**Defender**

**System Requirements Specification**

**Draft**

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Defender System Requirement Specification

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List of Acronyms

| Acronym | Description |
| --- | --- |
| MM | Maintenance Manual |
| OM | Operations Manual |
| SRS | Software Requirements Specification |
| SSL | Secure Sockets Layer |
| UC | Use Case |
| IOP | INTEGRITYOne Partners |

## Document Purpose

The purpose of this document is to provide conceptual requirements for Defender. The document details the overall system requirements for the tool including an overview of the core business functions, system requirements, and non-functional requirements. Detailed requirements, business rules, and interface requirements for each core function are included as attachments. This document should serve as the source for requirements for this software suite.

## Methodology

Defender uses the agile methodology for life-cycle management. The Agile methodology promotes the use of development iterations, open collaboration, and process adaptability throughout the life-cycle of a project. Agile methods emphasize working software as the primary measure of progress and use requirements in order to develop so that progress is built up instead of on hold until a full requirements suite is available.

Defender used User Stories and Acceptance Criteria as their primary definition for requirements. Requirements were elicited during Release planning and evolved during each Sprint Review as part of the Scrum process. IOP used some of the following practices throughout their Release:

* Protosketching
* Planning Poker for estimates
* Time-boxed Release

## Overview

The “Defender” utility brings together the FDA formal data with less formal information across the internet, and acts as a big picture utility where users can go get a quick glance at current, known FDA enforcement actions, their location, and affected areas. The utility additionally presents users internet trending and social media data to see related information on FDA recalls/enforcements. As the user drills into details the FDA data is further mashed with the non-FDA internet data.

## Application Goals

The (Defender) tool will provide a summary of enforcement actions with the following goals in mind:

* Provide enforcements for Food, Drugs, and Devices
* Provide for 30 days with ability to modify
* Provide informal data for recalls to help user get a bigger picture of recall data

## Operational Policies and Scope

Defender shall be operational 24 hours a day, seven days a week and shall be available to all users during this operational time frame. At times, the system may require an update and scheduled downtime will occur. In addition to scheduled downtime, there is always a risk of an unexpected outage. In cases such as these the system will be unavailable. Please refer to the Environment and Other Non-Functional Requirements sections for policies regarding the system environment.

## High Level System Process

1. User reviews summary page of total number of recalls for 30 days
2. User views map indicating locations of recalls
3. User views summary table of recall data to access full report
4. User filters recalls based on a keyword.
5. User review summary of internet and social trending data for food type to determine search trends.

High Level Alternate Flows:

1. User views summary of top offenders.
2. User refines recalls by date range, category, and specific location.
3. User views recall information for Drugs and Devices.
4. User views twitter feed related to keyword refinement.
5. User filters recalls based on a keyword.

## Assumptions, Dependencies, and Constraints

Assumptions are suppositions that critically impact the success or validity of the project. Constraints are the project limitations. They are those influences over which none of the participants have control.

* Assumption: Defender’s enforcement information shall be limited to data provided by OpenFDA.

## Support concept

Defender will be supported by through a continual monitoring provided by AWS.

## Stakeholders and Users

* IOP Senior Management
* 18F Agile BPA
* Product Owner: Bill McElhaney

## Access

The following information provides a summary of access requirements for Defender.

* Accessible via the World Wide Web and indiscriminant of browsers.

# Functional Requirements

### Public Access

Defender will provide a public access site that provides information regarding the product, pricing, and how to obtain membership. The site will also include access to the Defender tool itself.

#### User Stories

The following user stories provides an overview of the functionality that will be available in Defender.

