Digital Trade – Guidance for National Standards Bodies

UK International Development
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Commonwealth Standards Network

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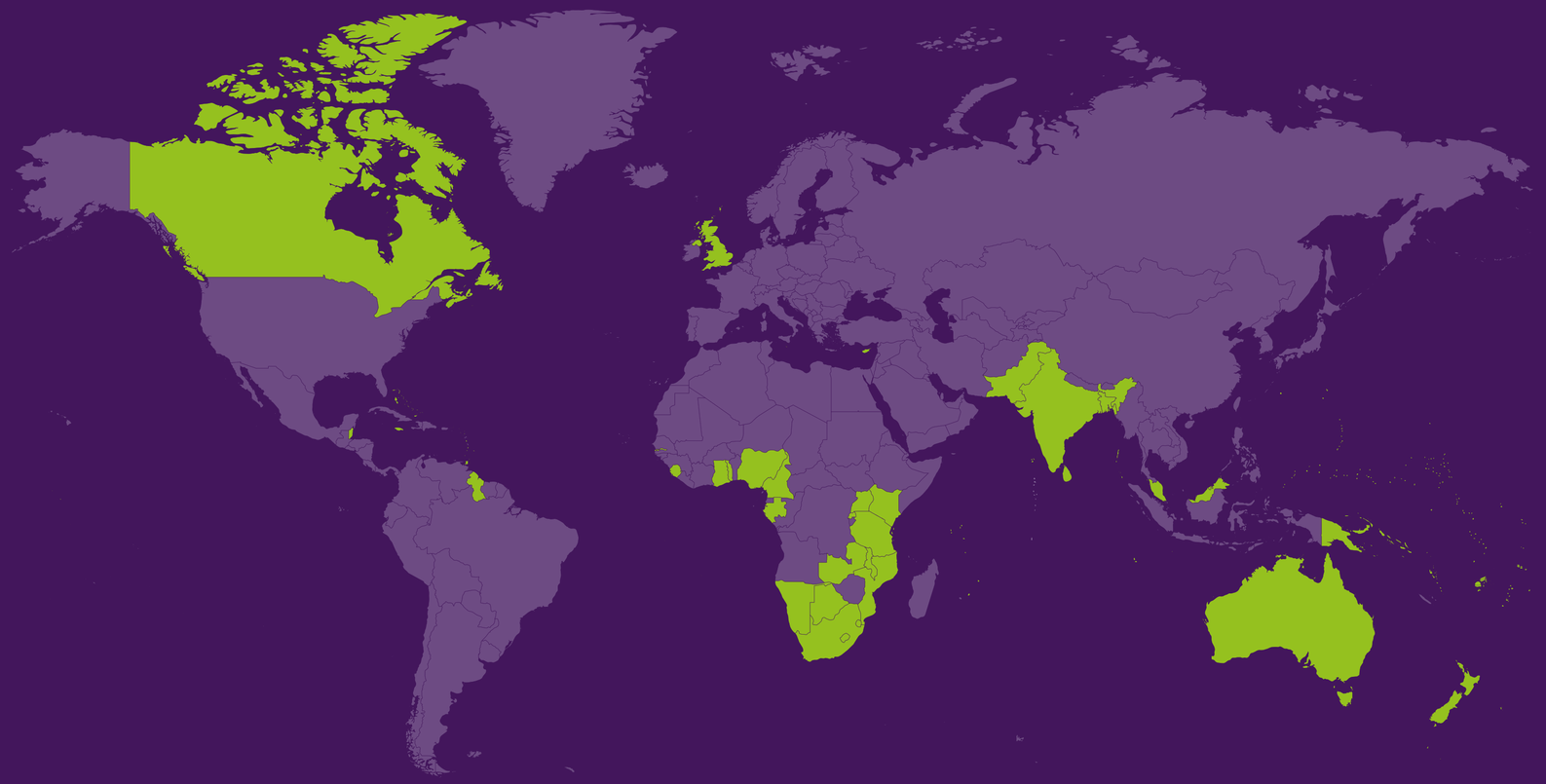
1. Introduction

The Commonwealth is composed of 56 independent *countries* in a wide spectrum of development with diverse technology, service and production capabilities. 33 of the 56 Commonwealth member states have a population of less than 1.5 million. For many, their geographical isolation separated from any trading region or regional standards organisation may lead to vulnerability in trade. Contained within the Commonwealth is the *Commonwealth Standards Network (CSN)* whose aim is to tackle non-tariff barriers and to promote strong trade amongst all Commonwealth states through the participation, adoption and implementation of International Standards. The CSN supports the *Commonwealth Connectivity Agenda* which seeks, inter alia, to reduce regulatory boundaries to trade and to support Digital Trade facilitation.



Introduction

In particular, the CSN aims to increase its members' technical and institutional capacity to use, and particpate in, the development of International Standards via existing International Standards organisations such as the ISO and IEC. These standards play an important role in promoting productivity and efficiency, reducing costs, removing barriers to trade, and driving economic growth. As such, the CSN is especially relevant to National Standards Bodies (NSBs) from Commonwealth nations that are looking to boost their international Digital Trade capabilities through the use of robust Quality Infrastructures.

This guide refers both to the digitised mechanisms of placing products/ services on the market and to the digitalisation of the supporting processes of logistics, customs clearances, conformity assessment etc. But the regulatory and supporting standard approaches to Digital Trading are in constant evolution, with different global regions often taking the lead in one subject specific area or another. This guide takes as reference the latest published versions of the respective authoritative documents and is drafted to assist NSBs in developing Commonwealth countries with their knowledge of and their participation in the Quality Infrastructure of Digital Trade. In particular, we outline the key Digital Trade concepts in relation to standards and wider Quality Infrastructure.

To assist further, the guide concludes with a Roadmap for enhancing Digital Trade.

Digital trade is all international trade that is digitally ordered and or / digitally delivered.

