Marco Rossi
Director, Standardization and Technical Policy

TO THE ISO MEMBER BODIES

Reference: IWA 47
Date: 2024-03-28

Invitation to an international workshop on:

Reference architecture for data-driven agrifood systems

Dear ISO Members,

Following approval by the Technical Management Board of a proposal from the German Institute for Standardization (DIN), we are pleased to invite you to a workshop to develop an International Workshop Agreement (IWA 47) on *Reference architecture for data-driven agrifood systems.*

Workshop meeting dates:

The workshop will take place **virtually**, over Zoom. Meeting credentials will be distributed to registered individuals near the date of the meetings.

The workshop will have four meetings, spaced by roughly four weeks. Each meeting will entail two sessions, held several hours apart, to enable participants worldwide to join at a time feasible for their time zone. The schedule for meetings and sessions is as follows:

- 2024-07-09   1st Workshop Meeting   (2 sessions: 12 pm – 3 pm; 8 pm – 11 pm, all in UTC)
- 2024-08-06   2nd Workshop Meeting   (2 sessions: 12 pm – 3 pm; 8 pm – 11 pm, all in UTC)
- 2024-09-03   3rd Workshop Meeting   (2 sessions: 12 pm – 3 pm; 8 pm – 11 pm, all in UTC)
- 2024-10-01   4th Workshop Meeting   (2 sessions: 12 pm – 3 pm; 8 pm – 11 pm, all in UTC)

Participants are invited to attend as many sessions as is practical for them. The expectation is that the material covered in the two sessions of a given meeting will be very similar.

To participate

Please fill out the online registration form at https://bit.ly/3THCV7k.

The Workshop participation will be opened to registered participants only.

We would be grateful if you could publicize this event in your country.

Yours sincerely,

Marco Rossi
Director, Standardization and Technical Policy

cc. Vice-President (technical management), General Secretary & CEO of IEC

INVITATION

Kickoff: International Workshop Agreement (IWA) 47: Reference architecture for data-driven agrifood systems
Kickoff: Tuesday, 9 July 2024, Virtual (Zoom)

DIN is pleased to invite interested stakeholders from public and private sector organizations worldwide to participate in the ISO International Workshop Agreement (IWA) on a Reference architecture for data-driven agrifood systems.

The workshop will happen through monthly virtual meetings and additional offline work over the course of 2024. **Participation is free**.

Please register online at https://bit.ly/3THCV7k (or use the QR code). If online registration is unavailable to you, please refer to Annexes 3 and 4.

Background

In January 2024, DIN (Germany) submitted a proposal to the Secretariat of ISO's Technical Management Board (TMB) for the development of an ISO International Workshop Agreement (IWA) for a *Reference Architecture on Data-driven Agrifood Systems*.

DIN committed to providing the secretariat for the development of this IWA.

Please find attached as annex:

Annex 1:   IWA proposal on Reference architecture for data-driven agrifood systems

Annex 2:   Communication Piece

Annex 3:   IWA workshop participation registration form

Annex 4:   Copyright release form

Purpose

The IWA is proposed with the purpose of initiating work on a reference architecture (RA) for data-driven agrifood systems. It should serve as an early, inclusive step toward enabling data-driven capabilities in agrifood (agriculture and food) systems. This architecture will define a conceptual model, a reference model, and various architectural perspectives aligned with industry best practices. It will lay out a structured approach for implementing information systems to support processes in data-driven agrifood systems and serve as a framework to guide architects in creating such information systems. It will also provide a clearer understanding of these systems for stakeholders such as device manufacturers, application developers and retailers. All of it helps to create a transparent and interoperable Agrifood Systems which serves to fulfil sustainable strategies such as the European Green Deal, the Paris Agreement and the UN Sustainable Development Goals (SDGs).

The IWA deliverable will provide a preliminary specification of a reference architecture and guidance on how to use it. It will serve as a fundamental input for ISO Technical Committee 347.

Draft Scope

The scope for the reference architecture will be provided international workshop will be provided by the business capability model container subclause.

Compliance with ISO process

DIN, the German member body of ISO, guarantees its support in the management and publication of the IWA in compliance with ISO Directives, following the principles of international standardization: transparency, fairness and consensus.

DIN, the proposer of the IWA, appoints Mr Johannes Lehmann (DIN) as the Secretary of the IWA, and nominates Mr R. Andres Ferreyra as the Chairperson (to be confirmed at kick-off).