|  |  |
| --- | --- |
| Taiga ID | User Story |
| 1 | TS001: Pull trend data from Google Trends API in visuals formats |
| 5 | TS002: Pull in social media data from aggregation on a single value. |
| 6 | TS003: Research way to do bubble like indicators - leaflet presentation layer |
| 7 | US: As a user I would like to see a welcome page. |
| 8 | RS004: Determine how to find related items. |
| 25 | As a user, I would like to view the applicable enforcement report so that I can see all data. |
| 26 | As a user, I would like to view a summary of food recalls that have occurred in the last 30 days so that I am aware of the latest recalls. |
| 28 | As a user, I would like to refine results by a specific keyword so that I can see any recall information related to it. |
| 30 | As a user, I would like to view a map of the recalls that have occurred in the last 30 days so that I can see where the recalls came from. |
| 31 | As a user, I would like to obtain a summary of top offenders by classification and by type in order to analyze who has a large amount of offences. |
| 32 | As a user, I would like to refine/search by a time frame in order to see a specific scope of results. |
| 33 | As a user, I would like to search trend data for keyword in order to gain additional knowledge about trends on the internet. |
| 34 | As a user, I would like to refine my results by type in order to see data specific to food, drug, or devices. |
| 35 | As a user, I would like to view related enforcement actions in order to determine if other agencies have data on this recall. |
| 36 | As a user, I would like to see a summary of social media trends based on specified name. |
| 37 | As a user, I would like to review a summary of recalls by a specific location order to see affected and source recalls. |
| 38 | As a user, I would like to see a photo of the recalled product in order to better identify the recall. |
| 44 | As a user, I would like to view a summary of affected areas based on my recalls. |
| 45 | As a user, I would like to view a map of affected areas based on my recalls. |
| 68 | As a user, I would like to see the twitter feed applicable to my keyword. |
| 72 | As a user, I would like to view a map of the world and switch to it from viewing a grid. |
| 81 | As a user, I would like to choose an individual recall and have Defender filter all analyses windows to that single recall. |
| 82 | As a user, I would like to view a summary of drug recalls that have occurred in the last 30 days so that I am aware of the latest recalls. |
| 83 | As a user, I would like to view a summary of devices recalls that have occurred in the last 30 days so that I am aware of the latest recalls. |
| 88 | As a user, I would like to be able to navigate to more results in my summary view. |
| 90 | As a user, I would like to see the total number of recalls in the last 30 days. |
| 104 | System: Update documentation |
| 111 | As a user, I would like to see an 'About Defender' feature |
| 112 | As a system admin, I would like to be notified if there are issues with production. |
| 117 | Update color of corn, hard to see. Add to food label. |
| 119 | Add header to modal window for enhancement report |

#### User Story Descriptions

For acceptance criteria please access the project in Taiga.

# System-wide Requirements

## System-wide Requirements

The following list of requirements are applicable to the entire system.

### Requirements

1. The system shall validate all data entry fields to ensure data provided is in the proper format.
2. System shall restrict entry information according to the data type of the field.
3. System shall provide the ability to sort data in ascending and descending order for every column of information when data is displayed in tabular format.

# Environment (Non-Functional) Requirements

## User Interface Requirements

Defender shall be designed using the flat template from bootstrap.

1. The system shall be designed as a Web-based application that will work on a mobile device.
2. The system shall provide forward and backward navigation throughout the system when navigation moves to another page.
3. The system shall use a responsive design in order to ensure the application adjusts to screen sizes.
4. The system shall be designed so that descriptive error messages are displayed on screen to the user.
5. The system shall be designed to operate on the following or greater Chrome v43, IE v.11, Firefox v43, and Safari v8.

## Integration/Migration Requirements

The system shall use the following API’s to obtain data:

1. OpenFDA
2. Google Trends
3. Twitter

## Software Requirements

The system shall use Microsoft Windows as the operating system for workstations. The system’s user browser will be vendor and version independent to support communications over standard internet protocols.

## Hardware Requirements

System shall operate from a machine that meets the minimum system standards for Chrome v43, IE v.11, Firefox v43, or Safari v8.

# Other Non-Functional Requirements

This section lists the additional requirements of the application.

## Business Continuity and Recovery Requirements

Defender is hosted on the Amazon Web Services (AWS) which has a 99.999% rate for up time. This meets all requirements.

## Performance Requirements

### Speed

Any interface between a user and the system shall have a maximum response time of 30 seconds during peak times of usage and using 128K connection speed or faster.

### Capacity

Follows AWS standards for

### Ease of Use

1. The system shall include navigation that provides access to all areas of the system to ease navigation.
2. The system shall provide screen based online help to provide assistance on using the system.
3. The system shall provide simple tutorials and simulated training to provide assistance in learning the system.

## Safety Requirements

There are no specific safety requirements identified for this system.

## Administrative/Backup/Archive Requirements

### Administrative

1. The system shall provide system monitoring on CPU usage and alert if exceeds more than 90% on average over 15 mins.
2. The system shall provide an automated alert should the outbound network usage exceed 5 MB over the course of 45 minutes.
3. The system shall provide an automated alert if the server downtime is more than 10 mins.
4. The system shall provide an alert if the application registers as offline for more than 10 minutes.
5. The system shall capture all errors and log them to the server.
6. The system shall provide a summary of average length of server page hits.

### Backup

Follow standards for backup AWS.

## Training Requirements

Training shall primarily be self-guided.

## Documentation Requirements

The following documentation shall be provided for the system:

* Software Requirements Specification (SRS)
* Software Design Document (SDD)
* Test Cases

## Security and Privacy Requirements

Below is a list of security related requirements for the system:

### Security Requirements

1. Information received will not be transferred to any other interface.
2. Data accessed within Defender is public and does not require any classification.
3. The system shall not use scripts with embedded passwords.
4. The system shall use 128-bit Secure Sockets Layer (SSL) encryption whenever the user or system passes “secure” information over the Internet.