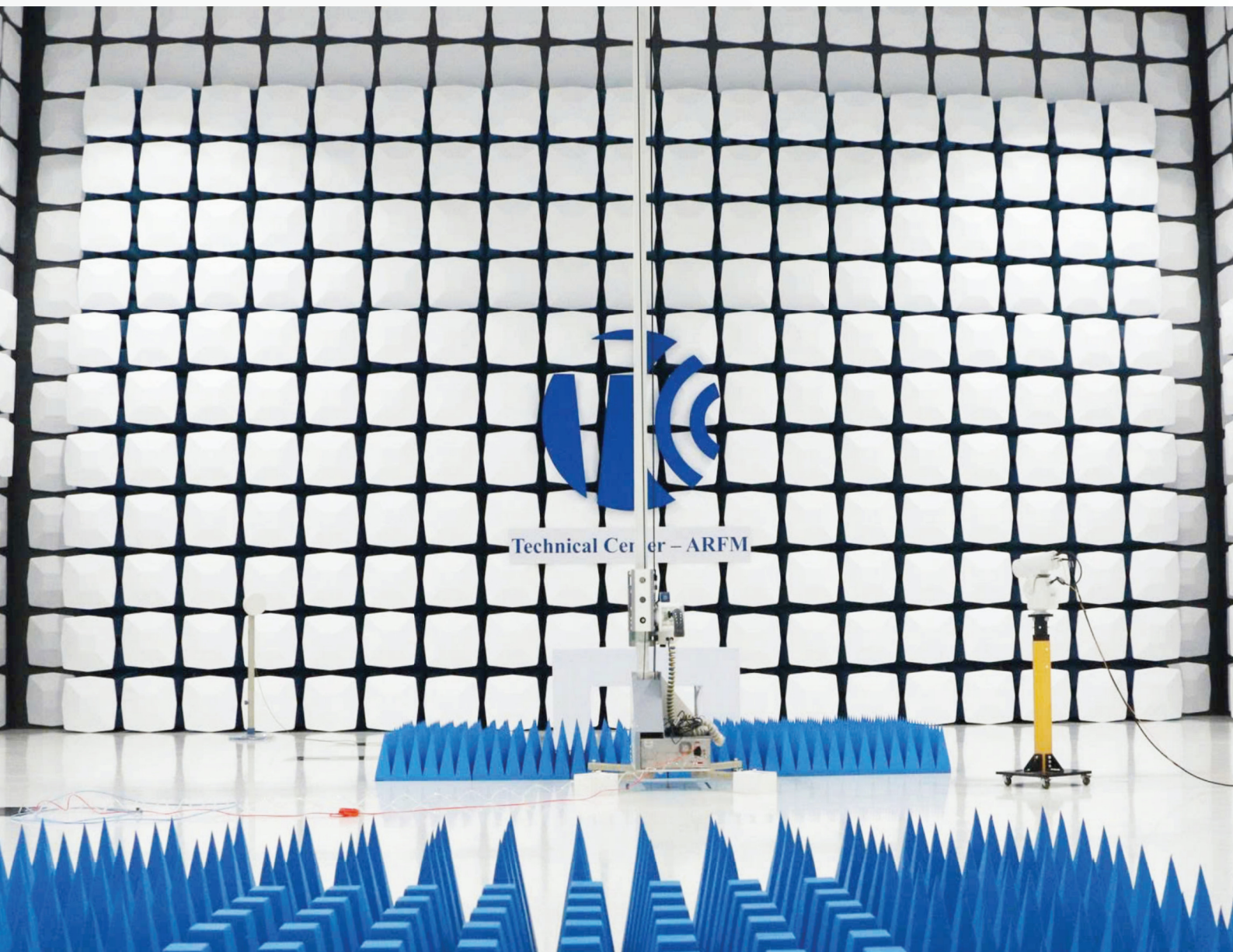




TEC - ARFM

TECHNICAL CENTER AUTHORITY OF RADIO FREQUENCY MANAGEMENT

Precision Measurement – Global Integration





VALUE PROPOSITION

The Technical Center – Authority of Radio Frequency Management (TEC-ARFM), under the Ministry of Science and Technology, established in 1998, is a pioneering public service organization in measurement and ICT testing in Vietnam. As an advisory body for the development of national technical standards and regulations, and a leading provider of technical services, we are a trusted partner committed to delivering value through three core pillars:

- 01 International Quality and Impartiality:** Ensuring accuracy, objectivity, and confidentiality. Accredited to ISO/IEC 17025:2017 and ISO/IEC 17065:2013 standards.
- 02 Digital Efficiency and Transparency:** Optimizing time-to-market via LIMS/QMS digital platforms, enabling online sample traceability through QR codes.
- 03 End-to-End Partnership:** Providing services ranging from in-depth technical consultancy to regulatory compliance support for seamless market entry.



VISION

To be Vietnam's leading ICT testing organization, ensuring trust for state management authorities and enterprises in the digital era.

MISSION

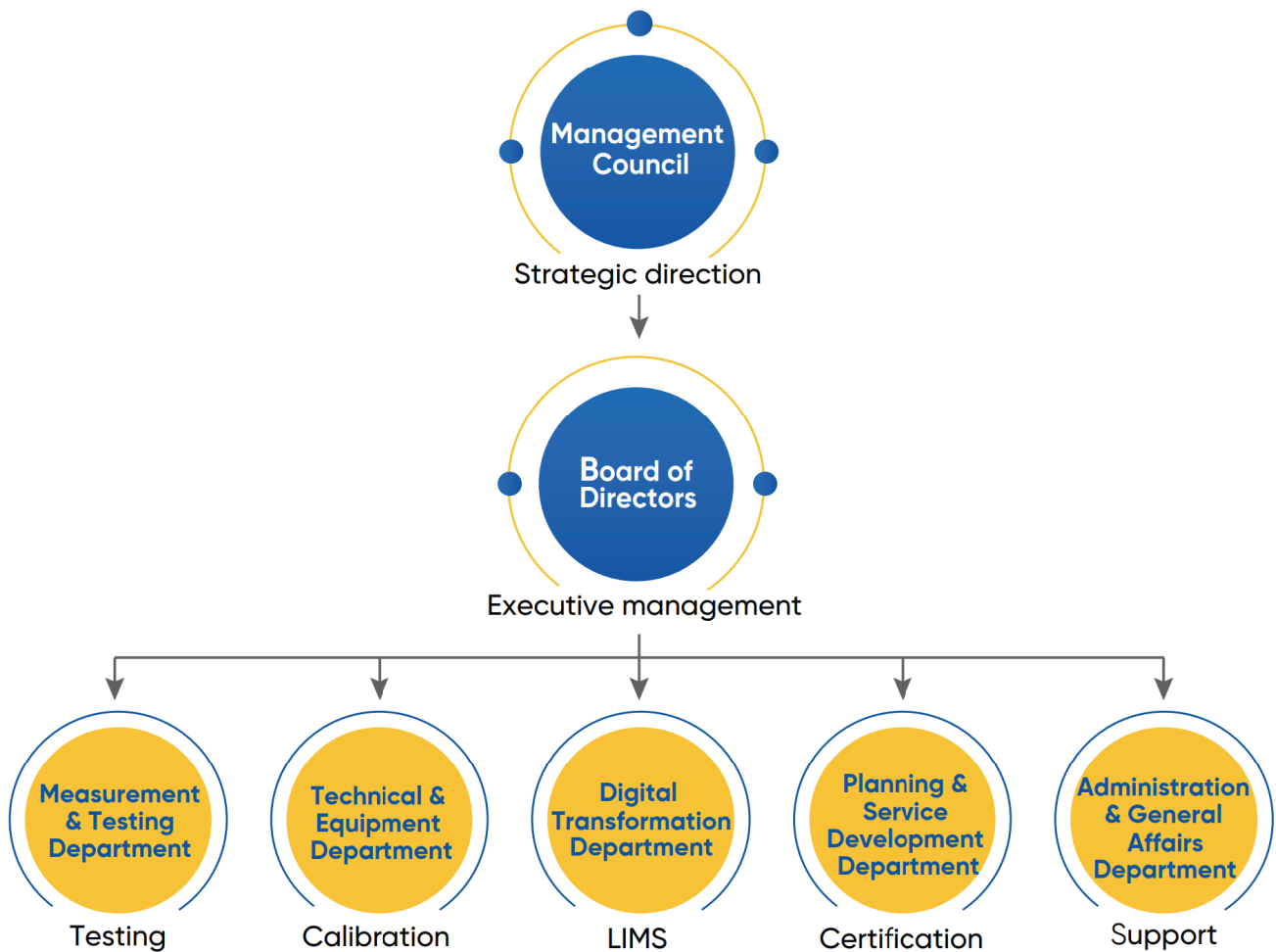
To ensure technical capacity in support of radio frequency management and provide advisory input for the development of national standards and technical regulations; to deliver testing, certification, and calibration services in accordance with international benchmarks; and to accompany enterprises in innovation and international integration.



