The Current Crash Process Report

Our project focuses on the data collection aspect of the crash reporting ecosystem. The current process is as follows:

1. An officer receives a call that there has been a motor vehicle crash. They arrive on the scene and their first priority is to ensure the area and make sure all involved parties are accounted for and taken care of.
2. Once the scene is secure, and the situation is under control, the officer can begin to collect data related to the crash. They get information regarding the individuals involved, the vehicles involved, the location details, and the conditions and factors in the crash. Many officers are still using paper forms for the on-scene data collection.
3. Eventually, the officer finds themselves back at their station. For many, they have to type that paper form and translate it into a digital version. Once filed, the officer is done with their part of the process. The report leaves their hands and will go onto be stored at the station in a physical or digital copy and might also go on to a state or national level database.

The Solution

Number of vehicles involved

<table>
<thead>
<tr>
<th>Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3</td>
<td></td>
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</tbody>
</table>

Number of non-motorists involved

<table>
<thead>
<tr>
<th>Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2</td>
<td></td>
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</tbody>
</table>

EASE OF USE

Oscar the On-Scene Officer

I want to fill out this most important PDF form at the scene of the crash in under 20 minutes, so that I can focus on securing the scene of the crash and making sure everyone is safe.

Eric the Error-Prone

I want to make my crash reports accurate, not just fill out the form so that I can work quickly and make sure my crash reports are accurate.

On-the-Fly Freddie

I want to be able to restart or change my responses, so I can adjust to new info or correct mistakes on the fly.

No Internet Imogen

I want to be able to complete a report without the internet so I can work no matter what my end user.

To improve the collection of motor vehicle crash data, we created Runa, a mobile application that replaces the paper forms most officers currently use to collect data on the scene. Runa takes advantage of smart device capabilities to automate the process and improve the quantity and quality of data.

At the start of this year, Runa was a proof-of-concept, and we worked to turn it into a fully functioning application. After implementing basic functionality, we focused on the needs of specific users. We found there were areas of importance: speed, ease of use, and integration. These areas and user profiles helped us develop Runa in such a way that future teams can get the application into the hands of users and begin a pilot program where officers test Runa’s capabilities in the field.

The new mobile officer app runs in minutes instead of hours, is easy to use, and continues to improve.

Integration

For both Penny and Melissa, their data need to be regularly stored and shared on their device. For Melissa, it allows her to close the app at any time and resume an in-progress report when she has the time to return to work. This allows her to be called away to answer another officer’s questions, process other paperwork, and pick up Runa at any time to finish her data collection. For Penny, it allows her to feel safe at all times. She doesn’t have to worry about losing her hard work, because it is constantly being saved in the background. If her device crashes or needs an emergency restart, she knows that her report is ready to be resumed with all of her important information safely stored and waiting for her return.

INTEGRATION

Multisession Melissa

I want to edit the report in multiple settings, so I can capture key information at the scene and resume the report later.

Needs Persistence Penny

I don’t want to worry about the reporting failing so that I don’t lose the data I’ve collected or have to re-enter.

Isaac the Integrator

I want to work with our current system, so that I can file reports as usual without replacing the complicated and expensive systems we have to place.

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Fiona the Fatigued Reader

I don’t want to have a lot of text to read while filling out the report form, so that I can fill it out as quickly and easily as possible without getting lost or overwhelmed.

For Fiona, the fatigue reader indicates that there is some level of reading fatigue:

- The table of detailed questions surrounding the injuries are hidden from view.
- This only shows the user's view of reading exactly what they need and not getting bogged down.

Sponsored by:

In collaboration with:

Olin College of Engineering

Vialecta Center

Santos/Volpe/Scope team

The project is sponsored by:

- Olin College of Engineering
- Santos/Volpe/Scope team

Integrating the key points from the text:

- Runa is a mobile application that replaces paper forms for motor vehicle crash data collection.
- Runa automates the process, improving speed, ease of use, and integration.
- The solution focuses on reducing the time to complete a report from minutes to hours.
- Users can continue working on the report even if they need to leave it temporarily.
- The application integrates with existing systems, allowing users to work with their current infrastructure.
- Runa includes features to avoid data loss in case of device crashes or restarts.
- The application is designed to minimize text, making it easier to fill out quickly.
- Runa supports multisession use, allowing officers to resume work where they left off.
- The application is available for no internet scenarios, ensuring reports can be completed offline.

Additional notes:

- The document highlights the benefits of Runa, such as improved efficiency and reduced data loss.
- The solution addresses the needs of users by providing a user-friendly interface and minimizing the time spent on data collection.
- Runa is designed to integrate with existing systems, making it a versatile tool for crash reporting.
- The project is a collaboration between Olin College of Engineering and Santos/Volpe/Scope team.