



DT-NMBP-01-2018

Open Innovation Test Beds for Lightweight, nano-enabled multifunctional composite materials and components (IA)

OASIS

Open Access Single entry point for scale-up of Innovative Smart lightweight composite materials and components

Starting date of the project: 01/01/2019
Duration: 44 months

= Deliverable: D7.5 = OASIS webinar for Open Call preparation

Due date of deliverable: 28/02/2020
Actual submission date: 31/08/2020

Responsible WP: Roman Pašek, WP7, ABIMI
Responsible TL: Ramona Landgraf, BLM
Revision: V1.2

Dissemination level		
PU	Public	x
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CO	Confidential, only for members of the consortium (including the Commission Services)	



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 814581.

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DOCUMENT CONTROL

Document version	Date	Change
V1.0	19/08/2020	First draft
V1.1	20/08/2020	Review by WP leader
V1.2	31/08/2020	Review by Coordinator and Technical Coordinator

VALIDATION

Reviewers		Validation date
Work Package Leader	Roman Pašek	20/08/2020
Project Manager	Roman Pašek	20/08/2020
Technical Coordinator	Romain Agogué	31/08/2020
Coordinator	Sonia Florez	31/08/2020

DOCUMENT DATA

Keywords	Open Call, Webinar, Dissemination, Communication, Online
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Delivery date	31/08/2020

DISTRIBUTION LIST

Date	Issue	Recipients
31/08/2020	V1.2	All partners + project officer

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Executive Summary

The OASIS project has launched an Open Call for Democases in June 2020 (M18). To promote this Open Call to a broad audience, it was foreseen to organise a single webinar. Instead, the consortium decided to create a series of webinars that do not only focus on the Open Call promotion but also put the six Showcases on stage to better describe for potential applicants how technical services can be combined.

During the first interactive webinar in July 2020 (M19), Sonia Florez, Roman Pasek and Matthias Warkentin (Ford, Showcase 2) participated as speakers. In the future webinars, Sonia and Roman will participate as well, accompanied by corporate speakers from the remaining Showcases. The webinar gathered registrations from SMEs and Start-ups, RTOs as well as large corporates and cluster organisations mainly located in Europe.

BLM has successfully engaged its database and especially got positive feedback from different European cluster organisations for promoting the Open Call for Democases and related webinars. 63 registrations have been gathered for the first webinar, coming from 17 different countries. Especially research organisations, start-ups and SMEs have expressed interest in the OASIS Open Call.

Additional webinars will take place in September (M21) and November (M23) 2020.

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1. Introduction

The OASIS project aims at fulfilling market potential of nano-enabled multifunctional lightweight composites, particularly of polymer-matrix and aluminium composites. Therefore, OASIS gathers manufacturing capacity of 12 pilot lines for the industrial production of nanoscale structures in unprocessed form, intermediate products with nanoscale features and nano-enabled products as well as complementary technical and business services. These modular services will be provided in Democases to companies, particularly to SMEs, so that they gain access to unique facilities and knowledge without high capital investment.

As part of WP7 “Dissemination and Marketing”, Task 7.3 “Networking and clustering activities” combines networking events in major conferences as well as digital events. European clusters are invited to join OASIS activities since their members could benefit from OASIS technical and business services through open calls. Thus, T7.3 also covers digital communication and the organisation of – originally – one webinar to promote the Open Call for Democases launched in June 2020 (M18) to broadly attract companies interested in OASIS services. T7.3 is led by BLM and requires the contribution of all OASIS partners.

Deliverable D7.5 “OASIS webinar for Open Call preparation” focuses on the webinar that has been organised by BLM for the promotion of the launch of the Open Call. Originally, this webinar was planned for February 2020 (M14) before the planning of the Open Call has started. Together with WP4 partners, BLM decided to communicate about the Open Call as soon as the preparation work is done and the application form accessible on the OASIS website. As the Open Call was launched on 29th June 2020, the first webinar took place on 16 July 2020. Such decision to adapt the communication timing has been made to create momentum and encourage more companies to join OASIS activities.

Although the Grant Agreement foresees only a single webinar for Open Call promotion, BLM initiated a series of at least three interactive webinars during the application phase for the Open Call. These webinars do not only cover the Open Call but also highlight the six OASIS Showcases to present how corporates especially use the technical services (pilot lines) provided by OASIS. The webinars happen in July (M19), September (M21) and November (M23) 2020 and will cover:

- A general introduction to the OASIS project,
- Concrete information about the Open Call and how companies can apply for it,
- Insights in the six Showcases and how the corporates involved combine and benefit from the different services offered by the OASIS consortium from a technical but also business point of view.

Although only one version of D7.5 was foreseen in the Grant Agreement, this deliverable will be updated voluntarily in M24 caused by the new arrangement after the implementation of the third webinar to summarize the dissemination activities.

2. First open call webinar

2.1. Preparation of webinar


The first webinar has been organised under the title “Access to technical & business support to implement nanotechnologies” and took place on 16 July 2020, 1pm CEST. Beforehand, BLM had contacted the project coordinator and WP7 leader to participate as speakers. In addition, BLM aligned with WP3 leader on which Showcases are ready to present insights to a broader public about the impact and outcome of their specific Showcase. Thus, Showcases 1 to 4 have been contacted to present during the first webinar. Originally it was planned to have two corporates participating to introduce their Showcases. Unfortunately, it was only possible to introduce Showcase 2 in July 2020. Consequently, only one of the six Showcases participated to the first webinar which causes that the remaining five Showcases will be introduced to interested parties during two more webinars, one in September 2020 and one in November 2020.



Figure 1 Speakers at the OASIS Open Call Webinar on 16 July 2020

As soon as speakers have been confirmed, BLM and AMI prepared the communication material for dissemination purposes and shared it with the whole consortium including the request to share the webinar announcement with their ecosystems. Therefore, a News post and a LinkedIn post have been prepared by AMI. BLM added a complete e-mailing that has been sent to the European BLM database of about 19,500 contacts at companies and research organisations.

Get ready for the open call for European companies and institutions in nanomaterials, nano-intermediates, nano-enabled products and associated services. [VIEW IN BROWSER](#)




The OASIS Open Innovation Test Bed has launched an **Open Call for Democases** providing support to companies in the development of **lightweight multifunctional products based on aluminium and polymer composites**.

Join our webmeeting on 16 July 2020, 1pm CEST


During this webmeeting, you will learn why and how to apply to this unique opportunity to benefit from the European Commission's support through the OASIS project.

[Register now](#)



Access to technical & business support to implement nanotechnologies

Webmeeting on 16 July, 1pm CEST




This webmeeting will provide you information about


- the Horizon 2020 project OASIS
- the open call for companies and institutions
- the technologies that you can access through the pilot-lines
- the business services provided by OASIS to boost your innovation
- showcases already implemented to give you an impression of what can be achieved on the technological side with the support of the OASIS consortium.

