



Training requirements for Translators



March 27th 2019
Hamburg

EMMC-CSA H2020-NMPB-2016-2017 Grant 723867





EMMC Expert Meeting

Training requirements for Translators

09:30 - 11:00	Unit 1	Translation training resources
09:30 – 09:50		Translation and Training for Companies Natalia Konchakova (EMMC)
09:50 – 10:30		Necessary skills of Translators from a BDSS perspective Peter Klein (FORCE)/ Salim Belouettar (COMPOSELECTOR)
10:30 – 11:00 <i>Coffee Break</i>		Training resources / AC2T Translation Case Micol Pezzotta (EMMC) / Ulrike Cihak-Bayr (AC2T research GmbH, AT)
11:15 - 12:30	Unit 2	Training strategy
11:15 – 11:35		Essential training for translators: Cases, Challenges and Practice Tobias Neumann (Nanomatch GmbH, DE)
11:35 – 11:55		Translator training – Reflections from an industrial research angle Svenn Anton Halvorsen (NORCE, NO)
11:55 – 12:30 <i>Lunch</i>		Translator profile, Manuel Laspalas (ITAINNOVA, ES)
13:30 –14:45	Unit 3	Business model for translators
13:30 – 13:50		Ownership of training materials, IP of training and Translation Alexandra Simperler (EMMC)
13:50 – 14:25		Marketplaces for Translators Martin Thomas Horsch (VIMMP)/ Kwang-Leong Choy (Marketplace)
14:25 – 14:40 <i>Coffee Break</i>		Perspective and importance of the training of translation by /within companies Hein Koelman (DOW, NL)
15:00 –16:00		Summary of the Meeting and Discussion
16:00		<i>Networking and closure</i>





EMMC Expert Meeting

Training requirements for Translators

Unit 1

Translation training resources

Impulse 1

Translation and Training for Companies:

Summary and Conclusions from the EMMC International Workshop 2019

Natalia Konchakova (EMMC)

Impulse 2

Necessary skills of Translators from a BDSS perspective

Peter Klein (FORCE) and Salim Belouettar (COMPOSELECTOR)

Impulse 3

Training resources / AC2T Translation Case:

Micol Pezzotta (EMMC) / Ulrike Cihak-Bayr (AC2T research GmbH, AT)





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Training requirements for Translators

Impulse 1

Translation and Training for Companies:

Summary and Conclusions from the EMMC International Workshop 2019

Natalia Konchakova (Helmholtz-Zentrum Geesthacht , Germany)

Representing the EMMC-CSA project

The EMMC provided on February 25th -27th the International Workshop 2019, reached the goal to boost the networking of European and International stakeholders and provided a communication platform across all stakeholder communities. It supported different type of stakeholders to provide their input on the future materials modelling.

The EMMC Translation Group organized three sessions regarding difference aspects of Modelling Translation:

- Towards the Translator as a key professional
- Translation for and by SMEs
- Training for translators, with emphasis on economic concepts and skills

Summary and conclusion from the sessions, as well as the recommendations and future activities of the EMMC Translation Group are presented and discussed in the talk.





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Impulse 2-1

Necessary skills of Translators from a BDSS perspective

Peter Klein (*Fraunhofer ITWM, Kaiserslautern, Germany*)

Representing the FORCE project

The EMMC-CSA has spent great efforts in defining concepts like Business Decision Support Systems BDSS, Key Performance Indicators KPI and Translation methodologies. Picking up these definitions experience in a running EU project, FORCE, has identified a set of necessary skills from a practical point of view necessary for effective Translation processes which are discussed in this contribution.

In FORCE, we integrate materials modelling workflows into Multi-Criteria Optimization (MCO) as specific Business Decision Support methodology. The goal is to make the MCO approach broadly available to industrial decision makers responsible for materials development and selection and production process design. Business related Key Performance Indicators, used as the MCO objectives, are modelled on top of the physical states obtained from modelling and balanced compromises among them, the Pareto front, are identified using MCO algorithms. Decision Making is supported by interactive graphical tools allowing for the exploration of what-if-scenarios on the Pareto-front.

From this perspective, the necessary skills of Translators in FORCE are discussed and generalized to other BDSS methodologies used in industry. In particular, the relation of the FORCE approach to COMPOSELECTOR, a companion project running under the same call, is highlighted.

