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Interoperability Framework Spine Mini Service – FGM RIS Provider Requirements

Document management

Revision History

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0.1	21/04/2016	Initial Draft
0.2	01/08/2016	Initial changes in line with TRG requirements to act as a security broker
0.3	03/08/2016	Updated diagrams
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1.0	31/05/2	Final

Reviewers

This document must be reviewed by the following people:

Reviewer name	Title / Responsibility	Date	Version
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Simon Knee	Interoperability & Messaging specification	06/03/2017	0.7
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Glossary of Terms

Term / Abbreviation	What it stands for
NHS Digital IF	NHS Digital Interoperability Framework
NHS Digital ITK	NHS Digital Interoperability Tool Kit Initiative by DHID Tech Office to create lightweight messaging standards to accelerate connectivity between deployed solutions.
SMSP	Spine Mini Services Provider - Middleware that provides access to lightweight, filtered services on National Applications
FGM	Female Genital Mutilation
FGM RI	Female Genital Mutilation Risk Indicator
FGM RIS	Female Genital Risk Indication Service. A national application providing information of females under 18 at risk of FGM in England
PDS	Personal Demographics Service. A National Application providing demographics update and retrieval services.
SCR	Summary Care Record
CP-IS	Child Protection Information Service
RBAC	Role Based Access Control. Used across NHS systems to control access to systems for authenticated system users
FHIR	Fast Healthcare Interoperability Resources - standards framework created by HL7.
DMS	Domain Message Specification
ASID	Accredited System Identifier

Reference Documents

Ref	Description
01	SCCI2112 FGM RIS – Local System integration Requirements Specification v2.0
02	IF Spine Mini Service - Common Provider Requirements
03	ITK Core document set V2.1
04	FGM RI message definitions DMS V2.0 These can be downloaded from: https://nhsconnect.github.io/fgm-risk-indication-service/

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Contents

1. Introduction

Spine Mini Services are a specification to enable suppliers of third party software to provide solutions that provide a greatly simplified interface for accessing a subset of Spine services. The intent is to thus lower the “barrier to entry” to the Spine.

This document forms part of the overall document set for Spine Mini Services Security Brokering and supporting documents from the Interoperability Framework.

1.1. Purpose of Document

Background context

This document is a specification for the implementation of services that are expected to be provided by a Spine Mini Service Provider (SMSP). There are also requirements in here for the design and assurance process. The implementation specification provides some requirements for some non-functional behaviour of the SMSP as well as some guidance for implementation decisions.

Some of the requirements in this document will be assured using the Common Assurance Process and some will be assured using the Interoperability Framework Accreditation process..

1.2. Interoperability Framework SMS Documentation

The position of this document in relation to the document set is shown below heading should describe why the document has been written.

