SystmOne Client Integration Interface Specification

Contents

These instructions are correct at the date of writing.

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Document History

This section should only be used when a new version of an existing document is created. Newer versions should detail which sections have been amended/added, including who reviewed and approved the document.

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33.3	25/04/2025	Amber Mace	Charlotte Yorston	Added update to sensitivity function regarding end dates
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Introduction

This document describes the SystmOne Client Integration interface, which allows third party applications and devices to interact with a SystmOne client. The interface has the capability to discover the state of SystmOne, to search for patient records, to extract patient data, and to add new patient data.

The interface works over a TCP socket, hosted by a SystmOne client. To use the interface, your application opens a socket to the local host. Communication is performed using a set of XML documents, sent and received over this connection. All communication is initiated by your application sending a function request (in the form of an XML document) over this connection to SystmOne. SystmOne will process your request, build up a response (also an XML document), and then return the response over the same connection.

The below diagram illustrates the relationship between your application and SystmOne. The numbered interactions are:

1. Your application opens a connection to port 40700

2. Your application sends a function request XML document, terminated by a newline character

3. The SystmOne client requests any data it doesn't already hold from the SystmOne server

4. The SystmOne server provides any required data

5. The SystmOne client returns the function response XML to your application

Steps 2-5 can then be repeated indefinitely. There is no need to close the TCP connection between function requests (although there's no reason why you can't close and re-open the connection). Remember, each XML document has to be terminated with a newline character.

The SystmOne client is limited to processing a maximum of one function request per second. The client will throttle requests so this limit isn't exceeded. Additional throttling is applied to the GetPatientRecord function to permit only one GetPatientRecord function per thirty seconds. Exceptions to this are in the case where the request is only for patient demographics or only for the last one day's worth of data. No other functions are throttled. TPP reserve the right to change these throttling thresholds or add throttling to other functions, without warning, if necessary.

The time between steps 2 and 5 can vary considerably, depending what the SystmOne client has to do to generate the response. If all required data is already in memory, then the response will be near instant. If data must be retrieved from the SystmOne server, then it will be slower (although, generally still sub-second).
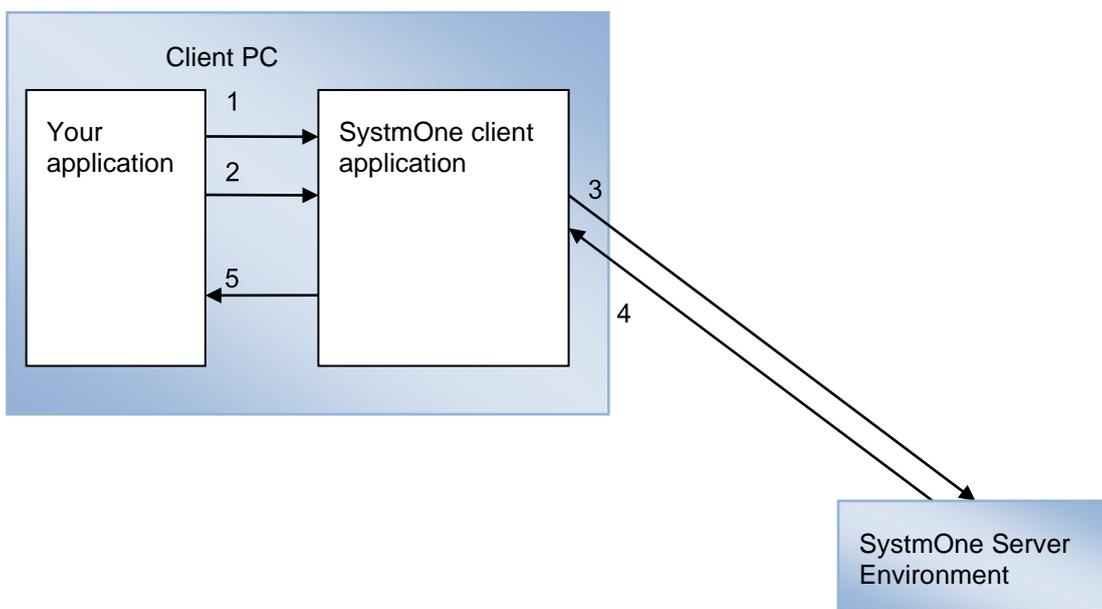
These instructions are correct at the date of writing.

There are a number of different SystmOne environments, hosted by TPP, that serve different purposes. The two that you will most likely become aware of are Demo and Live.

The Demo environment serves as a stable test bed to allow third parties to develop against. You will be given an installer (or similar) to allow you to set up a SystmOne client to connect to the Demo environment, and a user name and password to allow you to log on to a fictitious organisation on that environment.

The Live environment is the production environment that the SystmOne users connect to. This environment will be the one that your application uses when released to users.

Both environments have the same version of SystmOne on them, and are updated in parallel, so you can be sure that code written to communicate with a Demo SystmOne client will work against a Live one.

The interface automatically enables on all SystmOne clients once the log on process completes. No further configuration is required to enable or start the interface.

Function Overview

Below is a summary of the functions the Client Integration interface supports. Each of these functions is explained in detail later in this document.

Function	Overview
GetFunctions	Discovery function to find the list of supported functions and their current version
GetOrganisationMetaData	Discovery function to find details of SystmOne users and the organisation using SystmOne
GetCurrentActivity	Discovery function to find the screen and general functional area that SystmOne is in, plus the NHS number of any patient record that's been opened
GetCurrentSelection	Function to query the currently selected drugs and codes from the user's active screen
PatientSearch	Function to search the patient list of the organisation using SystmOne by various fields, including name and date of birth
GetPatientRecord	Function to extract all or part of a patient record from SystmOne. This function is throttled to once every 30 seconds, with the exception of GetPatientRecord filtered only on demographics, or filtered on information entered in the last day.
UpdatePatientRecord	Function to add data to a patient record in SystmOne
GetDocument	Function to extract a file referenced by a letter or attachment in a patient record (since the GetPatientRecord function doesn't return attached files themselves)
DeleteFromPatientRecord	Function to delete data from a patient record
GetAppointmentSlots	Function to query for details of free slots in the appointment book
GetDiary	Function to return the organisation diary of up-coming visits and appointments
ExitClient	Function to cause the SystmOne client to shutdown, exiting to desktop
DataExtract	Function to download a Strategic Reporting data extract of a given name to a given directory
LaunchFunctionality	Function to invoke functionality in the SystmOne user interface
GetXSDFiles	Function to cause SystmOne to generate XSD files for the API functions
IsPatientRetrieved	Function to query whether the connected client has a patient record retrieved

These instructions are correct at the date of writing.

Testing the Interface

By contacting TPP and expressing your intent to develop against this API, you will be provided with a test harness which must be used to test your integration interface.

Please note: All patient data shown in this document is fictitious.

These instructions are correct at the date of writing.

Audit Trail

SystmOne audits all messages sent to it via the interface. This audit trail is visible using the Client Integration Message Audit screen, in the SystmOne client, in the Audit > Client Integration menu. The screen shows the timestamp and message IDs, plus whether the function was successful or not. Right-click options on the audit trail items allow viewing of the XML message received and any error responses returned.
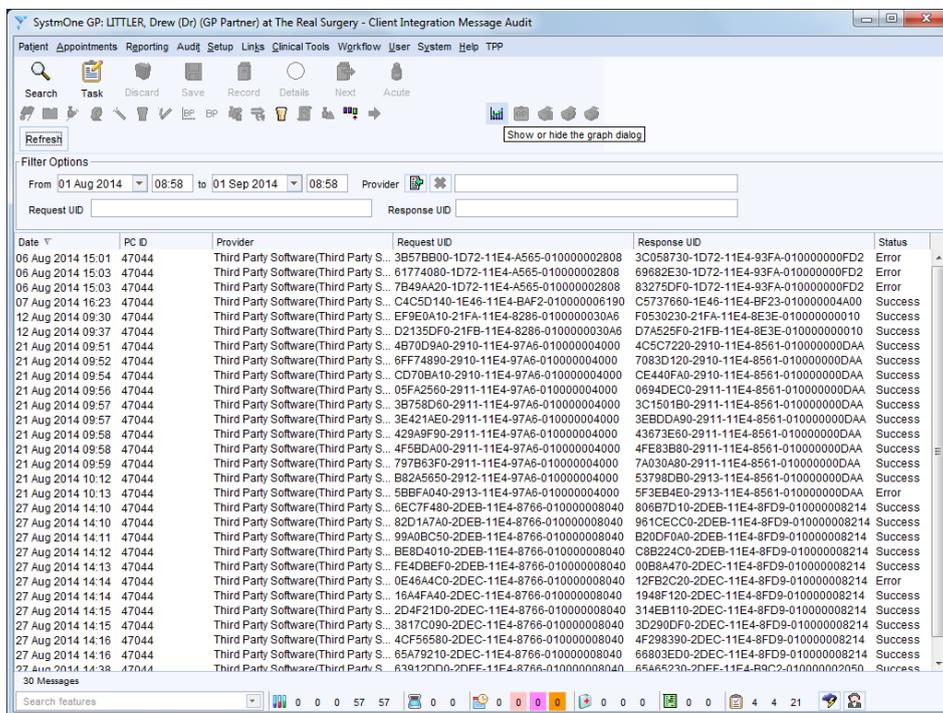
Note that messages aren't visible on the audit trail screen immediately, and may take several minutes to be shown on this screen.

These instructions are correct at the date of writing.

XML Overview

Every communication over the interface consists of two XML documents: a request and a response. Your software generates the request, sends it to SystmOne, which then generates and returns a response. There should be a number of XSD files with this document, giving you the schema for each XML function request.

