# ITEA Press release

VMAP enhances interoperability in virtual engineering workflows

*15 September 2021 – VMAP, an international collaborative ITEA project led by Fraunhofer SCAI, has created a vendor-neutral standard for CAE data storage and transfer to enhance interoperability in virtual engineering workflows, which has already been adopted by a lot of tool providers. The VMAP Standard Community will be established to further disseminate the VMAP Standard and its development. Thanks to these outstanding outcomes, VMAP received the ITEA Award of Excellence for Standardisation today.*

New interface standard for integrating multi-disciplinary and multi-software simulation processes

The ability to carry forward result data from one simulation step to another in a Computer-Aided Engineering (CAE) software workflow has always been dependent on customised data transfer solutions, which requires a huge effort in terms of time and money.

The ITEA project VMAP ran from September 2017 until October 2021, with 29 industrial partners from Austria, Belgium, Canada, Germany, the Netherlands and Switzerland. The goal of the project was to gain common understanding and interoperable definitions for the modelling of materials and manufacturing processes, and to generate universal concepts and open software interface specifications for the exchange of simulation results information in CAE workflows.

Faster innovation and reduced setup time

VMAP developed a new interface standard for integrating multi-disciplinary and multi-software simulation processes in the manufacturing industry along with Input/Output (I/O) routines, which can be integrated in any CAE Software. VMAP’s major result is simple: computer-aided engineering is now quicker and easier than ever before. The industrial benefits include faster innovation of highly complex parts by 50% and the reduction of setup time for virtual process chains for lightweight automotive components with composites by 40%. By eliminating the need for customised solutions, delays caused by human errors are also greatly reduced. Overall, VMAP offers a far more cost-effective approach to CAE and VMAP Standard has seen widespread acceptance in the CAE community.

“The design of jet engines is a highly interdisciplinary process. VMAP significantly contributes to automation as it seamlessly integrates into the respective tool chains.”
– Oliver Kunc, Senior Researcher at DLR Institute of Structures and Design

As a standard is only as strong as its users, the VMAP Standards Community e.V. (VMAP SC) will be formed in Autumn 2021 by 15 founding members, with the purpose of disseminating the VMAP Standard and its further development, and of ensuring and maintaining a uniform library. The VMAP SC is open to any interested party that wants to use or contribute to the standardisation efforts of the VMAP SC.

“The ITEA project VMAP has outstanding outcomes that will fasten the digitalisation process of all industries. Now the impact of the VMAP project will be extended by an association, the VMAP Standards Community; that is a proof of the high-level dedication of the VMAP consortium. I am very happy and hopeful for the future with this new initiative.”
– Zeynep Sarılar, ITEA Chairwoman

## ‘String of pearls’

VMAP is the first-ever CAE workflow interface standard. One of its biggest strengths is therefore its rich potential, which the community seeks to exploit by extending the standard into technical domains beyond simulation for manufacturing parts. Therefore, the VMAP SC is continuing its efforts. A new project, VMAP analytics, coordinated by Swerim AB (Sweden) will contribute to the standardisation of data transfer for Computational Fluid Dynamics (CFD) and multi-scale simulations, test and sensor data storage, and alignment of AI methods for data analytics to the VMAP Standard. The ultimate goal of the VMAP analytics project is the concept development of a digital twin platform for implementing analysis tools, methods, models and process data using the standardised interfaces. Other projects might be launched in the future to develop this approach.

VMAP thus represents the tip of the iceberg: as the number of organisations involved in the community increases, so too will the number of engineering domains which can benefit from the faster processes and lower costs of CAE interoperability. ITEA supports the further development of this standard in future ITEA projects in the VMAP line to create a new ‘string of pearls’, successes that have laid the foundations for ITEA to be just as, if not more, successful in the future in a number of key domains.

## *Note for editors, not for publication*For interview requests, questions and additional information about VMAP and ITEA, please contact:

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#### VMAP project partners - <https://itea4.org/project/vmap.html>

**Austria**

* 4a engineering
* Wittmann Battenfeld

**Belgium**

* MSC Software Belgium

**Canada**

* Convergent Manufacturing Technologies

**Germany**

* Audi
* Dr. Reinold Hagen Stiftung
* DYNAmore
* EDAG Engineering
* ESI Software Germany
* Fraunhofer SCAI
* Hagen Engineering
* inuTech
* Karlsruhe Institute of Technology (KIT)
* Kautex Maschinenbau
* NAFEMS
* RIKUTEC Richter Kunststofftechnik
* Robert Bosch
* Simcon Kunststofftechnische Software

**Netherlands**

* Delft University of Technology
* DevControl
* In Summa Innovation
* KE-works
* Materials innovation institute M2i
* MSC Software Benelux
* Philips
* Reden
* University of Groningen

**Switzerland**

* BETA CAE Systems International
* Sintratec

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