Deliverable C – Design Criteria and Target Specifications

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Group #17

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Abstract

A list of prioritized design criteria was determined based on a list of the client's needs. Technical benchmarking was performed in order to compare existing products using the prioritized list of Design Criteria. Target Specifications were chosen based on what the team decided were reasonable product attributes.

List of Prioritized Design Criteria

Table 1 – Design Criteria based on the client's needs. A list of client's needs was determined after an hour long briefing between the design team and the client's representatives. Functional, Non-Functional design criteria as well as constraints were determined and associated to each of the client's needs. An importance ranking was assigned to each criterion, with 1 being the least important and 5 being the most important.

Needs	Type of Requirement	Associated Criteria	Importance (1-5)
The application will detect SIM swaps in a company's User Equipment	Functional	Swap Detection Accuracy	5
		Swap Detection Speed	4
The application will alert the admin of SIM swaps	Functional	Number of concurrent swaps	3
		Alert speed	4
The application will take a Snapshot of a UE's location	Functional	Snapshot Accuracy	4
The application will reduce the Quality of Service of the UE	Functional	Effectiveness of Reduction of Service	3
The application's UI/UX should prioritize functionality	Non-Functional	Robustness	3
		Ease of Use	3
The application needs to use 2 or more Shabodi AEP API's.	Constraint	# of APIs used	2

Technical Benchmarking

AppDome SIM Swapping Features *(1)*

- This is an app for security that contains SIM swap detection as one of its features. They have three levels of protection:
    - Detection Mode: Detect a SIM swap and send a message to the user using customizable messaging (in this case, the app only detects and alerts the user)
    - Threat Detection Mode: Detect the swap, send the user a message, and takes standard precautions in the device
    - Threat Defense: Detect the threat, send user a message, gather information about the attack and take some security measures all while keeping standard protection running.
        - The SIM swap app for Shabodi requires most of the features of the Threat Defense mode, where the app takes a snapshot of the location (longitude and latitude), event ID, kernel information, Wi-Fi SSID, etc.

- Our app may not have protection for the device required, as it is just a means to notify the user and administrator of the network and provide some information as a snapshot to them.

Life 360 *(2)*

- Location tracking app (Has been analyzed to see how information is sent to the user in the snapshot)

- Features include - family driving history, crash detection, data breach alerts, etc.
- All notifications can be seen in the app, while some pop up in your phone notifications center for emergency situations. For example, driving history pops up with a map of speeds and distances covered at the end of a person's drive.
    - Like Life360, our SIM swap application can also have various security options that can be ranked in terms of most serious and requires immediate action (different notification settings whether messages go to the user first or straight to the administrator)

Effects of the Client Meeting on the design Process

During the client meeting, our client emphasized the specific needs that should be the focus of the design process. Our team has agreed on the six most important needs expressed during that meeting, and these were addressed in Deliverable B. Our main goal is to create an application that detects SIM Swaps, and once that is done, we will be focusing on other features of the app that could be beneficial for the various types of users. As the client talked about prioritizing the user experience, our team will also focus on creating a SIM Swap detector app that ensures Non-Functional requirements like robustness and ease of use.

Target Specification

Table 2 – Design Specifications. Design Criteria were determined based on a list of client needs and assigned importance (1-5). Reasonable Target Specifications were assigned to each criterion, where applicable.

	Design Specification	Relation (=, < or >)	Value	Units	Verification Method
	Functional Requirements				
1	Swap Detection Accuracy	>	70%	N/A	Testing
2	Swap Detection Speed	<	10	seconds	Testing
3	Alert speed	<	15	seconds	Testing
4	Snapshot Accuracy	>	70%	N/A	Testing
5	Effectiveness of reduction of Service	=	yes	N/A	Testing
6	Number of concurrent swaps	>	2	N/A	Testing
	Non-Functional Requirements				
1	Robustness	=	yes	N/A	Analysis / Feedback
2	Ease of Use		yes	N/A	Analysis / Feedback
	Constraints				
1	# of APIs used	>	2	N/A	Count

References

1 – Appdome, “How to Detect SIM Card Swapping in Android & IOS Apps”, July 29 2024, https://www.appdome.com/how-to/mobile-fraud-detection/social-engineering-prevention/detect-sim-card-swapping-in-android-ios/ , last visited September 6th, 2024

2 – Life360, “Digital Safety: You’re online. We’re on it.”, https://www.life360.com/ca/digital-safety/ , last visited September 6th, 2024