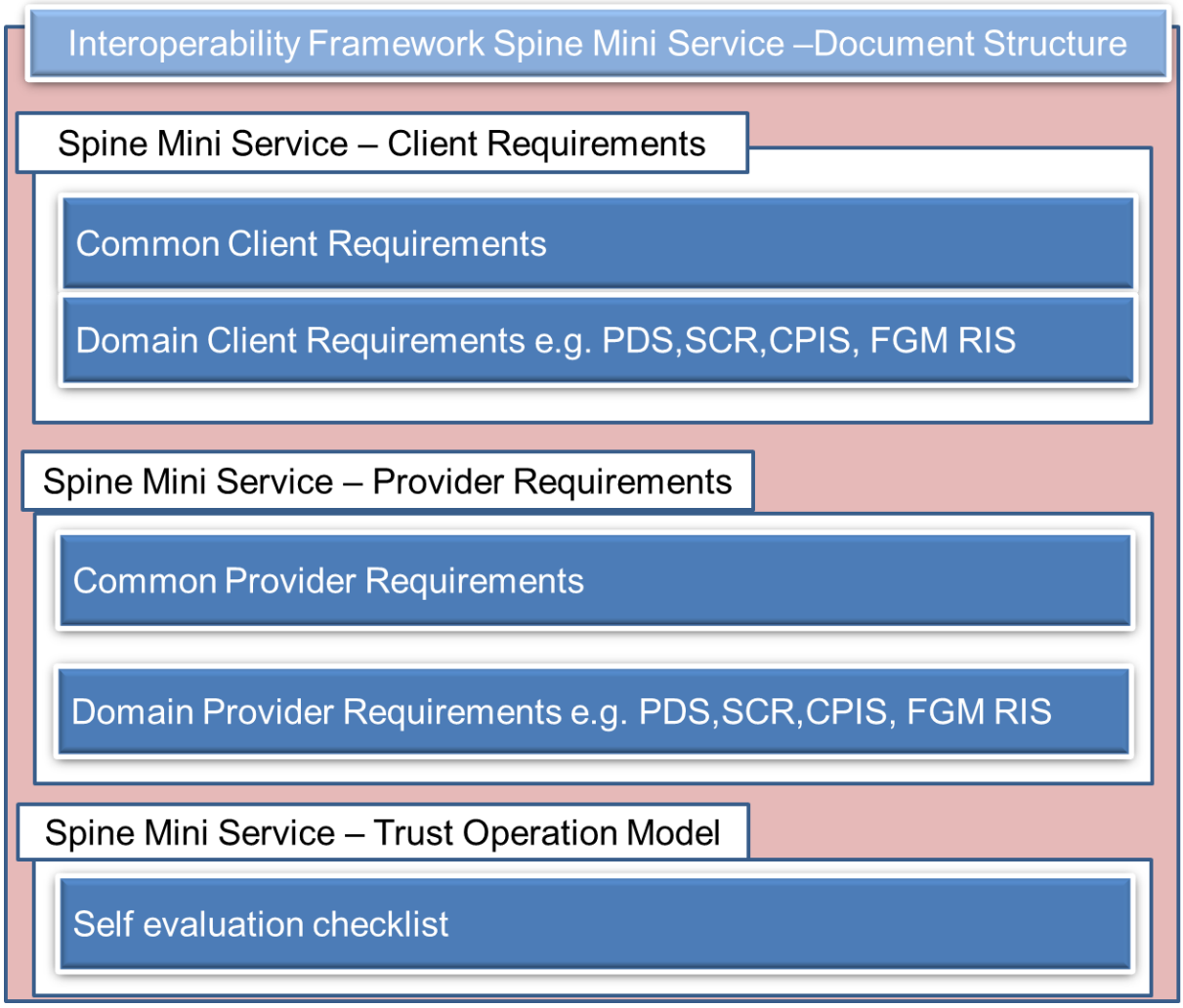

Figure 1 – The Interoperability Framework Spine Mini Services Architecture Document Set.

1.3. Audience

The primary audience for this document are the developers (analysts, architects, developers) working on the development and implementation of a Spine Mini Service in a similar way to an ITK Process. This document set is relevant to the implementing Trusts' Project Manager and technical team.

These requirements are common/generic to all FGM RIS Spine Mini Service Provider implementations.

1.4. Scope

The document only describes the requirements of the Provider application with respects to interfacing with FGM RIS. Other documents describe the responsibilities of the Spine Mini Services Client and also the more general Operating Model responsibilities of the deploying organisation.

For the avoidance of doubt, this document does not describe requirements which will be subject to central conformance testing by NHS Digital. Rather it provides guidance to NHS

Organisations in terms of their own responsibilities when developing or purchasing software to make use of the Spine Mini Services interfaces

2. High Level Overview

2.1 Level 0 View

A SMS is an application which handles the complexity of dealing with the Spine boundary yet provides a simplified interface to its clients. The complexity saving can be expressed both in terms of relaxed requirements for certain system calls, syntactically and semantically more concise messaging and providing a security bridge to spine.