FORCE is an EU funded Research and Innovation Action, Grant Agreement No. 721027, under topic NMBP-23-2016: Advancing the integration of Materials Modelling in Business Processes to enhance effective industrial decision making and increase competitiveness.





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Impulse 2-2

Necessary skills of Translators from a BDSS perspective

Salim Belouettar (*Luxembourg Institute of Science and Technology, Luxembourg*)

Representing the COMPOSELECTOR project

Material modelling covers a great diversity of physics and scales and requires correspondingly diverse methods to understand and to deploy for effective and efficient translation. Recognizing the importance of the training of translators, this talk will discuss the resources needed for the translation training resources





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Training requirements for Translators

Impulse 3-1

Training resources / EMMC Translation Case template

Micol Pezzotta (*SINTEF, Norway*)

Representing the EMMC-CSA project

In 2018, the European Materials Modelling Council (EMMC) represents about 800 members with an interest in materials modelling. It promotes the application of materials modelling to support the European Industrial Competitiveness. The EMMC Roadmap for materials modelling and informatics entails the state of the art in materials modelling, the challenges, knowledge gaps, and whitespaces, as well as actionable recommendations for projects (EMMC Roadmap 2018).

Material models can create added value and benefits for the key stakeholders. "Attract, educate and train people for the use of materials modelling" is identified in the EMMC Roadmap 2018 as one of the key challenges that needs to be addressed.

During the years of the CSA project several documents have been produced and are available on the EMMC website for the members (free membership). The translators guide, the translations case template and translation case examples are tools for supporting the training of translators. During the talk these tools will be presented with more details. The translators guide is intended to be used by the Translators themselves for guidance and also by the industrial end users to know what to expect from the translators. The translation template helps collecting the relevant information (as related to the tasks of the translator) to create successful stories of translation. Translation cases demonstrating the specifics (including bottlenecks) of the translation process for various types of industrial users (e.g. SMEs, large companies, different application sectors) need to be collected, shared among and used by the translators. To follow the general introduction, a case study under preparation by the EMMC will be presented by the Translator.





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Training requirements for Translators

Impulse 3-2

AC2T Translation Case

Ulrike Cihak-Bayr (*AC2T research GmbH, AT*)

The use of numerical models in tribological applications requires to capture different phenomena happening synchronously and occurring on different scales – timewise and in lateral distances. Due to increasing need for material design via numerical tools there is a strong need to upscale the material behaviour by verified models and approaches. In tribology, which studies wear and friction of components interacting with each other, the numerical simulation of wear is a basis to find tailored solutions for lifetime extensions by customized material selections. In our use case we present an example for the numerical simulation of wear of a large tillage. Tests in the laboratory would not be feasible with originally large components and additionally, it would not be possible to produce real parts made of different material that are candidates to ensure higher lifetimes. So a standardized laboratory test was used to measure wear rates of different materials. This material specific wear rate was then transferred to a numerical FEM-BEM model of the system soil-tillage. Within this numerical simulation the pressure acting on each single surface point of the tillage could be simulated and the implementation of Archard's wear law enabled to determine on each single point the wear volume as a function of operation conditions.

This approach will be applied and extended in the Open Innovation Test Bed project „i-TRIBOMAT“ funded from the European Union's Horizon 2020 research and innovation programme (innovation action) under grant agreement No. 814494 (Call: H2020-NMBP-TO-IND-2018), which will serve as a single entry point for future tribological material upscaling requests of industrial customers.





EMMC Expert Meeting

Training requirements for Translators

Translation training resources

Discussion Points

Which **Translation skills** and **Training Elements** are **strongly required/recommended** for translation utilisation in the **BDSS**?

RoMM (model classification aspects), MODA, EMMO, ???

Which **skills** should a Translator possess (capability to estimate investments vs. benefits of modelling, capability to give neutral advise with several workflow options), and how it could be **efficiently trained**?

EMMC Translation cases as a basis of the training materials:

Is it the **enough basis** for the training example / effective training?

What translators need to explain to demonstrate the **translation effort** and focus/aim of the translation process for the specific (focused) case?

Which specific **issues** did you have preparing the translation case?

Which aspects/parts of the document would you like to **change**? Why?





