Business Process Management Scenario

Prequalification Notes

NOTE: THIS IS AN EARLY DRAFT OF THE SPECIFICATION THAT HAS BEEN PUBLISHED WITH THE INITIAL ITT.

After stage 1 (PreQualification) an updated version of this document will be made available. the most up to date documentation will be maintained on the github repository:

https://github.com/British-Library-Architecture/bpm-tender

A sample service has been made available on:

http://bpmn-api.northeurope.cloudapp.azure.com/

This is a shared service and will be available to everyone from 16th January 2017 until the end of the tender process.

There are no guarantees for performance or availability on this service.

Business Process Management Scenario

The British Library has a large range of processes that we would like any prospective BPM tool to assist us in capturing, modelling, executing and monitoring. Provided below is a synthetic business process that is present in the British Library that we would like you to use as a scenario to demonstrate the requirements outlined in the main tender.

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Background

The scenario described in this document is loosely based on an existing registration and payment service that exists in the British Library. The process has been simplified for the purposes of this tender to ensure that scenario concentrates on demonstrating the functional and non-functional requirements of the product rather than trying to model an existing service.

The British Library maintains a fund of money that is proportionally distributed to contributors of a book on an annual basis based on the number of times the book has been loaned. The overall user journey is where an author of a book is claiming the royalties on their in-copyright work. The author registers a claim by signing up to the service and claiming their titles against the British Library catalogue of titles.

The claims are validated and verified by an internal team before the royalty payment is processed and paid. Other teams within the service also perform functions after a validated and verified claim has been processed.

Some services already exist and provide API's that must be used when delivering the demonstration. Other services are new and it is anticipated that the product can be used to create these new services, at least within a rapid-application-design/agile environment in anticipation of a re-factoring exercise, or these new services can be incorporated directly into the product.

Scale of service

The service supports over 50,000 authors in total with 3,000 new authors each year.

The service holds over 500,000 title claims and 40,000 new claims are processed each year.

The British Library monograph catalogue is in excess of 15 million records.

The British Library Microsoft Dynamics CRM system holds over 1 million contact records.

Key Deliverables

- A demonstration of the key processes outlined, with a view to their design, deployment, and maintainability.
- A demonstration of the user experience (UX), user journeys, usability and accessibility features.
- A demonstration of deploying, testing, versioning, adapting and refactoring processes.
- A demonstration of interoperability with industry standard API's, using bespoke internal REST and SOAP API's, and developing and deploying new service API's.
- A demonstration of end user options for initiating, responding to alerts from processes and monitoring process progress, including desktop, mobile device (smartphone and tablet) and interoperability with common office productivity suites.
- A demonstration of how continuous improvement best practices can be applied to the processes with efficiency reporting (time, effort, cost and waste), hot-spot analysis, process simulation and "A-B testing" and multi-versioning.

Business Process Management Scenario

Process Design

Process Overview
This scenario focuses on four parts of the overall workflow:

1. Claimant registration
2. Title claims
3. Claims verification
4. Claims fulfilment

Notes to the vendor
This process intended to allow the demonstration of features, functionality and interoperability with services of the product. It has not been designed to be 'complete' or robust from a process design point-of-view. It does not represent the current actual or proposed future processes within the Library.

A sample library of the API's has been provided on GitHub, and also includes updated versions of this document:
https://github.com/British-Library-Architecture/bpm-tender

