



The HardingFPA-X
Programmer's Manual
Version 2.0.0

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*Help ensure video is safe to watch
for both diagnosed and dormant photosensitive epileptics*

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Introduction

This manual describes the HardingFPA-X web services interface, that you may provide through your IIS or Apache web server, using SOAP. These are provided as modules/DLLs for the appropriate web servers, running under Windows or Linux.

Installation

The HardingFPA-X SOAP Service requires the following components to be installed and correctly configured:

Either:

IIS (Windows)

Or:

Apache 2.0.41 and above (Tested on Ubuntu Linux 8.04)

Apache 2.2.X (Linux and Windows)

To install the service, you need to obtain the correct HardingFPA-X Web Services module/DLL for the version of the web server you wish to use it with.

Firstly, the libraries must be installed. To do this, copy the libraries provided in the *WebServicesLibraries.zip* folder to the *Windows\System32* directory.

The following installation instructions are an example guideline only!

IIS

- Create a directory called *hfpax* in the *Inetpub* directory for the IIS Server, and copy the DLL into it (*iishfpax.dll*).
- Create a new Virtual Directory in IIS that points to the *hfpax* directory that was created above.
- The menu listing for the HardingFPA-X Web Service is then visible at:

<http://127.0.0.1/hfpax/iishfpax.dll>

- The location of the WSDL file is then:
<http://127.0.0.1/hfpax/iishfpax.dll/wsdl/HFPAXService>
- The services are then available from:
<http://127.0.0.1/hfpax/iishfpax.dll/soap/HFPAXService>

Apache

- Place the module "mod_hfpax.so" in the *modules* directory for your version of Apache.
- Edit *httpd.conf* and add the following:

```
LoadModule hfpax_module modules/mod_hfpax.so

<Location /hfpax>
    SetHandler hfpax-handler
</Location>
```

- The location of the WSDL file is then:

<http://127.0.0.1/hfpax/services/WSDL/hfpax>

- The services are then available from:

<http://127.0.0.1/hfpax/services/HFPAXService>

Configuration

The web service needs to know where the HardingFPA-X database is located, so that it can forward the method calls onwards and retrieve the results of the job queries.

Windows IIS and Apache

The database location is defined in the following Registry key (which is written to the default values shown below on first loading the module). You should change these values if you do not plan on running the web server from the same computer as the HardingFPA-X database or you are not running the database on the default port number 5432 (00001538 in hex). The "*HostName*" can be either an IP address, as in the default value, or a host name string eg "myserver".

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Cambridge Research Systems\HFPAXService]
"HostName"="127.0.0.1"
"HostPort"=dword:00001538
```

Linux Apache

The database location is defined in the configuration file */etc/mod_hfpax.conf*. You should change these values if you do not plan on running the web server from the same computer as the HardingFPA-X database or you are not running the database on the default port number 5432. The "*HostName*" can be either an IP address, as in the default value, or a host name string eg "myserver".

Config File Layout:

```
[CONNECTION]
HostName = 127.0.0.1
Port = 5432
```

HardingFPA-X API

The API for the HardingFPA-X web service allows for adding jobs, getting job status, promotion and demotion of jobs etc. Using this API and the HardingFPA-X web service, you may in effect provide your own implementation and automation to the HardingFPA-X System.

[Types](#)

[Methods](#)

Types

class types

[TJobLocations](#)
[TJobProperties](#)

enumerated types

[TAnalysisStandard](#)
[TJobStatus](#)
[TVideoStandard](#)

TJobLocations

This class defines the location information for a job being submitted. It should at least specify the filename and paths for placing the movie whether it pass or fail. The remaining paths are for the different results types and are optional. If you do not wish to save the results of any type, these can be omitted by setting them to a blank string ("").

class TJobLocations

```
{  
  
    Movie      : string;  
    Failed     : string;  
    Passed     : string;  
    Csv        : string;  
    PapPar     : string;  
    Pdf        : string;  
    Xml        : string;  
  