EMMC Expert Meeting

Training requirements for Translators

Unit 2

Training strategy

Impulse 4

Essential training for translators: Cases, Challenges and Practice

Tobias Neumann (Nanomatch GmbH, DE)

Impulse 5

Translator training – Reflections from an industrial research angle

Svenn Halvorsen (NORCE, NO)

Impulse 6

Translator profile/ increase the visibility of translators

Manuel Laspalas (ITAINNOVA, ES)





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Training requirements for Translators

Impulse 4

Essential training for translators: Cases, Challenges and Practice

Tobias Neumann (Nanomatch GmbH, DE)

The design of custom tailored workflows to incorporate multiscale materials modeling into product development requires the translation of simulation methodology from various software owners to the industrial end-user. Starting at the identification of a translation case, Translators face various challenges during this complex process. In this presentation, we highlight three key aspects in the translation process to be covered in future trainings for Translators.





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Training requirements for Translators

Impulse 5

Translator training – Reflections from an industrial research angle

Svenn Halvorsen (NORCE Norwegian Research Centre AS, NO)

Svenn Anton Halvorsen has a Master in Technical Physics and a PhD in Numerical Mathematics. After finishing his PhD at NTH (now NTNU), Trondheim, Halvorsen was employed by the metallurgical company Elkem, where he has been involved in many modelling tasks related to metallurgical processes.

As he most of the time was the only one with a comprehensive background in mathematical modelling, he often acted as a “modelling translator” in his communication with other Elkem employees. His experience covers “translation” to furnace operators, metallurgists, chemists, economists and leaders.

After 20 years Halvorsen left Elkem, and successfully ran his own consultancy company for 7 years. He then joined the research institute, Teknova, as one of the first researchers. Teknova has now merged with 5 other institutes into NORCE Norwegian Research Centre. He is still involved in many projects where Translator skills are required.

Halvorsen will present some examples from his experience, emphasising the Translator aspects. Based on his experience, he will discuss central Translator skills. He will share some reflections on education for two different types of Translators, one with a comprehensive modelling background and the other an internal employee without (broad) modelling knowledge.

The Translator needs knowledge/know-how from various fields

Modelling knowledge;

Business knowledge;

Industrial/technical knowledge

The Translator Training should be aimed at filling the relevant gaps, depending on the Translator’s background. He cannot possibly be an expert in all fields. Hence, it is important that he

Knows his limitations ;

Knows where to find help/assistance

In addition, the Translator needs:

- Communication skills
- Active listening and questioning techniques to enable proper understanding of the client’s need and wishes
- Presentation skills to present
 - A model solution/proposal in the “client’s language”
 - Modelling results that are understandable, reliable and usable for the client
- Integrity – the client’s needs is priority number one!





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Impulse 6

Translator profile/ increase the visibility of translators

Manuel Laspalas (ITAINNOVA, ES)

A short overview of the translator profile identified by the EMMC (Translator Guide) is given, discussing which aspects could be indexed to be incorporated into the translator profile for marketplaces. Among these, one relevant part is to demonstrate experience through successful cases, which can be uploaded in the EMMC or marketplaces platform. Some possible ideas of how to increase the visibility of the translator are shared, based on ITAINNOVA experience (which groups translation + execution together), which include training activities related to modeling background and modeling exploitation routes.





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Training requirements for Translators

Training strategy

Discussion Points

Which type/ kind of training is **more effective** and **usable** for Translators and industrial/modelling experts?

presenting training;
on-line tutorials/ webinars / **video**-lessons

Which training **duration** and **intensity** are required for

Economic Training (project management, leadership)

Technical Training (modelling and simulation)

IP Training -> issues and key points

Which **specific** should be recognized in the **training didactic** for the education of **different groups** of Translators:

academics,
software owners/engineers,
internal employees of the company, and
independent translators.

Different **level** of translators education: Do translators need the differential education system?
from beginner to experience translators (advanced level)

Why **Translators**/ trainers need to increase their **visibility** and How they can do it?

Publication of translation results.





