



# Integrated & Distributed Engineering Services Framework for MDO

# **D6.1: Dissemination Plan - final**

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ITEA3

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# **CHANGE LOG**

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2.3	22.11.2016	Jürgen Freund	Updated section of the Live Demonstrator
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# I List of Abbreviations

AIF Advanced Integration Framework

API Application Programmable Interface

BPM Business Project Management

EaaS Engineering as a Service

ELW Engineering Language Workbench

EWIS Electrical Wiring Interconnection System

IDEaliSM Integrated & Distributed Engineering Services framework for MDO

IT Information Technology

KBE Knowledge Based Engineering

MDO Multidisciplinary Design Optimization, Multidisciplinary Design Optimization

OA Open Access

PCA Project Cooperation Agreement

PDP Product Development Process

SaaS Software as a Service

SME Small and Medium-sized Enterprises

SotA State-of-the-Art

**URL** Unified Resource Locator

WP Work Package





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# 1 Introduction

The objective of work package 6 (WP6) is the dissemination of the project results, their exploitation and exposure to the industrial community.

The purpose of this "Dissemination Plan" is to define the approach to maximize the exposure of the project results, resulting in potential exploitation by means of disseminating the project (intermediate) results among project partners and interested companies, both during and after the project. The dissemination plan provides a description of all the planned dissemination within the IDEaliSM project. This document defines the details of the dissemination channels, the planning and the intermediate results.

The document will be updated annually. At each release the dissemination plan will be modified and extended to account for the project progresses and the evolving partners' needs.

# 2 Project Overview

High-tech transport manufacturing industries such as the automotive and aerospace have globalized with customers, partners as well as competitors located around the world. Industrial partners are involved in multiple projects that involve the collaboration of multiple sites and multiple companies, supplying each other with specific services in engineering and manufacturing. In order to satisfy this very competitive environment and to deliver fast, robust and low cost product development, these companies need a novel collaboration framework with a coherent set of methods and tools to generate, apply and re-use their engineering knowledge. Such a framework, however, requires a paradigm shift in product development which demands further specialization on the core business of organizations. The realization of such a framework, will allow industrial partners to boost productivity and cost-efficiency by effectively managing valuable resources, and by sharing knowledge, methods and tooling across multiple projects and customers simultaneously. Continuous integration of highly specialized design teams, production sites and supply chain partners will be the standard way of collaboration between highly-specialized engineering teams and departments.

Table 1: Partners within the IDEaliSM project

Project Partners	Description	Country
Fokker Aerostructures	Specialist in the design, development and manufacturing of lightweight structures, modules and landing gear for the aerospace and defense industry.	The Netherlands
Fokker Elmo	Specialist in design, manufacturing and support for the electrical wiring interconnection systems (EWIS) for civil aerospace and defense programs.	The Netherlands
IDEC	Experienced partner in advanced composites out-of- autoclave structures design, development and manufacturing for mainly the aerospace industry.	Spain





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DRÄXLMAIER	The DRÄXLMAIER Group supplies premium automobile manufacturers worldwide with complex wiring harness systems, central electrical and electronic components, exclusive interiors, and storage systems for electric mobility. The combination of core competencies in the interior, electrical, electronic and storage systems areas makes DRÄXLMAIER unique in the industry.	Germany
KE-works	Specialist in process optimization and provider of process management and automation software to the manufacturing industry.	The Netherlands
NOESIS Solutions	Partner for process integration, design optimization and reliability optimization for design and manufacturing in automotive, aerospace and other engineering-intense industries. Implementer of MDO architectures for engineering.	Belgium
IILS	Partner for design automation, artificial intelligence and similarity mechanics. It also is an expert in 3D routing in arbitrary complex geometries.	Germany
Delft University of Technology	Experience in the development of design tools to support conceptual and preliminary aircraft design, with particular experience in the development of Knowledge Based Engineering (KBE) applications for design automation and their integration in complex Multidisciplinary Design Optimization (MDO) systems.	The Netherlands
DLR	Provides experiences and technologies for distributed MDO. Customer or partner for resulting KBE tools.	Germany
University of Stuttgart	Basic and applied research expertise in the area of design methodology, system of system analysis, MDO and design automation using graph-based design languages.	Germany
Airbus Defence & Space	Partner for innovative, effective space and defense solutions and services.	Germany
Fraunhofer LBF	Experience and expertise in engineering services and product development assistance for automotive, aerospace and other engineering industries.	Germany
K.U. Leuven	Partner with extensive expertise on Business Process Management (BPM) middleware, cloud computing with infrastructure as a service and platform as a service	Belgium