1.0 Registration

Summary
A claimant (user/customer) wishes to register with the claims service and register the books (titles) that they have contributed to.
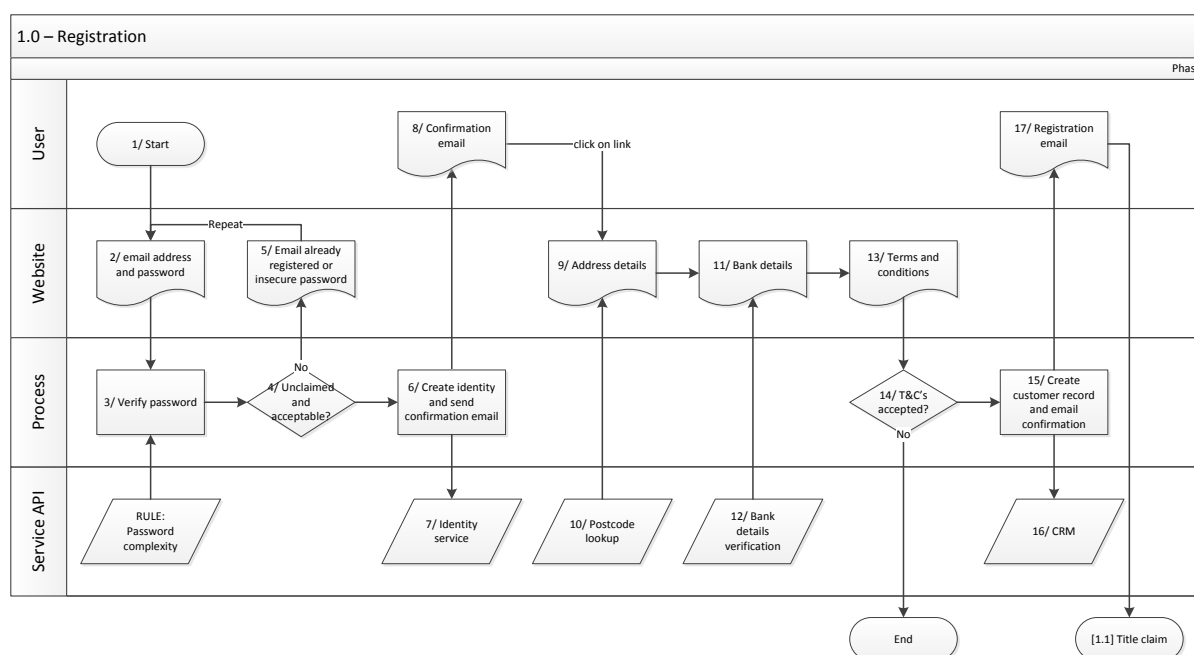

Figure 1

Business Process Management Scenario

Process detail

Key	Process description	Notes
1	Start: An introduction web page with a link to create a new account	
2	User prompted to enter their email address and a password.	See appendix for sample form design
3	The email address field should be format checked and the password verified for complexity of the password.	See rules for email checking See rules for password complexity
4	The email should be checked uniqueness on the identity service	See the Identity Service API details
5	If the email already exists, or the password complexity is insufficient then a message should be displayed to the user	
6	Create the user identity. Email a confirmation to the supplied email address to allow the email address to be verified.	
7	Register the email and password in the Identity service API	
8	The email should contain a 'click here' link to allow the email address to be confirmed. The destination of the link should	
9	The user should be asked for the address of their residence or business.	The claimant must be resident in the UK
10	The address form should make use of the Postcode lookup service API.	See the Postcode service API details
11	The user should be asked for their bank name, address, bank account number and sort code.	
12	The bank details should be verified with the bank account sort code API	See the Bank Account Verification service API
13	The user should be asked to confirm the terms and conditions.	
14	Only proceed if the 'accept' button is checked.	
15	Create the customer record Send a registration confirmation email	
16	Use the CRM API to create a record	See appendix for a sample customer record and the CRM interface
17	Send a registration confirmation email to the user	
18	End	

