

Glucose Meter Readers

Executive Summary

Chronic Care Management requires in-depth and timely knowledge of a patient's health information. Typically, patient healthcare information is stored in different silos and it is very hard for the healthcare provider to gain timely and accurate access to such data. One of Technosoft's clients is a driving force in the Diabetes Education and Management landscape. For Diabetes management, knowing patient's glucose readings are key. However, typically, patient's collect glucose meter readings in a self maintained log or in the meter itself. And this silo of data never accurately and timely gets to the endocrinologists. Our client also wanted to minimize the effort of patients for preparing blood glucose logs and write down precisely the information i.e. date/time, before/after meal, glucose level and numbers. For this purpose, an easy communication channel was required to transfer data from glucometers to the smartphones.

Technosoft Solutions being an expert in healthcare integration arena was tasked to make the communication possible and uploading this data to a secure HIPAA compliant cloud for provider viewing.

Business Challenges

While making the communication possible, the challenges faced were:

- Hardware was not supported to communicate with the meters.
- While some meter vendors provide the communication protocols to communicate with the meter, many don't. And thus for some meters, the meter protocols were to be defined by hit and trial method.
- Figure out the chips used in serial cables and their supported drivers and libraries for mobile devices.
- Not all meter vendors use a standard like HL7 for transfer of data and thus each vendor requires different type of coding.
- The documentation and samples available by the Glucose meter vendors is basically targeted for the PC with serial ports. And basic translation some times was not that easy for mobile devices on a USB or Blue tooth BLE.

In U.S, every diabetic patient has his own meter to test blood glucose levels for maintaining the records. Instead of noting it down manually in a notebook and then take it to the provider, the

potential communication was made to read out all the saved results in the meters on patient's smartphone and PC screens.

The providers usually need to examine and monitor the glucose levels of his members before and after meals. This communication helped them to track the test results with the recorded values and easily observe the trends to examine medication cope with different meals. All a provider needs to do is; connect the meter with the hardware through a USB or serial cable and then view the meter results on the screen. This allows creating a secure workflow between the provider and the member.

Technosoft team accepted the challenge and complexity of work by going through client's requirements and documents provided by vendors. The team also came up with a lot of queries and suggestions that were discussed with client and then finally were able to propose thought provoking solutions. Keeping in mind the facts, all this data was fetched in a secure HIPAA compliant way while trying to follow FDA recommendations for risk management and CGMP, etc.

The end product consists of:

- Transmitting data
- Secure communication mode
- Receiving data

It can be better understand with the following block diagrams.

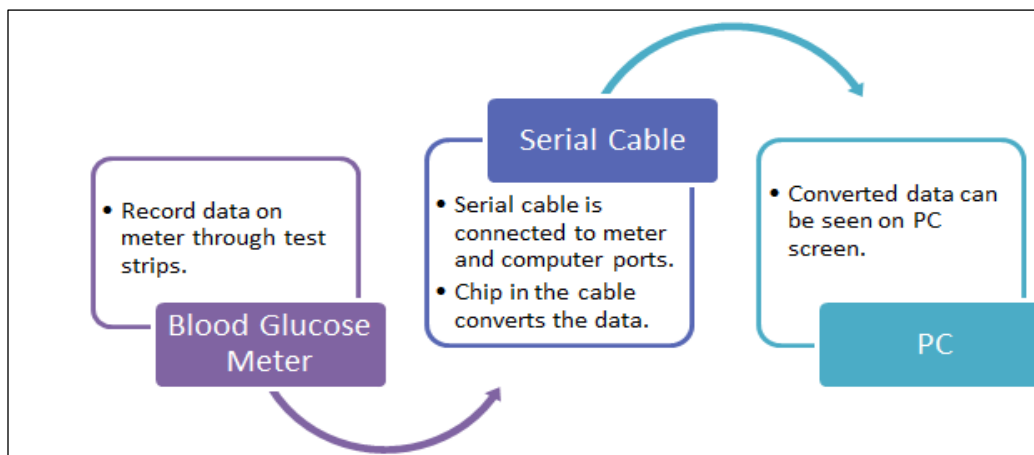


Fig.1: Receiving Data through Serial Communication

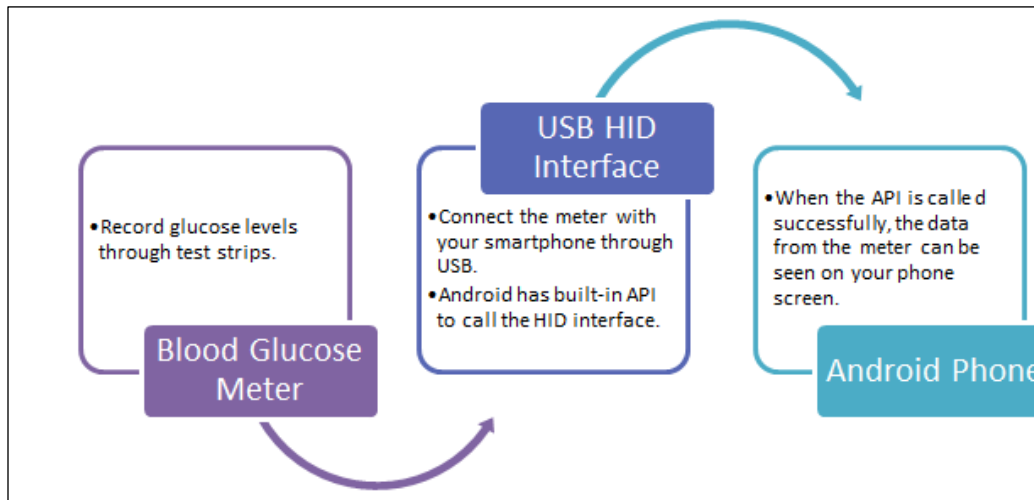


Fig.2: Receiving Data through USB Communication

The audience that is benefited with the product is:

- Health care providers
- Members – diabetic patients

About our Client:

Client: Confidential | **Industry:** Healthcare | **Location:** USA

System Constraints:

The communications will not success if the device is not properly connected or the device drivers are not installed accurately.

Application Platforms:

HID supported Android devices

Technologies:

HID interface, SiLK Libraries, Prolific and FTDI chips.

About Technosoft Solutions Inc.

Technosoft Solutions Inc. is leading outsourcing software and application development Company dedicated in Healthcare Software Development and Integration Services. We are offering a full range of IT solution and support services to companies developing healthcare solution for the U.S market. For more than 10 years, our commitment to providing reliable healthcare system software solutions has remained constant and stable.

Many of our clients are well versed in software development and have healthcare solutions deployed at main hospitals. We augment their resources with our HL7 integration, HIPAA privacy & security services.

We are endowed with quality certifications and standards, including CMMI ML2, ISO 9001:2008, Sun, MySQL and as IBM Certified Partner.



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