[Register now](#)


Join the webmeeting and meet with



Sonia Florez Fernandez
TECNALIA
Project Coordinator OASIS



Roman Pasek
AMIRES
Programme Manager for Advanced Manufacturing




Matthias Warkentin
FORD
Research Engineer Ford R&A Europe

Successful applicants to the OASIS Open Call will get **free access to an ecosystem of 12 nanotechnology manufacturing pilot lines**, providing nanomaterials, nano-intermediates, nano-enabled products and associated services. The selected applicants will be provided with **customized support** through a complete **set of services integrating technical and business expertise** which will enable them to build sustainable business cases.

[Learn more about the OASIS project](#)



For further information please contact:



Ramona Landgraf
BLUMORPHO
Venture Project Manager
landgraf@blumorpho.com

BLUMORPHO is partner of OASIS to support companies in increasing the market attractiveness of solutions developed in the frame of OASIS and to engage private investments if needed.

The OASIS project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 814581.

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Figure 2 Emailing sent out by BLM to its database

In addition to the direct e-mailings sent by BLM and some of the consortium partners, social media posts have been done especially by AMI and BLM to attract a broader audience:



Figure 3 LinkedIn Post by OASIS



Figure 4 LinkedIn Post by BLM

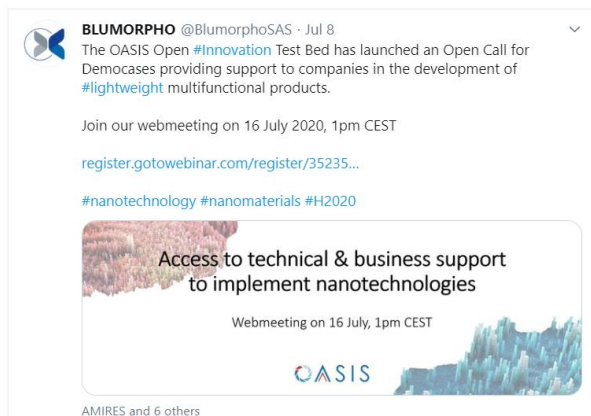


Figure 5 Twitter Post by BLM



Figure 6 Twitter post by AMI

Part of BLM's role in OASIS is to engage existing communities in introducing the OASIS added-value and OASIS services to reach Sustainable Production in the scope of Circular Economy. In addition, European clusters shall also be invited to join the ecosystems since their members could benefit from OASIS activities through open calls. Therefore, BLM has contacted cluster organisations active in the field of manufacturing and invited them to join the webinar and promote OASIS services to its members. For the first webinar, BLM has concentrated on 35 clusters in Europe matching the OASIS focus on nanotechnologies in their industries. Very positive feedback has been received from organisations in Aerospace, Manufacturing, Automotive and Materials, willing to promote the Open Call and participate to the webinar. Clusters and Digital Innovation Hubs will be contacted again for the next two webinars promoting the OASIS Open Call.

Cluster	Main targeted industry	Country
Axel'One	Manufacturing	France
Berlin Partner	Manufacturing	Germany
Hamburg Aviation	Aerospace	Germany
JIC	Manufacturing	Czech Republic
MESAP Cluster	Manufacturing	Italy
MOV EO	Automotive	France
PLASTIPOLIS	Materials	France
Romanian New Materials Cluster	Materials	Romania

Table 1 Overview of cluster organisations interested in promoting the OASIS Open Call

2.2. Summary of the content

The webinar has been moderated by Ramona Landgraf, Venture Project Manager at BLUMORPHO.¹ After a general introduction to the topic of the webinar, the speakers, technical specifications of the platform and how to engage with the speakers as webinar attendee, the OASIS project coordinator Sonia Florez opened the webinar with an introduction of the OASIS project.

This OASIS introduction focused on the bottlenecks that the integration of nanotechnologies in advanced materials and manufacturing processes has. Afterwards, the overall structure of the OASIS Sustainable Manufacturing Open Innovation Test Bed and the 12 pilot lines as well as the six Showcases involved in OASIS have been highlighted.

As second part of the webinar, Roman Pasek presented the Open Call for Democases that was launched in June 2020 and will be open until July 2021. This presentation covered the following topics relevant for potential applicants:

- What is offered to Democases?
- How to apply?
- Who and what is eligible for application?

Afterwards, Matthias Warkentin explained Ford's engagement in the OASIS project. Building its electrical vehicle fleet, Ford has a strong need for aluminium castings, especially for housing and battery trays. This need is driven by a high cost pressure in the e-mobility sector which causes a strong focus on cost efficient Aluminium castings for high volume production. It has been explained to the audience how Ford is combining different OASIS pilot lines to reach this goal. Thanks to this explanation, potential applicants get a better understanding of how to benefit from the different technical services offered by OASIS.

The webinar closed with a Q&A session moderated by BLM. Most of the questions asked were related to application areas covered by OASIS. The speakers expressed clearly that there is no limitation in application areas as long as the application fits to the OASIS focus on nano-enabled multifunctional lightweight composites. Other questions have been related to the eligibility criteria of the Open Call for Democases.

¹ The webinar slides can be found in the Annex.

2.3. Outcome and audience

Although the webinar had been organised during summer vacation time, the OASIS consortium has gathered 63 registrations from 17 different countries, including India (2) and the United States (1).

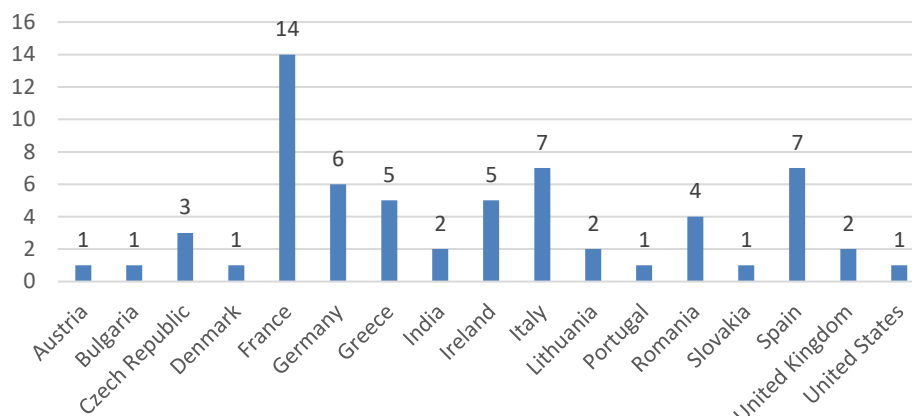


Figure 7 Webinar registrations by country

It needs to be highlighted that 49 out of 63 webinar registrations were coming from members of the BLM database and have also includes a few OASIS consortium members.