}
```

Movie

Path to the movie to be analysed, including the filename.

Failed

Path to where to move the movie if it fails analysis, not including the filename.

Passed

Path to where to move the movie if it passes analysis, not including the filename.

Csv

[optional] - Path to where to save CSV results.

PapPar

[optional] - Path to where to save PAP and PAR results.

Pdf

[optional] - Path to where to save PDF results.

Xml

[optional] - Path to where to save XML results.

TJobProperties

This class defines the properties of a job being submitted.

class TJobProperties

```
{
    Name           : string;
    Filename        : string;
    ResultsName     : string;
    UseJobID        : boolean;
    Submitter       : string;
    AnaysisStandard : TAnalysisStandard;
    DateIntimated   : DateTime;
    DateStarted     : DateTime;
    Analyser        : string;
    FrameWidth      : integer;
    FrameHeight     : integer;
    MovieLength     : integer;
    FrameRate       : double;
    VideoStandard   : TVideoStandard;
    DateComplete    : DateTime;
    ErrorMessage    : string;
    Priority         : integer;
}
```

Name

The name of the movie clip.

Filename

The filename of the movie clip, including the path.

ResultsName

The filename for the results files, e.g. xxxx.PDF, xxxx.CSV.

UseJobID

Whether or not to append the job id number onto the results files eg 00019xxxx.PDF.

True to append it, **False** to not append it.

Submitter

The user submitting the job, in the form "user@computer", e.g. John@workstation1.

AnaysisStandard

Which analysis standard this job is analysed as.

DateIntimated

The date/time the job was created.

DateStarted

The date/time at which analysis started.

Analyser

The computer name that the Analyser was running on that last modified this job.

FrameWidth

The frame width of the movie.

FrameHeight

The frame height of the movie.

MovieLength

The length of the movie in seconds.

FrameRate

The frame rate of the movie in frames per second.

VideoStandard

The video standard of the movie.

DateComplete

The date/time at which analysis completed.

ErrorMessage

The last error message that occurred for this particular job.

Priority

The priority of this job. This should always be set to a value between -10 and +10.

TAnalysisStandard

This is the type that describes the analysis standard that the job is to be analysed as.

enumerated type TAnalysisStandard

```
{  
    as_ofcom_itc,  
    as_nab2006;
```

```
}
```

as_ofcom_itc
 [Ofcom/ITC guidelines.](#)

as_nab2006
 [Japanese NAB2006 guidelines.](#)

TJobStatus

This is the type returned by GetJobStatus, and describes the status of a job.

enumerated type TJobStatus

```
{  
  
    js_waiting,  
    js_busy,  
    js_error,  
    js_failed,  
    js_warning,  
    js_passed,  
    js_aborting,  
    js_aborted;  
  
}
```

js_waiting
 Job is waiting to be analysed.

js_busy
 Job is busy being analysed.

js_error
 Job has encountered an error.

js_failed
 Job has been analysed and has failed the HardingFPA test.

js_warning
 Job has been analysed and has a warning (caution) in the HardingFPA test.

js_passed
 Job has been analysed and has passed the HardingFPA test.

js_aborting
 Job has been aborted and is waiting to be removed from the analysis queue.

js_aborted
 Job has been aborted.

TVideoStandard

This is the type that defines the video standard of a movie in a job, PAL or NTSC.

enumerated type TVideoStandard

{

```
    vs_unknown,  
    vs_pal25,  
    vs_ntsc30;
```

}

vs_unknown
 Unknown video standard.

vs_pal25
 PAL, 25 frames per second.

vs_ntsc30
 NTSC, 29.97 frames per second.

Methods

SubmitJob

Used to enter a job into the job queue.

GetJobProperties

Used to retrieve a job's properties.

GetJobStatus

Used to retrieve a job's status.

GetError

Returns the last error message created by the system.

GetVersion

Returns the currently running version of the HardingFPA-X SOAP Service Module.

GetJobQueue

Used to obtain the current job queue.

GetJobCompletedQueue

Used to view the list of completed jobs.

SetJobPriority

A supervisor function used to set the priority of a job in the job queue.

GetJobLocations

Used to get the job locations for a particular job.

SubmitJob

Used to enter a job into the job queue. This method takes arguments defining the job itself, and returns a result integer with the job_id of the newly submitted job, or -1 if an error occurs (at which point [GetError](#) can be called to determine the error message).

method SubmitJob