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	paradigms and tune them to perfectly fit the MDO context.	
Jotne	Specialist in product data exchange and sharing with focus on reducing development and product lifecycle costs through the use of intelligent data management in the areas of Defence, Aeronautics, Oil & Gas, Built Environment and Aerospace.	Norway

The consortium consists of large industrial partners, Small and Medium-sized Enterprises (SMEs), universities and academic research institutions. The industrial partners and SMEs have a broad coverage of aircraft and automotive systems. This ensures that relevant points of view with respect to the real-world applicability of the project results are driving the direction of research. The research institutes, universities and SMEs provide the consortium with knowledge of engineering-centric methodologies and software tools for MDO. The combination of large industry and SMEs reflects the typical situation of collaborative and distributed business structures in Europe and thus guarantees that the research goals address relevant challenges of today's industry.

# 3 Key Objectives

IDEaliSM aims to drastically improve the time-to-market and development cost of high-tech structures and systems (efficiency gain of 50% and a time to market reduction of 50%) through a radical change in the Product Development Process (PDP) by enabling continuous integration of distributed and highly specialized development teams. To this purpose the project will deliver a new distributed flexible and service-oriented development-framework for multi-disciplinary design and optimization that can integrate people, process and technology. To achieve this goal, the project will rely on software solutions for Knowledge Management and Engineering, e.g. KBE, process integration, automation and optimization technologies.

The overall IDEaliSM aim can be divided into three main objectives:

- An Advanced Integration Framework (AIF) for distributed multidisciplinary design and optimization. It also enables sharing of engineering services and collaboration between distributed teams.
- An Engineering Language Workbench (ELW): a set of domain specific and high-level modelling languages, ontologies and data standards to enable flexible configuration of engineering workflows and services.
- A methodology for service-oriented development processes to redefine the product development process and information architecture to enable collaboration between service-oriented distributed development teams.

# 4 Target Audience

IDEaliSM has several target groups within the engineering domain. The dissemination efforts carried out over the project's lifetime aim at the following audiences.





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The main audience that is targeted by the project consists of European automotive and aerospace companies that face the challenge of faster and more collaborative product development. With the results delivered by this project it is possible to guide them towards Competence Centres and Distributed Development Teams to enhance their level of integration and flexibility in product development. This will enable them to reduce the effort, cost and time-to-market in designing innovative aircraft / automotive structures and systems.

The main targeted audience is well represented within the project consortium. Airbus Defence & Space, DRÄXLMAIER, Fokker Aerostructures, IDEC and Fokker Elmo represent world-class leading manufacturers from both the aerospace and automotive industry. They are representing integrators and first and second tier suppliers. On the one hand, the consortium partners function as directors and validators of the research results; on the other hand the industrial partners are first-line potential users and customers of the project outcomes. Hence forming an important exploitation potential.

The second group that is targeted consists of similar integrators and tier-suppliers from other high-tech manufacturing industries, such as the embedded systems, public transport and energy sectors. Although the consortium does not contain any representative companies from these industries, companies operating in these fields are likely to face similar challenges. It is expected that the project results provide large potential to companies from these industries. Therefore, these industries form a large potential for exploitation and an important dissemination audience.

With respect to the three specific project objectives discussed in the previous section, the main audience can also be divided in the three following categories:

- 1. Companies interested in the language workbench to improve engineering tools developed inhouse or either external ones:
- 2. Companies interested in the integration of their engineering applications and legacy systems to improve their engineering business processes;
- 3. Companies interested in the service-oriented methodology for product development, to improve the level of collaboration between their distributed development teams and with external customers and suppliers.

## 5 Dissemination Channels

#### 5.1 Website

#### 5.1.1 Internal

The internal website (also addressed as the technical website) is used for dissemination and distribution of intermediate / confidential results, models and data among project partners. Each partner can access, review and download files uploaded by other project partners.

The internal website is used also to store presentations and document templates.

The technical one has been realized by KE-works and is online at (https://tech-idealism.ke-works.net). It can be reached also from the public project website (next subsection), via a login and password protected link.





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#### **5.1.2** Public

A public website has been created to distribute the idea and the publicly available contents of the project to a broader community than the involved industrial and research partners. The website hosts any public material produced and used within the project.

The website will be kept on line for at least three years after project finalization to ensure a proper dissemination of the project result to the general public. By keeping the website online after project end it is insured that project results stay accessible since dissemination in general needs some time to get around.

