# Technical Design Document – File Search

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# Purpose

The purpose of this document is to describe following Integration items at a detailed level. This document describes the interface usage, behaviour and constraints.

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| --- |
|  |
| **Key** | **Summary** | **T** | **Created** | **Updated** | **Due** | **Assignee** | **Reporter** | **P** | **Status** | **Resolution** | **consumer** | **provider** |

# Objectives

The objectives of this document are to define:

1. The functional (business) scope of the interface or set of business activities that the interface (and where applicable its operations) enables / realises.
2. Specific technical details such as; support protocol, request and response message payloads, usage requirements and patterns that the interface supports
3. Interface system qualities (Non Functional Requirements) such as; performance and volume, security and privacy constraints

# Interface Version to Design FileSerch matrix

The table below lists each version of the built interface/application that this specification complies with.

|  |  |  |  |
| --- | --- | --- | --- |
| **Integration Version** | **Build Date** | **Environment** | **Summary of Change** |
|  |  |  |  |

# Key Contacts

The following table list the key technical and business contacts associated with the interface defined within this document

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role** | **Full Name** | **Responsibility** | **Email** | **Phone** |
| Integration Architect | Anil A | Integration Architecture |  |  |
| Senior Solution Designer |  | Integration Architecture |  |  |
| Senior Manager |  | Integration Architecture |  |  |

# Business Overview

**Use Case:**

We have received a palette of hard drives containing text documents. We do not know how many text documents exist at this time but we expect at least one more palette in the future. Initial estimate suggests 900 Million plus documents.

We need the ability to execute multiple searches to locate any of these text documents containing one or more key words. E.g. find me all documents containing the word “elephant” Results should be returned in reasonable time nominally under 1 hr.

## Business Outcome

|  |
| --- |
|  |
| **Key** | **Summary** | **T** | **Created** | **Updated** | **Due** | **Assignee** | **Reporter** | **P** | **Status** | **Resolution** |

### Technical Design:

### UltraFileSearch is available in Installable and Portable Version.

### Standard Edition: The Standard Edition can be freely downloaded and installed on your computer for evaluation. Once installed, this Edition can be used fully-functional in Trial Mode for a period of 30 days. If you have installed a Registration Key, the product has no time limitations in its use.

### License

### The Multi-User License allows installation and use of the Software on a number of different Devices (PC Desktop, Notebook, USB Key), not exceeding the quantity of Licenses purchased.

#### System Requirements

##### Operating System

Windows® 10 / Windows® 8.1 / Windows® 8 / Windows® 7 / Windows Vista® / Windows® XP / Windows® 2000 / Windows® NT 4.0   
Windows® Server 2012 R2 / Windows® Server 2012 / Windows® Server 2008 R2 / Windows® Server 2008 / Windows® Server 2003 R2 / Windows® Server 2003

##### Hardware

No specific hardware requirements.

### Search Files by “Containing Text” : UltraFileSearch is a Search Utility which is able to quickly find Files, Folders and Text on your Local, Network, DVD, CD-ROM, USB Hard or Flash Drives.

### UltraFileSearch allows you to specify several File Names and multiple Drives and/or Folders at the same time; it is able to sort out Files and Folders according to their properties (e.g. Modified Date) and find Files which contain one or more specific words or sentences. The search results can be put in order by column (upward, downward or neither of them). The results window supports Windows® Explorer functionality (e.g. icons, context menus). Specific actions can be carried out on the results (e.g. Open Folder, Open Containing Folder), moreover they can be exported in various [File Formats](https://www.ultrafilesearch.com/features.html#exportresults) (\*.TXT, \*.TSV, \*.CSV, \*.HTML, \*.XML). This Utility does not use background Indexing, does not waste system resources and does not use extra space on the Disk.

#### File Searching Capabilities

Search Files or Files and Folders or only Folders in any NTFS or FAT File System in your internal or external Hard Drives, Network Drives, Discs (e.g. CD-ROM, DVD), USB Flash Drives and any other Devices and File Systems recognized by the Operating System.

#### Drives and Folders Selection

You can create a multi-Folder, which contains a list of Drives and Folders to Include and Exclude from the search process, give it a Mnemonic Name and use it later with a simple click. It is also possible to build a general list of Folders to be excluded and also a list of Names to filter Folders.

