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**Committee on Technical Barriers to Trade**

**THEMATIC SESSION ON CONFORMITY ASSESSMENT PROCEDURES  
(DIGITAL SOLUTIONS)**

8 MARCH 2022, 15:00-18:00

*Moderator's Report<sup>1</sup>*

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At the Ninth Triennial Review, Members agreed to continue to hold thematic sessions in conjunction with its regular meetings during 2022 to 2024, with a view to further deepening the Committee's exchange of experiences on specific topics. On this basis, the Committee agreed to hold a thematic session on conformity assessment procedures with a focus on digital solutions.<sup>2</sup> Information about the speakers, presentations, and related materials are available on the WTO website.<sup>3</sup>

**1 GUIDING QUESTIONS**

- How have new technologies enabled the adoption of digital solutions for conformity assessment? What is the role of the private sector and other stakeholders (NGOs, civil society, etc) here? What are the challenges for developing Members in the adoption and application of such digital solutions, given in particular costs, complexity and the ever-evolving nature of new digital technologies?
- How can digital legal, regulatory and technological approaches (e.g., blockchain, single window, e-transferrable records, remote conformity assessment, etc.) be implemented in accordance with core TBT principles and good regulatory practice? What's the role in particular of international standard-setting activities here?
- Electronic certificates of conformity are considered one of the possible digital solutions for improving conformity assessment. What have Members learned in their efforts to promote electronic certificates of conformity and other digital solutions? What to do, and what not to do?

**2 INTERVENTIONS**

2.1. **Dr. Wang Yunsong<sup>4</sup>** (China) presented on national quality infrastructure development and application in the context of digitalisation. First, he said that digital transformation profoundly affects economic and social development. While the digitalization of industries is advancing at a high speed, there is a digital divide between developed and developing countries that may bring new inequalities. Second, digital transformation puts new demands on government regulation. In the digital era, important changes in industrial organization and business models have brought about a series of cross-cutting issues that integrate the regulations of competition, finance, platforms and quality. At the same time, online shopping and cross-border e-commerce has changed the traditional consumer experience to such an extent that existing conformity assessment systems are not enough to deliver quality signals to consumers. Third, he said that there is an urgent need to innovate and upgrade

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<sup>1</sup> Mr. Warren Merkel (United States). This Report is provided on the Moderator's own responsibility.

<sup>2</sup> [G/TBT/46](#).

<sup>3</sup> [https://www.wto.org/english/tratop\\_e/tbt\\_e/tbts\\_e/tbts080322pm\\_e.htm](https://www.wto.org/english/tratop_e/tbt_e/tbts_e/tbts080322pm_e.htm)

<sup>4</sup> Deputy Director-General of the Quality Development Bureau of the State Administration for Market Regulation of China.

the quality infrastructure to provide the fundamental technical rules in the context of digitalization and to assist in opening the evolutionary path of scientific and technological innovations.

2.2. **Dr. Lucian Cernat**<sup>5</sup> (European Union) elaborated on the role of new technologies in facilitating international trade using the case of electronic certificates. He highlighted the key digitalization challenges for CAPs: (i) how to operate in a world where products are increasingly digital; (ii) how to embrace new digital technologies to enhance CAPs; (iii) how to meet increasing demand for quality, safety and traceability from global consumers; (iv) how to move towards a more circular economy; and (v) how to adapt to post-COVID-19 realities that accelerated the adoption of disruptive technologies. Despite these challenging developments, he said, CAPs are evolving and getting smarter (for example, emergence and use of "smart laboratories", blockchain technologies, sensors, big data, cloud computing, real-time information). Digital tools are needed to enable conformity assessment to tackle new challenges, such as enabling market surveillance over an update of embedded software in a smart device. In this context, he noted that the European Union has been promoting a digital agenda for years which builds upon cloud computing, big data, artificial intelligence, providing a legal background to allow for the gradual deployment of these digital technologies.

2.3. Despite the rapid technological developments, the vast majority of trade procedures are still paper-intensive. For example, shipping a container from Mombasa to Rotterdam generates a pile of paper 25 cm tall. As such, it is important to explore technological solutions for upgrading national quality infrastructure (e.g., blockchain platform are one option that would allow to create the digital infrastructure for the trusted exchange of digital certificates).

2.4. **Mr. Lin Feng**<sup>6</sup> (China) presented a solution for conformity assessment digitalisation based on blockchain technology. He elaborated on three main benefits of using blockchain technology for conformity assessment digitalization.