The website can be reached via the URL http://www.idealism.eu.

The website is configured to be indexed by search engines to improve search results for this ITEA project. Furthermore the site collects statistics about usage / visits which will be published at the end of project. These statistics contain information about the number of visits to the URL including a per day visit breakdown and on which day the site had the most visits since its existence.





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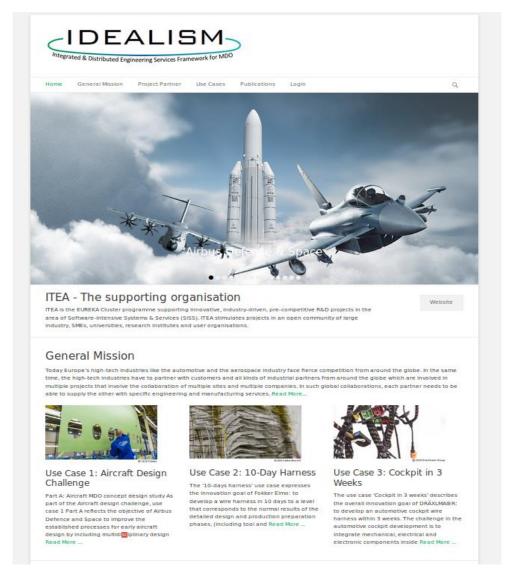


Figure 1: IDEaliSM Website

In the following paragraphs the content of the website will be described in more detail:

# Homepage

This is the starting page. It gives a short overview of the contents of the site and it also includes a small area which is used as a blog where every project member can post articles concerning their progress or other topics that should be made accessible to the public. Each partner of the project has an account on the public website which ensure that every partner can enrich the content of the website especially in the blogging section.

#### **General Mission**

Within this page the idea and the background of the project is constituted. This includes a short State-of-the-Art (SotA) description as well as the reason why this project was founded and what it intends to improve. Furthermore the expected results are given.





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# **Project Partner**

Every partner has the possibility to introduce himself to the public with the help of the project partner pages on the website. A description of their activities and which role they fulfil within the project is given.

#### **Use Case**

On this page the public is informed about how the ideas and the results of the project are evaluated and assessed.

#### **Publications**

This part of the website will function as the main data repository for every non-confidential written material produced during the project. Hereby the project provides a way to open access of scientific information.

#### **Downloads**

During the project different publicly shown documents were produced like flyers, leaflets, magazine articles, conference / fair presentations, etc. which are uploaded to this part of the webpage and therefore available for everyone who is interested in it.

#### **Public Demonstrator**

At this web-site section additional information and tutorials about the <u>Public / Live Demonstrator</u> of the IDEaliSM software can be found as well as a direct link to the before mentioned demonstrator.

## 5.2 Publications

Since the IDEaliSM project is a research project that should reveal new insights within the field of digital engineering (see 2 Project Overview), it is essential to publish the project's achievements / results via different types. The types of publications which can be produced during the project can be any of the following:

- Journal article;
- Monographs;
- Books;
- Conference proceedings;
- Conference posters;
- · White papers;
- Grey literature (informally published written material not controlled by scientific publishers, e.g. reports, flyers, leaflets);
- Etc.

Industry partners should publish white papers or some kind of grey literature. Scientific partners should submit journal and conference papers on a regular basis, since this is one of the most influential dissemination forms to expose project results, new findings and receive feedback from peers. ITEA supports this with their progress report template, which should be published twice a year (February and September).





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The sections below provide information on how to make project results available and how they can be reviewed by project partners before publishing. The content of these sections is mainly based on guideline documents produced for the European Research Project "Horizon 2020" [2],[3].

#### 5.2.1 Open Access

Open Access (OA) refers to the practice of providing online access to project information / results that is free of charge to the end-user and reusable.

The reason why this project relies on an OA rule is that modern research builds on extensive scientific dialogue and advances by improving earlier work. Fuller and wider access to publications and data therefore helps to:

- Build on previous research results (improved quality of results);
- Encourage collaboration and avoid duplication of effort (greater efficiency);
- Speed up innovation (faster progress to market means faster growth);
- Involve citizens and society (improved transparency of the scientific process);

#### 5.2.2 Open Access Channels

Within this project the following channels were identified to publish results:

- Project partner self-archiving access the author, or a representative, archives (deposits)
  the published article or the final peer-reviewed manuscript in an online repository which is
  hosted by the authors company / research institutes facilities;
- Project self-archiving access The author, or a representative, archives (deposits) the
  published article or the final peer-reviewed manuscript in an online repository which is
  provided by the project. For this project this is the public website of the project (see 5.1.2);
- Public archiving access The author, or a representative, archives (deposits) the
  published article or the final peer-reviewed manuscript in an online repository which is
  provided by the common scientific publishing channels. This can either be the homepage
  of a conference, the homepage of a journal, etc.