(OECD Definition)

2. Fostering Digital Transition

Fostering Digital Transition

The digital transition has the potential to be a driver of inclusive and sustainable economic growth and development. The *Commonwealth Trade Ministers Meeting of London 2023* emphasised the importance of supporting an inclusive digital transformation for all and in particular:

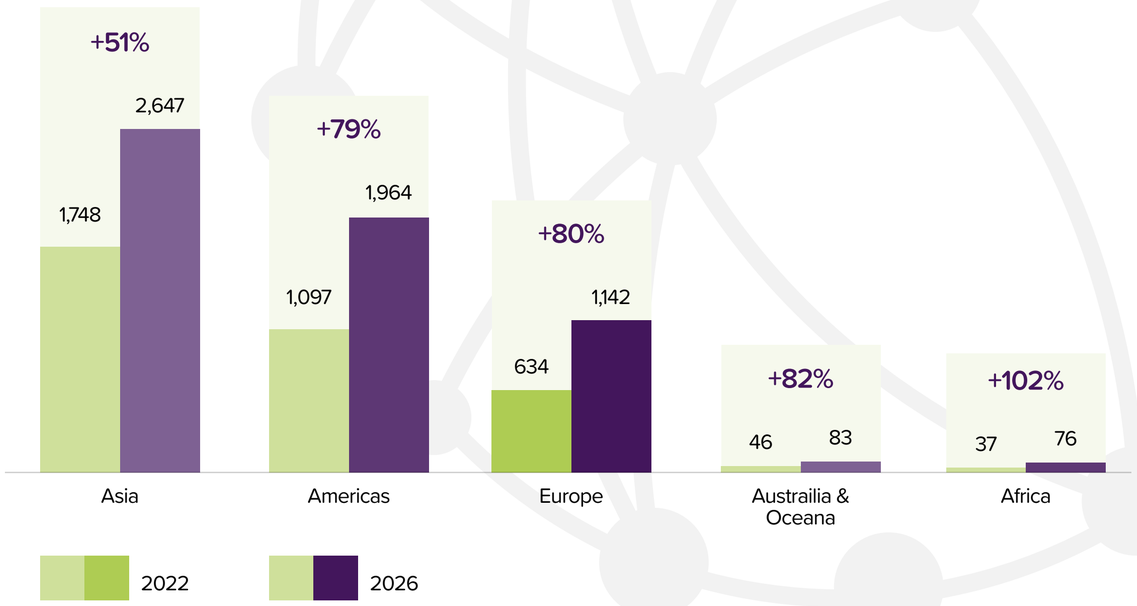
- The facilitation of Digital Trade for growth and development, with a particular focus on supporting micro, small and medium enterprises (MSMEs)
- The importance of enabling access to digital financial services as part of an inclusive digital ecosystem and the need to develop efficient cross-border digital payment systems to support Digital Trade
- The opportunities for Commonwealth members on co-operation in promoting coherence in regulatory and policy frameworks governing Digital Trade and the digital economy
- The need to strengthen the capacity of developing countries to engage in Digital Trade and to build human capacity in all the member countries to empower individuals – particularly women and youth - and businesses to harness the potential of the digital economy and Digital Trade, and
- The shared commitment to deepen pan-Commonwealth cooperation in the digital economy and Digital Trade particularly moving towards increasing digitisation of trade and paperless trade.

The *Commonwealth Secretariat 2020. The State of the Digital Economy in the Commonwealth* noted:

'In recent years, the digital economy has experienced unprecedented growth, with the internet becoming accessible to more than half of the global population in 2018 (ITU 2018) – a remarkable increase from the less than 10 per cent penetration rate in 2000 (World Development Indicators 2019).

Just six Commonwealth countries make up 98.8 per cent of the Commonwealth's total high-tech product exports as of 2017 (WITS 2019). The disparity in ICT trade participation among Commonwealth countries is also evident by income and size, with low-income countries (LICs) and small states contributing minimally to overall Commonwealth ICT trade.

Global E-Commerce revenue growth by region



Between 2017 – 2022 the intergovernmental UN Conference on Trade and Development (UNCTAD) assessed the e-commerce ecosystems in developing countries and LDCs and provided 'snapshot' assessments of readiness. 12 of the assessments are relevant to CSN members.

A repeated theme is that public sector coordination is paramount and a greater coherence of policy actions through the formulation of an encompassing e-commerce strategy is often one of the key recommendations. Contained within these snapshot assessments are helpful Action Matrices which suggest a Road Map for e-commerce readiness and strategy formulation and which may be helpful to other Countries when trying to identify common actions & strategies required. *UNCTAD. eTrade Readiness Assessments*

A similar Road Map is suggested at the conclusion of this Guide.

Trade generates wealth and the digitalisation of the global economy has transformed the very nature of trade itself. A prospective digital trader must identify the market or markets for which their digital service or their digitally supplied product is targeted. An alignment with multiple markets may incur multiple costs and decisions may need to be made as to which are the key markets with which to align. Designing a digital service or a product for a specific remote market may or may not restrict the digital trader to that particular market and an early decision may be required on the most productive market having regard to the regulatory and standards requirements to be satisfied.

3. International Standards, Technical Barriers to Trade and the WTO Principles

As explained in the *WTO ISO Standards Information Gateway*, the Agreement on Technical Barriers to Trade (TBT) is one of the legal texts of the WTO Agreement. It obliges WTO Members to ensure that, inter alia, voluntary standards, technical regulations and conformity assessment procedures do not create unnecessary obstacles to trade.

In order to improve the quality of International Standards and to ensure the effective application of the TBT Agreement, the WTO/TBT Committee has developed *6 principles* that clarify and strengthen the concept of International Standards under the TBT and contribute to the advancement of its objectives.

1. Transparency
2. Openness
3. Impartiality and Consensus
4. Effectiveness and Relevance
5. Coherence
6. Development Dimension

These principles are relevant to, and should be observed in, the preparation of ISO and IEC International Standards including standards for conformity assessment procedures. *International Standards & trade agreements*

Further information can be found in the CSN companion paper 'Using Standards to reduce Technical Barriers to Digital Trade'

4. Market Compliance and Digital Trading

There is a continual trade-off between reducing costs and the conformity assessment processes for ensuring both products and services are fully compliant with a target market. This remains the same for digital services or digitally delivered products. Therefore, consumers and legitimate businesses expect the government to supply the base regulatory assurances as supported by relevant standards and Quality Infrastructure. In order to access a National or harmonised regional market a prospective economic operator must be knowledgeable and compliant with the Quality Infrastructure for that market. It is perfectly possible that a product or service compliant with one harmonised single market region may not be compliant with another region. Non-compliant products may be detained at the point of entry, products and services may suffer other regulatory market intervention. In the current world of Digital Trading there is an increasing risk of supplying non-compliant products or services because:

- There are increasingly new inexperienced entrants to market as Digital Trading opens up previously controlled established distribution channels. This in turn increases pressure on being first on the market and is often with an associated higher price elasticity of demand due to a higher number of prospective online suppliers.
- The remote purchasing and supplying of products online does not assist with the required conformity assessment processes that are required to be performed before placing products on a market.
- Rogue traders or negligent traders are more easily able to supply illegal products, unsafe products or products that were simply designed for another market, but which are diverted to a market for which they are non-compliant.