Business Process Management Scenario

1.1 Title Claim

Summary

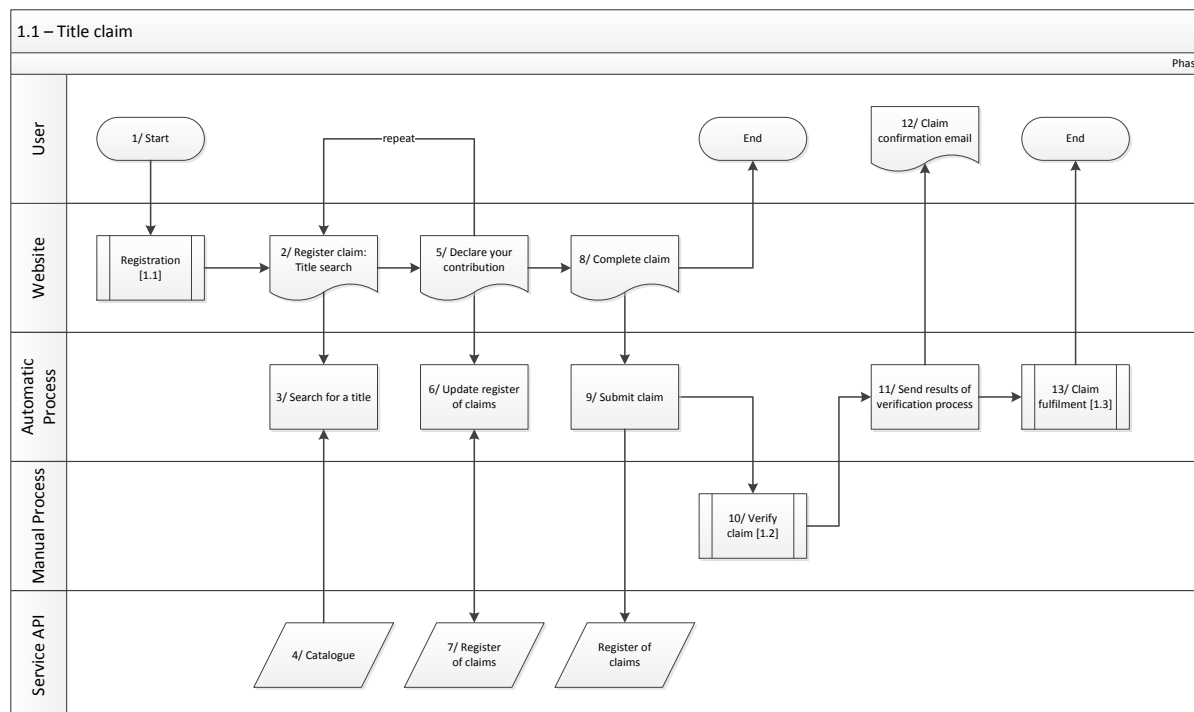A registered claimant (user/customer) registers the books (titles) that they have contributed to.

Figure 2

Process detail

Key	Process description	Notes
1	Start: An introduction web page with a link register a claim	See appendix for sample webpage
2	User prompted to search for a title using the title name, ISBN or matching author. Results should be displayed in a paged list with links to show detail.	
3	Catalogue search interface	
4	British Library catalogue	See appendix for Catalogue API
5	A link should be provided to allow the user to enter their contribution type and amount (explicit or percentage)	See appendix for contribution types
6	Use the Register of Claims API to maintain a state of current claims (analogous to a shopping basket of individual claims)	
7	Register of claims database	See appendix for Register of Claims schema
8	The user can complete their claim by submitting their basket for verification. This completes the user's activity.	
9	The claim is registered in the Register of Claims as 'pending verification'	See appendix for Register of claim status codes
10	The claim is verified by the 'Verify Claims' sub process	
11	Once the 'Verify Claims' sub process is complete the user	

	is emailed with the result of the verification process
12	The email should compose of a summary of the claim and the result of the verification process
13	If the claim is accepted then the 'Claim Fulfilment' sub-process is started
14	End