```
(  
    Name : string,  
    ResultsName : string,  
    UseJobID : boolean,  
    Submitter : string,  
    Locations : TJobLocations,  
    AnalysisStandard : TAnalysisStandard;  
  
    ) returns result : integer;
```

Parameters

Name

The name of the movie clip.

ResultsName

The filename for the results files, e.g. xxxx.PDF, xxxx.CSV.

UseJobID

Whether or not to append the job id number onto the results files eg 00019xxxx.PDF.

True to append it, **False** to not append it.

Submitter

The user submitting the job, in the form "user@computer", e.g. John@workstation1.

Locations

The [TJobLocations](#) object defining the required path information for the job.

AnalysisStandard

The [TAnalysisStandard](#) object defining the required analysis standard that the job is to be analysed as.

Return Value

result

The job_id of the newly submitted job, or -1 if any error occurs in the job submission process.

GetJobProperties

Used to retrieve a job's properties. This method takes an argument defining the `job_id` of the job in question, and returns the [TJobProperties](#) and a result integer of 0 if the method completed successfully, or -1 if an error occurs (at which point [GetError](#) can be called to determine the error message).

method GetJobProperties

```
(  
    ID : integer;  
  
) returns result : integer, Properties : TJobProperties;
```

Parameters

ID
 The `job_id` of the job.

Return Values

result
 Returns 0 if the method completed successfully and -1 if not. If -1 is returned, use [GetError](#) to get the last error message.

Properties
 A [TJobProperties](#) object defining the current properties of the requested job.

GetJobStatus

Used to retrieve a job's status, i.e. if it has passed, failed, waiting, error etc. This method takes an argument defining the `job_id` of the job in question, and returns the [TJobStatus](#) defining the current status, an integer defining how much of the movie has currently been analysed (in seconds), and a result integer of 0 if the method completed successfully, or -1 if an error occurs (at which point [GetError](#) can be called to determine the error message).

method GetJobStatus

```
(  
    ID : integer;  
  
    ) returns result : integer, Status : TJobStatus,  
    MovieAnalysed : integer;
```

Parameters

ID
 [The job_id of the job.](#)

Return Values

result
 [Returns 0 if the method completed successfully and -1 if not. If -1 is returned, use \[GetError\]\(#\) to get the last error message.](#)

Status
 [The current status of the requested job.](#)

MovieAnalysed
 [The number of seconds of movie that has currently been analysed.](#)

GetError

Returns the last error message created by the system. This is typically called after obtaining a value of -1 from the result value of a method call, in order to see what went wrong with the method call.

method `GetError()` returns `result : string`;

Return Value

result

The last error message generated by the system.

GetVersion

Returns the currently running version of the HardingFPA-X SOAP Service Module.

method `GetVersion()` returns `result : integer;`

Return Value

result

The HardingFPA-X SOAP Service Module version number.

GetJobQueue

Used to obtain the current job queue, as an array of job_id values, and a result integer of 0 if the method completed successfully, or -1 if an error occurs (at which point [GetError](#) can be called to determine the error message).

method `GetJobQueue()`

returns result : integer, Queue : array of integer;

Return Value

result

Returns 0 if the method completed successfully and -1 if not. If -1 is returned, use [GetError](#) to get the last error message.

Queue

An array of integers containing the job_id of all of the jobs currently in the Job Queue.

GetJobCompletedQueue

Used to view the list of completed jobs, as an array of job_id values, and a result integer of 0 if the method completed successfully, or -1 if an error occurs (at which point [GetError](#) can be called to determine the error message).

