Software Requirements Specification

for

Automated Teller Machine

Version 1.0 approved

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Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Karl Wiegers	10/21/02	initial draft	1.0 draft 1
Karl Wiegers	11/4/02	baseline following changes after inspection	1.0 approved

1. Introduction

1.1 Purpose

This SRS describe the requirement specifications for automated teller machine network (ATM) for designers, maintainers and developers. Function of ATM is to support computerized banking system. Serve bank customers in off timings

1.2 Document Conventions

Font with formal range of <12-14> units in Microsoft word Document, Terms and clauses in italic style will have greater prominence in sentence.
"()" parentheses will simplify the meaning having inside them for your easiness

1.3 Intended Audience and Reading Suggestions

Prioritized Sections are below
  Developers: Section 3 and 4 are more emphasized over section 5.
  Project Managers: look over timing constraints on analyzing this complete SRS
  Marketing Staff: Section 5.5
  Users: should have to study carefully section 2.6(User Documentation)
  Testers: would only study section 2.4(Operating Environment)

1.4 References

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https://groups.google.com
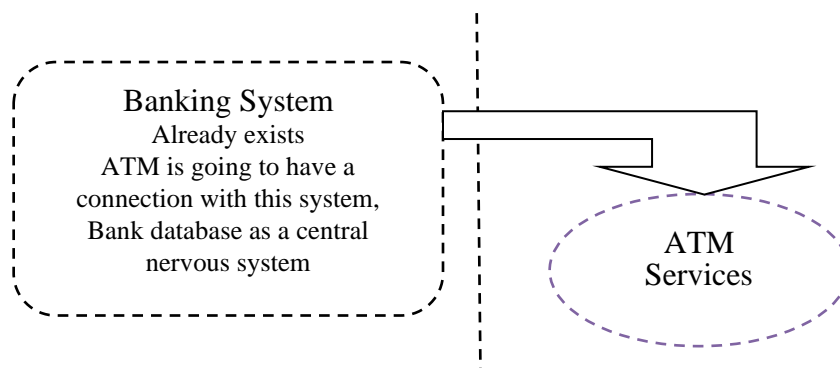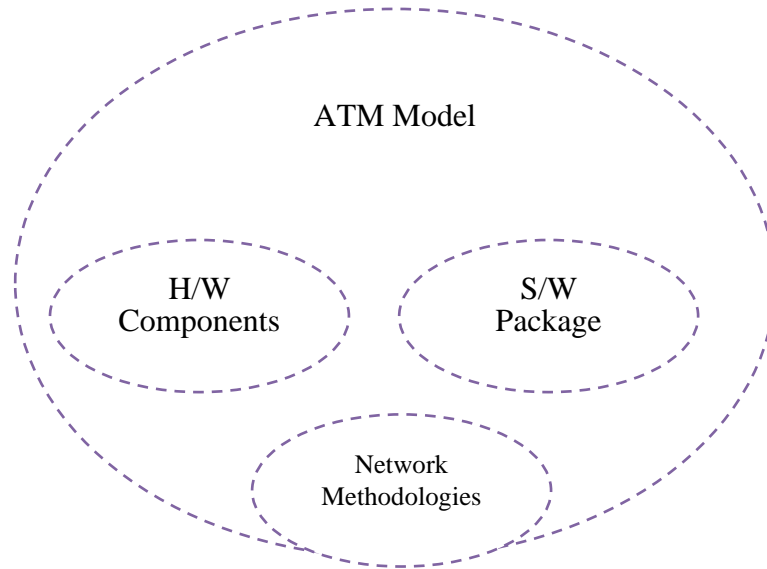http://www.computerworld.com
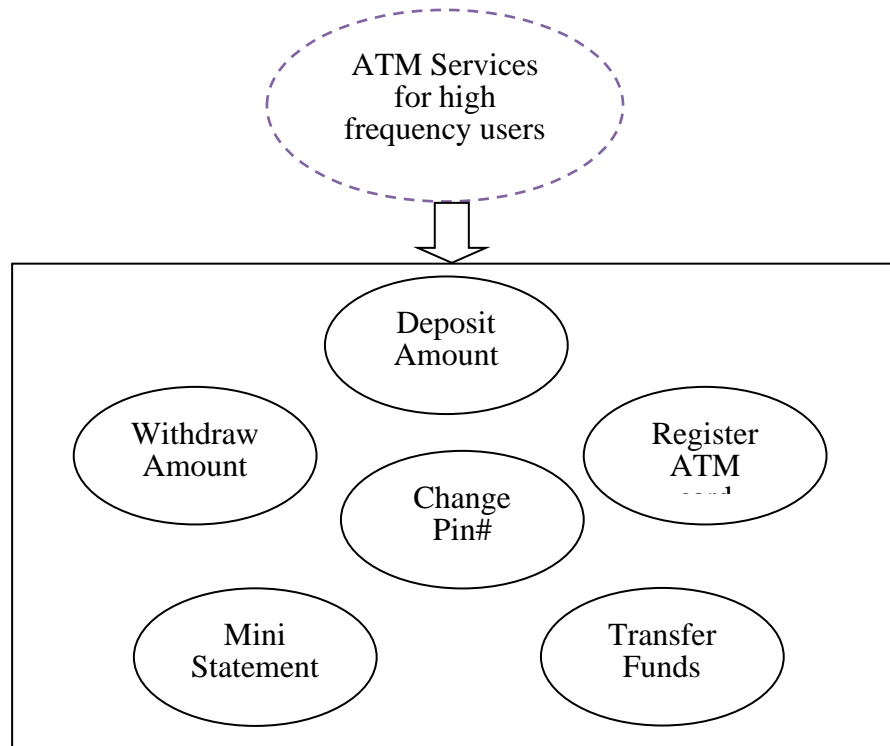
2. Overall Description