# 5.2.3 Open Access Rules

Within the project it was decided to grant open access to as much publications as possible. Each partner confirmed to grant open access (free of charge online access for any user) to peer-reviewed publications where feasible. They also decided to grant open access at least to every abstract of any publication. This abstract then is published with contact information to the author so that interested individuals can request private access to publications which are not open accessible.

If a publication is published under open access rights than it must fulfil the following properties:

- As soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications (see 5.2.2 Open Access Channels).
   Moreover, the partner must also aim to deposit the research data needed to validate the results presented in the deposited scientific publications at the same time;
- Ensure open access to the deposited publication via the repository at the latest:
  - (1) On publication, if an electronic version is available for free via the publisher, or;





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- (2) Within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.
- Ensure open access via the repository to the bibliographic metadata that identify the
  deposited publication. The purpose of the metadata requirement is to make it easier to
  find publications because mining metadata is more efficient than mining full text versions.
  The bibliographic metadata must be in a standard format and must include all of the
  following:
  - (1) An acknowledgement to ITEA:

"The authors would like to express their gratitude to the consortium members of the European research project IDEaliSM for their support and contributions. The research leading to these results was performed within the European ITEA2 project IDEaliSM (#13040) as part of the Eureka cluster programme."

- (2) The name of the action, acronym and grant number;
- (3) The publication date, and length of embargo period if applicable, and;
- (4) A persistent identifier.

## 5.2.4 Misconceptions about Open Access

In the context of research funding, open access requirements do not imply an obligation to publish results. Whether to publish is entirely up to the project member. Open access becomes an issue *only if* publication is chosen as a means of dissemination.

Moreover, open access does not affect the decision to exploit research results commercially, e.g. through patenting. The decision on whether to publish through open access must come after the more general decision on whether to publish directly or to first seek protection.

#### 5.2.5 Publishing Guidelines

#### Dissemination of own results

During the project and for a period of 1 year after the end of the project, the dissemination of own results by one or several project partners including but not restricted to publications and presentations, shall be a governed subject to the following provisions:

- Prior notice of any planned publication shall be given to the other project partners at least 20 working days before the publication;
- Any objection to the planned publication shall be made in accordance with the Project Cooperation Agreement (PCA) in writing to the coordinator and to the project partner or partners proposing the dissemination within 10 working days after receipt of the notice;
- In such cases, the dissemination may not take place unless appropriate steps are taken to safeguard these legitimate interests;
- If no objection is made within the time limit stated above, the publication is permitted.

An objection is justified if:

- The protection of the objecting partner's results or background would be adversely affected:
- The objecting partner's legitimate academic or commercial interests in relation to the results or background would be significantly harmed.

The objection has to include a precise request for necessary modifications.





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If an objection has been raised the involved partners shall discuss how to overcome the justified grounds for the objection on a timely basis (for example by amendment to the planned publication and/or by protecting information before publication) and the objecting partner shall not unreasonably continue the opposition if appropriate measures are taken following the discussion. The objecting partner can request a publication delay of not more than 90 calendar days from the time it raises such an objection. After 90 calendar days the publication is permitted, provided that confidential Information of the objecting partner has been removed from the publication as indicated by the objecting partner.

#### Dissemination of another partner's unpublished results or background

A partner shall not include in any dissemination activity another partner's results or background without obtaining the owning partner's prior written approval, unless they are already published.

# Cooperation obligations

The project partners undertake to cooperate to allow the timely submission, examination, publication and defense of any dissertation or thesis for a degree, which includes their results or background subject to the confidentiality and publication provisions agreed in the PCA.

#### Use of names, logos or trademarks

Nothing in the PCA shall be construed as conferring rights to use in advertising, publicity or otherwise the name of the partners or any of their logos or trademarks without their prior written approval.

#### 5.2.6 **Publications within the Project**

The following tables show the already published and planned publications throughout the project partners as well as SotA publications that function as background knowledge to the project.

