
Draft Project plan for the CEN- CENELEC Workshop on “Data- driven management of production processes”

**Requests to participate in the Workshop
and/or comments on the project plan are
to be submitted by
2024-03-30 to futrilla@une.org¹**

Recipients of this project plan are kindly requested to name all patent rights known to them to be relevant to the Workshop and to make available all supporting documents.

2024-02-12 (Version 1.0)

¹ Applications for participating in the Workshop and comments on the project plan that are not received by the deadline do not need to be taken into consideration. Once constituted, the Workshop will decide whether or not to consider the comments received in good time.

Contents

	Page
1	Status of the project plan4
2	Workshop proposer and Workshop participants4
2.1	Workshop proposer4
2.2	Other potential participants.....4
2.3	Participants at the kick-off meeting.....4
2.4	Registered Workshop participants5
3	Workshop objectives and scope.....5
3.1	Background.....5
3.2	Scope6
3.3	Related activities7
4	Workshop programme7
4.1	General7
4.2	Workshop schedule7
5	Resource planning9
6	Workshop structure and rules of cooperation9
6.1	Participation in the Workshop.....9
6.2	Workshop responsibilities.....9
6.3	Decision making process10
7	Contacts10

1 Status of the project plan

Draft project plan for public announcement and commenting (Version 1.0)

This draft project plan is intended to inform the public of a new Workshop. Any interested party can take part in this Workshop and/or comment on this draft project plan. Please send any requests to participate or comments by e-mail to futrilla@une.org.

All those who have applied for participation or have commented on the project plan by the deadline will be invited to the **kick-off meeting of the Workshop on 2024-04-11**.

Approved project plan for CWA development will be adopted at the kick-off meeting of the Workshop.

2 Workshop proposer and Workshop participants

2.1 Workshop proposer

Person or organisation	Short description and interest in the subject
ITG – Galicia Institute of Technology (Spain)	<p>ITG is a private non-profit foundation based in A Coruña, Spain. Its goal is to enhance the competitiveness of companies, organizations, and professionals by leveraging technologies such as the Internet of Things (IoT), Big data, Industry 4.0, Augmented Reality, Artificial Intelligence and nanotechnology. ITG offers R&D services to various sectors including industrial, energy, water, environmental and construction.</p> <p>It is a partner in the Horizon 2020 BIOMAT project, where it works as a service provider specializing in the development of Digital Twin Pilots. Some knowledge developed in this project is the basis for the proposed CWA.</p>

2.2 Other potential participants

This CWA will be developed in a Workshop (temporary group) that is open to any interested party. The participation of other experts would be helpful and is desired. It is recommended that:

- production companies (for instance: manufacturing of materials or products, water and waste treatment and valorisation, etc.),
- engineering consultancies,
- Universities and Research Organizations with interest in this field,
- etc.,

take part in the development of this CWA.

2.3 Participants at the kick-off meeting

The following persons or organisations already signed up to the kick-off meeting prior to the publication of the draft project plan.

Person	Organisation
Oscar BRANDON	ITG (Workshop proposer)
Juan Luis SOBREIRA	ITG (Workshop proposer)
Fernando UTRILLA	UNE (Workshop secretariat)

2.4 Registered Workshop participants

The following persons or organisations have registered as Workshop participants at the kick-off meeting and will actively participate in the development of the CWA.

Person	Organisation
Oscar BRANDON	ITG
Juan Luis SOBREIRA	ITG
Fernando UTRILLA	UNE (Workshop secretariat)

3 Workshop objectives and scope

3.1 Background

In the transformative era of Industry 4.0, data is the ‘fuel’ for industrial progress. As production systems evolve towards increasing complexity and interconnectivity, the significance of implementing data management procedures becomes increasingly evident. The adoption of a data management procedure in production systems is not merely a strategic choice but a necessity for industries in the European market.

The benefits involve, among others, operational efficiency, quality assurance, cost reduction and innovation and adaptability:

- **Operational efficiency:** A cornerstone of effective data management is its ability to streamline information flow within production systems, increasing operational efficiency. As production processes become more intricate, decision-makers require access to accurate and timely data to identify bottlenecks, optimize workflows, and enhance informed decisions.
- **Quality assurance:** Effective data management allows ensuring quality control measures and compliance with industry standards and regulations. Maintaining comprehensive and traceable records enables companies to trace and verify each step of the production process, facilitating adherence to quality benchmarks.
- **Innovation and adaptability:** Industries with robust data management procedures are better equipped to innovate and adapt to evolving market trends, as well as to adopt new procedures and technologies in the transition to a green economy and decentralized manufacturing. In the European market, characterized by

dynamic consumer preferences and rapid technological advancements, companies that can swiftly adapt their production systems based on data-driven insights are rewarded.

To assess the magnitude of the potential impact of data management in European industries, it's imperative to consider the scale of the market. The manufacturing sector in Europe contributes significantly to the overall GDP. In 2022, the value of sold production in the European Union amounted to €6179 billion, highlighting the economic importance of the sector ('Industrial production statistics', Eurostat 2023 https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Industrial_production_statistics).