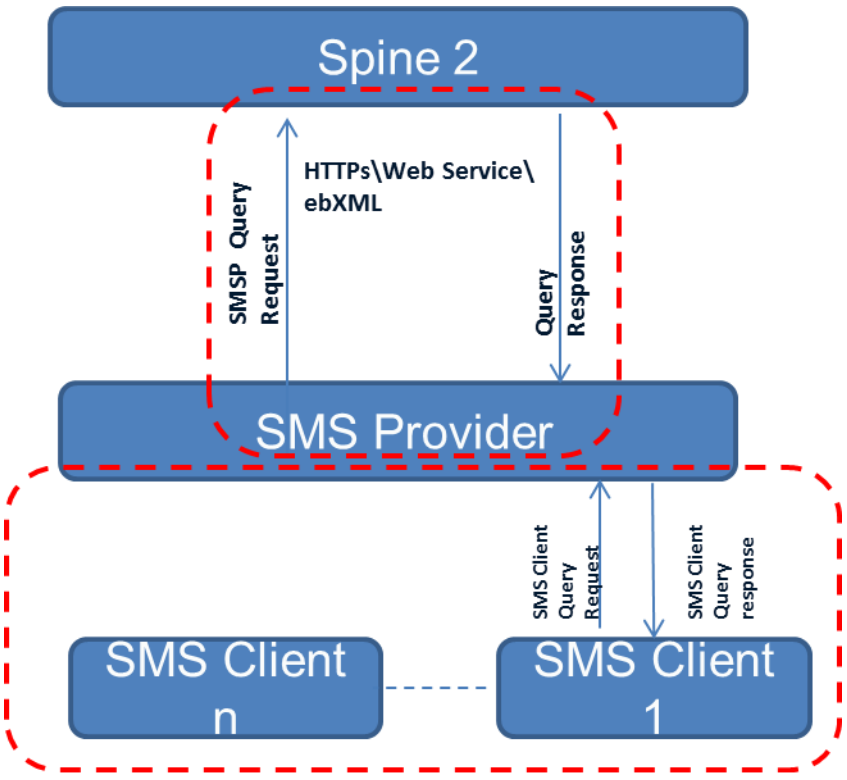

Figure 2: High Level view of an Interoperability Framework Spine Mini Service

Note: only FHIR over HTTPs is supported for FGM RIS service.

This document specifically focuses on the FGM RIS (Female Genital Mutilation Risk Indication Service) that will provide Health services with information regarding the status of patients who may be at risk of FGM.

A SMSP MAY (and indeed, in some cases MUST) provide internal business logic above and beyond simple adaptor logic (e.g. filtering, protocol translation etc.). The following sections in the document are logical groupings of related principles of the architecture of an SMSP that must be considered and have some additional requirements.

Some areas may overlap areas that are covered in other related documents from the Mini Services pack; notably the Interface specification and the Vocabulary specification.

3. FGM RI Implementation Principles

3.1 FGM RI Data Elements and Messaging

SMSP-FGMRI- 001: Where the Spine FGM RIS returns and error code response where the NHS Number traced has no associated indicator, this MUST replicated this for the client.
The Spine FGM RIS service will return an error code in the response if the record traced has no associated indicator. This behaviour SHOULD be replicated for the client.

SMSP-FGMRI-002 Client Access Methods: The SMS Provider MAY use client access methods 1,2 and 3
The SMS Provider MAY use client access methods 1,2 and 3 1. **Unattended SMS Client Calls** –are not initiated by an individual, they are typically initiated by an automated function within software e.g. on admission into hospital a patient will be allocated a local identifier. 2. **Attended SMS Client Calls to SMS Provider – (Without Smartcard**) - In this case the ITK audit identity contains a SMSP provided code to identify the user. It is essential that this code is sufficient to uniquely identify the individual user involved, and that it is written to the SMSP audit trails to provide an end-to-end link from the spine bound call back to the local user. 3. **Attended SMS Client Calls to SMS Provider – (With Smartcard)** - In this case the ITK audit identity contains the Spine identity fields from the smartcard, identified by their standard OIDs, which are then passed through directly to be used in the PDS message. The User Role Profile ID and User ID MUST be provided, and the Role ID MAY optionally be provided.