1.2 Verify Claim

Summary

The claims department reviews the claims made, checks the claims and either approves, rejects or passes the claim on for further review.
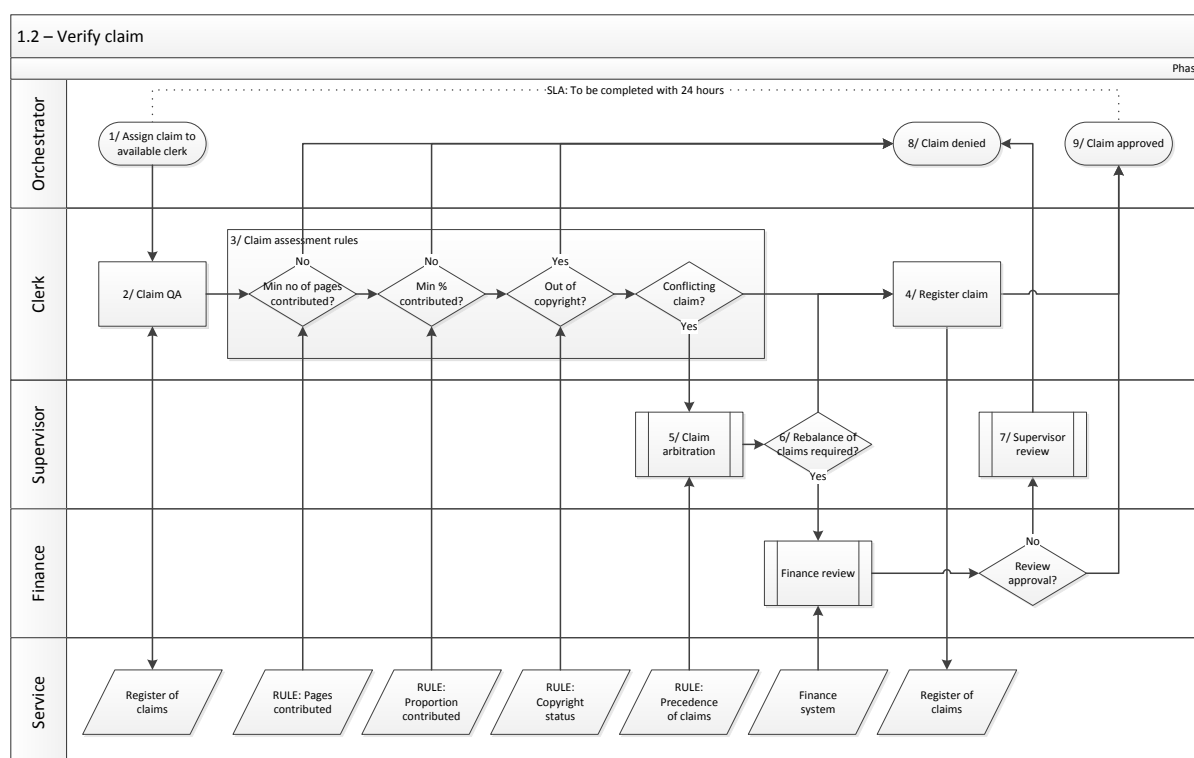
Figure 3

Process detail

Key	Process description	Notes
1	Start: Assign the case to the next available clerk	See appendix for clerk rota
2	Display the claim and allow the clerk to verify the claimant's details and their claim.	Only tasks that have been assigned or delegated to the clerk should be shown.
3	The clerk checks each claim against the appropriate claim rules	See rules for contribution types and acceptable claims
4	If the claim passes all the acceptance criteria then the claim is registered and marked as approved	
5	If the title is already claimed for that contribution then the claim is marked as "conflicting" and passed onto the supervisor for review	

6	If the claim requires the contributions to be redistributed then the case is passed onto the finance team to recalculate the distribution	
7	On a weekly basis, the supervisor can view claims that have been 'denied' to check and audit the processes prior to informing the claimant.	A report is automatically generated on Monday of all denied claims in the previous week. If the supervisor is on leave then the review is undertaken by the Finance Manager.
8	If the claim fails the rules check or the financial review then the claim is marked as 'denied'	
9	If the claim passes the rules check or the financial review then the claim is marked as 'approved'	
	End	