5. Standards and legislation

For Digital Trading, as elsewhere, standardisation is one of the main elements of a country's National Quality Infrastructure (NQI) together with metrology, accreditation, conformity assessment services and market surveillance. However, standardisation plays a particularly important role as all the elements of the NQI use standards to perform their operations. By applying good standardisation practices, NSBs optimise the efficiency and effectiveness of their national standardisation system and thereby strengthen their NQI. This, in turn, enables them to comply with the commitments of the World Trade Organization and enhance their countries' economic competitiveness.

When pursuing access to digital and non-digital markets it should be recalled that most often it is the applicable legislation that lays down the general requirements for compliance of the services or products. The legislation is often drafted in accordance with high level policy relevant to that market. The fine detail of how to comply is often drafted by consensus through participation in various forms of standardisation organisations, therefore when focussing on a target market for Digital Trade it might be good practice to understand first policy, legislation and then the supporting standards. Additionally, the term, 'standard' -although often used in the context of voluntary supporting standards such as drafted globally by the ITU, ISO and IEC - is often used in other contexts such as intergovernmental agreements, intergovernmental legal requirements, or commercially developed consortia deliverables which are developed outwith the global standards Quality Infrastructure.

Further information on this relationship can be found in Link to Devin's Companion Paper (need to give proper title which is TBC).

Regulatory requirements may often specify general essential requirements that need to be met by the economic operator. This enables the longevity of the regulatory requirements. The fine detail is provided by supporting standards which provide 'real world' clarity. It is therefore important that standards be reviewed on a regular basis with the assistance of the Quality Infrastructure.

With regard to deliverables published within the standardisation structure itself, it is worth noting that the process and the nature of the deliverable may determine its provenance, participation access and its weight of persuasion when determining compliance with digital services and products requirements. For example, apart from a 'standard' there exist other deliverables, 'technical specification', 'technical report 'publicly available specification', 'workshop agreement'.

6. What is a ‘Standard’ in terms of Digital Trading?

Standards are drafted according to a consensus process by experts in their field from interested stakeholder communities such that a competent user of the document would be able to understand the requirements.

The term, 'standard' is globally used to describe many different forms of a standard and the associated administrative mechanisms to initiate, develop via consensus, consult, publish and review such documents and similar deliverables. In order to participate in their development or review it is necessary to understand the exact nature of the deliverable and the process associated with it. For example:

- International Standards published by International Standards Development Organizations. The 3 largest and most well-established – all based in Geneva Switzerland - are the International Electrotechnical Commission (IEC established 1906), the International Organisation for Standardisation (ISO established 1947) and the International Telecommunications Union (ITU established 1865). Both IEC and ISO and are private international organisations and not established by international government treaty. In order to sustain their activities, payment is generally required to obtain the standard and the normative/informative standards referenced inside them. The ITU is a treaty-based organisation established as a permanent agency of the United Nations and most of their standards are available free of charge. More particular information on these International Standards is detailed further in the next chapters.

In particular, the ISO provides capacity building support to its country members primarily through the ISO Committee on Developing Country Matters (DEVCO). In response to the needs expressed by developing country members, ISO has developed comprehensive guidance on Good Standardisation Practices, including a diagnostic tool for NSBs to assess their own standardization system. *ISO Action Plan for Developing Countries. 2021-2025.*

Capacity building support is also provided to ISO members of developing countries based on *OECD Development Assistance Committee DAC.* Official Development Assistance ODA. In the framework of the APDC activities are undertaken to strengthen their National Quality Infrastructure (NQI) such as training, technical assistance projects and sponsored participations in ISO TC/SC meetings. *ISO capacity building for developing nations. 2024*

Where possible the independent International Standardisation bodies will work with the relevant global intergovernmental organisations, for example the ISO food safety TCs such as ISO TC 32/SC17. Safety in the Food Chain Farm to Fork. work in alignment with the *Codex Alimentarius* and the *World Organisation for Animal Health (OIE)*

- National standards which are drafted within the agreed standardisation processes but are relevant to only one country. Where there is an agreement for harmonised standards within a region, the National standard should be withdrawn within an agreed timeframe in order to provide an alignment and clarity of requirements.
- Regional standards published by regional standardisation bodies. In most cases, the participating NSBs agree to harmonise their standards within their region. The largest and most established is European standardization system including CEN CENELEC and ETSI. Harmonized European Standards support the European Single Market where harmonized standards exist for products and services. In such a case, compliance with the regional standard allows the product or service to be freely circulated within the regional market provided the target market language is respected.
- Global standards published by intergovernmental organisations such as the *UN FOA & WHO Codex Alimentarius Commission* for food quality standards, food hygiene standards, import/export certification and related matters.
- Privately developed product standards and corporately developed value chain standards. For example, the *GS1 commercial consortia* for GTIN/bar code product identification, The *Institute of Electrical and Electronics Engineers (IEEE)* based in New Jersey USA.
- Common Marketing Standards prescribed directly in enacting legislation by specific countries or trading blocs, such as marketing standards for food or plant products. These are not voluntary standards but prescribed codifications of permitted descriptions of products. Participation in defining such descriptions may only be possible through the authority controlling the descriptor such as the Codex Alimentarius Commission (CAC) or through dispute resolution via the WTO.

In order to participate in the development, consultation or review of such deliverables it is important to know which organisations have the control, how is the membership defined and what mechanisms of organisational engagement are required.
The ISO/IEC standards organizations have an established open transparent engagement with standardisation stakeholders and remain internationally independent in the Quality Infrastructure. For ISO/IEC participation it may first be necessary to establish a National 'mirror committee' to internally discuss and then present a Nationally aligned position on the deliverable concerned.

Standards serve as a very effective basis for supporting regulation. They are recognised solutions to implement the compliance requirements of products. Legislation gains support by using standards because many stakeholders were involved in the development of the standard in the first place. Standards are kept up to date within a regular timeframe. For example, within ISO, standards are reviewed every five years to ensure their continued currency and relevance. This in turn provides the assurance to legislators that the standards are regularly maintained and relevant. Standards give access to the latest state of the art requirements that have been developed by the broad stakeholder base'.

The Basics of Quality Infrastructure for Trade. UNECE. Trade. 11.2023

Therefore, it is recommended that NSBs focus their activities on Digital Trading standardisation activities relevant to their trade priority requirements. In particular their knowledge acquisition requirements, information feeds and their participation in the relevant technical committees and working groups. Currently there are very many opportunities to engage with the ISO/IEC in the development of Draft International Standards (DIS) for Digital Trade. In fact, now is the time as many global Digital Trade standards are in draft format and being developed. This is particularly relevant and important for the under-represented CSN developing countries as their requirements may have a particular focus. The CSN NSBs are 'gatekeepers' of this dynamic process and we suggest targeted participation will assist the development of a supporting and inclusive Quality Infrastructure relevant to Digital Trade. Participation is further echoed in this document's *Road Map*, but further guidance may be obtained from the following CSN publications:

The role of standards in supporting policy. BSI CSN. This paper – drawn from discussions with CSN NSBs - highlights the challenges and suggests good practices for a coherent approach to the use of standards in regulation.