#### Searching Parameters

You can specify the File Name in a Simple mode or using Wildcards. You can find Words or Phrases inside Plain Text Files or Encoded Documents using the **Text Filters** built-in with the Software or the IFilters. You can also search by Date and Size, Files and Folders Attributes and by Filename, Folder, or Full Path Lengths.

#### File Management Operations

You can Cut and Copy Files to the Clipboard, Copy or Move them to a selected Folder, Delete and Rename Files and create Shortcuts on the Desktop, source Folder, or a selected Folder. Also the Filenames to be renamed can be edited one by one or all at once.

#### Batch Renaming Files

The Batch rename feature enables you to apply various rules to Remove Characters or Strings from the Filename, Replace Characters or Text from the Filename and Change Case to lower/UPPER/etc., Insert Sequence and Text and also modify File Extension. The preview of the new Filename is automatic.

#### Export of the Results

The Results Export functionality lets you choose which Columns to Export and in what order, the destination: Clipboard/File, the File Format: FullPath/.TXT/.TAB/.CSV/.HTML/.XML and the Encoding: ASCII/ANSI/Unicode/Big-Endian Unicode/UTF8/UTF8 No BOM.

#### Features of UltraFileSearch

This Utility is also available in Portable Version that can be copied to a removable device and does not leave traces on your computer, but cannot be launched from the Context Menu of Windows® Explorer.

###### Features List

The comparison list below shows which features are available in the two Editions of UltraFileSearch.

###### Features

##### General

■  The search is done without the need to use background indexing.

■  Can be launched directly from Windows® Explorer shell context menu.

■  Can Search any NTFS or FAT File System, supported by the Operating System.

■  Search in every kind of Drive: Internal, External, Network, CD-ROM, DVD, etc.

■  Full support to Unicode characters.

##### Special

■  Ability to calculate the Size of the Folders.

■  Multi Rename that lets you Edit and Rename a list of Files at once.

■  Batch Rename that lets you Rename a list of Files according to certain rules.

■  Search for Files by Length of Filename, Length of Folder, Length of Full Path.

##### Files

■  Search Files or Files and Folders or only Folders.

■  Allows you to specify the File Name Mask in 2 ways: "Simple" and "Wildcards".

■  Allows you to enter more File Name Masks at the same time.

##### Folders

■  Search in Subfolders and may include Hidden Subfolders.

■  Drag & Drop Folders support from other Applications to "Search Path" Box.

■  Allows you to quickly select the Local or Network Drives or of single Drive.

■  Allows you to enter more Drives and/or Folders at the same time.

■  Accepts single or multiple "Environment Variables" (e.g. %APPDATA%)

■  Supports UNC Network Path Names (i.e. \\ComputerName\FolderName).

■  Supports for Long Path Names (lengths > 260 characters).

■  Ability to define a multi-Folder that contains a list of Folders and/or Drives.

■  Allows you to assign a mnemonic name to the multi-Folder.

■  Possibility to define the Folders to be Excluded from all searches.

■  Possibility to set more Filters on the Folders in which the search is performed.

##### Text

■  Search in Plain Text Files and in Binary Files looking in their Raw Format. (e.g. .txt, .html, .csv, .exe, .dll, .obj etc.)

■  Search in Encoded Text Documents using IFilters or Text Filters built-in. (e.g. .PDF, .XLS, .DOC, .XLSX, .DOCX etc.)

■  Allows you to specify the Text Masks in 2 ways: "Words" and "Phrases".

■  Ability to search more Phrases and Words together.

■  Text search Options: Entire/Partial Word(s)/Phrase(s) and Match Case.

■  Ability to find files that do not contain specified Words and Phrases.

■  Can ignore Files of certain Types: Hidden, System, Image, Audio, Video.

##### Date and Size

■  Filter for Files Newer than or Older than or within a specific Date range.

■  Possibility to select the Date Range on the basis of hours, Minutes, Seconds.

■  Filter for Files Larger than or Smaller than or within a specific Size range.

■  Possibility to select the Size Range on the basis of Bytes, KB, MB, GB.

##### Attributes

■  Can choose the match type for the attributes to search for (Any, All, Only).

