Appendix A: Scope of Work and components descriptions.

The scope of work for this agreement covers designing and developing a Smart Pills Bottle Proof of Concept (POC) for the Client. The POC will involve developing the smart pills bottle cap that is linked to a mobile app and web application for tracking purposes.

Below are all the features that are in scope for the POC:

Feature	Description	User
Smart Cap		
Tracking Cap Opening/Closing	Automatically tracks doses by detecting when bottle is opened or closed. *By using the fingerprint sensor, I chose to order 3 fingerprints so as to be secure during prototyping.*	Patient / Caregiver
Biometric Locking Mechanism	Programmable biometrics lock on the cap to prevent anyone other than the User to open the bottle. The price of a Programmable biometric ranges from 20-30 dollars, as stated previously, 3 were ordered	Patient / Caregiver
Track Dosage	Sends reminders when you forget a dose and warns of double-dose.	Patient / Caregiver
Content Counter	The counter will enable the User to know how much content has remained in the bottle and how many have been taken out. *Content counter could use either the weight (2 of them), capacitive technology (2 of them), both sensors are required, at least. The price ranges from 10 to 15$*	Patient / Caregiver
Sync to the Mobile App via WIFI	Syncs to the mobile app; view your dose history and notifications.	Patient / Caregiver

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| Bottle Locating Signal | Bottle locating signal to enable the User to locate their pills bottle should they forget or misplaced it.

With the bottle allocating Single, a buzzer or a micro-speaker could be used. | Patient / Caregiver |
|---|---|---|

Note: The major components need for the development of the POC are: A **finger print** (4 different technology will be explored to see which one fits best e.g., fingerprint), a **locking mechanism module** (different methods could be used to approach this one hence the variety in components (3 different types of motors and actuators)), **controllers** to program the circuitry system, **Wireless modules** (4 types to be used during testing), **content counter sensor module** (also 3 different technologies to see which on fits best).

The remaining components which aren't specified here are electronics components which contribute in design and interfacing the circuit.

Mobile App

Display Dose History	Display dose history based on data posted by the Smart Cap.	Patient / Caregiver
Notifications	Caregiver can receive notifications when a loved one misses a dose.	Caregiver
Find my pills bottle button	Bottle locating signal to enable the User to locate their pills bottle should they forget or misplaced it.	Patient / Caregiver

Web Application

Inventory Management	Track the number of Smart Cap produced and ready to be distributed.	Pharmacist
Allocate Smart Cap to the Pills Bottle and Patient	Assign a Smart Cap per pills bottle and per patient.	Pharmacist
Reassign the Smart Cap to a Different Pills Bottle	Reassign Smart Cap to a new pills bottle.	Pharmacist

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Patient Profiles	Maintaining Patient profiles in the database including their Caretaker information.	Pharmacist
Reporting	View different reports such as: • Smart Cap Sales Report • Patients Due for Refill • Overdose Report • Inventory report	Pharmacist Insurance
Sync with the Mobile App	Receiving patient dose intake data from the Mobile App.	Pharmacist Insurance
Notifications	Receiving notifications when patient needing refill and/or overdose alerts.	Pharmacist Insurance

Appendix B: Delivery Schedule

Dates	Duration	Phase	Tasks and Deliverables
17/01/2022 – 21/01/2022	1 Week	0	Preparation and contracting. **Outcome:** Contract signed and 1st invoice raised.

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24/01/2022 – 04/02/2022	2 Weeks	1	Research and Analysis. **Outcome:** Solution addressing all Client concerns, review with Client for feedback and approval.
07/02/2022 – 18/02/2022	2 Weeks	2	Design the prototype **Outcome:** 3D representation of the product to be developed and 2nd invoice raised.
21/02/2022 – 04/03/2022	3 Weeks	3	POC Development **Outcome:** 3D Printed Smart Cap Mobile App Web Application
07/03/2022 – 18/03/2022	2 Weeks	4	Testing and fixing based on Client feedback. **Outcome:** Final product ready to be shipped to the Client and Final Invoice raised.

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