SMSP-FGMRI- 003: The SMSP MUST NOT Cache FGM RI S data
The SMSP MUST not cache the data returned from the FGM RIS.

SMSP-FGMRI-004: Data served through the SMSP FHIR interface MUST be sourced solely from the Spine FGM RIS service
Data served through the SMSP FHIR Interface MUST be provided from the national service – i.e. the SMSP FHIR Client Interface MUST NOT serve information derived from another source.

SMSP-FGMRI-005: Where using a SmartCard the Spine.Practioner MUST containg the SDS User ID and SDS User Role Profile ID
Where using a SmartCard when querying FGM RIS from the SMSP the Spine.Practioner field **MUST** contain the SDS user ID and SDS User Role Profile ID.

SMSP-FGMRI-006: Where quering the FGM RIS and a SmartCard is NOT used the Spine.Practioner field MUST contain Organisation code
Where the querying FGM RIS from the SMSP the Spine.Practioner field **MUST** Organsiation code where the SMSP Client is not using a Spine Smart Card.

SMSP-FGMRI-007: Where the querying FGM RIS from the SMSP the Spine.Practioner field MAY contain a Local ID
Where the querying FGM RIS from the SMSP the Spine.Practioner field **MAY** contain a Local System ID i.e. this may be a user name . Note this is ignored by Spine

SMSP-FGMRI-008: Where the querying FGM RIS from an SMSP Client to the SMSP the Spine.Practioner field MUST contain an SDS User ID, SDS User Role Profile ID or a LocalID
Where the querying FGM RIS from an SMSP Client to the SMSP the Spine.Practioner field **MUST** contain either A SDS user ID and SDS User Role Profile ID. Or A LocalID mapped to the national RBAC requirements for FGM RIS access. reword

3.2 Mini Service to Spine Mapping

There is a single query interaction pair which can be used by SMSP from/to the client to the SMSP and the SMSP to/from Spine. Spine will ignore any SMSC LocalIDs and the technical error codes served by the SMSP to the client.

3.3 Mini Service to Spine Mapping

The spine FHIR interactions will be HTTPs and use the NHS Digitial FHIR common error code mappings of the HTTP status codes, the NHS Digitial common error codes and the specific error codes identified for the domain.

Business & SMSP error responses

While it is not an error as such FGM RIS will return a response of *No Record Found,* if the NHS number in the request message is not present in the FGM RIS data repository.

Errors may also be generated by the SMSPe.g. where the SMSP cannot parse a client request message or Spine services are not available. These errors should be mapped as defined in the table below.

HTTP Code	issue-severity	issue-type	Details.Code	Details.Display	Orignal codes
404	error	not-found	NO_RECORD_FOUND	No Record Found	FGM-0001
400	error	invalid	INVALID_NHS_NUMBER	Invalid NHS number	FGM-0002
400	error	invalid	INVALID_PARAMETER	Invalid parameter	FGM-0004
400	error	structure	MESSAGE_NOT_WELL_FORMED	Message not well formed	FGM-9999
403	error	forbidden	ASID_CHECK_FAILED	The sender or receiver's ASID is not authorised for this interaction	300
400	*error*	*structure*	*INTPUT_MESSAGE_NOT_WELL_FORMED*	Input message validation error	SMSP-0001
400	*error*	*structure*	*RESPONSE_MESSAGE_NOT_WELL_FORMED*	Response message validation error	SMSP-0002
203	*warning*	*Information*	*DATA_FROM_LOCAL_STORE_SPINE_UNAVAILABLE*	Data returned from local store, Spine unavailable	SMSP-0003
500	*fatal*	*no-store*	*COULD_NOT_CONNECT_TO_SPINE*	Could not connect to spine	SMSP-0004
401	*fatal*	*forbidden*	*AUTHOR_CREDENTIALS_ERROR*	Author credentials error	SMSP-0005
500	*fatal*	*Internal server error*	*GENERIC_SPINE_MINI_SERVICE_PROVIDER_SOFTWARE_FAILURE*	Generic Spine Mini Service Provider software failure	SMSP-9999

4. SMSP FGM RIS FHIR Service Definitions

4.1 Overview

The SMSP FGM FHIR Spine service will be HTTPs based and messaging request/responses will be synchronous. Full details are available at the following link

https://nhsconnect.github.io/fgm-risk-indication-service/

The SMSP FHIR FGM RI request and response messages provide client systems with a standard interface to request a FGM Risk Indication status based upon a NHS Number for a female under the age of 18.

