
APIR Systems

**Integrating APIR Systems
into Third Party Applications**

Version 1.3

Web Services	Version: 1.3
Modern Software Requirements Specification	Date: 22 February 2005
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Revision History

Date	Version	Description	Author
7 February 2002	1.0	Initial document	Richard Brand
26 February 2002	1.1	Added sample Delphi code for unpacking an APIR Certificate	Brendan McLaughlin
06 May 2002	1.2	Added installation and user guide for the Delphi Certificate Decoder API	Brendan McLaughlin
22 February 2005	1.3	Removed Certificate References, Delphi References and enhanced Web Services references.	Marcus Jowsey

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1 Integrating APIR Systems into Third Party Applications

This document covers configuration or other changes to third party systems, which may be needed to allow these systems to be integrated with the systems and services provided by APIR Systems Limited.

It also describes Web Services provided by APIR for the on-line, real-time integration of APIR's Data Registers and APIR's SPIN Surcharge Directory with customer or third party systems.

1.1 Industry Directories

APIR Systems maintains several Financial Services Industry directories, identifying industry participants, and financial products. All recorded entities are provided unique 9-character codes, which may be used to retrieve data about the entity.

Examples of specific registers include the SuperEC Surcharge Reporting Register. This directory maps superannuation funds, superannuation providers, superannuation products and banking details to support the Australian Taxation Office's reporting requirements for superannuation providers.

Access to APIR Directories is provided in three ways

- o over the web to browser users
- o as downloadable files in CSV and XML formats
- o on-line over the web to third-party applications using Web Services.

This document describes how systems need to be configured to:

- o use Web Services to access Directories from external client applications, such as screen-based enquiries

1.2 Definitions, Acronyms and Abbreviations

API	Application Programming Interface – the definition of the methods and message formats used to allow one computer application to interoperate with another computer application
HTTPS	<p>HTTPS (Hypertext Transfer Protocol over Secure Sockets Layer) is a Web protocol developed by Netscape that encrypts and decrypts user page requests as well as the pages that are returned by the Web server. HTTPS uses Netscape's Secure Socket Layer (SSL) as a sublayer under its regular HTTP application layering. HTTPS uses port 443 instead of HTTP port 80 in its interactions with the lower layer, TCP/IP.</p> <p>HTTPS and SSL support the use of X.509 digital certificates. SSL is an open, nonproprietary protocol that Netscape has proposed as a standard to the World Wide Consortium (W3C).</p>
Integrity	Integrity guarantees the contents of a digitally signed message have not been changed, by comparing the signed message digest with a recomputed message digest
ITU	International Telecommunications Union - was formerly known as the CCITT
Non-repudiation	Non-repudiation guarantees that the true author and exact contents of a digitally signed message (or document) cannot be denied.

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PIC	Product Identification Code – an industry standard APIR-assigned 9 character code identifying a financial product
PRI	Participant Representative Identifier – an industry standard APIR-assigned 9 character code identifying a person or organization operating in the financial services industry
SMTP	Simple Mail Transfer Protocol is a TCP/IP protocol used in sending and receiving e-mail.
SOAP	<p>Simple Object Access Protocol (SOAP) is a way for one program to communicate with another program by using the World Wide Web's Hypertext Transfer Protocol (HTTP) and its Extensible Markup Language (XML) as the mechanisms for information exchange. SOAP specifies exactly how to encode an HTTP header and an XML file so that a program in one computer can call a program in another computer and pass it information. It also specifies how the called program can return a response.</p> <p>SOAP was developed by Microsoft, DevelopMentor, and Userland Software and has been proposed as a standard interface to the Internet Engineering Task Force (IETF).</p> <p>An advantage of SOAP is that program calls are much more likely to get through firewall servers that screen out requests other than those for known applications (through the designated port mechanism). Since HTTP requests are usually allowed through firewalls, programs using SOAP to communicate can be sure that they can communicate with programs anywhere.</p>
SSL	<p>The Secure Sockets Layer (SSL) is a commonly-used protocol for managing the security of message transmissions on the Internet. SSL uses a program layer located between the Internet's Hypertext Transfer Protocol (HTTP) and Transport Control Protocol (TCP) layers. SSL is included as part of both the Microsoft and Netscape browsers and most Web server products. The "sockets" part of the term refers to the sockets method of passing data back and forth between a client and a server program in a network or between program layers in the same computer. SSL includes the use of digital certificates.</p> <p>SSL establishes a secure web session by generating a shared-secret key which is used to encrypt all messages for the duration of the session. It authenticates the server to the user by checking the server's certificate against a trusted authority. As an option, it can also authenticate the user to the server by requesting a user certificate.</p>
TCP/IP	Transmission Control Protocol/Internet Protocol is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network (either an intranet or an extranet). When you are set up with direct access to the Internet, your computer is provided with a copy of the TCP/IP program just as every other computer that you may send messages to or get information from also has a copy of TCP/IP.
UDDI	Universal Description, Discovery, and Integration (UDDI) is an initiative spearheaded by Microsoft, IBM, and Ariba. UDDI is an XML-based registry for businesses worldwide, which enables businesses to list themselves and their services on the Internet.

