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# CLOUD AND SYSTEM INTEGRATION SOLUTIONS

## FUNCTIONAL SPECIFICATION

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## 2 Introduction

This project aims to use different methods of integration between cloud and on premises within Unum's current architecture. As Unum's portfolio of tools and software grows over time due to the demand of the current insurance market. Integration is one of the many challenges the company has had to face in recent years. The main issue is to make secure and maintainable solutions that can be consumed by the software development teams and the company's clients without causing stability issues or leaving them vulnerable to malicious attacks. This project will identify business cases to use for integration, determine the sources of the required data, design the contacts and how that data should appear when being passed or transformed. In addition, the project will also consider logging the messages so that debugging or audit may be carried out easily and defining the correct methods and protocols that should be used to insure no PII(Personal Identifiable Information) can be intercepted. One other consideration for the project is to ensure all failure case scenarios are covered to ensure no data loss and that performance testing of high intensity periods is emulated.

## 3 Functionality

There are three main pieces of functionality to this project the first being the consistency of data between IBM Master Data Management (MDM) and Salesforce and secondly the dashboard for the HRIS and policy information so that the HRIS on-boarders are aware of the current state of the clients. Lastly the Universal Life annual report and illustration so that mainframe policy information can be generated into a visual format to be sent to Unum's customers.

### 3.1 Data Consistency and Reliability

The main objective of this integration is to assign a unique enterprise identifier to a record in Salesforce by using the dedicated Unum web service for generating these identifiers. For this piece of work only tasks within IIB will be addressed. When a prospect client has been marked as sold in Salesforce meaning that Unum has sold them some product(s) the client is then switched from a prospect to a customer. Salesforce will then prepare an outbound message. This message will then be passed to an existing IIB service used to route messages to IBM MQ queue which should just require some simple configuration tasks. IIB will consume an outbound Salesforce message via this queue, build a new request structure via the inbuilt ESQL language then pass that message on for the enterprise identifier service to create a new enterprise ID. The record in salesforce will be updated in with the new Enterprise ID via the Salesforce REST/SOAP then the data management system MDM must be also updated with the source system (Salesforce) identifier and the newly generated enterprise ID. MDM is used to store some of the companies most vital data in one "source of truth". This means in the future if another team would like to figure out where client information in Salesforce resides, they will simply need to use MDM as a lookup to find the most reliable source. Majority of the work will consist in using a mix of coding and configuration within the IIB application, the definition of the MQ queue creations and the logging of all the created services within IIB.

### 3.2 Data Accessibility

The second objective is the accessibility of data for the HRIS on-boarding team through a QlikView dashboard. This will allow the users to see the current status of clients through the onboarding of the HR Connect solution implementation. The dashboard will integrate with multiple different data sources and display the data as a simple easy to use interface. This will give a much faster view of the current state of the clients. As part of this work only tasks within the QlikView report will be coded this will consist of a QlikView script, user experience design, the presentation configuration and the configuration of the security.

### 3.1 Mainframe to Cloud Integration

The purpose of this integration is to automate the process of collecting data of a customer's universal life product data from several different mainframe systems. The data will be sent to be consumed by a cloud process to calculate values and store the data in PDF format to be printed at a later stage. This implementation should allow for a streamlined process of generating these reports and allow for large scale data feeds to be processed effectively. As part of this work all coding will be done in IIB along with the logging of these services, the queue definitions of all the MQ queues. The coding tasks will consist of the transformation of the mainframe message to XML to be passed to the cloud provider to generate the PDF. If enough time is available at the end of the project all messages will be saved to a database in order to run analysis against the data. This will consist of the table design and procedures to commit the data.

## 3 Requirements and Project Plan

### 3.1 One Client View

As part of this feature of the project the onboarding specialist requires a detailed report of all the current and existing customers that have enrolled with HR connect so that they may understand where they are in the process of onboarding and for which solutions. The aim is to only create the report the API providing the data will be created by the moonshot team.

#### 3.1.1 Requirements

- The report should be available in browser and not require any install.
- The data in the report needs to be updated at least once daily.
- Only the onboarding team and leadership should have access to the report.
- The report should exist only within the Unum network
- The report should only make reads and not have the ability to write and update data.
- The report should allow filtering, sorting and search functionality on the data.
- Export to excel functionality should be available.
- Policy information from HRIS, Salesforce, Merlin and CCP to be include.

#### 3.1.2 Scope

##### *Work in scope*

- Create the reports specified in the business requirements sheet of this document.
- Access list for report.
- Report scheduling definition.



