



Scottish Care Information

SCI Store

Interfacing Approach

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1 Introduction

1.1 Purpose

This document provides an overview of current best practice for interfacing third-party systems with SCI Store.

1.2 Background

SCI Store is an information store which provides clinicians with access to patient information such as test results, referrals, and clinical letters. It achieves this by consolidating data from lab, radiology, PAS and other systems.

Inbound Adapters

This is term used to describe interfaces developed which enable external systems to submit information to SCI Store. Information submitted through inbound adapters is processed through parsing, matching etc. and then added to the patient's record.

SCI Store ships with a number of pre-built inbound adapters including Masterlab, Telepath, Mysis, Radwise, COMPAS, CHI and SCI Gateway.

SCI Store also supports the standard NHS Scotland XML format, which 3rd parties can use to develop their own inbound adaptors – see Section 3.

Outbound

In addition, SCI Store enables 3rd party developers to incorporate patient information built up SCI Store in their own applications. Historically, a number of different technologies have been used for doing this but the recommended approach is now to use web services and there are now over 100 projects using SCI Store web services. For details of outbound interfacing - see Section 4.

1.3 Intended Audience

This document is aimed at:

- Local and national programme delivery teams
- SCI Store User Group
- System suppliers / integrators

1.4 References

- SCI Store Interfaces Backward-compatibility
- SCI Store Developer's toolkit and supporting documentation
- SHOW Web site http://www.sci.scot.nhs.uk/products/store/store_main.htm

The SCI Store Developer's toolkit and supporting documentation are available from the SCI Store support team. The latest contact details are available on the SHOW website.

1.5 Glossary

ADT

Admission, Discharge and Transfer

2 Getting started

2.1 Accreditation process

It is recommended that any project wishing to interface with SCI Store should liaise with the SCI Store support team early in the project lifecycle (latest contact details are available on the SHOW website).

At this point, information can be provided regarding the accreditation process and detailed technical documentation.

It is also an opportunity to discuss high-level design issues and ensure that subsequent development can meet the requirements of the project while minimising impact on existing SCI Store users – see section 5 for some common design considerations.

2.2 Interfaces support policy

SCI Store interfaces are updated on an annual basis. Generally speaking, “old” version will be supported within the product for a period of 5 years.

There are a couple of consequences of this:

- 3rd party developers should try to use the most recent version of the interfaces when developing new or updating existing applications.
- At a minimum, projects will have to upgrade their systems every 5 years. However, projects should set aside budget to carry out upgrades more frequently than this and benefit from improvements and greater functionality in intervening releases. In particular, it is hoped that national systems would upgrade as part of their regular release cycle.
- To avoid impacting existing users, new functionality is not applied retrospectively to "old" versions of interfaces. To take new functionality, an upgrade to the latest version of SCI store interfaces is normally required.

2.3 Standards

SCI Store interfaces are based on NHSScotland messaging standards, including:

- NHS Scotland XML and Interoperability standards
- NHS Scotland Clinical Document Index Standards

3 Inbound Interfaces

This section applies to projects that wish to send information to SCI Store – e.g. a diagnostic result or a clinical document.

Projects can use the XML Interfaces to develop their own inbound feeds to SCI Store. At the time of writing, the following XML Interfaces are available:.

- Investigation Report (includes laboratory, radiology, ECG)
- Patient Demographics
- Document upload (clinical document, summaries and notes)
- ADT
- Merge
- TreatmentLog

If no suitable interface exists, contact the SCI Store team to discuss the possibility of raising a change request for enhancing SCI Store to support your requirements.

To build a new adapter using one of these interfaces, 3rd party developers need to develop a process that can generate files in the appropriate XML format.

These files have to be delivered to a directory on the SCI Store server using Windows file copy, FTP (s) or an integration tool.

SCI Store will process the XML files as they are received. Typically, the processing includes patient matching, update rules, CHI look up and exception processing but this is all configurable depending on requirements.

Note that documents sent through SCI Gateway can be “copied” to SCI Store using existing functionality and a new inbound SCI Store adapter is not required.

Note: Please see the developer documentation for more details.

4 Outbound

This section applies to projects that wish to access information already held in SCI Store.

The options for doing this include :

- Launch SCI Store
- Web Services
- Notification Services

4.1 Launch SCI Store

Where the requirement is simply to display some information in SCI Store, one option is to “launch” SCI Store using the patient identifier. This will enable users to view the patient record in SCI Store and involves minimal work in the part of 3rd party developers.

Note: Please see the developer hand book “SCI Store Direct Page Access” which is included in the developer documentation (v6.0 onwards) for more details.

4.2 Web Services

Web services provide more seamless access to information in SCI Store, allowing information to be searched for and retrieved “behind the scenes” and displayed / processed within the 3rd party system.

Current web methods include:

- Find / Get Patient (optional search of CHI)
- Find / Get Result (includes laboratory, radiology, ECG)
- Find /Get ADT
- Find /Get Document / Get Document Style sheet
- Find Merge / Merge Patient / Unmerge Patient
- FindTreatmentLog / GetTreatmentLog
- Break Glass

Under normal circumstances, information obtained using web services should not be stored.

Please see the developer documentation for more details.

4.3 Notification Services

SCI Store allows other systems to subscribe to changes made on SCI Store – for example, the arrival of a certain type of laboratory results. Normally, this is less intrusive than periodically “polling” for changes.

Notifications Services allows subscriptions to be defined at various level: e.g. tell me about results but only of type “Microbiology”.

Once the subscriptions are set up, SCI Store queues up the required updates in a “notification queue”. Periodically, the 3rd party system should call the notifications services web service to see if there are any updates waiting for it on its queue. (See note in section 5.3)

Note: Please see the developer documentation for more details.

5 Design Considerations

5.1 Performance Testing

Performance testing should be performed whenever new interfaces are implemented to determine the impact on existing infrastructure. Large numbers of inbound files / web services calls can obviously affect other users.

5.2 Internal SCI Store Identifiers

SCI Store web services pass back internal identifiers to allow the returned items to be retrieved efficiently.

E.g. FindResult will return a set of result summaries along with their internal identifiers. To retrieve the result detail call GetResult with the required internal id.

Internal Identifiers should **not** be persisted outside the scope of a session as they may change e.g. as the result of reprocessing a file.

Storing “real world” identifiers such as CHI Number or accession number is acceptable.

5.3 Efficient use of Notification Services

SCI Store Notification can process large volumes of updates, subscriptions and notifications and is normally more efficient than “polling”. However, it can have an impact on the performance of other areas of SCI Store, such as the user interface, and it is important that the capabilities are used judiciously.

For example, if a GP system wished to be notified of updates to patients within a particular practice, it would be more efficient (and maintainable) to create a single subscription based on GP Practice than several thousand patient level subscriptions.

5.4 Accessing Information from more than one SCI Store

Even though the SCI Store team actively assist boards keeping up to date with new releases, it is inevitable that different versions of the SCI Store will be encountered.

When using web services, it is simplest to follow a “lowest version” approach – i.e. if some boards have version 4.1 and others have version 5.1, start with 4.1 web services and upgrade when all sites are at 5.1

However, there may be situations in which national applications wish to utilise a new version of interfaces (for enhanced functionality) before all the SCI Stores have been upgraded. This is acceptable but requires the 3rd party application to support multiple versions of SCI Store web services.

It is important that national systems are tested against all the versions of SCI Store web services they will be using.

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