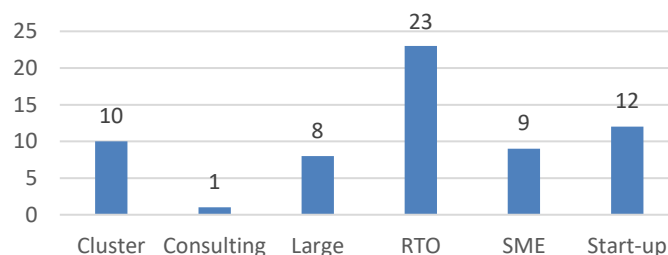


Figure 8 Webinar registrations by type of organisation

During the webinar, different questions have been asked to the attendees through the following polls:

- What type of organization are you part of?
- Which technical services raise your interest?
- Which business services raise your interest?
- Do you plan to apply?
- Would you like to use the feasibility check for your project idea?

52% of the webinar attendees have completed the polls about technical and business services. Based on the OASIS Catalogue of Services², attendees could choose multiple answers from the different services groups offered by the OASIS consortium.

² https://project-oasis.eu/wp-content/uploads/OASIS_Catalogue-of-services_v3.pdf

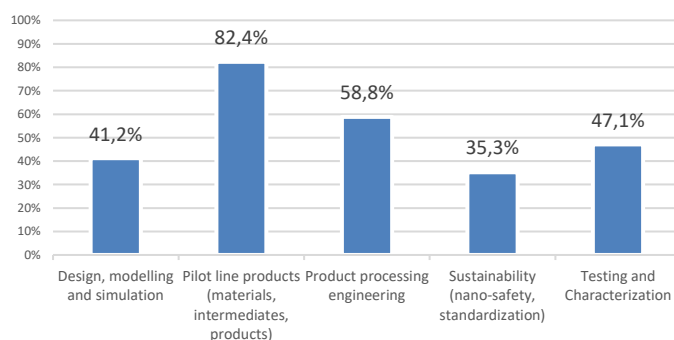


Figure 9 Interest in Technical Services offered by OASIS

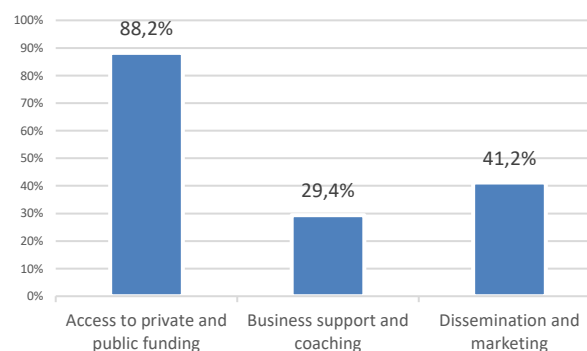


Figure 10 Interest in Business Services offered by OASIS

At the end of the webinar, the audience has been asked if they plan to apply and if they plan to use the service of a pre-application feasibility check. 45% of the webinar attendees were already able to provide a clear feedback on their intention:

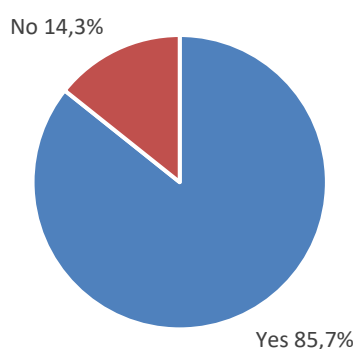


Figure 11 Interest in applying to OASIS Democases

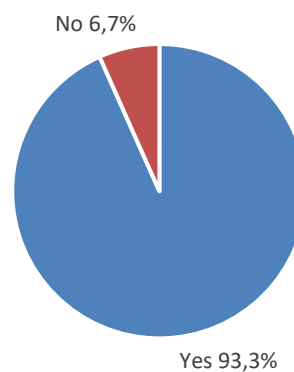


Figure 12 Interest in using the pre-application feasibility check

2.4. Follow up & link to recorded version

As follow up of the web meeting, BLM uploaded the recorded version to Youtube to guarantee that interested parties can access the video easily online: https://www.youtube.com/watch?v=I3n5n_q4F-E. On 11 August 2020, the video already had 54 views.

In addition, AMI has included a [News post on the OASIS website](#) linking to the video and providing the [slide deck](#). This has been announced in LinkedIn:

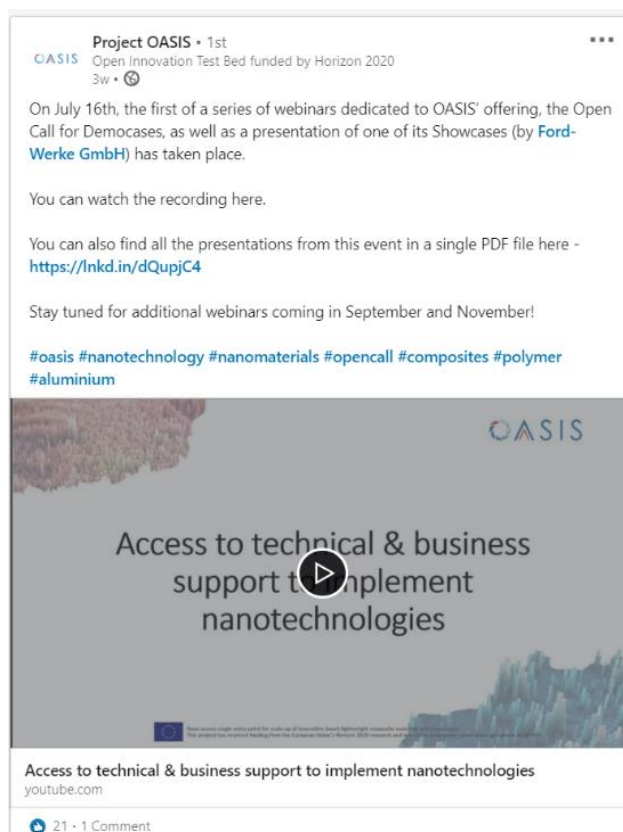


Figure 13 LinkedIn post by OASIS sharing the webinar recording and slide deck

It is planned that all three Open Call webinars will be recorded and made available online on Youtube and accessible through the OASIS project website.

3. Conclusions

As part of WP7 “Dissemination and Marketing”, the Open Call webinar series has a strong impact on the presentation of the OASIS project and the technical and business services provided to a broad European audience covering different application areas.

Instead of only promoting the Open Call for Democases and its eligibility criteria to interested parties, the OASIS consortium decided to create a webinar series to promote the Showcases and thus the pilot lines to a broad public. This webinar series will stay available online and is accessible for all parties interested in learning more about the OASIS project at any stage of its implementation.

