Official ITU-D Question 4/2 Workshop Keynote

The Architecture of Trust

Transforming ICT Conformity, Interoperability, and Accessibility into a Sovereign Ecosystem

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*All maps, diagrams, and figures are included solely for illustrative purposes and are not intended to be precise geographic or technical representations.
Presentation prepared with the assistance of AI applications.*

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Participation (Share): Mandatory Type Approval (Mandatory Type Approval)

Enforcement of Telecommunications Law No. 22 of 2010 for consumer protection and limiting interference.



Stage 1: Declaration (Declaration)
Submission of European Declaration of Conformity (CE DoC).

Stage 2: Testing (Testing)
Passing Electromagnetic and Safety Tests (EN 300 328, EN 62368).

Stage 3: Certification (Certification)
Issuance of Approval within a standard period (Lead Time: 2 Weeks).

Stage 4: Renewal (Renewal)
Strict surveillance cycle requiring renewal every 5 years.

Disclaimer: The statistics included in the slides are inserted for illustrative and strategic purposes.

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Share: Mandatory Type Approval as a Gateway

Stage 4: Renewal.
Strict regulatory cycle requiring renewal every 5 years.

Stage 3: Certification.
Issuing accreditation within a standard period (2 Weeks Lead Time).



(Eliminating Vendor Lock-in) Eliminating Institutional Data Silos.

(Enforcing Open Standards) Enhancing GACI"s Regulatory Sovereignty across Operators.

Accelerating Data Exchange Efficiency within the National Project (eLibya).

(Standards Repository (IAR): Activating the Interoperability Architecture Repository.

Note: The numbers and statistics presented in the slides are included for illustrative and strategic purposes.

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The Q4/2 Mandate & The Missing Dimension



A device that is affordable but inaccessible—or vulnerable to threats—is functionally unavailable.

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Analysis: The Five Challenges and Access Indicators



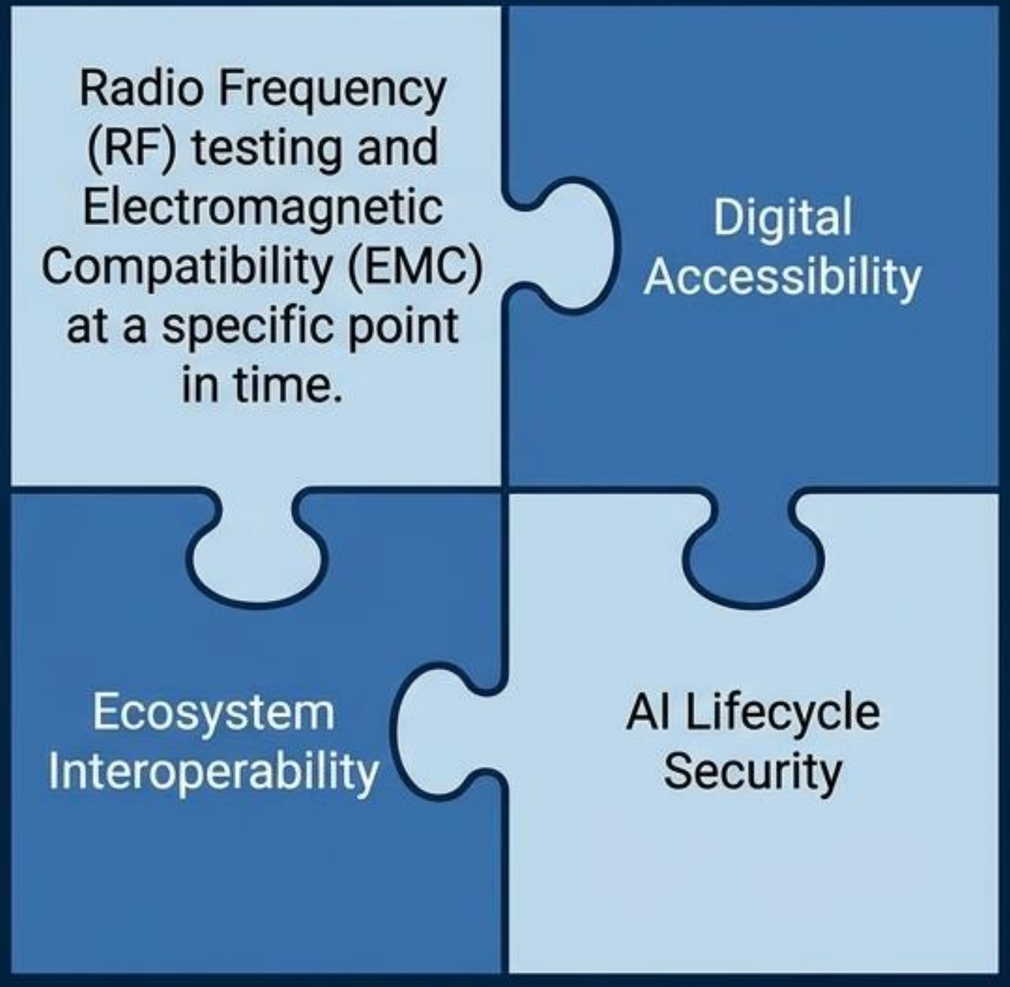
1. Linking the UN Indicator (SDG Target 5.b.1)
2. Broadband Basket Target < 2% of GNI
3. Household Broadband Access Jump from 20% to 70% by 2028

