
Draft Project plan for the CEN Workshop on "ModGra - Graphical representation of physical process models"

**Requests to participate in the Workshop
and/or comments on the project plan are
to be submitted by**

1st July, 2022 to mario.gallo@uni.com¹

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.

Milan, 27th May, 2022 (Version 1)

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
Summary	4
1 Status of the project plan	4
2 Workshop proposer and Workshop participants	4
2.1 Workshop proposer	5
2.2 Other potential participants.....	5
2.3 Participants at the kick-off meeting.....	5
2.4 Registered Workshop participants	5
3 Workshop objectives and scope.....	5
3.1 Background.....	6
3.2 Scope	6
3.3 Related activities	6
4 Workshop programme	6
4.1 General	6
4.2 Workshop schedule	7
4.3 Work already delivered	Error! Bookmark not defined.
5 Resource planning	8
6 Workshop structure and rules of cooperation	8
6.1 Participation in the Workshop.....	8
6.2 Workshop responsibilities.....	9
6.3 Decision making process	10
7 Dissemination and participation strategy	10
8 Contacts	11

Summary

Models mimic the behaviour of real-world systems by mapping them into mathematical objects. Models give freedom to the mind, allow tampering and testing, playing with what could become real before it has real-world consequences. Models are central to any exploratory work aiming to exploit the object's behaviour based on its properties. Models are essential for controlling the real-world object's behaviour or properties. In short, models are the alpha and omega of science and engineering.

Modelling is a highly knowledge-intensive activity, and engineering and science activities cover a wide range of contexts from process engineering to manufacturing and materials & product engineering. Their documentation represents a notorious problem of science and technology.

1 Status of the project plan

Draft project plan for public 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 mario.gallo@uni.com.

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 7th July, 2022.

2 Workshop proposer and Workshop participants

The proposer of this CEN Workshop is the Project MarketPlace funded by Horizon2020 programme under Grant agreement n. 760173 and coordinated by:

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The main contact point for the CEN Workshop is:

Prof Heinz A Preisig
Department of Chemical Engineering
Norwegian University of Science and Technology
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Phone: +47 97541334
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MarketPlace project Partner

The CEN/CENELEC national member holding the Workshop secretariat is:

UNI - Ente italiano di Normazione
Via Sannio n.2, Milano, Italy (20148)

2.1 Workshop proposer

<u>Person or organisation</u>	<u>Short description and interest in the subject</u>
H2020 project Marketplace GA 760173 Dr. Dirk Helm (Coordinator of EU Project)	Fraunhofer-Institut für Werkstoffmechanik IWM
Prof Heinz A Preisig	Department of Chemical Engineering Norwegian University of Science and Technology

2.2 Other potential participants

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

- Academic and research bodies
- Funded European Projects (i.e. Horizon 2020, Horizon Europe)
- Industry and commerce
- Non-governmental organizations (NGO)
- Standards application.

take part in the development of this CWA.

2.3 Participants at the kick-off meeting

The list of participants is not yet fully finalized. It will be available after the kick off meeting. A high participation is expected from experts coming from different funded European projects (e.g. Horizon2020).

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.

<u>Person</u>	<u>Organisation</u>
<u>Workshop Chair</u> Prof Heinz A Preisig	Department of Chemical Engineering Norwegian University of Science and Technology
<u>Workshop Vice-Chair</u> Dr. Dirk Helm	Fraunhofer-Institut für Werkstoffmechanik IWM
<u>Workshop secretariat</u> UNI – Ente italiano di Normazione – Mario Gallo	UNI – Italian Standardization Body

3 Workshop objectives and scope

Models mimic the behaviour of real-world systems by mapping them into mathematical objects. Models give freedom to the mind, allow tampering and testing, playing with what could become real before it has real-world consequences. Models are central to any exploratory work aiming to exploit the object's behaviour based on its

properties. Models are essential for controlling the real-world object's behaviour or properties. In short, models are the alpha and omega of science and engineering.

Modelling is a highly knowledge-intensive activity, and engineering and science activities cover a wide range of contexts from process engineering to manufacturing and materials & product engineering. Their documentation represents a notorious problem of science and technology.

3.1 Background

- **Motivation:** Process and product modelling activities require bits and pieces from different disciplines while modelling activities are strongly context-dependent. Modelling multi-scale physical processes will include the range from atomistic to macroscopic continuum. Documenting the overall model for a process for a specific product thus faces the problem of providing a description that captures the entire width of the involved disciplines. From the top, the modelling landscape is a patchwork. Each domain has its way of "doing" things and generates its application-tailored solution. These separated developments result in domain-specific software codes and domain-related terminology. Hence, there is a need for a robust interdisciplinary approach between these fields and communities.
- **Market environment:** The industrial and academic R&D communities are the target group being active in materials, chemical, manufacturing, consumer goods, electronics, energy production and storage, bio-processes.
- **Legal environment:** No known legal issues.