2.1 Product Perspective

ATM here is the availability of most banking services outside the bank as shown below,

2.2 Product Functions

2.3 Operating Environment

XP: Windows XP powered by Microsoft Cooperation is a suitable working platform for ATM software.

H/W component is a complete system (computer system) with pertinent peripherals.

2.4 Design and Implementation Constraints

CO-1: System Should all in one so all of the hardware configurations will inside one compact module

CO-2:   Power Supply must b attained by ATM 24 hours for its regularity.

CO-3: Small size compact box should have certain units available in it for proper functionality of ATM, e.g Memory, Concurrent Processing modules one or more, Transmission reliability inside and outside the system

CO-4: Banking database must be compatible with ATM computations.

CO-5:   Security Precautions for banking system are strictly imposed.

CO-6: Maintenance keys should must be kept in mind to provide schema to maintainers.

2.5 User Documentation

UD-1: Bank will provide the instruction manual with ATM card package. How to use this system. Also sophisticated users documentations will also

UD-2: Document for developer and design repositories are properly prepared.

2.6 Assumptions and Dependencies

AS-1: ATM is open for transactions every company business day in which employees are expected to use this service.

DE-1: All time maintenance capability and, deliverables of any problem occurring will be reported

DE-2: H/W components, there should must be a guarantee in case of malfunctioning the device or subcomponent, high quality components should the purchased according to the budget. but reliability, accuracy , dependability is a great issue.

3. External Interface Requirements

3.1 User Interfaces

UI-1: ATM Screen will contain all possible options in respected rectangles.

UI-2: Touch sensitive screen code compatibility.

UI-3: Maintainers and developers will see completely different interface with more privileges as will be mentioned in product function.

UI-4: Error text will appear preceding with cross sign '×'

UI-4: Interface is needed for every type of configurations, so functionally system will faced through its interface so it would have every component of software to interact with interface module.

3.2 Hardware Interfaces

HI-0: Power Cable plugging port.

HI-1: Necessary buttons will be provided with appropriate interfacing of compact keyboard with system.