Source: General Authority for Communications and Informatics – Libya (GACI)

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The Problem: “Dimensional Blindness” in Current C&I

National regulatory authorities use 20th-century tools to confront 21st-century threats.



*Figures on vulnerabilities and counterfeit equipment are generalized for the regional context based on aggregated global telecom indicators and do not target specific international suppliers.

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The Paradigm Shift: Introducing SNCAF



Moving from bureaucratic certification to dynamic regulatory governance.

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Comparison Matrix: Traditional vs. Smart Conformity

Dimension	Traditional Type Approval	Smart Conformity - SNCAF
Focus	RF/EMC	Holistic: RF + Access + AI
Timeline	Point-in-time	Continuous Lifecycle
Method	Paper-based/Manual	AI-assisted analytics
Outcome	Certifying Exclusion	Inclusive Ecosystem

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Pillar 1: Accessibility-Inclusive Conformity



1 Demographic Imperative

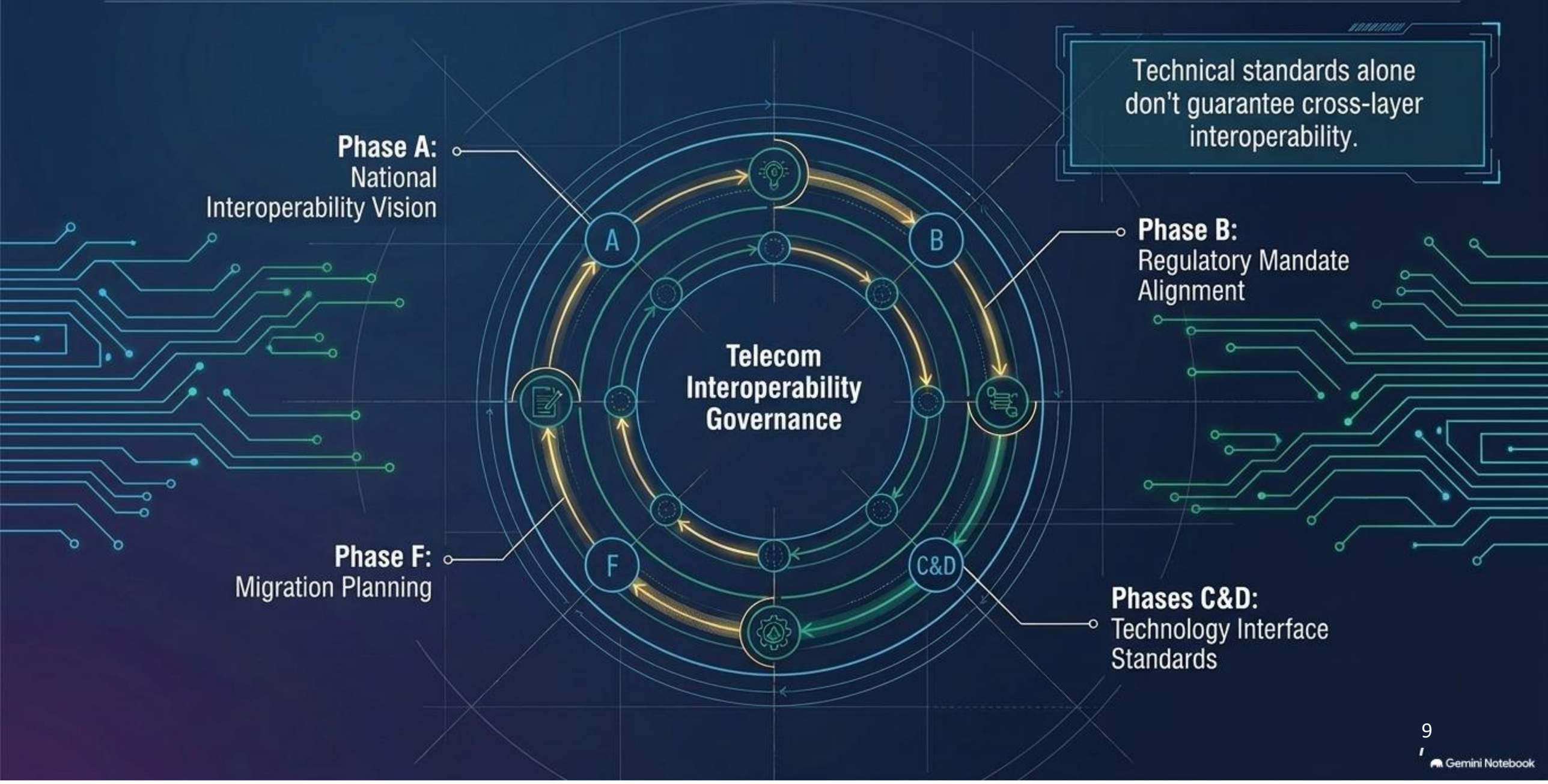
- 15% of the population faces digital exclusion.
- Includes elderly, disabled, and low-literacy users.

2 Regulatory Action

- WCAG 2.1 and EN 301 549
- Devices must be universally usable to receive type approval.

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Pillar 2: Interoperability Governance via TOGAF 9.1 / (TIGF)



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Pillar 3: AI-Resilient Conformity & Security Lifecycle