Function Requests

The XML documents used to make the various function requests all follow a common pattern:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>99DDDEE0-B335-11E3-A459-010000004280</RequestUID>
    <Function>GetFunctions</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <OutputScheme>
        <Drugs>Mulitlex</Drugs>
        <Codes>CTV3</Codes>
    </OutputScheme>
    <FunctionParameters>
        ...
    </FunctionParameters>
</ClientIntegrationRequest>
```

All the elements are mandatory, and have the following meanings:

Element Name	Description
ClientIntegrationRequest	The root element of all XML documents to be sent to the SystmOne interface.
APIKey	Element to contain your API key. This will be given to you by TPP and identifies your software to SystmOne. This key will be the same for all SystmOne environments (contact TPP before using the integration on a Live environment to make sure the API key is copied correctly).
DeviceID	Element to contain your unique Device ID. The first time your application uses the interface, you won't have a Device ID, so simply send an empty element. SystmOne will generate your application a Device ID which will be returned in the function response. This process is detailed in the Device ID Allocation section.
DeviceVersion	Element to contain details on the version of your software. It's used as part of the audit trail within SystmOne, to explain where data came from.
RequestUID	Contains a unique ID for this function request. Forms part of the audit trail in SystmOne, but serves no functional purpose. You could use a GUID in this element, or a simple incrementing number, or even the date and time.
Function	Contains the name of the function you are requesting (see the Function Overview section for the possible values for this element).

These instructions are correct at the date of writing.

Element Name	Description
FunctionVersion	Contains the version of the function that you want to request. SystmOne can support multiple versions of each function, to maintain backwards compatibility. When interface functions are changed, a new version number will be supported. After a period of time, older version numbers will be removed. It is expected that you will update your software to use the latest version of each function, although any changes should a minor.
	The GetFunctions function can be used to find the versions supported for each function.
OutputScheme	Container element to specify the coding schemes used in the response to this request.
Drugs	Optional element to specify the drugs coding system to be used in the response to this request. Possible values are "Multilex" and "Dmd". If omitted, the SystmOne default of Multilex will be used.
Codes	Optional element to specify the clinical coding system to be used in the response to this request. Possible values are "CTV3" and "Snomed". If omitted, the SystmOne default of CTV3 will be used.
FunctionParameters	Container element for the parameters specific to the function being requested.

Function Responses

The XML response documents also follow a common pattern:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>6E6E7500-B338-11E3-A459-010000004280</RequestUID>
    <Function>GetFunctions</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>6F175F30-B338-11E3-9804-010000005129</ResponseUID>
    <Response>
        ...
    </Response>
</ClientIntegrationResponse>
```

All the elements are mandatory, and have the following meanings:

Element Name	Description
ClientIntegrationResponse	Root element for the XML document.
DeviceID	Element containing the unique Device ID that SystmOne has issued to your application.
RequestUID	Element containing the Request ID that was sent to SystmOne in the function request.
Function	Contains the function name that was sent in the function request.
FunctionVersion	Contains the version of the function that was requested and executed.
ResponseUID	Contains a GUID to uniquely identify this response.
Response	Element to contain the specific results of the function requested.

These instructions are correct at the date of writing.

Dates/Dates and Times

Dates attributes will be in the format attribute="YYYY-MM-DDT00:00:00". Date and time attributes will be in the format attribute="YYYY-MM-DDTHH:MM:SS". Time zone information is never included, the time will represent the local time when the event occurred.

Error Responses

When an error occurs, you will receive a standard XML response. The **Response** element will contain an **ErrorMessage** element, detailing what went wrong, and a **PermanentError** element indicating whether the error is permanent or temporary (and can be retried).

For example, if a PatientSearch function is attempted but no search constraints are specified, it will result in this XML response from SystmOne:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>9033DD40-B33A-11E3-A459-010000004280</RequestUID>
    <Function>PatientSearch</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>90BDF4D0-B33A-11E3-9804-010000005129</ResponseUID>
    <Response>
        <ErrorMessage>At least two search parameters must be specified</ErrorMessage>
        <PermanentError>true</PermanentError>
    </Response>
</ClientIntegrationResponse>
```

There are some situations in which a message may fail and no error response will be returned, for example:

- A message is not processed due to throttling.

- The SystmOne server is unresponsive and therefore cannot reply. This will only be in very rare circumstances and, where possible, you will have been notified of this ahead of time.

These instructions are correct at the date of writing.

Device ID Allocation

All the function requests require a **DeviceID** element. The Device ID uniquely identifies the specific installation or instance of your software to SystmOne. The first time your software sends a function request to SystmOne, you won't have a **DeviceID** value, so send an empty element.

For example:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID></DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>216D31D0-B340-11E3-A459-010000004280</RequestUID>
    <Function>GetFunctions</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters></FunctionParameters>
</ClientIntegrationRequest>
```

When SystmOne receives a function request with an empty DeviceID element, it asks the SystmOne user to confirm that the third-party application is permitted to connect to SystmOne. A dialog similar to below is shown, detailing what the third-party software is, and giving the user the option to approve the connection or block it. The details on the dialog are generated from the value in the **DeviceVersion** element in the function request, plus details entered into SystmOne when your **APIKey** was generated (your APIKey will be generated once you have made contact with TPP).
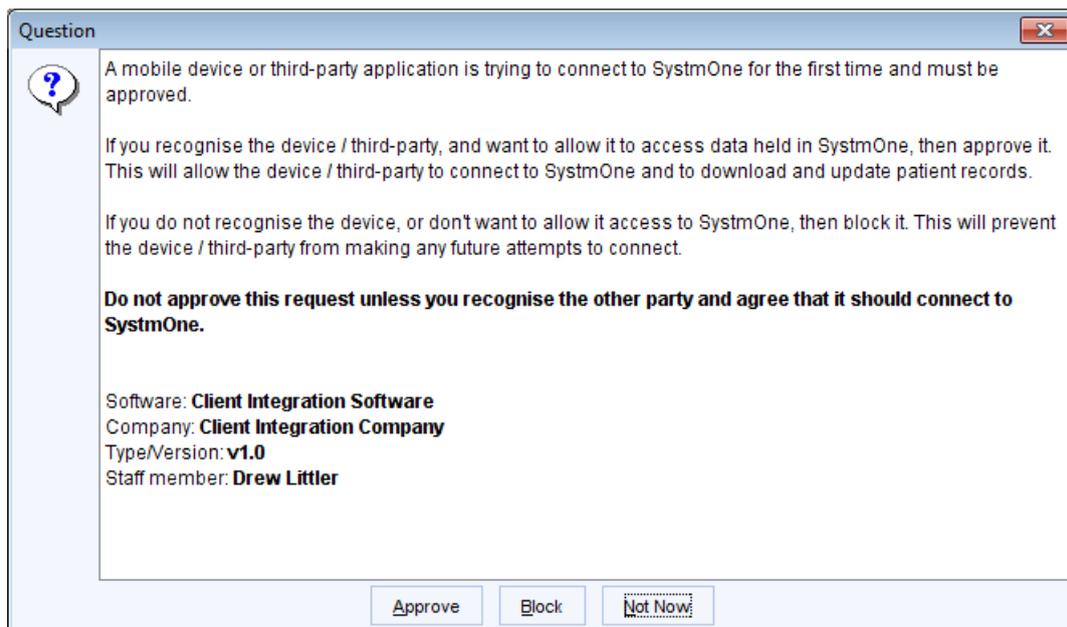
If the SystmOne user chooses to approve your connection, then the requested function will be executed as normal, and the response XML returned to your application. The response XML will contain a **DeviceID** element, the value of which you should extract and use in the **DeviceID** element of all future requests. Failure to do this will result in every function request being presented to the SystmOne user for approval.

The response will contain the **DeviceID** generated for your application;

```
<ClientIntegrationResponse>
    <DeviceID>2087a2d784cda2e4</DeviceID>
    <RequestUID>F9AD7460-B340-11E3-A459-010000004280</RequestUID>
    <Function>GetFunctions</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>EBED7220-B341-11E3-8FBA-01000000C200</ResponseUID>
    <Response>
        ...
    </Response>
</ClientIntegrationResponse>
```

These instructions are correct at the date of writing.

If the SystmOne user chooses to block your connection, then SystmOne will return an XML response containing an **ErrorMessage** element, telling you that the request was blocked. Blocks can be manually removed using the Device Manager screen in SystmOne (Setup > Mobile Working & Integration menu) if a user has mistakenly or accidentally blocked a third party application.

Online Visibility

Additional controls are available to determine whether data added to patient records is visible to patients online by default or not. This is set at the Device level. Once a device has been approved in the Device Manager screen (Setup > Mobile Working & Integration > Device Manager), an additional right click option will appear: "Visible in the Online Record'. If this option is enabled, data added via the device is visible in the online record by default. If disabled, data is not visible in the online record by default. A checkbox on the right-hand side of the screen displays the device's online visibility default status.

These instructions are correct at the date of writing.

XML Templates

Along with this document you should have received a number of XML files. These XML files serve as examples of the functions you can send and also as templates you can use to test the interface and aid your development. Note that these files are just examples and although they provide examples of all functions the interface supports, they don't necessarily provide examples of all possible combinations of parameters for each function.

Within each of the XML files, there are element and attribute values prefixed with an "@" symbol (e.g. @UserName). This is to indicate those values that should be treated as parameters and substituted with real values before sending to SystmOne. Some of these parameters also list possible values for the parameter, delimited with the | character after the parameter (e.g. @NewStatus|Booked|Arrived|Finished, which means the @NewStatus parameter can have one of three possible values).

For example, one of the XML templates looks like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<ClientIntegrationRequest>
        <APIKey>@APIKey</APIKey>
        <DeviceID>@DeviceID</DeviceID>
        <DeviceVersion>@DeviceVersion</DeviceVersion>
        <RequestUID>@RequestUID</RequestUID>
        <Function>GetCurrentActivity</Function>
        <FunctionVersion>1.0</FunctionVersion>
</ClientIntegrationRequest>
```

Before sending to SystmOne, all four values starting with @ (@APIKey, @DeviceID, @DeviceVersion and @RequestUID) should be replaced with true values. So what would be sent to SystmOne would look something like:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>F7354CA0-B339-11E3-A459-010000004280</RequestUID>
    <Function>GetFunctions</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters></FunctionParameters>
</ClientIntegrationRequest>
```

You don't have to use the templates in this way, but this may aid you in quickly generating valid XML documents to send to SystmOne.

These instructions are correct at the date of writing.

Patient Identification

Many of the functions relate to patient records and a common XML structure is used to identify those patients. Due to the nature of SystmOne, it is impossible for two patient records to have the same NHS number, so this is used as a unique record identifier. If a patient record doesn't have an NHS number (which is becoming increasingly rare), an NHS number-like pseudo identifier is used.

So, in function requests where you need to identify a patient (to extract patient data, for example) and in function responses where patients are listed (after a patient search) the below structures will be used to represent the patient uniquely.

If the patient has an NHS number:

```
<Identity>
    <NHSNumber>4667633050</NHSNumber>
</Identity>
```

Or, if not:

```
<Identity>
    <PseudoNumber>0002767317</PseudoNumber>
</Identity>
```

In addition to the NHS number or pseudo-number, identity tags provided in response to API requests will also contain a strategic reporting identifier. This value uniquely identifies a patient, but is identical to the RowIdentifier value on the SRPatient table (and, hence, the IDPatient column on other SR tables) that you can download through strategic reporting. This allows you to join the output from this API with the output from strategic reporting easily.

The Identity tag therefore looks like this if the patient has an NHS number:

```
<Identity>
    <NHSNumber>4667633050</NHSNumber>
    <StrategicReportingIdentifier>8827771</StrategicReportingIdentifier>
</Identity>
```

Or, if not:

```
<Identity>
    <PseudoNumber>0002767317</PseudoNumber>
    <StrategicReportingIdentifier>8827771</StrategicReportingIdentifier>
</Identity>
```

The strategic reporting identifier should not be provided in any requests made to the API, it is purely a response value.

These instructions are correct at the date of writing.

Function Descriptions

The below sub-sections detail each of the functions the Client Integration interface supports.

GetFunctions

This function allows you to discover the functions that the interface supports, and the supported versions for each function.