##### Results Window

■  Thumbnails View.

■  Possibility to append results of consecutive searches.

■  The rows of the results are numbered for an easy recognition.

■  The results can be put in order by column: upward, downward or initial.

■  Ability to perform incremental search in the Results.

■  Search for Column in the Results and positioning on the found Item.

■  The Results window supports Windows® Explorer functionality (e.g. icons, context menus).

■  Specific actions can be carried out on the results (e.g. Open Folder, Open Containing Folder).

■  Multi-select support in order to perform editing on multiple Items (e.g. Cut, Copy, Copy to Folder, Move to Folder, Rename, Delete etc.).

■  Drag & Drop Support from Results Items to other Applications.

■  Ability to change the column layout (position, size, visibility).

■  Ability to zoom the text for better legibility.

##### Export Results

■  Export all the Rows or only the selected ones.

■  Select which Columns to Export and in which order (except Full Path).

■  Save the Export to File or to the Clipboard.

■  Save the Export to a new File or overwrite or append it to an existing File.

■  The Results can be Exported in various File Formats:

    ■  Full Path (\*.TXT)

    ■  Formatted Text File (\*.TXT)

    ■  Tab Separated Values File (\*.TSV; \*.TAB)

    ■  Comma Separated Values File (\*.CSV)

    ■  Web Page File (\*.HTM; \*.HTML)

    ■  Web Page File with Links (\*.HTM; \*.HTML)

    ■  XML Document File (\*.XML)

■  Available Encodings: ASCII / ANSI Code Page / Unicode / Big-Endian Unicode / UTF8 / UTF8 No BOM

##### Statistics visualization

■  Progress state visualization: Files and Folders found and Total Size.

■  Display of the main Search Filters in the Window Caption and in the Taskbar.

■  Shows the statistics of the last search performed.

##### Options

■  Can choose which types of MRU Items to save and (or) load.

■  Can choose which types of Search Parameters to save and (or) load.

■  Possibility to choose the destination Directory of the Export command.

Built-in Text Filters

UltraFileSearch find the Text within Encoded Documents using IFilters or Text Filters built-in.  
For the following common Documents no IFilters need to be downloaded or installed separately.  
(If installed are used the IFilters otherwise are used the Text Filters built-in)

###### Documents Formats Extensions

Microsoft Office Documents .DOCX (Word), .XLSX, .XLSM, .XLTX, .XLTM, .XLSB (Excel)

Microsoft Excel spreadsheets .XLS

Microsoft Word documents .DOC

Microsoft Write .WRI

Open Documents formats .ODT (TextDocuments), .ODS (Spreadsheets), .ODP (Presentations)

Corel Word Perfect .WPD

Lotus 1-2-3 & Symphony spreadsheets .123, .WK1, .WK2, .WK3, .WK4, .WR1, .WKS, .WKE

Quattro Pro spreadsheets .WQ1, .WQ2, .WKQ, .WB3, .QPW)

