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**Linkage Key API**

 Specification and Requirements

Document management

Revision History

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Glossary of Terms

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| Term / Abbreviation | What it stands for |
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# Introduction

## Background context

The IM1 interfaces work on an authentication scheme that uses information sent out via a letter from the GP practice when a user registers for Online Services. This information comprises of 3 pieces of data

*ODS Code – Practice’s unique code*

*Identifier – Unique identifier for the user’s account*

*Linkage Key – Unique password for the ODS Code and Identifier*

This approach allows 3rd Party Subsidiaries to offer GP Connected services via the same authentication scheme, consistently across all 4 main GP System Suppliers. This is referred to as a Registered Online Service User (ROSU) and will not include Anonymous access.

However, User Research identified that the process of obtaining the Registration Letter and entering the information would act as an inhibitor to the service. The challenge was to identify a means of improving the End User Experience of this approach.

The proposed approach is for each GP System Supplier to provide an interface that allows the creation and retrieval of Linkage information when presented with an NHS Number. There is an implied trust between the NHS login Service and the Linkage Key API. The linkage key information will then be used for subsequent IM1 interactions.

This gives the user the best experience as they no longer need to go into the practice to register for online services and the whole journey can be completed online. It achieves this in a way that does not require a rewrite of IM1 functionality.

Very simplistically the user goes through a registration and identity verification process. Assuming everything is ok, the identity will be assured. At this point the system will interact with the new Linkage Key APIs.

The two scenarios are mapped out below. The user already has a previously used linkage key, in which case it is retrieved. Alternatively, there is no previous linkage key and therefore a new one is created.

## Existing User Flow

For the purpose of illustration, the sequence diagram refers to a RESTful http endpoint, this should not be viewed as prescribing the implementation approach.

For the Existing User flow, the user already has a Linkage Key with the GP System and this is returned in the first call – the Retrieve Linkage Key Function



## New User Flow

In some instances, it is possible that, a user does not have a linkage key. An example would be a patient who has registered with a GP Practice, but has not applied for access to online GP services. In this case, the flow will request that if the user/patient exists in the practice, that the GP System makes then capable of consuming online services.

This flow involves the ‘Retrieve Linkage Key’ function as per the ‘Existing User’ flow above, but this returns a ‘not found’. Hence a second call is made to the ‘Create Linkage Key’ function.



#  API Specification

The below set out possible APIs which achieve the described approach above - this should not be seen as prescribing a particular solution.

Both APIs need to be appropriately secured such that only NHS Digital may access them.

## Retrieve Linkage Key Function

This function requests that for a specific patient, identified by NHS Number and ODS Code, that the Linkage Key and Account ID for that patient are retrieved, along with basic confirmation demographics (Surname and Date of Birth)

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| --- | --- |
| **Function Name** | Retrieve Linkage Key |
| **Input Variables** | ODS Code – Organisation Unit of practice the user is registered withNHS Number – NHS Number of user registeringTransactionId – HTTP Header containing transaction id, used for traceability |
| **Output Variables****(all mandatory)** | AccountId – User’s account IDLinkageKey – User’s linkage keyODSCode – User’s ODS codeSurname – Registered user’s Surname DateOfBirth – Registered user’s birthdate |
| **Response Types** | Successfully processedInvalid request, either NHS Number or ODS Code are of the wrong formatODS Code not found for this systemODS Code has blocked digital servicesThe patient was not foundThe patient was found – but their access to digital services has been blocked (detail also returned)The patient was found – but their linkage key has been revokedThe patient was found – but does not have a linkage keyThe patient was found – but retrieving the linkage key failedGeneric error code containing specific error text within |

## Create Linkage Key Function

 This function requests that for a specific patient, identified by NHS Number and ODS Code, along with basic confirmation demographics (Surname and Date of Birth), that a Linkage Key (and Account ID if required) for that patient is created.

If the user has a Linkage Key already, then a response code should be returned and no new Key created.

If the user has a Linkage Key already which has been revoked, then a new Linkage Key should be created and returned

|  |  |
| --- | --- |
| **Function Name** | Create Linkage Key |
| **Input Variables** | ODS Code – Organisation Unit of practice the user is registered withNHS Number – NHS Number of user registeringSurname – Registered user’s surnameDateOfBirth – Registered user’s Date of BirthCorrelationID – HTTP Header |
| **Output Variables****(all mandatory)** | AccountId – User’s account IDLinkageKey – User’s linkage keyODSCode – User’s ods codeSurname – Registered user’s SurnameDateOfBirth – Registered user’s birthdate |
| **Response Codes** | Successfully processedInvalid request, either NHS Number or ODS Code are of the wrong formatODS Code not found for this systemThe patient was not foundThe patient was found – but creating a linkage key failedThe patient was found – but already has a linkage keyGeneric error code containing specific error text within |