ITUWebinars

Digital financial services

Episode #1: Addressing SS7 vulnerabilities affecting digital financial services

14:00 - 15:00 CET
18 February 2025
Fully virtual

Addressing SS7 Vulnerabilities affecting Digital Financial Services

http://www.itu.int/go/dfssl

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18 February 2025

Overview

- ITU DFS Security Lab
- Security recommendations for digital finance
- Recap: SS7 Security Recommendations for DFS

DFS Security Lab

DFS Security Lab

- Cybersecurity capability of regulators
- Security audit of mobile payment applications
- Adoption of security best practices for digital finance

DFS Security Lab - Objectives

Collaborate with regulators to adopt DFS security recommendations

Perform **security audits** of mobile payment apps (USSD, Android and iOS)

Encourage adoption of **international standards on DFS security and participation in ITU-T SG17**

Organize **security clinics** **& Knowledge transfer** for Security Lab

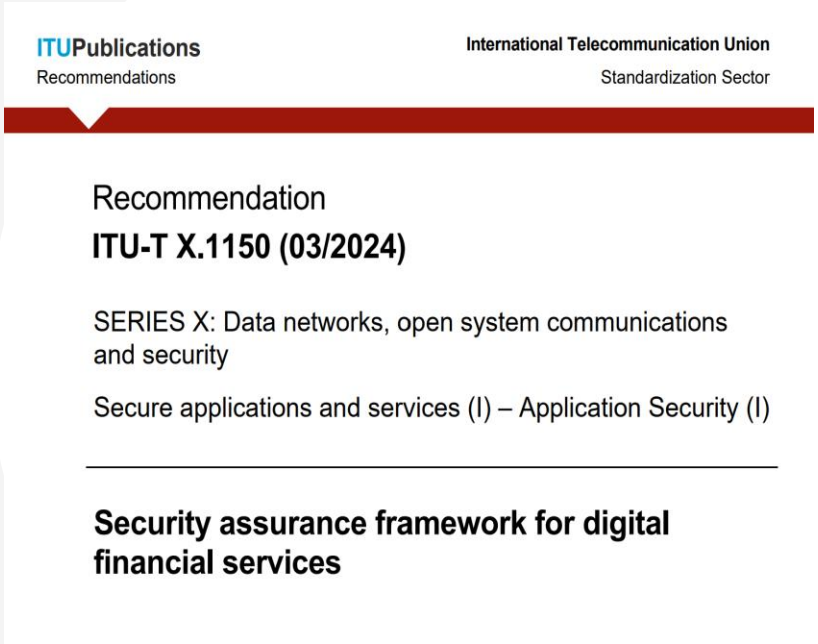
Assist regulators to **evaluate** the **cyberresilience of DFS critical infrastructure**

Networking platform for regulators for knowledge sharing on threats and vulnerabilities

DFS Security Recommendations

The recommendations contain the following specific guidelines that may be adopted by regulators.

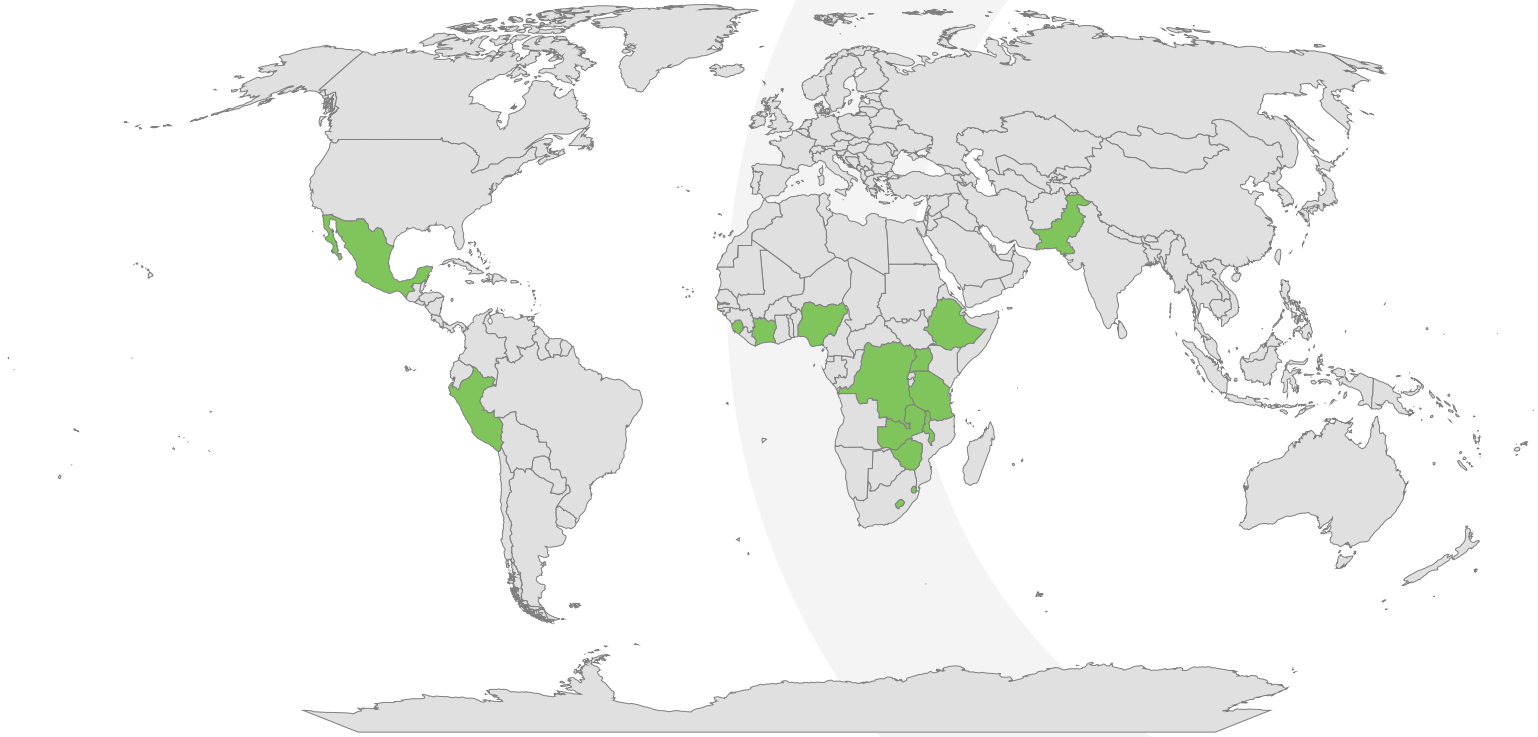
1. Recommendations to mitigate SS7 vulnerabilities
2. Security recommendations to protect against DFS SIM related risks
3. DFS Mobile application security Best practices (From ITU-T X.1150)
4. Template for a Model MOU between a Telecommunications Regulator and Central Bank related to DFS Security
5. DFS consumer competency framework