HI-2: Kyocera 5.7" Color LCD for Triton, Hyosung, Hantle, Tranax, Tidel, NCR

HI-3:   Two Serial ports,1st for running communication headache and 2nd for backup. For source code configuration

HI-4:   Two Universal Serial Bus for data sharing

3.3 Software Interfaces
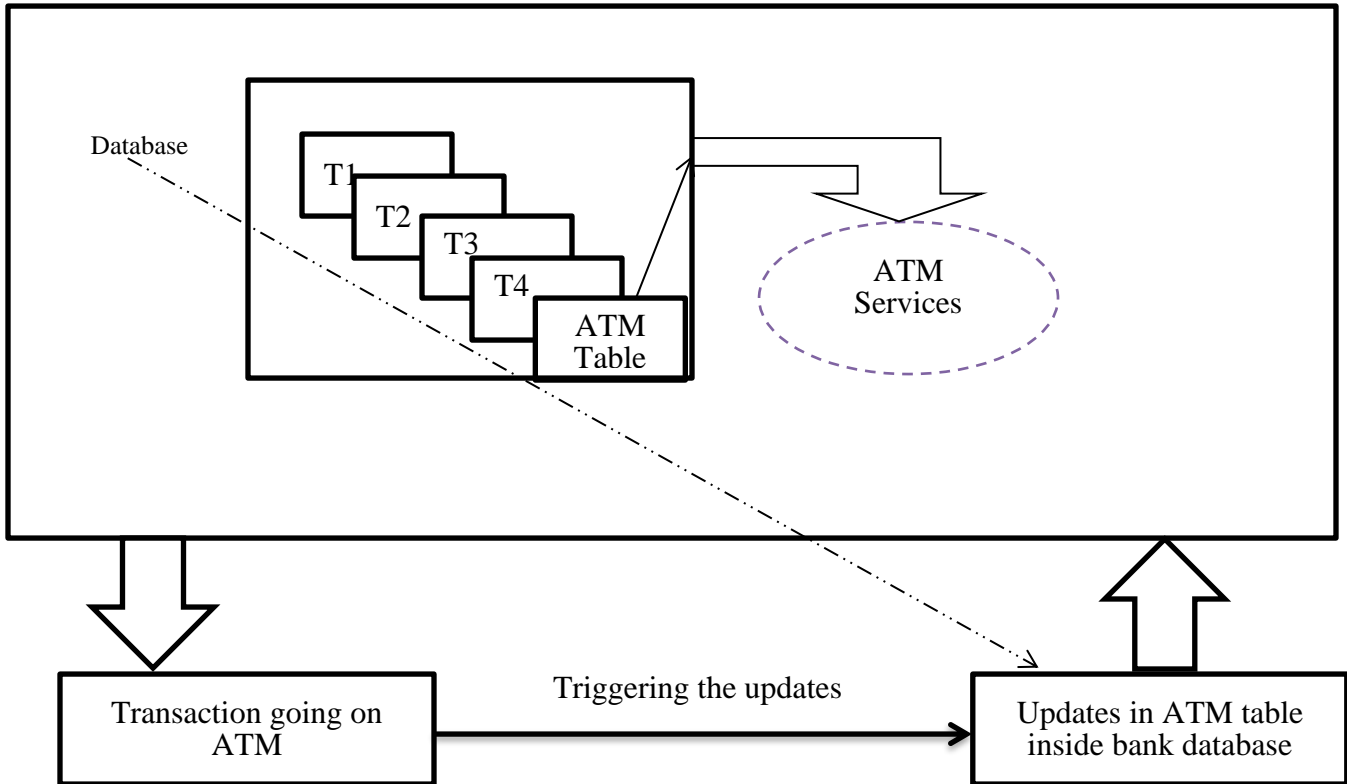
3.4 Communications Interfaces

CI-1:   ATM card activation will be acknowledged by email to customer.

CI-2:   GSM used for ATM messages transmission

CI-3:   Communication security recommended strongly. Confidential information is guaranteed to be secure.

4. System Features

4.1 24 Hours Availability

4.1.1 Description and Priority

Highest priority task of this system is to provide the functioning on numerous ATM users 24 hours. This is highest priority although may not functionally a service for user.

4.1.2 Stimulus/Response Sequences

Stimulus:	Regular power supply to system.
Response:	System will operational.
Stimulus:	Backup of power supply.
Response:	Also system is operational.
Stimulus:	User queries.
Response:	Precise results, reliability in action of user.
Stimulus:	Half alive/Half Dead
Response:	ATM is operational in administration configurations mode.