```
method GetJobCompletedQueue()  
returns result : integer, CompletedQueue : array of  
integer;
```

Return Value

result

Returns 0 if the method completed successfully and -1 if not. If -1 is returned, use [GetError](#) to get the last error message.

CompletedQueue

An array of integers containing the job_id of all of the jobs currently in the Completed Jobs list.

SetJobPriority

A supervisor function used to set the priority of a job in the job queue. The priority value should only be set to a value within the range -10 to +10. This method takes arguments defining the job itself (by job_id) and the priority value to be set, and returns a result integer of 0 if the method completes or -1 if an error occurs (at which point [GetError](#) can be called to determine the error message).

method SetJobPriority

```
(  
    ID          : integer,  
    Priority     : integer;  
  
) returns result : integer;
```

Parameters

ID
 [The job_id of the job.](#)

Priority
 [The priority of the job. This should always be set to a value between -10 and +10.](#)

Return Value

result
 [Returns 0 if the method completed successfully and -1 if not. If -1 is returned, use \[GetError\]\(#\) to get the last error message.](#)

GetJobLocations

Used to get the job locations information for a particular job in the form of a [TJobLocations](#) object. This method takes the `job_id` of the job in question, and returns the [TJobLocations](#) object and a result integer of 0 if the method completes or -1 if an error occurs (at which point [GetError](#) can be called to determine the error message).

method GetJobLocations

```
(  
    ID : integer;  
) returns result : integer, Locations : TJobLocations;
```

Parameters

ID
 The `job_id` of the job.

Return Values

result
 Returns 0 if the method completed successfully and -1 if not. If -1 is returned, use [GetError](#) to get the last error message.

Locations
 A [TJobLocations](#) object defining the location information for the specified job.

WSDL

The HardingFPA-X Web Service is described by the following WSDL file:

```
<?xml version="1.0"?>
<definitions name="hfpax" xmlns="http://schemas.xmlsoap.org/wsdl/" xmlns:tns="
hfpax" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:soap="
http://schemas.xmlsoap.org/wsdl/soap/" targetNamespace="hfpax">
  <types>
    <xsd:schema xmlns="http://www.w3.org/2001/XMLSchema" xmlns:tns="hfpax"
targetNamespace="hfpax">
      <xsd:complexType name="TJobLocations">
        <xsd:extension base="xsd:TBaseComplexRemotable">
          <xsd:sequence>
            <xsd:element name="Movie" type="xsd:string"/>
            <xsd:element name="Failed" type="xsd:string"/>
            <xsd:element name="Passed" type="xsd:string"/>
            <xsd:element name="Csv" type="xsd:string"/>
            <xsd:element name="PapPar" type="xsd:string"/>
            <xsd:element name="Pdf" type="xsd:string"/>
            <xsd:element name="Xml" type="xsd:string"/>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexType>
      <xsd:simpleType name="TAnalysisStandard">
        <xsd:restriction base="xsd:string">
          <xsd:enumeration value="as_ofcom_itc"/>
          <xsd:enumeration value="as_nab2006"/>
        </xsd:restriction>
      </xsd:simpleType>
      <xsd:complexType name="TJobProperties">
        <xsd:extension base="xsd:TBaseComplexRemotable">
          <xsd:sequence>
            <xsd:element name="Name" type="xsd:string"/>
            <xsd:element name="Filename" type="xsd:string"/>
            <xsd:element name="ResultsName" type="xsd:string"/>
            <xsd:element name="UseJobID" type="xsd:boolean"/>
            <xsd:element name="Submitter" type="xsd:string"/>
            <xsd:element name="AnalysisStandard" type="tns:TAnalysisStandard"/>
            <xsd:element name="DateIntimated" type="xsd:dateTime"/>
            <xsd:element name="DateStarted" type="xsd:dateTime"/>
            <xsd:element name="Analyser" type="xsd:string"/>
            <xsd:element name="FrameWidth" type="xsd:int"/>
            <xsd:element name="FrameHeight" type="xsd:int"/>
            <xsd:element name="MovieLength" type="xsd:int"/>
            <xsd:element name="FrameRate" type="xsd:double"/>
            <xsd:element name="VideoStandard" type="tns:TVideoStandard"/>
            <xsd:element name="DateComplete" type="xsd:dateTime"/>
            <xsd:element name="ErrorMessage" type="xsd:string"/>
            <xsd:element name="Priority" type="xsd:int"/>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexType>
      <xsd:simpleType name="TJobStatus">
        <xsd:restriction base="xsd:string">
          <xsd:enumeration value="js_waiting"/>
          <xsd:enumeration value="js_busy"/>
          <xsd:enumeration value="js_error"/>
          <xsd:enumeration value="js_failed"/>
          <xsd:enumeration value="js_warning"/>
          <xsd:enumeration value="js_passed"/>
          <xsd:enumeration value="js_aborting"/>
          <xsd:enumeration value="js_aborted"/>
        </xsd:restriction>
      </xsd:simpleType>
      <xsd:simpleType name="TVideoStandard">
```