The function request looks like this:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>F90B7D20-B342-11E3-A459-010000004280</RequestUID>
    <Function>GetFunctions</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters></FunctionParameters>
</ClientIntegrationRequest>
```

Note that this function has no additional parameters over those minimum ones described in the Function Requests section.

The response XML looks like this:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>F90B7D20-B342-11E3-A459-010000004280</RequestUID>
    <Function>GetFunctions</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>F9A63680-B342-11E3-8FBA-01000000C200</ResponseUID>
    <Response>
        <SupportedFunction>
            <Function>GetFunctions</Function>
            <Version>1.0</Version>
        </SupportedFunction>
        <SupportedFunction>
            <Function>GetCurrentActivity</Function>
            <Version>1.0</Version>
        </SupportedFunction>
    </Response>
</ClientIntegrationResponse>
```

The standard elements of the response are documented in the Function Responses section. The elements specific to this response are:

Element Name	Description
SupportedFunction	Container element for a supported function. Repeated once for each function the interface supports.
Function	Element containing the name of the supported function.
Version	Element containing the version of the supported function. This element will be repeated once for each version that is currently supported.

These instructions are correct at the date of writing.

GetOrganisationMetaData

This function allows the discovery of details of the organisation using SystmOne and the registered users.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>E9B220C0-B344-11E3-A459-010000004280</RequestUID>
    <Function>GetOrganisationMetaData</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <LoggedOnUserOnly></LoggedOnUserOnly>
    </FunctionParameters>
</ClientIntegrationRequest>
```

This function has an optional parameter, which can be included in the **FunctionParameters** element:

Element Name	Description
LoggedOnUserOnly	The presence of this element means that SystmOne will only return details of the currently logged on SystmOne user and the site they're located at. Excluding this element will result in all registered users and sites (at the organisation) being returned.

The function response:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>2AC5D390-B345-11E3-A459-010000004280</RequestUID>
    <Function>GetOrganisationMetaData</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>2B56F000-B345-11E3-8FBA-01000000C200</ResponseUID>
    <Response>
        <Site>
            <Name>The Real Surgery</Name>
            <ID>B11111</ID>
            <Telephone>01132050080</Telephone>
            <Fax>01132050081</Fax>
            <Email>email@test.com</Email>
            <Address>
                <HouseName>The Health Centre</HouseName>
                <HouseNumber></HouseNumber>
                <Road>Troy Road</Road>
                <Locality>Horsforth</Locality>
                <Town>Leeds</Town>
                <County>West Yorkshire</County>
                <Postcode>LS18 5TN</Postcode>
            </Address>
            <CurrentSite></CurrentSite>
        </Site>
        <User>
            <Title>Dr</Title>
            <FirstName>Drew</FirstName>
            <MiddleNames></MiddleNames>
            <Surname>Littler</Surname>
            <UserName>dlittler2405</UserName>
            <Gender>M</Gender>
            <Role>General Medical Practitioner</Role>
            <RoleCode>S0010:G0020:R0260</RoleCode>
            <NationalID>2672881</NationalID>
```

These instructions are correct at the date of writing.

```
                    <NationalIDType>GMC</NationalIDType>
                    <AccessRights>
                        <Access>can use the Choose and Book module to refer patients</Access>
                    </AccessRights>
                    <UserGroups>
                        <Group>Doctors</Group>
                    </UserGroups>
                    <Teams>
                        <Team>Doctors</Team>
                    </Teams>
                    <CurrentUser></CurrentUser>
                </User>
                <SlotType>Telephone Appointment Slot</SlotType>
                <ClinicType>Nurse Clinic</ClinicType>
            </Response>
        </ClientIntegrationResponse>
```

The function-specific elements in this response are:

Element Name	Description
	Container element to describe a site this organisation exists at. Repeated once for each site.
Name	The name of a site.
ID	The ID of a site.
Telephone	The telephone number of a site.
Fax	The fax number for the site, if one is known. If not known, this element is not included.
Email	An email address for this site, if one is known. If not known, this element is not included.
Address	Container element for the address of a site. Contains child elements giving the separate address fields (number, road, postcode etc.)
PrimarySite	The presence of this element within a **Site** structure indicates that this site is the primary site.
CurrentSite	The presence of this element within a **Site** structure indicates that this site is the one the SystmOne client is physically located in. One and only one **Site** element will have this element.
User	Container element to describe a registered user at this organisation. Will be repeated once for each registered user, unless the **LoggedOnUserOnly** parameter was included in the function request, in which case only a single iteration of this element will be in the response.
Title	The title of a registered user (Dr, Mr, Mrs etc.).
FirstName	The first name of a registered user.
MiddleNames	The middle name (or initials) of a registered user.
Surname	The surname of a registered user.
UserName	The SystmOne user ID of a registered user. This can be used as a unique identifier for a user.
Gender	The gender of a registered user (M, F or empty if unset).
Role	A description of the job role of the registered user

These instructions are correct at the date of writing.

Element Name	Description
RoleCode	The national code relating to the job role of the registered user, as used on NHS smartcards.
NationalID	A national ID for this person. What this ID actually is, is defined by the next element
NationalIDType	Defines what type of ID the **NationalID** element contains. Possibly values include GMC, NMC, RPSGB, HPC.
AccessRights	Container element for the access rights this registered user has.
Access	Contains an access right this registered user has. Repeated once for each additional access right.
UserGroups	Container element for the user groups this user belongs to. **N.B.** Once an organization decides to disable user groups functionality, this element will become obsolete.
Group	Element containing the name of a user group this user is in. Repeated once for each group they're in.
Teams	Container element for the teams this user belongs to.
Team	Element containing the name of a team this user is in. Repeated once for each team they're in.
CurrentUser	Element to indicate if a **User** is the currently logged on SystmOne user. This element will be present in one and only one iteration of the **User** element.
SlotType	Element to define a type of appointment slot that the organisation has configured, and is used in the GetAppointmentsAndSlots function for filtering on empty appointment slots. This element is repeated for each type of slot the organisation provides.
ClinicType	Element to define a type of appointment clinic that the organisation provides, used in the GetAppointmentsAndSlots function for filtering on appointment clinics. This element is repeated for each type of clinic the organisation provides.

These instructions are correct at the date of writing.

GetCurrentActivity

This function allows a third-party application to discover the current state of SystmOne.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>1807F6D0-B344-11E3-A459-010000004280</RequestUID>
    <Function>GetCurrentActivity</Function>
    <FunctionVersion>1.0</FunctionVersion>
</ClientIntegrationRequest>
```

This function has no additional parameters, other than the common baseline.

The function response:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>1807F6D0-B344-11E3-A459-010000004280</RequestUID>
    <Function>GetCurrentActivity</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>18A76B20-B344-11E3-8FBA-01000000C200</ResponseUID>
    <Response>
        <Identity>
            <NHSNumber>7737976078</NHSNumber>
            <StrategicReportingIdentifier>665584</StrategicReportingIdentifier>
        </Identity>
        <Activity>Patient Actions</Activity>
        <Activity>Prescribing</Activity>
        <Activity>New Acute</Activity>
        <Activity>Record Acute Medication</Activity>
        <CurrentSelection>
            <Drug Scheme="Multilex" ProductID="1004531" Name="Paracetamol 500mg soluble
tablets"></Drug>
        </CurrentSelection>    </Response>
</ClientIntegrationResponse>
```

The function-specific elements in this response are:

Element Name	Description
Identity	Container element identifying the currently open patient record. See the Patient Identification section for more detail on this. If no patient record is open in SystmOne, this element isn't present.

These instructions are correct at the date of writing.

Element Name	Description
Activity	Element containing detail on the current screen being used in SystmOne. This element will be repeated a number of times, with each repetition being more specific than the last. In the above example, this element is repeated four times: • **Patient Actions** - indicating the user is performing an action on a patient record (the alternative is Navigation Actions, indicating that the user is not acting in a patient record) • **Prescribing** - indicating that prescribing functionality is being used • **New Acute** - the user is recording a new acute medication item • **Record Acute Medication** - the user is specifically in the dialog with this name The first iteration (Navigation Actions) indicating we're on a screen referenced by the main menu bar; the second (Patient) indicating we're on a screen in the Patient menu; and the third (Patient Record) indicating we're on the Patient Record screen itself.
CurrentSelection	Container element to list the drugs or clinical codes selected in the user interface. In the above example, this indicates that the user has selected Paracetamol to prescribe. This element is the same as returned in the response to the **GetCurrentSelection** function.

These instructions are correct at the date of writing.

GetCurrentSelection

This function allows you to query SystmOne to find details of any selected drugs or codes on the user's currently active screen. If no selections have been made then an empty selection is returned.

The function request:

```
<ClientIntegrationRequest>

    <APIKey>0f3e33ae95b74520</APIKey>

    <DeviceID>0a3b2ed06537a063</DeviceID>

    <DeviceVersion></DeviceVersion>

    <RequestUID>3FF7F3A0-DC22-11E3-9721-010000008322</RequestUID>

    <Function>GetCurrentSelection</Function>

    <FunctionVersion>1.0</FunctionVersion>

</ClientIntegrationRequest>
```

This function has no additional parameters, other than the common baseline.

The response:

```
<ClientIntegrationResponse>

    <DeviceID>0a3b2ed06537a063</DeviceID>

    <RequestUID>24EB1BF0-DC27-11E3-9721-010000008322</RequestUID>

    <Function>GetCurrentSelection</Function>

    <FunctionVersion>1.0</FunctionVersion>

    <ResponseUID>25BC9CC0-DC27-11E3-A451-01000000010A</ResponseUID>

    <Response>

        <Identity>

            <NHSNumber>9400130333</NHSNumber>
            <StrategicReportingIdentifier>774268</StrategicReportingIdentifier>

        </Identity>

        <CurrentSelection>

            <Drug Scheme="Multilex" ProductID="1009071" Name="Paracetamol 120mg/5ml oral
            solution paediatric sugar free"></Drug>

            <Code Scheme="CTV3" Code="XaBVJ" Term="Clinical findings"></Code>

        </CurrentSelection>

    </Response>

</ClientIntegrationResponse>
```

The function-specific elements being:

Element Name	Description
Identity	Container element identifying the currently open patient record. See the Patient Identification section for more detail on this. If no patient record is open in SystmOne, this element isn't present.
CurrentSelection	Element containing details on the currently selected items from the user's active screen. If there are no appropriate selections when this query is made, the CurrentSelection element will still be present but containing no child elements.

These instructions are correct at the date of writing.

Element Name	Description
Drug	Element representing a selected drug or appliance in the user interface. If the user interface allows multiple drugs to be selected, then this element may be repeated. This element contains attributes as follows: • **Scheme** - defines the coding scheme used for this drug. SystmOne uses Multilex by default, but can output using DM+D codes. To output DM+D codes, the OutputScheme element should be included in the function request (documented earlier). • **ProductID** - the Multilex product ID or DM+D ID, depending on the scheme used. • **Name** - the textual name for this drug
Code	Element representing a selected clinical code in the user interface. If the user interface allows multiple codes to be selected, then this element will be repeated for each code. This element contains attributes as follows: • **Scheme** - defines the coding scheme used by this code. SystmOne uses CTV3 by default, but codes can be output in Snomed by specifying the OutputScheme element in the function request (documented earlier) • **Code** - the CTV3 or Snomed code • **Term** - the textual description associated with this code

These instructions are correct at the date of writing.

