ISO STRATEGIC ADVISORY GROUP ON SMART FARMING (SAG SF) - OVERVIEW

Background

The rising world population and climate change are increasing the pressure for increased productivity and greater efficiency in agriculture. Digitization is enabling increasing networking of all agricultural sectors and can thus make a significant contribution to meeting the challenges facing agriculture and food production. Smart farming, the modern use of Information and Communication Technologies (ICTs) in agriculture, is of particular importance.

Apart from the challenges of climate change and food security for the world's population faced by governments and community decision makers, there are a whole range of technological challenges, foremost among which is the issue of interconnectivity across the entire value chain of the food industry.

The general concept of smart farming is to interconnect the entire value chain, from farm to retailer to fork, and everything in between. The seamless connection of these processing units requires open interfaces and standardized data formats.

A holistic view is even more important to implement political strategies such as the Sustainable Development Goals (UN SDGs) because issues, such as food waste, do not stop at the field but intersperse the entire food value chain.

New technologies (e.g. Artificial Intelligence, Blockchain, Open Source Software, etc.) as well as new systematic approaches (e.g. Circular Economy, Vertical Farming, Meat Substitutes, etc…) require a multitude of new standards that are necessary for a future-proof world food supply.

The smart farming approach brings innovative technical solutions to agriculture and aquaculture with the goal of improving the efficiency and sustainability of food production and its value chain.

Scope of the SAG SF

Recognizing the increasing pressure on our food chain from global challenges such as climate change, population growth and the risk from pandemics, in June 2021 the TMB approved a new Strategic Advisory Group on 'Smart farming' (TMB resolution 60/2021).

'*Smart farming'* stands for the networking of food production. The networking requires the information from the first production process of the food to be transferred, through to grocery retail.

This asks for a standardization of defined interfaces. Smart farming is also the optimization and increase in efficiency of food production. It was also agreed that "Smart farming" covers all innovative technical aspects of agriculture and aquaculture as well as the sustainability and improved efficiency of food production and its value chain.

Many ISO committees are already considering smart farming aspects and approaches, and as part of its mandate, the new SAG on Smart Farming will look for synergies and opportunities in the existing work, as well as identifying any gaps. It will also build a matrix between the UN SDGs and smart farming, to identify current and potential future challenges and recommend appropriate actions.

Mandate of the SAG SF

- Define a set of parameters for the classification of “Smart Farming” for the purposes of the SAG
- Build a matrix between the Sustainable Development Goals (UN SDGs) and the definition of Smart Farming, in order to establish an overview of current and potential future challenges in relation to the Sustainable Development Goals (SDGs)
- Recommend actions to address these challenges
- List standards and other documents relevant to Smart Farming that are, or have been, developed by existing ISO Technical Committees
- Analyse any synergies in the current work of existing ISO technical committees relevant to Smart Farming, and consider opportunities to coordinate or collaborate across ISO committees where overlaps exist
- Set up a gap analysis, in order to identify areas important for standardization in the field of Smart Farming not currently addressed by an existing ISO committee
- Recommend standardization activities
- Set up recommendations for the structuring of these standardization activities, which includes consideration of existing ISO committees, new technical committees, and ongoing coordination mechanisms
- Establish a priority list of any new work to be undertaken in the short term that should be progressed as an immediate priority

Membership

The SAG on SF will be composed by a Core Group (CG) of experts nominated by TMB members, non-TMB ISO members, and the IEC/SMB. The CG will be supported by a Consultative Group of experts from relevant ISO and IEC committees developing standards related to the subject of Smart Farming.

Within this activity, the CG is expected to form operational Subgroups (SGs) that might correspond to the UN SDGs relevant for Smart Farming and each subgroup will composed of experts in the area of the subgroup. The subgroups will present an opportunity for additional experts, in addition to those named to the CG, to be directly involved.

Main output

The SAG on SF is expected to deliver by September 2022 its summarised findings and recommendations in the form of Roadmap on Smart Farming.

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