Roadmap for National Standards Bodies This paper sets down a series of practical steps for NSBs to take with regard to Quality Infrastructure, to support national domestic goals and ambitions.

CSN Toolkit for NSBs This toolkit provides – as a result of an extensive survey of members - a useful overview of the key issues of standardisation and also provide links to a range of online resources.

7. Conformity Assessment

'Conformity assessment procedures are integrated in legislation which define the requirements with which the products or services – and the related risks that could be posed if the product or service is put on the market – need to comply and how the economic operator can demonstrate this compliance is fulfilled.'

The Basics of Quality Infrastructure for Trade. UNECE. Trade. 11.2023

ISO/IEC 1700: 2020 defines conformity assessment as a 'demonstration' that specified requirements relating to a product, process, system, person or body are fulfilled. Conformity assessment procedures, such as testing, inspection and certification, offer assurance that these requirements found in legislation and in standards are fulfilled. Conformity assessment is specific to the subject matter assessed.

It is important for NSBs to determine what form of conformity assessment is required for digital services or digitally supplied products. Marketing media published by interested parties such as test laboratories or conformity assessment organisations may bias guidance on the appropriate requirements. Therefore, an objective and knowledgeable view by a NSB is required for the correct choice. Successive reviews of the WTO/TBT Agreement have noted the usefulness of ISO/IEC conformity assessment standards in harmonising conformity assessment practice and as benchmarks for the technical competence of assessment bodies. Therefore, NSBs should attempt to focus on such global standards where they are applicable.

As the level of risk associated with the non-compliance of a service or product increases – so does the level of assessment. In many markets first party assessment is permitted for lower risk products or services; the purpose is to reduce regulatory burdens whilst maintaining legal duties on the economic operator according to their level of influence in the digital supply chain. The higher up the chain, the more onerous the burden.

Second party assessment is less commonly used except perhaps 'round robin' testing by laboratories or technical organisations when determining the suitability of a standard, such as in the case of a 'critical friend'. first and third party assessment remain the most common according to the level of associated risk of the product or service.

As the risk increases, so does the regulatory burden in requiring third party assessment. Third party certification does not relieve the economic operator from their duties of pre-market and post-market conformity assessment.

There is often an understanding that products or services which have a once accredited report or certificate will be accepted everywhere in the world. There are indeed a number of multilateral agreements between accreditation bodies to make this function. However, an accredited report or certificate does not necessarily mean that the results will be accepted by market surveillance authorities worldwide. A digital trader must identify the particular market requirements.

UNECE. Recommendation F. International Agreements on Conformity Assessment. 2016

An example of a required third assessment for a particular national market is the *US CPSC Child Product Certificate* which requires importers into the United States of America to submit their *consumer products* to an approved US test laboratory for assessment with the relevant standards.

8. Accreditation

Accreditation is the *"third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks"* (ISO/IEC 17000).

Establishing accreditation systems based on International Standards and guides and linked with membership of the ILAC and/or IAF mutual recognition arrangements can help provide assurance to trading partners that suppliers of tests and certificates are competent. At the same time, it helps in overcoming technical trade barriers and in complying with the requirements of the WTO/TBT Agreement.

Key players in the Quality Infrastructure are accreditation bodies and third party assessment bodies. Recently, there has been significant growth in new types of sector specific process certification activities related to Digital Trading, e.g. for information technology, sustainability, social welfare, blockchain technology, nanotechnology, security systems, food safety . Certification of these processes in emerging markets is being implemented by conformity assessment bodies to ensure quality of the outcomes. The trend of new processes that are emerging will not stop and they will need to be certified to ensure quality.

Conformity assessment bodies can include laboratories, inspection bodies, certification bodies, metrological verification and proficiency testing providers. All these bodies verify compliance with the requirements relating to a product, process, service, system, or person. The assessment may be voluntary (requested by bodies that intend to obtain an independent and authoritative third-party declaration of their competence and operative correctness) or mandatory (assessment of conformity of products, services, processes, systems and persons which can be placed on the market after compliance with the reference standards required by laws, directives or regulations).

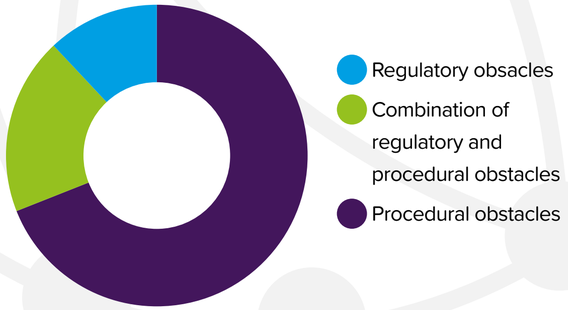
Accreditation can be done for various digitally supplied services and digitally supplied products, each based on relevant International Standards, examples include:

- *ISO/IEC 17021-1:2015 Conformity assessment Requirements for bodies providing audit and certification of management systems*
- *ISO/IEC 17020:2012 Conformity assessment Requirements for the operation of various types of bodies performing inspection*
- *ISO/IEC 17025 Testing and calibration laboratories*
- *ISO 17034:2016 General requirements for the competence of reference material producers*
- *ISO/IEC 17024:2012 Conformity assessment General requirements for bodies operating certification of persons*
- *ISO/IEC 17029:2019 Conformity assessment General principles and requirements for validation and verification bodies*
- *ISO 15189:2022 Medical laboratories Requirements for quality and competence*
- *ISO/IEC 17065:2012 Conformity assessment Requirements for bodies certifying products, processes and services*
- *ISO 20387:2018 Biotechnology Biobanking*
- *ISO/IEC TR 17032:2019 Conformity assessment Guidelines and examples of a scheme for the certification of processes*

The WTO in 2018 referenced, Certification-intensive goods, 'Products that require certification and labelling, may see a rise in trade volume as digital technologies enable a reduction of costs in verification and regulatory compliance. Increasingly, firms in developing countries voluntarily obtain certifications that signal the quality of their products in order to enter international markets. Complying with certification requirements, however, can be costly for companies, particularly for small enterprises in developing countries. Digital technologies remove some information asymmetries by making product attributes and processes more transparent, so that markets function more efficiently. This can result in a reduction of certification costs.