HR Connect Client  
and Tracking Data An:

##### *Not in scope*

- HRIS REST API
- Scheduled run of the report

#### 3.1.3 Aim's (Deliverables Timeline Milestones)

- This feature of work must be completed before February 2020
- Milestone 1: Current onboarding report in production (December 2019)
- Milestone 2: Existing onboarding report in production (December 2019)
- Milestone 3: Ad Hoc reports in production (January 2020)

## 3.2 Salesforce as CRM

As part of this feature of work the goal is to create a relationship in MDM between a Salesforce account record and a record in MDM while also creating an enterprise identifier to be used for a client across all of Unum's different systems.

### 3.2.1 Requirements

- Process will kick off when the salesforce account record switches from prospect to customer or when new customer account is created.
- Use Unum existing enterprise identifier rest service.
- Must use salesforce ID as the value to generate the enterprise identifier.
- Message should be passed asynchronously to decouple the systems.
- Use existing Publish Business Events service model to route the message correctly.

### 3.2.2 Scope

#### *In scope*

- Enterprise ID generation.
- Update to salesforce.
- Update to MDM.
- MQ queue definitions.

#### *Not in scope*

- Salesforce outbound message on customer creation.
- MQ queue creation.

### 3.2.3 Aim's

- This feature of work must be completed before February 2020 existing.
- Milestone 1: MQ Queue setup (December 2019).
- Milestone 2: Salesforce and MDM update (January 2020).
- Milestone 3: Released to production (February 2020).

### 3.1 Universal Life

As part of this feature of work the goal is to pass data from a variety of Unum mainframe systems such as L70, CCP and CIA to a cloud provider to generate PDF documents to be printed and sent to customers.

#### 3.3.1 Requirements

- Message format to be in industry standard ACCORD191 format for cloud provider to process.
- PDF to be stored in enterprise document store (iDoc).
- Request should be passed asynchronously where possible to decouple systems.
- Solution should be able to handle message batches over 20k records.
- Messages to be passed via MQ to ensure no message loss.

#### 3.3.2 Scope

##### *In scope*

- IIB service to map mainframe information for Annual Report and Illustration,
- Routing service to receive reply from cloud provider.
- Service to send PDF document to iDoc.
- MQ queue definitions.

##### *Not in scope*

- Mainframe programs and copybooks to send mainframe information.
- Generation of PDF.
- Analytics reporting.
- Save process to iDoc.

#### 3.3.3 Aim's

- This piece of work will be released in stages
- Milestone 1: CCP in production (November 2019)
- Milestone 2: L70 in production (April 2020)
- Milestone 3: CIA in production (May/June 2020)



## 4 Tools

### 4.1 IBM Integration Bus (IIB)

IIB has been chosen as the tool for middleware and data transformation. The reason for this is that Unum have already implemented this software into their eco system and it has proven that it works well with a variety of different of message formats such as SOAP, REST, Cobol copybooks and along with having support for IBM MQ built into the software suite. Unum has also defined its log and audit implementations for traceability. It also has an inbuilt and simple deployment system for multiple environments. This has been chosen over MuleSoft since Unum's implementation of MuleSoft is still in its infancy stage.

### 4.2 IBM Web Sphere MQ

MQ has been chosen as the message-oriented middleware as the tool is also already running in Unum's environment. It has proven its value with its ability to link with mainframe and supports a wide variety of message formats such as XML, JSON ect. The software can also guarantee 0% message loss and support point to point integration or publish and subscribe.

### 4.3 QlikView

QlikView has been chosen as the business intelligence tool for the analytics work. The tool can create reports with a wide variety of filtering, search capabilities and visualization. The reports are also supported in all browsers. It also comes a wide range of OBDC connectors for databases such as DB2, Teradata, MySQL etc. Which allows for flexibility. The tool also supports REST and SOAP which is vital. Lastly the tool also supports an export to excel function as standard.

### 4.4 Soap UI

SOAP UI is an application used for webservice testing. This tool is a free open source project which can be used for debugging applications and checking for access on endpoints that already exist. This will be saved time if access is needed as the process for getting access can be multiple working days.

### 4.5 Rfhutilc

Rfhutilc is a Web Sphere MQ client used for connecting to queue managers to put or get messages. It also has a built-in message parser for Cobol which is very helpful when trying to check issues of failed tests or production issues.

### 4.6 IR360

IR360 is a software used for monitoring, administration, audit reporting and load testing for middleware. This will be the tool we use to do stress testing of the Universal life feature but allows to send out automated emails when channels go down or queues are getting close to max capacity. Along with this we can put or get messages like Rfhutilc but does not have the inbuilt parser. We will use IR360 to check the flow between queues and services are working correctly and a place to check our backout/dead letter queues in production.