1.3 Claim Fulfilment

Summary

Other departments within the organisation start to process the new customer and claim within their own internal processes.
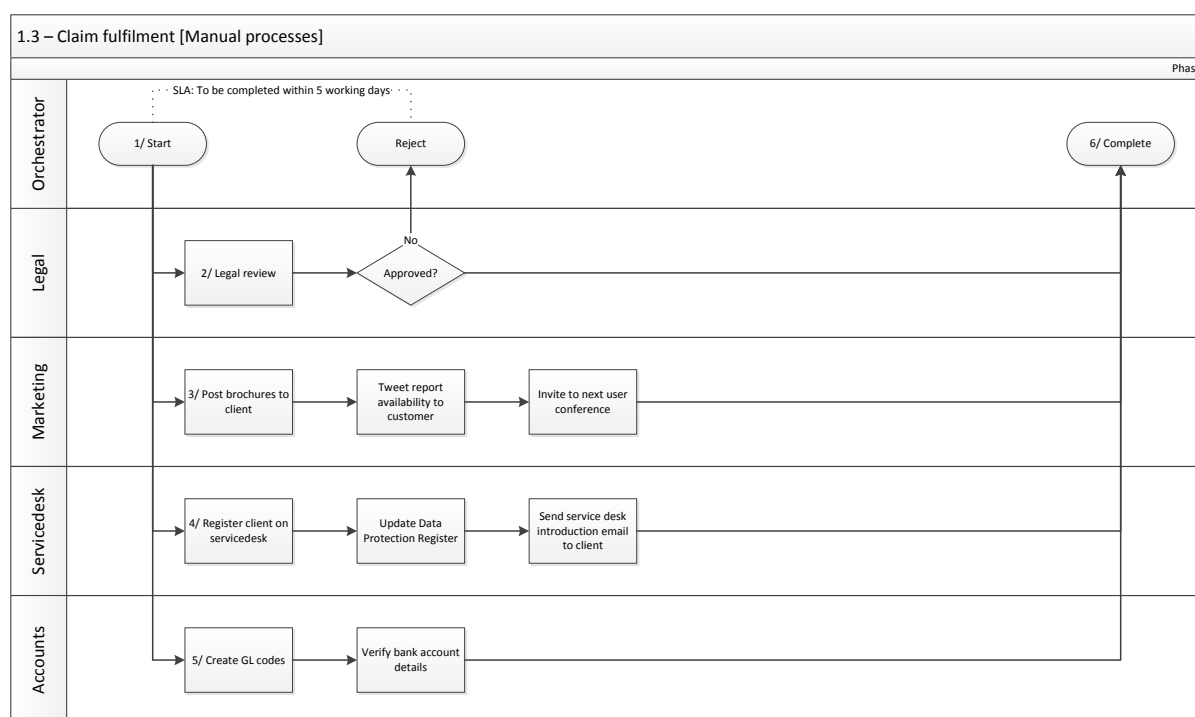
Figure 4

Process detail

Key	Process description	Notes
1	Start. Pass appropriate details of the case to the following teams	
2	Legal – Full details for review and sign off	If legal reject the case, then all other

		tasks should be suspended
3	Marketing – Email, name and address	
4	Service desk – email and name	
5	Accounts – Email, name, address and bank details for review	
6	The case is closed when all tasks have been completed	

Business Process Management Scenario

This section is subject to change.

Staff Rota

Based on a 36 hour week – Monday to Friday.

Name	Account name	Role	Work rota
Anne Clark	ACLARK	Clerk Supervisor	100% Monday-Friday
Belinda Moore	BMOORE	Clerk	80% Monday-Friday (leaves at 16:00)
Craig Shaw	CSHAW	Clerk	100% Monday-Friday
Daniel Mann	DMANN	Finance manager	Tuesday-Friday
Ellie Long	ELONG	Clerk	Monday, Tuesday, Thursday, Friday

Contribution types and limits

Contributor	Minimum contribution	Proportion of fund allocation
Original author(s)	10 pages or 10% of the total pages	100% or equal proportion share of qualifying contributors
Writer / co-writer	10 pages or 10% of the total pages	100% or equal proportion share of qualifying contributors
Illustrator / photographer	Minimum 10 contributed illustrations or photographs	20% or equal proportion share of qualifying contributors
Translator	Fixed share at 30%	30% of the total fund
Adaptor	80% of the text share	50% or equal proportion share of qualifying contributors
Ghost writer	80% of the text share	50% or equal proportion share of qualifying contributors
Editor	50% of the text share	10% or equal proportion share of qualifying contributors

Note: These are fictitious 'rules of contribution' only for the purposes of the tender.

Customer Record

Field name	Type	Valid entries
ID	GUID	Auto generated
SALUTATION	TEXT	Required: Values accepted: MR, MRS, MISS
TITLE	TEXT	Optional Values accepted: DR, PROF, LORD
FIRSTNAME	TEXT	Required
SURNAME	TEXT	Required
ADDRESSLINE1	TEXT	Required
ADDRESSLINE2	TEXT	Optional