BLM has successfully engaged its database and especially got positive feedback from different European cluster organisations for promoting the Open Call for Democases and related webinars. As 49 out of 63 registrations were coming from the BLM database, the dissemination activities of the OASIS consortium partners need to be increased for upcoming activities.

At least two more webinars will be organised in September (M21) and November (M23) 2020 to promote the remaining five Showcases. All webinars will be recorded and accessible through the OASIS project website.

4. Degree of Progress

The deliverable is 100% fulfilled. All additional webinars will be included in a voluntary update in M24.

5. Dissemination Level

The Deliverable D7.5 “OASIS webinar for Open Call preparation” is public and therefore will be available for download on the project’s website. In addition, also the recorded versions and the slide decks will be accessible through the OASIS project website.

6. Appendix: Slide Deck

Access to technical & business support to implement nanotechnologies





Ramona Landgraf
BLUMORPHO
Venture Project Manager



Speakers



Sonia Florez Fernandez
TECNALIA
Project Coordinator OASIS



Roman Pasek
AMIRES
Programme Manager
for Advanced Manufacturing



Matthias Warkentin
FORD
Research Engineer
Ford R&A Europe

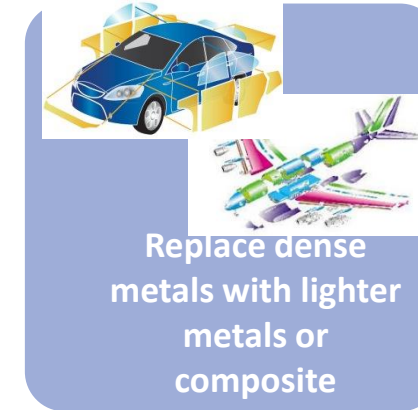
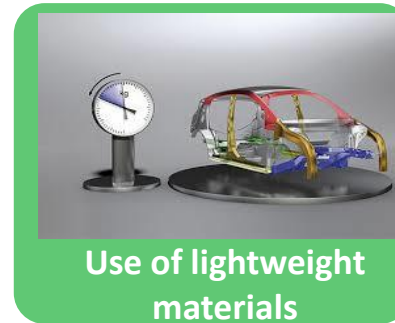


OASIS

Open Access Single entry point
for scale-up of Innovative Smart lightweight
composite materials and components



PROBLEM



PROBLEM:

1. **Composites and lighter metals individually: Insufficient properties:** do not meet all requirements for mechanical, electrical or thermal abilities
2. **Nanotechnology** cannot easily be introduced into composites and metallic supply
3. **Lack of industrial scale** manufacturing of nano-enabled products
4. **Not sufficient quantities** are currently produced for the high demanding industries
5. **High Cost** of intermediate nano-enabled products, especially for SMEs
6. **Tailored solution for each application:** different chemical content, production process, etc
7. **Limited accessibility** to SME producers

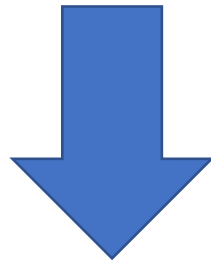




PROBLEM



NANOTECHNOLOGY + ADVANCED MATERIALS
ADVANCED MANUFACTURING



LIGHTER MULTIFUNCTIONAL ESTRUCTURES





PROBLEM



Companies and new technologies- Introduction of nanotechnologies in metallic and polymer composites in **today's industrialized systems** as part of advanced materials and advanced manufacturing processes



Bottlenecks

- Need for specialized expertise
- Investments cost too high
- Novel techniques not a priority
- RTO not offer facilities and services covering the full value chain
- Development of new products may require Access to finance and optimised business plan

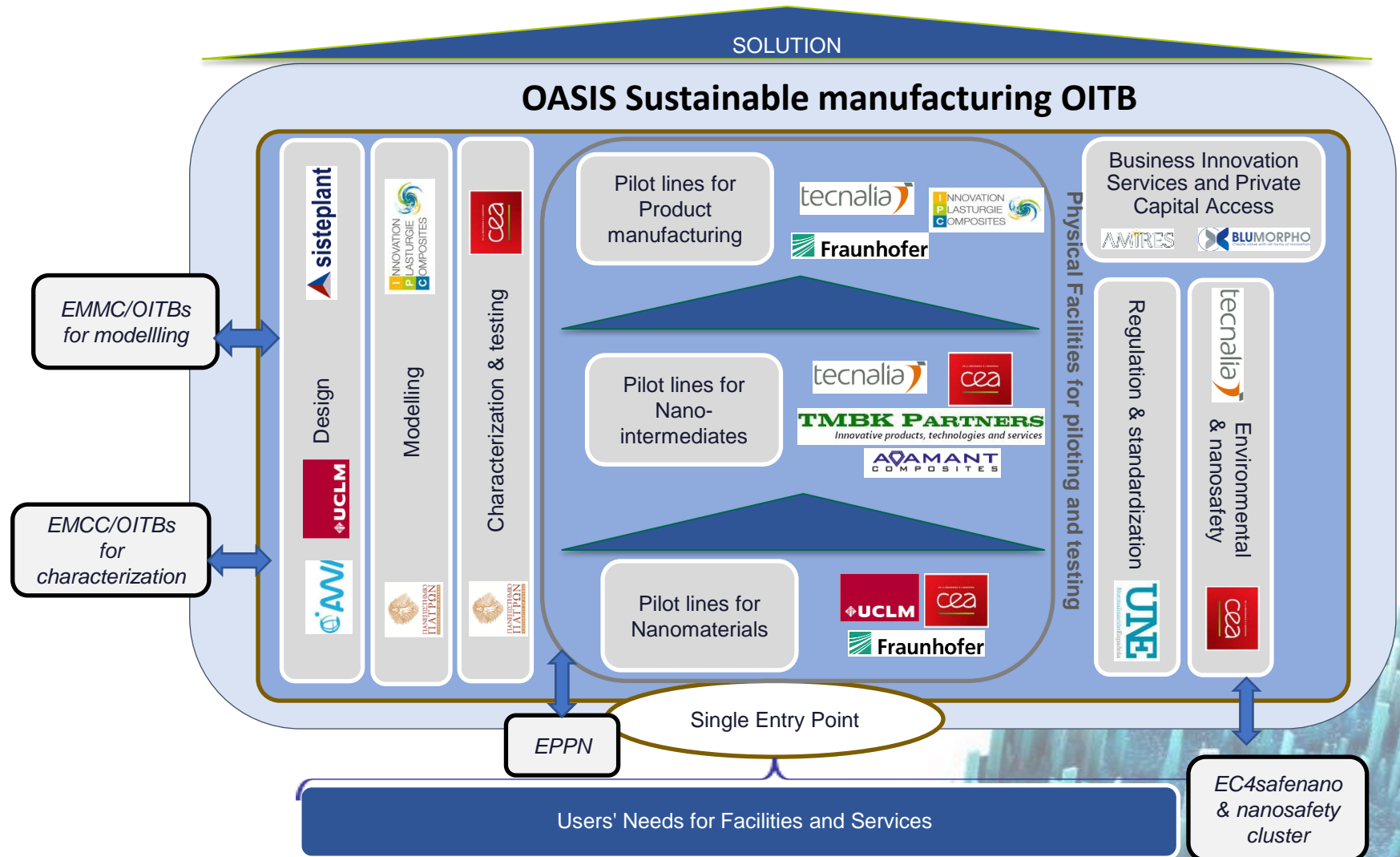


SOLUTION



Develop and organize a **sustainable Open Innovation Test Bed** for innovative scale-up of smart lightweight aluminium and polymer-based composite compounds and products to which