This workshop emerges from the opportunity to consolidate and synthesize a set of proven tools for data-management in production processes, supporting industries in the achievement of abovementioned benefits. They have been developed as part of the R&D initiative H2020 BIOMAT project.

The main goal of these tools is to facilitate the integration of data-driven management into production processes, such as materials or products manufacturing, water and waste treatment or subproducts valorisation, amongst other. It offers a comprehensive guidance throughout the entire implementation lifecycle, rather than focusing on individual aspects. To promote the adoption of this data-based management practices in manufacturing, it takes a broad approach that includes traceability from different perspectives such as data acquisition and structured compilation, and data analysis and simulations.

Thus, the proposed workshop emphasizes the importance of establishing traceability throughout the implementation process without controlling the associated equipment. It serves as an initial phase of implementation for data-based management, paving the way for more complex control mechanisms.

The practical application of data-based production management will help achieving traceability in documenting parameters, materials, infrastructure usage, data acquisition, analysis, and simulations. It's relevant to note that this workshop does not cover the control of equipment associated with the manufacturing process.

While technical elements are considered, this workshop primarily focuses on providing a methodology rather than a case study on implementing digital twins or specific technologies in manufacturing. Therefore, the envisioned CWA (CEN Workshop Agreement) will not prescribe any particular technology but rather present a comprehensive framework for implementing data-driven management in production processes. This represents the main value proposition of this CWA.

3.2 Scope

This CEN-CENELEC Workshop intends to develop a CEN-CENELEC Workshop Agreement (CWA) describing a "Methodology for the data-driven management of production processes", which allows to document the process lifecycle and gain knowledge through its application.

The objectives of this methodology involve:

- Structured documentation of data related to observed parameters, materials, and the physical infrastructure equipment used in processes.
- Data acquisition, which facilitates collection of measured data.
- Data analysis, for extracting insights through charts or dashboards.
- Simulation capabilities, enabling the execution of models to anticipate outcomes before production initiation.

The methodology is preferably to be integrated into an information system that offers the aforementioned capabilities. It also serves as a communication tool, fostering collaboration between stakeholders, such as producers and customers. However, the CWA will not impose any specific technological framework for this system.

NOTE 1: This methodology does not constitute a use case for digital twin adoption, although their abilities may align with the capabilities of a digital twin.

NOTE 2: This CWA is not a 'management system standard' following a PDCA approach and is not intended for certification purposes.

The CWA is intended to be used by industries characterized by the presence of production processes or engineering consultancies working with them. For instance: manufacturing of materials or products, water and waste treatment and valorisation of subproducts, etc.

3.3 Related activities

The subject of the planned CWA is not at present the subject of any standard.

The subject of the planned CWA falls into the scope of CLC/TC 65X “Industrial process measurement, control and automation”. This technical committee has been consulted until 2024-01-30, having received the answer from the TC Secretary (VDE) by e-mail:

- Confirming the scope overlap.
- Confirming this subject is not currently in its working plan (any active work item).
- Confirming that there is not any objection to start the Workshop.
- Wanted to be informed about the outcome.

Even if this topic is under the scope of CLC/TC 65X, the elaboration of a CWA is a good opportunity to get new research knowledge in a CEN-CENELEC document, that can be used in the future to feed new standard development in this TC. Members of this TC are invited to participate to the Workshop to better ensure the alignment with existing standards and the interest in its future use.

4 Workshop programme

4.1 General

The kick-off meeting is planned to take place online on 2024-04-11. A draft for public commenting is published for information and commenting.

A total of 3 Workshop meetings (kick-off meeting and working meetings, either online or face to face) are initially foreseen, during which the content of the CWA will be presented, discussed and approved. More meetings can be arranged if needed. Online work will be preferred to improve the sustainability of this work.

The CWA will be drawn up in English (language of meetings, minutes, CWA, etc.).

4.2 Workshop schedule

Table 1: Workshop schedule (preliminary)

CEN/ CENELEC Workshop	Dec 23	Jan 24	Feb	Mar	Apr	May	Jun	Jul	Ago	Sep	Oct	Nov	...				
Initiation																	
1. Proposal form submission and TC response																	
2. Project plan development																	
3. Open commenting period on draft project plan																	
Operation																	
4. Kick-off meeting																	
5. CWA development																	
6. Open commenting period on draft CWA (optional)																	
7. CWA(s) finalised and approved by Workshop participants																	
Publication																	
8. CWA publication																	
Milestones			C				K V			V			V A			P	

- C** End of consultation with CLC/TC 65X on establishment of a CEN/CENELEC Workshop
- K** Kick-off meeting
- M** Workshop meeting
- V** Virtual Workshop meeting
- A** Adoption of CWA
- P** Publication of CWA

5 Resource planning

Both registration and participation at the Workshop here are free of charge. The management costs of the Workshop will be covered by resources from the BIOMAT project.

