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Industrial-process measurement, control and automation – Smart manufacturing – Part 5: Market and innovation trends analysis

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IEC TR 63283-5 has been prepared by IEC technical committee 65: Industrial-process measurement, control and automation. It is a Technical Report.

The text of this Technical Report is based on the following documents:

Draft	Report on voting
65/1008/DTR	65/1028/RVDTR

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 63283 series, published under the general title *Industrial-process measurement, control and automation – Smart manufacturing*, can be found on the IEC website

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

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INTRODUCTION

The IEC TR 63283 series describes the framework for smart manufacturing concepts and in particular, terms and definitions, use cases, cyber security, market and innovation trends and new technologies.

This document describes the market and innovation trends and analyses their impediments and impacts to smart manufacturing.

The market trends are based on the tendency that the smart manufacturing markets move into a particular direction potentially using technologies described in other parts of the series. These market trends have the time prospective of 3 years to 5 years to become common smart manufacturing concepts.

The innovation trends describe those technology innovations that are considered to have an impact on or to influence the smart manufacturing concepts. These innovation trends have the time prospective of 5 years to 10 years.

This document also describes how the market and technology trends are influencing the current business models. Some examples of the forthcoming business models are described.

This document has no intention to describe an exhaustive list of market, innovation or the business model trends. It also forecasts how standards will be influenced by these market, innovation and business model trends.

INDUSTRIAL-PROCESS MEASUREMENT, CONTROL AND AUTOMATION – SMART MANUFACTURING –

Part 5: Market and innovation trends analysis

1 Scope

This part of IEC 63283 describes the market and innovation trends analysis affecting smart manufacturing (SM). The market and innovation trends will influence the evolution of smart manufacturing and it will be important to have good insights on these trends. Specific aspects of the market trends are the evolution of the business cases that is assumed to highlight new supplier chain models, new revenue streams, new customer services, and/or new customer segments.

The document will address the following topics:

- Market watch: Identify the important, likely, and/or disruptive market trends (e.g. mass customization) from an end-to-end perspective, which impact smart manufacturing topics/aspects. This includes the end-user, producers, supply chain, regulators, etc.
- Business model watch: Identify the new business model trends from an end-to-end perspective, which impact smart manufacturing.
- Technological watch: Identify the important, likely, and/or disruptive innovations (AI chipsets, 6G, quantum computing, etc.) describing the impacted smart manufacturing topics/aspects; this topic will focus on those technologies that are still under development but is assumed to influence (or is assumed to be influenced by) smart manufacturing.

There are many more new trends which are used in SM. In this document, only some frequently discussed trends are presented. Some technologies are considered to have priority according to their maturity.

This work will focus on how they can be used in SM.

2 Normative references

There are no normative references in this document.