The Future of World Trade: How Digital Technologies Are Transforming Global Commerce. WTO. 2018

It is the 'how' (procedure) rather than the 'why' (regulation) that often creates CAP obstacles:



International Trade Centre. What companies teach us about conformity assessment procedures. 2017

9. Seizing the opportunities of Digital Trade through the use of global standards

How is this to be achieved? We suggest by breaking down the barriers piece by piece in all sectors of Digital Trading from drop-shipped consumer goods to agricultural products, to digitally deliverable services. Complying with the key International Standards will assist a digital trader to demonstrate reliability, trust, sustainability and regulatory compliance within the e-commerce supply chain. Customers wish to know exactly who they are dealing with at the point of purchase, they require assurance on the service or product authenticity and the timeliness of delivery. In addition, the rise of environmentally and ethically conscious customers has seen increasing customer demands on the transparency and authenticity of advertised standards for products, services and their supply chains.

In recent decades Digital Trade has been increasing faster than non-Digital Trade. It is now up to one-quarter of global trade or almost USD 6 trillion (USD 6×10^{12}). Digitalisation also matters for how we trade – lowering trade costs and shock-proofing supply chains. In the following parts of this guide, we will identify particular aspects of Digital Trading and how the associated Quality Infrastructure assists with removing the barriers to international trade. It is vital that NSBs objectively assess and review their national strengths and opportunities in order to support and facilitate their journey of improving their quality infrastructure. In order to assist, the following sections itemise the most relevant global standards for Digital Trading and a *Roadmap* is provided on conclusion of this guide to add focus.

10. Information Security Management, and Personal data protection & privacy

Information Security Management.

The *ISO/IEC JTC1/SC27. 27000 series on digital security* assist in determining the 'state of the art' in relation to many aspects of online digital security. In particular IT security, cybersecurity and the protection of privacy which taken together assist digitally enabled organisations to manage the security of assets such as financial information, intellectual property, employee data and third party entrusted data.

Personal data protection & privacy.

The requirements on the protection of personal data in the course of Digital Trading are prescribed by national or regional legislative requirements in 71% of countries globally with another 9% countries in the process of drafting their legislation. The website *UNCTAD Data Protection & Privacy Legislation Worldwide* provides further guidance and analysis for digital traders and has a useful downloadable tool to facilitate a search of the relevant legislative personal data requirements per country.

International Standards support this legislation with regard to information security management. The *ISO/IEC JTC1/SC27. 27000 series* on digital security assist in determining the 'state of the art' in relation to many aspects of online digital security. In particular IT security, cybersecurity and the protection of privacy which taken together assist digitally enabled organisations to manage the security of assets such as financial information, intellectual property, employee data and third party entrusted data. We recommend NSBs are familiar with this important series of International Standards which provide the basis for secure online Digital Trading.

11. Transaction assurance of e-commerce supply chains

The ISO TC 321. Transaction assurance in E-commerce is currently leading globally on the development of new deliverables for digital services and the digital delivery of products. There are several Preliminary Work Instructions PWIs, in fact now is the time for the emergence of these new global standards. We strongly suggest interested and participative NSBs would be welcomed into these TCs and WGs. In particular:

- ISO 32110: 2023 Transaction assurance in E-Commerce. Vocabulary

This is a completely new International Standard published in 2023 which provides the basic terms and definitions in the field of transaction assurance in e-commerce. Its scope includes both goods and services. In particular it provides such definitions as 'e-commerce/electronic commerce', 'e-commerce platform', 'e-shop', 'logistic service provider' etc.

- ISO DIS 32120. Transaction assurance in e-commerce. Supply Chain Goods Traceability
  This International Standard sets down international guidelines for sharing traceability information related to goods quality assurance in e-commerce supply chains.
- ISO/CD 32122 Transaction assurance in e-commerce - Guidelines for online dispute resolution. This International Standard provides guidance on online dispute resolution (ODR) for e-commerce transactions including basic principles of ODR.
- ISO/DIS 32112. Transaction assurance in e-commerce. Relevant factors of evaluation and selection of indicators. This International Standard provides the description of the relevant factors for evaluating e-commerce transactions, which can help in identifying indicators, evaluation toolkits, and an approach for selection of indicators.
- ISO TC 321 Preliminary Work Item PWI concerning information disclosure on e-commerce platforms. Pre-publish format. This PWI proposes clear, accurate and transparent information disclosure to enable assurance in e-commerce platform transactions.
- ISO 32111:2023 Transaction assurance in E-commerce Principles and framework. This International Standard specifies the principles and framework for e-commerce transaction assurance, including participants, activities and assurance elements. It is intended to be used by organisations and individuals engaged in e-commerce transactions.
- ISO TC 321. PWI. Best Practice for customer experience related to e-platform and e-stores. Pre-publish format. This PWI specifies best practice for online market platforms and similar e-stores with regard to customer experience.
- ISO TC 321. TR 32123 Working Draft WD. Transaction assurance in E-commerce. After-sales services. Pre-publish format. This Working Draft provides information on the nature of after-sales services unique to e-commerce transactions and a description of the possible means to improve after-sales services.

Additionally, ISO/TC 46 Information and documentation has published ISO 5127:2017. Information and documentation. Foundation and vocabulary In particular it provides such definitions as 'internet', 'search engine', 'visible web', 'social network', 'markup language', etc.

Similarly, the ISO TC 154 is currently leading globally on data elements which support Digital Trade. The TC is aligned with intergovernmental organisations such as the UN CEFACT.