Companies - and more precisely SMEs - can gain access through a **SEP** to **develop, test and adopt, new lightweight**, high performance, **multifunctional**, safe and environmentally friendly high value **materials, components and structures** in a cost-effective and sustainable way



OASIS- ADVANCED MANUFACTURING FACILITIES ECOSYSTEM



Pilot lines for nanoscale structures in unprocessed form with intrinsic functionalities

- SiO₂ nanoreinforced aerogels
- Nanoparticles and nanomaterials synthesis by wet chemical route
- Magnetic and flame retardant nanoparticles and nanocomposites



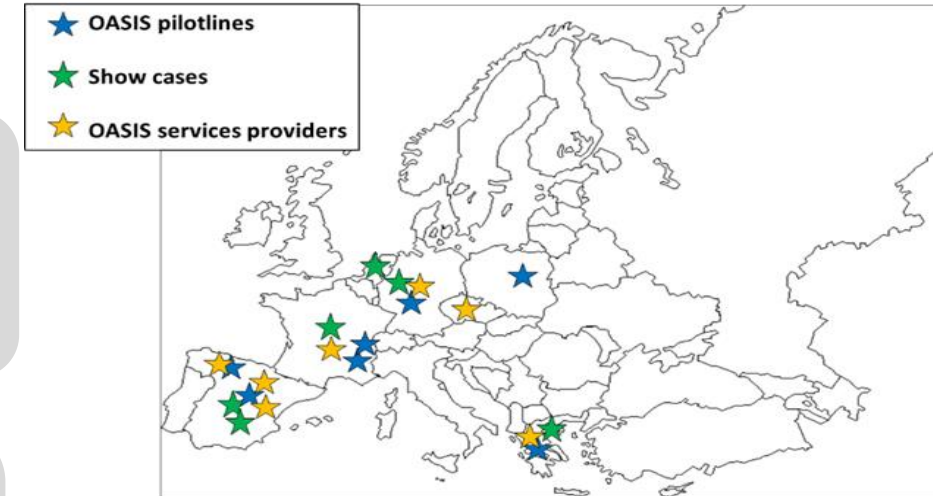
Pilot lines for intermediate product with nanoscale features

- Buckypapers
- CNT treated thermoplastic veils
- CNT treated preregs
- Sheet to sheet smart printed sensors and actuators
- Nanoreinforced metallic alloy ingots



Pilot lines for Nanoenabled-products

- Nano-enabled injected cast parts
- RTM polymer based composites
- Nano-enabled Al/composites hybrid products
- Nano-enabled pultrudates



OASIS Sustainable manufacturing OITB



12 PILOT LINES

Competitive, quality, safe, environmental friendly production of nano-enabled products

Development and commercialization support of lightweight multifunctional products based on aluminium and polymer composites

TECHNICAL SERVICES

From primary concept to final qualification of the product

- ✓ Material selection
- ✓ Manufacturing processes
- ✓ Product and process Design
- ✓ Modelling & simulation
- ✓ Characterisation & testing
- ✓ Sustainable-manufacturing diagnosis
- ✓ Environmental and nanosafety
- ✓ Safe-by-design approaches
- ✓ LCA (recycling concerns)



business support SERVICES

Accelerate market commercialization

- ✓ Diagnosis methodology
- ✓ Training
- ✓ Business support
- ✓ IP
- ✓ Coaching to SMEs
- ✓ Access to finance/investors



SOLUTION



SEP



Pilot line facilities are efficient catalysts for innovation, helping overcoming upscaling barriers and the “crossing of the valley of death” between invention and market.

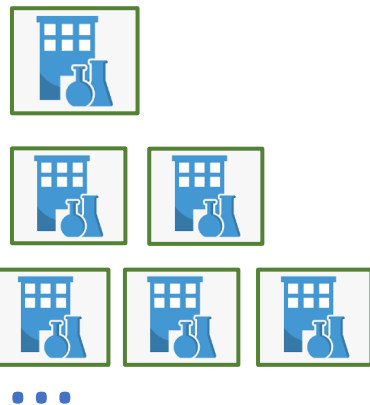


Validation of upscale/upgrade of pilots and services



OASIS Sustainable manufacturing OITB

PILOT PLANTS



TECHNICAL SERVICES

- ✓ X
- ✓ Y
- ✓ Z
- ✓ ...



BUSINESS-SUPPORT SERVICES

- ✓ A
- ✓ B
- ✓ C
- ✓ ...



SEP

ONE STOP
FULL
PACKAGE
OFFER

Nano-enabled pultrusion for lightweight construction

Structural nanoreinforced Al castings by HPDC process

Multifunctional heatable pannels

Energy Storage in prefabricated walls

Multifunctional nanobased layer for aeronautical structure

Battery module nanocomposite packaging



OASIS Sustainable manufacturing **OITB**

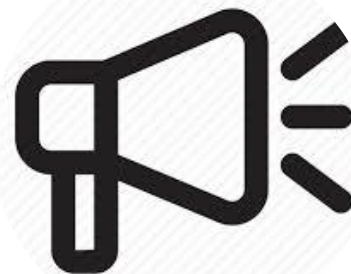
PILOT PLANTS



TECHNICAL SERVICES



business support
SERVICES



OPEN CALL (OC)

- New SMEs
- Industries
- Individuals
- Acaemia
- RTOs

Will be attracted

DEMOCASES (6 months)
Development of specific demonstrators
Access to specific services

MULTIFUNCTIONAL NANO-ENABLED PRODUCTS

Open Call for Democases



What?

- **Project acronym:** OASIS
- **Project full name:** Open Access Single entry point for scale-up of Innovative Smart Lightweight composite materials and components
- **Project grant agreement number:** 814581
- OASIS, an Open Innovation Test Bed ecosystem of 12 nanotechnology manufacturing pilot lines, is organizing an Open Call for Democases with the objective of providing support to organizations in order for them to **develop and test novel nano-enabled products** taking advantage of top-notch European infrastructure.
- Specifically, the aim of each supported Democase will be to transform a product idea into a **functional product/part demonstrator** and develop its associated **exploitation plan** targeting early market adoption.

