTT|EDDM|UUEE|N52
47.6899|E15 30.7916|27500ft|30|275 kts|485kts |127.850 lbs|25.000
lbs|Climbing|00:17|00:32|150|7.000 lbs|290/95|-64|IFR|Not
available|353nm|1230nm|225||
```

The field "**FlightCaption**" will be used on the World Map as the flight caption. Please note that you don't need to supply a value for each field. If a value is blank, it will not be displayed in the World Map information tooltip. The only required fields are "**Latitude**" and "**Longitude**". They need to be in the following format: "**N50 49.8826**" and "**E9 51.3858**". That's exactly the format you will receive in all position related ACARS messages.

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FS Flight Keeper live ACARS Configuration

ACARS support can be easily configured for FSFK. The installed live ACARS template ("**LiveACARS.txt**") already shows exactly what you need to supply in the [**ACARS_CONFIG**] section:

"**ADDRESS**"
Live ACARS Web Service address (must be a valid URL). Note that you can use "**HTTPS**" for a secure connection.

"**PORT**"
Web Server port.

"**LOGIN_ENCODED**"
Tells FSFK that the following two login parameters are encoded using the SDK Encoder tool. Possible values are "**TRUE**" or "**FALSE**".

"**USER**"
User needed to access the web service. Can be left blank, if no authentication is required.

"**PASSWORD**"
Password needed to access the web service. Can be left blank, if no authentication is required.

"**POSITIONREPORT**"
Additional automatic Position Report for the live ACARS. This option will send an additional ACARS position report (PR), if there was no ACARS message in the last x minutes. Useful to keep the position for the live ACARS watch has closest as possible and to avoid "dead" flights (see above). Set to zero, if you don't want any additional messages. FS Flight Keeper will start sending additional reports, if the aircraft starts taxiing at the origin airport and will stop them after reaching the parking position at the destination airport.

"**POSITIONREPORT_EX**"
Similar to the "**POSITIONREPORT**" parameter, but the interval is given in seconds to allow higher refresh rates (e.g. for drawing a map with the live ACARS web service).

"**LIVEWATCH**"
VA Traffic live Watch Web Service address (must be a valid URL). Note that you can use "**HTTPS**" for a secure connection.

"**LIVEWATCHREFRESH**"
Traffic refresh interval in seconds for the World Map.

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Example:

```
[ACARS_CONFIG]
ADDRESS=http://www.myva.com/FlightServices/ACARSService.asp
PORT=80
LOGIN_ENCODED=FALSE
USER=
PASSWORD=
POSITIONREPORT=5

LIVEWATCH=://www.myva.com/FlightServices/ACARSWatch.asp
LIVEWATCHREFRESH=30
```


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ASP Sample Service

In the SDK sub folder "**ASP Sample**" you will find a complete example service written in ASP (VB-Script) for IIS 4.0 and higher. It covers all ACARS and PIREP aspects (features).

To install the sample follow these steps:

- Create a new virtual web directory for IIS and call it "**FSFK**".
- Copy all sample files to the new folder.
- For NT 4.0, Windows 2002 and XP users: Make sure that the NT-User **IIS_SERVERNAME** (e.g. IUSR_MYSERVER) has read **AND** write access to the database file or access denied errors.
- Register an ODBC system database called "ACARSDB" linking to the Access database "**ACARSDB.mdb**" (check out the file "**SQL.asp**" if you want to change this).
- Copy the file "**PIREPService.txt**" to the folder "**[FSFK MAIN]\Templates**".

If you want to automatically upload Flight Maps with your PIREP the follow additional steps are required:

- Create a Virtual FTP directory called "**PIREP**" that points to the folder "**...\FSFK\Images\PIREP**".
- Remove the chars "**;**" from the "**PIREPService.txt**" template.

You are now finished installing the sample. Configure the live ACARS template file. It should look similar to this one:

```
[ACARS_CONFIG]
ADDRESS=http://localhost/FSFK/ACARSService.asp
PORT=80
LOGIN_ENCODED=FALSE
USER=
PASSWORD=