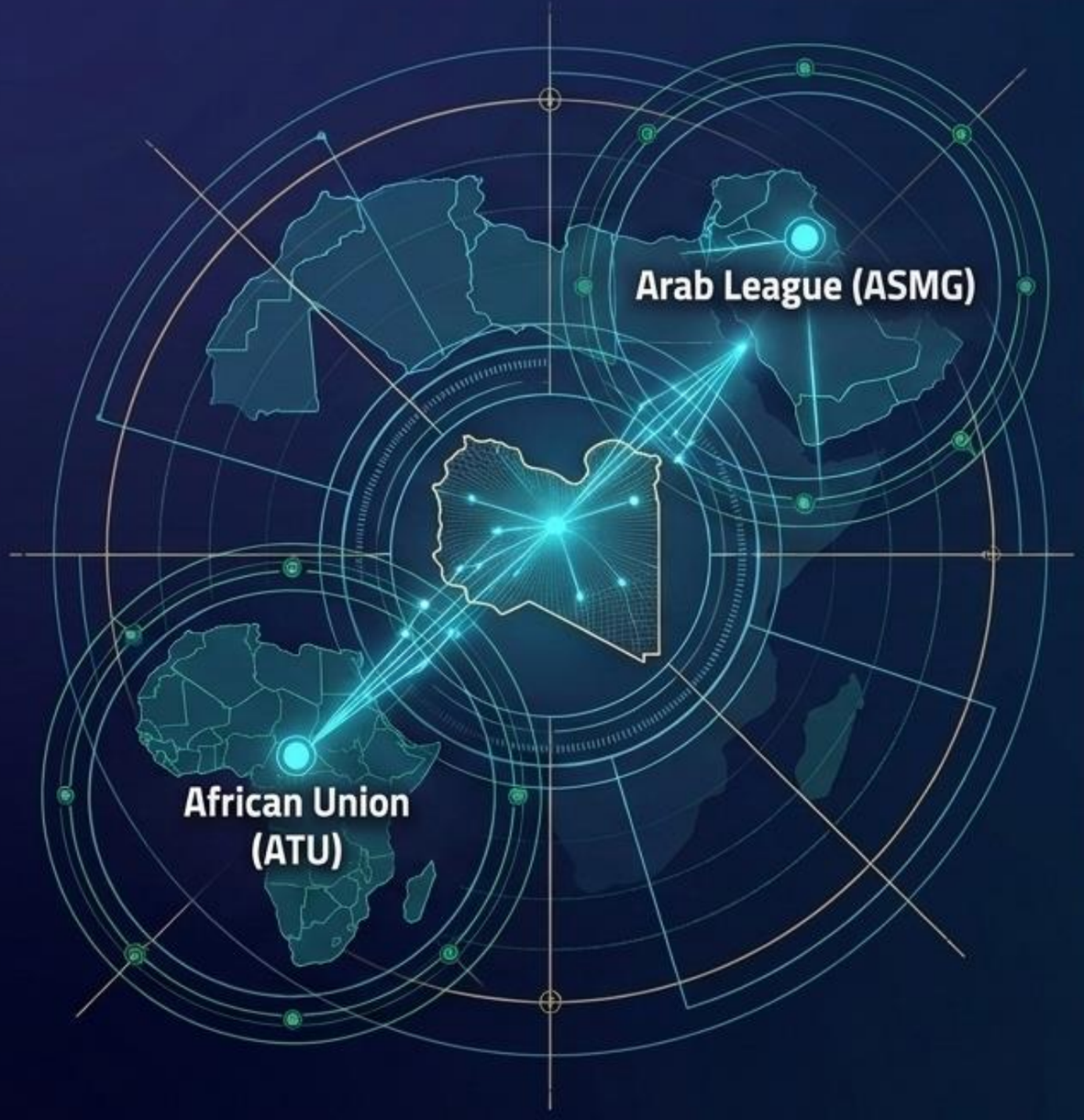
Smart devices evolve post-approval; regulation must be continuous.



Ensuring foreign equipment suppliers cannot introduce supply chain vulnerabilities or bypass authorization post-approval.

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Pillar 4: Regional Harmonization & MRAs



Resource pooling through international cooperation.
Developing nations cannot test everything alone.

Multiplying NRA capabilities through Mutual Recognition Agreements (MRAs).

Arab League (ASMG):
Harmonizing Arab accessibility and security.

African Union (ATU):
Building a regional regulatory intelligence network.

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Execution: The CGTIRD R&D Lab / التنفيذ: مختبر (CGTIRD) كذراع وطني للاختبار



استثمار استراتيجي لتفعيل إطار (SNCAF) في ليبيا.
(Strategic investment to operationalize SNCAF in Libya.)

محور إقليمي لتبادل المعرفة، وتجميع الموارد، واختبارات C&I المتقدمة.
(Regional hub for knowledge sharing, resource pooling, and advanced C&I testing.)

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Share: Sovereign Technical Arm for Testing
(CGTIRD National Lab)



Government (Regulator): General Authority for Communications and Informatics (GACI)

Academia: Universities and Scientific Research Centers

Testing and Certification: Conducting complex Type Approval tests locally.

5G Platforms: Dedicated test environments for 5G Standalone networks.

Industry: Telecom Network Operators.

Secure Innovation: Providing Regulatory Sandboxes to safely test emerging technologies.