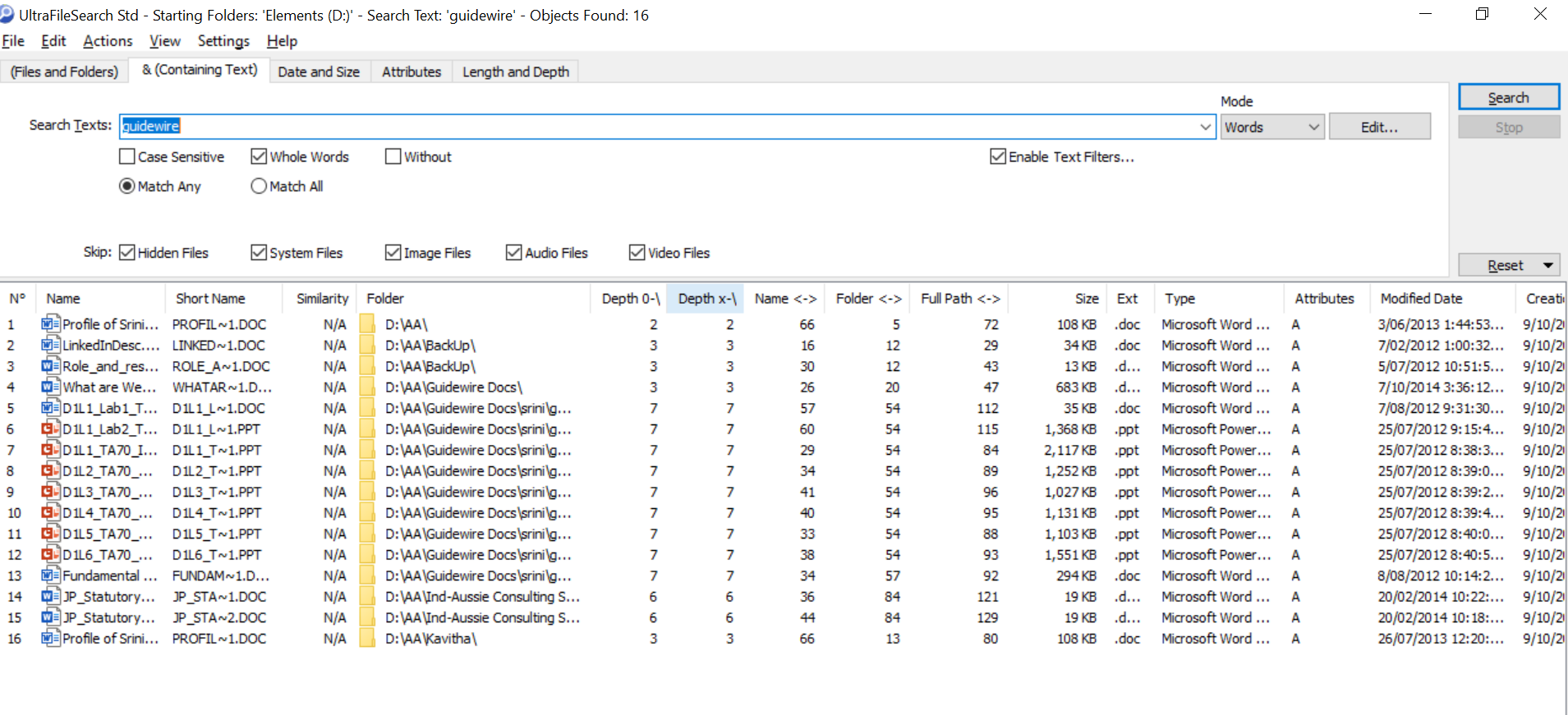
eBooks .EPUB (Electronic Publication), .FB2 (Fiction Book), .PDB (Palm Doc)

Adobe Portable document format   
(Bundled and installed as Add-on) .PDF

(If installed are used the IFilters otherwise are used the Text Filters built-in)

**Example : Search Files By “Guidewire”**

Below is the Search Results from a Hard Drive:



## Interface Structure

### Usage

**Interface – FileSearch Utility (Document Search)**

### Error/Alternate Behaviour

|  |  |
| --- | --- |
| **Error/Alternate Condition** | **Behaviour** |
| Any Technical Error while using UltraFileSearch Utility | ESBFault is returned by UltraFileSearch with relevant error text and error code. e.g. System is down, network is down. If the error is related to payload, payload can be fixed and message can be resubmitted. |
|  |  |

