6 – Emergency: Release 2 Summary

1 TEAM MEMBERS

Jad Khoriaty	1959220	(Project Lead)
Quynh-Anh Ly	6356370	
Walter Chacon	9238662	
Andrew Jia	9774491	
Gregory Fischer-Rush	2605929	
Sahil Nanda	1951815	

2 PROJECT SUMMARY

Our software, Emergency Team Dispatcher, will be used as a tool for a dispatcher to handle first aid teams in the context of a cultural or sport event. Teams can be assigned a sector to cover, or can be assigned onto an intervention to provide first aid services for a patient that requires medical attention. A team can also be used as backup for another team that needs advanced equipment to handle the emergency.

Replacing the old paper-based system, the software will basically be used to move around teams and assign them to interventions. However the software decreases the dispatcher's workload and cognitive load, rendering him more efficient and allowing him to handle a greater flow of information. During emergencies, where time is very limited, the software will enable the whole service to decrease their response time, thus increasing the chances of survival of the critical patient.

It will also document every team's movements and will be able to produce statistics on the overall first aid service provided in order to evaluate its quality. Documentation can either be used for any legal suit that is brought against our client, in order for them to prove that the correct procedure was followed and that there was no delay in the team's response. It can also be used as a marketing tool to prove the efficiency and quality of the service itself.

3 IMPORTANT PROJECT UPDATES

A decision was made within our team to turn our software into a suite. We decided to pull statistics viewing to a different application that is going to be linked with the main ETD application. Additionally, due to the fact that we are progressing faster than what was initially expected, we talked with the client about the possibility of developing an additional volunteer management software.

4 STORY POINTS

4.1 CONTRIBUTIONS (DESIRED INDIVIDUAL VELOCITY: 6.5 STORY POINTS/ITERATION)

Name	ID	Number of story points contributed
Jad Khoriaty	1959220	75.5
Quynh-Ahn Ly	6356370	28.5
Gregory Fischer-Rush	9238662	20
Sahil Nanda	1951815	18
Andrew Jia	9774491	18
Walter Alexander Chacon	9238662	18
AVERAGE:		30.2

4.2 VELOCITY (DESIRED VELOCITY: 39 STORY POINTS/ITERATION)

Iteration #	Actual Velocity (Only includes completed tasks)
4	28
5	84
6/7	66
TOTAL:	178
AVERAGE:	59.3

4.3 NOTES

- It is worth noting that Jad Khoriaty finished his exams for the fall 2014 session on the 8th of December and had the ability to dedicate a lot of time for the Capstone project while everyone else was studying for exams.
- There are 20 story points are from tasks that have not been completed yet.
- Not many story points were completed during Iteration #4 due to the fact that the iteration was used to "convert" the software from a throwaway prototype to a releasable software. A lot of work was done on architecture and that is why the story point count does not reflect the effort made by the team.
- Iteration #6 and #7 have been merged due to the fact that most of the team was busy during the holidays and could not work on the software.