When?

- The Call will be open from **29th June 2020 to 31st July 2021** and applicants will be able to apply anytime.
- Submitted proposals will be evaluated following one of the two cut-off dates
 1. **31st January 2021**
 2. **31st July 2021**
- Applicants can work on their proposals in the system up until the cut-off date (deadlines at 5 p.m. CET for both). However, after they „**submit**“ their proposals, **they won't be able to change them anymore.**

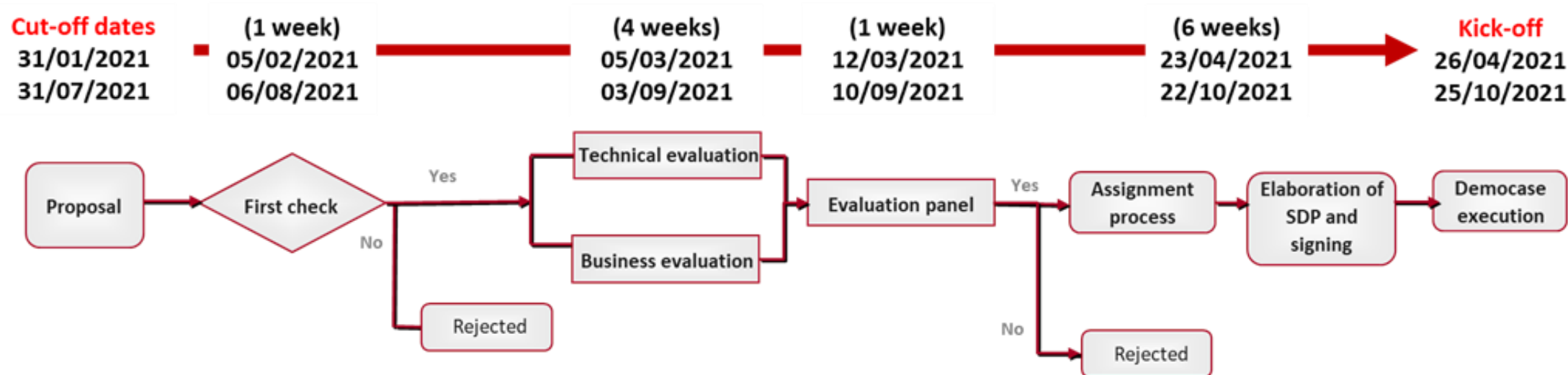
Who?

- The call is open to all organizations regardless of their type, size or field of activity. The following categories are being used in the Call:
 - PRC (Private for profit, excluding education)
 - **SME (Small and medium-sized enterprises)**
 - REC (Research organisations)
 - HES (Higher or secondary education)
 - PUB (Public body, excluding research and education)
 - OTH (Other)
- Important:
- Given the project's aim of fostering the competitiveness of European businesses, the primary target of the OASIS Open Call are **Small and Medium-sized Enterprises (SMEs)**. A minimum of **50%** of the supported Democases will be dedicated to SMEs, provided they score above the required threshold. **Which means they may take priority over higher ranked proposals submitted by other types of organizations.**

Why?

- All successful applicants to the OASIS Open Call will get **free access** to an ecosystem of 12 nanotechnology manufacturing pilot lines, providing nanomaterials, nano-intermediates, nano-enabled products and associated services for the development and commercialization of **lightweight multifunctional products based on aluminium and polymer composites**.
- The selected applicants will be provided with **customized support** through a complete set of services integrating **technical and business expertise** which will enable them to build up sustainable business cases.
- The free of charge contribution by the OASIS consortium is composed of:
 - Qualified human resources dedicated to the execution of the Democase.
 - Consumables and materials required for the product demonstrator.
 - Access to top-notch equipment and infrastructure of the pilot lines.

Process?



- Submitted proposals will be evaluated by 4 evaluators (2 for technical and 2 for business aspects). The maximum overall score is 15. The standard **threshold for individual criteria is 3**, and the **standard overall threshold is 10**.
- However, apart from the proposal-level evaluation there will also be a **portfolio-level assessment** done by the Evaluation Panel which will take into consideration also other factors like balanced use of the services and the available capacities to execute the Democases. **These factors might change the final ranking of the proposals.**

How?

1. Check out www.project-oasis.eu.
2. Browse through the Catalogue of Services to see how they match your needs.
3. Download & read the Application Guidelines.
4. Register through the submission software at <https://apply.project-oasis.eu/>.
5. Fill in the application data including your preliminary choice of services (a minimum of 2 technical and 1 business supporting service).
6. Download the Application Form from the software.
7. Complete the Application Form, save it as a PDF file (MAX 5 pages), upload it and submit it through the submission software.

Contact

- If you need assistance with applying to the Call, or explanations about technology offerings and your possibilities with OASIS, please send us your enquiries by phone to: +420 226 217 422 or by email to helpdesk@project-oasis.eu.
- Helpdesk will be active Monday - Friday from 9 a.m. to 5 p.m. We will be happy to help you.
- **We encourage all applicants to check the technical and business feasibility of their ideas well in advance of submission.**

Showcase:

Structural Nanoreinforced Al Castings

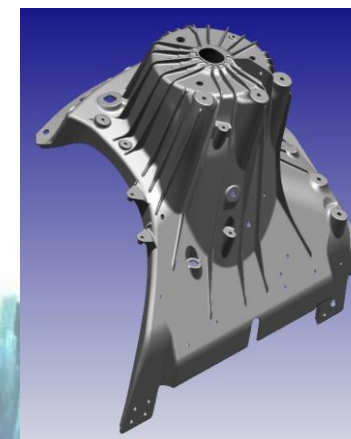
Ford-Werke



The next-generation 2020 Ford Explorer



Aluminum in the hood and front shock towers



Ford Goes Electric in Europe

FORD HYBRID



MILD HYBRID
(mHEV)



FIESTA

FOCUS



KUGA

PUMA



TRANSIT

TRANSIT CUSTOM



TOURNEO CUSTOM



HYBRID
(HEV)



MONDEO

MONDEO WAGON



KUGA



PLUG-IN HYBRID
(PHEV)



EXPLORER

KUGA



TRANSIT CUSTOM

TOURNEO CUSTOM



BATTERY
ELECTRIC VEHICLE



MUSTANG-INSPIRED
PERFORMANCE SUV



TRANSIT

Great potential for Al castings:
 housings, battery trays



Challenge: High cost pressure on e-mobility , Aluminum does not run by itself !!

Strong focus on cost efficient Aluminium castings for high volume production.

