

# **Requirement Specification Document 1.0**

## **Disaster Continuity Planning System**

**Angle Engineering**

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## Revision History

Name	Date	Reason for Changes	Version
Tristan Giles	Oct 8, 2019	Initial Revision, resolving customer feedback from RD 1.0	0.1
Jalila Jalila	Oct 8, 2019	Fixes to glossary, additions to safety requirements and administrative users	0.2
Emma Johnson	Oct 8, 2019	Resolving TA feedback from RD 1.0	0.3
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# 1 Introduction

## 1.1 Purpose

This document was last updated to version 1.0, and lays out the requirements for a disaster continuity planning system. The system is hereby referred to as DARA (“Disaster Aid Response Application”) and is being designed by Angle Engineering. This document also introduces the problem that Angle Engineering seeks to solve with DARA, and each user class that will interact with DARA. Additionally, this document defines use cases for each user class that will interact with DARA.

The purpose of DARA is to provide each disaster victim with the ability to identify and locate aid centers in the event of a disaster. DARA will allow each local administrative user to communicate information about their respective aid center to each disaster victim before and during a disaster.

## 1.2 Project Scope

DARA is targeted at each disaster victim. DARA must provide aid center status information to each disaster victim in a clear and concise fashion. DARA must allow each administrative user to update information about their respective aid center. DARA must also allow each regional administrative user to add aid center entries and authorize local administrative users. The client company for DARA is AidConnect, a non-profit organization whose mission is to quickly and efficiently direct each disaster victim to the aid center that best suits that respective disaster victim’s needs [1].

## 1.3 Glossary of Terms

Administrative <del>user</del>	An individual who oversees the operation of one or more aid centers, and has local or regional privileges.
<del>Aid Center</del>	A building or room containing supplies for disaster victims that is managed by an aid organization.
Aid Center Entry	A record in the aid center list representing a single aid center. Each aid center requires an aid center entry in order for disaster victims to receive aid center status information from the respective aid center.
Aid Center List	A list view of aid centers that a disaster victim or administrative user can see.
Aid Center Status Information	Data consisting of levels of supplies, location, last updated time, operating status (open or closed) for an aid center.
Aid Organizations	A business or non-profit group that provides food, shelter, water, and medical aid to disaster victims

	during a disaster.
Authenticate	The process by which an administrative user provides a username and password combination that allows that administrative user to access their local privileges or regional privileges.
Authorize	The process by which a regional administrative user grants local privileges to an individual.
Cache	To store and preserve aid center status information on the device of a disaster victim to allow use of DARA while connection to primary networks is unavailable.
Computational Device	A piece of hardware with a central processing unit and at least one gigabyte of random access memory.
DARA	Acronym for Disaster Aid Response Application
Device	A smartphone, tablet, or personal computer.
Digital Privacy Laws	Articles of legislation that regulate the storage and use of personally identifiable information of individuals.
<del>Disaster</del>	<del>An event that causes great damage to the environment.</del>
<del>Display Radius</del>	<del>The maximum distance from a disaster victim that an aid center will be displayed.</del>
<del>Disaster Region</del>	<del>An area serviced by a collection of aid centers</del>
<del>Disaster Victim</del>	<del>An individual looking for aid center status information during, before, or after a disaster.</del>
Filter	The ability for each disaster victim to limit the shown aid centers to only those aid centers which match the aid center status information criteria specified by the disaster victim.
Geographical Data	Maps and coordinate data for maps.
GPS	Acronym for Global Positioning System.

Internationalization	Support for multiple languages.
Last Updated Time	The time at which the aid center status information for each aid center was entered into DARA.
Levels	A descriptive label indicating the amount of a specific type of supply available at an aid center. Will be one of low, medium, high, or none.
Local Administrative User	An administrative user with local privileges.
Local Privileges	Permission to update aid center status information.
Personal Computer	A computational device with a microprocessor, designed for use by an individual.
Primary Network	Infrastructure that facilitates access to the internet, including cellular, ethernet, and wi-fi.
Regional Administrative User	An administrative user with regional privileges.
Regional Privileges	Permissions in addition to local privileges that allow adding aid center entries, removing aid center entries, adding disaster regions, removing disaster regions, adding new administrative users, resetting administrative user passwords, and assigning administrative users to aid centers.
Release of Liability	A waiver that a disaster victim agrees to by using DARA, declaring that AidConnect cannot be held legally accountable for any damage caused to the disaster victim through use of DARA.
Smartphone	A computational device with a display smaller than or equal to 7 inches diagonally that runs a supported operating system.
Supplies	Food, potable water, medical equipment, first aid equipment, and medical staff.
Supported Operating System	One of Android 7.0+, iOS 11+, Windows 8.1+, MacOS 10.12+, or GNU Linux 5.0+.
Tablet	A computational device that has a diagonal display size of greater than 7.0 and is running a supported operating system.
Web Content Accessibility Guidelines	Recommendations for making web content more

	accessible for people with disabilities. These disabilities can include blindness, low vision, deafness, hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities and photosensitivity [3].
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## 1.4 References

- [1] AidConnect, “Request for Proposal”, 2019. [Online] Available: <https://trusting-montalcini-84102f.netlify.com/Mission-Vision>. [Accessed Sept. 23, 2019].
- [2] A. Shenwai, E. Johnson, J. Jalila, R. Raso, S. Andreen, T. Giles and X. Chen, SENG 321, Elicitation Notes, Topic: “Elicitation Notes.” University of Victoria, Victoria, BC, Sep. 24, 2019.
- [3] Wikipedia, “Web Application Security Guidance” . [Online] Available: [https://www.owasp.org/index.php/Web\\_Application\\_Security\\_Guidance](https://www.owasp.org/index.php/Web_Application_Security_Guidance) [Accessed Oct. 12, 2019].
- [4] W3, “Web Content Accessibility Guidelines”, 2019. [Online] Available: <https://www.w3.org/TR/WCAG20/>. [Accessed Sept. 30, 2019].