To participate

Please fill out the online registration form at https://bit.ly/3THCV7k

If (and only if) you cannot reach the online form, please use the ones in Annex 3 and Annex 4.

The form will contain a link to a copyright release form. Please fill it out as per the instructions on the registration form and upload it as indicated in the registration form.

Please return any Annex 3 / 4 printouts to the secretariat support (melodi.kelebek@din.de) by June 15 at the latest. This will provide time to process non-automated registrations.

The Workshop will be open to registered participants only.

Time schedule

The workshop will take place virtually, over Zoom. Meeting credentials will be distributed to registered individuals near the date of the meetings.

The workshop will have four meetings, spaced by roughly four weeks. Each meeting will entail two sessions, held several hours apart, to enable participants worldwide to join at a time feasible for their time zone. The schedule for meetings and sessions is as follows:

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2024-10-01   4th Workshop Meeting (2 sessions: 12 pm – 3 pm; 8 pm – 11 pm, all in UTC)

Participants are invited to attend as many sessions as is practical for them. The expectation is that the material covered in the two sessions of a given meeting will be very similar.

Once the discussions have reached their conclusion, the final text of the IWA as arising from the workshop consultations and meetings will be submitted to ISO for publication.

ISO members may market and promote the document through their regular channels.

ISO will hold the copyright to the document. Individual contributors will retain the rights to their contributions, as per the ISO Copyright Licence Agreement (Annex 4).

Draft Agenda for the Kickoff Meeting

Date: **2024-07-09 (Tuesday)**

Time: **Session 1:** 12:00 to 15:00 UTC; **Session 2**: 20:00 to 23:00 UTC

Venue: **Annex 2 Practical Information**.

Zoom: A Zoom link will be distributed to registered participants a few days before the meeting.

Draft agenda:

	Topic	Session 1 start time (CET)	Session 2 start time (CET)	Duration
1	**Welcome. Opening of the meeting**	**12:00**	**20:00**	**5'**
2	**ISO Code of ethics and conduct**	**12:05**	**20:05**	**5'**
3	**Roll call of workshop members (online form)**	**12:10**	**20:10**	**10'**
3	**Adoption of the agenda**	**12:20**	**12:20**	**5'**
4	**Confirmation of Chairperson**	**12:25**	**20:25**	**5'**
5.	**ISO International Workshop Agreement (IWA) for a Reference Architecture on Data-driven Agrifood Systems.**			
	5.1 Purpose and objectives	**12:30**	**20:30**	**10'**
	5.2 What is a reference architecture, what is it for, and why do we need one?	**12:40**	**20:40**	**20'**
	5.3 Guiding principles	**13:00**	**21:00**	**10'**
	5.4 The IEEE/IEC/ISO 42010 Approach	**13:10**	**21:10**	**20'**
	5.2 Comments received during the consultation of the proposal	**13:30**	**21:30**	**10'**
	5.3 Title and scope	**13:40**	**21:40**	**10'**
	5.4 Document structure	**13:50**	**21:50**	**10'**
	5.5 Bibliography and related standards, specifications or other documents	**14:00**	**22:00**	**10'**
	Break	**14:10**	**22:10**	**10'**
6.	**Allocation of work packages, recommendations**	**14:20**	**22:20**	**25'**
7.	**Any other business**	**14:45**	**22:45**	**10'**
8.	**Closure of the meeting**	**14:55**	**22:55**	**5'**

Fee: None

        2024-03-26

Questions

Should you have any question content wise to the reference architecture, as Workshop secretary and the proposed chair, we will be glad to be of assistance.

Sincerely,	
Johannes Lehmann	Ferreyra Andres
Workshop Secretary	Workshop Chair Nominee
DIN Standardization	Syngenta
Johannes.Lehmann@din.de	Andres.Ferreyra@syngenta.com

Should you have any administrative questions to the International Workshop, as Workshop secretary support, I will be glad to be of assistance.

Sincerely,
Melodi Kelebek
Workshop Secretary Support
DIN Standardization
melodi.kelebek@din.de

Berlin, 2024-03-22

International Organization for Standardization
Organisation internationale de normalisation
Международная организация по стандартизации

PROPOSAL FOR AN INTERNATIONAL WORKSHOP AGREEMENT

A proposal for an International Workshop Agreement (IWA) shall be submitted to the secretariat of the Technical Management Board at ISO/CS (tmb@iso.org). Proposals will be referred to the ISO Technical Management Board for approval (4-week ballot).