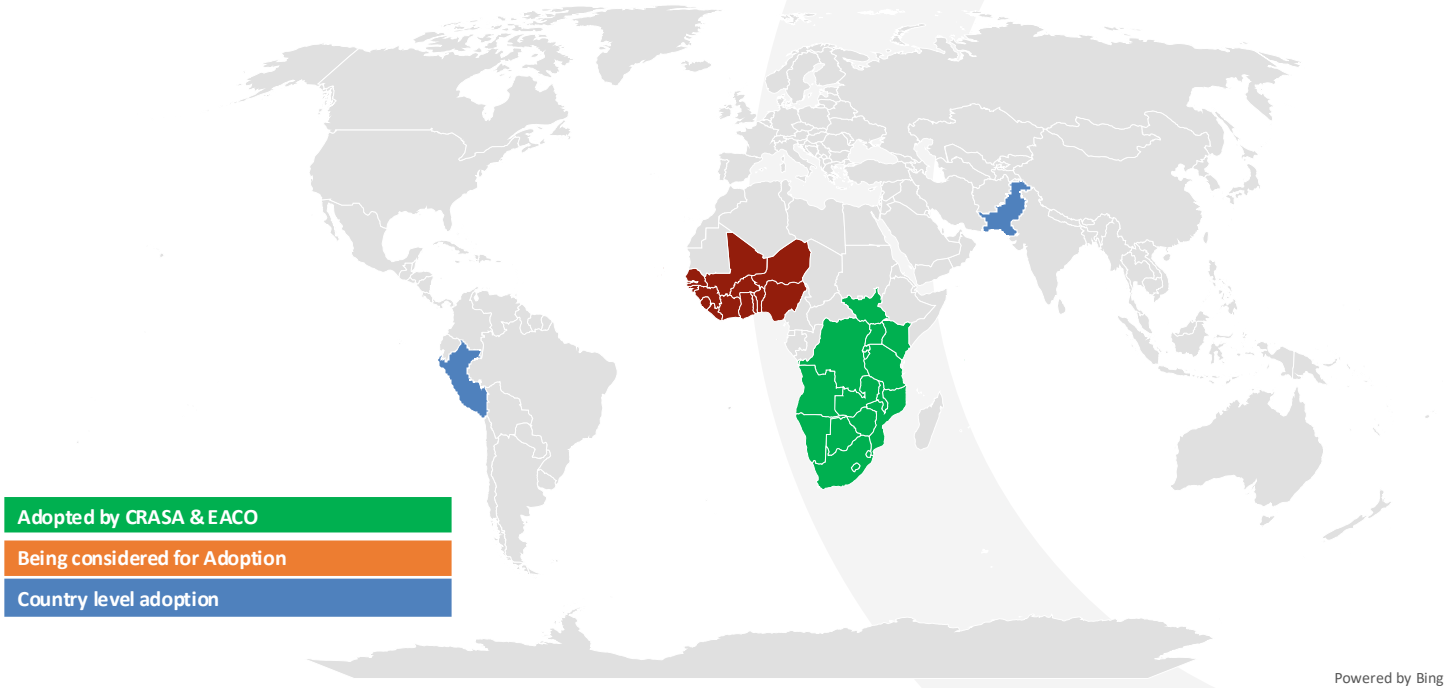
Actions Being Implemented

1. Organizing of DFS Security clinics with a focus on knowledge sharing on DFS security recommendations
2. Knowledge transfer for regulators (Tanzania, St. Lucia, Antigua and Barbuda, Uganda, Peru, Zimbabwe, South Sudan, Ghana, The Gambia and Ethiopia)
3. Supporting regulators on implementing DFS security recommendations
4. Conducting security audits of mobile payment applications (conducted tests for Zambia, Zimbabwe, DRC, The Gambia, Peru, Tanzania, Indonesia).
5. ITU Knowledge Sharing Platform for Digital Finance Security
6. ITU Cyber Security Resilience Assessment toolkit for DFS Critical Infrastructure