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Powering the Blueprint: Infrastructure & Human Capital

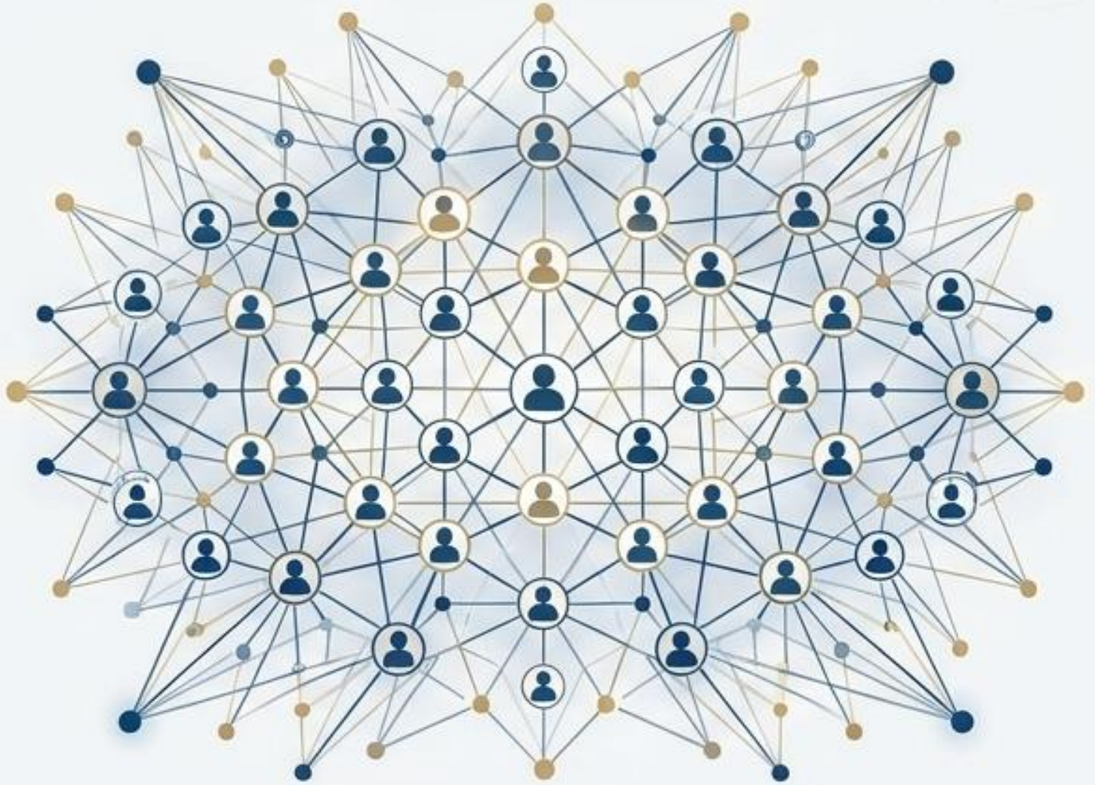
The Physical Engine: CGTIRD R&D Lab

- Functioning as the national **testing and innovation** arm.
- Operating on a **Triple Helix Model**: Fostering synergy between government, academia, and industry to validate interoperability and conformity standards.



The Human Engine: 15,000 Digital Cadres

- A massive, strategic national initiative to build human capacity.
- Equipping a new generation with the **digital skills** required to manage, govern, and secure AI-resilient smart ecosystems.