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Training requirements for Translators

Unit 3

Business model for translators

Impulse 7

Ownership of training materials, IP of training and Translation

Alexandra Simperler (EMMC)

Impulse 8

Marketplaces for Translators

Analysis of the joint training and translation survey: Martin Horsch (VIMMP)

Translation Architecture in Marketplaces: Kwang-Leong Choy (MARKETPLACE)

Impulse 9

Perspective and importance of the training of translation by /within companies

Hein Koelman (DOW, NL)





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Training requirements for Translators

Impulse 7

Ownership of training materials, IP of training and Translation

Alexandra Simperler (Goldbeck Consulting, UK)

(representing the EMMC-CSA project)

The concept of Intellectual Property (IP) is introduced and how it relates to training and translation. Translators and trainers will mainly come from industry itself, self-employment and academia. This will decide if and how they can own IP. In all cases persons will be able to keep their know-how, as things cannot be unlearned. Training and translation require materials and it will be the responsibility for each translator/trainer to check what they can/cannot use.





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Training requirements for Translators

Impulse 8-1

Marketplaces for Translators

Analysis of the joint training and translation survey: Martin Horsch (STFC, UK)
(*representing the VIMMP project*)

The present contribution discusses the outcome of a stakeholder survey on training requirements for translators that was jointly conducted by the project consortia [1 – 3] responsible for the Virtual Materials Marketplace (VIMMP), MarketPlace, and European Materials Modelling Council Coordination and Support Action (EMMC-CSA) projects. The virtual marketplaces developed within the VIMMP and MarketPlace projects, which will jointly establish a European Virtual Marketplace Framework, aim at facilitating the provision of training and translation services and related resources (beside other marketplace features). The survey, which predominantly elicited responses from the side of potential service providers at academic institutions as well as research and technology centres, was carried out to inform the EMMC community about the ongoing development efforts and to guide the design of the training and translation aspects of these virtual marketplaces by taking the specific needs of prospective future marketplace stakeholders into account. Beside, the outcome of the present survey provides feedback on the EMMC view of translation as a concept in materials modelling, as summarized by the EMMC Guide for Translators [4], and on expected training requirements concerning a variety of technical and economic aspects of materials modelling.

[1] <https://vimmp.eu/>

[2] <https://www.the-marketplace-project.eu/>

[3] <https://emmc.info/>

[4] <https://emmc.info/translators-guide-2/>





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Training requirements for Translators

Impulse 8-2

Marketplaces for Translators

Translation Architecture in Marketplaces: Kwang-Leong Choy,
University College London, UK
(representing the *MARKETPLACE* project)

The initial design of the translation process as implemented through the MarketPlace has been proposed and developed by taking into account the requirements as identified by vendors and end users as well as academic and industrial partners and through the user stories. The design aims to facilitate the actual implementation in the knowledge and translational services and ultimately help in the online translation process for the MarketPlace platform





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Impulse 9

Perspective and importance of the training of translation by /within companies

Hein Koelman (DOW, NL)

Presented will be the different aspects a translator in a large company needs to deal with, types of problems and how modeling is applied. From those, the different skills a translator needs to possess will be elaborated. Different examples will be given. Finally will give some insights in how a translator is trained in order to get the required skills. Also some discussion around how Dow, as a large company, connects with Universities to collaborate in the modelling space.





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Training requirements for Translators

Discussion Points

Business model for translators

How and where Translators can **organise** effective **training**?

Who could /should be a **trainer** for Translators?

Certification of Translators: **EMMC certification**???

Which part of **Marketplaces** are responsible /impacted for **Translation**, Data Providing and Training Materials?

Marketplace requirements for Translation (training materials and infrastructure).

Are **OTEs** the ideal place for **Translation training** in the future?

Which **business models** do exist for Translation?

Is Marketplace an additional business model for Translation?

Is it possible to **patent** of translation workflow?

Copyright issues for training materials and Translation.

Licensing issues: Is the Pay-per-use model (for SW or modelling tools) a schema for Translators?





EMMC Expert Meeting Training requirements for Translators

General Discussion

Discussion Points

Agreement on training requirements for Translators and training elements for Marketplaces / BDSS/ OTE

Rules / **recommendations for translators**





EMMC Roadmap 2019

Your contribution will support the EMMC to get an wider overview of the opinions and future needs of all stakeholders of the European Materials Modelling Community.

By taking part in this event, you agree that your input will be considered as a contribution to the EMMC Roadmap 2019.