**Error Scenarios for File Search Service:**

| **Scenario** | **High-Level Handling** |
| --- | --- |
| Dialogue Wrapper System    unavailable or system not picking up service requests | The ECM Controller will    provide an error call-back to GuideWire with error:  <Status>    Failure </Status>  <Description>    Fail to generate </Description> |
| Invalid Request Data    (Dialogue Wrapper) | The ECM    Controller will provide an error call-back to GuideWire with error:  <Status>    Failure </Status>  <Description>    Fail to generate </Description> |
| ESB  Document Transport Request (check-in    request) JMS Queue unavailable | The ECM    Controller will provide an error call-back to GuideWire with error:  <Status>    Failure </Status>  <Description>    Fail to store </Description> |
| ESB Document Transport    Response (check-in response) JMS Queue unavailable | The ECM    Controller will not provide a call-back. |
| ESB Message Broker    unavailable or not picking up messages | The ECM    Controller will not provide a call-back. |
| ESB Service Technical    Error | The ECM    Controller will provide an error call-back to GuideWire with error:  <Status>    Failure </Status>  <Description>    Fail to store </Description> |
| Batch Loader Document    Check-In  Request JMS Queue    unavailable | The ECM    Controller will not provide a call-back. |
| Batch Loader Document    Check-In response Queue unavailable | The ECM    Controller will not provide a call-back. |
| Batch Loader application    unavailable or not processing check-in requests from the Batch Loader JMS    Queue | The ECM Controller    will not provide a call-back. |
| OCS System Unavailable or    Other Storage Errors | The ECM    Controller will not provide a call-back. |
| Invalid Metadata | The ECM Controller will    provide an error call-back to GuideWire with error:  <Status>    Failure </Status>  <Description>    Fail to store </Description> |
| EIS Emailer System    Unavailable | The ECM    Controller will provide an error call-back to GuideWire with error:  <Status>    Failure </Status>  <Description>    Fail to distribute </Description> |
| Invalid Email Address | In the    event of an invalid internal email address, the email distribution response    will return with OK status butan    error report email will be sent to the “ReplyTo” email address by [Postmaster@qbe.com](mailto:Postmaster@qbe.com). If ReplyTo is not provided in the initial    request then the distribution will be marked as successful and the user will    not be notified.  In the    event of an invalid external email address, the email distribution response    will return with OK status but an error report email will be sent to the    ReplyTo by [MAILER-DAEMON@messagelabs.com](mailto:MAILER-DAEMON@messagelabs.com). If ReplyTo is not    specified in the email distribution request, then the distribution will be    marked as successful and the user will not be notified. |
| Distribution failure | The ECM    Controller will provide an error call-back to GuideWire with error:  <Status>    Failure </Status>  <Description>    Fail to distribute </Description> |
| No template is found | The ECM    Controller will provide an error call-back to GuideWire with error:  <Status>    Failure </Status>  <Description>    Fail to generate </Description> |
|  |  |

# Coding Standards

## Naming Conventions for Rules

For more information on Rules, please reference the Coding standards Rules Guide and Java Reference Guide.

To avoid problems when configuring and testing rules, it is recommended that each rule have the following naming convention:

8 character alphanumeric identifier + space + - + space + description (where at least the last 3 characters in the 8 character alphanumeric identifier are numbers that are unique for a particular rule set).

Eg: 

## Naming of variables

* Use Camel notation for the variables that are being declared

e.g: var todayDate = api.util.DateUtil.currentDate();

## Comments

* Comment the name of the developer, date and the reason for the Function that is being written

e.g: **//** 18 Dec 08 Dave Veloper: Created the rule for bug 2 from sprint 1 for checking the time to be in future when a person calls.

or

**/\*** 18 Dec 08 Dave Veloper: Created the rule for bug 2 from sprint 1 for checking the time to be in future when a person calls. **\*/**

## Catching exceptions

* Always use try, catch block syntax for catching exceptions
* Write User readable exception messages and make sure it has equivalent displaykey if shown on the user interface.

## Type coercion

* Follow the type coercion. Type coercion is assigning the right variable to the right data type.

e.g: var x:Boolean= Claim.CheckNumber as Boolean

## Rule condition

* While writing any new rule in Studio, put a code filter condition in "Condition" part of Rule tree instead of just a true value & business logic in "Action" part of Rule tree. This will help a lot in Performance Enhancement by executing rules conditionally & also will add modularity to rule code for ease of maintenance.

## Comments

* Comments, including owner name, shall be included for any new Java Class, Libraries or any piece of code. Add additional comments for each new Method/Function & wherever needed in code. Assume the audience has limited Java knowledge.