POSITIONREPORT=5

LIVEWATCH=http://localhost/FSFK/ACARSWatch.asp
LIVEWATCHREFRESH=60
```

Now start FS Flight Keeper, go to the options dialog and select the ACARS template. Be sure that the Pilot ID is set to "**001**" or the sample service will not accept the login. Start a new flight with FS and let FSFK connect to it. After the connection has been established, try to connect FSFK to the ACARS server on your local machine. If you get any error messages, check that all permissions are set correctly and check that you didn't forget any steps (see above). If everything works open your web browser and open the following link "**http://localhost/FSFK/Default.asp**". You should now be able to see your flight.

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Files in the Sample package

- **ACARSDB.mdb**
  Microsoft Access Database for storing the ACARS messages (flights) and PIREPs.

- **ACARSService.asp**
  Receives ACARS messages and stores them in an Access Database. It also contains a simple ACARS parser to get the values for Aircraft position, IAS, Fuel, etc.

- **Default.asp**
  Displays available ACARS flights stored in the Database in a table.

- **Details.asp**
  Shows all messages for a specific flight ID.

- **ACARSWatch.asp**
  Returns all ACARS flights stored in the Database for viewing them on the FSFK World Map.

- **SQL.asp**
  Handles the Access Database connection.

- **PIREPService.asp**
  Receives PIREPs and stores them in a MySQL Database

- **PIREPs.asp**
  Displays available PIREPs stored in the Database in a table.

- **PIREPDetails.asp**
  Shows all details for a specific PIREP ID.

- **PIREPService.txt**
  Flight Keeper IREP template.

- **Folder Images**
  Contains all images used by the sample.

- **Folder Images\PIREP**
  This folder is used for uploading the PIREP Flight Maps.

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PHP Sample Service

In the SDK sub folder "**PHP Sample**" you will find a complete example service written in PHP using a MySQL Database. It covers all ACARS and PIREP aspects (features).

To install the sample follow these steps:

- Create a new web directory and call it "**FSFK**".
- Copy all sample files to the new folder.
- Open the MySQL command prompt and run the SQL scripts "**LiveACARS.sql**", "**PIREP.sql**" and "**Pilots.sql**".
- Copy the file "**PIREPService.txt**" to the folder "**[FSFK MAIN]\Templates**".

If you want to automatically upload Flight Maps with your PIREP the follow additional steps are required:

- Create a Virtual FTP directory called "**PIREP**" that points to the folder "**...\FSFK\Images\PIREP**".
- Remove the chars "**;**" from the "**PIREPService.txt**" template.

You are now finished installing the sample. Configure the live ACARS template file. It should look similar to this one:

```
[ACARS_CONFIG]
ADDRESS=http://localhost/FSFK/ACARSService.php
PORT=80
LOGIN_ENCODED=FALSE
USER=
PASSWORD=

POSITIONREPORT=5

LIVEWATCH=http://localhost/FSFK/ACARSWatch.php
LIVEWATCHREFRESH=60
```

Now start FS Flight Keeper, go to the options dialog and select the ACARS template. Be sure that the Pilot ID is set to "**001**" or the sample service will not accept the login. Start a new flight with FS and let FSFK connect to it. After the connection has been established, try to connect FSFK to the ACARS server on your local machine. If you get any error messages, check that all permissions are set correctly and check that you didn't forget any steps (see above). If everything works open your web browser and open the following link "**http://localhost/FSFK/Index.php**". You should now be able to see your flight.

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Files in the Sample package

- **LiveACARS.sql**
  SQL script file that will install a new database and all required ACARS tables.

- **PIREP.sql**
  SQL script file that will install a new database and all required PIREP tables.

- **Pilots.sql**
  SQL script file that will install a new database and the Pilots table.

- **ACARSService.php**
  Receives ACARS messages and stores them in a MySQL Database. It also contains a simple ACARS parser to get the values for Aircraft position, IAS, Fuel, etc.

- **Index.php**
  Displays available ACARS flights stored in the Database in a table.

- **Details.php**
  Shows all messages for a specific flight ID.

- **ACARSMap.php**
  Displays all live ACARS flights on Goggle Map (requires a v3.0 client).

- **ACARSWatch.php**
  Returns all ACARS flights stored in the Database for viewing them on the FSFK World Map.

- **PIREPService.php**
  Receives PIREPs and stores them in a MySQL Database

- **PIREPs.php**
  Displays available PIREPs stored in the Database in a table.

- **PIREPDetails.php**
  Shows all details for a specific PIREP ID.

- **PIREPService.txt**
  Flight Keeper IREP template.

- **Folder Images**
  Contains all images used by the sample.

- **Folder Images\PIREP**
  This folder is used for uploading the PIREP Flight Maps.

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Login Encoder Tool

In the SDK sub folder "**Encoder**" you will find a small tool, that allows you to encode your login information, if that is really necessary. Simply start the encoder by double clicking on the file "**FSFKEncoder.exe**". Enter the user and password and click on the "**Encode**" button. Copy and Paste the encrypted login values to your template and add the parameter "**LOGIN_ENCODED=TRUE**" or "**PICTURE_LOGIN_ENCODED=TRUE**".

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Contact

Homepage

http://www.flightkeeper.net

Support Forum

http://www.molitor-home.de/FS/Forum

Email

If you have any further questions or ideas then write to thomas@molitor-home.de.

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