```

        <xsd:restriction base="xsd:string">
            <xsd:enumeration value="vs_unknown"/>
            <xsd:enumeration value="vs_pal25"/>
            <xsd:enumeration value="vs_ntsc30"/>
        </xsd:restriction>
    </xsd:simpleType>
</xsd:schema>
</types>
<message name="SubmitJob">
    <part name="Name" type="xsd:string"/>
    <part name="ResultsName" type="xsd:string"/>
    <part name="UseJobID" type="xsd:boolean"/>
    <part name="Submitter" type="xsd:string"/>
    <part name="Locations" type="tns:TJobLocations"/>
    <part name="AnalysisStandard" type="tns:TAnalysisStandard"/>
</message>
<message name="SubmitJobResponse">
    <part name="result" type="xsd:int"/>
</message>
<message name="GetJobProperties">
    <part name="ID" type="xsd:int"/>
</message>
<message name="GetJobPropertiesResponse">
    <part name="Properties" type="tns:TJobProperties"/>
    <part name="result" type="xsd:int"/>
</message>
<message name="GetJobStatus">
    <part name="ID" type="xsd:int"/>
</message>
<message name="GetJobStatusResponse">
    <part name="Status" type="tns:TJobStatus"/>
    <part name="MovieAnalysed" type="xsd:int"/>
    <part name="result" type="xsd:int"/>
</message>
<message name="GetError"/>
<message name="GetErrorResponse">
    <part name="ErrorMessage" type="xsd:string"/>
    <part name="result" type="xsd:int"/>
</message>
<message name="GetVersion"/>
<message name="GetVersionResponse">
    <part name="result" type="xsd:int"/>
</message>
<message name="GetJobQueue"/>
<message name="GetJobQueueResponse">
    <part name="Queue" type="xsd:TArrayOfInt32SRemotable"/>
    <part name="result" type="xsd:int"/>
</message>
<message name="GetJobCompletedQueue"/>
<message name="GetJobCompletedQueueResponse">
    <part name="CompletedQueue" type="xsd:TArrayOfInt32SRemotable"/>
    <part name="result" type="xsd:int"/>
</message>
<message name="SetJobPriority">
    <part name="ID" type="xsd:int"/>
    <part name="Priority" type="xsd:int"/>
</message>
<message name="SetJobPriorityResponse">
    <part name="result" type="xsd:int"/>
</message>
<message name="GetJobLocations">
    <part name="ID" type="xsd:int"/>
</message>
<message name="GetJobLocationsResponse">
    <part name="Locations" type="tns:TJobLocations"/>
    <part name="result" type="xsd:int"/>
</message>
<message name="AbortJob">
    <part name="ID" type="xsd:int"/>

```