## 5 Flow Diagram

Majority of the early activity for Unum policy information starts with salesforce although not all pieces of work interface with salesforce directly. Due to it being the platform the sales office use to track customers it is the source of where everything starts from a business perspective. This is at a very high level and to document all components of Unum's architecture would impact the delivery of the project. There is no business case where all 3 projects are invoked for the same customer as of today.

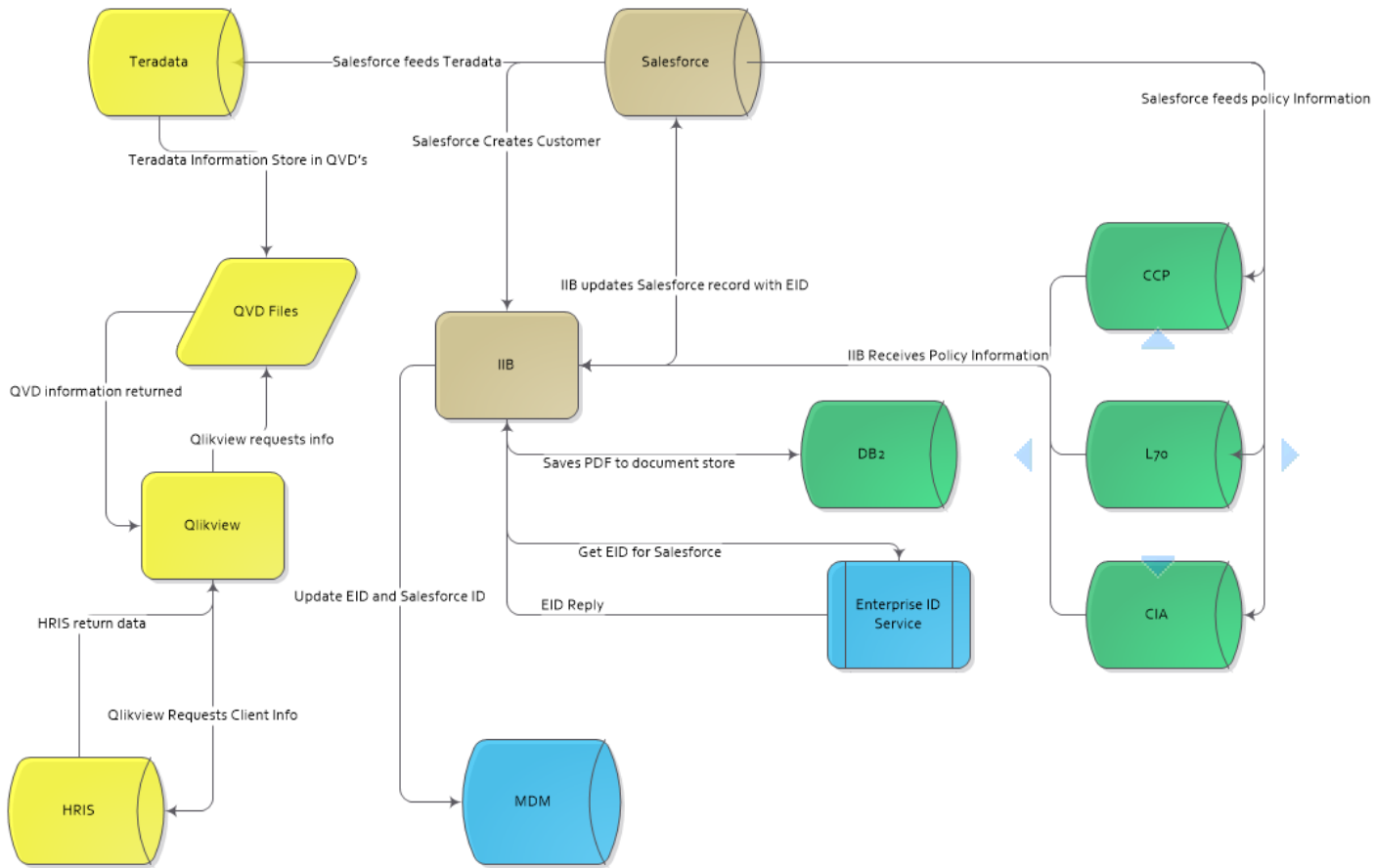


Figure 1. Overall Architecture



Flow Overall  
Architecture.vsd

Legend:

Salesforce as CRM project (MDM Salesforce Integration)

Universal Life (Annual Report and Illustration report)

One Client View Reporting (QlikView HRIS)