Once the proposal for the IWA is approved by the TMB, the proposer will be requested to prepare an announcement/ invitation to the workshop, which will be circulated to the ISO members by ISO/CS. Please note that the announcement must be made at least 90 days in advance of the agreed date to allow potential attendees adequate time to plan on attending the workshop (Annex SI.3).

See the ISO Supplement Annex SI for full details of the Procedure for the development of IWAs.

Proposer
A proposal to hold an ISO workshop for the purpose of developing one or more IWAs on a particular subject may come from any source, including ISO member bodies, liaison organizations, corporate bodies etc. An organization that is not an ISO member body or liaison organization, or is not international in scope, shall inform the ISO member body in its country of its intent to submit such a proposal.   German Institute of Standardization (DIN)   Am DIN-Platz   Burggrafenstraße 6   10787 Berlin   American National Standards Institute (ANSI)   1899 L Street, NW   11th Floor   Washington, DC 20036
Contact details of proposer   **Name:** Johannes Lehmann   **Email:** Johannes.Lehmann@din.de
Title of the proposed IWA   Reference Architecture for Data-Driven Agrifood Systems

Purpose and justification

- The proposed goal is to convene an international workshop to initiate work on a reference architecture to define generic data-driven agrifood system characteristics, a conceptual model, a reference model and a number of architectural views on the basis of the architecture descriptions defined in ISO/IEC/IEEE 42010 and meta reference architecture guidelines developed by ISO/IEC JTC 1/AG 8.
- The desired reference architecture should outline an overall structured approach for representing and building data-driven agrifood systems, by providing an architectural structure framework. In short, the proposed reference architecture will provide guidance for the architect developing a data-driven agrifood system and aims to give a better understanding of such systems to the stakeholders thereof, including device manufacturers, application developers, customers and users.
- The ultimate purpose of the reference architecture that will be initiated through the proposed IWA is to enable greater interoperability for standards development in the field of data-driven agrifood systems. This is relevant because there are currently no mechanisms within the ISO standards system to enable standards development teams within different parts of the data-driven agrifood systems domain (who typically operate bottom-up, without overarching coordination) to create interoperable standards.
- This effort should have as its starting point on a capability model (presented in Clause 4.3 of the final report of the ISO Strategy Advisory Group for Smart Farming (SAG-SF)). The effort should be followed by developing a standard for the reference architecture.
- In addition to a conventional IWA text (e.g., PDF) document, developing the reference architecture should include an additional electronic, machine-readable reference architecture model deliverable, to be housed on a Github repository belonging to ISO (or other national or regional standards organization to be determined). This resource would be distributed under an open-source license (to be determined). The contents of this deliverable are not normative, but rather a resource to enable users to apply, experiment with, and comply with the specifications laid forth in the IWA.

Additional notes

- Contemporary data-driven agrifood in general, and smart farming in particular, can be imagined as a system of systems requiring extensive data exchange both within and among systems. Interoperability (and implementing the FAIR data principles for making data Findable, Accessible, Interoperable and Reusable in general) become especially challenging in this situation in the absence of standardized capabilities and interfaces. A reference architecture enables the standardization thereof.
- Realizing, that in the geopolitical context are different target and therefore different information's in the various data spaces, the IWA will consider the already existing ISO 7673 series. The ISO 7673 series include exactly this mechanism for representing geopolitical-context-dependent information in agrifood systems data models. More broadly, the fact that we are initiating the reference architecture work as an International Workshop is fundamentally motivated by the intent to capture requirements from as many countries as possible to ensure tha the final result can provide a data-driven framework that can be used / adapted to particular countries or other geopolitical contexts with little to no modification.
- As the goal is to have a holistic global picture the scope is scope is a critically important aspect of developing a reference architecture, as is consideration of stakeholders and their concerns. We intend to both:
  - Initiate the work with the business capabilities requirements specified in the SAG-SF final report subclause 4.3, and