3.2 Scope

The purpose of the planned CEN/ Workshop Agreement is to:

- Establish a common graphical representation for multi-scale materials modelling, leading to efficient communication, especially for industrial end-users to understand and lower the barrier to utilising multi-scale materials modelling.
- Agree on a common terminology for the classification of models.
- Define a minimal set of basic building blocks that is rich enough to capture the various models on any level of complexity and including the model controls

3.3 Related activities

The subject of the planned CWA is not at present the subject of a standard. However, there are committees, standards and/or other technical specifications that deal with related subjects and thus need to be taken into account - and involved, where necessary - during this Workshop:

The CEN workshop agreement CWA 17284 "Materials modelling – Terminology, classification and metadata", was established on the background of standardising the language in material modelling. It also introduced the notation of "materials Modelling Data", abbreviated as MODA. The CWA introduced a graphical language for information flow, augmented with tables that further detail the elements of the MODA flow diagrams. The MODA flow diagram is though neither a workflow nor a representation of a model. It does not provide the necessary details to enable the reconstruction of the simulation it represents.

This standardisation project aims at a more detailed description of the involved models in graphical form.

4 Workshop programme

4.1 General.

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

The drafting process is open and all comments will be considered, first by the chair person and secondarily by the participants of the workshop.

In order to minimise travelling, meetings will mostly be done remotely. If a physical meeting is desirable, it will be organised.

4.2 Workshop schedule

Table 1: Workshop schedule (preliminary)

CEN/CENELEC Workshop	M5	M6	M7	M8	M9	M10	M11	M12
	May	June	July	August	Sept	Oct	Nov	
project plan	D							
submission to CEN	B							
WS announcement								
kick-off			K					
CWA drafting			V		V			
Adoption of the CWA and commenting phase (if any)						A		
Publication							P	
promotion							D	D

- D** Drafting of the PP
- B** CEN/BT informed on establishment of a CEN/Workshop
- K** Kick-off
- V** Virtual Workshop meeting
- A** Adoption of CWA
- P** Publication of CWA
- D** Online distribution of CWA

5 Resource planning

The administrative costs of CEN Workshop Secretariat will be covered by resources from the H2020 Project Marketplace.

6 Workshop structure and rules of cooperation

The workshop will be lead by a chair or vice-chair. The workshop secretariat is responsible for the organisation and management of the workshops.

a. CEN Workshop Chairman:

Prof Heinz A Preisig, Department of Chemical Engineering

Norwegian University of Science and Technology

Chairman main responsibilities include:

- Chairing the CEN Workshop meetings.
- Representing the CEN Workshop in outside meetings in cooperation with CCMC and with the Workshop secretariat.
- Monitoring the progress of the CWA in line with the Project Plan.
- Managing the consensus building process.
- Interface with CEN/WS Secretariat and CEN Management Centre regarding strategic indications, external relationships, problems arising in the development of the CWA

b. CEN Workshop Vice-Chair

The Workshop vice-chair shall be appointed in the Kick-off meeting. The vice-chair shall support and assist in all responsibilities outlined for the chairperson. In the absence of the chairperson, the vice-chair will represent the CEN Workshop at outside meetings in cooperation with CEN/WS Secretariat and will interface with CCMC regarding strategic directions, problems arising, external relationships etc.

c. CEN Workshop Secretariat

The proposed CEN Workshop Secretariat is by UNI - Italian National Standard Body.

CEN Secretariat is providing the formal link to the CEN system. The following main activities will be carried out by the Workshop Secretariat:

- Organizing CEN Workshop plenary meetings,
- Producing CEN Workshop minutes and action lists,
- Forming the administrative contact point for CWA project,
- Managing CEN Workshop attendance lists,
- Managing CEN Workshop document registers,
- Following-up action lists,
- Assisting Chairperson in monitoring and following-up of electronic discussions, in case the CEN Workshop is mainly working by electronic means,
- Administrating the liaison with relevant CEN/TCs, if applicable.

The Secreteriat will also provide public dissemination of the CEN workshop and CWA, either via online tool (e.g. website, social media) and with dedicated seminars and workshops, exploiting liaison with international innovation community.

The proposed contact detail for UNI Secretariat is:

Name and Surname of secretary from UNI

6.1 Participation in the Workshop

The Workshop will be constituted during the course of 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.

As a rule, the request to participate in the Workshop is closed once it is constituted. The current Workshop participants shall decide whether any additional members will be accepted or not.

Any new participant in the Workshop at a later date is decided on by the participants making up the Workshop at that time. It is particularly important to consider these aspects:

- a. expansion would be conducive to shortening the duration of the Workshop or to avoiding or averting an impending delay in the planned duration of the Workshop;
- 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 the latest scientific findings and state-of-the-art knowledge;
- e. the new Workshop participant would actively participate in the drafting of the manuscript by submitting concrete, not abstract, proposals and contributions;
- f. the new Workshop participant would ensure wider application of the CWA.

All Workshop participants who voted for 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 voted against the publication of the CWA, or who have abstained, 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 Vice-Chair and the responsible 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, on the basis of 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.