#### State-of-the-Art publications, background knowledge

Table 2: State-of-the-Art publications, background knowledge

Title	Event / Journal	Partner	Published
Architectural analysis of complex systems with graph-based design languages	4th International Workshop on Aircraft System Technologies (AST), Hamburg.	University of Stuttgart: Rudolph, S., Hess, S., Beichter, J., Motzer, M. und Eheim, M.	2013
On Multi-Disciplinary Architectural Synthesis and Analysis of Complex Systems with Graph-based Design	DGLR Jahrestagung, Stuttgart.	University of Stuttgart: Rudolph, S., Beichter, J., Eheim, M., Hess, S.,	2013





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Languages		Motzer, M. und Weil, R.	
Building a customizable Business-Process-as-a-Service application with current state- of-practice	International Conference in Software Composition, volume 8088, pages 113-127, Budapest, Hungary, 17-21 June 2013	<b>KU Leuven</b> Stefan Walraven, Wouter Joosen	2013
Service line engineering in practice	Technical Report (CW Reports), volume CW652, Department of Computer Science, KU Leuven, February 2014	<b>KU Leuven,</b> Stefan Walraven, Wouter Joosen	2014
An Automated Process for Numerical Evaluation of Cable Stiffnesses.	Benchmark the international magazine for engineering designers & analysts from NAFEMS. Backford Street, Hamilton, Lanarkshire, ML3 0BT, UK: NAFEMS Beckford Business Centre, S. 10–18. ISSN: 0951 6859.	Fraunhofer LBF: Stoll, G.; Pöllmann, J.; Atzrodt, H.; Schmidgall, G	2014
Mehradrige Kabel in der Verlegesimulation	Fraunhofer LBF Annual Report 2014, Publisher: Fraunhofer-Institut für Betriebsfestigkeit und Systemzuverlässigkei t LBF, Bartningstraße 47, 64289 Darmstadt, S. 76–77. ISSN: 1864-0958.	Fraunhofer LBF: Atzrodt, H.	2014

Publications produced during the project





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Table 3: Publications produced during the project

Title	Event / Journal	Partner	Published
An MDO advisory system supported by knowledge-based technologies.	AIAA Aviation conference – Dallas, Texas	Delft University of Technology: Hoogreef, M.; La Rocca, G.	2015
A multidisciplinary design optimization advisory system for aircraft design.	CEAS conference – Delft, The Netherlands	Delft University of Technology, Noesis: Hoogreef, M.F.M.; d'Ippolito, R.; Augustinus, R.; La Rocca, G.	2015
WF-Interop: Adaptive and reflective REST interfaces for interoperability between workflow engines	ARM 2015 Proceedings of the 14 <sup>th</sup> International Workshop on Adaptive and Reflective Middleware, Vancouver, Canada, 0811. December	KU Leuven, Emad Heydari Beni, Bert Lagaisse, Wouter Joosen	2015
Collaborative Aircraft Design using an Integrated and Distributed Multidisciplinary Product Development Process	International Council of the Aeronautical Sciences Congress, Daejeon, Korea	DLR, Airbus Defence & Space: E. Moerland, F. Daoud, B. Nagel	2016
Development of a modeling approach for wire harnesses	Cadfem ANSYS Simulation Conference, Nürnberg, Germany	Fraunhofer LBF, DRÄXLMAIER, TU Delft, Noesis: Tamm C., Heissler F., d'Ippolito R., Motzer M., Panzeri M., Stöckl F., Stoll G.	2016
Automation Opportunities in the Conceptual Design of Satellite Propulsion Systems	Systems Engineering and Concurrent Engineering for Space Applications (SECESA 2016), Madrid, Spain	University of Stuttgart: Schmidt J., Rudolph S.	2016





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# Publications planned during the project

Table 4: Publications planned during the project

Title	Event / Journal	Partner	Published
High-Performance Aircraft Through Innovative Development Process and Methods	AIAA SciTech 2017 Conference	Airbus Defence & Space	09 13.01.2017
Reliable optimization of composite structures with machine learning approaches	COMPTEST 2017, Leuven, Belgium	Noesis, IDEC, KU Leuven	04.2017
	NAFEMS European Congress 2017 (Talk and conference paper) or ATZ (article)	Fraunhofer LBF	07 12.2017
Open Simulation Data Management and Testing – The Crystal Project	Paper at NAFEMS European Congress 2017	Jotne	07 12.2017
Geometry Classification Using Higher Order Moments	ASME - DAC/DTM	University of Stuttgart	06. – 09.2017
3D Routing in Arbitrary Complex Geometries		IILS	10.2017
Development of Knowledge Based Engineering Tool to support fin-rudder interface design front-loading and multi- disciplinary optimization	Council of European Aerospace Societies (CEAS 2017), Romania	TU Delft, Fokker: Raju Kulkarni A., van Dijk R.E.C., van den Berg T., La Rocca G.	10.2017

# **Grey literature**

The following publications can be found at the public website at the download section as well.