CORE VALUES

- **Pioneering:** Leading through standards, delivering efficiency through technology.
- **Creativity:** Continuous innovation, creating distinctive value.
- **Professionalism:** Dedication, responsibility, quality, and accuracy.
- **Trustworthiness:** Transparency, integrity, and robust competence.

ORGANIZATION AND LEADERSHIP



Mr. Le Thai Hoa

Deputy Director General of the Authority of Radio Frequency Management and Chairman of the Management Council



Mr. Nguyen Van Khanh

Deputy Director



Mr. Nguyen Phuong Dong

Director



Mr. Bui Nhat Quang

Deputy Director



HUMAN RESOURCES

Our high-quality workforce is the core foundation driving and shaping the sustainable development of the Technical Center.



01
PhD



16
Master's
degrees



94%
Bachelor's
degree or higher



04
BoA technical experts
conduct laboratory
assessments



100%
Managers and staff in testing,
calibration, and certification
hold training certificates for
ISO/IEC 17065:2013 and ISO/IEC
17025:2017



We also take pride in our team of repair experts with outstanding technical proficiency, capable of performing chip-level repairs on complex radio measurement equipment modules from world-leading manufacturers such as TCI, R&S, GEW, PLATH, Keysight, Anritsu, Aeroflex, and others.

INTERNATIONAL QUALITY ASSURANCE SYSTEM

TEC-ARFM provides **Accurate** and **Reliable** services through an international accreditation system.

Scope of Competence	International Standard	Accreditation Code
Technical Testing	ISO/IEC 17025:2017	VILAS 060
Product Certification	ISO/IEC 17065:2013	

LEGAL BASIS

  	Regulations on the functions, duties, powers, and organizational structure of TEC-ARFM	
	Registration certificate for testing activities in the electrical and electronic fields	
	Registration certificate for the provision of verification, calibration, and testing services for measuring instruments and measurement standards	
	Registration certificate for product certification activities in the electrical and electronics sector, together with the certification scope	
	Decision appointing TEC-ARFM to conduct testing in support of state management under the Ministry of Science and Technology, together with the designated scope	
	Decision on laboratory accreditation (VILAS 060)	

CORE COMPETENCIES

TEC-ARFM focuses on six core technical competencies, delivering comprehensive services for the digital age.

01

Internationally Harmonized Standardization

Advising on the development of nationally issued standards and technical regulations harmonized with international practices, ensuring product quality and safety while facilitating successful international market access for Vietnamese goods.

02

Wideband ICT Testing (RF/EMC)

Electromagnetic compatibility and radio frequency testing for telecommunications equipment, compliant with TCVN/QCVN/IEC/EN/CISPR/47 CFR standards.

03

Radiation Safety Assessment (SAR/EMF)

Testing specific absorption rate, electromagnetic field exposure in accordance with stringent international standards, ensuring user safety.

04

Product Certification

Certification of household electrical and electronic appliances and handheld electrical devices to meet all applicable safety standards.

05

Precision Calibration

High-accuracy calibration services for measuring instruments and radio equipment in accordance with international standards. Leading antenna calibration capability in Vietnam.

06

Radio Measurement Equipment Repair

Chip-level repair capability for complex measurement modules from manufacturers such as TCI, R&S, GEW, Keysight, Anritsu, etc., helping clients save cost and time.