Potential for cost reduction due to:

- **High strength alloys not require heat treatment**
- **Longer life time of tools**
- **Efficient design**



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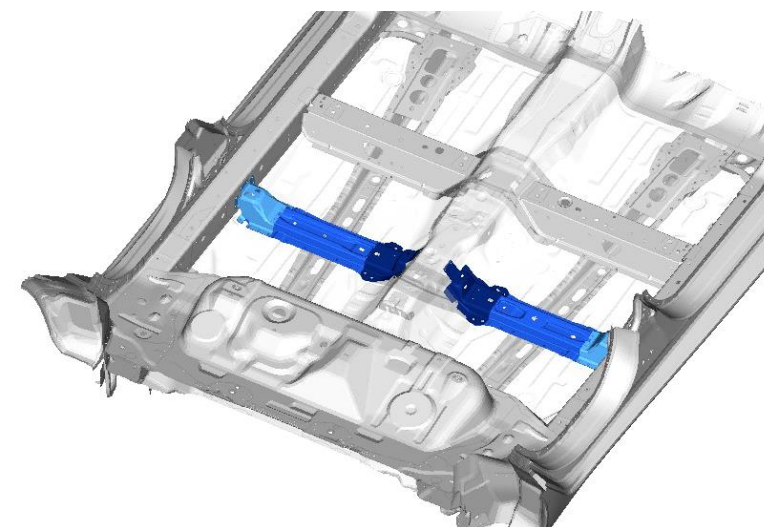
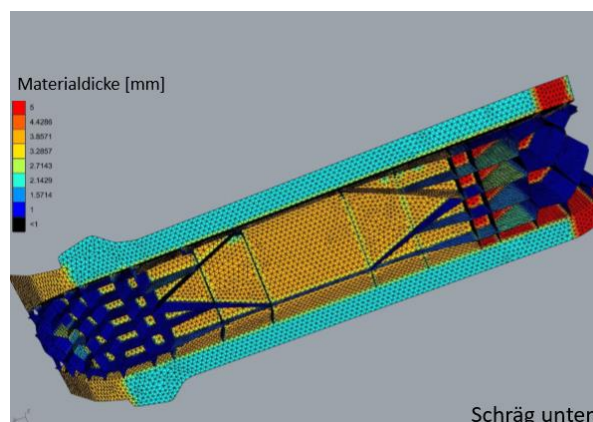
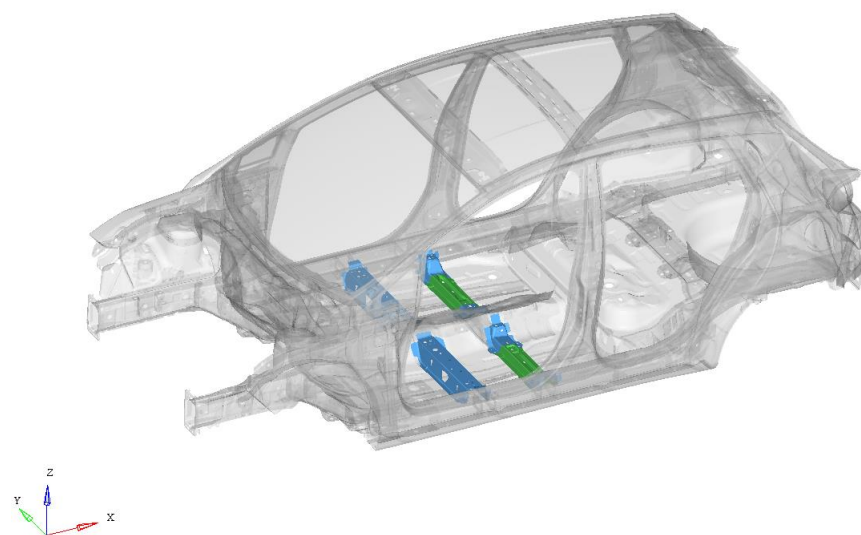


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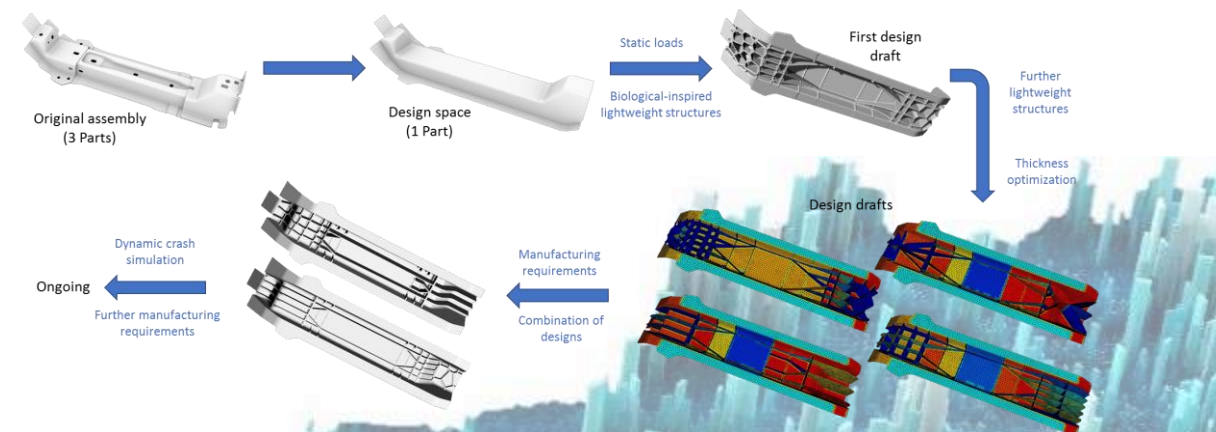
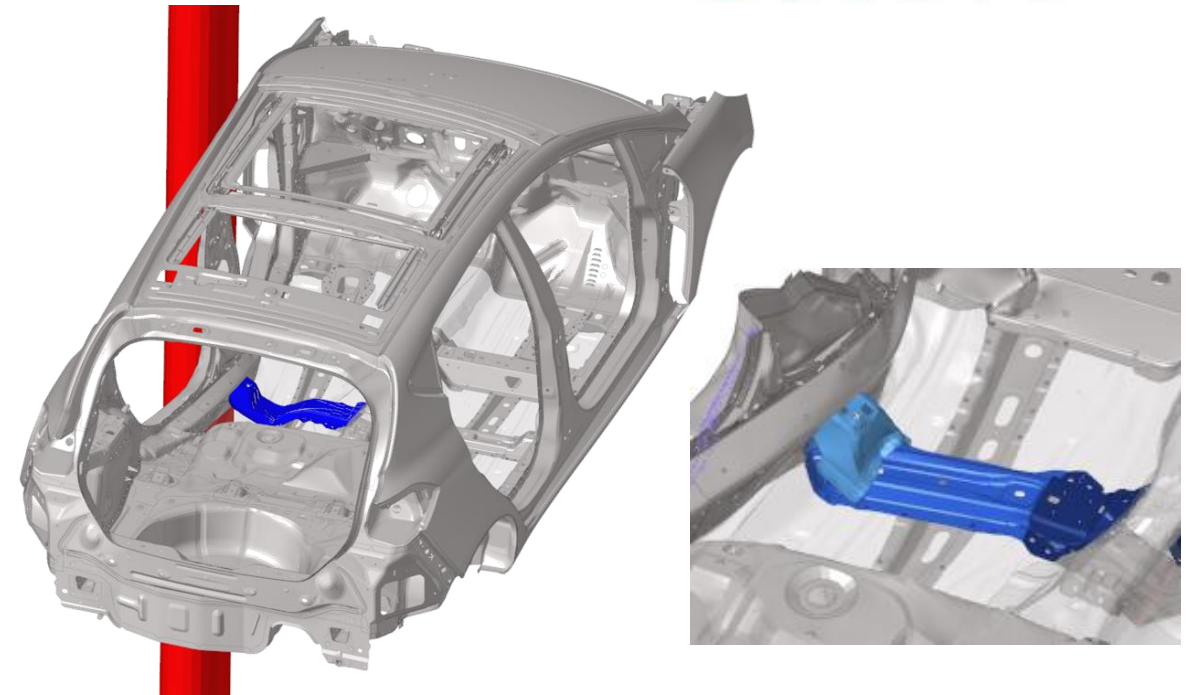
Ford showcase: Structural Nano-reinforced Aluminum Casting