## Test cases

* Write the individual test cases for all the functionality of the developed code

## Structural Design

### Request Payload Definition

### Response Payload Definition

## Interface Qualities

**Performance Architecture Blueprint:**

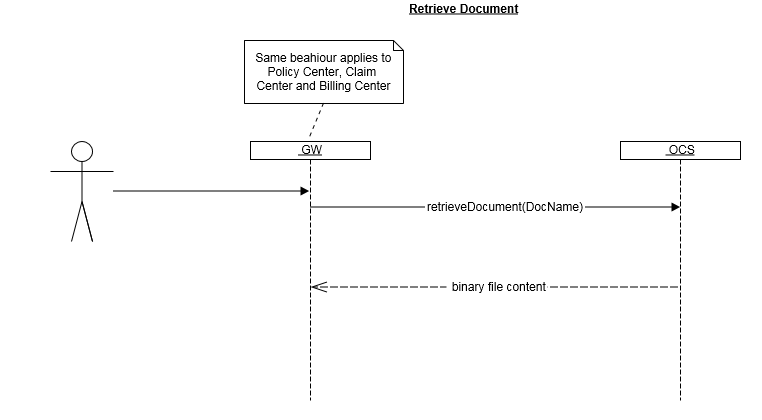
Document Search - Less than 30 seconds

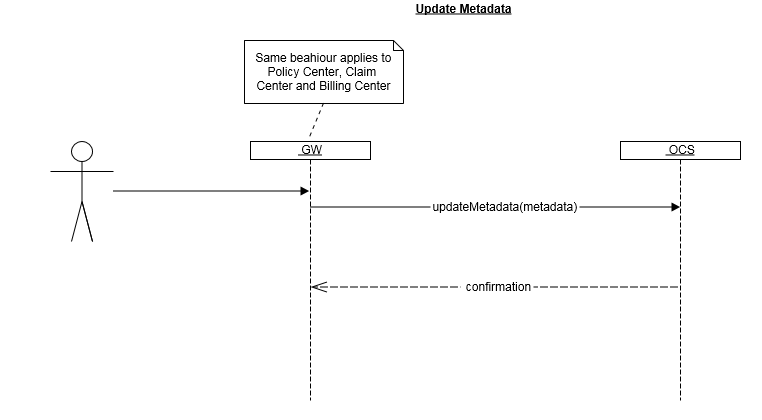
Document distribution - Less than 0.5 second per document on-demand (average doc size 150kb)

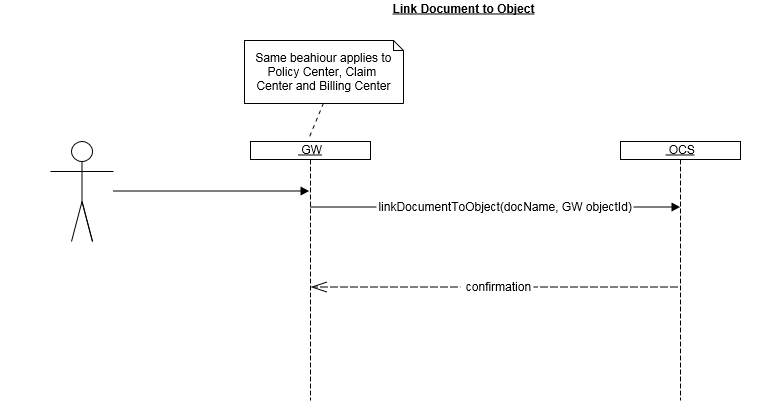
Document Storage (Document Upload) - Maximum 10 seconds

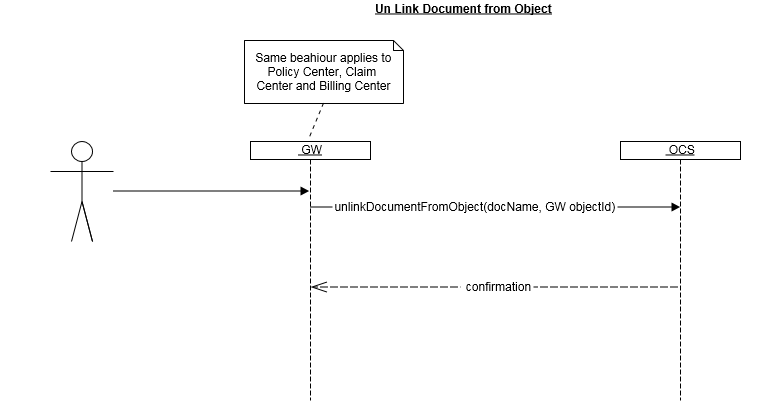
End to end request/store and distribute - Average 3 seconds or less, maximum 10 seconds.