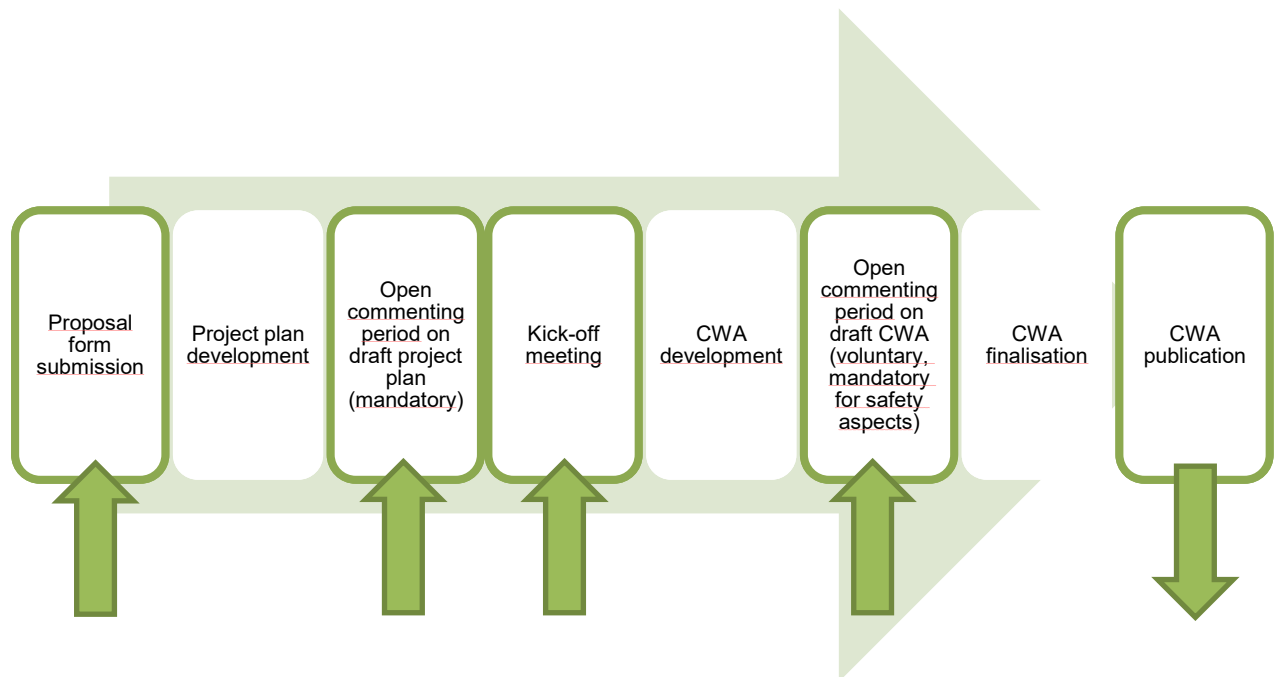
- Administrative and organisational contact point for the Workshop
- Ensures that the development of the CWA respects the principles and content of the adopted project plan and of the requirements of the CEN-CENELEC Guide 29
- Formally registers Workshop participants and maintains record of participating organisations and individuals
- Offers infrastructure and manage documents and their distribution through an electronic platform
- 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

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.

7 Dissemination and participation strategy



Proposal form submission

The Workshop proposal will be disseminated to the following relevant stakeholders and bodies for consultation:

- Relevant standardisation committee, working group at CEn and ISO level
- Academic and research bodies
- Funded European Projects (i.e. Horizon 2020, Horizon Europe)
- Networks of industry and commerce representatives

Open commenting period on draft project plan

The project plan will be disseminated to the following relevant stakeholders and bodies for commenting:

- Relevant standardisation committee, working group at CEn and ISO level
- Academic and research bodies
- Funded European Projects (i.e. Horizon 2020, Horizon Europe)
- Networks of industry and commerce representatives

In addition to the CCMC website, the project plan and the date of the kick-off meeting will be advertised on UNI website and on Marketplace website to raise awareness. Interested parties are requested to contribute either through commenting of the project plan (short term) or through Workshop participation (long term).

Open commenting period on draft CWA (if any)

The draft CWA will be disseminated to the following relevant stakeholders and bodies for commenting:

- Relevant standardisation committee, working group at CEn and ISO level
- Academic and research bodies
- Funded European Projects (i.e. Horizon 2020, Horizon Europe)
- Networks of industry and commerce representatives

In addition to the CCMC website, the draft CWA will be advertised on Marketplace project website to raise awareness. Interested parties are requested to contribute through commenting of the draft CWA (short term).

CWA publication

The final CWA will be disseminated to the following relevant stakeholders and bodies:

- standards committee, working group etc.
- Relevant standardisation committee, working group at CEn and ISO level
- Academic and research bodies
- Funded European Projects (i.e. Horizon 2020, Horizon Europe)
- Networks of industry and commerce representatives

In addition to the CCMC website, the final CWA will be advertised on:

- sector specific newsletter
- social media, such as
 - Facebook
 - Instagram
 - LinkedIn
 - Twitter
- Research Gate
- EC Newsroom
- others

8 Contacts

- Workshop Chair:

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- Workshop proposer

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