DFS Security Clinics Held



Countries and Regions Adopting the Recommendations

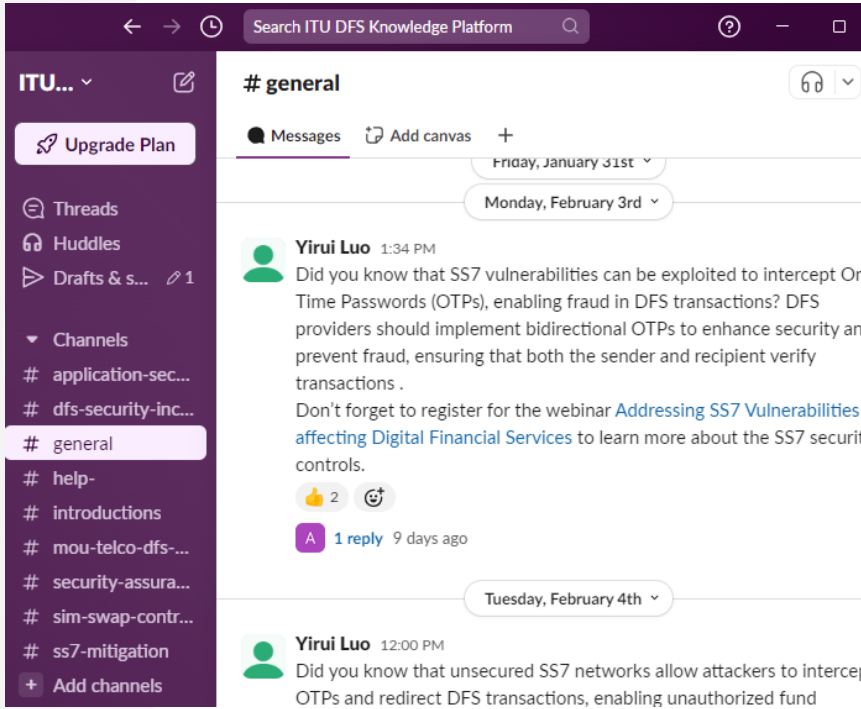


ITU Knowledge Sharing Platform for DFS

Objective

- Keep up to date the DFS security assurance framework & security recommendations.
- Share experiences, challenges, and lessons learned from the implementation of security measures across various jurisdictions.
- Communicate directly with their peers on issues relating to security of digital financial services.

Link: https://itudfssecurity.slack.com/



Join the ITU DFS Security Knowledge Sharing Platform

https://www.itu.int/en/ITU-T/dfs/Pages/share-platform.aspx

Summary: SS7 Security Recommendations for DFS

Related report: Technical report on SS7 vulnerabilities and mitigation measures for digital financial services transactions

Regulatory Guidance to Mitigate SS7 Risks

a) Regulatory coordination between telco and DFS regulator on SS7 vulnerabilities.

b) Incentivize the industry

c) Education for telecom and financial services regulators on SS7 vulnerabilities and impact to DFS

d) Telecom regulators should establish baseline security measures for each SS7 risk category

e) IMSI validation gateway: An API that provides status of a mobile subscriber.

Recommendations for MNO to Mitigate SS7 Risks

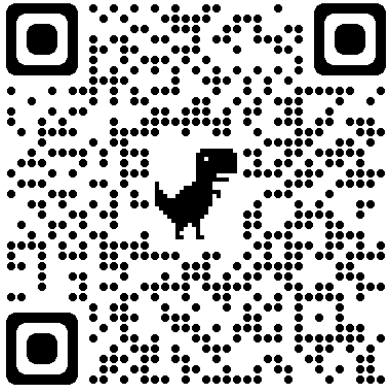
a) SS7 interconnect security monitoring guidelines
   - FS.11: SS7 interconnect security monitoring guidelines
   - FS.07 SS7 and SIGTRAN network security (Limit access to traces and logs)
   - IR.82 security SS7 implementation on SS7 net work guidelines (SMS filtering, SMS home routing)
   - IR.88 LTE and EPC roaming guidelines

b) Session time out

c) USSD PIN masking

DFS Operator Controls to Mitigate SS7 Risks

a) Session time out
b) Transaction limits for insecure channels
c) User education
d) Bidirectional OTP SMS flow



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Thank you!

ITUWebinars

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Episode #2: Securing Mobile Payment Applications - 1

14:00 – 15:00 CET
26 March 2025
Fully virtual

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