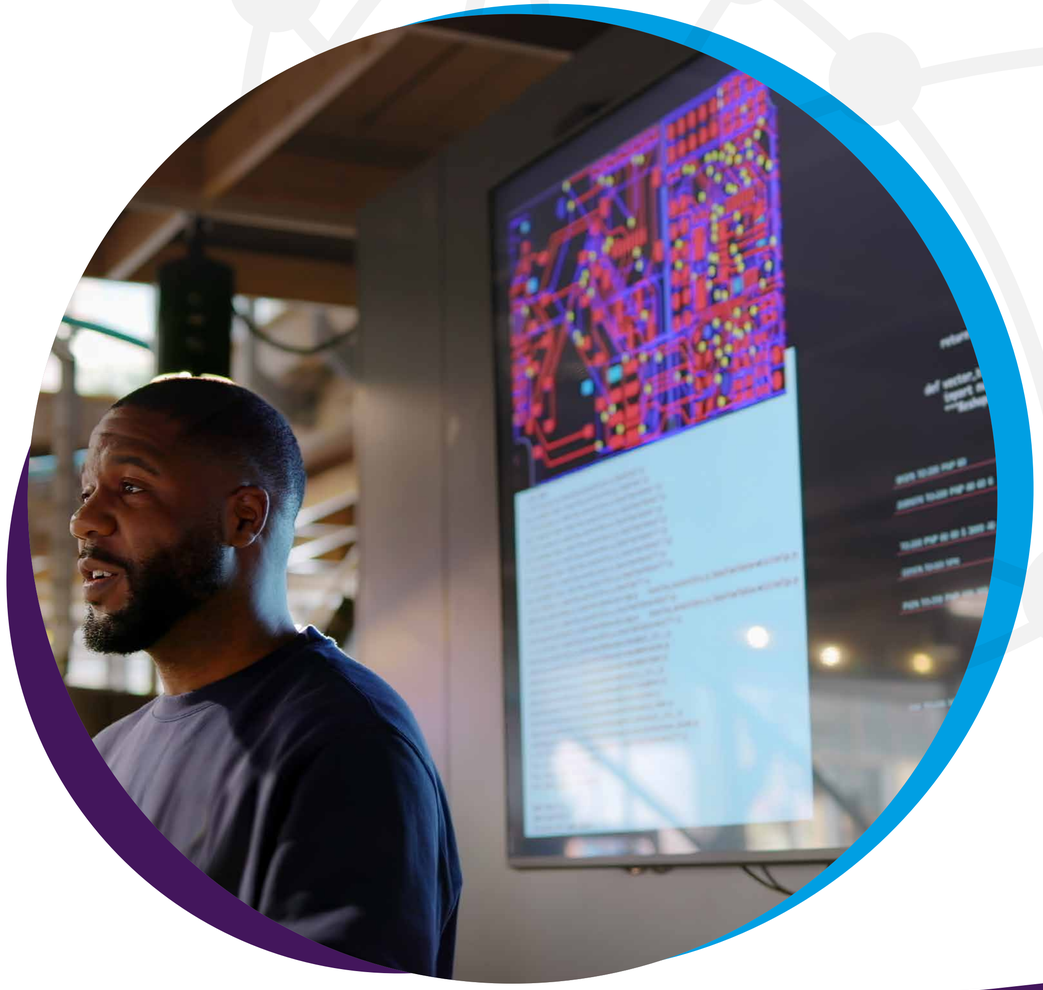
12. Trade Documents

Trade Facilitation

This field of Quality Infrastructure is in rapid current development with many new deliverables still in draft format. The intention is to improve logistics processes and create a common language for all market participants.

In particular:

- ISO TC 154 ISO/PWI 22132. Rules for 2D Coded Trade Documents. Pre-publish format.
- ISO TC 154. PWI proposal - Guidance for data registration. Pre-publish format.
- *ISO TC 154. TS 20625. Rules for generation of XML scheme files (XSD) on the basis of EDI(FACT) implementation guidelines*
- *ISO TC 154. DIS 20197-1. UN/CEFACT Buy-Ship-Pay Reference Data Model — Part 1: Business Requirement Specification (BRS)*
- *ISO 154. FDIS 23355 Visibility data interchange among logistics information service providers.*
- *ISO 23354:2020. Business requirements for end-to-end visibility of logistics flow.* This standard sets down requirements for 'real time transparency' in LISS.



13. Digital Payments

> *"Empirical research finds that transaction costs associated with insecure exchanges resulting from corruption or imperfect contract enforcement significantly deters international trade. Traders in countries with weak institutions often need to rely on costly intermediaries and networks or bias their trade towards partners they trust. Digital technologies are expected to further reduce the costs associated with cross-border transactions by removing the need for third parties to manage transactions and keep records."*
>
> *The Future of World Trade: How Digital Technologies Are Transforming Global Commerce. WTO. 2018*

ISO has defined various standards for facilitating the flow of messages related to payments/financial transactions. The standards have evolved due to the dynamic nature of payments and FINTEC advancements.

Messaging formats are in fact standards for electronic data exchange between institutions participating in a payment system relating to several message categories, such as orders, invoices, customs documents, remittance advices, and payments. Uniform messaging standards are critical to standardise payment flows with an increasing number of cross-border transactions and the advent of multiple payment systems. More specifically, messaging standards generally facilitate the following:

- Identification of senders and receivers
- Key attributes of a payment transaction, such as currency, amount, and value date
- Additional information alongside settlement data and format to enable the onward transmission and processing of transactions.

The main messaging standards for domestic payment transfers include ISO 8583, SWIFT MT Standards, and ISO 20022, among others. Desk research and the deep-dive analyses conducted by *Fast Retail Payments Toolkit. World Bank. 2024* showed that ISO 20022 and ISO 8583 are currently the major messaging standards adopted by operators. A few have adopted XML-based proprietary messaging formats or proprietary messaging tools. While other possibilities exist ISO 20022 is emerging as a leading messaging standard for, 'fast payments'.

ISO 20022. A Single Standardisation Approach to be used by all financial standards initiatives, this International Standard provides flexibility and is the first payment messaging standard that has gone beyond information exchange. It allows the standardisation of messaging components, which are emerging as the global benchmark for real time payments.

ISO 8583:2023 Financial-transaction-card-originated messages Interchange message specifications specifies a common interface by which financial transaction card originated messages (credit and debit card data) may be interchanged between acquirers and card users.

A successful example of utilising the digitisation of payment methods to enable intra-regional trade outwith the traditional banking system is the M-PESA monetary transfer service where traders and consumers use their mobile phones to store and transfer money. Developed in Kenya in 2005 but launched in 2007 following the Kenyan regulators examination of the due diligence process by the operator Safaricom. In particular, their examination of the security mechanisms, the provision of minimum standards and by procuring a legal opinion to the effect that Safaricom was not engaged in a licensed 'banking' business. Although the 'loose' national regulatory structure on Digital Trading facilitated the success this market driven digital payment system, the Kenyan authorities subsequently examined and redrafted the relevant regulatory landscape to permit Safaricom to operate under a special government licence whose conditions were more relaxed to that of banks or other financial institutions. This was despite legal challenges to the system by the Kenyan banks.

14. Unique product identifiers & the development of Digital Product Passports

The most recognised product identifier is the 'bar code' originally developed by the commercial GS1 Consortium of companies. *Global Trade Item Number. GS1 Consortium. 02.2024.*

However, the ISO/IEC have published the following *JTC 1/ SC1* global 15459 series to assist in the development of unique product identifiers such as bar codes etc. The GS1 Consortium work in alignment with these global standards. In the ISO/IEC standards they are defined as 'Automatic identification and data capture' media (AIDC). An example is *ISO-IEC 15459-1-2014. Automatic identification and data capture techniques. Unique identification - Individual transport units.*

Additionally the *ISO/IEC JTC 1/SC 31* has published numerous supporting standards on product identifiers in their many forms. Examples include: 1 dimensional *ISO/IEC 15417. Bar code symbology* and 2 dimensional *ISO/IEC 18004. QR codes.*

The European Single Market is leading globally on the future requirement for a *Digital Product Passport (DPP)* to be attached to products placed in their market. Driven by a regional sustainability policy agenda it will impact on all aspects of product compliance within the world's largest Single Market. It is expected that other regional product markets will follow with such a requirement. At this moment in time the regional EU DPP legislative standardisation request is in draft format.