PatientSearch

The patient search function allows searching the organisation patient list for a patient or patients.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>248DC730-B34A-11E3-A459-010000004280</RequestUID>
    <Function>PatientSearch</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <DateOfBirth>2014-03-24</DateOfBirth>
        <PostCode>LS18 5TN</PostCode>
        <FirstName>Drew</FirstName>
        <Surname>Littler</Surname>
        <Telephone>01132050080</Telephone>
        <Gender>M</Gender>
    </FunctionParameters>
</ClientIntegrationRequest>
```

This function has a number of additional elements to provide the search constraints. They're all optional, but a minimum of two must be provided.

Element Name	Description
DateOfBirth	Optional element to constrain the patient search on date of birth, in the format CCYY-MM-DD.
PostCode	Optional element to constrain the patient search on postcode. The postcode can either be a complete postcode (e.g. "LS18 5TN") or a postcode area (e.g. "LS18"). If a full postcode is searched for, it must be formatted correctly, with the space in the appropriate place.
FirstName	Optional element to constrain the search on patient first name. The first name can be the complete first name (e.g. "David") or just the first letter (e.g. "D") or anywhere in between.
Surname	Optional element to constrain the search on patient surname. It can be used in the same way as the **FirstName** field.
Telephone	Optional element to constrain the search on patient telephone number. This will search all the SystmOne telephone number fields (home, mobile, work and alternative).
Gender	Optional element to constrain the search on patient gender. This should be either "M" or "F".

The function response:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>DB0163A0-B34A-11E3-A459-010000004280</RequestUID>
    <Function>PatientSearch</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>E1AE86B0-B34A-11E3-9FEC-010000001020</ResponseUID>
    <Response>
        <Result>
            <Identity>
                <PseudoNumber>0001980947</PseudoNumber>
```

These instructions are correct at the date of writing.

```
            <StrategicReportingIdentifier>88110</StrategicReportingIdentifier>
        </Identity>
        <FirstName>Jasvinder</FirstName>
        <Surname>Saffer</Surname>
        <DateOfBirth>1929-09-01</DateOfBirth>
        <Sex>M</Sex>
        <Telephone></Telephone>
        <Address>
            <HouseName>The Health Centre</HouseName>
            <HouseNumber>13</HouseNumber>
            <Road>Clarence Road</Road>
            <Locality>Horsforth</Locality>
            <Town>Leeds</Town>
            <County>West Yorkshire</County>
            <Postcode>LS18 4LB</Postcode>
        </Address>
    </Result>
  </Response>
</ClientIntegrationResponse>
```

The function-specific elements are:

Element Name	Description
Result	Element to contain details on a matching patient. This element will be repeated once for each matching patient.
Identity	Provides the unique ID for a matching patient. See the Patient Identification section for details on this structure.
FirstName	First name of the matching patient.
Surname	Surname of the matching patient.
DateOfBirth	Date of birth of the matching patient, in the format CCYY-MM-DD.
Sex	Gender of the matching patient. Possibly values are M, F, I (indeterminate) and U (unknown).
Telephone	Patient's preferred telephone number. Could be a landline or mobile number. If no number is recorded, this element will be absent.
Address	Structure containing the patient's home address. If the patient has no recorded address, this element will be absent.

Note that if the search is valid but happens to match to no patient records, then the same above response is returned, but with no iterations of the **Result** element. An error response will only be raised if the search itself isn't valid (e.g. doesn't contain a minimum of two constraints).

These instructions are correct at the date of writing.

GetCurrentSelection

This function allows you to query SystmOne to find details of any selected drugs or codes on the user's currently active screen. If no selections have been made then an empty selection is returned.

The function request:

```
<ClientIntegrationRequest>

    <APIKey>0f3e33ae95b74520</APIKey>

    <DeviceID>0a3b2ed06537a063</DeviceID>

    <DeviceVersion></DeviceVersion>

    <RequestUID>3FF7F3A0-DC22-11E3-9721-010000008322</RequestUID>

    <Function>GetCurrentSelection</Function>

    <FunctionVersion>1.0</FunctionVersion>

</ClientIntegrationRequest>
```

This function has no additional parameters, other than the common baseline.

The response:

```
<ClientIntegrationResponse>

    <DeviceID>0a3b2ed06537a063</DeviceID>

    <RequestUID>24EB1BF0-DC27-11E3-9721-010000008322</RequestUID>

    <Function>GetCurrentSelection</Function>

    <FunctionVersion>1.0</FunctionVersion>

    <ResponseUID>25BC9CC0-DC27-11E3-A451-01000000010A</ResponseUID>

    <Response>

        <Identity>

            <NHSNumber>9400130333</NHSNumber>
            <StrategicReportingIdentifier>774268</StrategicReportingIdentifier>

        </Identity>

        <CurrentSelection>

            <Drug Scheme="Multilex" ProductID="1009071" Name="Paracetamol 120mg/5ml oral
            solution paediatric sugar free"></Drug>

            <Code Scheme="CTV3" Code="XaBVJ" Term="Clinical findings"></Code>

        </CurrentSelection>

    </Response>

</ClientIntegrationResponse>
```

The function-specific elements being:

Element Name	Description
Identity	Container element identifying the currently open patient record. See the Patient Identification section for more detail on this. If no patient record is open in SystmOne, this element isn't present.
CurrentSelection	Element containing details on the currently selected items from the user's active screen. If there are no appropriate selections when this query is made, the CurrentSelection element will still be present but containing no child elements.

These instructions are correct at the date of writing.

Functions which retrieve patient records

- **GetPatientRecord**
- **UpdatePatientRecord**
- **GetDocument**
- **DeleteFromPatientRecord**

The functions which fall under this category share a mechanism for accessing patient records, using the optional LeaveRecordOpen tag.

If the LeaveRecordOpen tag is present, SystmOne will process a message as follows:

- If the record is not already open, open the record fully and display it for the user, continue performing any message-specific actions, and then leave the record open.

- If the record is already open in a state which can be displayed to the user, continue performing any message-specific actions, and then leave the record open.

- If the record is already open, but is *not* in a state which can be displayed to the user (e.g. a limited background retrieval used in some SystmOne workflows), return a non-fatal error which allows the sending system to retry later.

- **N.B.** Changes made to patient data when the message is successful will be visible immediately to the user, but will be committed *when and only when* the user later saves the patient record.

If the LeaveRecordOpen tag is *not* present, SystmOne will assume that the sending system *expects* the record to be committed on completion of message processing if anything has been changed, and therefore will process a message as follows:

- If the record is not already open, open the record fully without displaying it to the user, continue performing any message-specific actions, and then save or discard the patient record as appropriate so that any changes made are committed immediately.

- If the record is already open, and the message is one which only retrieves information and does not add to or amend the record, continue performing any message-specific actions, and then leave the record open. See:

    – GetPatientRecord

    – GetDocument

- If the record is already open, and the message is one which adds to or amends the record, return a non-fatal error which allows the sending system to retry later, as the record is also in use by someone else and therefore cannot be closed on completion of message processing. See:

    – UpdatePatientRecord

    – DeleteFromPatientRecord

Systems which are intended to process patient records in bulk in the background generally *should not* specify LeaveRecordOpen, and should expect that on occasion a record may already be in use on the SystmOne client and therefore may not be available.

Systems which are intended to work interactively with a user in SystmOne generally *should* specify LeaveRecordOpen.

These instructions are correct at the date of writing.