2.5. First, blockchain technology promotes the digital transformation of conformity assessment. Conformity assessment is normally performed by people, and, therefore, the results of conformity assessment can be affected by personal subjective judgement. Blockchain technology can shift the method of manual collection of audit findings and data towards automatic data collection through information system and sensors to improve authenticity and objectivity of conformity assessment process. This could increase trust in the data and confidence in the conformity assessment bodies.

2.6. Second, blockchain technology promotes the digital transformation of conformity assessment patterns. A traditional trust-building paradigm for conformity assessment process is based on credibility of conformity assessment bodies. Blockchain technology can be used for developing a new trust-building paradigm. In particular, additional machinery verification can supplement the traditional institutional identification. New conformity assessment patterns can also provide customized service for enterprises by demonstrating additional attributes of a product other than simple compliance to the standard.

2.7. Third, blockchain technology promotes the digital transformation of conformity assessment supervision. In the current practice, regulatory authorities, including accreditation bodies, mainly conduct spot checks on the record of the conformity assessment process, but sometimes the record cannot fully reflect details of the conformity assessment process. Blockchain technology can be used for requiring conformity assessment bodies to automatically generate unique hash value of conformity certificates, process information and upload it to the chain. This would potentially eliminate the occurrence of fraudulent records and false certificates. As such, the use of blockchain technology could change supervision patterns and help to achieve cost and time efficiency.

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<sup>5</sup> Head of Global Regulatory Cooperation and International Procurement Negotiations, European Commission, DG Trade.

<sup>6</sup> Deputy director, China Certification & Accreditation Institute, State Administration for Market Regulation.

2.8. **Ms. Gabi Kimura**<sup>7</sup> (European Union) introduced the *TÜV Rheinland* system that provides online access to conformity assessment certificate information, called *Certipedia*. *TÜV Rheinland* is a global testing certification provider that holds over 750 accreditations. *TÜV Rheinland* decided to launch *Certipedia* as an online certificate database portal that allows for easy verification of conformity assessment certificates. It is publicly accessible and is intended to be used by different stakeholders, including regulatory authorities, manufacturers and customers. *Certipedia* has almost 600,000 valid certificates, most of which are product certificates.

2.9. **Mr. Matt Gantley**<sup>8</sup> (United Kingdom) introduced IAF *CertSearch* and its role in supporting market confidence. IAF *CertSearch* is an online database launched in 2020 that contains the largest and most up-to-date collection of accredited management systems certificates in the world. It allows users to validate individual management systems certificates from any economy, in any language, in real time. The database supports the mutual recognition of management systems in a cost-effective and efficient manner, supporting trade and consumer protection. In addition, it supports the principal objective of IAF, that is "certified once, accepted everywhere".

2.10. He further noted that the growth of private databases slows down the process of validating a management system certificate. In this regard, he explained that the main advantage of IAF *CertSearch* is that it brings all information together in one place allowing validation to happen in seconds. While IAF *CertSearch* is a voluntary model and contains only 34% of the potential management systems certificates, it has the potential to become a global central point of fast and up-to-date verification and a vital tool for regulators, certification and accreditation bodies. The priorities for the IAF in this regard would be to (i) maximize participation; (ii) ensure a sustainable funding mechanism; (iii) ensure full protection of the data; (iv) encourage data interoperability and cross-referencing across databases; and (v) support developing nations to participate in this database.

2.11. **Mr. Brett Hyland**<sup>9</sup> (Australia) described foundations for future digital product conformity systems. In his presentation, he focused on the identification problem in the supply chain. He said that conformity assessment certificates are not linked to the physical delivery of the products due to the prevailing use of paper documents. Any lack of clear identification of the product, he said, is an opportunity for documentation fraud or for a product substitution.

2.12. He then described one Australian response to this issue. For example, *InfraBuild*, a private steel company, attaches a physical tag with a QR code, backed by a common data matrix, to each delivered bundle of steel that contains detailed information about the product delivered (reference to the manufacturer, product code, batch number, test report, delivery docket). Because data matrix is ISO/IEC-based, any technology will be able to uniquely read this information and share with other systems.

2.13. **Mr. Lai Wei**<sup>10</sup> (China) presented on the implementation of digital engineering certification and testing to promote the high-quality development of engineering construction. He explained that JCC is a certification and testing body in China.

