



ICT CONFORMITY ASSESSMENT IN THE DIGITAL TRANSFORMATION SCENARIO

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TELECOMMUNICATION**

Agenda

- **Introduction**
- **Digital Transformation impact**
- **CPQD focus on digital transformation**
- **Test laboratories – Importance to digital transformation**
- **Compliance assessment – The key for successful digital transformation**
- **Final Remarks**

Introduction

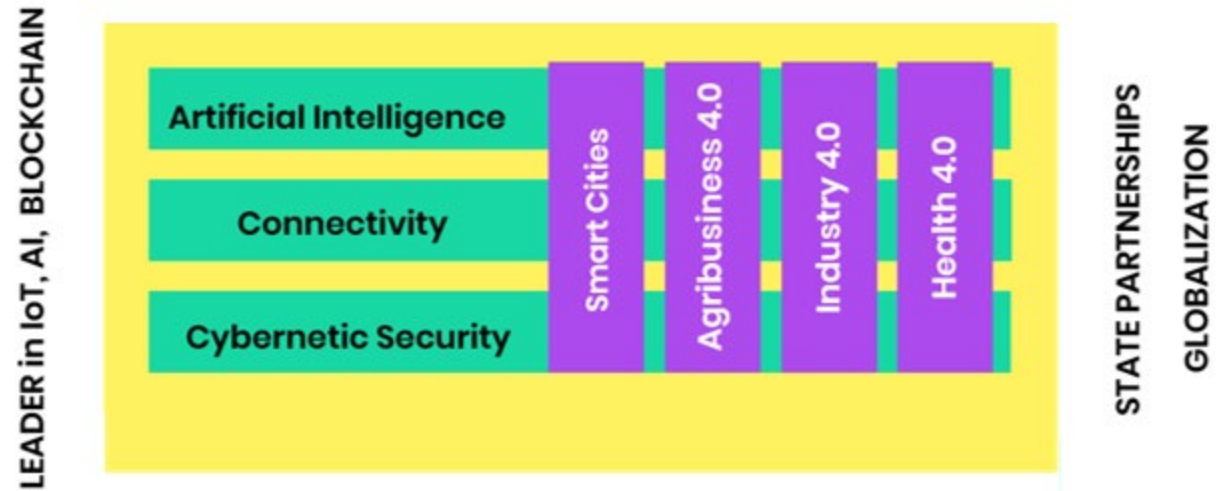
The purpose of this presentation is to provide an overview of the importance of testing and conformity assessment of products and solutions for the Digital Transformation Scenario.

Digital Transformation impact

- Digital transformation involves the integration of digital technologies and solutions into all areas of a company and human activities.
- It has become very important in the rapidly evolving business environment
- Makes possible for organizations to seek to stay competitive and adapt to changing customer needs and expectations.
- However, its implementation can also be complex, requiring careful planning, investment and execution to ensure the success of the adopted solutions.