GetPatientRecord

This function allows your application to extract a patient record from SystmOne. It is possible to extract an entire record, or a filtered record. **Note:** This function is throttled to once every 30 seconds, with the exception of GetPatientRecord filtered only on demographics, or filtered on information entered in the last day. For more information on this, see the bolded notes on the descriptions for MinEntryDate, MaxEntryDate and Demographics.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>36675940-B35D-11E3-A459-010000004280</RequestUID>
    <Function>GetPatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>1111111111</NhsNumber>
        </Identity>
        <LeaveRecordOpen></LeaveRecordOpen>
        <Filter>
            <MinEffectiveDate>2014-08-25</MinEffectiveDate>
            <MaxEffectiveDate>2014-08-25</MaxEffectiveDate>
            <MinEntryDate>2014-09-01</MinEntryDate>
            <MaxEntryDate>2014-09-01</MaxEntryDate>
            <Appointments></Appointments>
            <CarePlans></CarePlans>
            <Demographics></Demographics>
            <ClinicalCodes></ClinicalCodes>
            <ClinicalCode>XE0s6</ClinicalCode>
            <ClinicalCode>XM1GI</ClinicalCode>
            <Letters></Letters>
            <Medication></Medication>
            <Sensitivities></Sensitivities>
            <Recalls></Recalls>
            <Referrals></Referrals>
            <Relationships></Relationships>
            <Results></Results>
            <Vaccinations></Vaccinations>
            <Numeric>229..</Numeric>
            <Reminders></Reminders>
            <Activity></Activity>
            <Attachments></Attachments>
            <Narrative></Narrative>
            <Visits></Visits>
            <Tasks></Tasks>
            <UserNameDoneBy>user99</UserNameDoneBy>
        </Filter>
    </FunctionParameters>
</ClientIntegrationRequest>
```

These instructions are correct at the date of writing.

The function-specific elements being:

Element Name	Description
Identity	Optional element to identify the patient to be extracted. Uses the same Identity structure as other functions, as explained in the Patient Identification section. If this element is absent, SystmOne will extract the currently open patient record (if there is one, otherwise an error response will be returned).
LeaveRecordOpen	As described above.
Filter	Container element to contain various optional filters, described below. If this element is absent, then the full patient record will be extracted.
MinEffectiveDate	Optional element (format CCYY-MM-DD) to filter the data being extracted by effective date. Most data items are indefinitely effective from their date of recording (e.g. clinical codes), but some data items are only effective for a discrete period of time, such as: - medication - effective from when prescribed until when the prescription runs out - care plans - effective from when started to when ended - referrals - effective from when referred to when the referral is closed - relationships - effective from when recorded to when ended - reminders - effective from when recorded to when expired or removed
MaxEffectiveDate	Optional element to filter the data being extracted by effective date. No data said to have occurred after this date will be extracted.
MinEntryDate	Optional element (format CCYY-MM-DD) to filter the data being extracted by the date it was actually entered. No data entered before this date will be extracted. **Note: If both the MinEntryDate and MaxEntryDate are set to be today, GetPatientRecord will not be throttled to once every 30 seconds.**
MaxEntryDate	Optional element to filter the data being extracted by the date it was actually entered. No data entered after this date will be extracted. **Note: If both the MinEntryDate and MaxEntryDate are set to be today, GetPatientRecord will not be throttled to once every 30 seconds.**
Appointments	Optional element to specify that pending appointments should be extracted from the patient record. There is no facility to extract the appointment history of a patient.
CarePlans	Specifies that care plan data be extracted from the patient record.
Demographics	Specifies that demographic data be extracted from the patient record. **Note: If the demographics filter is applied, GetPatientRecord will not be throttled to once every 30 seconds.**
ClinicalCodes	Specifies that all coded data be extracted from the patient record.
ClinicalCode	Specifies that coded data for a specific clinical code be extracted from the patient data. This element requires a value to specify the clinical code to extract. A CTV3 code must be used as the value. This element can be specified multiple times, with different codes, to extract different readings at the same time. If ClinicalCodes is specified then any specific ClinicalCode filters will be ignored.
Letters	Specifies that letters be extracted from the patient record.
Medication	Specifies that medication be extracted from the patient record. This includes both acute and repeat medication.

Sensitivities	Specifies that allergy (e.g. reaction to peanuts) and sensitivity (e.g. reaction to penicillin) information be extracted. Note: In the response, The DrugSensitivity element contains an attribute of "Ingredient" which shows all the ingredients of the drug from Multilex, it also contains an attribute of "Details" which contains the name of the drug as seen in the SystmOne front end. For pre-2014 data, there may be allergies linked to drug action groups, in this case the Details attribute will contain the action group name (again, as displayed in the record).An example of this is shown in the example response below. Where an allergy is ended, this will be included in the response as either an end date or an additional tag of EndedWithUnknownDate.
Recalls	Specifies that recalls be extracted from the patient record. This includes pending and past recalls.
Referrals	Specifies that referral data be extracted from the patient record. This includes both incoming and outgoing referrals.
Relationships	Specifies that relationships be extracted from the patient record.
Results	Specifies that pathology and radiology results be extracted from the patient record.
Vaccinations	Specifies that vaccination data be extracted from the patient record. This includes vaccination consents and refusals in addition to the vaccinations
Numeric	Specifies that recordings of a specific numeric reading be extracted from the patient record. This element requires a value to specify the reading. A
Reminders	Specifies that reminders be extracted from the patient record.
Activity	Specifies that activity data be extracted from the patient record.
Attachments	Specifies that non-letter attachments be extracted from the patient record.
Narrative	Specified that free-text narrative be extracted from the patient record.
Visits	Specifies that pending visits be extracted. There's no facility to extract past visits.
Tasks	Specifies that non-completed workflow tasks, for this patient, be extracted
UserNameDoneBy	Optional element to Specify that only data recorded by a particular SystmOne user be extracted from the record. This element requires a value to specify the username for which data should be extracted. Any data for which the recording user is unknown will always be extracted. This element can be specified multiple times, with different users, to extract different user entries at the same time.

Filters

The various filters are intended to provide a quick and easy way to restrict the amount of data you extract from the SystmOne client. A complete patient record can be several megabytes when written to XML, but this can be greatly cut down by using the filters to only extract the data your application requires. For example, if your application only requires demographics and height and weight recordings, then you can use the **Demographic** and **Numeric** filters to restrict the extract, reducing the several MB to several KB.

These instructions are correct at the date of writing.

The function response:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>AACB44C0-B35F-11E3-A459-010000004280</RequestUID>
    <Function>GetPatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>AD01ACC0-B35F-11E3-AE33-010000004608</ResponseUID>
    <Response>
        <Identity>
            <NHSNumber>7835438275</NHSNumber>
            <StrategicReportingIdentifier>8484556</StrategicReportingIdentifier>
        </Identity>
        <Demographics>
            <Title>Mrs</Title>
            <FirstName>Azra</FirstName>
            <MiddleNames></MiddleNames>
            <Surname>Swift</Surname>
            <KnownAs></KnownAs>
            <DateOfBirth>1933-01-01</DateOfBirth>
            <Sex>F</Sex>
            <MaritalStatus>
                <Code Scheme="CTV3" Code="XE0oZ" Term="Single person"></Code>
            </MaritalStatus>
            <Ethnicity>
                <Code Scheme="CTV3" Code="XaFwD" Term="White British"></Code>
            </Ethnicity>
            <MainLanguage>
                <Code Scheme="CTV3" Code="XaG5t" Term="Main spoken language English"></Code>
            </MainLanguage>
            <EnglishSpeaker>Yes</EnglishSpeaker>
            <Address>
                <HouseName></HouseName>
                <HouseNumber>425</HouseNumber>
                <Road>Leeds Road</Road>
                <Locality>Scholes</Locality>
                <Town>Leeds</Town>
                <County></County>
                <Postcode>LS15 4DF</Postcode>
            </Address>
            <HomeTelephone></HomeTelephone>
            <WorkTelephone></WorkTelephone>
            <MobileTelephone></MobileTelephone>
            <AlternateTelephone></AlternateTelephone>
            <EmailAddress></EmailAddress>
            <SMSConsent></SMSConsent>
            <UsualGPUserName>jefffry</UsualGPUserName>
            <CareStartDate>1990-10-29</CareStartDate>
            <RegistrationType>GMS</RegistrationType>
        </Demographics>
        <Clinical>
            <Event DateTime="2014-03-26T09:06:50" UserName="dlittler2405" DoneBy="Drew Littler"
DoneAt="Surgery" Software="Client Integration Software" LinkedReferralUID="6510300000000000"
EventUID="b95ee04200000000">
                ...
```

These instructions are correct at the date of writing.

```
            ...
        </Event>
        <Event DateTime="2017-12-19T12:45:12.0Z" UserName="lsharples1004" DoneBy="SHARPLES, Laura
        ('Other' Community Health Service)" DoneAt="Surgery" EventUID="3c891fb900000000">
          <DrugSensitivity>
                <Type>Ingredient</Type>
                <Ingredient Scheme="Multilex" IngredientID="1" Name="None known" Details="LATEX FOAM -
        ADHESIVE"/>
          </DrugSensitivity>
        </Event>
    </Clinical>
    <NonClinical>
        <Appointment>
                <DateTime>2014-03-26T14:55:00</DateTime>
                <Duration>10.0</Duration>
                <Clinician>LITTLER, Drew</Clinician>
                <UserName>dlittler2405</UserName>
                <Site>The Real Surgery</Site>
                <ClinicType>Session</ClinicType>
                <AppointmentUID>6510300000000000</AppointmentUID>
                <Status>Booked</Status>
        </Appointment>
    </NonClinical>
    <RecordState>Open</RecordState>
  </Response>
</ClientIntegrationResponse>
```

The function-specific elements in the response are:

Element Name	Description
Identity	Provides the identity of the patient extracted.
Demographics	Container element for the patient demographics. If demographics weren't requested, this element will be absent.
Title	The patient's title (Mr, Mrs etc.).
FirstName	The patient's first name.
MiddleNames	The patient's middle names or initials.
Surname	The patient's surname.
KnownAs	If the patient is known by a different name to their first name (e.g. if known as "Dave" rather than "David"), this element will be present to provide it.
DateOfBirth	The patient's date of birth in CCYY-MM-DD format.
Sex	The patient's gender. Possible values are: M, F, I (indeterminate) or U (unknown).
MaritalStatus	Container element for the patient's marital status. If no marital status is recorded in SystmOne, this element will be present but empty.
Code	Element to represent a clinical code. Used as a child element in the **MaritalStatus**, **Ethnicity** and **MainLanguage** elements. Has attributes to give the coding scheme (which is CTV3 by default), the code and the term associated with the code.
Ethnicity	Container element for the patient's ethnicity. If no ethnicity is recorded in SystmOne, this element will be present but empty.
MainLanguage	Container element for the patient's primary spoken language. If no language is recorded in SystmOne, this element will be present but empty.
EnglishSpeaker	Element to indicate if the patient speaks English. Possible values: Yes, No and Unknown.

Address	Container element for the patient's home address. Contains child elements for the various address fields (e.g. road, postcode).
HomeTelephone	The patient's home telephone number. If not known, this element will still be present, only empty.
WorkTelephone	The patient's work telephone number. If not known, this element will still be present, only empty.
MobileTelephone	The patient's mobile telephone number. If not known, this element will still be present, only empty.
AlternateTelephone	The patient's alternative telephone number. If not known, this element will still be present, only empty.
EmailAddress	The patient's email address.
SMSConsent	Whether the patient has given consent to receive SMS messages to their mobile phone. Possible values: Yes and No.
UsualGPUserName	The user name of the patient's usual GP. This can be correlated to the response to the GetOrganisationMetaData function to get the name of the GP.
CareStartDate	Date that the patient was registered for care.
RegistrationType	GP registration type (e.g. GMS, Private). If used in a non-GP practice setting, this element won't be present.
Clinical	Container element for the clinical content of the patient record, such as medication and clinical codes. If clinical content wasn't requested (e.g. demographics or appointments only were requested), this element will be absent.
Event	Container element to represent each consultation or administrative event recorded in the patient record. Has attributes to provide: • The date and time of the event • The user name of who recorded the event • A textual description of who recorded it • Where it was performed • The software used to add the event (if the event was recorded using the SystmOne client, this attribute won't be present) • A UID linking the event to a referral • A UID for the event (which can be used in the DeleteFromPatientRecord function). The child elements of **Event** represent the different data types that can be recorded in an event, such as medication, clinical codes etc. These individual data types aren't documented in this specification. To discover the XML for a data type, refer to the XML template files provided, or use your SystmOne client to manually record the data you are interested in and then extract that record using the interface.
NonClinical	Container element for the non-clinical content of the patient record, such as appointments. If non-clinical content wasn't requested, this element will be absent.
Appointment	Container element for a patient appointment.
DateTime	The date and time of an appointment.
Duration	The duration of the appointment, in minutes.
Clinician	The name of the clinician this appointment is with.

UserName	The username of the clinician this appointment is with.
Site	The site this appointment is at.
ClinicType	The type of clinic this appointment is in.
AppointmentUID	The UID of an appointment. This can be later used to update the appointment (e.g. to cancel it).
Status	The status of an appointment (e.g. booked, DNA or cancelled)
RecordState	The state of the patient record in the SystmOne client after this function. Possible values are "Open" and "Closed".

These instructions are correct at the date of writing.

