

Real Time Identification

...a National Police Services Project under the stewardship of the
Royal Canadian Mounted Police



Web Service Transport Description

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RECORD OF AMENDMENTS

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1 1. Introduction

The web service (WS) transport mechanism is used to share information between the Automated Fingerprint Identification Service (AFIS) and the NPS-NIST Server (NNS).

This document describes the details of the interface between AFIS and NNS, such as the WS names, the error handling, and the WSDL structure.

1.1 What is a Web Service?

A Web Service is a method of communication between two systems over a network. It uses a standard XML interface which bridges the connection between divers systems.

1.2 References

Reference documents are listed below.

- <http://www.w3.org/2002/ws>
- <http://java.sun.com/webservices/xwss/index.jsp>
- <http://www.w3.org/TR/2000/NOTE-SOAP-2000508>
- <http://www.w3.org/TR/wsdl>
- <http://www.uddi.org>

2 2. ICD5 Web Service Name

2.1 Architecture

There are currently two systems within the scope of consideration in this report. They are:

- NNS (NPS NIST Server)
- AFIS

Each of these system will provide a pair of similarly named web services.

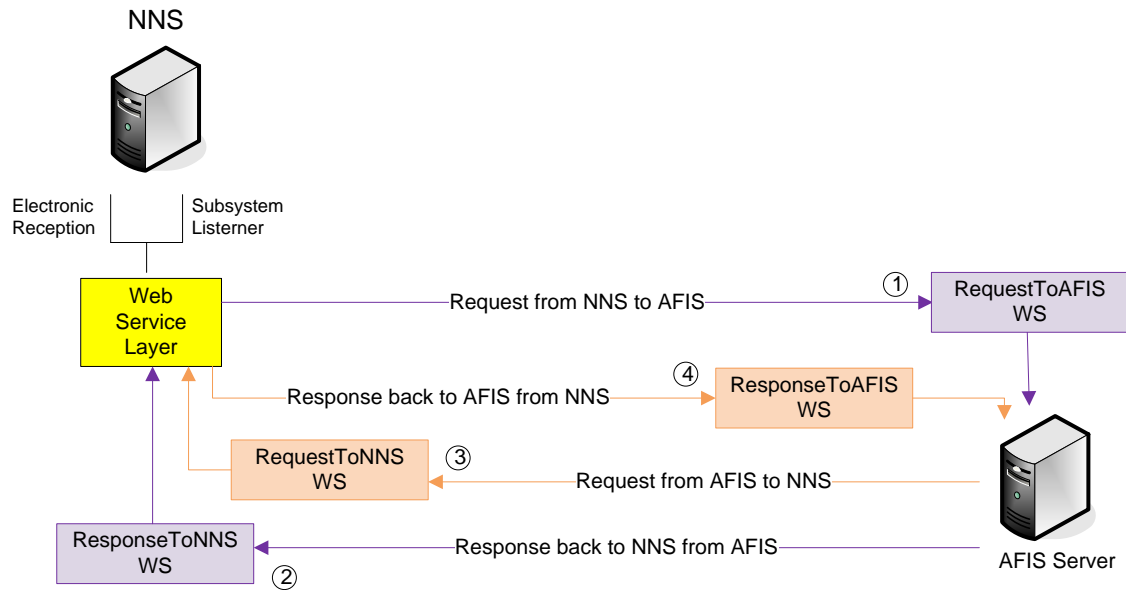
The first web service will be prefixed with “RequestTo” concatenated with the name of the system (e.g. “RequestToAFIS”). This web service will be called by the other systems when a new process is to be initiated.

The second web service will be prefixed by “ResponseTo” concatenated with the name of the system(e.g. “ResponseToAFIS”). This web service will be called when another system has finished processing a request made to it and wants to return the response to that request to the system which submitted it originally.

This means that there are a total of four defined web services named as:

- Web Services Deployed on NNS
- RequestToNNS
- ResponseToNNS
- Web Services Deployed on AFIS and Paper Conversion
- RequestToAFIS
- ResponseToAFIS

The interaction between these systems is shown below (See Figure 1). This design allows easy differentiation between new requests from another system and response to request originally sent out to another system.

**Figure 1**

For example:

1. NNS sends a request to AFIS.
2. AFIS receives the request through one WS (see ① on Figure 1).
3. After AFIS has completed the processing, it sends a response back to NNS.
4. NNS will receive the response through one of its WS (see ② on Figure 1)

The reverse path would be:

1. AFIS send a request to NNS.
2. NNS receives the request through their second WS (see ③ on Figure 1)
3. After NNS has completed the processing, it sends a response back to AFIS
4. AFIS will receive the response through its second WS (see ④ on Figure 1)

2.2 Request/Response

The Request to one system and the Response back constitutes a pair. Each system will have a pair of webservices which, taken together, will allow a flexible and full range of appropriate and relevant interaction with other systems.

3 3. Web Service Error Messages

3.1 Levels of error messages

WS and the ICDs provide us with 3 levels of error messages:

1. Web Service Level
2. Parameter Level
3. ICD Level

3.2 Web Service Level

As part of the WS standard, a success/fail message is automatically returned. In case of failure and error code is returned in a parameter in the WSDL.

3.4 NIST Packet Level

As per the AFIS-ICD, the ERRIN is used to send a failure message from the AFIS to the NNS in situations such as ICD errors. AN ACKI is not required as it will be the Web Service level error of success or failure that supports this integrity requirement. The ERRIN also includes records describing the type of error(s). These NIST Packets will be used if there are errors in the request. See the AFIS-ICD for more details.

4 4. WSDLs

4.1 NIST Packets to Web Services

Each Type of Transactions (TOT) will be associated with a Web Service. For a complete list of all TOTs, refer to the AFIS-ICD.

4.2 Parameters

4.2.1 NIST Packet

The NIST Packet will be embedded in the WS.

4.2.2 Types of Transactions

The TOT will be copied from the NIST Packet and added as a parameter. This will assist the NIST Packet routing in the NNS. The NNS is responsible for handling mal-formed or invalid TOTs in this field.

4.2.3 Error Code

The possible error code returned from AFIS include . However, any details around the error codes and processing that could generate error codes will be agreed to between the RCMP and the Contractor prior to implementation.

4.3 Web Service Names

As outlined before there are a total of four web services defined. They are

- RequestToNNS
- ResponseToNNS
- RequestToAFIS
- ResponseToAFIS

4.4 Web Service Version

- WSDL version 1.1
- SOAP 1.1
- UDDI 2.0