4.4 DISCUSSION

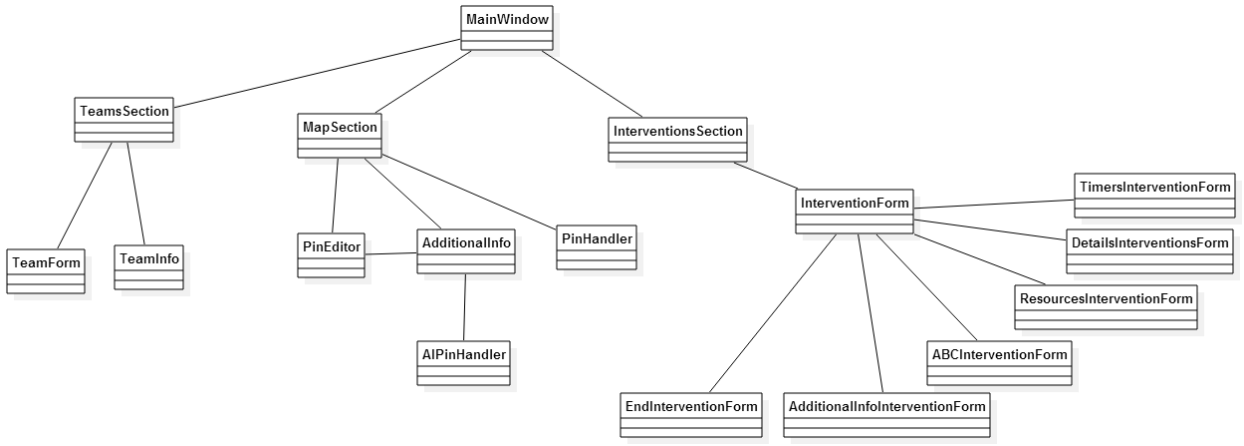
The progress made during this release cycle is very good and higher than what we expected. We completed an average of 59.3 story points per iteration, 20.3 points more than our desired velocity per iteration. That's 61 points more than our desired velocity over the course of the release cycle.

During iteration #4, the team was split into two sub-teams. One sub-team that created a new software with great architecture and migrated all of the features that were completed before the first release onto the new software while bringing multiple enhancements to them, and the other sub-team dedicated to working on new features. That explains why some people appear to have worked more

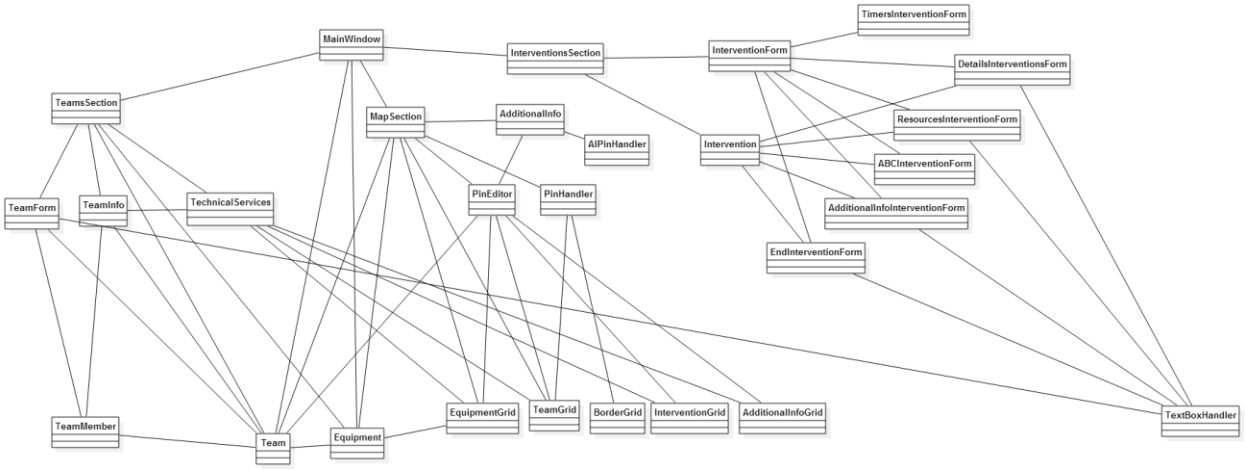
than others by the story point count. Keeping this in mind, all members have exceeded the desired individual velocity (6.5 story points per person per iteration) over the course of this release cycle.

5 ARCHITECTURE

5.1 DIAGRAMS



The above diagram does not include Models, just Views and Presenters as one file.



5.2 DISCUSSION

During this release cycle we moved from a throwaway prototype to a releasable software. We are using an MVP architecture because of the fact that the Views (the .xaml files) are strongly coupled to the Presenters (the .xaml.cs files) that have the power to control and edit them.