UpdatePatientRecord

This function allows new content to be added to a patient record.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>0D08FFA0-B361-11E3-A459-010000004280</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>7835438275</NhsNumber>
        </Identity>
        <Demographics>
            <MiddleNames>NewName</MiddleNames>
        <Demographics>
        <Clinical>
            <Event>
                ...
            </Event>
        </Clinical>
        <NonClinical>
            <Appointment>
                ...
            </Appointment>
        </NonClinical>
        <LeaveRecordOpen></LeaveRecordOpen>
    </FunctionParameters>
</ClientIntegrationRequest>
```

The function-specific elements of this are defined as:

Element Name	Description
Identity	The Identity of the patient whose record should be updated.
Demographics	Container element for demographics changes. If you have no demographics changes to make, do not supply this element. The structure of this element is the same as used in the GetPatientRecord function response. When supplying this structure, only specify the fields that you which to change. I.e. If you want to change the patient middle name, only specify the **MiddleNames** child element of the **Demographics** structure and nothing else.
Clinical	Container element for **Event** elements, to add new clinical content to the patient record. If you have no clinical additions, do not supply this element.
Event	Container element for clinical additions to the record, using the same structure as in the GetPatientRecord function. The attributes of the **Event** are optional and can be specified to change how the event is recorded in the SystmOne client. Leaving these elements out will cause the resulting event to be recorded with the current date and time, and by the user logged in to SystmOne. The individual data types to be added to the patient record should be sent as child elements to an **Event**.
NonClinical	Container element for non-clinical additions to the record, such as **Appointments**, **Visits** and **Tasks**. If none of these are to be added or updated, then do not supply this element.
LeaveRecordOpen	As described above.

These instructions are correct at the date of writing.

The function response:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>B96D6FB0-B4C9-11E3-8523-010000000060</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>BDC9EC00-B4C9-11E3-A3A5-010000000002</ResponseUID>
    <Response>
        <Identity>
            <NHSNumber>6640569094</NHSNumber>
            <StrategicReportingIdentifier>619941</StrategicReportingIdentifier>
        </Identity>
        <EventUID>f95ee04200000000</EventUID>
        <AppointmentUID>f95ee04200000000</AppointmentUID>
        <VisitUID>f95ee04200000000</VisitUID>
        <TaskUID>f95ee04200000000</TaskUID>
        <RecordState>Open</RecordState>
    </Response>
</ClientIntegrationResponse>
```

The function-specific elements being:

Element Name	Description
Identity	The Identity of the patient whose record was updated.
EventUID	The UID of the event that was created in the patient record. This element may be repeated if the insert of the additional data caused multiple events to be created (which typically happens if an update adds clinical information at the same time as changing demographic fields).
AppointmentUID	This element will be repeated once for each appointment created by the update.
VisitUID	This element will be repeated once for each patient visit created by the update.
TaskUID	This element will be repeated once for each workflow task created by the update.
RecordState	The state of the patient record in the SystmOne client after this function. Possible values are Open and Closed. If Open, it means that you changes to the record aren't committed yet and require the user to press the Save button in the SystmOne client.

These instructions are correct at the date of writing.

Update Example: Adding a Clinical Code in CTV3

When adding most data to a patient record, simply use the same structure as returned when getting a patient record.

So to add a new clinical code to a patient record, simply use the same ClinicalCode structure as returned when getting a record. For example, to add the CTV3 code for Eczema to the patient record, use this XML:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>5F33C740-CABF-11E3-BFB0-010000005024</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6343800514</NhsNumber>
        </Identity>
        <Clinical>
            <Event>
                <ClinicalCode>
                    <Code Scheme="CTV3" Code="X505K"></Code>
                    <FreeText>optional comments</FreeText>
                </ClinicalCode>
            </Event>
        </Clinical>
    </FunctionParameters>
</ClientIntegrationRequest>
```

Update Example: Adding a Clinical Code in Snomed

SystmOne uses CTV3 natively, but can support Snomed. To add a Snomed code to a patient record, use the same XML as above, but specify the alternative coding scheme in the **Scheme** attribute and the Snomed concept ID in the **Code** attribute:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>5F33C740-CABF-11E3-BFB0-010000005024</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6343800514</NhsNumber>
        </Identity>
        <Clinical>
            <Event>
                <ClinicalCode>
                    <Code Scheme="Snomed" Code="43116000"></Code>
                    <FreeText>optional comments</FreeText>
                </ClinicalCode>
            </Event>
        </Clinical>
    </FunctionParameters>
</ClientIntegrationRequest>
```

These instructions are correct at the date of writing.

Update Example: Adding a Clinical Code and Linking to Referral

Following on from the previous example, if new data should be linked to a received referral, then the same XML is used but with an additional "LinkedReferralUID" attribute in the Event element. This attribute should have the value of the ReferralUID element returned when getting the patient record.

For example:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>2A7E78F0-CAC0-11E3-BFB0-010000005024</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6343800514</NhsNumber>
        </Identity>
        <Clinical>
            <Event LinkedReferralUID="6510300000000000">
                <ClinicalCode>
                    <Code Scheme="CTV3" Code="X505K"></Code>
                </ClinicalCode>
            </Event>
        </Clinical>
    </FunctionParameters>
</ClientIntegrationRequest>
```

Note that events can only be linked to a single referral.

Update Example: Adding a Clinical Code and Linking to Problems

Building on the previous example again, if new data should be linked to a Problem then use the LinkedProblemUID element. This element should contain the ProblemUID value returned when getting the patient record. This element can also be repeated multiple times to link to multiple Problems. It's also possible to use the LinkedProblemUID element to link either entire events to Problems or just individual data items within an event.

For example, to add a code and link the entire event to a Problem, send this XML, with the LinkedProblemUID element as a child of the Event element:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>E603D7F0-CAC0-11E3-BFB0-010000005024</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6343800514</NhsNumber>
        </Identity>
        <Clinical>
            <Event>
                <ClinicalCode>
                    <Code Scheme="CTV3" Code="X505K"></Code>
                </ClinicalCode>
                <LinkedProblemUID>794d100000000000</LinkedProblemUID>
            </Event>
        </Clinical>
    </FunctionParameters>
</ClientIntegrationRequest>
```

These instructions are correct at the date of writing.

Alternatively, to add the same code but linking just the Clinical Code, not the entire event, then have the LinkedProblemUID be a child of the ClinicalCode element instead:

```xml
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>E603D7F0-CAC0-11E3-BFB0-010000005024</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6343800514</NhsNumber>
        </Identity>
        <Clinical>
            <Event>
                <ClinicalCode>
                    <Code Scheme="CTV3" Code="X505K"></Code>
                    <LinkedProblemUID>794d100000000000</LinkedProblemUID>
                </ClinicalCode>
            </Event>
        </Clinical>
    </FunctionParameters>
</ClientIntegrationRequest>
```

Update Example: Adding a Letter

To add a letter to a patient record requires a slight variation on the XML structure used when getting a letter from a patient record. The main Letter element should have all the same common elements, such as the sender and recipient details, but should also have an additional DocumentPath element containing file location of the letter itself.

```xml
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>C9963490-CAC1-11E3-BFB0-010000005024</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6343800514</NhsNumber>
        </Identity>
        <Clinical>
            <Event>
                <Letter>
                    <RecipientName>
                        <Title>Title</Title>
                        <FirstName>First name</FirstName>
                        <Surname>Surname</Surname>
                    </RecipientName>
                    <RecipientOrganisation>Surgery Name</RecipientOrganisation>
                    <RecipientAddress>
                        <HouseNumber>1</HouseNumber>
                        <Postcode>LS18 5TN</Postcode>
                    </RecipientAddress>
                    <SenderName>
                        <Title>Title</Title>
                        <FirstName>First name</FirstName>
                        <Surname>Surname</Surname>
                    </SenderName>
                    <SenderAddress>
                        <HouseNumber>1</HouseNumber>
                        <Postcode>LS18 5TN</Postcode>
                    </SenderAddress>
                     …
```

These instructions are correct at the date of writing.

```
                ...
                <DocumentPath>c:\example.docx</DocumentPath>
                <Type>Miscellaneous</Type>
                <Direction>Incoming</Direction>
                <DateSentReceived>2014-06-04T15:23:29</DateSentReceived>
            </Letter>
          </Event>
        </Clinical>
      </FunctionParameters>
    </ClientIntegrationRequest>
```

The structures providing details on the sender and recipient are all optional, except the recipient name and organisation - at least one of which must be provided. There are also a number of mandatory fields:

- DocumentPath is mandatory, and tells SystmOne where to find the file being uploaded.

- Type is mandatory, and describes the type of letter. This must match one of the known letter types SystmOne uses. But you can always just use "Miscellaneous".

- Direction is mandatory. It tells SystmOne whether the letter was sent to or from the organisation using SystmOne. Possible values are "Incoming", "Outgoing" and "Other".

- DateSentReceived is mandatory and describes when the letter was actually sent or received (which may be different to the Event date it's recorded under, which is when it was written or processed).

Update Example: Adding a File Attachment

To add a file attachment to a patient record requires the Attachment element contain just a DocumentPath element, giving the path of the file to attach.

```
    <ClientIntegrationRequest>
        <APIKey>0f3e33ae95b74520</APIKey>
        <DeviceID>60e1dc7b6c786750</DeviceID>
        <DeviceVersion>v1.0</DeviceVersion>
        <RequestUID>A3103930-CACE-11E3-BFB0-010000005024</RequestUID>
        <Function>UpdatePatientRecord</Function>
        <FunctionVersion>1.0</FunctionVersion>
        <FunctionParameters>
            <Identity>
                <NhsNumber>6343800514</NhsNumber>
            </Identity>
            <Clinical>
                <Event>
                    <Attachment>
                        <DocumentPath>c:\example.docx</DocumentPath>
                        <Comments>optional free text</Comments>
                    </Attachment>
                </Event>
            </Clinical>
        </FunctionParameters>
    </ClientIntegrationRequest>
```

Note that within SystmOne there are two ways of attaching files to patient records: as attachments or letters. Attachments are simply files. Letters are files with metadata describing the sender, recipient and what the letter is about. Whether you add files as attachments or letters is basically down to whether you have that additional metadata to supply.

These instructions are correct at the date of writing.

Update Example: Adding a URL Attachment

To attach a URL to a patient record uses the same Attachment element as attaching a file, except with slightly different child elements.

```xml
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>



    <RequestUID>A3103930-CACE-11E3-BFB0-010000005024</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6343800514</NhsNumber>
        </Identity>
        <Clinical>
            <Event>
                <Attachment>
                    <URL>http://www.nhs.uk</URL>
                    <Comments>optional free text</Comments>
                </Attachment>
            </Event>
        </Clinical>
    </FunctionParameters>
</ClientIntegrationRequest>
```

Update Example: Adding a New Appointment

To book a new appointment for the patient requires specifying the **UserName**, **SiteName**, **ClinicType**, **SlotType**, **DateTimeStart** and **Duration** of the appointment, as shown in the example below. Since appointments can only be booked in pre-created slots in SystmOne, these parameters must all match existing free slots. The free slots can be discovered using the **GetAppointmentSlots** function.

```xml
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>0CA1B5B0-0B6E-11E4-B012-010000009081</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>7137845479</NhsNumber>
        </Identity>
        <NonClinical>
            <Appointment>
                <Clinic>
                    <UserName>dlittler2405</UserName>
                    <SiteName>The Real Surgery</SiteName>
                    <ClinicType>Session</ClinicType>
                    <Slot>
                        <SlotType>Slot</SlotType>
                        <DateTimeStart>2014-07-15T13:00:00</DateTimeStart>
                        <Duration>10</Duration>
                    </Slot>
                </Clinic>
                <Comments>Comments2</Comments>
            </Appointment>
        </NonClinical>
    </FunctionParameters>
</ClientIntegrationRequest>
```

These instructions are correct at the date of writing.