OPERATIONAL CAPABILITIES



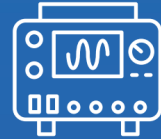
TCVN/QCVN standards covering RF, SAFETY, EMC, and SAR/EMF

Advised on the development and official issuance of national standards for RF, SAFETY, EMC, and SAR/EMF (including QCVN 47:2015, 132:2022, 134:2024, 86:2025, and TCVN EMF). This ensures product safety and quality, driving the international integration of Vietnamese goods.



Development of SDR Frequency Monitoring Equipment

Monitoring capability up to 6 GHz, flexible operation on multiple platforms: fixed stations, mobile vehicles, drones, etc.



Calibration of Measuring Instruments and Radio Equipment

Calibrating over 180 devices per year with frequency ranges up to 40 GHz, sustaining reliability and quality for technical operations.



Specialized Antenna Calibration

Calibrating more than 80 antennas per year with frequency ranges up to 18 GHz. TEC-ARFM is among the few laboratories in Vietnam with dedicated antenna calibration capability.



Chip-Level Technical Repair

Repairing over 150 complex modules annually from world-leading manufacturers, enabling cost savings and extending equipment lifecycle.



Comprehensive RF, EMC, and EMF/SAR Testing Services

Testing more than 1,800 samples annually for ICT products, radio-electronics, and lighting product groups.



Product Certification

Certification for 12 groups of household electrical and electronic products and handheld electrical tools in compliance with TCVN/QCVN/IEC/CISPR standards.

EQUIPMENT AND TECHNOLOGY

Modern and synchronized testing and calibration equipment meeting international standards from world-leading manufacturers such as TDK, Rohde & Schwarz, Keysight, Anritsu, Speag, etc.

01. 3M ELECTROMAGNETIC COMPATIBILITY (EMC) TESTING LABORATORY

Deputy Minister of Information and Communications Le Nam Thang inaugurating the 3M EMC Laboratory in Hanoi in 2011.