- o Follow the guidance of the ISO/IEC JTC 1 N 16184 document on Meta Reference Architecture, and ISO / IEC / IEEE 42010 standard on Software, systems and enterprise—Architecture description
- To realize ongoing maintenance and governance of the reference architecture we will ultimately translate it into a standard developed in the context of TC 347, which in turn will likely require a discussion about designating a Maintenance Agency for that document.
- The variety of stakeholders in smart farming is very broad, and **only a small subset of them is currently represented as ISO experts**. While this is one of the motivations for Recommendation 3.2.1 (to form a Technical Committee on Data-Driven Agrifood Systems, now TC 347) in the final report of the SAG-SF, convening an international workshop and supporting open source development would reduce barriers to participation and enable reaching a wider audience, both for input to the critically important idea of a reference architecture for data-driven agrifood systems, but also as a mechanism for kickstarting, and recruiting experts to TC 347 through exposure to ISO and its processes. The workshop agreement will then serve as the basis for the development of an ISO standard on a reference architecture for data-driven agrifood systems in ISO/TC 347.
- Note: In the course of the work of the SAG-SF it became clear that the term *smart farming* is interpreted very differently by different parties, and even more so in an international context. In that light, although SAG-SF Recommendation 3.4.10 is worded recommending an *IWA for a reference architecture for "smart farming"*, the true intent, reflected in this current proposal, was to initiate the development of a reference architecture for the full scope of data-driven agrifood systems.
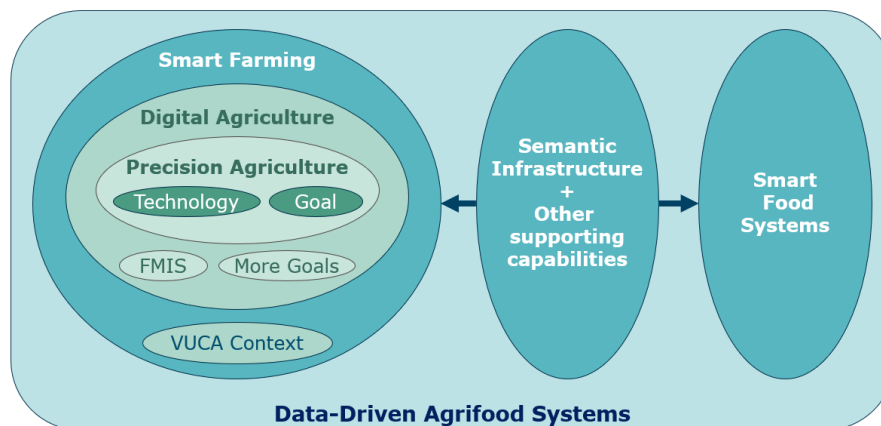

Figure 1 Diagram showing how agrifood systems contain both agricultural- and food-related aspects, how a subset of the domain is data-driven; and how a narrower subset of these corresponds to smart agrifood systems

The Document

The expected primary outcome of this work is a foundational document for a subsequent standard on a reference architecture for data-driven agrifood systems, organized as follows:

1. Scope
2. Normative references
3. Terms and definitions
4. Abbreviations
5. Objectives of a reference architecture for data-driven agrifood systems
6. Characteristics of data-driven agrifood systems (including smart farming)
   a. General
   b. Stakeholders and their concerns
   c. Functional characteristics

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          d. Other characteristics
7. Data-driven agrifood systems reference model
          a. Dimensions
          b. Vertical domains
          c. The Capability Model
8. Data-driven agrifood systems reference architecture views
          a. General
          b. Functional architecture view
          c. Engineering architecture view
          d. Privacy architecture view
          e. Safety architecture view
          f. Reliability and resilience architecture view
          g. Trustworthiness architecture view

Does the proposed IWA relate to or impact on any existing work in ISO committees?

☒ Yes   ☐   No

Please list any relevant documents and/or ISO committees

Relevant Documents
ISO Strategy Advisory Group on Smart Farming
IWA 29:2019(E)

ISO committees
ISO/IEC JTC1/SC40 IT service management and IT governance
ISO/IEC JTC 1/SC 41 Internet of things and digital twin
ISO/IEC JTC 1/SC7 Software and systems engineering
ISO/IEC JTC 1/SC7 WG 42 Architecture
ISO/IEC JTC1 SC 27 Information security, cybersecurity and privacy protection
ISO/TC 23/SC19 Agricultural electronics
ISO/TC 34 Food products