## 1.5 Overview

This document contains seven sections and an appendix. First, section 1 is composed of the glossary, references, and overview. Then, section 2 contains an overview of the current system, the main features of the proposed system, constraints to development, and each assumption made. Next, section 3 explains each functional requirement of DARA. Section 4 details each external interface requirement of DARA, while section 5 lists other non-functional requirements, such as performance requirements, safety requirements, security requirements, and software quality requirements. Finally, section 6 summarizes all other requirements for DARA, and section 7 describes typical use cases of the system.

## 2 Overall Description

### 2.1 Product Perspective

AidConnect’s present system (named the “Disaster Continuity Platform” and hereby referred to as the “existing system”) “connects disaster victims with aid organizations’ information [1].” However, the existing system has been “unreliable in post-disaster situations [2]” for reasons such as damage to primary networking infrastructure from a disaster.

Angle Engineering will develop DARA to replace the existing system at AidConnect. DARA will focus on reliability, information accessibility, and information accuracy.

### 2.2 Product Features

The primary feature of DARA will be an interface that allows each disaster victim to view each aid center within that ~~disaster victim’s display radius, from that disaster victim’s device~~. Each disaster victim will be able to ~~select an aid center to view aid center status information for the selected aid center~~.

The other main feature of DARA will be an interface that will allow each administrative user to manage aid center status information. Each regional administrative user will also have the option to add or remove aid center entries, and the option to add other administrative users.



## 2.3 User Classes and Characteristics

There are three user classes associated with DARA: ~~the local administrative user, the regional administrative user, and the disaster victim.~~

### 2.3.1 Local Administrative User

~~Each local administrative user is an employee or volunteer with local privileges at an aid center who can update aid center status information for their assigned aid center. In order to access DARA's administrative interface, each local administrative user must authenticate to DARA with a provided username and password. At each aid center, a local administrative user associated with that aid center will access DARA multiple times a day to update the aid center status information of their respective aid center. Technical expertise and education levels will vary greatly, but each local administrative user will have received training to use DARA.~~

### 2.3.2 Regional Administrative User

Each regional administrative user must have access to complete functionality of DARA. Each regional administrative user will be able to modify aid center status information for any aid center. The regional administrative user class is the only user class with the ability to add a new aid center to DARA or remove an existing aid center from DARA. ~~Each regional administrative user will have prior experience with DARA and can thus be expected to be proficient with DARA.~~ Each regional administrative user must be able to add local administrative users to DARA at their discretion. Finally, the regional administrative user must be able to assign or remove a local administrative users privileges to each aid center.

### 2.3.3 Disaster Victim

Each disaster victim is a member of the general public who will use DARA to access information about aid centers during a disaster. Technical expertise and education levels will vary greatly, and each disaster victim is unlikely to have experience with DARA before a disaster occurs. Each disaster victim is expected to use DARA up to multiple times an hour on their way to an aid center [2]. No disaster victim is expected to use DARA while at an aid center.

## 2.4 Operating Environment

Each disaster victim, as well as each administrative user, must be able to access DARA on a device that is running a supported operating system. The earliest operating system versions that are supported through DARA are as following: Android 7.0, iOS 11, Windows 8.1, MacOS 10.12, and GNU/Linux version 5.

## 2.5 Design and Implementation Constraints

Access to aid center status information by means of DARA must not rely solely on the presence of any primary network. In the event that all primary networks have been damaged or disabled, each disaster victim must still have a means of accessing aid center status information by preserving aid center status information on the disaster victim's device.

Additionally, no disaster victim must be required to purchase specialized hardware in addition to their device in order to access DARA. Therefore, DARA must function on a wide range of smartphones, tablets, and personal computers.

Each regional administrative user is responsible for starting up an instance of DARA, and each regional administrative user will handle the hosting of all information pertaining to that regional administrative user's disaster region.

## 2.6 Assumptions and Dependencies

It is assumed that each disaster victim will have access to the internet prior to a disaster, in order to allow DARA to cache aid center status information for each aid center within the disaster victim's display radius.

~~Furthermore, it is assumed that there is no need to remove an aid center status information update, since an administrative user can overwrite an aid center status information update by creating a new aid center status information update in order to achieve the same result.~~

Finally, it is also assumed that each disaster victim does not need to be authorized or authenticated prior to accessing DARA, as a disaster victim is never expected to update any information in DARA that is accessible to other disaster victims.

## 3 System Features

This section describes the features of DARA that are pertinent to DARA's normal operation.

### 3.1 Aid Center Status Information Access

#### 3.1.1 Description and Priority

**Priority: HIGH**

The primary function of DARA is to allow each disaster victim to see the location of each aid center within the disaster victim's display radius and each aid center's aid center status information. The ability to filter aid centers by aid center status information criteria is an important function, since each disaster victim may have their own set of requirements that an aid center must fulfill to meet each disaster victim's needs.