Common Across all projects

## 6 Use Case Diagrams

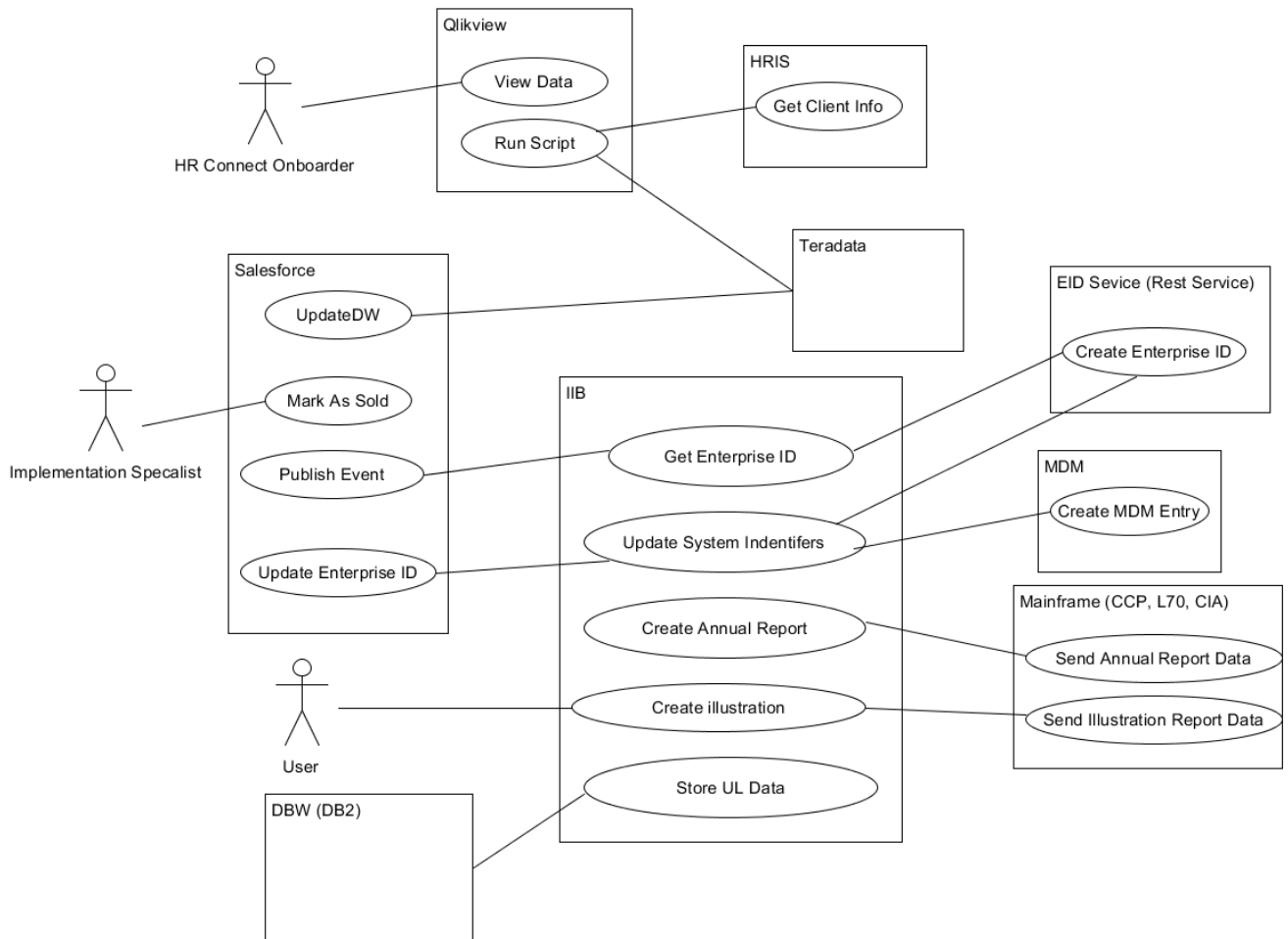


Figure 2. Use Case Diagram

## 7 Brief Use Cases

### 7.1 View Data

**Use Case:** View data

**Actors:** User, QlikView

**Brief Description:** The user will navigate to one of the prepared QlikView reports and be presented with data.

#### **Main Success Scenario**

- 1: The user enters the QlikView webpage
- 2: The user selects the report
- 3: QlikView checks if the user has access
- 4: QlikView presents the data

#### **Alternatives**

- 4b: QlikView cannot display data as user is not authorized

### 7.2 Run Script

**Use Case:** Run Script

**Actors:** QlikView

**Brief Description:** QlikView will check the list of tasks to be executed by the scheduler and execute the script associated to a report