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URL	Universal Resource Locator – a unique character sequence identifying a web page or service on the world wide web. A URL is the address of a file (resource) accessible on the Internet. The type of resource depends on the Internet application protocol. Using the World Wide Web's protocol, the Hypertext Transfer Protocol (HTTP), the resource can be an HTML page, an image file, a program such as a common gateway interface application or Java applet, or any other file supported by HTTP. The URL contains the name of the protocol required to access the resource, a domain name that identifies a specific computer on the Internet, and a hierarchical description of a file location on the computer.
Web service	Web services are services that are made available from a business's Web server for Web users or other Web-connected programs.
WSDL	The Web Services Description Language (WSDL) is an XML-based language used to describe the services a business offers and to provide a way for individuals and other businesses to access those services electronically. WSDL is the cornerstone of the UDDI initiative spearheaded by Microsoft, IBM, and Ariba.
XML	eXtensible Markup Language - a flexible way to create common information formats and share both the format and the data on the World Wide Web, intranets, and elsewhere

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2 Accessing APIR's systems from external applications

2.1 Summary

APIR's systems may be accessed from external applications, such as screen-based enquiries or validation routines.

The simplest access regime is to embed a URL to APIR Website so that users can directly access the website from the displayed screen. The disadvantage is that no additional data is passed to populate a request for a compliance assessment.

2.2 Web Services

In principle, each web service comprises a URL identifying the service and capability of carrying data parameters. The existing application is modified to collect and pass the required data parameters to the URL, and in turn receives a record containing the results of the assessment in programmatic form.

Web Services are packaged so that application developers need only be concerned with calling a method corresponding to the required service.

Web Services provide a language and platform independent mechanism for computer programs to interoperate remotely with the APIR services. APIR Web Services can be consumed by client applications written in many platform and language combinations.

2.3 Systems Considerations

The messages are transported over standard Internet protocols such as HTTP, HTTPS or SMTP and so can securely pass through most firewalls without raising complex configuration issues.

2.4 Other Issues

The implementing organization will need to agree its security policy with APIR Systems before APIR will deliver confidential components from APIR's information base via Web services.

2.5 Details

To enable an external organization to access APIR's Web services, APIR provides a WSDL file that defines the business operations (methods and parameters) published by APIR. There is a WSDL file for each package of services. The files can be downloaded from APIR's web site.

The organization uses the WSDL file to generate the language-specific methods needed to invoke the Web services. The organization then modifies their applications where required, to collect the required parameters, invoke the required service using the generated methods, and process the returned information.

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2.6 SPIN Surcharge Reporting Web Services

Below is an example of the use of the Surcharge Directory WSDL file using Borland JBuilder Version 6.0 with “Web Services Kit For Java” installed (note that this development kit is a free download from the Borland Web site).

To obtain and use the Web Service,

- Download the **SurchargeRegister.wsdl** file from APIR’s web site.
- Create a new JBuilder project.
- Import the WSDL file into the JBuilder project. This will result in the following stub files being automatically generated:
 - **SurchargeRecord.java** – a class that encapsulates the return values from the Web service method
 - **SurchargeRegisterBindingStub.java** – an implementation of the client-side binding to the Web service
 - **SurchargeRegisterPortType.java** – an interface definition for the client-side binding to the Web service
 - **SurchargeRegisterService.java** – an interface definition for the Web service
 - **SurchargeRegisterServiceLocator.java** – an implementation of the Web service
- Create a Java class with a main method. The main method should do the following:
 - Create an instance of the Surcharge Register service
 - Create a binding to the service from the service instance
- Use the service by calling the **lookupSurchargeRecordBySPIN()** method. The method takes one input parameter:
 - the 9-character SPIN code of a superannuation product,
 and returns the following:
 - the Product Name corresponding to the SPIN
 - the PIC code of the Fund
 - the name of the Fund
 - the Superannuation Fund Number of the Fund
 - the Australian Business Number of the Fund
 - the PRI code of the Provider
 - the name of the Provider

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2.7 Sample Java code to access details of a SPIN Surcharge product

```

try {
    String exampleSPIN = "CSA0026AU";

    //bind to the service
    SurchargeRegisterServiceLocator service = new SurchargeRegisterServiceLocator();
    SurchargeRegisterPortType binding = service.getSurchargeRegister();

    //use the service
    SurchargeRecord exampleProduct= binding.lookupSurchargeRecordBySPIN(exampleSPIN);

    //display the results
    if (exampleProduct == null) {
        System.out.println(exampleSPIN + " not found in Surcharge Register");
    } else {
        System.out.println(" Product SPIN: " + exampleProduct.getProductSPIN());
        System.out.println(" Product Name: " + exampleProduct.getProductName());
        System.out.println("      Fund PIC: " + exampleProduct.getFundPIC());
        System.out.println("      Fund Name: " + exampleProduct.getFundName());
        System.out.println("      Fund SFN: " + exampleProduct.getFundSFN());
        System.out.println("      Fund ABN: " + exampleProduct.getFundABN());
        System.out.println(" Provider PRI: " + exampleProduct.getProviderPRI());
        System.out.println("Provider Name: " + exampleProduct.getProviderName());
    }
} catch (javax.xml.rpc.ServiceException jre) {
} catch (java.rmi.RemoteException re) {
}

```