 **Standards:** ANSI C63.4, EN 50147-1, CISPR 16-1-4, CISPR 22, IEC 61000-4-3, FCC part 15

 **Frequency Range:** Up to 40 GHz  **Distance:** 3m

 **Quality Parameters:** NSA ± 3.5 dB; SVSWR +6.0; FU 0/+6 dB



02. 10M ELECTROMAGNETIC COMPATIBILITY (EMC) TESTING LABORATORY

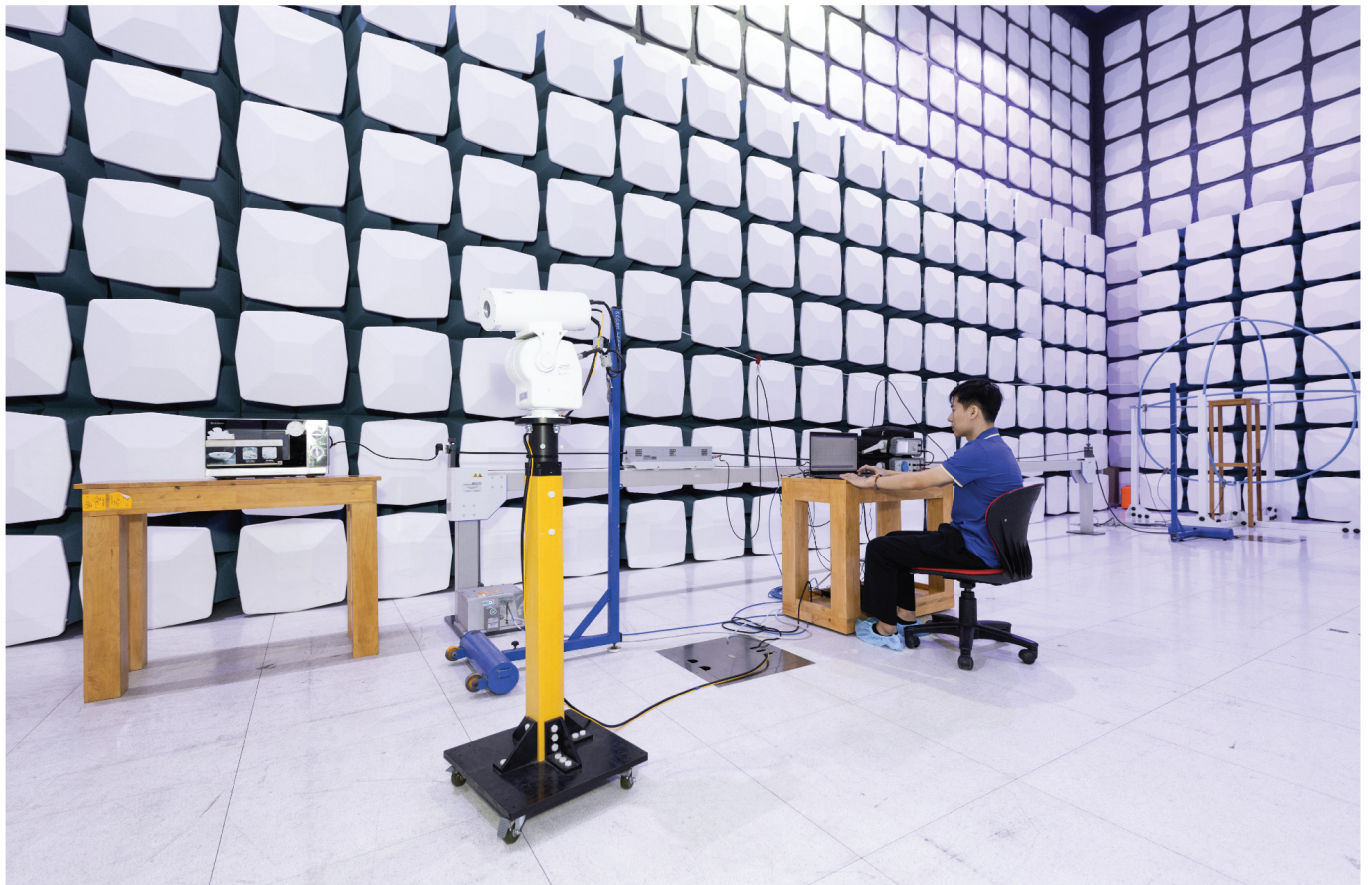
Deputy Minister of Information and Communications Pham Hong Hai inaugurating the 10M EMC Laboratory in Ho Chi Minh City in 2018.



 **Standards:** ANSI C63.4; EN 50147-1; CISPR 16-1-4; CISPR 11/22; IEC 61000-4-3, FCC part 15

 **Frequency Range:** Up to 40 GHz  **Distance:** 10m

 **Quality Parameters:** NSA ± 4.0 dB; SVSWR +6.0; FU 0/+6 dB



03. ELECTROMAGNETIC INTERFERENCE (EMI) AND ELECTROMAGNETIC IMMUNITY (EMS) MEASUREMENT SYSTEM



 **Standards:** CISPR 11/13/14/15/22/32/35; IEC 61000-4-2/3/4/5/6/8/11, IEC 61000-3-2/3; ETSI EN 301489 series; FCC part 15; QCVN 9/18/19/86/93/94/96/100/103/112/118/119/130... issued by the Ministry of Science and Technology

 **Frequency Range:** 9 kHz – 18 GHz

 **Test Levels :** 10 V/m (RI) và 10 Vrms (CI); 16 kV (ESD); 5 kV (Burst/Surge)



04. RADIO FREQUENCY (RF) TESTING SYSTEM



 **Standards:** ETSI EN 300220/300328/300330/300440/301893...; QCVN 16/41/47/54/55/65/66/73/74/77/91/110/111/117/122/127/129/131/136... issued by the Ministry of Science and Technology.

 **Frequency Range:** 9 kHz – 50 GHz



05. CALIBRATION SYSTEM

Calibration of radio equipment and specialized antennas, ensuring high accuracy and performance.