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TOWN	TEXT	Required
COUNTY	TEXT	Required
POSTCODE	TEXT	Required
COUNTRY	TEXT	Required
EMAIL	TEXT	Required
BANKACCOUNT	TEXT	Required: Validated by the Bank Account service
BANKSORTCODE	TEXT	Required: Validated by the Bank Account service
TERMS_APPROVED	TEXT	Required: Values accepted: YES, NO, DISPUTE
LEGAL_APPROVED	TEXT	Required: Values accepted: YES, NO, DISPUTE, PENDING, INREVIEW
PAYMENT_CURRYR	NUMERIC	Optional. Value of royalty in the current year.
PAYMENT_PREVYR	NUMERIC	Optional. Value of royalty in the previous year.
PAYMENT_LIFETIME	NUMERIC	Optional. Total royalty value for the customer.
REGISTERED_DATE	DATETIME	Required: Date the customer registered their details.
CLAIMREVIEW_DATE	DATETIME	Required: Date the claims should be next review. By default 12 months from initial registration.

Business Process Management Scenario

Interfaces

> This section is subject to changes and corrections

A sample version of the interfaces is available on:
http://bpmn-api.northeurope.cloudapp.azure.com/

The source code for these interfaces is available on:

https://github.com/British-Library-Architecture/bpm-tender

Identity Service
API endpoint: https://<host>/api/v1/identity

Interface reference		Response status codes
Create identity	~~POST <api>/identity –d {~~ ~~"identity" : "guy.wicks@bl.uk",~~ ~~"secret" : "MyPassword12"~~ ~~}~~ POST <api>/identity/<identity>/<secret>	201 – Identity created 406 – Not acceptable
Verify identity	~~POST <api>/identity/verify –d {~~ ~~"identity" : "guy.wicks@bl.uk"~~ ~~}~~ POST <api>/identity/verify/<identity>	200 – Identity verified 404 – Identity not found
Check existence of an identity	GET <api>/identity/<identity>	200 – Email address exists 404 – Email not found
Check identity credentials	GET <api>/identity/<identity>/<secret>	200 – Identity verified 404 – Identity credentials rejected

Postcode service
API Endpoint: http://www.bl.uk/Api/PostcodeService.svc

Interface reference	
POST FindUkAddressesFromPostCode	<Envelope xmlns="http://schemas.xmlsoap.org/soap/envelope/"> <Body> <FindUkAddressesFromPostCode xmlns="http://tempuri.org/"> <p_PostCode>[string?]</p_PostCode> </FindUkAddressesFromPostCode> </Body>

	`</Envelope>`
RESPONSE	HTTP Status code: 200

```
<s:Envelope
xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <FindUkAddressesFromPostCodeResponse
xmlns="http://tempuri.org/">
      <FindUkAddressesFromPostCodeResult
xmlns:a="http://schemas.datacontract.org/2004/07/Domain"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <a:Address>
          <a:AddressId>0</a:AddressId>
          <a:AddressLine1>1 Coningham
Avenue</a:AddressLine1>
          <a:AddressLine2/>
          <a:AddressLine3/>
          <a:AddressType>0</a:AddressType>
          <a:Country/>
          <a:CountryISO>GBR</a:CountryISO>
          <a:CountryId>227</a:CountryId>
          <a:CountyState>North Yorkshire</a:CountyState>
          <a:Department/>
          <a:PostCode>YO30 5NH</a:PostCode>
          <a:PreferredContact>false</a:PreferredContact>
          <a:PreferredDelivery>false</a:PreferredDelivery>
          <a:ProvinceRegion/>
          <a:ReadOnly>false</a:ReadOnly>
          <a:TownCity>York</a:TownCity>
        </a:Address>
        <a:Address>
          <a:AddressId>0</a:AddressId>
          <a:AddressLine1>2 Coningham
Avenue</a:AddressLine1>
          <a:AddressLine2/>
          <a:AddressLine3/>
          <a:AddressType>0</a:AddressType>
          <a:Country/>
          <a:CountryISO>GBR</a:CountryISO>
          <a:CountryId>227</a:CountryId>
          <a:CountyState>North Yorkshire</a:CountyState>
          <a:Department/>
          <a:PostCode>YO30 5NH</a:PostCode>
          <a:PreferredContact>false</a:PreferredContact>
          <a:PreferredDelivery>false</a:PreferredDelivery>
          <a:ProvinceRegion/>
          <a:ReadOnly>false</a:ReadOnly>
          <a:TownCity>York</a:TownCity>
        </a:Address>
      </FindUkAddressesFromPostCodeResult>
```

```
</FindUkAddressesFromPostCodeResponse>
</s:Body>
</s:Envelope>
```

Bank Account Verification Service

API endpoint: https://<host>/api/v1/bankaccount

For the purposes of this demo, the only valid bank account and sort code combination that is accepted is shown in the table below. All other values will return the error response 'Account number or sort code is not valid' and status code 404.