#### 3.1.2 Functional Requirements

~~ASCI-1:~~ Each disaster victim must be able to visually locate each aid center on a map.

~~ASCI-2:~~ Each disaster victim must be able to access the aid center status information for each aid center.

~~ASCI-3:~~ Each disaster victim must be able to filter aid centers by aid center status information criteria defined by that respective disaster victim.

### 3.2 Aid Center Status Information Entry

#### 3.2.1 Description and Priority

**Priority: HIGH**

Providing each disaster victim with aid center status information is a primary function of DARA. Each local administrative user is responsible for updating the aid center status information for the aid center that the given local administrative user is responsible for, and therefore must have a way of updating the aid center status information.

### ***3.2.2 Functional Requirements***

**ACSIE-1:** Each local administrative user must be able to update the aid center status information of that local administrative user's aid center.

**ACSIE-2:** Each regional administrative user must be able to update the aid center status information of any aid center within their region.

**ACSIE-3:** Each regional administrative user must be able to add new aid center entries.

**ACSIE-4:** Each regional administrative user must be able to remove existing aid center entries.

## **3.3 User Management**

### ***3.3.1 Description and Priority***

#### **Priority: HIGH**

To ensure only each authorized individual can update aid center status information, ~~only each regional administrative user~~ will have the ability to add a new local administrative user. Each aid center will be assigned one and only one local administrative user.

### ***3.3.2 Functional Requirements***

**UM-1:** Each regional administrative user must be able to add a new local administrative user in DARA.

**UM-2:** Each regional administrative user must be able to assign exactly one local administrative user per existing aid center without an assigned local administrative user.

## **3.4 Disaster Region Management**

### ***3.4.1 Description and Priority***

#### **Priority: MEDIUM**

In order for DARA to function in a disaster region, each regional administrative user must first create an ~~instance~~ of DARA. Then, in order for each disaster victim to access DARA, the respective disaster victim must be able to select a disaster region composed of aid centers to view from DARA.

### ***3.4.2 Functional Requirements***

**DRM-1:** Each regional administrative user must be able to create an instance of DARA for a disaster region defined by that regional administrative user.

**DRM-2:** Each disaster victim must be able to select a disaster region to view from DARA.

**DRM-3:** Each regional administrative user must be able to see each disaster region that they have regional privileges for.

**DRM-4:** Each regional administrative user must be able to remove each disaster region that they have regional privileges for.

## **3.5 Networks**

### ***3.5.1 Description and Priority***

#### **Priority: MEDIUM**

DARA must allow each disaster victim to receive up-to-date information from aid centers within their display radius while the primary network is still available.

### ***3.5.2 Functional Requirements***

**NET-1:** Each disaster victim must be able to access DARA through primary networks.

**NET-2:** Each disaster victim must be able to access the most recent information cached by DARA when all primary networks are inoperable.

## **4 External Interface Requirements**

### **4.1 User Interfaces**

This section describes the logical characteristics of each interface between the software product and the users.

#### ***4.1.1 Description and Priority***

##### **Priority: MEDIUM**

Each disaster victim must be able to quickly locate the aid center that best fits their requirements, and must have a means of viewing the location of each aid center within their defined display radius. Each disaster victim must be able to select each aid center from a list. Selecting an aid center from the aid center list will display the aid center status information for the chosen aid center, and will prioritize showing the best aid center for the disaster victim.

#### ***4.1.2 Requirements***

**UI-1:** Each disaster victim must be able to locate themselves as a color-coded ~~dot on a map~~.

**UI-2:** Each disaster victim must be able to locate each aid center as a color-coded dot on a map.

**UI-3:** Each disaster victim must be able to select an aid center from the list view to see all aid center status information about that aid center.

**UI-4:** Each disaster victim must be able to select ~~an aid center from the map view to see all aid center status information about that aid center~~.

**UI-5:** Each disaster victim must be able to view a collection of aid centers in a list format.

**UI-6:** Each administrative user must be able to view the collection of aid centers that they have local privileges for.

#### ***4.1.3 Functional Requirements***

**UI-7:** Each disaster victim must be able to manually provide their location to DARA.

### **4.2 Software Interfaces**

#### ***4.2.1 Description and Priority***

##### **Priority: HIGH**

In order to maximize compatibility and accessibility, DARA must function with a variety of operating systems.

#### ***4.2.2 Requirements***

**SI-1:** Each disaster victim must be able to access DARA from any version of Android version 7.0 or ~~newer~~.

**SI-2:** Each disaster victim must be able to access DARA from any version of iOS version 11 and newer.

**SI-3:** Each administrative user must be able to access DARA from any version of Windows version 8.1 and newer.

**SI-4:** Each administrative user must be able to access DARA from any version of macOS version 12.13 and newer.

**SI-5:** Each administrative user must be able to access DARA from any version of GNU/Linux version 5 and newer.

## 5 Other Non-Functional Requirements

### 5.1 Performance Requirements

This section describes the non-functional requirements of DARA, and outlines the criteria that will be used to judge DARA's operation.

#### 5.1.1 Speed

**PR-S-1:** Each disaster victim must be able to receive aid center status information from each aid center within ~~20 seconds~~ while their device is connected over a primary network.

**PR-S-2:** Each disaster victim must be able to receive aid center status information from each aid center within the user's display radius within ~~1 hour~~ while their device is connected over a ~~secondary network~~.

#### 5.1.2 Caching

**PR-C-1:** Each disaster victim must be able to access ~~30 megabytes of cached geographical data~~ on their respective device.