Table 5: Grey literature

Title	Event / Journal	Partner	Published





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Workshop presentation: Engineering applications (CAx/PLM) and Big Data – Simulation Data Management	Big Data Value Norway 2016	Jotne	04.2016
Workshop presentation: CAxMan workshop May 2 program, introductions	Computer Aided Technologies for Additive Manufacturing (CAxMan 2016)	Jotne	05.2016
Article:  SME in the spotlight  Jotne: research is the key to innovation	25 <sup>th</sup> ITEA Magazine	Jotne	10.2016
Project showcase: IDEaliSM – fast, robust, low-cost product development and manufacturing	ITEA Magazine, to be published	KE-works	2017
Cloudification of Simulation Workflows	Online blog, LinkedIn	Noesis, KU Leuven	2017

#### 5.3 Live Demonstrator

A live demonstrator is published at the IDEaliSM public website, allowing interested audiences to test and evaluate the framework's capabilities. Hence interested parties and potential customers can explore the project's results. This approach is important for both dissemination and exploitation of the results.

The first development version of the demonstrator was finished at the end of June in 2016. An updated second version could be finished at the end of the fourth quarter of 2016. The final version is planned to be ready by the end of September 2017, the project's end date.





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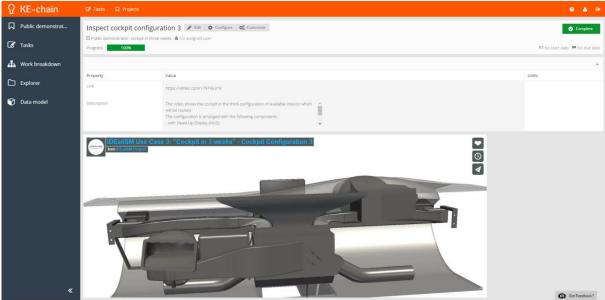


Figure 2: Live Demonstrator

# 5.3.1 Registration

In general every person can sign up at the Live Demonstrator to get access and play around. To keep track of the usage of the demonstrator and the overall acceptance it is important for the consortium that the person who registers indicates some facts like from where the person comes from and what its interesting background is, like work or private. Therefore a registration form can be found at the public website.





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# Registration This page is intended to register for the Public Demonstrator within the IDEaliSM project. After registration you will receive an email with the login credentials for the Public Demonstrator which can be found at the following url: https://idealism-demonstrator.ke-chain.com/ Privacy statement - Use of data The personal data you put in this form is not shared with any third party. We only use this data we collect for the purpose it is provided. User Type \* Private Person $\times \times$ First Name \* Last Name \* E-mail Address \* Phone Address \* City \* Zip code \* Country \* Choose a Country LinkedIn 🕝 Comment ( Would you like to be notified about news in the project (4 to 5 times a year)? Login

Figure 3: Live Demonstrator Registration Form

# 5.3.2 Help / Description

The Live Demonstrator section of the public website features a sub-section with help and descriptions for the user of the demonstrator. As soon as the user got a login to the demonstrator he / she can start exploring it. But this is a software utilized in industrial use-cases meaning it is complex at first sight and needs some advises on how to use and how to run. Therefore this help site was introduced and reviewed by the consortium to guarantee minimum starting barriers.





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#### Help / Description

How to start / Quick start

The workflow of the demonstrator is intended to begin at the build case. This is the task on the most left in the workflow.

After exploring this task you should proceed to the execute case which directly follows the build case.

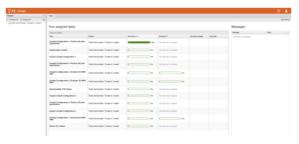
The direction of browsing through the task is also leaded by the arrows which connect the task between each other.

If you need more explanation just read along.

Have fun with the software!!

#### General Remarks to the Demonstrator

After login you will see the following start page.



This page gives you an overview of the tasks in the workflow which are assigned to you. These are the task which you can inspect and if they are correct mark as watched and approved.

The left pane also shows the projects which are assigned to you. If you click on one you will get to the dashboard of that project.