When an appointment is created, the response will include a UID for that appointment, which can later be used to update that appointment. This **AppointmentUID** is also included when appointments are extracted in the GetPatientRecord function.

```
<ClientIntegrationResponse>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <RequestUID>2C4FC190-0B6E-11E4-B012-010000009081</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>2EE56090-0B6E-11E4-AF53-01000000A094</ResponseUID>
    <Response>
        <Identity>
            <NHSNumber>7137845479</NHSNumber>
            <StrategicReportingIdentifier>31354877</StrategicReportingIdentifier>
        </Identity>
        <AppointmentUID>83fab51000000000</AppointmentUID>
        <RecordState>Closed</RecordState>
    </Response>
</ClientIntegrationResponse>
```

Update Example: Updating an Appointment

Like demographics, Appointments can be updated. This is done using a similar structure as when creating an appointment, except requires use to the **AppointmentUID** to identify the appointment being updated. For example, to change the status of an appointment to be Arrived, only the new **Status** and the **AppointmentUID** need be sent:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>4C60EA20-0B70-11E4-B012-010000009081</RequestUID>
    <Function>UpdatePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>7137845479</NhsNumber>
        </Identity>
        <NonClinical>
            <Appointment>
                <AppointmentUID>8ebea51000000000</AppointmentUID>
                <Status>Arrived</Status>
            </Appointment>
        </NonClinical>
    </FunctionParameters>
</ClientIntegrationRequest>
```

When updating an appointment, only send the fields that need to be changed (in addition to the AppointmentUID).

These instructions are correct at the date of writing.

GetDocument

This function allows extracting an attached document from a patient record. When a patient record is extracted, although metadata about documents is extracted (e.g. sender and recipient), the document itself isn't. In its place is a DocumentUID which can be used in this function to request a specific document.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>6D76C710-B4C3-11E3-8523-010000000060</RequestUID>
    <Function>GetDocument</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6640569094</NhsNumber>
        </Identity>
        <DocumentUID>4093400000000000</DocumentUID>
        <WriteTo>d:\</WriteTo>
        <LeaveRecordOpen></LeaveRecordOpen>
    </FunctionParameters>
</ClientIntegrationRequest>
```

The function-specific elements are defined as:

Element Name	Description
Identity	The Identity of the patient whose record contains the document.
DocumentUID	The UID of the document to extract.
WriteTo	A directory path that SystmOne should write to. If a path is specified that doesn't exist or SystmOne can't access, an error response is returned.
LeaveRecordOpen	As described above.

The function response:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>6D76C710-B4C3-11E3-8523-010000000060</RequestUID>
    <Function>GetDocument</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>74C58150-B4C3-11E3-AA12-010000000028</ResponseUID>
    <Response>
        <DocumentFile>d:\276740.doc</DocumentFile>
        <RecordState>Open</RecordState>
    </Response>
</ClientIntegrationResponse>
```

These instructions are correct at the date of writing.

The function-specific elements are defined as:

Element Name	Description
DocumentFile	Returns the path and filename that the document was written to. Depending on the document file format used in SystmOne, the document may be exported as a single document or multiple image files, in which case this element will be repeated for each file extracted.
RecordState	The state of the patient record in the SystmOne client after this function. Possible values are Open and Closed.

These instructions are correct at the date of writing.

DeleteFromPatientRecord

This function allows data previously inserted using the UpdatePatientRecord function to be deleted. This function only allows you to delete data that your software has added, and not data added from any other source. Demographics changes cannot be deleted in this way, and must simply be reverted by sending a new UpdatePatientRecord function request, containing the corrected demographics fields.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>f31e26725b5491f2</APIKey>
    <DeviceID>392752167bd7f69b</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>B1CF8B60-B4C6-11E3-8523-010000000060</RequestUID>
    <Function>DeletePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>6640569094</NhsNumber>
        </Identity>
        <Reason>Wrong data inserted</Reason>
        <EventUID>6e9de04200000000</EventUID>
        <AppointmentUID>9827c51000000000</AppointmentUID>
        <TaskUID>a827c51000000000</TaskUID>
        <VisitUID>8827c51000000000</VisitUID>
    </FunctionParameters>
</ClientIntegrationRequest>
```

The function-specific elements are:

Element Name	Description
Identity	The Identity of the patient whose record should be affected.
Reason	A textual reason for the deletion. If this element is empty the delete will fail and an error response will be returned.
EventUID	The UID of the event to be deleted. This UID is returned when a patient record is extracted and when new data is added to a patient. This element can be repeated to delete multiple events at once.
AppointmentUID	The UID of an appointment to be deleted. This UID is returned when an appointment is created (using the UpdatePatientRecord function) or extracted (using the GetPatientRecord function). This element can be repeated to delete multiple appointments at once.
TaskUID	The UID of a task to be deleted. This UID is returned when a task is created (using the UpdatePatientRecord function) or extracted (using the GetPatientRecord function). This element can be repeated to delete multiple tasks at once.
VisitUID	The UID of a visit to be deleted. This UID is returned when a visit is created (using the UpdatePatientRecord function) or extracted (using the GetPatientRecord function). This element can be repeated to delete multiple visits at once.
LeaveRecordOpen	As described above. Required if Identity tag absent.

These instructions are correct at the date of writing.

The function response:

```
<ClientIntegrationResponse>
    <DeviceID>392752167bd7f69b</DeviceID>
    <RequestUID>17CBC2F0-B4CA-11E3-8523-010000000060</RequestUID>
    <Function>DeletePatientRecord</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>19C91990-B4CA-11E3-A3A5-010000000002</ResponseUID>
    <Response>
        <Identity>
            <NHSNumber>6640569094</NHSNumber>
            <StrategicReportingIdentifier>619941</StrategicReportingIdentifier>
        </Identity>
        <RecordState>Open</RecordState>
    </Response>
</ClientIntegrationResponse>
```

The function-specific elements are:

Element Name	Description
Identity	The Identity of the patient whose record affected.
RecordState	The state of the patient record in the SystmOne client after this function. Possible values are Open and Closed. If Open, it means that your deletion hasn't been committed yet and requires the user to press the Save button in the SystmOne client.

If the event, task, appointment or visit cannot be deleted, an error response will be returned saying why. If multiple events are being deleted at once, a failure to delete any single one of them will result in the entire operation being cancelled.

These instructions are correct at the date of writing.

GetAppointmentSlots

This function allows you to query SystmOne to find details of free slots in the appointment book. New patient appointments can be booked using the UpdatePatientRecord function, but for this to work you need details on what free slots there are. This function gives you that information.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>64966810-CBB3-11E3-A964-010000000482</RequestUID>
    <Function>GetAppointmentSlots</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <MinDateTime>2014-04-24T00:00:00</MinDateTime>
        <MaxDateTime>2014-04-30T00:00:00</MaxDateTime>
        <UserName>dlittler</UserName>
        <SiteName>The Real Surgery</SiteName>
        <ClinicType>Nurse Clinic</ClinicType>
        <SlotType>Slot</SlotType>
    </FunctionParameters>
</ClientIntegrationRequest>
```

The function-specific elements being:

Element Name	Description
MinDateTime	Optional element to specify a date and time to restrict the slots returned by SystmOne. No slot before this date and time will be returned.
MaxDateTime	Optional element to specify a date and time to restrict the slots returned. No slot after this date and time will be returned.
UserName	Optional element to restrict the slots returned to only those for the staff member with this user name. This element can be repeated to return slots for multiple staff.
SiteName	Optional element to restrict the slots to those at a specific site. This element can be repeated to restrict to multiple sites.
ClinicType	Optional element to restrict to slots in specific types of clinic. This element can be repeated to restrict to multiple clinics.
SlotType	Optional element to restrict to slots of a specific type. This element can be repeated to restrict to multiple slots types.

The response:

```
<ClientIntegrationResponse>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <RequestUID>305A9A10-CBB5-11E3-A964-010000000482</RequestUID>
    <Function>GetAppointmentSlots</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>30FEF060-CBB5-11E3-96B2-010000005200</ResponseUID>
    <Response>
        <Clinic>
            <UserName>dlittler</UserName>
            <SiteName>Surgery Name</SiteName>
            <ClinicType>Session</ClinicType>
            <Slot>
                <SlotType>Slot</SlotType>
                <DateTimeStart>2014-04-24T16:10:00</DateTimeStart>
```

These instructions are correct at the date of writing.

```
                <Duration>10</Duration>
            </Slot>
        </Clinic>
    </Response>
</ClientIntegrationResponse>
```

The function-specific elements being:

Element Name	Description
Clinic	Container element for a clinic. Repeated once for each clinic with slots being returned.
UserName	User name of the owner of the clinic
SiteName	Site name where the clinic is to be held
ClinicType	Provides the type of the clinic (e.g. "Asthma Clinic")
Slot	Container element for a free slot within a clinic. Repeated once for each free slot.
SlotType	Describes the type of slot (e.g. "Slot" for normal slots or "Telephone Appointment Slot" for telephone consultations)
DateTimeStart	The date and time that this appointment slot starts
Duration	The duration, in minutes, of this appointment slot

These instructions are correct at the date of writing.

GetDiary

This function allows you to query SystmOne for up-coming appointments and visits. It allows restricting by site, staff member and date. Note that the response only includes appointments and visits that are linked to patient records. The SystmOne client allows staff to create "textual" appointments and visits that aren't linked to patient recorded; these aren't returned in the response to this function.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>BB7C0600-EC90-11E3-A808-010000008210</RequestUID>
    <Function>GetDiary</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <MinDateTime>2014-06-05T08:00:00</MinDateTime>
        <MaxDateTime>2014-06-06T08:00:00</MaxDateTime>
        <UserName>dlittler</UserName>
        <SiteName>The Real Surgery</SiteName>
        <Appointments></Appointments>
        <Visits></Visits>
    </FunctionParameters>
</ClientIntegrationRequest>
```

The function-specific elements being:

Element Name	Description
MinDateTime	Optional element to specify a date and time to restrict the data returned by SystmOne. Nothing before this date and time will be returned.
MaxDateTime	Optional element to specify a date and time to restrict the data returned. Nothing after this date and time will be returned.
UserName	Optional element to restrict the data returned to only those for the staff member with this user name. This element can be repeated to return data for multiple staff.
SiteName	Optional element to restrict the appointments to one or more specific sites. This element doesn't apply to extracting visits, since they're not associated with a site. This element can be repeated to restrict to multiple sites.
Appointments	Optional element to restrict the output to just Appointments.
Visits	Optional element to restrict the output to just Visits. If neither this nor the Appointments element are specified, then both Appointments and Visits are returned in the response.

These instructions are correct at the date of writing.