### 5.2 Safety Requirements

Through a release of liability, AidConnect cannot be held responsible for any damages incurred by a disaster victim that uses DARA. Each disaster victim agrees ~~to release of liability by~~ using the application, which outlines the risks of travelling to an aid center, and that the aid center status information of each aid center may not be recently updated. The release of liability will also include a warning that the aid center status information of each aid center might not be accurate and DARA cannot guarantee the level of supplies or access to any supplies at any aid center.

**SAR-1:** Each disaster victim must be shown a release of liability before the first use of DARA.

**SAR-2:** Each disaster victim must be shown a release of liability after each update of DARA.

### 5.3 Security Requirements

**SER-1:** DARA must implement each remediation laid out by OWASP in the OWASP Web Application Security Guidance Page [3].

### 5.4 Software Quality Requirements

In addition to the above requirements, DARA must also meet the software quality requirements outlined here.

**SQ-1:** DARA must meet the *Web Content Accessibility Guidelines* [4].

**SQ-2:** DARA must support internationalization.

**SQ-3:** DARA must allow each local administrative user to update the aid status information of an aid center within one minute.

**SQ-4:** DARA must be available to administrative users 99.999% of the time per year.

**SQ-5:** DARA must be available to disaster victims 99.999% of the time per year.

## 6 Other Requirements

In order to avoid fines from digital privacy law violations, such as fines issued under the General Data Protection Regulation in the European union, DARA must ensure that each disaster victim is made aware of any data that DARA stores about that disaster victim, and must make each disaster victim aware that they have the ability to request that all traces of their personal data be removed from DARA.

**OR-1:** DARA must not violate the digital privacy laws of any country where DARA will be used.

## 7 Use Cases

The below use cases define the common functions that disaster victims, local administrative users, and regional administrative users can perform.

### 7.1 Disaster Victims

Below are the use cases that pertain to the functions that a disaster victim can perform.

#### 7.1.1 View Aid Centers

<b>Use Case:</b> ViewAidCenters
<b>ID:</b> UC-1
<b>Brief description:</b> The disaster victim views aid centers within the disaster victim's display radius.
<b>Actor(s):</b> Disaster victim
<b>Preconditions:</b> <del>None.</del>
<b>Main flow:</b> <ol style="list-style-type: none"><li>If the disaster victim wants to view aid centers on the map view then<ol style="list-style-type: none"><li>The disaster victim navigates to the map view.<ol style="list-style-type: none"><li>If the disaster victim has primary network access then<ol style="list-style-type: none"><li>The disaster victim sees the map view showing the most recent map data.</li><li>The disaster victim sees their location on the map, as well as the location of every aid center within their display radius.</li></ol></li><li>Else if the disaster victim does not have primary network access, but has cached map data then<ol style="list-style-type: none"><li>The disaster victim sees the map view showing cached map data.</li><li>The disaster victim sees their current location, as well as the location of every aid center within the disaster victim's display radius that the disaster victim has cached information on.</li></ol></li></ol></li><li><del>If the disaster victim wants to view aid centers on the list view, then</del><ol style="list-style-type: none"><li>The disaster victim accesses the list view.</li></ol></li></ol></li></ol>

2.2. The disaster victim sees all aid centers within the disaster victim's display radius in a list format.
<b>Postconditions:</b> 1. The disaster victim can see all aid centers within the disaster victim's display radius, and is able to view the aid center status information for each respective aid center.
<b>Alternative flow(s):</b> None.

### 7.1.2 Update Map Filter

<b>Use Case:</b> UpdateMapFilter
<b>ID:</b> UC-2
<b>Brief description:</b> The disaster victim filters aid centers on the map view for a group of aid centers that meets the disaster victim's needs.
<b>Actor(s):</b> Disaster victim
<b>Preconditions:</b> <ol style="list-style-type: none"> <li>1. The disaster victim has primary network access on their device or has cached aid center status information on their device.</li> <li>2. The disaster victim is on either the map view or the list view.</li> </ol>
<b>Main flow:</b> <ol style="list-style-type: none"> <li>1. The disaster victim navigates to the filter interface.</li> <li>2. If the disaster victim wants to filter by aid center status information then <ol style="list-style-type: none"> <li>2.1. The disaster victim chooses the level of each supply they want at an aid center.</li> </ol> </li> <li>3. If the disaster victim wants to hide unavailable aid centers then <ol style="list-style-type: none"> <li>3.1. The disaster victim hides unavailable aid centers.</li> </ol> </li> <li>4. The disaster victim enters the maximum display radius.</li> <li>5. The disaster victim confirms the selected options.</li> <li>6. The disaster victim sees the map view hide aid centers that don't match the new criteria.</li> </ol>
<b>Postconditions:</b> <ol style="list-style-type: none"> <li>1. The disaster victim sees the aid center map hide aid centers that do not meet the filter criteria.</li> </ol>
<b>Alternative flow(s):</b> Return to the map view <ol style="list-style-type: none"> <li>1. The disaster victim returns to the map view.</li> </ol> 1 b) CancelFilterSelection 5 b) ResetFilterSelection <ol style="list-style-type: none"> <li>1. The disaster victim resets the map view filter.</li> </ol>