Relevant Standards
ISO/IEC/IEEE 42010:2022 Software, systems and enterprise — Architecture description
ISO/IEC 30141:2018 Internet of Things (IoT) — Reference Architecture
ISO/IEC TR 20547-1:2020 Information technology - Big data reference architecture
ISO 11783-10 Tractors and machinery for agriculture and forestry - Serial control and communications data network
ISO 11783-11:2011 Tractors and machinery for agriculture and forestry -Serial control and communications data network
ISO/IEC 27559:2022 Information security, cybersecurity and privacy protection – Privacy enhancing data de-identification framework
ISO 7673 series
ISO/IEC CD 27036 - Cybersecurity
ISO/TR 4804:2020 Road vehicles
ISO/TS 18101-1:2019 Automation systems and integration — Oil and gas interoperability — Part 1: Overview and fundamental principles

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Relevant stakeholders (list of organizations that may be interested)
ITU, IEC, IEEE, FAO, USDA, KTBL, Gaia-X European Association for Data and Cloud AISBL The Consumer Goods Forum, AEF, AMAA (Alliance for the Modernization of African Agrifood Systems), AgGateway, GS1, PTI (Produce Traceability Initiative)
Member body willing to act as secretariat
DIN
Number of meetings to be held (if more than one is envisaged) and proposed dates
1st virtual workshop (April 2024) 2nd virtual workshop (May 2024) 3rd virtual workshop (June 2024) 4th virtual workshop (July 2024)
Annexes are included with this proposal (give details)
Further details about the whole capabilities of agrifood systems and the need of a data reference architecture can be found in the final report of the ISO SAG on Smart Farming. Recommendations 3.4.10 and 3.4.11 explain the need and gaps of the target topic. A short document for communication to inform NSBs about the IWA is attached (see Appendix). Please distribute it to the NSBs so they can answer any queries more easily.

Preparing for a New Agrifood System

Why a reference architecture for data-driven agrifood systems?

The world's agrifood (agriculture + food) systems are coming under increasing pressure. Farmers and food producers must make many hundreds of decisions each year to remain profitable, sustainable, and compliant with regulations. This must happen in the context of challenges such as climate change, supply-chain disruptions, increasing crop input costs, volatile commodity markets, resource depletion and international conflict. The ensuing volatility, uncertainty, complexity and ambiguity render it impossible to make those decisions based only traditional methods.

Data is a key to success: observations and measurements in the field, herd and supply chain, as well as accurate crop, herd and process management records can **support decisions based on sound scientific principles**. Automating this collection and management can reduce costs and enable widely available digital agriculture tools, potentially helping producers of all sizes (even smallholders in the developing world) and helping advance the UN Sustainable Development Goals (SDGs).

Unfortunately, the automation described above is currently impossible to do at a large scale. Different brands of equipment and software can't talk to each other; their formats and interfaces are often proprietary. Moreover, the industry does not have a "common language" (standards) for even the basic data used to describe concepts such as crops, pests, fields, herds and laboratory methods.

We propose a **reference architecture** (**RA**) as an early step toward enabling data-driven capabilities in agrifood (agriculture and food) systems. This architecture will define a conceptual model, a reference model, and various architectural perspectives aligned with industry best practices. It will lay out a structured approach for building data-driven agrifood systems and serve as a framework to guide architects in creating such systems. It will also provide a clearer understanding of these systems for stakeholders such as device manufacturers, application developers and retailers.

We believe there are several compelling reasons to begin work on this RA immediately:

1. **Data Integration and Interoperability:** Data in the agrifood sector comes from a multitude of sources, including sensors, machinery, supply chain partners, weather forecasts, and more. An RA provides a standardized framework for diverse data sources to integrate and interoperate. It greatly improves the chances that data will flow seamlessly among the components of the agrifood system, enabling better decision-making, resource allocation, and process optimization.

2. **Scalability:** As agrifood systems evolve and expand, they generate an ever-increasing volume of data. A properly designed RA can guide this growth efficiently; it can provide a scalable structure to capture and analyze huge datasets from agricultural operations, supply chains, and distribution networks.

3. **Consistency and Quality:** Maintaining data consistency and quality is critical in agrifood systems. A well-defined RA leads to effective data governance standards, ensuring that data are accurate, reliable, and consistent, which is essential for making informed decisions and ensuring food safety and quality. (After all, "garbage-in, garbage-out"!)

4. **Data Security and Privacy:** Agrifood systems often handle sensitive information, such as field-level farmer income, crop yields, and food safety records. An RA can clearly lay out a process of **data ethics by design**, including access controls, encryption, data anonymization, data ownership and informed consent, to protect valuable data from unauthorized access, breaches and misuse.