On a higher level, just like the first diagram shows it, we have “branched” architecture that allows us to keep the coupling down to a minimum. We achieve that by having all “cross-branch” calls pass through the “common root” (the MainWindow.xaml.cs file) in order to access the other branch. Also, we are using the Frame object in the WPF project a lot because it allows us to separate a page into several small

components. The latter architectural feature allows us to keep cohesion very high because those small pages only handle a limited amount of calls that directly concerns them.

On another note, in our throwaway prototype, all files were in one folder because the prototype was used only for proof of concept of the features we were going to develop. Currently, the files are organized in folders and sub-folders where a View in a folder is composed of all the Views in the subfolders of that initial folder and so on, resembling a layered file structure.

6 CODE

File Path	Purpose
PinHandler.cs: https://github.com/zukoj/SOEN490-ETD/blob/master/ETD/ETD/ViewsPresenters/MapSection/PinManagement/PinHandler.cs	This file is responsible for all the collision detection and the addition of equipment onto teams as well as the addition of teams onto interventions
TeamFormPage.xaml.cs: https://github.com/zukoj/SOEN490-ETD/blob/master/ETD/ETD/ViewsPresenters/TeamsSection/TeamForm/TeamFormPage.xaml.cs	This file handles the creation of teams that can include up to 3 members
Intervention.cs: https://github.com/zukoj/SOEN490-ETD/blob/master/ETD/ETD/Models/Objects/Intervention.cs	This file represents an intervention and all the information that it contains using structs and enums.
MainWindow.xaml.cs: https://github.com/zukoj/SOEN490-ETD/blob/master/ETD/ETD/ViewsPresenters/MainWindow.xaml.cs	It is the root of architecture “tree” all requests that have to reach other branches pass through it to reduce coupling.
TechnicalServices.cs: https://github.com/zukoj/SOEN490-ETD/blob/master/ETD/ETD/Models/Services/TechnicalServices.cs	This file is used to access resources on the hard disk like icons, all request to pull from the hard disk will pass by this file.

Those files should be ignored as they are stubs that will be used for future development of features:

- Word.cs
- IObservable.cs
- IObserved.cs
- LanguageSelector.cs
- Vocabulary.cs
- Resources folder and all contained files

7 TESTING

We did unit tests for most of the classes in the model. Due to the fact that our software is UI intensive, some classes and methods are missing unit tests because they’re calling UI objects and for these, we did black box testing where we test the functionality of the code targeting the specific task. Due to the fact

that our methods constantly evolve to handle new features, we constantly have to re-write the tests since the ones we wrote originally don't pass anymore so we constantly have to check on the tests and run them to see if they pass or not.

8 STORY SUMMARIES

STORY #3: As a user I want to be able to create a team and get information on any currently created teams.

https://trello.com/c/eWJTRRxq/32-13-3-create-teams-and-get-information-on-the-team-27-5

Feature:

Points: 13 Priority: High, Risk: Medium

This story involved creating an integrated interface that would allow for easy access to any and all information related to the teams. This was implemented by the addition to a pane on the left side of the screen that held each team and their members. This was approved by the client.

STORY #4: As a user, I want to be notified a specific time before a volunteer has to leave.

https://trello.com/c/sedX15lt/4-2-4-notification-of-when-a-volunteer-has-to-leave-12

Feature:

Points: 2 Priority: Medium, Risk: Low

This story consisted of making the software inform the user of any volunteers currently in the field that have to leave soon. This was implemented through the use of flashing timers to notify operators of a volunteer that soon has to leave. No sound was permitted by demand of the client. This story was approved.

STORY #7: As a user I want to have the teams and the equipment represented on the map.

https://trello.com/c/opOLkydM/31-5-7-have-teams-and-equipment-represented-on-the-map-10

Feature:

Points: 5 Priority: High, Risk: Medium

This story involved having distinctive icons for each of the equipment and teams on the map so as to make immediate location of a given team possible. This was implemented by assigning a shape to the teams and an icon to each of the equipment that could be moved around the map freely. This was approved by the client.

