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2024-2025

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

SIM BASED MOBILE BANKING SYSTEM

PRESENTED BY

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ABSTRACT

This project presents the design and implementation of a SIM card-based mobile banking system, aimed at providing secure and accessible banking services to users, particularly in regions with limited internet connectivity or access to smartphones. The system leverages the SIM Application Toolkit (STK) to enable financial transactions directly through the SIM card, allowing users to interact with their bank accounts via basic mobile phones.

Key features include balance inquiries, fund transfers, and mini-statements, all protected by multi-level authentication and encryption mechanisms to ensure data privacy and transaction security. By utilizing existing GSM infrastructure and minimal hardware requirements, the system offers a cost-effective and scalable solution to promote financial inclusion in underserved communities. This approach bridges the digital divide and enhances banking outreach, aligning with broader goals of financial empowerment and technological accessibility.

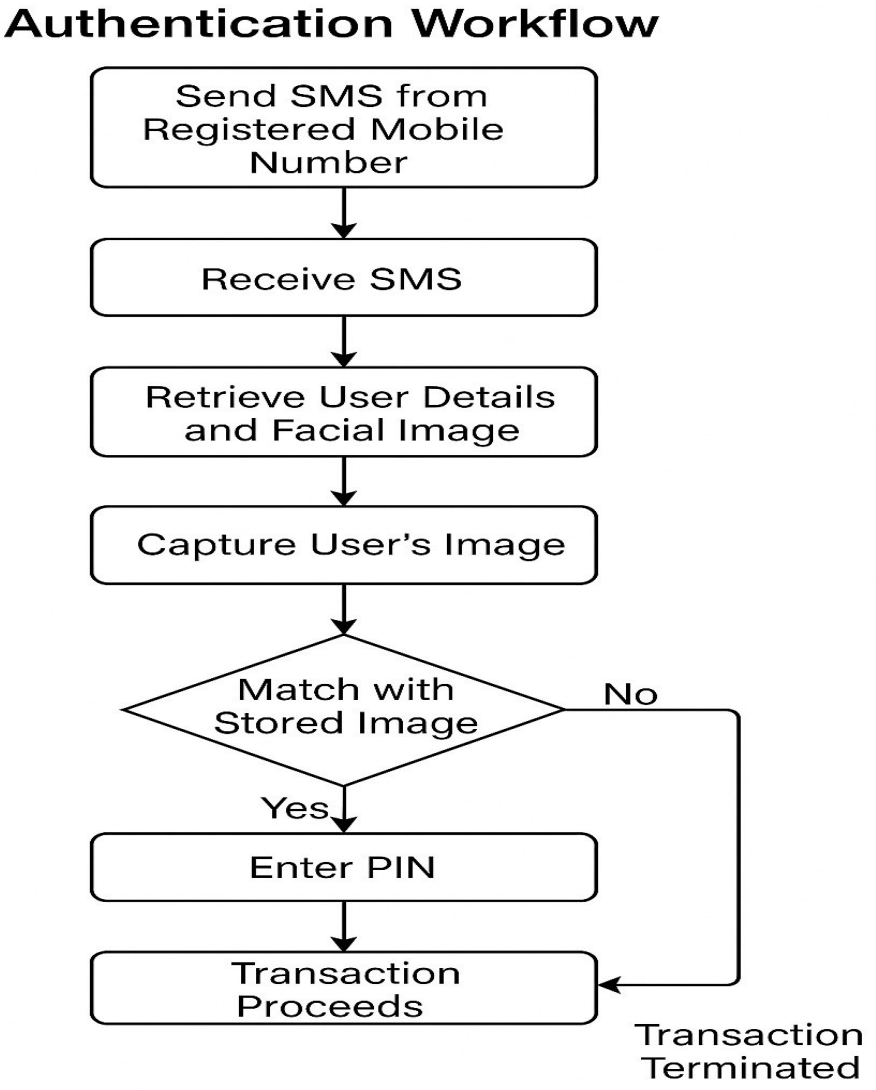
EXISTING METHOD

The existing method refers to the traditional approach used by Automated Teller Machines (ATMs) for financial transactions, which typically involves the use of a physical ATM card along with a Personal Identification Number (PIN) for user authentication. While this method has been in place for decades and is widely used, it has several inherent drawbacks related to security, accessibility, and user convenience. Below, we explore the current method in detail

PROPOSED METHOD

The proposed method involves a modern, cardless ATM system that leverages mobile SIM card numbers as a means of authentication, removing the need for physical ATM cards. This system is designed to offer enhanced security, convenience, and accessibility compared to traditional ATM systems. By utilizing GSM (Global System for Mobile Communications) technology and Verilog-based FPGA control, the system enables secure banking transactions using a user’s mobile number and PIN. This method also includes optional voice guidance making it an inclusive and user-friendly solution.