Field	Value
Bank account	38290008
Sort code	200415

API reference

Interface reference		Response status codes
Check existence of an identity	GET <api>/bankaccount/<sort code>/<bank account>	200 – Account valid 404 – Account invalid

Response	`<result>`
	`<sort_code>200415</sort_code>`
	`<account>38290008</account>`
	`<iban>GB37BARC20041538290008</iban>`
	`<country>GB</country>`
	`<bank_name>BARCLAYS BANK PLC</bank_name>`
	`<bank_bic>BARCGB2108L</bank_bic>`
	`<chaps_bic>BARCGB22</chaps_bic>`
	`<bank_address>Dept AC Barclaycard House</bank_address>`
	`<bank_city>Northampton</bank_city>`
	`<bank_postalcode>NN4 7SG</bank_postalcode>`
	`<bank_phone>01604 234234</bank_phone>`
	`<direct_debits>NO</direct_debits>`
	`<pfs_payments>YES</pfs_payments>`
	`<chaps>YES</chaps>`
	`<bacs>YES</bacs>`
	`<ccc_payments>NO</ccc_payments>`
	`</result>`	

A detailed description of the fields returned can be seen in the table below:

Field Name	Length	Type	Description
ACCOUNT	8	String	The Account Number you submitted is displayed for back reference.
BANK_ADDRESS	128	String	Address of the current bank or branch.
BANK_BIC	11	String	BIC Code of the corresponding bank branch.
BANK_BRANCH	128	String	Name of the specific branch to which the

				SORT/BIC code is assigned.
BANK_CITY	128	String		The name of the city in which the branch is located.
BANK_NAME	256	String		Name of the bank or financial institution which owns this SORT/BIC number.
CHAPS_BIC	11	String		BIC code required for CHAPS transactions to clients of this specific bank branch.
COUNTRY	32	String		Full name of the country of origin e.g. "United States"
COUNTRY_CODE	2	String		Two letter abbreviation of the country code e.g. US, UK, AU, FR … etc.
IBAN	256	String		An International Bank Account Number is generated from the Sort Code and Account Number supplied.
SORT_CODE	8 or 11	String		The SORT/BIC code you searched for is displayed if searching by SORT code. If searching by bank name the SORT code of the corresponding bank and branch is displayed

In case of an error the SORT API returns an XML response containing the error message. The XML tags are returned without any other fields in the XML response. Below you can find a description of all possible error messages that could be returned:

API Errors

> Error codes below have not been implemented in the sample services

Error message
<error>Subscription Expired</error>
<error>Invalid API Key</error>
<error>Account number or Sort code is not valid!</error>
<error>Sort code cannot be found</error>
<error>No more queries available, you need to purchase additional queries.</error>

Source: https://www.iban.com/sort-code-api.html

Catalogue Service

> More complete documentation on the catalogue service will be made available in due course.

API endpoint: http://<host>/api/v1/catalogue/isbn/<isbn>

Example usage: http://<host>/api/v1/catalogue/isbn/0099322617

```
{
  "service": "catalogue",
  "search": "ISBN",
```