4.1.3 Functional Requirements

Each requirement will be an independent class

4.1.3.1 Registration:	Customer will register his/her ATM card, and get acknowledged by email. • Choose PIN number • Give personal information(CNIN# for verification) • More information is extracted by card scanner
Verify info:	Verification of card and user input will be done, Three tries are allowed. Cancel(×) Is available for interactive back
4.1.3.2 Withdraw amount:	User will withdraw amount according to its package. o Golden Card:500<=Amount<=100,000 o Master Card:500<=Amount<=40,000 o VISA Card:500<=Amount<=25,000 o All packages are changeable Receipt is recommended on each withdrawal of money with updates the bank balance also.
4.1.3.3 Transfer Amount:	Two ways money transfer, • Inter-Bank (Bank to Bank tax deduction 5 Rs per thousand) Changeable • Intra-Bank (Within Bank tax deduction 2.5 per thousand) Changeable • Account number of receiver is needed • Acknowledgement on mobile text • Transacted amount in addition to deduction will

	be subtracted from Current Balance • Receipt is recommended on each transfer. • All packages are changeable
4.1.3.4 Mini Statement:	Mini statement of account current state will be available on the choice of user. Thermal Printer as a subsystem will take on its own responsibility.
4.1.3.5 Change Pin#	User can change his/her pin number according to constraints given below. • Four Decimal digits are allowed • Three tries are allowed • Previous pin# is recommended • In case of illegal entry a complaint will be entered against respective account. This will warn the related person to verify the details of this ATM recently updated its complaint.
4.1.3.6 Configure ATM: ATM will	In case of any sort of administration configurations set to configuration mode. • Go to configuration mode • Changing in settings. • Save your recent settings • Assuring Configuration will not harm saved database • Back to user Mode
4.1.3.7 Under Maintenance:	A message will be displayed in case of any backend issue. "Sorry ATM is under Maintenance please wait few minutes"

5. Other Nonfunctional Requirements

5.1 Performance Requirements

PE-1: The system shall accommodate 1 user all time necessarily.
PE-2: Cash counting must be accurate.
PE-3: Responses to keyboard hits shall take no longer than 7 seconds to load onto the screen after the user hit(press) one key.
PE-4: The system shall display confirmation messages to users his/her query within 4 seconds after the user submits any information to the system.

5.2 Safety Requirements

SR-1: System room will be safe for user going to use ATM machine.
- Electricity damage precautions
- Fire alerts

SR-2: System room should be air conditioned for system safety in order to suppress heat produced by system.

5.3 Security Requirements

SE-1: Data transactions that involve financial information or personally identifiable information shall be encrypted.
SE-2: Users shall be required to log in (pin#) to access System for all operations except viewing a menu.
SE-3: The system shall permit only Admin staff members who are on the list of authorized Menu Managers to create or edit menus.
SE-6: The system shall permit users to view only their own previously placed transactions, not placed by others

5.4 Software Quality Attributes

Availability-1: The ATM System shall be available to users on the 99.9% of the time between 12:00AM To 11:50 PM
Robustness-1: If the connection between the user and the system is broken prior to an query being either confirmed or canceled, the ATM System shall enable the user to recover an incomplete query or cancel its effect completely.