#### 7.1.2.1 Cancel Filter Selection

<b>Alternative Flow:</b> UpdateMapFilter:CancelFilterSelection
<b>ID:</b> UC-2.1
<b>Brief description:</b> The disaster victim backs out of the filter selection.
<b>Actor(s):</b> Disaster victim
<b>Preconditions:</b> <del>The disaster victim is on the filter interface.</del>
<b>Alternate flow:</b> <ol style="list-style-type: none"><li>1. The disaster victim returns to the map view.</li><li>2. If the disaster victim had a filter selected before then<ol style="list-style-type: none"><li>2.1. The disaster victim sees the map view with only the aid centers that match the previously defined filtering criteria.</li></ol></li><li>3. Else<ol style="list-style-type: none"><li>3.1. The disaster victim sees the map view showing all aid centers.</li></ol></li></ol>
<b>Postconditions:</b> <del>The disaster victim is viewing the map view with no changes made to the filter.</del>

#### 7.1.3 Manually Enter Location

<b>Use Case:</b> ManuallyEnterLocation
<b>ID:</b> UC-3
<b>Brief description:</b> The disaster victim manually enters their location to DARA <del>to locate themselves when DARA cannot automatically locate the disaster victim.</del>
<b>Actor(s):</b> Disaster victim
<b>Preconditions:</b> The disaster victim has a primary network connection or has cached geographical data stored on their device.
<b>Main flow:</b> <ol style="list-style-type: none"><li>1. The disaster victim navigates to the map view.</li><li>2. <del>The disaster victim sees an alert saying that DARA is unable to automatically locate the disaster victim.</del></li><li>3. The disaster victim chooses to manually locate their position.</li></ol>



<ol style="list-style-type: none"> <li>4. <del>The disaster victim is shown the best guess of their location.</del></li> <li>5. While the disaster victim is not satisfied with their location setting <ol style="list-style-type: none"> <li>5.1 If the disaster victim wants to locate themselves using the map view then <ol style="list-style-type: none"> <li>5.1.1. The disaster victim locates their position on the map view, and confirms their new position.</li> </ol> </li> <li>5.2 Else <ol style="list-style-type: none"> <li>5.2.1. The disaster victim enters the latitude and longitude that they wish to set, and confirms the input.</li> <li>5.2.2. The disaster victim sees their new location at the entered coordinates.</li> </ol> </li> </ol> </li> <li>6. The disaster victim returns to the map view.</li> </ol>
<p><b>Postconditions:</b></p> <ol style="list-style-type: none"> <li>1. The aid center status information list is updated to take into account the newly updated location of the disaster victim.</li> <li>2. The disaster victim can resume use of DARA by using the newly updated location.</li> </ol>
<p><b>Alternate flow(s):</b></p> <p>5 b) Cancel Manual Location</p> <ol style="list-style-type: none"> <li>1. The disaster victim chooses to cancel entering their location manually.</li> <li>2. The disaster victim returns to the map view.</li> </ol>

#### 7.1.4 View Aid Center Status Information

<b>Use Case:</b> ViewAidCenterStatusInformation
<b>ID:</b> UC-4
<p><b>Brief description:</b></p> <p>The disaster victim views aid center status information for an aid center.</p>
<p><b>Actor(s):</b></p> <p>Disaster victim</p>
<p><b>Preconditions:</b></p> <ol style="list-style-type: none"> <li>1. There are aid centers inside the disaster victim's display radius.</li> <li>2. The disaster victim is on the map view, or is on the list view.</li> </ol>
<p><b>Main flow:</b></p> <ol style="list-style-type: none"> <li>1. If the disaster victim is on the map view then <ol style="list-style-type: none"> <li>1.1. The disaster victim selects the aid center on the map view that they wish to view the aid center status information of.</li> </ol> </li> <li>2. Else <ol style="list-style-type: none"> <li>2.1. <del>The disaster victim selects the aid center on the list view that they wish to view the aid center status information of.</del></li> </ol> </li> <li>3. The disaster victim sees the aid center status information view of the selected aid center.</li> </ol>

<b>Postconditions:</b> <del>The disaster victim can see the aid center status information for the selected aid center.</del>
<b>Alternative flow(s):</b> None.

### 7.1.5 Select Disaster Region

<b>Use Case:</b> <del>SelectDisasterRegion</del>
<b>ID:</b> UC-5
<b>Brief description:</b> The disaster victim selects a disaster region to view the aid centers contained within it.
<b>Actor(s):</b> Disaster victim
<b>Preconditions:</b> None.
<b>Main flow:</b> <ol style="list-style-type: none"> <li>1. If the disaster victim has previously chosen a disaster region then <ol style="list-style-type: none"> <li>1.1. The disaster victim sees the map view of the chosen disaster region.</li> </ol> </li> <li>2. Else <ol style="list-style-type: none"> <li>2.1. The disaster victim sees the disaster region list view.</li> <li>2.2. The disaster victim selects the disaster region they wish to view.</li> <li>2.3. The disaster victim sees the map view of the chosen disaster region.</li> </ol> </li> </ol>
<b>Postconditions:</b> <del>The disaster victim sees the map view of select disaster area.</del>
<b>Alternative flow(s):</b> None.

## 7.2 Administrative Users (Local or Regional)

The use cases that local administrators can perform, and the use cases that regional administrators can perform.