5. **Analytics and Insights:** Data-driven capabilities rely on advanced analytics and machine learning algorithms to extract meaningful insights. A well-structured RA makes it easier to implement these tools and techniques because they start from a place of **semantic interoperability** (i.e., the *meaning* of the data is clear), enabling stakeholders to uncover hidden patterns, optimize processes, and make data-driven decisions that enhance agricultural productivity and food quality.

6. **Standardization and collaboration:** Agrifood systems involve multiple stakeholders, including farmers, agribusinesses, researchers, and regulators, collaborating toward common goals. An RA enables a common language / framework for them to share and exchange data. Standardization simplifies collaboration, reduces data integration challenges, and promotes innovation.

7. **Futureproofing:** The agrifood industry is constantly evolving, with emerging technologies like IoT, AI, and distributed ledgers playing increasingly significant roles. An RA is designed to be flexible and adaptable, allowing agrifood systems to incorporate new technologies and data sources as they emerge without undergoing a complete overhaul.

8. **Compliance:** Many agrifood systems must adhere to regulatory and industry standards related to data management, traceability, and reporting. An RA can help ensure compliance by providing a structured framework for capturing and reporting the required data accurately and consistently.

In summary, a reference architecture is essential for the agrifood industry to harness the full potential of data-driven capabilities. It enables data integrity, security, and interoperability while enabling stakeholders to leverage data for optimizing agricultural processes, enhancing food quality, and addressing the challenges of feeding a growing global population.

An international workshop and its deliverable, the IWA

The variety of stakeholders in agrifood systems is very broad, and only a small subset of them is currently represented as experts in ISO committees. Collaboration among professionals with diverse skills and backgrounds is essential for developing a comprehensive reference architecture that addresses the unique challenges and opportunities within the agrifood sector. We thus selected a more inclusive alternative to ISO committees for this foundational work: an international workshop. It reduces barriers to participation because the only administrative overhead required is to sign up.

The desired endgame is to have the RA become an international standard; the process will begin with the deliverable of the international workshop, called the **International Workshop Agreement** (IWA). A **core document** will be drafted ahead of time by DIN and ANSI as a way to kickstart the IWA. This core document will be modified and refined over the course of a series of (initially estimated at 4) virtual workshops. The figure below shows the tentative timeline and steps of the IWA process.
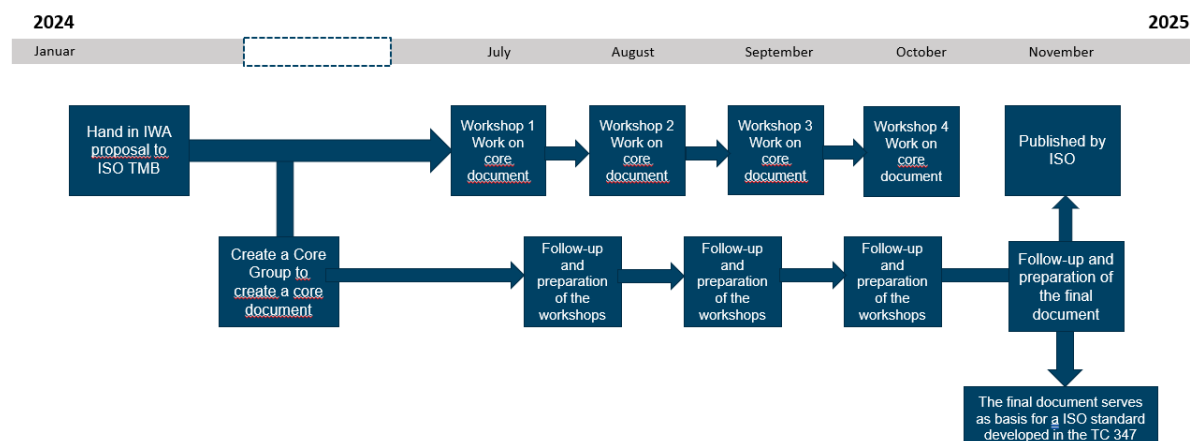
Who do we need in this effort?

The International Workshop for Data-Driven Agrifood Systems will require a mix of different areas of expertise to be effective. We imagine participants from, but not restricted to, the following areas:

1.   **Information Architecture:** Experts in data architecture understand how to design the structure, storage, and flow of data within the system. They can create data models, define data standards, and ensure data integrity.

2.   **Agricultural Knowledge:** Understanding the intricacies of agriculture, including crop types, farming practices, and supply chain dynamics, is crucial. Agricultural experts can help tailor the architecture to specific agrifood challenges.