For the global market the *UN CEFACT Paper 2024* has been drafted this year to support all similar DPP developments with respect to the respective standardised data structures that support interoperability.

15. Digital signatures

Trust in Digital Trading is supported by ensuring the provenance and the durability of digital signatures. The *ISO TC 154. Processes, data elements and documents in commerce, industry and administration* has published global standards on the digital signature. In particular:

- *ISO 14533-1:2022. Long term signature. Part 1: Profiles for CMS Advanced Electronic Signatures (CAdES).*
- *ISO 14533-2. ong term signature Part 2: Profiles for XML Advanced Electronic Signatures (XAdES).*
- *ISO 14533-3:2017. Long term signature Part 3: Profiles for PDF Advanced Electronic Signatures (PAdES)*
- *ISO 14533-4:2019. Long term signature. Part 4: Attributes pointing to Proof Of Existence in long term signature formats (PoEAttributes)*

These global standards specify the elements of interoperability that enable the verification of a digital signature in the ETSI defined formats over a long period of time – as supported by ISO, ISO/IEC and IETF RFC normative references.

None of the standards specify new technical requirements about the digital signature itself nor restrictions of usage of existing technical specifications.

An example of the practical use of digital signatures within the phyto-sanitary globally regulated value chain is the *IPPC FAO. ePhyto Solution* which utilises *a digital signature* in an XML formatted digital certificate to prevent fraud, to reduce time delays and to ensure plant health. A member country NPPO may interact using their own National system, or the GeNS in the case of a developing country with no such National system, in order to process their ePhytos through the *IPPC ePhyto Hub*.

16. Distributed Ledger Technology / Blockchain

The overall challenge for any country, with no exception to small states, is that in order to maintain resilient and sustainable economies, one must consistently adapt to the constant changes in the external and internal economic environment. Studies that specifically focus on how small states can benefit from and adapt to these technological advancements are very limited.

Despite the significant investments worldwide, research on the impact of blockchain technology is the least investigated compared with other enablers of digital transformation. This is mainly because it is still a relatively new technology and thus evidence on its impact is limited. From the restricted number of studies published within this area of research to date, focus was mainly made on how blockchain influences specific sectors, in particular financial services.

A number of initiatives are underway in the public sector which seek to reduce costs and enable renumeration for digital services provided. In particular the small commonwealth island of Malta is a pioneer with regard to regulating new sectors and has built a reputation over a short period of time as 'the Blockchain Island'. Successive Maltese governments have invested heavily in a digital transformation process of the public service, and it has a broad e-government service offering and infrastructure Following its launch of a national vision on blockchain and DLTs the government identified key areas of focus for digital services:

- Land registry services
- The register of businesses in the Maltese Business Registry
- The publication – with the assistance of the Massachusetts Institute of Technology MIT of educational certificates "Blockcerts"
- A regulated environment attracting commercial traders in crypto-assets.

The Maltese government is also working on other financial service innovations that will allow it to become a FinTech hub.

Digital Transformation. Enhancing Economic Development in Small States. Commonwealth Secretariat. 2019

Examples of the most relevant International Standards are as follows:

ISO 22739: 2024. Blockchain & DLT. Vocabulary

ISO/TS 23258:2021 Blockchain and distributed ledger technologies Taxonomy and Ontology

ISO/TR 23576:2020 Blockchain and distributed ledger technologies Security management of digital asset custodians.

The ISO TC 307 on Blockchain and Distributed Ledger Technologies in addition, has *published* and is in the process of *drafting* further global ISO deliverables to support DLT.

17. The use of Artificial Intelligence (AI) in Digital Trade

One example of a narrow Artificial Intelligence (AI) system are online 'chatbots' customer interfaces. This is a form of cognitive computing that allows customers and machines to interact more naturally. The software – through discussion - attempts to answer basic questions on a service or product or attempts to direct the customer to the relevant section of the online market platform. The intention is to reduce the size of the sales team or technical assistance team. Though not all chatbots are equipped with AI, modern chatbots increasingly use conversational AI like natural language processing NLP to understand questions and to automate responses.

A particular important aspect of such AI system use is trustworthiness. In particular:

- Proper design and validation in conformance with 'state of the art' rules
- Construction for the benefit of the relevant stakeholders who have aligned objectives
- The proper identification of the responsible and accountable parties, and
- The development and operation with consideration for the appropriate regional concerns. Such as regulatory controls on personal data privacy.

International Standards are continuing to be drafted by the ISO/IEC to assist with the development and use of AI, for example:

ISO/IEC 22989:2022. Artificial intelligence concepts and terminology

ISO/IEC TR 24028:2020. Overview of trustworthiness in artificial intelligence

ISO & IEC JTC for IT. Publicly available & free standards for IT

ISO AI Management Systems. What Companies Need to Know

Additionally:

- The intergovernmental organisation OECD has developed a *OECD AI Policy Observatory* to assist with AI development work and
- The UK Government published the *Bletchley Park Declaration 11. 2023* at the November 2023 AI Summit. This document confirms international cooperation is required in the form of pro-innovation and a proportionate regulatory approach in order to address AI risks.

18. Summary and Conclusion

So far we have itemised the landscape of the international Quality Infrastructure for Digital Trade and attempted to signpost to the most relevant and current standards that may of interest to NSBs in their journey to promote and assist the digitalisation of the most suitable sectors within their economy. Whilst at first the actual number and the potential complexity of International Standards may be of concern, it should be noted that – with a little preparation and planning – participation in these International Standards will be of great benefit.

Either by assisting in the consensual development of their content as a Participant or merely by attending as an Observer in order to monitor 'the direction of travel'. Of course, attendance is mainly hybrid with a choice of physical or online participation. There is a concern that the content of the developing or reviewed standards may be overly technical, but in fact much of the current 'work-in-progress' involves the development of standard deliverables which are based on agreed, established standard building blocks. A large amount of collegial work on these building blocks has already delivered clear international definitions and provisions which would be easily understood by a competent reader of the documents. The standards are currently being drafted and reviewed for re-drafting to answer digital market needs; to be part of that international development would mean having a stakeholder voice in the drafting process.