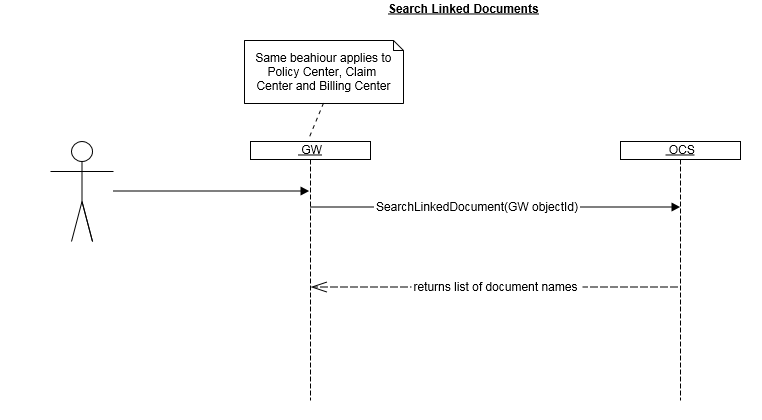
## Behavioural Design

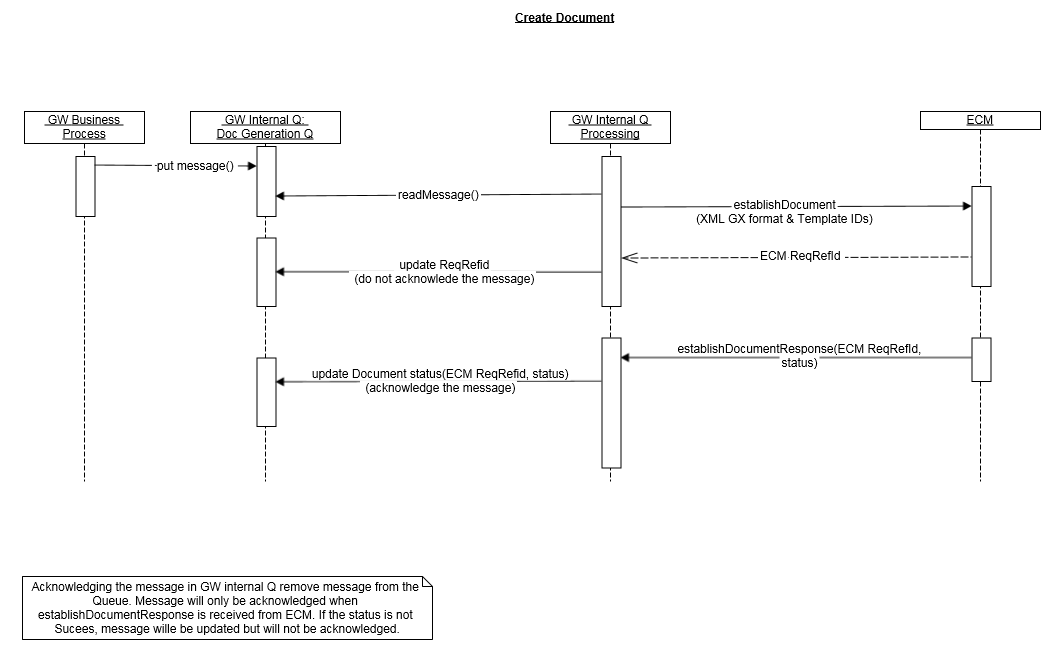












# Constraint

Delivery mechanism is a mandatory in FileSearch service. This implies that even If the document is to be printed locally, a delivery mechanism needs to be specified under tag - DistributionMethod.

# Outstanding Questions

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| --- |
|  |
| **Key** | **Summary** | **T** | **Created** | **Updated** | **Due** | **Assignee** | **Reporter** | **P** | **Status** | **Resolution** |

[No issues found](https://qbe-appservices.atlassian.net/secure/IssueNavigator.jspa?reset=true&jqlQuery=key+in+%28+PMO-1003%2C+PMO-1004%29+&src=confmacro)

# Governance Summary

The following section is used to summarise the change process and maintenance procedure for the given interface

# Change Requests

|  |
| --- |
|  |
| **Key** | **Summary** | **T** | **Created** | **Updated** | **Due** | **Assignee** | **Reporter** | **P** | **Status** | **Resolution** |

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# Related Design Dependencies

* SRS Document ( System Requirements )