GS1 Australia Submission

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What stakeholder group do you represent?

Standards development organisation

Refer to section 2.3. Do you agree with the proposed high priority artefacts to be developed to support interoperability?

Yes

Please provide comments (optional)

The prioritisation of a vocabulary, a dictionary of data elements, and a canonical data model aligns well with GS1 standards, which emphasise uniform identification systems and seamless data exchange across global supply chains. Australian agricultural systems could benefit from adopting these artifacts to improve traceability and ensure compatibility with international markets, particularly in sectors like meat and dairy where export plays a critical role. Including adoption of GS1's approach to standardised data terms and structured data sharing can enhance Australia's reputation for quality and compliance in premium markets

Refer to section 2.3.1. Do you agree with the criteria for selecting existing interoperability resources to leverage in the framework?

Yes

Please provide comments (optional)

The proposed criteria effectively encompass the essentials for selecting interoperability resources.

Are there any other criteria for selecting existing resources that should be included? (optional)

Drawing from the GS1 standard's successful application in industries worldwide, consider adding 'Scalability' and 'Flexibility' to accommodate industry-specific adaptations' as criteria. Including "integration with existing technologies" would be worth consideration. Many Australian farms already utilise, various levels of technology, from basic machinery to advanced data systems. Ensuring new interoperability resources can integrate with existing technologies will facilitate smoother and speedier adoption and minimise disruption in established operations. These additions ensure that selected resources can grow with technological and market developments and be

tailored to unique Australian agricultural contexts, such as varying crop cycles and livestock management practices.

Refer to section 2.3.2.1. Do you agree with the criteria for selecting the most important data terms to be included in the vocabulary?

Yes

Please provide comments (optional)

The criteria outlined provide a solid foundation for selecting crucial data terms. To further refine this, leveraging real-time data from advanced telemetry and sensor technologies in precision farming could be vital. This approach would align with GS1 standards in supporting data accuracy and real-time traceability, enhancing decision-making and efficiency across the Australian agricultural sector.

Refer to section 2.3.2.2. Please indicate your preference from the following:

Critical Tracking Events and Key Data Elements developed by the United States based Institute of Food Technologists (IFT) should be used as the foundational traceability data terms.

Please provide comments (optional)

Using the critical tracking events and key data elements developed by ands used by industry is preferable. These elements are already aligned with GS1 standards, which are widely accepted and have proven effective in various global traceability systems. This approach will facilitate international compliance and enhance the export potential of Australian agricultural products.
Also refer to global data standards that support international trade as outlined here https://iccwbo.org/news-publications/news/icc-digital-standards-initiative-launches-complete-framework-for-supply-chain-digitalisation/

Adopting and reusing well established, adopted and tested standards is a good thing for industry, it saves on rework often faced in industry when "differing standards" are requested, but the standards should be open and accessible, aligned with EPCIS tracking events and published in a normative form.

Refer to section 2.3.3. Would an agricultural traceability and product data ontology be a valuable resource to support interoperability?

Yes

Please provide comments (optional)

The establishment of an agricultural traceability ontology would be highly beneficial. Drawing from the GS1 standard's use of detailed data structures, an ontology can offer a robust framework that captures the complexity of agricultural processes and

relationships. This would improve data sharing across disparate systems, ensuring more reliable traceability from farm to consumer, crucial for meeting both local biosecurity measures and global market demands.

Refer to section 2.3.6. What other standards should be considered in the list of recommended standards to support interoperability? (optional)

In addition to the already identified standards, we recommend incorporating the GS1 Digital Link standard, which allows QR codes to enable "links" to other sources of data via the use smartphones connecting to the web. This standard enables the already existing use of GS1 identifiers in this format (a newer addition to the standards suite of GS1). This technology could transform Australian agricultural products into portals of information on provenance and safety, directly accessible to consumers and supply chain partners, reinforcing transparency and trust. Details of the Digital Link standard (and now recently adopted as an ISO Standard) is at :
https://www.gs1.org/standards/gs1-digital-link

The components of all parts of the GS1 system can support the different applications required in the Agricultural sector and connect with already existing use of these standards by downstream parties enabling the more robust connection of data for yet to be defined use cases.

With a view to maintaining and growing market access, especially in the context of emerging market requirements for enhanced ESG compliance reporting consideration should also be given to standards as defined in the ICC-DSI Key Trade Documents and Data Elements (refer to the earlier link provided)
Also, UN/CEFACT work in progress- not limited to digital product conformity certificate exchange and recommendation 49 – the UN Transparency Protocol. Further information on these emerging standards and business requirements specifications can be found at: https://uncefact.unece.org/display/uncefactpublicreview

Refer to section 2.3.6.2. How can the issue of multiple location identifiers be addressed? (optional)

To address the challenges posed by multiple location identifiers, a unified framework that integrates GS1's Global Location Numbers (GLN) could be adopted. This approach would ensure a consistent method for identifying locations across various systems, reducing confusion and improving the efficiency of data exchanges within the agricultural sector. An assessment of the strategic and economic benefit of multipurpose national location registries leveraging those already used in healthcare, for transport and logistics and as trialled for plant-producing properties (Plant PIDs) would be helpful – to avoid duplication and inefficiency plus address known issues with existing national property ID codes used in livestock sector (PICs). Every effort should be made to avoid industry-specific islands of data, and maintain open and discoverable

location registries of national significance (with appropriate permission and security controls) and support existing systems and tools.
Refer ongoing work of the National Property ID working group since 2018. Note this public record and related industry submissions from Nov 2019 has recently been removed with links not directing users to we pages on the intergovernmental agreement on biosecurity.