Prioritisation and participation in International Standards development for Digital Trading is only part of the journey. NSBs need to consult on and to develop good standardisation practices and policy; with both their stakeholders and Policy Makers to effectively use standards and the wider Quality Infrastructure to support Digital Trade relevant policy decisions and regulations. The Roadmap below is a suggested distilled guide on how to progress this in a pragmatic way.

19. CSN Roadmap to Growing Digital Trade

The above short introductory guide to standards in Digital Trade should assist an NSB to understand the regulatory and Quality Infrastructure landscape.

Below is a suggested roadmap to promote and sustain Digital Trade.

1

Opportunity mapping

Identify the areas of commerce most likely to respond from investment in Digital Trading. Identify the Digital Trade potential within your member state economy. What are your strengths and how do they relate to the transition to Digital Trading?

2

Digital infrastructure improvement

Identify the gaps and the components of Quality Digital Trading Infrastructure that contain the most significant barriers to progressing Digital Trading in those preferred areas of focus.

3

Determine the current and intended future trading target market requirements and the any conformity assessment processes required before placing products on the market or before operating digital services within that market.

It is often the 'how' (procedure) rather than the 'why' (regulation) that creates conformity assessment obstacles. Research in detail the target market requirements for the product or service. Determine whether there exists quality authoritative guidance or signposting from the Market Surveillance Authority itself.

1

Discover the level and type of quality infrastructureQuality Infrastructure required to enable access to the markets.

What conformity assessment processes are required? Is the advice received correct and objective or is it biased from a commercial interest? Are there any authoritative guidance portals that provide clear advice on the target market compliance requirements?

5

Participate in the regional and international Quality Infrastructure for the relevant Digital Trading standards.

Contribute at the relevant TC or WG and at the appropriate input level having regard to NSB resources. Participant, observer status etc. Prioritise and develop National Mirror Committees to assist with National Delegation participation & to agree a prior National consensus.

6

High level policy support.

Consider e-commerce as a way to reduce or remove established trade barriers. Give full support to boosting local productive capacities, increasing exports and integrating into regional and Global Value Chains (GVCs). This should be done in an inclusive manner, enabling equal opportunities to men and women from both urban and rural areas. A monitoring and accountability system should be established to ensure inclusivity compliance.

7

Review the level of IT skills among entrepreneurs and the level of supportive education & training for IT and Digital Trading skills.

In terms of skills development, the e-commerce sector has often outpaced skills providers. CSN relevant case studies cite a challenge for companies in acquiring IT talent, for example website development, supply chain management, cloud based custom programming etc.

8

Promote & support effective trade logistics and cross border facilitation measures.

Enable Digital Trade logistics that meet the requirements of global standards - particularly with relevance to the developing combined co-regulator entry points, such as the customs', 'Single Window'.

9

Consider enabling access to low-cost finance to support MSME Digital Trading.

In the absence of borrowing capacity, businesses limit their online expansion and often look for cheaper, yet unsustainable, ways to grow online. Access to low cost funding for Digital Trading will assist the participation of SMEs.

10

Review inclusivity with regard to Digital Trading opportunities and ICT infrastructure.

Consider the barriers restricting access to Digital Trading with regard to equality of gender, age, social mobility etc. An individual restricted by time, social isolation, work or social care duties etc may still be able to contribute to a Digital Trading initiative when assisted by appropriate supportive infrastructure.

Acronyms and abbreviations

ACCSQ	The ASEAN consultative Committee on Standards and Quality. A sectoral body under the purview of the ASEAN economic Ministers
APG	Asia/Pacific Group on Money Laundering
API	Application Programming Interface
ARSO	The African Organisation for Standardisation
ATM	Automated Teller Machine
CARICOM	Heads of Government of the Caribbean Community
CASCO	SO committee for conformity assessment
COD	Cash on Delivery
COPANT	Pan American Standards Commission
CROSQ	CARICOM Sub-Regional Organisation for Standards and Quality
DEVCO	ISO Committee on developing country matters
EAC	East Africa Community. Intergovernmental Organisation
ECOWAS	Economic Community of West African States. Intergovernmental organisation.
eIDAS	electronic IDentification Authentication and Signature
ePHyto	Electronic phytosanitary certificate
ETSI	European Telecommunications Standards Institute
FAFTA	Financial Action Task Force
FAO	Food and Agriculture Organization of the United Nations
FDIS	Final Draft International Standards
FSP	Financial Services Provider
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GeNS	The Generic ePhyto National System
GTIN	The Global Trade Item Number
GVCs	Global Value Chains
IEC	International Electrotechnical Commission
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ISP	Internet Services Provider
ISPM	International Standards for Phytosanitary Measures
ITU	Information Technology
ITU	International Telecommunication Union
LDC	Least Developed Country
LISS	Logistics Information Service Systems
MSME	Micro, Small and Medium Enterprises
NPPO	National Plant Protection Organisation
NSB	National Standards Board
OECD	Organisation for Economic Co-operation and Development
OIML	International Organization of Legal Metrology
PAS	Publicly Available Specification
PASC	The Pacific Area Standards Congress
PCI	Payment Card Industry
PICs	Pacific Island Countries
POS	Point of Sale
PSP	Payment Service Provider
PWI	Preliminary Work Item
SADC	Southern African Development Community. Intergovernmental Organisation
SARSO	South Asian Regional Standards Organization
SDG	Sustainable Development Goals (of the UN Agenda 2030)
SPS	Agreement on the Application of Sanitary and Phytosanitary Measures (of the WTO)
TBT	Technical Barriers to Trade Agreement (of the WTO)
TFA	Trade Facilitation Agreement (of the WTO)
TRR	Telecommunications and Radiocommunications Regulator
UNCEFACT	The United Nations Centre for Trade Facilitation and Electronic Business
UNCTAD	United Nations Conference on Trade and Development
UNECA	The United Nations Economic Commission for Africa
UNECE	United Nations Economic Commission for Europe
UNECLAC	The UN The Economic Commission for Latin America
UNESCAP	The UN Economic & Social Commission for Asia & the Pacific
UNESCWA	The UN Economic and Social Commission for Western Asia
WEF	World Economic Forum
WTO	World Trade Organisation
XAdES	XML Advanced Electronic Signatures
XML	Extensible Markup Language

About the Commonwealth Standards Network (CSN)

The CSN is a collaborative network that supports trade, economic growth and prosperity throughout the Commonwealth by promoting increased awareness, development and use of International Standards.

To find out more about the network please see **www.commonwealthstandards.net** or contact the CSN Senior Programme Manager, Ben Hedley **ben.hedley@bsigroup.com**

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