3.   **Information Technology:** Proficiency in IT, including software development, database management, and network infrastructure, is essential for implementing the technical aspects of the architecture.

4.   **Data Science and Analytics:** Data scientists and analysts are skilled in extracting insights from data using statistical and machine learning techniques. Their expertise is valuable for making the architecture data-driven and capable of generating actionable insights.

5.   **Cybersecurity:** Given the sensitive nature of data in agrifood systems, cybersecurity experts are needed to design robust security measures, including access controls, encryption, and threat detection.

6.   **Standards and Compliance:** Professionals knowledgeable in industry standards, regulations, and compliance requirements ensure that the architecture aligns with legal and regulatory frameworks.

7.   **Project Management:** Effective project management skills are essential to coordinate the development and deployment of the reference architecture, ensuring it meets project goals and deadlines.

8.   **Stakeholder Engagement:** Experts skilled in communication and stakeholder engagement can ensure the needs and requirements of all stakeholders are represented in the reference architecture.

9.   **Domain-Specific Expertise:** Agrifood systems have a broad scope; we will need experts in precision agriculture, food safety, forestry, supply chain management, semantics, and much more.

10.   **Ethics and Privacy:** Experts in agricultural, food and data ethics and in data privacy can help establish guidelines and practices for ethical data handling and protection of individual privacy.

11.   **Emerging Technologies:** As new technologies like IoT, AI, and distributed ledgers become integral to agrifood systems, experts in these areas can contribute to the architecture's adaptability and futureproofing.

Registration, IWA 47: Reference architecture for data-driven agrifood systems

Please use this form only if you are unable to register online at https://bit.ly/3THCV7k

In this case, please also make sure to include the copyright release form in Annex 4.

Salutation

Full name* (Include honorifics and suffixes)

Preferred name (This is the name by which you would like people to address you in meetings; e.g., Katherine or Kathy; Arkopaul or Arko)

Professional title (e.g., VP of Supply Chain)

Email address*

Category of expert* (As a participant in the workshop, you will be considered an expert. Please check the box that best applies to you.)

- ☐ **Industry and commerce:** Manufacturers; producers; designers; service industries; distribution, warehousing and transport undertakings; retailers; insurers; banks and financial institutions; business and trade associations
- ☐ **Government**: International and regional treaty organizations and agencies; national government and local government departments and agencies, and all bodies that have a legally recognized regulatory function
- ☐ **Consumers**: National, regional and international consumer representation bodies, independent of any organization that would fall into the 'industry and commerce' category, or individual experts engaged from a consumer perspective
- ☐ **Labour**: International, regional, national and local trades unions and federations of trades unions and similar bodies the main purpose of which is to promote or safeguard the collective interests of employees in respect of their relationship with their employers. This does not include professional associations.
- ☐ **Academic and research bodies**: Universities and other higher educational bodies or professional educators associated with them; professional associations; research institutions
- ☐ **Standards application**: Testing, certification and accreditation bodies; organizations primarily devoted to promoting or assessing the use of standards
- ☐ **Non-governmental organization (NGO)**: Organizations that usually operate on a charitable, not-for-profit or non-profit distributing basis and that have a public interest objective related to social or environmental concerns. This category does not include political parties or other bodies whose main purpose is to achieve representation in government or governmental bodies.

Organizational affiliation* (Name of the organization (e.g., NGO, company, university, governmental institution) you represent in the workshop)

Time zone* (Please select the time zone from which you will be primarily participating.)

Country or territory* (Please indicate where you will be primarily participating from)

Organization mailing address (Address--physical or post office box, etc.--where you can receive physical mail. The workshop organizers do not foresee the need to mail content to workshop participants, but if necessary, it would helpful to have your address on file.)

Background information* (About your company/organisation and your interest in this workshop.)

Experience (Please describe your experience relevant to this international workshop.)

Expertise (Check all that apply.)