#### **Main Success Scenario**

- 1: QlikView will check the scheduler to see if any tasks need to be executed at that time
- 2: QlikView will execute the script associated to that report
- 3: QlikView script will call the HRIS REST service
- 4: QlikView script will make a call to the QVD file for the salesforce data
- 5: QlikView will receive data, data will be loaded into the QlikView dashboard
- 6: QlikView will update the last updated indicator

#### **Alternatives**

- 3b: The script will fail
- 4b: The data will not be updated on the dashboard

### 7.3 Mark as Sold

**Use Case:** Mark as Sold

**Actors:** Salesforce, Implementation Specialist

**Brief Description:** The Implementation specialist will check all the necessary information for the enrollment and go through the process of changing a client from a prospect to a customer

#### **Main Success Scenario**

- 1: The Implementation Specialist will mark the current opportunity as sold
- 2: Salesforce will change the account from a prospect to a customer

### 7.4 Update DW

**Use Case:** Update DW (Data warehouse)

**Actors:** Salesforce, Teradata

**Brief Description:** Salesforce will run a night batch job in order to ensure that company data is stored for audit and as backup if Salesforce is unavailable at some point

#### **Main Success Scenario**

- 1: Salesforce batch job will execute
- 2: Salesforce will process batch job and extract data from tables
- 3: Salesforce will send data over through bulk API
- 4: Teradata will store data in appropriate tables

### 7.5 View Data

**Use Case:** Publish Event

**Actors:** Salesforce, IIB

**Brief Description:** The Salesforce account is updated from a prospect to a customer this then sends a message to IIB to then call the enterprise ID service

#### **Main Success Scenario**

- 1: Salesforce updates the account record type from prospect to customer
- 2: Salesforce prepares message with accounts id to be sent to IIB
- 3: IIB receives message request

## 7.6 Get Enterprise ID

**Use Case:** Get Enterprise ID

**Actors:** IIB, MDM

**Brief Description:** The generated Enterprise Identifier will then be entered in MDM along with the unique Salesforce Identifier to be stored

### **Main Success Scenario**

- 1: IIB will prepare the request for the for Enterprise ID service
- 2: IIB will send the request to Enterprise ID service
- 3: IIB will receive the reply of the generated ID

### **Alternatives**

- 1b: The service is not available

## 7.7 Update System Identifiers

**Use Case:** Update System Identifiers

**Actors:** IIB, Salesforce, MDM

**Brief Description:** This process will take the generated ID and create the relationship between the two systems

### **Main Success Scenario**

- 1: IIB will receive the generated enterprise ID
- 2: IIB will prepare the request for the update to Salesforce
- 3: IIB will send the request to Salesforce
- 4: Salesforce will store enterprise ID on account in database
- 5: IIB will prepare the request for the update to MDM
- 6: IIB will send the request to MDM
- 7: MDM will store enterprise id and Salesforce ID in database

### **Alternatives**

- 2B: The enterprise ID has already been created the process ends.

## 7.8 Create Annual Report & Create Illustration

**Use Case:** Create Annual Report & Create Illustration

**Actors:** IIB, Mainframe

**Brief Description:** The mainframe will pass a scheduled batch load of policy information that needs to be passed to an external resource.

### **Main Success Scenario**

- 1: Mainframe (CCP, L70, CIA) passes request to IIB
- 2: IIB passes request to external cloud resource.
- 3: Cloud resource will create PDF from mainframe data
- 4: PDF is stored in enterprise document store

### **Alternatives**

- 1b: The message is in the incorrect format

## 6.9 Send UL Data to Storage

**Use Case:** Send UL Data to Storage

**Actors:** IIB, DB2

**Brief Description:** IIB will receive client data to be stored for analytics reporting

### **Main Success Scenario**

- 1: IIB receives request
- 2: IIB calls database routine
- 3: Databases store the data

### **Alternatives**

- 2b: Database is not available



## 8 FURPS+

### 8.1 Functionality

- The user needs to be authenticated the gain access to the dashboard
- The user will need to be connected to the internet to carry out the operations
- The user needs to be within the Unum network to access these applications

### 8.2 Usability

- The report functionality should have a similar feel to excel whilst supplying filtering

### 8.3 Reliability

- The type of authentication used should be windows based
- All messages should be asynchronous where possible to decouple systems

### 8.4 Performance

- The IIB services should be able to handle more than 10000 requests at a time where the requirements specify
- The QlikView data load should not take more than 2 minutes to reload all the required data
- The services should be available 99% of the time

### 8.5 Supportability

- All newly created services should be in Json or XML format
- The applications should support cross platform