2.14. According to his presentation, digital engineering has penetrated into all aspects of the engineering construction industry value chain. However, the quality control link is incomplete, and there is a lack of conformity assessment methods such as testing and certification to ensure the digital construction of projects and the quality of digital assets in buildings, and to transmit trust. In this context, he introduced the history and development achievements of digital engineering certification and testing in China. He said that digital engineering certification had been carried out for more than 60 projects to protect the quality of engineering construction.

2.15. Some challenges in this field include the need to add digital certification and testing-related content to the existing conformity assessment system. Opportunities include the possibility to build

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<sup>10</sup> Chief Expert of Digital Engineering in Beijing ZhongJianXie Certification Centre Co., Ltd (JCC).

an all-round, all-factor international digital conformity assessment system on a global scale to serve the high-quality development of engineering construction.

### 3 DISCUSSION

3.1. The discussion was focused on the following issues: (i) what are the benefits of implementing digital technologies in conformity assessment; (ii) what are some of the main obstacles related to implementing digital technologies in conformity assessment; and (iii) what can be done to address those obstacles.

3.2. With respect to the first issue, participants said that digitization had several benefits, including: (i) a levelling effect that enables smaller companies and conformity assessment bodies to compete; (ii) reduction of fraud and product substitution, better integrity in supply chain; (iii) greater data quality; (iv) simplified access to and analysis of the data; (v) simplified confirmation of authenticity of certificates; and (vi) improved objectivity, transparency, traceability of conformity assessment. There was also discussion on how regulatory authorities can make use of online databases presented to authenticate certificates.

3.3. With respect to the second issue, participants said that many developing countries lack digital technologies and infrastructure. Similarly, participants flagged that smaller companies could lag in adopting digital solutions. The underlying complexity of the technologies in question, and the difficulty in ensuring high quality data, present additional obstacles. Certain technological challenges for assessing conformity were discussed: e.g., blockchain technology (interoperability, legal basis, acceptance by regulators) and 3D Printing (data quality, different uses entailing different risks).

3.4. With respect to the third issue, participants said that the national quality infrastructure should be used for implementing digital solutions for conformity assessment. In addition, it was noted that governments need to clearly define their strategy with respect to digital solutions for conformity assessment. In addition, participants said that it is also important to promote research on digitalization of conformity assessment to develop trust and common international approaches.

### 4 COMMENT BY THE MODERATOR

4.1. We heard clearly that progress in the area of digital technologies and solutions for CAP largely depends on innovation and upgrading the national quality infrastructure. Digitization can have a levelling effect, allowing smaller companies and CABs to showcase services and compete worldwide. However, many developing countries lack digital infrastructure and lag in uptake of these technologies, so we need to find ways to overcome this digital divide.

4.2. Despite rapid technological developments, trade procedures are still paper-intensive and with lots of red tape – we heard that shipping a container from Mombasa to Rotterdam still generates a pile of paper 25 cm tall. We saw useful examples of how online databases of certificates enable stakeholders, including regulators, to verify the authenticity of certificates in a swift and secure manner. Another interesting example showcased efforts to connect various conformity assessment documents (such as test reports, inspection reports and product certificates) to the physical product through a QR code, backed by a common data matrix. This approach still works in a fully paper-based environment and could thus allow different Members to move at different paces.

4.3. Digital technologies and solutions can help improve the objectivity, transparency of CAP and provide better integrity in supply chain. They can also support the acceptance and recognition of conformity assessment results, towards the vision of "tested, certified once, accepted everywhere". Yet, in today's market, conformity assessment must tackle increasingly complex challenges. For instance, in the area of medical products, how can market surveillance authorities verify that a software update to a medical device will not endanger patient safety. 3D Printing also presents novel conformity assessment challenges as "printing" instructions (software) and their results (the actual physical "printing") both take place in different places and times, and entail different risks.

4.4. Blockchain technology could be employed as one tool for digitalization of conformity assessment, providing real-time access to conformity data, and support post-market activities as well. But we would need to overcome certain barriers holding back this technology, such the lack of interoperability between platforms, lack of legal footing and absence of regulatory cooperation. We

heard about innovative approaches in the construction industry, using digital engineering to facilitate conformity assessment. Other industries, like aerospace, automotive, food and telecoms, are also driving forward digital solutions.

4.5. The key to unlocking the potential of digital solutions for conformity assessment is building up the requisite level of trust among Members and other stakeholders. It is clear that there is a lot more work to be done in this space, and the TBT Committee will have a vital role to play.

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