STORY #8: As a user I want to be able to distinguish deployed resources.

https://trello.com/c/tnQYouOu/9-5-8-ability-to-distinguish-deployed-resources

Points: 5, Priority: Medium, Risk: Medium

This story involved creating a series of icons for the various equipment items that can be deployed to any of the teams and the adding the ability for the user to add an equipment to a team by dragging the equipment onto the team. This was implemented through the fact that only the resources that are currently in use are displayed on the map at all. This was also approved by the client in concept.

STORY #9: As a user I want to be able to recognize the status and the information of each team.

https://trello.com/c/lql6Dut5/30-8-9-recognize-status-and-information-on-teams-3

Feature:

Points: 8 Priority: Medium, Risk: Medium

This story involved creating an interface in which it would be very quick and easy to find out all the information on a current team including what intervention they're deployed to, what level of training the people on the team have and what equipment is being carried by that team. This was done by having the information for each team be represented in the team panel on the right and the status of each team if differentiated through the color coding of the team icon. The client approved this story.

STORY #13.1: As a user I want to be able to drag a team onto an intervention to assign a team to that intervention.

https://trello.com/c/jmayed5t/35-13-adding-team-onto-intervention-drag-and-drop-overlap-27

Feature: Drag and Drop

Points: 13 Priority: High, Risk: High

This story consisted of allowing the users to drag and drop teams onto interventions and have this assign that team to the given intervention. This was implemented through the use of our drag and drop mechanic. The client liked this implementation.

STORY #16: As a user, I want to be able to add an interventions position directly to the map

https://trello.com/c/gm9dpQTI/10-3-22-log-end-of-intervention

Feature:

Points: 13 Priority: High, Risk: Medium

This story consisted of allowing the user to annotate the map with symbols to represent the interventions that could be moved around in the same way the teams can be moved around on the map. This was implemented by creating a generic icon for an intervention the applying a letter to it that corresponds with the index of the intervention on the pane in the bottom third of the UI. This was approved by the client.

STORY #17: As a user, I want to be able to input the initial details of an intervention upon its creation such as who called the intervention, where it is, and what was it declared as.

https://trello.com/c/Szxua0Zq/27-8-17-add-initial-details-of-an-intervention-64

Feature:

Points: 8 Priority: Medium, Risk: Low

This story involved creating an interface that would make it very easy for the user to enter all this information for each intervention as they were called it. This had to be optimized for speed so as not to reduce the efficiency of the users. All of the intervention details were made as tabs to a single interface for interventions. This is acceptable, according to the client.

STORY #18: As a user, I want to be able to track all the ongoing interventions, so that I can identify the needs and/or the resources that are busy with the intervention.

https://trello.com/c/8TJfzNlR/1-13-18-be-able-to-track-ongoing-interventions

Feature:

Points: 13 Priority: Medium, Risk: Medium

This story consisted of allowing the user to be able to see all the ongoing interventions at one time in the user interface. All of the interventions are present in the bottom third of the UI, they are in a straight line for easy distinction one from the other. The client deemed this an acceptable implementation.

STORY #19: As a user, I want to be able to add additional details to the intervention such as the priority code of the intervention, the gender and age of the patient, etc. for future reference.

https://trello.com/c/rTBcRxwz/28-13-19-add-additional-details-to-the-intervention

Feature: Document an intervention

Points: 13 Priority: Medium, Risk: Medium

This story consisted of adding user interface elements that would allow the user to document the specifics about the patient in each of the interventions that are called in. This was implemented as just another tab in the intervention interface. This was approved.

STORY #21: As a user, I want to be able to document information related to a 911 call for a particular intervention, such as the time at which the call has been made, the meeting point with the team, etc.

https://trello.com/c/jWNZydcq/4-8-21-document-911-call

Feature: Document an intervention

Points: 8 Priority: Medium, Risk: Medium

This story consisted of adding user interface elements that would allow the user to document the specifics of any call to 911 that was made by one of the first aid teams. This is required for legal reasons. This was implemented as just another tab in the intervention interface. This was approved.