- ☐ Agricultural retail
- ☐ Agronomy
- ☐ Apiculture
- ☐ Aquaculture
- ☐ Biodiversity
- ☐ Carbon markets / sequestrat.
- ☐ Climate change
- ☐ Commodity sales / mkting.
- ☐ Commodity supply chain
- ☐ Crop input supply chain

- ☐ Cybersecurity
- ☐ Data management
- ☐ Data modeling
- ☐ Energy
- ☐ Food production
- ☐ Forestry
- ☐ ISOBUS
- ☐ Livestock
- ☐ Machinery
- ☐ Process modeling

- ☐ Processed food supply chain
- ☐ Risk management
- ☐ Robotics
- ☐ Safety
- ☐ Software development
- ☐ Standardization
- ☐ Supply chain
- ☐ Traceability

Other expertise (Involvement in standardization activities (Please describe any current or prior involvement with ISO or other standards organization(s).

Can the workshop leadership email you?* (Do you authorize the workshop to email you materials related to the workshop? Important You MUST answer 'I authorize' in order to participate in the workshop.)

Can the workshop leadership share your contact information?* (Do you authorize the workshop leadership to share your contact information with other participants in the international workshop?

Confirm Agreement*

I have read and agree with the conditions below and wish to register as participant in this international workshop. By submitting this membership registration, I accept the following conditions:

- I subscribe to the ISO Code of Ethics and Conduct.
- I subscribe to the objectives of the work, as outlined in the IWA proposal.
- I agree to offer my expertise in the agreement building process, and to contribute by participating in meetings to this process.
- I agree to abide by the ISO Declaration for participants in ISO activities and the ISO Member Data Protection Policy.

Signature   **Date***

COPYRIGHT LICENCE AGREEMENT

hereinafter the "Agreement"

Re: Copyright protected content (e.g. image, text figure, table etc.):   as contributed to the International Workshop Agreement (IWA) 47

hereinafter referred to as the "Work"

between

[Entity name and address of sending organization]

hereinafter referred to as the "Licensor"

and

The INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, ISO,
1 Chemin de la Voie-Creuse, Case postale 56, 1211 Geneva 20, Switzerland

hereinafter referred to as the "Licensee"

WHEREAS, the Licensor holds the copyright in the Work;

WHEREAS, the Licensee develops and publishes standards, and considers incorporating the Work in its entirety, in part, or as an adaptation, into one of its standards (hereinafter referred to as the "ISO Publication";

WHEREAS, this Agreement will set out the terms and conditions between the Licensor and the Licensee (hereinafter jointly referred to as the "Parties").

1. Grant of Rights

1.1 The Licensor grants to the Licensee, without any fee due in return, a non-exclusive licence to use the Work and to include it into the ISO Publication. For this purpose the right is granted to reproduce, to distribute, to adapt, to modify, to translate the Work and to make it available to the public in all forms (e.g. printed or any electronic form), and in all media (whether now known or hereafter developed), throughout the world. The Licensor also grants the right to the Licensee to sublicense ISO members to use the Work in their national adoptions of the ISO Publication in the same way the Licensee is allowed to use the Work.

1.2 For clarification, the Licensor shall retain copyright in the Work.

2. Warranties

2.1 The Licensor warrants to the Licensee that it has at its disposal all rights in the Work which are required to grant the Licensee the rights granted in this Agreement.

2.2 The Licensor shall indemnify and hold the Licensee harmless upon first request for any losses, claims, damages, awards, penalties, or injuries incurred, including reasonable attorney's fees, which arise from any claim by any third party of an alleged infringement of rights granted under this Agreement.

3. Applicable Law / Arbitration Clause

3.1 The law applicable to the substance of any dispute, controversy or claim arising out of or in relation to this Agreement, including the validity, invalidity, breach or termination there shall be exclusively Swiss law with the exclusion of its international private law.

3.2 Any dispute, controversy or claim arising out of or in relation to this Agreement, including the validity, invalidity, breach or termination thereof, shall be resolved by arbitration in accordance with the Swiss Rules of International Arbitration of the Swiss Chambers of Commerce in force on the date when the notice of arbitration is submitted in accordance with these rules. The number of arbitrators shall be one. The seat of the arbitration shall be Geneva, Switzerland. The arbitral proceedings shall be conducted in English.

4. Entire Agreement

This Agreement contains the entire understanding of the Parties with respect to the subject matter contained herein and supersedes all terms and conditions in any quotations, purchase orders, acknowledgements or other documents exchanged by the Parties. There are no promises, covenants or undertakings other than those expressly set forth herein. No modification, amendment or waiver of any provision of this Agreement shall be valid unless in writing and signed by the Parties.

_____   _____

Signature (Licensor)   Date

_____

Name and title of representative of Licensor

_____   _____

Signature (Licensee)   Date

_____

Name and title of representative of Licensee