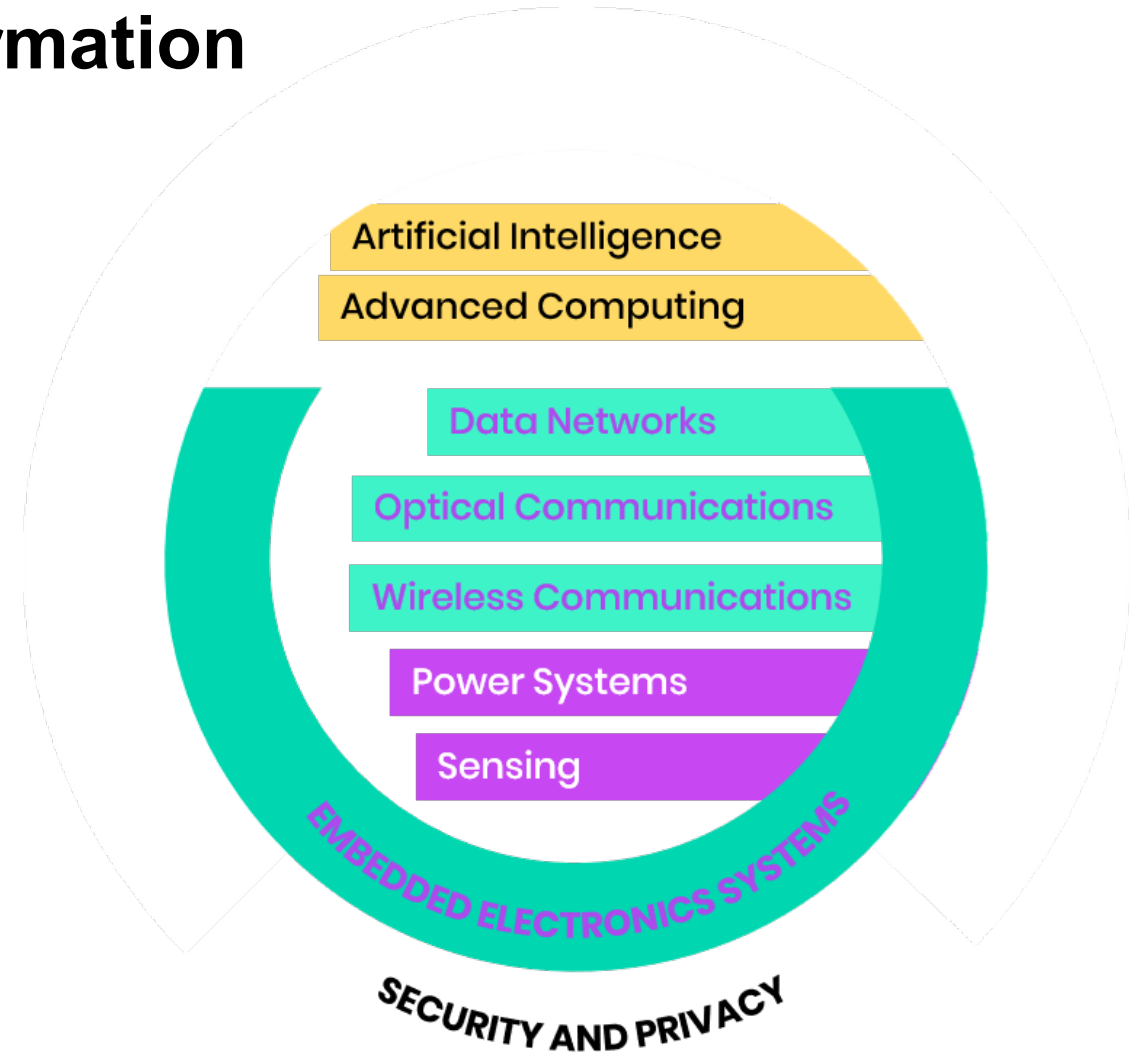
CPQD focus on Digital Transformation

STRATEGIC THEMES AND GUIDELINES



CPQD focus on Digital Transformation

TECHNOLOGY PLATFORMS



CPQD focus on Digital Transformation

**ACTIVITIES
THAT ACCELERATE
THE GENERATION
OF VALUE IN THE DIGITAL
TRANSFORMATION PROCESS**

TESTING AND CERTIFICATION

Ensure compliance with quality, safety, performance and interoperability standards when evaluating products and systems.

CONSULTING SERVICES

Support for decision-making in choosing new technologies and overcoming technical and regulatory challenges related to ICTs.

SMART INTERACTION

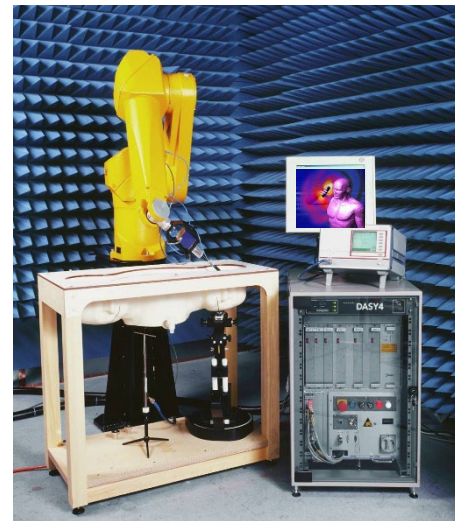
Improves communication between companies and customers through natural interfaces and artificial intelligence.

Test laboratories – Importance to Digital Transformation

- Acoustic
- Antennas
- Batteries
- Cables
- Corrosion
- Chemical
- Climatic
- EMI/EMC
- Full Conformance 2G, 3G, LTE, LTE-A, and 5G
- Protocol and Communication Interfaces
- Optical Fiber and Optical Equipment



- Radio and Signaling
- Cyber security
- Safety
- SAR



Test laboratories – Importance to Digital Transformation

- Test laboratories are crucial to R&D and innovation efforts
- Supports the regulatory agencies by adopting certification processes to assure conformity with quality specifications and national standards
- Enhances user safety and protection of consumer rights
- Increases national industry quality and competitiveness
- Supports growth of knowledge on emerging technologies
- Can support market surveillance activities
- Important tests to be done in products: EMC, Safety, SAR, interoperability, cyber security, RF etc.

CPQD experience on conformity assessment

Examples of nonconformity with regulatory requirements issued by ANATEL:

- Electromagnetic Compatibility and RF testing
- Protocol testing (e.g., IPv6) due to the particular characteristics of the national Brazilian network
- DFS - **Dynamic Frequency Selection**. (software incompatibility)
- Safety (including problem of batteries)
- SAR (Specific Absorption Rate)
- RF power emission
- Among others

Conformity Assessment - The key for successful Digital Transformation

- Conformity assessment is essential to ensure that digital products, hardware systems and services are reliable, secure, and meet the expected behavior and quality specifications
- It shall provide assurance that a product meets specific standards and regulatory requirements (e.g., Anatel regulations)
- There are different activities to be adopted according to the need, such as compliance test, inspection, and certification
- Requirements should be tested for EMC, Safety, RF emissions, protocols (e.g., IPv6), batteries, cybersecurity, SAR (specific absorption rate), etc.

FINAL CONSIDERATIONS

- Due to the use of several technologies in communications, hardware and software, it is possible to conclude that the conformity assessment is an essential part of a successful transition
- As a result, test facilities and regulatory compliance testing are critical to ensure the success of adopted solutions

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