The use of electronic meetings will be preferred. Nevertheless, in the case of physical meetings, they will be held in Europe and each participant must bear his/her own costs for travel, accommodation and subsistence.

The CWA will be published by CEN/CENELEC and made publicly available through CEN/CENELEC and the different standardization Institutes in the member states at normal costs in line with the guidelines in CEN/CENELEC Guide 10. It is foreseen that the CWA can be also freely downloaded from the CWA Download Area on the CEN/CENELEC webpage.

The copyright of the final CWA will be at CEN/CENELEC. The final document will include the following paragraph: "Results incorporated in this CEN Workshop Agreement received funding from the European Union's HORIZON 2020 research and innovation program under grant agreement number 953270".

6 Workshop structure and rules of cooperation

6.1 Participation in the Workshop

The Workshop will be constituted during the kick-off meeting. By approving this project plan, the interested parties declare their willingness to participate in the Workshop and will be formally named as Workshop participants, with the associated rights and duties. Participants at the kick-off meeting who do not approve the project plan are not given the status of a Workshop participant and are thus excluded from further decisions made during the kick-off meeting and from any other decisions regarding the Workshop.

Generally, the request to participate in the Workshop is closed once it is constituted. Any new participant in the Workshop at a later date is accepted considering these aspects:

- a. expansion would help to shortening the duration of the Workshop or to avoiding an eventual delay;
- b. the expansion would not result in the Workshop taking longer to complete;
- c. the new Workshop participant would not address any new or complementary issues beyond the scope defined and approved in the project plan;
- d. the new Workshop participant would bring complementary expertise into the Workshop in order to incorporate scientific findings and state-of-the-art knowledge;
- e. the new Workshop participant would actively participate in the drafting of the manuscript by submitting specific, not abstract, proposals and contributions;
- f. the new Workshop participant would ensure a wider application of the CWA.

All Workshop participants who agreed the publication of the CWA or its draft will be named as authors in the European Foreword, including the organisations which they represent. All Workshop participants who do not agree the publication of the CWA, will not be named in the European Foreword.

6.2 Workshop responsibilities

The Workshop Chair is responsible for content management and any decision-making and voting procedures. The Workshop Chair is supported by the Workshop secretariat, whereby the Workshop secretariat will always remain neutral regarding the content of the CWA(s). Furthermore, the Workshop secretariat shall ensure that CEN-CENELEC's rules of procedure, rules of presentation, and the principles governing the publication of CWA(s) have been observed. Should a Workshop Chair no longer be able to carry out her/his duties, the Workshop secretariat shall initiate the election of a new Workshop Chair. The list below covers the main tasks of the Workshop Chair. It is not intended to be exhaustive.

- Content related contact point for the Workshop.
- Presides at Workshop meetings.
- Ensures that the development of the CWA respects the principles and content of the adopted project plan.
- Manages the consensus building process, decides when the Workshop participants have reached agreement on the final CWA, based on the comments received.
- Ensures due information exchange with the Workshop secretariat.
- Represents the Workshop and its results to exterior.

The Workshop secretariat, provided by a CEN/CENELEC national member, is responsible for organising and leading the kick-off meeting, in consultation with the Workshop proposer. Further Workshop meetings and/or web conferences shall be organised by the Workshop secretariat in consultation with the Workshop Chair. The list below covers the main tasks of the Workshop secretariat. It is not intended to be exhaustive.

- Administrative and organisational contact point for the Workshop.
- Ensures that the development of the CWA respects the principles and content of the adopted project plan and of the requirements of the CEN-CENELEC Guide 29.
- Formally registers Workshop participants and maintains record of participating organisations and individuals.
- Offers infrastructure and manage documents and their distribution through an electronic platform, if needed.
- Prepares agenda and distribute information on meetings and meeting minutes as well as follow-up actions of the Workshop.
- Initiates and manage CWA approval process upon decision by the Workshop Chair.
- Interface with CEN-CENELEC Management Centre (CCMC) and Workshop Chair regarding strategic directions, problems arising, and external relationships.
- Advises on CEN-CENELEC rules and bring any major problems encountered (if any) in the development of the CWA to the attention of CEN-CENELEC Management Centre (CCMC).
- Administrates the connection with relevant CEN or CENELEC/TCs.

6.3 Decision making process

Decision making shall be done by agreement among the participants.

In the case that a vote is necessary for a particular decision, to unblock lack of agreement, each Workshop participant is entitled to vote and has one vote. If an organisation sends several experts to the Workshop, that organisation has only one vote, regardless of how many Workshop participants it sends. Transferring voting rights to other Workshop participants is not permitted. During voting procedures, decisions are passed by simple majority; abstentions do not count.

If Workshop participants cannot be present in the meetings when the CWA or its draft is adopted, an alternative means of including them in the voting procedure shall be used (e.g. by e-mail).

7 Contacts

- Workshop Proposer & Proposed Chair:

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