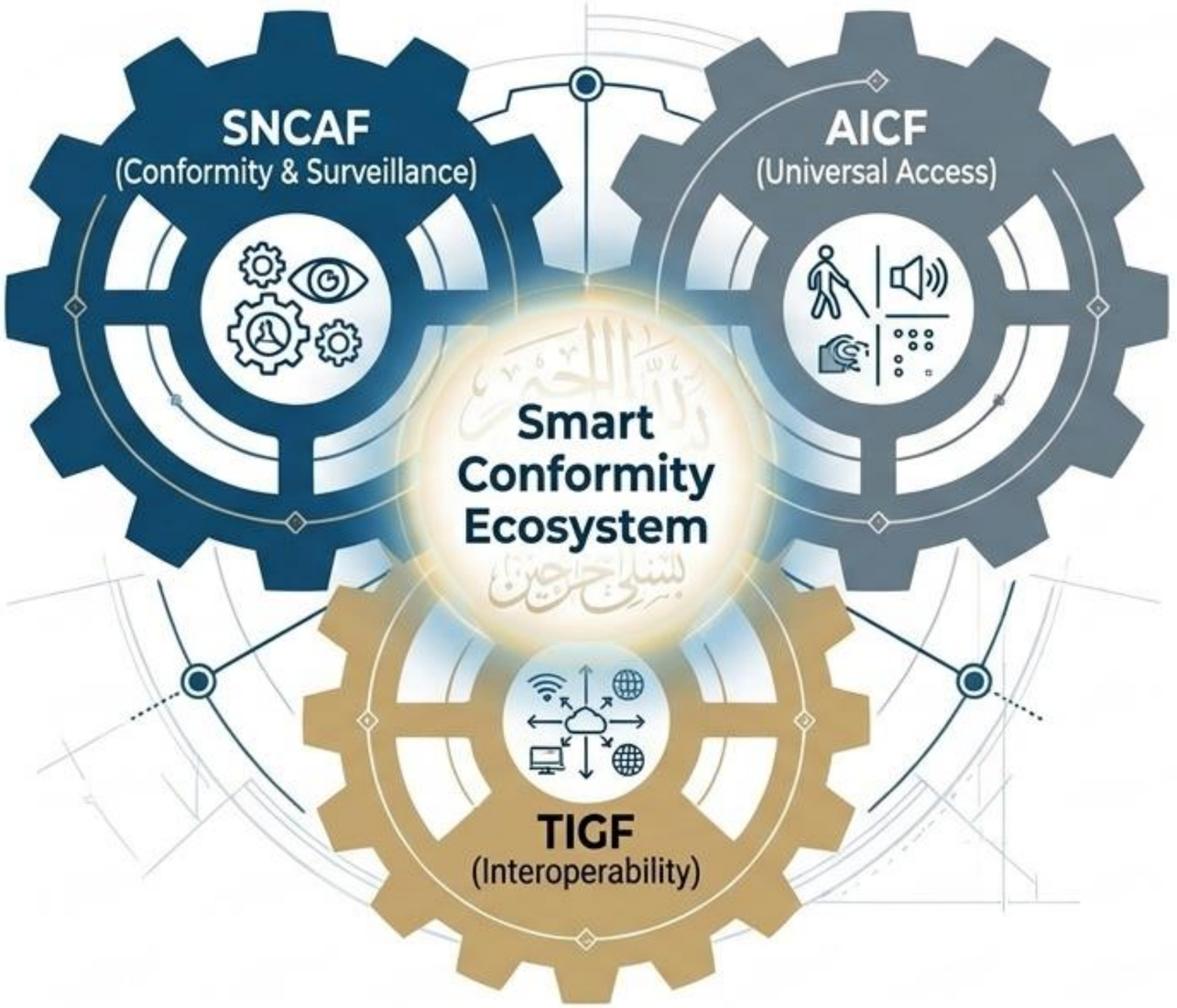
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Synthesis: The Smart Conformity Ecosystem

Insight

Conformity, accessibility, and **interoperability** are not separate regulatory checklists. They are deeply interconnected gears driving national digital sovereignty.