Key Points:

1. The Query requires a valid NHS number
2. Field validation will be performed for mandatory fields (NHS Number) and field formatting. (E.g. Modulus 11 check on NHS Number).
3. The NHS Number provided in the request will be verified by the client as a precondition to verifying the FGM RI status.
4. The response will return where a record does exist on the FGM RIS :
    - Status value = Active
    - The date of the assessment
5. Where a record does not exist on the FGM RIS – the response will return an error of 'No Record Found' as detailed in the Spine Error Code ValueSets.

Developers should refer to the schema's provided in the

Full details are available at the following

https://nhsconnect.github.io/fgm-risk-indication-service/

4.2 FGM RIS Query/Response Interactions

The query response interactions are:

- **QRY-FGM-QueryRequest-2-0 Interaction**- FHIR resource profiles combined to support the Spine 2 FGM RIS Query inbound message interface.
- **RSP-FGM-QueryRequestResponse-2-0 Interaction** - FHIR resource profiles combined to support the Spine 2 FGM RIS Query Response outbound message interface.

4.3 Author Details

To enable a comprehensive audit of who queried the FGM RIS, the interaction contains a query author know in the FHIR Interaction as **Spine.Practioner**

Interactions from a local client to the SMSP must use either, a local code mapped to the national RBAC requirements for FGM RIS access, or where using Spine smartcards the appropriate SDS user ID and SDS User Role Profile ID.

Interactions from the SMSP to spine must user either the ASID and SDS Org ID of the querying system or pass through the smartcard information SDS user ID and SDS User Role Profile ID

The SMSP service is responsible for auditing the queries from the local system to the FGM RIS spine service.

Spine-Practitioner-2-0

The Practitioner resource represents the healthcare professional who authored the FGM RIS Query.

Profile | Extensions | Bindings | Examples

Name	Card.	Type	Description & Constraints
Practitioner		DomainResource	A person with a formal responsibility in the provisioning of healthcare or related services
identifier			A identifier for the person as this agent **Slice:** *Ordering: Ordered, Discriminator: system, Rules: Closed*
identifier (SDS User ID)	0..1	Identifier	The SDS identifier that uniquely identifies the person as this agent
system	1..1	Uri	The namespace for the identifier Fixed Value http://fhir.nhs.net/Id/sds-user-id
value	1..1	String	The value that is unique Example Value 200009876204
identifier (SDS Role Profile ID)	0..1	Identifier	The SDS identifier that uniquely identifies the role profile of the person as this agent
system	1..1	Uri	The namespace for the identifier Fixed Value http://fhir.nhs.net/Id/sds-role-profile-id
value	1..1	String	The value that is unique Example Value 100077650987
identifier (Local Identifier)	0..1	Identifier	A identifier for the person as this agent
system	1..1	Uri	The namespace for the identifier Fixed Value http://fhir.nhs.net/Id/local-practitioner-identifier
value	1..1	String	The value that is unique Example Value 123456
practitionerRole	0..1	BackboneElement	The list of Roles/Organizations that the Practitioner is associated with
managingOrganization	1..1	Reference (spine-organization-1-0)	The Organization where the Practitioner performs the roles associated
reference	1..1	String	Relative URL reference Example Value Organization/13daadee-26e1-4d6a-9e6a-7f4af9b58878

5. Audit

The SMSP must Audit all interactions from SMSP Client and Spine queries in line with the standard SMS Common Provider requirements