 **Procedures:** DLVN 51/102/115/117;
QTHC-01/02/03/04/05/06/07/08/09



Measuring Instruments: Antennas, spectrum analyzers, signal generators, power meters, radio communication testers, measurement receivers, and related instruments



CMC: 1° (antenna radiation patterns); 1.2×10^{-40} (10 MHz); 0.17 dB (DC–40 GHz); 0.5 dB (SINAD); 0.1% (modulation distortion)



06. RADIATION SAFETY TESTING SYSTEM (SAR/EMF)

Assessment of electromagnetic radiation safety for handheld and body-worn wireless devices.



 **Standards:** IEC/IEEE 62209-1528; QCVN 134:2024/BTTTT  **Frequency Range:** 650 MHz–6 GHz

07. BROADBAND ELECTROMAGNETIC FIELD (EMF) EXPOSURE MEASUREMENT SYSTEM



EMF Measurement System MS2090A



EMF Measurement System SMASTS-AMC-01

 **Standards:** IEC 62232; ITU-T K.83/100/113; QCVN 8/78 issued by the Ministry of Science and Technology

 **Frequency Range:** 9 kHz–6 GHz

EQUIPMENT REPAIR



RESEARCH AND DEVELOPMENT



Minister of Science and Technology Nguyen Manh Hung visited the TEC-ARFM and provided strategic guidance for its development.



Secretary-General of the International Telecommunication Union (ITU) Houlin Zhao visited the TEC-ARFM.