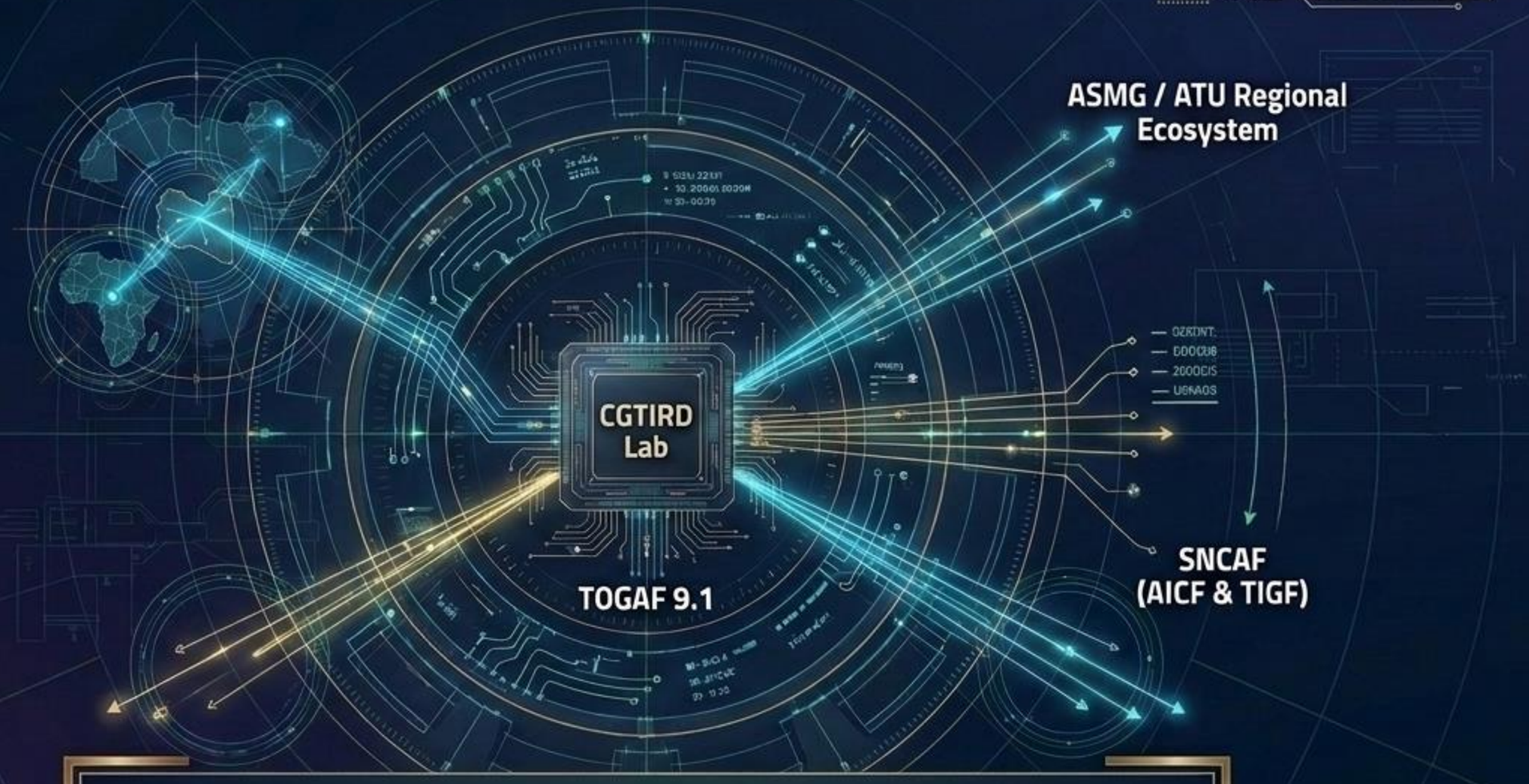
Mechanism

Driven by GACI's enterprise architecture approach, a failure or success in one framework directly impacts the operational reality of the others.

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Synthesis: The Complete Conformity Ecosystem



The CGTIRD Lab is the engine; TOGAF 9.1 is the OS; SNCAF is the output, pushing accessible, secure devices into the regional ecosystem.

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Share: Universal Digital Access & Market Protection

(Universal Access & Protection)



Fraud Prevention: Algorithmic Risk Engine (Algorithmic Risk Engine) to counter counterfeit devices.

Sovereign Tracking: National IMEI Tracking System (National IMEI Tracking)

Software Security: Implementing Software Bill of Materials (SBOM) requirements to ensure security transparency.

Note: The numbers and statistics presented in the slides are included for litostrative and stratlytic purposes.

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Development (Develop): Final Recommendations and Roadmap

(Final Roadmap)



Key References & Acronym Glossary

Acronyms

GACI: General Authority for Communications and Informatics (Libya)

SNCAF: Smart National Conformity Assessment Framework

AICF: Accessibility-Inclusive Conformity Framework

TIGF: TOGAF-based Interoperability Governance Framework

CGTIRD: Central Governmental Telecom & Informatics R&D Lab

ASMG: Arab Spectrum Management Group

ATU: African Telecommunications Union

Strategic Context

- Aligned with ITU-D Study Group 2 Question 4/2 (Availability, affordability, and conformance of ICT equipment).
- Supported by National Telecom Law No. 22 of 2010.
- Driven by Enterprise Architecture (TOGAF 9.1) principles.

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