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# Regional Cybersecurity Summit for Africa

20-23 November 2023  
Kampala, Uganda

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REGIONAL CYBERSECURITY SUMMIT FOR AFRICA

# Digital Financial Services Security Testing Lab

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20-23 November 2023  
Kampala, Uganda



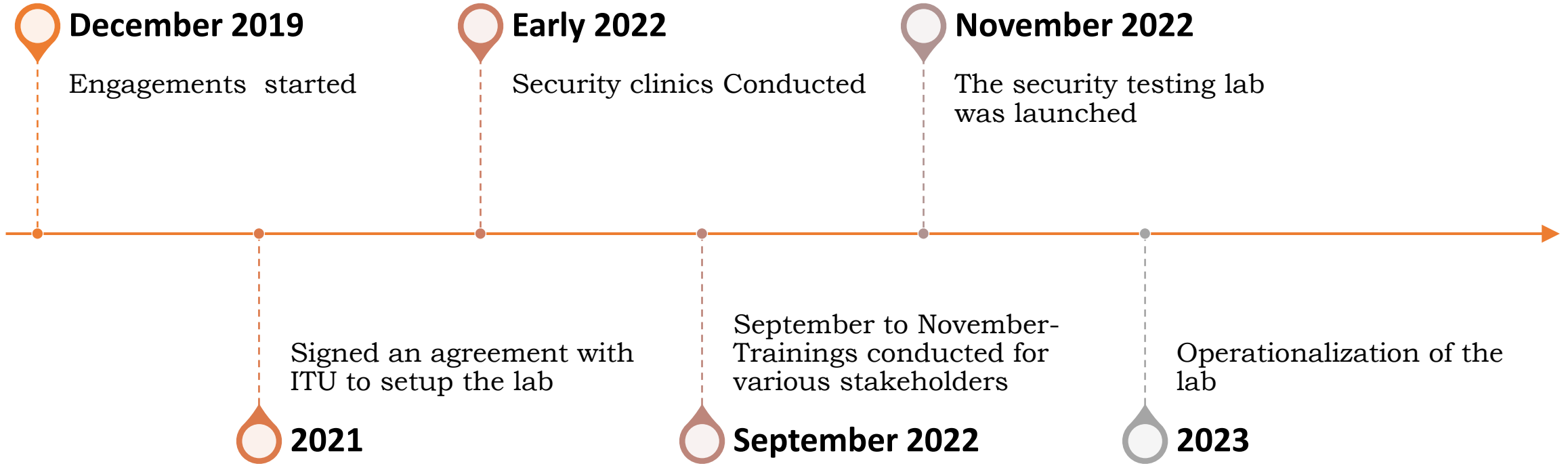
# Digital Financial Services (DFS)

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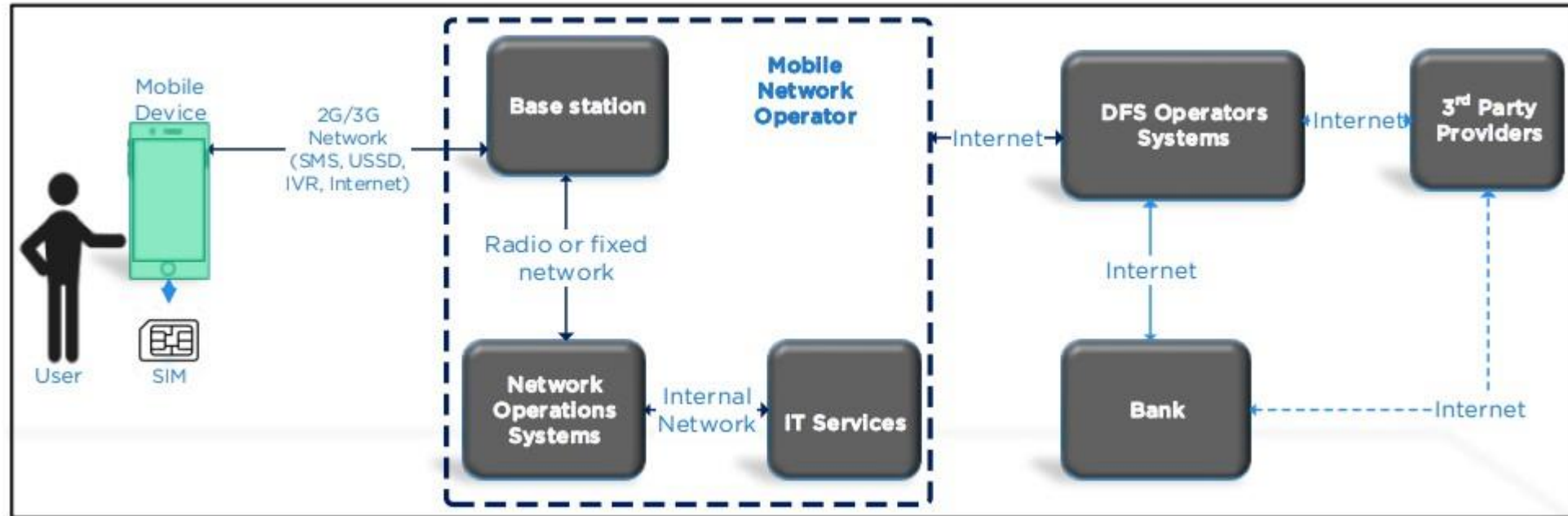