In that dashboard you can inspect the project workflow by clicking on that button in the upper row of the dashboard. The next page you will reach then will look like this:

Figure 4: Live Demonstrator Help / Description

# 5.4 Industrial Board

One of the key research ideas of the project is to develop the parts of the framework and of course the *Advanced Integration Framework* itself as a service of engineering expertise – *Engineering as a Service (EaaS)*. This interconnects with the current transition in Information Technology (IT) where software gets modularized and downscaled to its main functionality – *Software as a Service (SaaS)*. These small services then will be reconnected to a bigger software product via its interoperability functionality – *Application Programmable Interface (API)*. This is exactly what the framework tries to achieve.

In other words the *Advanced Integration Framework* is a connection of many small engineering services (software modules) composing to a powerful engineering tool.





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Due to the fact that the framework has such a modularity it is expected that a lot of different companies from different engineering disciplines could have a major interest in it as a whole as well as in its incorporated services. These companies will be asked to receive information about

the project and invitations to promotion events.

5.4.1 Guidelines for enlisting external companies

It is the responsibility of each partner to suggest and extend the industrial board with new companies as members which could be interested in information and results of the IDEaliSM project. To not violate compliance rules of the individual partners the following enlisting procedure was agreed to within the consortium each partner must abide to when proposing new board members.

- Before adding a new member to the board all partners must be informed of the new company 20 working days in advance.
- Any objection to the planned adding of the company must be made in writing to the coordinator and to the project partner or partners within 10 working days after receipt of the notice.
- If no objection is made within the time limit stated above, the adding is permitted.

## 5.4.2 Types of Information

All members of the industrial board will receive information about the project on a regular basis. The kind of information which is send to them is coordinated by the dissemination work package lead and ca be any of the following.

#### **Newsletters / Leaflets**

Companies within the board will receive newsletters or leaflets created by project partners. Those are also available via the public website but companies within the industrial board will be directly informed via email of new material.

#### **Private Demo Sessions**

As mentioned above a public demonstrator is provide which shows the general functionality of the software developed during the project. Since this software is developed on the needs of real use cases the whole functionality of the software will contain intellectual properties of the involved partners and cannot be made available to the public. But members of the industrial board can be offered to give more inside on the software via private demo sessions either via live internet presentations or workshops

#### **Dissemination / Promotion Events**

The consortium is planning special dissemination events which cannot be hold for a public audience because of the highly sensible research information produced during the project. But for agreed enlisted members of the industrial board it is possible to arrange such events revealing more information about the research subject without violating non-disclosure agreements.





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# 5.4.3 Industry Day

The industry day will be a dissemination event such as those mentioned before. But it gets some more attention here since it will be a real big dissemination event at the official end of the project lifetime. At the moment it is scheduled the day after the last ITEA review in November 2017.

The consortium is planning to organize it at least as a half-day event structured like a fair. Thus it will present posters, plenary discussions, booths etc. to the invited visitors. The following list is an incomplete enumeration of planned actions during the fair.

## **Company / Organization Booths**

Each partner will get a dedicated space within the fair area to present their company / research institute. These booths will generally be staffed so that visitors can get information material of the presenter as well as information about the specific role of the partner within the project.

#### Posters / Leaflets

Over the fair area posters and leaflets will be spread so that visitors will get as much information about the project and its results as they desire. These leaflets and some of the posters will be made publicly available after the fair.

#### **Live Demonstrations**

In dedicated rooms and / or areas of the fair premises live demonstrations of the different individual engineering service as well as of the *Advanced Integration Frameworks* of all three of the use cases will be held.

#### **Plenary Discussions**

In special breakout rooms and / or on a central stage at the fair area plenary discussions from developers and organizers of the project will be given to the visitors so that the visitors get the chance to ask more specific questions on topics presented during the discussion.

# 5.5 Participation at public events

A key way to disseminate IDEaliSM project progress is by participating in national and international events. At these events the already described distribution strategies, like flyers, newsletters, posters, can be applied in addition to discussions with interested people in science and / or industry. Direct access to interested people has the advantage of better content explanation than the written versions of IDEaliSM project results.