5.5 Business Rules

User can not withdraw his/her maximum limited amount from system in 24 hours timing constraint, ATM will reboot on 11:50 after restarting, Timing constraint on money withdrawal will be changed to denied to permit.
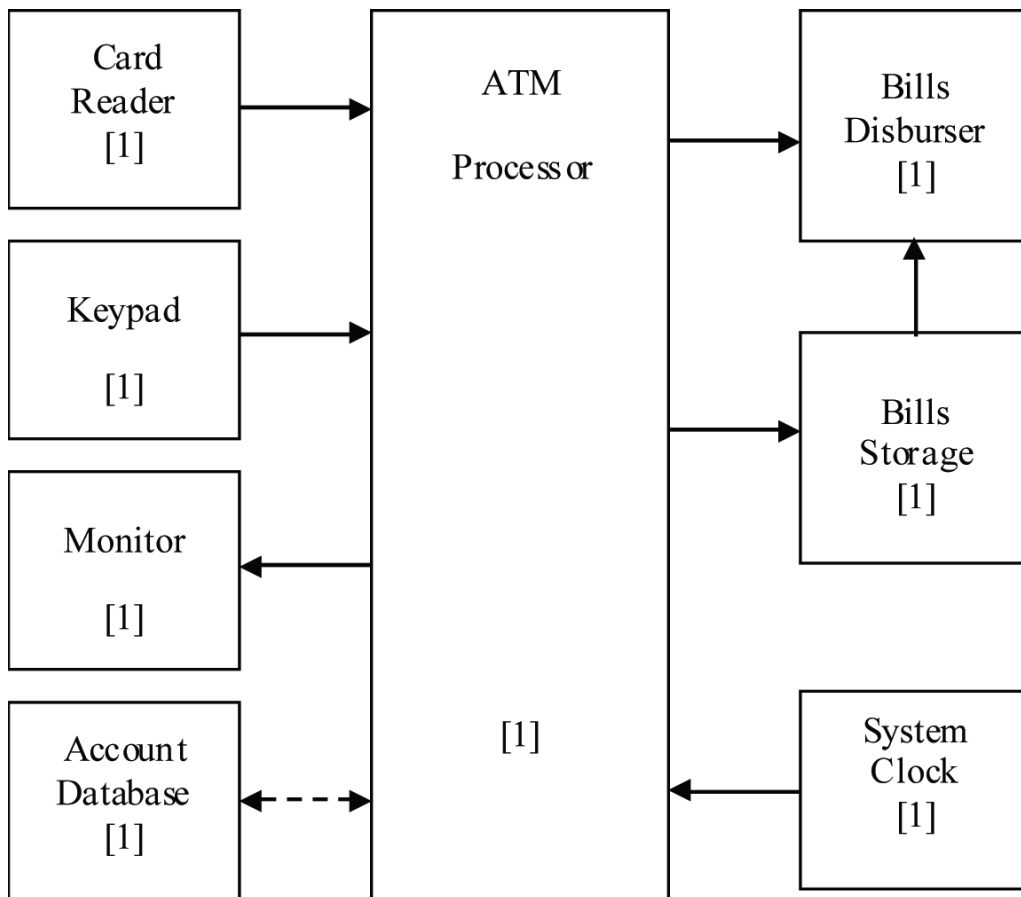Same constraint will be applied on transferring amount.

Appendix A: Glossary

ATM:	Automated Teller Machine
PIN#	4 digit confidential key number assigned to each ATM card
ATM Table	A database term represent an entity having attributes manipulated directly by ATM
Windows XP	Microsoft operating system used in 90% ATMs, XP for Experience
Designers	Specialized project staff(Team) Typically designing the software
Maintainer	Group of experts maintain the system with time,
Project Managers	Look over complete progress of project
H/W Components	Processor, memories, communication channels,etc
S/W Package	Program Code and Documentation
Network Methodologies	Communication protocols either off the shelf or manually developed, and all networking standards
Configuration	Assembling dynamically the settings available in appropriate fashion and on need
Encrypted	Decoding to data to be transmitted
Thermal Printer	Sub system used in ATM system for printing
Concurrent Processing	Parallel processing on single time domain
Transaction	Manipulation is results of withdrawals, deposits and transfers
Database	Centralized place for keeping data where all information of bank will resides.

Appendix B:

Figure 1.1:The conceptual model of the ATM system

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┌──────────┐        ┌──────────────┐        ┌──────────┐
│   Card   │        │              │        │  Bills   │
│  Reader  │───────▶│     ATM      │───────▶│Disburser │
│   [1]    │        │              │        │   [1]    │
└──────────┘        │  Processor   │        └──────────┘
                    │              │              ▲
┌──────────┐        │              │              │
│  Keypad  │        │              │        ┌──────────┐
│          │───────▶│              │───────▶│  Bills   │
│   [1]    │        │              │        │ Storage  │
└──────────┘        │              │        │   [1]    │
                    │              │        └──────────┘
┌──────────┐        │              │
│ Monitor  │◀───────│              │
│          │        │              │
│   [1]    │        │              │
└──────────┘        │              │
                    │     [1]      │        ┌──────────┐
┌──────────┐        │              │        │  System  │
│ Account  │        │              │        │  Clock   │
│ Database │◀─ ─ ─ ▶│              │◀───────│   [1]    │
│   [1]    │        │              │        └──────────┘
└──────────┘        └──────────────┘
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Appendix C: Analysis Model

Figure 1.2 State Transition Diagram of system