- Digital Financial Services (DFS) depend on the underlying telecommunications infrastructure to deliver services to consumers
- DFS include a broad range of financial services accessed and delivered through digital channels, including payments, credit, savings, remittances and insurance.

# UCC DFS SECURITY TESTING LAB



# Security risks in the DFS ecosystem



## User

*target user for DFS, uses mobile money application on a mobile device to access the DFS ecosystem*

## MNO

*provides communication infrastructure from wireless link through the provider network*

## DFS Provider

*application component, interfaces with payment systems and third-party providers.*

# ITU DFS Security Testing Lab

For a common approach for regulators, developers and DFS providers to test DFS mobile apps in a complex mobile ecosystem in order to provide/verify the level of assurance on security against systemic vulnerabilities.

## Lab objectives



**Collaboration** with DFS regulators and providers on DFS security.



Perform DFS **security test** of DFS Apps



To enhance knowledge sharing on the identified vulnerabilities in DFS applications



Participate in the promotion of international standards on DFS security

*Note: The outcomes of the tests are treated as strictly confidential, with recommendations on how the vulnerabilities identified can be addressed.*

# DFS Lab Equipment

- Laptop
- Android Smartphone
- Card reader
- Sim card adapter
- Mobile featurephone
- Programmable/blank SIMs
- PCB SIM adapters
- Simtrace2 Hardware Kit
- Wi-Fi router
- iOS Smartphone



# App Security Tests

The goal of the tests is to determine whether an attacker can perform a passive or active attack against DFS transactions.

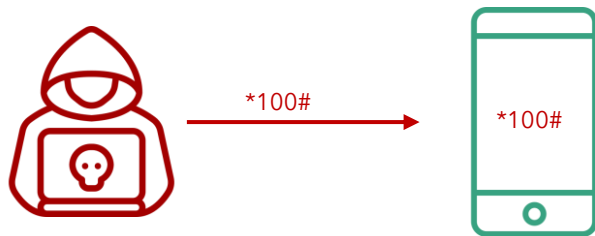


a. **SIM Swap** and **SIM cloning**

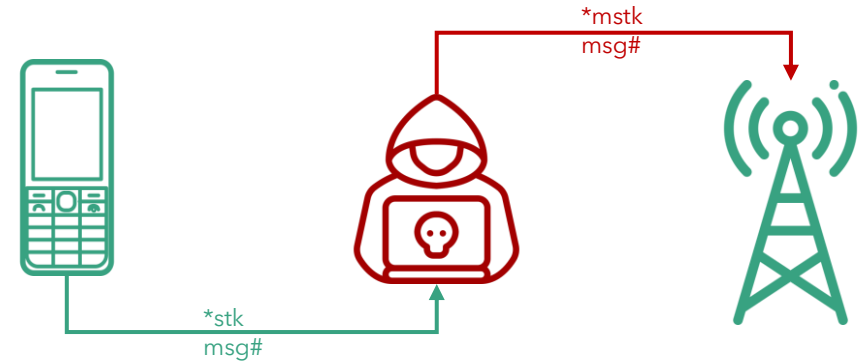
## b. susceptibility to binary OTA attacks

A binary OTA message can instruct the SIM to:

- initiate USSD,
- Send SMS
- Initiate a phone call on a vulnerable SIM



c. **remote USSD** execution attacks on the device connected to the internet



d. **man-in-the-middle attacks**



# Summary

DFS security lab provides a methodology to conduct security test for mobile DFS applications

Collaborate with telecom , Central Bank and DFS providers

Provide guidance on implementation of Security recommendations for DFS



Thank you!