```

</message>
<message name="AbortJobResponse">
  <part name="result" type="xsd:int"/>
</message>
<portType name="HFPAXService">
  <document>
    <GUID value="{A1B8414B-4798-415D-83EA-F008ADBC7664}"/>
  </document>
  <operation name="SubmitJob">
    <input message="tns:SubmitJob"/>
    <output message="tns:SubmitJobResponse"/>
  </operation>
  <operation name="GetJobProperties">
    <input message="tns:GetJobProperties"/>
    <output message="tns:GetJobPropertiesResponse"/>
  </operation>
  <operation name="GetJobStatus">
    <input message="tns:GetJobStatus"/>
    <output message="tns:GetJobStatusResponse"/>
  </operation>
  <operation name="GetError">
    <input message="tns:GetError"/>
    <output message="tns:GetErrorResponse"/>
  </operation>
  <operation name="GetVersion">
    <input message="tns:GetVersion"/>
    <output message="tns:GetVersionResponse"/>
  </operation>
  <operation name="GetJobQueue">
    <input message="tns:GetJobQueue"/>
    <output message="tns:GetJobQueueResponse"/>
  </operation>
  <operation name="GetJobCompletedQueue">
    <input message="tns:GetJobCompletedQueue"/>
    <output message="tns:GetJobCompletedQueueResponse"/>
  </operation>
  <operation name="SetJobPriority">
    <input message="tns:SetJobPriority"/>
    <output message="tns:SetJobPriorityResponse"/>
  </operation>
  <operation name="GetJobLocations">
    <input message="tns:GetJobLocations"/>
    <output message="tns:GetJobLocationsResponse"/>
  </operation>
  <operation name="AbortJob">
    <input message="tns:AbortJob"/>
    <output message="tns:AbortJobResponse"/>
  </operation>
</portType>
<binding name="HFPAXServiceBinding" type="tns:HFPAXService">
  <soap:binding style="rpc" transport="http://schemas.xmlsoap.org/soap/http"/>
  <operation name="SubmitJob">
    <soap:operation soapAction=""/>
    <input>
      <soap:body use="literal" namespace="hfpax"/>
    </input>
    <output>
      <soap:body use="literal" namespace="hfpax"/>
    </output>
  </operation>
  <operation name="GetJobProperties">
    <soap:operation soapAction=""/>
    <input>
      <soap:body use="literal" namespace="hfpax"/>
    </input>
    <output>
      <soap:body use="literal" namespace="hfpax"/>
    </output>
  </operation>

```

```

<operation name="GetJobStatus">
  <soap:operation soapAction=""/>
  <input>
    <soap:body use="literal" namespace="hfpax"/>
  </input>
  <output>
    <soap:body use="literal" namespace="hfpax"/>
  </output>
</operation>
<operation name="GetError">
  <soap:operation soapAction=""/>
  <input>
    <soap:body use="literal" namespace="hfpax"/>
  </input>
  <output>
    <soap:body use="literal" namespace="hfpax"/>
  </output>
</operation>
<operation name="GetVersion">
  <soap:operation soapAction=""/>
  <input>
    <soap:body use="literal" namespace="hfpax"/>
  </input>
  <output>
    <soap:body use="literal" namespace="hfpax"/>
  </output>
</operation>
<operation name="GetJobQueue">
  <soap:operation soapAction=""/>
  <input>
    <soap:body use="literal" namespace="hfpax"/>
  </input>
  <output>
    <soap:body use="literal" namespace="hfpax"/>
  </output>
</operation>
<operation name="GetJobCompletedQueue">
  <soap:operation soapAction=""/>
  <input>
    <soap:body use="literal" namespace="hfpax"/>
  </input>
  <output>
    <soap:body use="literal" namespace="hfpax"/>
  </output>
</operation>
<operation name="SetJobPriority">
  <soap:operation soapAction=""/>
  <input>
    <soap:body use="literal" namespace="hfpax"/>
  </input>
  <output>
    <soap:body use="literal" namespace="hfpax"/>
  </output>
</operation>
<operation name="GetJobLocations">
  <soap:operation soapAction=""/>
  <input>
    <soap:body use="literal" namespace="hfpax"/>
  </input>
  <output>
    <soap:body use="literal" namespace="hfpax"/>
  </output>
</operation>
<operation name="AbortJob">
  <soap:operation soapAction=""/>
  <input>
    <soap:body use="literal" namespace="hfpax"/>
  </input>
  <output>

```

```
        <soap:body use="literal" namespace="hfpax"/>
    </output>
</operation>
</binding>
<service name="HFPAXService">
    <port name="HFPAXServicePort" binding="tns:HFPAXServiceBinding">
        <soap:address location=""/>
    </port>
</service>
</definitions>
```



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