Are there any other gaps in data standards you would like to see addressed? (optional)

A significant gap in the current standards is the lack of provisions for emerging technologies like IoT and AI, which are increasingly pivotal in precision agriculture. Standards should evolve to include data formats and interoperability protocols that support these technologies, enabling more sophisticated data analytics and real-time decision-making in farming operations. These and other gaps are should be addressed through existing and well-supporting global standard development processes. Australian government agencies are encouraged to support and contribute to these existing national and international standards development processes via channels such as national standards and product conformity infrastructure.

Refer to section 2.3.6.3. Are there any risks or issues you know of with the W3C Verifiable Credentials and Decentralised Identifiers (DID) standards? (optional)

The main risk with adopting W3C Verifiable Credentials and Decentralized Identifiers (DIDs) lies in their nascent stage of development and adoption, which could lead to interoperability issues across different platforms. There is still ongoing global discussion, debate and a natural order [ie. defacto or dejure dominant standard(s)] to be established re the use of DIDs and other methods. Ensuring that these standards are robustly tested in the agricultural context, particularly in diverse environments like Australia's varied agricultural sectors, is crucial. Put simply, very few people know what a DID is or does. This lack of awareness (and more importantly, understanding of foundational simple concepts like critical events and data elements) is a serious oversight. The government should be encouraged to address the need to awareness and education within the sector (via. extension and other channels) to ensure primary producers and others are empowered to participate in important discussions concerning interoperability and data requirements to secure and grow market access for domestic and export production.

Refer to section 2.4.1. Do you think any parts of the framework should be mandatory to use in the development of data systems?

Unsure

Please provide comments (optional)

Governments should not expect consensus or adoption to form without direction – recognising that policy indecision and uncertainly undermines confidence and limits industry investment in capacity development.

Considering the diversity and varying technological maturity across Australian agriculture, a deliberate and focused approach to drive digital standards adoption and best practices would be prudent. Starting with voluntary adoption but planning for certain components to become preferred —like common identification for objects, data privacy protocols and critical tracking events—can help ease the transition and increase long-term compliance and effectiveness. Refer to the USFDA FSMA for a best practice example of clear government direction and directives to address national priorities.

Whilst a different sector, Healthcare, has been on a path for many years now of its digitisation and it has faced the challenge of "implementation" of the common global open standards where having the intent to adopt does not necessarily drive implementation. Its remit whilst focused on improving clinical outcomes has not seen pervasive adoption of standards across the sector, why, because it requires clear direction from the sector on what are the key elements that are somewhat not negotiable.

Clear direction, clarity to industry and alignment with standards but calling out what might be deemed "not negotiable or mandatory" might garner more implementation which then drives the outcomes identified in the sectors desire of "digitising" itself to realise the benefits outlined in the National Agricultural Traceability strategy https://www.agriculture.gov.au/biosecurity-trade/market-access-trade/national-traceability

Refer to section 2.4.2. Is the proposed governance structure adequate to support the development and maintenance of the framework?

Yes

Please provide comments (optional)

The proposed governance structure is well-designed to support the development and maintenance of the framework. However, it could be enhanced by examples in Australia and internationally to align Australian initiatives and practices – showcasing where global data standards are already well adopted and used by industry.

Please list any stakeholder groups you believe to be missing from the proposed governance structure (optional)

One critical stakeholder group missing is the technology providers, particularly those focused on next-generation technologies in agriculture. Including these stakeholders

would provide insights into technological trends and needs, ensuring the framework supports not just current but future interoperability requirement

Refer to section 3.1. How might these barriers be addressed? (optional)

To address barriers to adoption, strategies could include providing preferential procurement or financial incentives for early adopters, establishing demonstration projects to showcase the benefits of interoperability, and offering training and technical support to help smaller operators transition to the new standards. Where costs are a constraint consideration should be given to manufacturing modernisation and related programs to accelerate the understanding, update and use of digital standards that support Australian government and industry vision and strategy.

Are there any other barriers to adoption of the framework that you can think of? (optional)

Industry resistance to change, particularly in regions with deep-rooted agricultural practices is the major inhibitor. Educational campaigns that clearly communicate the tangible benefits of interoperability, such as improved market access and enhanced compliance with export regulations, would be essential. The National Traceability Strategy has identified the need for training and awareness and GS1 Australia recommends these efforts be led by and executed with industry – including peak bodies and councils and independent of research and development or new technology endeavours.

Non alignment of standards whether it be within the sector, with connected sectors or in the regional or international arena.

Refer to section 3.3. Do you agree with the roles and responsibilities listed?

Unsure

Please provide your reasons and alternative suggestions

We do agree with the roles and responsibilities listed, however, there is an opportunity to further enhance the co-hort of that described currently as industry and supply chain participants. Given within the sector a major party in the discussion and adoption is the retailer segment, it would be worthy of defining its inclusion quite specifically here, as a party that has undertaken significant digitalisation for many decades its influence and support would be well founded here.

We, GS1, also have historic and extensive expertise in the area of interoperability and traceability standards, and thus there is potential enhancement in specifying roles for leveraging international partnerships.