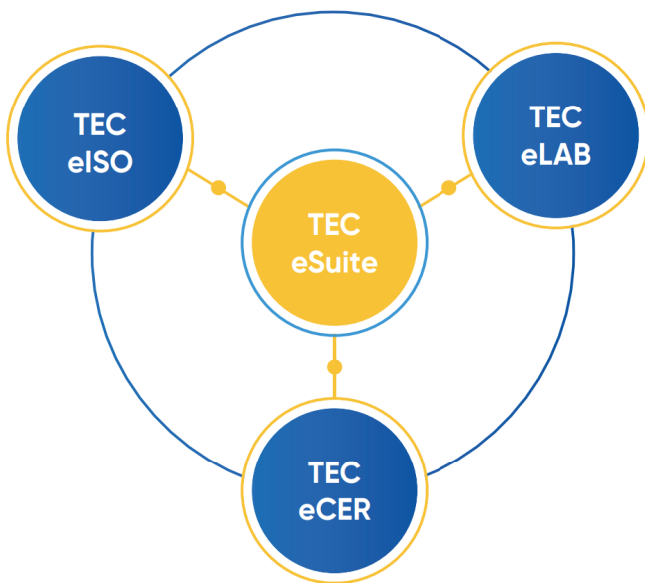
01. EMF FIELD STRENGTH MONITORING AND MAPPING SYSTEM



02. EQUIPMENT REPAIR AND DEVELOPMENT OF FREQUENCY MONITORING EQUIPMENT



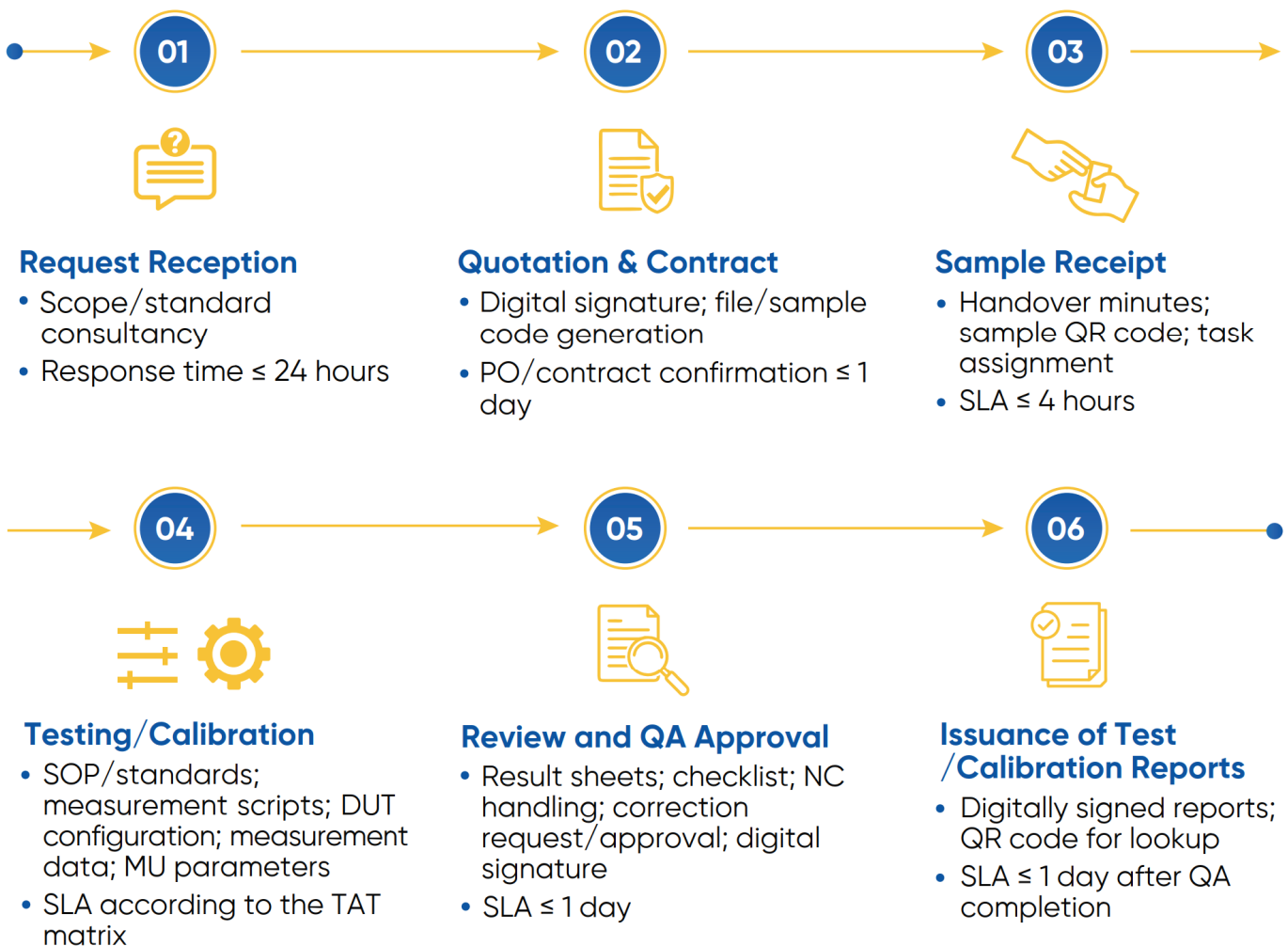
DIGITALIZATION SYSTEM



The comprehensive digital management platform **TECeSuite** helps automate and ensure transparency across all processes, ensuring progress and enabling easy access to results:

- Laboratory Information Management System (LIMS) **TECeLAB**: compliant with ISO/IEC 17025:2017.
- Certification Services **TECeCER**: compliant with ISO/IEC 17065:2013.
- Document Management **TECeISO**.

End-to-end digital workflow with LIMS: traceability, digital signatures, sample status lookup API and transparent SLAs, data security, and 8×5 technical support.



CUSTOMERS AND PARTNERS

TELECOMMUNICATION INFRASTRUCTURE & MOBILE COMMUNICATION EQUIPMENT			
			
			
			
MARITIME, AVIATION, SATELLITE & BROADCASTING EQUIPMENT			
			
			
			
ICT EQUIPMENT			
			
			
			
			
PRIVATE MOBILE RADIO (PMR) EQUIPMENT			
			
AUTOMOTIVE, INDUSTRIAL IOT & DRONE EQUIPMENT			
			
			

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DIGITAL CONNECTIVITY

Digital Channels	
Capability Overview Video	
	Capability Profile
Online Test Registration	



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ACKNOWLEDGEMENTS

TEC-ARFM sincerely thanks our valued customers, partners, and colleagues for your continued trust and support throughout our development journey. Your cooperation and encouragement are the driving forces that motivate us to continuously innovate, enhance service quality, and expand our technical capabilities.

With professionalism, creativity, and dedication, we remain committed to delivering advanced technological solutions and contributing to the development of a modern, safe, and sustainable radio communications infrastructure.



TEC - ARFM

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