### 7.2.1 Update Aid Center Status Information

<b>Use Case:</b> UpdateAidCenterStatusInformation
<b>ID:</b> UC-6
<b>Brief description:</b> The administrative user <del>signs into DARA</del> to update aid center status information.
<b>Actor(s):</b> Administrative user
<b>Preconditions:</b> <ol style="list-style-type: none"><li>1. The administrative user is <del>authorized</del> to use DARA's administrative interface.</li><li>2. The administrative user is logged in.</li><li>3. The administrative user has at least one aid center that they have authorization to update.</li></ol>
<b>Main flow:</b> <ol style="list-style-type: none"><li>1. The administrative user sees the group of aid centers that they have authorization to update.</li><li>2. The administrative user selects an aid center for which they want to <del>update</del> status.</li><li>3. The administrative user <del>enters the new aid center status information.</del></li><li>4. The administrative user confirms the entered details.</li><li>5. The administrative user sees a notification that the update was successful.</li><li>6. The administrative user is brought back to the group of aid centers that they are authorized to update.</li></ol>
<b>Postconditions:</b> The aid center status information has been updated with the new information.
<b>Alternative flow(s):</b> 3 b) <del>CancelAccessRequest</del> <ol style="list-style-type: none"><li>1. <del>The administrative user chooses to cancel the update.</del></li></ol>

### 7.2.2 Administrative User Log In

<b>Use Case:</b> AdministrativeLogin
<b>ID:</b> UC-7
<b>Brief description:</b> An administrative user logs in to gain access to the administrative interface and administrative functionality of DARA.
<b>Actor(s):</b> Administrative user

<b>Preconditions:</b> <ol style="list-style-type: none"> <li>1. The administrative user must be authorized in DARA.</li> <li>2. The administrative user must not already be logged in.</li> </ol>
<b>Main flow:</b> <ol style="list-style-type: none"> <li>1. While the administrative user has not provided a valid username and password combination that is known to DARA, and has not <del>attempted to authenticate more than 5 times in a thirty minute timeframe</del> <ol style="list-style-type: none"> <li>1.1. The administrative user sees a prompt to enter a username and password.</li> <li>1.2. The administrative user enters their username and password.</li> <li>1.3. The administrative user attempts to login.</li> </ol> </li> <li>2. The local administrative user is brought to the list of aid centers that they <del>have the ability to update</del>.</li> </ol>
<b>Postconditions:</b> The administrative user is logged in to DARA.
<b>Alternative flow(s):</b> 1 b) ResetPassword

#### 7.2.2.1 Administrative User Resets Password

<b>Alternative Flow:</b> AdministrativeLogin:ResetPassword
<b>ID:</b> UC-7.1
<b>Brief description:</b> <del>The administrative user</del> resets their password by contacting a regional administrative user, and the regional administrative user resets the password of the local administrative user.
<b>Actor(s):</b> Administrative user, <del>regional</del> administrative user
<b>Preconditions:</b> The regional administrative user must be able to log in without needing to reset the username and password combination of the regional administrative user.
<b>Alternate flow:</b> <ol style="list-style-type: none"> <li>1. The administrative user inputs 5 consecutive username and password combinations credentials <del>that are not authorized</del> within 30 minutes.</li> <li>2. The administrative user is prompted to contact a regional administrative user to change that administrative user's password.</li> <li>3. The administrative user contacts the regional administrative user to reset their password.</li> <li>4. The regional administrative user logs in.</li> <li>5. The regional administrative user contacted by the local administrative user changes the password on behalf of the <del>local administrative user</del>.</li> </ol>
<b>Postconditions:</b> <ol style="list-style-type: none"> <li>1. <del>The password of the administrative user has been changed.</del></li> </ol>

2. The administrative user can now log in with the new password.

## 7.3 Regional Administrative Users

### 7.3.1 Add Aid Center

<b>Use Case:</b> AddAidCenter
<b>ID:</b> UC-8
<b>Brief description:</b> The regional administrative user adds a new aid center to the aid center list.
<b>Actor(s):</b> Regional administrative user
<b>Preconditions:</b> <ol style="list-style-type: none"><li>1. The regional administrative user is logged in.</li><li>2. The regional administrative user is viewing the aid center list.</li></ol>
<b>Main flow:</b> <ol style="list-style-type: none"><li>1. The regional administrative user indicates that they want to add a new aid center to the aid center list.</li><li>2. The regional administrative user provides the location of the new aid center.</li><li>3. The regional administrative user optionally provides the name of the new aid center.</li><li>4. The regional administrative user optionally provides the initial supply levels of the new aid center.</li><li>5. The regional administrative user confirms the information that has been entered.</li><li>6. The regional administrative user sees a message confirming that the new aid center has been added.</li></ol>
<b>Postconditions:</b> <ol style="list-style-type: none"><li>1. The regional administrative user is viewing the aid center list.</li><li>2. The regional administrative user can see the new aid center in the aid center list.</li></ol>
<b>Alternative flow(s):</b> <ol style="list-style-type: none"><li>1 b) CancelAddingAidCenter<ol style="list-style-type: none"><li>1. The regional administrative user cancels adding a new aid center.</li></ol></li><li>2 b) AddressIsNotValid<ol style="list-style-type: none"><li>1. The regional administrative user is prompted to enter a valid address.</li><li>2. The regional administrative user is returned to the address prompt.</li></ol></li></ol>