Until now consortium partners joined or will join the following events:

- ITEA project days, 23.-.24.09.2014, Amsterdam
- ITEA-3 kick-off meeting, 26.02.2014, Nuremberg
- Bordnetz Kongress, 23.09.2015, Landshut
- AIAA Aviation conference, Dallas, Texas, 2015
- CEAS conference, Delft, Netherlands, 2015
- International Conference on Middleware, Vancouver, Canada, December 2015
- Big Data Value, Oslo, Norway, 04.2016
- World Manufacturing Forum Computer Aided Technologies for Additive Manufacturing CaXman workshop, 02.05.2016, Barcelona





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- INCOSE event, Air, Land, Sea Systems Engineering Tour in Oslo 12.09.2016
- ICAS 2016, 30<sup>th</sup> Congress of the International Council of the Aeronautical Sciences, 25.-30.09.2016
- SECESA 2016 (European Space Agency), Madrid, Spain, 5.-7.10.2016
- Cadfem ANSYS Simulation Conference, Nuremberg, Germany, 5.-7.10.2016
- International Conference on Middleware, Trento, Italy, 2016
- AIAA SciTech 2017 Conference, 09.-13.01.2017
- DIF 2017 (Digital Innovation Forum), Amsterdam, Netherlands, 10.-11.05.2017
- NAFEMS World Congress, Stockholm, Sweden, 11.-14.06.2017
- ASME (International Design Engineering Technical Conferences & Computers and Information in Engineering) Conference, Cleveland, Ohio, 6.-9.8.2017
- NAFEMS European Congress, Copenhagen, Denmark, 15.-16.11.2017
- CEAS (Council of European Aerospace Societies), Bucharest, Romania, 16.-20.10.2017

There are several potential upcoming meetings in the timeline which can also be joined depending on the partners' interests and financial resources.

- · Aerotec, Friedrichshafen
- ILA, Berlin
- Aero Salon, Paris
- Le Bourget, Paris

On a regular basis partners will identify new events that could potentially be attended.

#### **Documents Produced for the Events**

Documents created for the above mentioned events and further upcoming events partners want to contribute to have to confirm to the same publishing rules as the publications mentioned in section 5.2. This is to ensure that every partner and their produced results are presented in a proper way complying to their publication constraints.

Every partner agreed to apply the publishing rules for documents to be presented as described in section 5.2.5.

# 5.6 Partner private events and meetings

Besides joining public events, the IDEaliSM consortium partners can organize and arrange events concerning themselves.

The table below is a list of dissemination events organized by project partners which were used as dissemination channels.

Table 6: Planned and organized events

Event	Organizing Project Partners	Attendees	Date
Training in STEP and AP209	Jotne, Airbus Defence &		12.10.2015





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	Space		
Symposium on Collaborative Aircraft Design (SCAD)	DLR		12. – 14.10.2015
Workshop op private clouds	KU Leuven	12	June 2015
Workshop on private clouds	KU Leuven	16	Sept 2015
Half-day workshop 'BeNe KBE/MDO meeting' in Delft	KE-works	8	18.01.2016
Technical Alignment Meetings with Airbus	Fokker Elmo		02.02.2016
Workshop in Automatic 3D Routing of Wire Harnesses in Vilsbiburg	DRÄXLMAIER, Fokker Elmo, Delft University of Technology, University of Stuttgart, IILS	20	02 - 04.02.2016
Project introduction to SAP Berlin	University of Stuttgart	5	17.02.2016
2-day Optimus workshop	Noesis	30	16. – 17.03.2016
Project introduction to Aker Solutions	Jotne, University of Stuttgart	7	08.04.2016
Project introduction to Daimler Trucks Research Stuttgart – Product Data Management Department	University of Stuttgart	7	15.06.2016
Project introduction to EvoBus GmbH – Product Lifecycle Management Department	University of Stuttgart		13.07.2016
Half - Day Workshop in 3D Routing which is also used to disseminate IDEaliSM.	IILS		10.2016
New Frontiers in Engineering Simulation and Testing	Jotne	> 500	20.10.2016
Open Simulation Data Management	Jotne		22.10.2016
Industry Day	University of Stuttgart	~= 500	Q2 2017





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Ir	ndustry Day	ALL	~=100	Q4 2017
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# **Documents Produced for Meetings**

Consortium partners holding events to present contents and results of the project to companies not part of the consortium must confirm to the same publishing rules as described in section 5.2.5. This is to ensure that no confidential information either concerning consortium partners or produced results get disclosed to third-party companies joining self-organized events / meetings.





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# 6 References

- [1] IDEALISM Full project proposal (03/24/2015)
- [2] DESCA Horizon 2020 Model Consortium Agreement, <a href="www.DESCA-2020.eu">www.DESCA-2020.eu</a>, Version 1.2, (03/2016)
- [3] Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020, Version 2.1, (02/15/2016)