The response:

```
<ClientIntegrationResponse>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <RequestUID>B7F38610-EC91-11E3-A808-010000008210</RequestUID>
    <Function>GetDiary</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>B86F6CD0-EC91-11E3-B565-01000000295F</ResponseUID>
    <Response>
        <Result>
            <Identity>
                <NHSNumber>5941589352</NHSNumber>
                <StrategicReportingIdentifier>84521</StrategicReportingIdentifier>
            </Identity>
            <Demographics>
                <Title>Mr</Title>
                <FirstName>Miguel</FirstName>
                <MiddleNames></MiddleNames>
                <Surname>Danielson</Surname>
                <DateOfBirth>1989-02-08</DateOfBirth>
                <Sex>M</Sex>
            </Demographics>
            <Appointment>
                <Clinic>
                    <UserName>jefffry</UserName>
                    <SiteName>The Real Surgery</SiteName>
                    <ClinicType>Session</ClinicType>
                    <Slot>
                        <SlotType>Slot</SlotType>
                        <DateTimeStart>2014-06-05T14:15:00</DateTimeStart>
                        <Duration>10</Duration>
                    </Slot>
                </Clinic>
            </Appointment>
        </Result>
        <Result>
            <Identity>
                <NHSNumber>8997304569</NHSNumber>
                <StrategicReportingIdentifier>3618741</StrategicReportingIdentifier>
            </Identity>
            <Demographics>
                <Title>Ms</Title>
                <FirstName>Vickey</FirstName>
                <MiddleNames></MiddleNames>
                <Surname>Callaghan</Surname>
                <DateOfBirth>1992-02-02</DateOfBirth>
                <Sex>F</Sex>
            </Demographics>
            <Visit>
                <DateTime>2014-06-05T11:00:00</DateTime>
                <Duration>20</Duration>
                <Comments>Deferred from 05 Jun 2014 09:49</Comments>
                <UserName>dlittler2405</UserName>
            </Visit>
        </Result>
    </Response>
</ClientIntegrationResponse>
```

The function-specific elements being:

These instructions are correct at the date of writing.

Element Name	Description
Result	Container element for the appointments and visits for a specific patient. This element will be repeated for each patient included in the response.
Identity	Element, in the same pattern as used elsewhere to uniquely identify a patient.
Demographics	Container element to provide some basic details about a patient (name, DOB, and sex). For more details about the patient, use the GetPatientRecrd function.
Visit	Container element giving details about a patient visit. This matches the same structure as visits returned in the GetPatientRecord function response.
Appointment	Container element giving details about a patient appointment. This matches the same structure as visits returned in the GetPatientRecord function response.

These instructions are correct at the date of writing.

ExitClient

This function allows you to force the SystmOne client to exit to desktop. When the client receives this function request, it will send the response and then exit to desktop within three seconds.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>D6CDD100-2907-11E4-97A6-010000004000</RequestUID>
    <Function>ExitClient</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters></FunctionParameters>
</ClientIntegrationRequest>
```

This function has no function-specific elements.

The response:

```
<ClientIntegrationResponse>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <RequestUID>D6CDD100-2907-11E4-97A6-010000004000</RequestUID>
    <Function>ExitClient</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>D78C3F00-2907-11E4-AEEF-010000000804</ResponseUID>
    <Response></Response>
</ClientIntegrationResponse>
```

Similarly, the response has no function-specific elements either.

These instructions are correct at the date of writing.

DataExtract

This function allows you to query SystmOne for the latest Strategic Reporting data extract. When the client receives this function it will download the specified data extract to the requested directory. Successful responses to this message will pass back the SRManifestCRC which can be provided in future DataExtract messages to make sure the same download isn't performed again.

The function request:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ClientIntegrationRequest>
        <APIKey>@APIKey</APIKey>
        <DeviceID>@DeviceID</DeviceID>
        <DeviceVersion>@DeviceVersion</DeviceVersion>
        <RequestUID>@RequestUID</RequestUID>
        <Function>DataExtract</Function>
        <FunctionVersion>1.0</FunctionVersion>
        <FunctionParameters>
                <SRManifestCRC>123456789</SRManifestCRC>
                <Directory>D:\Data Extracts</Directory>
                <Name>Data Extract 1</Name>
        </FunctionParameters>
</ClientIntegrationRequest>
```

The function-specific elements being:

Element Name	Description
Directory	Mandatory element where the requested data extract will be downloaded to.
Name	Mandatory element to specify which data extract should be downloaded.
SRManifestCRC	Optional element that is used to ensure the data extract downloaded is not the same as the one downloaded previously.

The response:

```xml
<ClientIntegrationResponse>
    <DeviceID>8cb03c25797e17b1</DeviceID>
    <RequestUID>AEE632E0-3A64-11E4-AB06-010000000100</RequestUID>
    <Function>DataExtract</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>DF6D7270-3A64-11E4-8321-010000001ED8</ResponseUID>
    <Response>
         <SRManifestCRC>4246682649</SRManifestCRC>
    </Response>
</ClientIntegrationResponse>
```

The function-specific elements being:

Element Name	Description
SRManifestCRC	This is a CRC of the extract's manifest, it should be sent with the next data extract message as a way of ensuring the same download isn't performed more than once

These instructions are correct at the date of writing.

LaunchFunctionality

This function allows you to invoke certain functionality in SystmOne. Whereas the **UpdatePatientRecord** function allows you to insert data items into a patient record, this function allows you to invoke the SystmOne user interface for the creation of data items, based on some basic information.

For example, your software provides decision support that decides a patient should be prescribed a certain drug. If your software has prescribing functionality of its own, then you would use the **UpdatePatientRecord** function to record this in the patient record. However, if your software doesn't have prescribing functionality, then you would use the **LaunchFunctionality** function to invoke the SystmOne prescribing functionality, with that drug pre-selected, so the prescribing is actually performed in SystmOne.

The **LaunchFunctionality** function allows the invoking of the SystmOne functionality for:

1. Adding acute medication

2. Adding CTV3 codes

3. Adding file attachments

The function request:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>935CBCB0-68C2-11E4-90BC-010000000160</RequestUID>
    <Function>LaunchFunctionality</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Identity>
            <NhsNumber>4994354243</NhsNumber>
        </Identity>
        <ClinicalCode>
            <Code Scheme="CTV3" Code="H33.."></Code>
        </ClinicalCode>
    </FunctionParameters>
</ClientIntegrationRequest>
```

The function-specific elements are:

Element Name	Description
Identity	The Identity of the patient whose record affected. If the record is not already open in the SystmOne user interface, then it will be opened automatically.
ClinicalCode	The structure containing the data to pre-select in the SystmOne user interface. If wanting to launch the prescribing functionality, then this element would be replaced with a **Medication** element. If wanting to add a file attachment, then substitute with an **Attachment** element. It is also possible to omit this element entirely to use this function to simply open a desired patient record. See the included XML templates for clear examples.

These instructions are correct at the date of writing.

The function response:

```
<ClientIntegrationResponse>
    <DeviceID>60e1dc7b6c786750</DeviceID>
    <RequestUID>935CBCB0-68C2-11E4-90BC-010000000160</RequestUID>
    <Function>LaunchFunctionality</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>9ADB6090-68C2-11E4-A1A2-010000004401</ResponseUID>
    <Response>
        <Identity>
            <NHSNumber>4994354243</NHSNumber>
             <StrategicReportingIdentifier>95124</StrategicReportingIdentifier>
        </Identity>
    </Response>
</ClientIntegrationResponse>
```

There are no function-specific elements in the response. Note that the response is returned to confirm that the SystmOne user interface has been successfully invoked (e.g. that a dialog has been shown) and not that the user has completed that user interface (e.g. that the dialog has been completed and closed).

These instructions are correct at the date of writing.

GetXSDFiles

This function allows you to make the API generate XSD files to define all the functions that API supports. This is intended for use during the development and testing process and not intended for use in the Production environment (although it will work). You should be provided with XSD files along with this document, but this function is an alternative way to get the same files.

The function request:
```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>2e8bf46a0b9294fa</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>5AB71680-B845-11E4-B317-010000000715</RequestUID>
    <Function>GetXSDFiles</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters>
        <Path>D:\</Path>
    </FunctionParameters>
</ClientIntegrationRequest>
```

The function-specific elements:

Element Name	Description
Path	Optional element to direct SystmOne to write the XSD files to a specific directory. If this element isn't specified, the XSD files will be written to the SystmOne temp folder.

The function response:
```
<ClientIntegrationResponse>
    <DeviceID>2e8bf46a0b9294fa</DeviceID>
    <RequestUID>5AB71680-B845-11E4-B317-010000000715</RequestUID>
    <Function>GetXSDFiles</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>5B3EBD10-B845-11E4-9F4E-0100000058D0</ResponseUID>
    <Response>
        <XSD>
            <Function>GetFunctions</Function>
            <Version>1.0</Version>
            <Result>Successfully written to d:\GetFunctions v1.0.xsd</Result>
        </XSD>
    </Response>
</ClientIntegrationResponse>
```

The function-specific elements:

Element Name	Description
XSD	Container element for the following elements. Repeated for each function and version that the API supports.
Function	Element naming a function of the API.
Version	Element giving the version of an API function .
Result	Element describing whether the XSD file was generated and where.

These instructions are correct at the date of writing.

GetReferenceData

This function will retrieve all numeric Read codes and provide you with the current matching units of measurement for each. Its purpose is to provide you with the information required to confidently interpret numeric data associated with a Read code.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>2e8bf46a0b9294fa</DeviceID>
    <DeviceVersion>v1.0</DeviceVersion>
    <RequestUID>031411C0-CE84-11E5-8297-610A47403889</RequestUID>
    <Function>GetReferenceData</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters></FunctionParameters>
</ClientIntegrationRequest>
```

This function has no function-specific elements.

The function response:

```
<NumericReadCodeUnits>
    <Code>229..</Code>
    <Units>m</Units>
    <CreatedDate>2013-10-09T11:07:46</CreatedDate>
</NumericReadCodeUnits>
```

The function-specific elements:

Element Name	Description
NumericReadCodeUnits	Container element for the following elements. Repeated for each numeric Read code output from SystmOne.
Code	Element containing the numeric Read code.
Units	Element representing the units of measurement associated with the Read code.
CreatedDate	Element representing the date when the unit of measurement was associated with the Read code.

These instructions are correct at the date of writing.

IsPatientRetrieved

This function allows you to query SystmOne to find out whether or not the currently connected client has a patient record retrieved. This can be used as a precursor to the GetPatient function to ensure a quicker response with no error returned if there is not a patient retrieved.

The function request:

```
<ClientIntegrationRequest>
    <APIKey>0f3e33ae95b74520</APIKey>
    <DeviceID>0a3b2ed06537a063</DeviceID>
    <DeviceVersion></DeviceVersion>
    <RequestUID>3FF7F3A0-DC22-11E3-9721-010000008322</RequestUID>
    <Function>IsPatientRetrieved</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <FunctionParameters></FunctionParameters>
</ClientIntegrationRequest>
```

This function has no additional parameters, other than the common baseline.

The response:

```
<ClientIntegrationResponse>
    <DeviceID>0a3b2ed06537a063</DeviceID>
    <RequestUID>24EB1BF0-DC27-11E3-9721-010000008322</RequestUID>
    <Function>IsPatientRetrieved</Function>
    <FunctionVersion>1.0</FunctionVersion>
    <ResponseUID>25BC9CC0-DC27-11E3-A451-01000000010A</ResponseUID>
    <Response>
        <IsPatientRetrieved>true</IsPatientRetrieved>
    </Response>
</ClientIntegrationResponse>
```

The function-specific elements being:

Element Name	Description
IsPatientRetrieved	A tag indicating whether or not the connected client has a patient record retrieved. This will return either the value 'true' or 'false'.