PROCEDURE


Authentication Workflow
Send SMS from Registered Mobile Number
Receive SMS
Retrieve User Details and Facial Image
Capture User's Image
Match with Stored Image
No
Yes
Enter PIN
Transaction Proceeds
Transaction Terminated

DESIGN

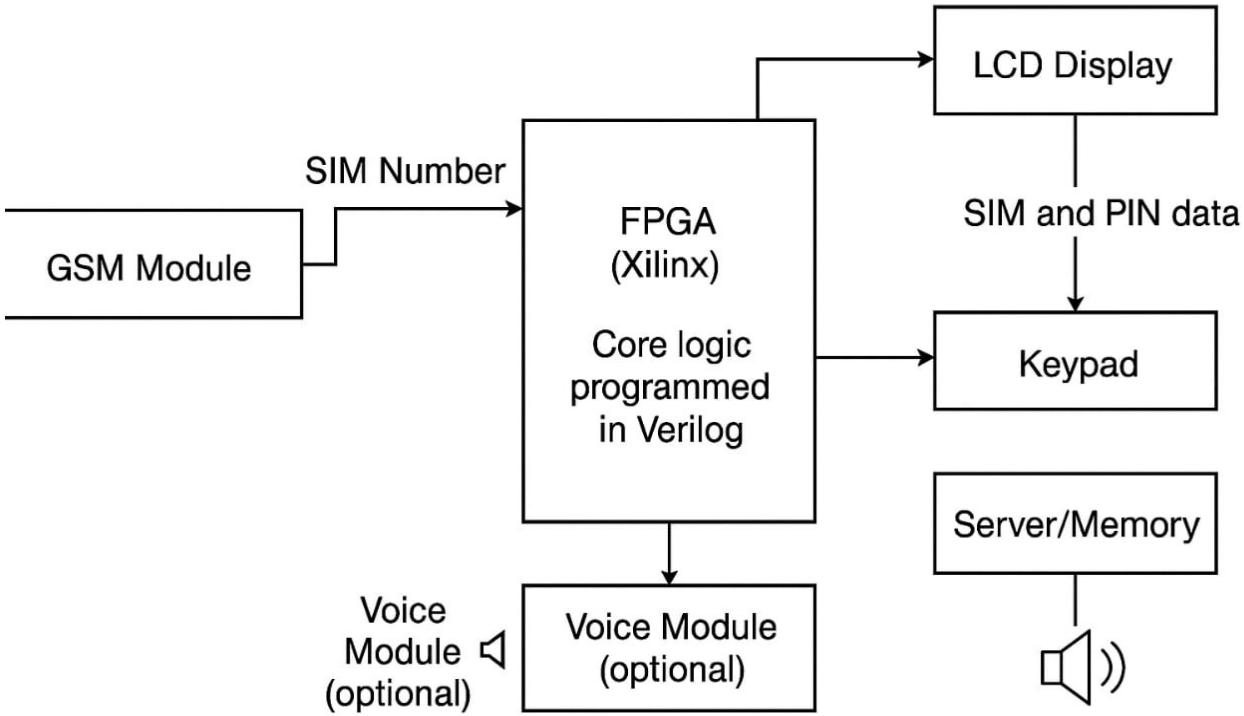


fig: Block Diagram of Sim Card Based Banking System

CIRCUIT

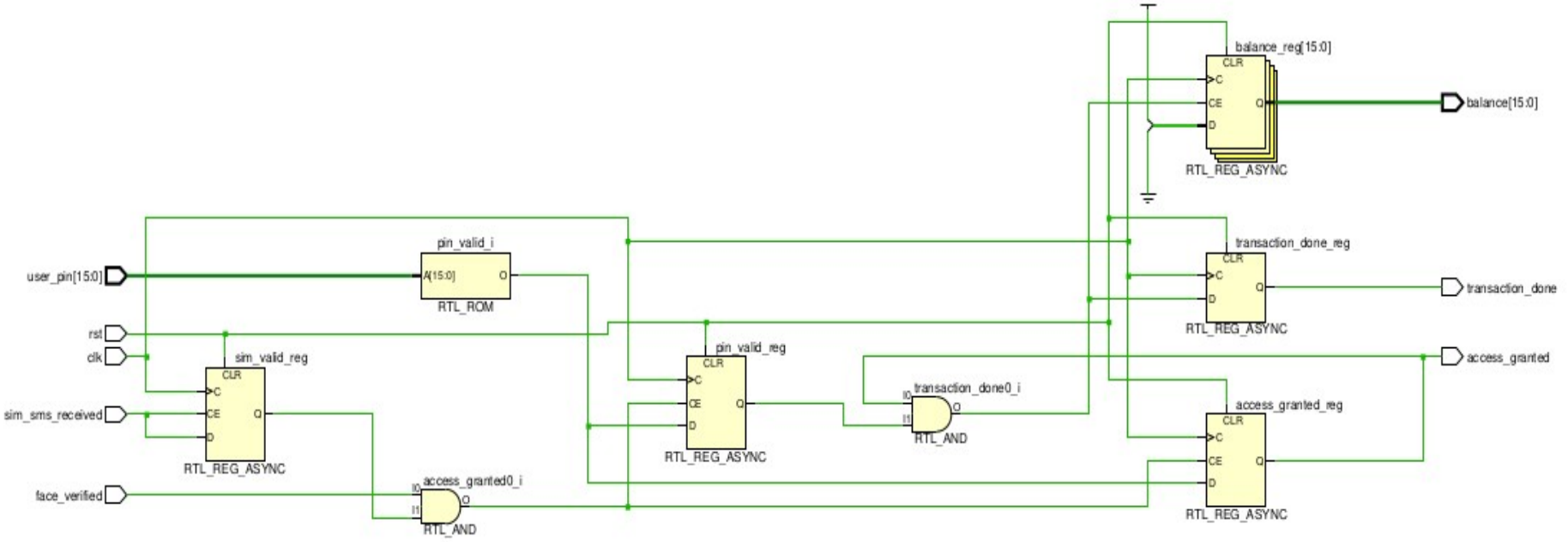
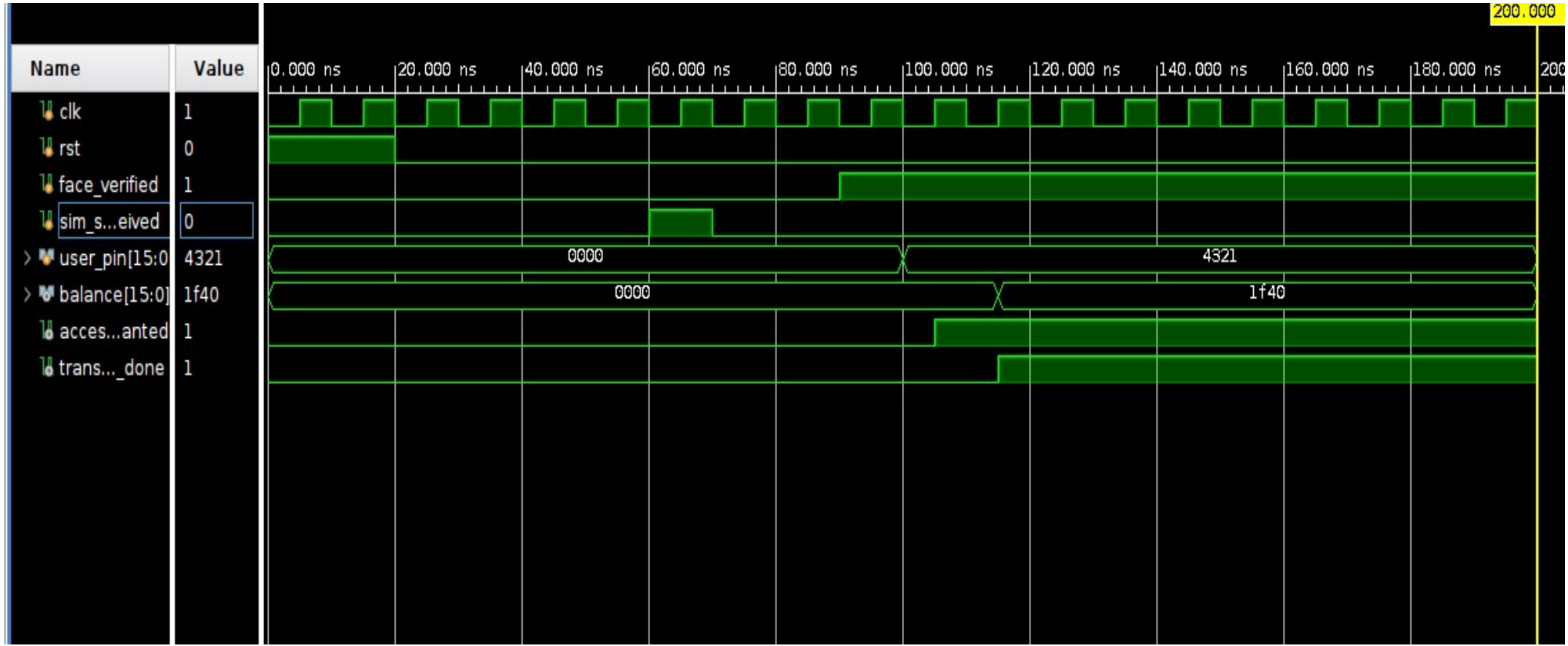


Fig: Circuit Diagram Of Sim Card Based Mobile Banking System

WAVEFORMS


Name
Value
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rst
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face_verified
1
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user_pin[15:0
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1
trans..._done
1
0.000 ns
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ADVANTAGES

- Eliminates the need for a physical card
- Reduces ATM fraud
- Improved accessibility

APPLICATIONS

- Smart ATMs
- Government kiosks
- Cardless financial systems
- Secure access control systems

CONCLUSION

The SIM Card-Based Smart Banking System using Verilog and GSM technology successfully demonstrates an innovative, secure, and accessible alternative to traditional card-based ATM systems. By leveraging mobile SIM-based authentication, the project eliminates the need for physical cards, thereby significantly reducing the risk of card theft, skimming, and fraud.