

SOLVEiT GH. LTD.  
No. 24 Onyankle Street  
Abelenkpe – Accra  
233-302-780355  
233-27-2143712  
233-27-6361326  
E-mail: [info@solveitghana.com](mailto:info@solveitghana.com)  
[www.solveitghana.com](http://www.solveitghana.com)



# **P**roposal

---

## **Smartcard Biometric-based Canteen System.**

### **D**escription

---

This project entails the development and deployment of an automated system for canteens. It makes use of biometric (fingerprint) and smartcard technology as a means of uniquely identifying people.



# Table Of Contents

Executive Summary	.....	1
Project Description	.....	2
Cost Summary	.....	4
Payment Terms	.....	5
Project Schedule	.....	6
Equipment Needed	.....	7
Assumptions	.....	8
Conclusion	.....	9
The SOLVEiT Company	.....	10



# Executive Summary

Ghana is gradually becoming a part of the information age that has swept over this generation. Today, many Ghanaians have come to understand the advantages of automating or computerising many, especially repetitive, daily activities of business.

Smartcard technology is becoming the standard for modern card systems. It provides a much greater degree of functionality than the older “dumb” cards currently used for the purpose of identification. A smart card contains an embedded chip which can be used to provide services such as door entry, advanced security and cashless payment systems.

Our solution, the **Smartcard Biometric-based Canteen System**, merges two technologies, contactless (RFID) smart card and fingerprint. It verifies something “you have” (smartcard) and something “you are” (fingerprint). This replaces the use of coupons or chits in many canteens to create a user-friendly and foolproof management system. Accurate reports are generated which makes the canteen run more efficiently. The smartcard also doubles up as an employee ID card.

The advantages of the system will be realized by both administration and employees.



# Project Description

This project will involve the analysis, design, building and deployment of a fingerprint-based biometric solution for your canteen. SOLVEiT will specifically:

- ❖ Develop a software vision/concept with your institution.
- ❖ Perform Systems Analysis based on the vision to generate a model for the proposed system.
- ❖ Develop a database back-end to contain the data.
- ❖ Develop a front-end application to manage the stored data and generate reports.
- ❖ Provide training for requisite staff.
- ❖ Deploy the system.
- ❖ Provide maintenance and backup services (Post-project completion)

The system makes use of the iGuard LM520 series Attendance device with the following features:

- ✓ Optical Fingerprint Scan
- ✓ Contactless Smart Card.
- ✓ PIN pad.

This will be wall mounted together with the thermal printer at a suitable location in the canteen and connected to the database server.

The dynamics of the card system will be determined by the institution. The options available are:

**Prepaid:** Money is loaded into an employee's account at the beginning of the month or any period of time specified by the institution. This account will be debited anytime the employee visits the canteen and uses his card. A receipt is printed if this process is successful.

**Postpaid:** A Stored value in an employee's account is incremented every time the employee uses his card. This could either be the actual value of the food or just a number to record how many times the canteen has been used over a specified period of time. A receipt is printed if the transaction succeeds.

The system can however be adapted to suit your institution's specific needs.

The receipt printer is necessary to serve as evidence that the employee is entitled to a meal on a particular day. This will be presented before food is collected.

Reports will be generated to show employee frequency, etc to aid in decision making.

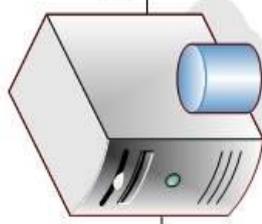


- ❖ Employee goes to Point 1, presents his card to the reader and places his finger on sensor. If successful, a receipt is printed.
- ❖ The receipt is presented at the counter for food.
- ❖ For Prepaid system, employee returns to Point 3 to reload.
- ❖ For Postpaid system, employee returns to Point 3 to reset stored value

Wall-mounted smartcard/fingerprint device and receipt printer at Canteen



1



Database Server



Client PCs with application to view reports

2



3



Client PC with application to increase or reset stored value.



# Cost Summary

Cost summary is dependent on type of software package and degree of customization of system.



# Payment Terms

The payment schedule for the project is as follows:

- ❖ Equipment cost + 50 % of software development at contract signing.
- ❖ Balance according to contract document.



# Project Schedule

Following final discussions with your institution and the appending of signatures to the contract document, it is expected that the project will take 4 weeks to deploy. The Gantt chart below depicts the expected development and deployment path, barring any circumstances beyond our control.

<b>Activity/Week</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Data collection and entry	■			
Software analysis and design	■	■		
Software customization and testing	■	■	■	
Personalization of smartcards			■	
Deployment and training				■

For the first three (3) months, SOLVEiT will be available to re-install and re-deploy the system in the event of any hardware failure or data loss. SOLVEiT will be available for telephone consultancy services and will make visits when the situation warrants it. After the initial three month period however, support (onsite visits) will come as a surcharge.



# Equipment Needed

A high-end computer with the following **minimum** hardware specifications:

- Intel® Core™2 Duo E6550 (1.86GHz)
- 1GB RAM
- 40GB HDD (Primary drive for system software)
- CD/DVD-ROM
- 20GB HDD (for backups)

An Uninterruptible Power Supply (UPS) system.



# Assumptions

This proposal is premised on the assumption that there is computer with the specifications indicated in the section titled (Equipment needed) and that the necessary network infrastructure is in place to support the application.

SOLVEiT can however lend its expertise to develop the necessary network infrastructure where it is not available.



# Conclusion

In closing, smartcard biometrics provides the best solution to any organization seeking to improve its canteen management. Further, a system developed to match the company's peculiar needs rather than a generic system will prove to be the best solution.

SOLVEiT's team comprises the individuals who mooted the idea for a project involving fingerprint biometrics at the Computer Engineering Department of the College of Engineering of the Kwame Nkrumah University of Science and Technology in 2006. This same group successfully developed and tested on a pilot basis a similar fingerprint-based project for exam attendance in December 2007 in the same department.

From the foregoing, it follows that SOLVEiT has requisite expertise in the building of customized biometric systems and can thus effectively design, build, deploy and support a smartcard biometric-based system for your organization.

We do look forward to the commencement of lasting business relations with you.



# The Solveit Company

## **Vision**

Our vision is to help individuals and corporate institutions apply relevant Information and Communications Technology (ICT) solutions to their problems in order to help them reach higher levels of productivity and efficiency on both personal and corporate levels.

## **Key Competencies**

Our key competencies at SOLVEiT are:

- ❖ Developing fingerprint biometrics-based solutions.
- ❖ Developing smartcard solutions.
- ❖ Developing customized software applications.
- ❖ Developing websites and web applications.
- ❖ Building scalable and reliable networks.
- ❖ IT Training (Corporate and Personal).