### 7.3.2 Remove Aid Center

<b>Use Case:</b> RemoveAidCenter
<b>ID:</b> UC-9
<b>Brief description:</b>

The regional administrative user removes an existing aid center from the aid center list.
<b>Actor(s):</b> Regional administrative user
<b>Preconditions:</b> <ol style="list-style-type: none"> <li>1. The regional administrative user is logged in.</li> <li>2. The regional administrative user is viewing the aid center list.</li> </ol>
<b>Main flow:</b> <ol style="list-style-type: none"> <li><del>1. The regional administrative user indicates that they would like to remove an existing aid center from the aid center list.</del></li> <li><del>2. The regional administrative user confirms the removal.</del></li> <li>3. The regional administrative user sees a message confirming the removal.</li> </ol>
<b>Postconditions:</b> <ol style="list-style-type: none"> <li>1. The regional administrative user is viewing the aid center list.</li> <li>2. The regional administrative user can see the aid center entry in the aid center list has been removed.</li> </ol>
<b>Alternative flow(s):</b> 1 b) The regional administrative user wants to cancel the removal of the aid center <ol style="list-style-type: none"> <li>1. The regional administrative user cancels the removal process.</li> <li>2. The regional administrative user is returned to the aid center list, and the aid center entry is not removed</li> </ol>

### 7.3.3 Add a Local Administrative User

<b>Use Case:</b> AddALocalAdministrativeUser
<b>ID:</b> UC-10
<b>Brief description:</b> The regional administrative user adds an administrative user to DARA.
<b>Actor(s):</b> Regional administrative user
<b>Preconditions:</b> The regional administrative user is logged in DARA.
<b>Main flow:</b> <ol style="list-style-type: none"> <li>1. The regional administrative user moves to the “add new user” view.</li> <li>2. The regional administrative user provides the name of the administrative user to be added.</li> <li>3. The regional administrative user provides a username for the administrative user to be added.</li> <li>4. The regional administrative user gives either regional privileges or local privileges to the new administrative user.</li> <li>5. The regional administrative user confirms the entered information.</li> </ol>

6. The regional administrative user records the password produced by DARA.
<b>Postconditions:</b> <del>The new administrative user can now login using the username and password provided by the regional administrative user who created the account.</del>
<b>Alternative flow(s):</b> 1 b) <del>CancelingAddingLocal</del> 1. <del>The regional administrative user cancels the process of adding a new local administrative user.</del> 4 b) UserAlreadyRegistered 1. <del>The regional administrative user sees a prompt stating that the username has been taken.</del> 2. <del>The regional administrative user provides a different username for the administrative user to be added.</del>

### 7.3.4 Assign an Administrative User to an Aid Center

<b>Use Case:</b> AssignLocalAdmin
<b>ID:</b> UC-11
<b>Brief description:</b> The regional administrative user assigns a local administrative user to an aid center.
<b>Actor(s):</b> Regional administrative user
<b>Preconditions:</b> <del>The regional administrative user is logged in.</del>
<b>Main Flow:</b> 1. The regional administrative user navigates to the “assign administrative user” view. 2. The regional administrative user selects a local administrative user to assign from the list of local administrative users. 3. If the local administrative user selected by the regional administrator is already assigned to an aid center then a. The regional administrative user sees a prompt stating that the local administrative user will lose their current assignment. 4. The regional administrative user selects an aid center to assign the local administrative user to.
<b>Postconditions:</b> The selected local administrative user is now assigned to the aid center selected by the regional administrative user.
<b>Alternative Flow(s):</b> <del>CancelAssignment</del> 1. The regional administrative user cancels the assignment process. 3 b) CancelViaPrompt 1. The regional administrative user rejects the prompt.

2. The regional administrative user ~~moves~~ back to the “assign administrative user” view.
3. ~~The regional administrative user sees that the local administrative user remains assigned to the aid center the local administrative user was previously assigned to.~~

### 7.3.5 Add Disaster Region

<b>Use Case:</b> AddDisasterRegion
<b>ID:</b> UC-12
<b>Brief description:</b> The regional administrative user adds a new disaster region.
<b>Actor(s):</b> Regional administrative user
<b>Preconditions:</b> <ol style="list-style-type: none"> <li>1. The regional administrative user is logged into DARA.</li> <li>2. <del>The disaster region does not exist in DARA.</del></li> </ol>
<b>Main Flow:</b> <ol style="list-style-type: none"> <li>1. The regional administrative user <del>chooses</del> to create a new disaster region.</li> <li>2. The regional administrative user provides the name of the new region.</li> <li>3. The regional administrative user confirms the creation of the new disaster region.</li> </ol>
<b>Postconditions:</b> <ol style="list-style-type: none"> <li>1. The regional administrative user can see the new disaster region in their list of regions.</li> <li>2. The regional administrative user sees that aid center entries can be added to the disaster region.</li> </ol>
<b>Alternative Flow(s):</b> <ol style="list-style-type: none"> <li>1 b) Cancel adding disaster region. <ol style="list-style-type: none"> <li>1. The regional administrative user chooses to cancel adding a new disaster region.</li> </ol> </li> <li>3 b) Disaster region name already exists. <ol style="list-style-type: none"> <li>1. The regional administrative user tries to confirm adding the new disaster region.</li> <li>2. The regional administrative user sees an error message stating that the disaster region name already exists.</li> </ol> </li> </ol>

### 7.3.6 Remove Disaster Region

<b>Use Case:</b> RemoveDisasterRegion
<b>ID:</b> UC-13
<b>Brief description:</b> The regional administrative user removes a disaster region from DARA.
<b>Actor(s):</b> Regional administrative user



**Preconditions:**

1. The regional administrative user is logged in to DARA.
- ~~2. The disaster region is visible in the regional administrative user's list of disaster regions.~~

**Main Flow:**

1. The regional administrative user selects a disaster region from the list of disaster regions they have created.
2. The regional administrative user chooses to remove the disaster region.
3. The regional administrative user confirms the removal request.