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```
    "isbn": "0099322617",
    "set_number": "034419",
    "set_size": 0,
    "status": "OK",
    "result": {
      "isbn": "0099322617",
      "author": "Pirsig, Robert M.",
      "title": "Zen and the art of motorcycle maintenance.",
      "format": "xiv, 436 p. ; undefined 20 cm.",
      "publisher": "undefined undefined undefined"
    }
}
```

CRM Service

The British Library uses Microsoft Dynamics CRM 2011 and is looking to upgrade this in the near-term to Microsoft Dynamics CRM 2016. For the purposes of this demonstration it acceptable to use your own instance of MSCRM, use a substitute CRM (for example, Salesforce.com), or to simulate a CRM system by some other means.

The core functionality required would be to create, read, update and delete customer contact records via an API.

Register of Claims Database

The register of claims database is a data store that currently does not exist. An initial schema design is provided below for guidance. You are welcome to extend this schema as required.

'Claims' table

Field Name	Type	Description
CLAIM_ID	Numeric	PK - Auto-generated incrementing integer
CUST_ID	String	FK - GUID from the CRM system
CUST_NAME	String	Name of the customer (sourced from CRM)
CUST_EMAIL	String	Email of the customer (sourced from CRM)
CATALOGUE_ID	String	FK – System ID from Catalogue Service
CATALOGUE_ISBN	String	ISBN of the title
CATALOGUE_TITLE	String	Title of the book
CATALOGUE_AUTHOR	String	Author of the title
CATALOGUE_NUMPAGES	Numeric	Number of pages
CONTRIBUTION_TYPE	String	See 'contributor_types' table
CONTRIBUTION_PAGES	Numeric	Number of pages the claimant contributed to the work
CONTRIBUTION_PCT	Numeric	Percentage of the title the claimant contributed to the work
CLAIM_STATUS	String	Status code of the claim. See 'claim_status' table
CLAIMAPPROVAL_DATE	Date	Date the claim was approved
QA_DATE	Date	
QA_USER	Date	

'Claim_status' table structure

Field Name	Type	Description
CLAIMSTATUS_CD	String	PK – Claim status code

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CLAIMSTATUS_DESC	String	Description

'Claim_status' values

CLAIMSTATUS_CD	CLAIMSTATUS_DESC
PROPOSED	New title claim requested by the contributor – not yet submitted
SUBMITTED	New title claim submitted ready for verification and approval
VERIFYING	Claim being processed by the verification process
APPROVED	Claim verified and approved
DISPUTE	Claim placed into dispute
REJECTED	Claim rejected

'Contributor_type' table structure

Field Name	Type	Description
CONTRIBUTOR_CD	String	PK – Contributor code
CONTRIBUTER_DESC	String	Description

'Contributor_type' values

CONTRIBUTOR_CD	CONTRIBUTER_DESC
WRITER	Writers may register a share to reflect contribution. If you are the sole author and the only person named on the title page, you may register 100%. Co-writers should agree shares based on contribution. If there are any illustrators/photographers named on the title page they should also be accounted for in the share agreement.
ILLUSTRATOR	If named on the title page, illustrators may register a share to reflect their contribution – even if they are paid by flat fee.
PHOTOGRAPHER	If named on the title page, photographers may register a share to reflect their contribution – even if they are paid by flat fee.
TRANSLATOR	Translators may register a fixed share of 30% if they are named anywhere in a book.
ADAPTOR	May register 80% of the text share (after the illustrator's share is allocated) where the original author is named on the title page or 100% of the text share where no original author is named.
RESELLER	May register 80% of the text share (after the illustrator's share is allocated) where the original author is named on the title page or 100% of the text share where no original author is named.
GHOST WRITER	A ghost writer whose name does not appear on the title page is not eligible for a claim unless they have a royalty agreement with the publisher or an agreement with the author named on the title page. The subject or interviewee may be regarded as a co-author if they had some positive part in producing the book – apart from giving interviews – e.g. checking manuscripts, making revisions.
EDITOR	May register a share to reflect their contribution. The basic share for editors/compilers is 20%, but share size can be determined by referring to the share allocation guidelines.
COMPILER	May register a share to reflect their contribution. The basic share for editors/compilers is 20%, but share size can be determined by referring to the share allocation guidelines.
ABRIDGER	May register a share to reflect their contribution. The basic share for editors/compilers is 20%, but share size can be determined by

	referring to the share allocation guidelines.
REVISER	May register a share to reflect their contribution. The basic share for editors/compilers is 20%, but share size can be determined by referring to the share allocation guidelines.

Rules

Rule reference	
EMAIL	Email address must meet the minimum standards for an email address. It must include the '@' sign (not as the first character) and a period after the '@' sign, not directly after the '@' sign and not the last character. Other characters acceptable are A-Z, a-z, 0-9, - (dash), . (period), _ (underscore)
PASSWORD	Password must exceed 8 characters and not exceed 20. Must include at least one uppercase letter, one lowercase letter and one number. Special characters are acceptable.