STORY #22: As a user, I want to be able to log the end of the intervention.

https://trello.com/c/gm9dpQTI/10-3-22-log-end-of-intervention

Feature: Document an intervention

Points: 3 Priority: Medium, Risk: Medium

This story consisted of allowing the user access to the tools needed to log the last few pieces of relevant information and close an intervention, thus removing it from the active intervention list.

STORY #23: As a user, I want to have relevant stopwatches displayed to me with relation to an intervention.

https://trello.com/c/eO6lOBIH/46-8-23-display-relevant-stopwatches-4

Feature: Display relevant stopwatches.

Points: 8 Priority: High, Risk: Medium

This story consisted of creating the UI elements that would allow the user to view all stopwatches that are relevant to all of his current interventions.

STORY #24: As a user, I want to have a visual alarm or notification displayed to me when a certain activity lasts more than its preset threshold

https://trello.com/c/o1ZOZ0yq/2-2-24-display-alarm-notify-user-when-a-certain-activity-lasts-more-than-treshhold

Feature:

Points: 2 Priority: Low, Risk: Low

This story consisted of having a set of threshold values, set by the user, that would force certain aspects of the program to happen within a given time-frame lest they trigger an alarm. Like the end-of-shift notification, this was implemented by adding flashing to the screen since the use of sound was not permitted. This was approved by the client.

STORY #33: As a user, I want to be able to pair-up equipment and teams, so that I'll know which team in possession of which piece of equipment throughout the operation.

https://trello.com/c/p2njXRNF/20-13-33-pair-up-equipment-and-teams-4-5

Feature: Drag and Drop

Points: 13 Priority: High, Risk: High

This story consisted of giving the user the ability to drag the icon for a piece of equipment onto the icon for one of the teams and this would pair the two together until the operator decided to unpair them. This was implemented through the use of our drag and drop mechanic. Drag the icon for the item onto the icon for the team and the two will be linked. The item will then be shown in the area reserved for that team. The client liked this implementation.

9 STORY MAP FOR NEXT RELEASE

9.1 ITERATION #8 (90 STORY POINTS, SOME STORIES WILL TAKE MORE THAN THIS ITERATION):

Drag-and-Drop overlap of equipments or teams or interventions with base

13 JK

When team is free and its status is changed to intervening, create intervention and assign the team to it automatically

5 JK

15 - Save map with modifications

20 1 0/3 GF Q

25 - Constantly back up data to database

13 0/2 WC

Request table with follow-up and completed time

5 A

20 - Have tips shown to user in relation with the category selected

5 1 0/4 S

When an intervention is set to concluded, the teams that were intervening on it should be displayed as unavailable

3 S

Add logo to software to be put on all documentation

3 S

1 - Initial input of event information upon setup

2 1 0/7 S

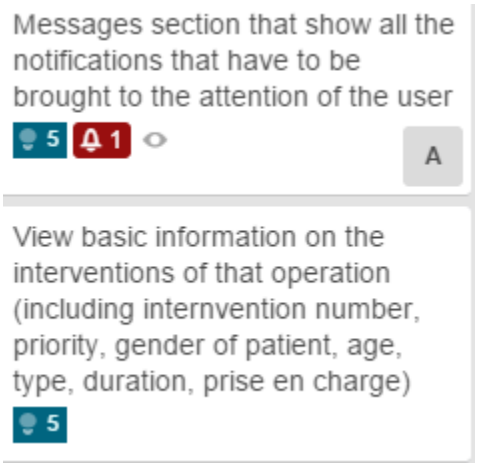
29 - User switching

2 0/3 S

Intervention logo

2 0/2 Q

9.2 INTERATION #9 (62 STORY POINTS):



9.3 ITERATION #10 (30 STORY POINTS, THAT SHOULD BE THE END OF OUR REQUIRED STORIES):