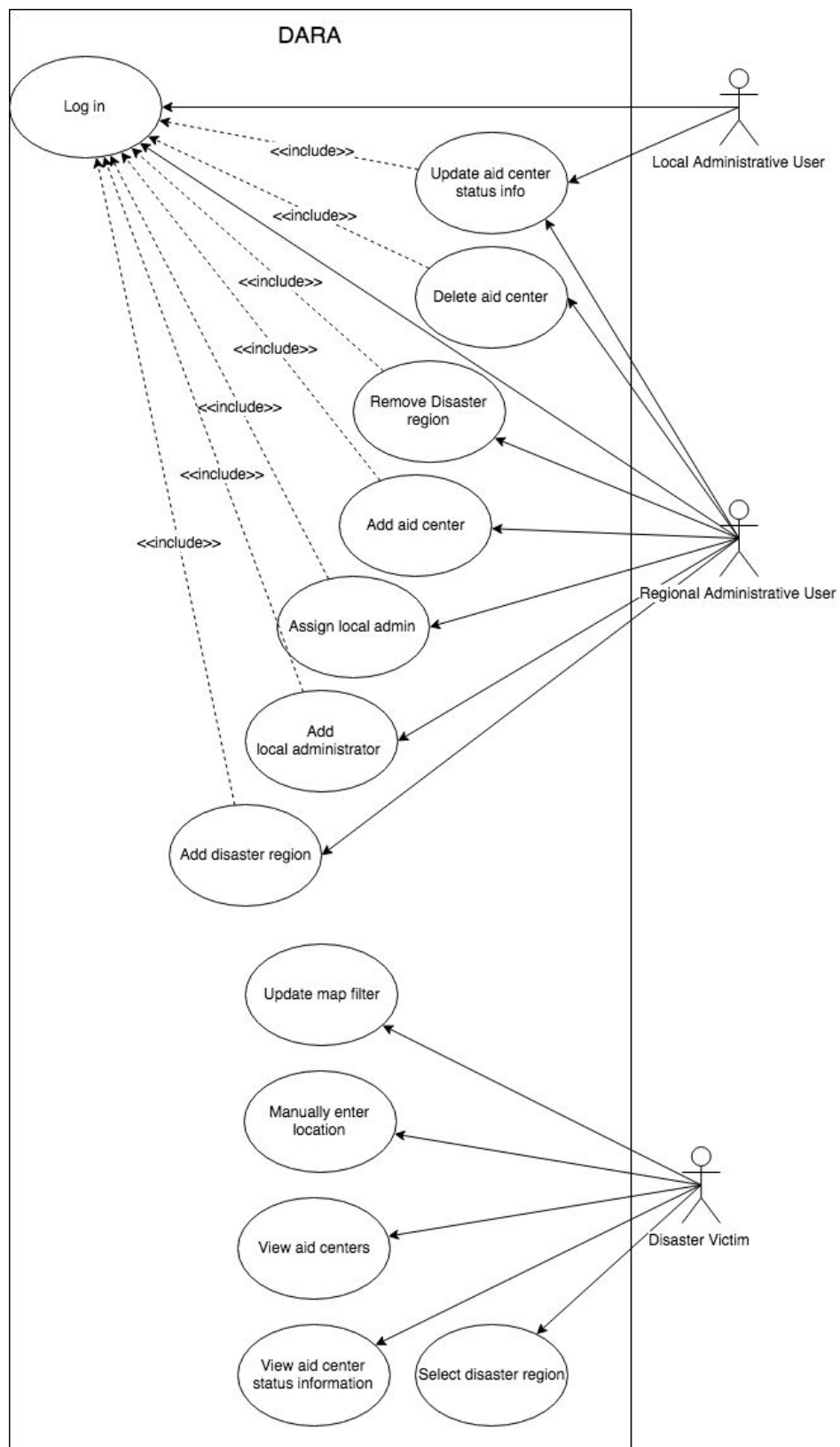
**Postconditions:**

1. The disaster region no longer exists within DARA.
2. The regional administrative user can no longer see the disaster region in the list of regions they have created.
3. The regional administrative user sees that aid center entries can no longer be added to the disaster region.

**Alternative Flow(s):**~~Cancel Removing Disaster Region~~

1. The regional administrative user chooses to cancel removing a disaster region.

## 7.4 Use Case Diagram



## **Appendix: Issues List**

### **A1: Elicitation Clarification**

**A-1:** DARA will not “find relevant information” [1] about a disaster. It was confirmed during the elicitation meeting that information about a disaster will be provided by an external government organization [2]. Additionally the provided information will not be distributed, see A-2.

**A-2:** DARA will not distribute information about an incoming or outgoing disaster. It was confirmed during the elicitation that information about a disaster will be distributed by a government organization, and not by DARA [2].

**A-3:** DARA will not have a unique interface for “disaster response communication centres” [1]. It was confirmed during the elicitation meeting that an administrative user, not an external center, will be responsible for manually updating the aid center status information [2].

**A-4:** AidConnect does not have a budget for this project [2].

**A-5:** DARA will not use or create a “secondary network” to deliver users information when primary networks are not available. It was confirmed during elicitation that a distributed network (aside from the primary network) was out of scope for this project [2].