Showcase #2: Cross beam member

3 APPROACH VALIDATION IN HPDC PILOT PLANT

- **Nano-reinforced alloys:** Manufacturing of nano-reinforced aluminium alloy components by HPDC process
- **High resistance die materials:** High resistance cermet coatings deposition on die insert for HPDC process with high corrosive aluminium alloys.
- **Bionic inspired design:** New complex structural designs modelling solution based on a bionic data base.



Show case leader:



Showcase #2: Cross beam member

3 APPROACH VALIDATION IN HPDC PILOT PLANT

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Showcase #2: Cross beam member

PL#8 SIMPnano Metallic (Al) alloys with dispersed nanoreinforcements

PL#9 METcast Nano-enabled lightweight injected cast parts

Bionic CAE method 

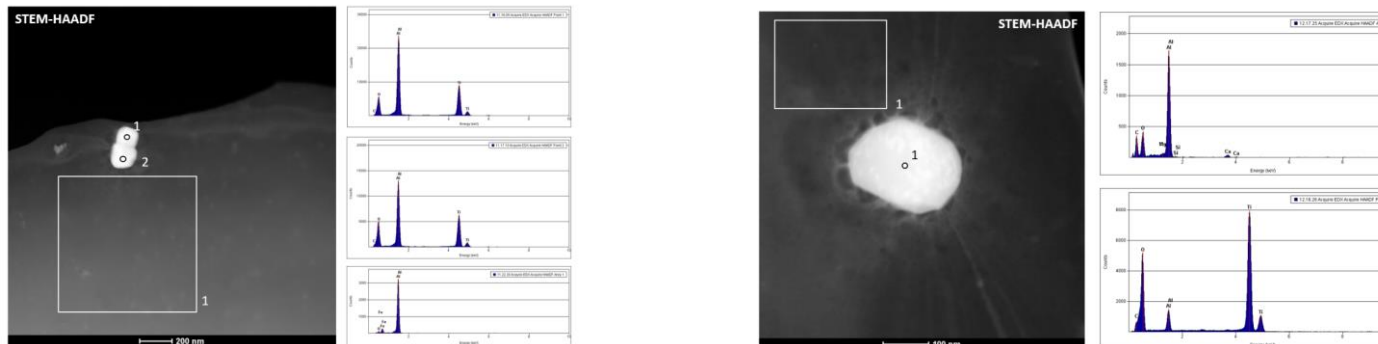
Entire process chain is covered by OASIS partners



High mechanical requirements are necessary to manufacture light structural parts

- HPDC aluminium parts are heat treated to obtain high mechanical requirements.
- Heat treatment adds higher cost to the part manufacturing process.

SOLUTION: Nano-reinforced alloys can increase mechanical properties of HPDC parts

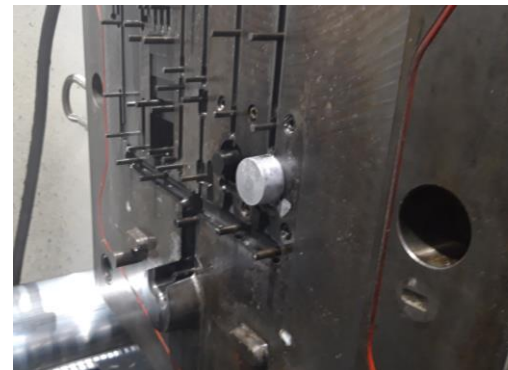


STEM-HAADF images and corresponding EDS analysis performed at two points, matrix and TiC nanoparticulates (Courtesy of IMIM)

High mechanical requirements are necessary to manufacture light structural parts

- Silicon free Aluminium-magnesium alloys can achieve mechanical requirements without heat treatment.
 - Die wearing increases shortening die's life, increasing the overall cost of the process and decreasing productivity due to the higher maintenance stops.

SOLUTION: High resistance nano ceramic coatings in critical parts of the die

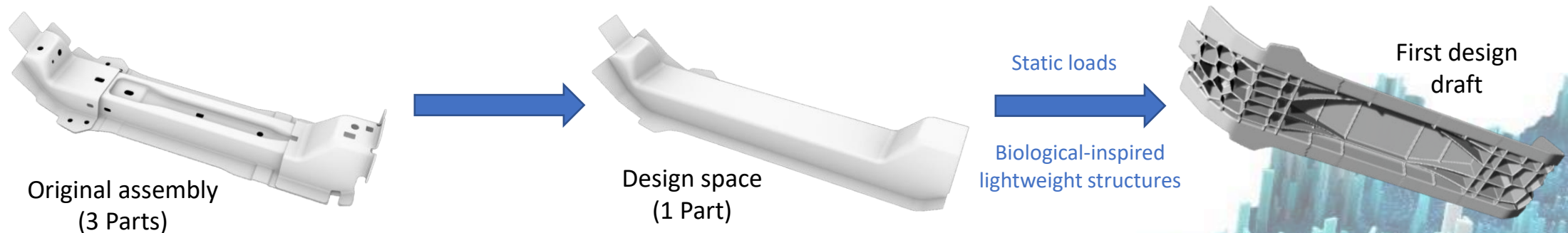


High mechanical requirements are necessary to manufacture light structural parts

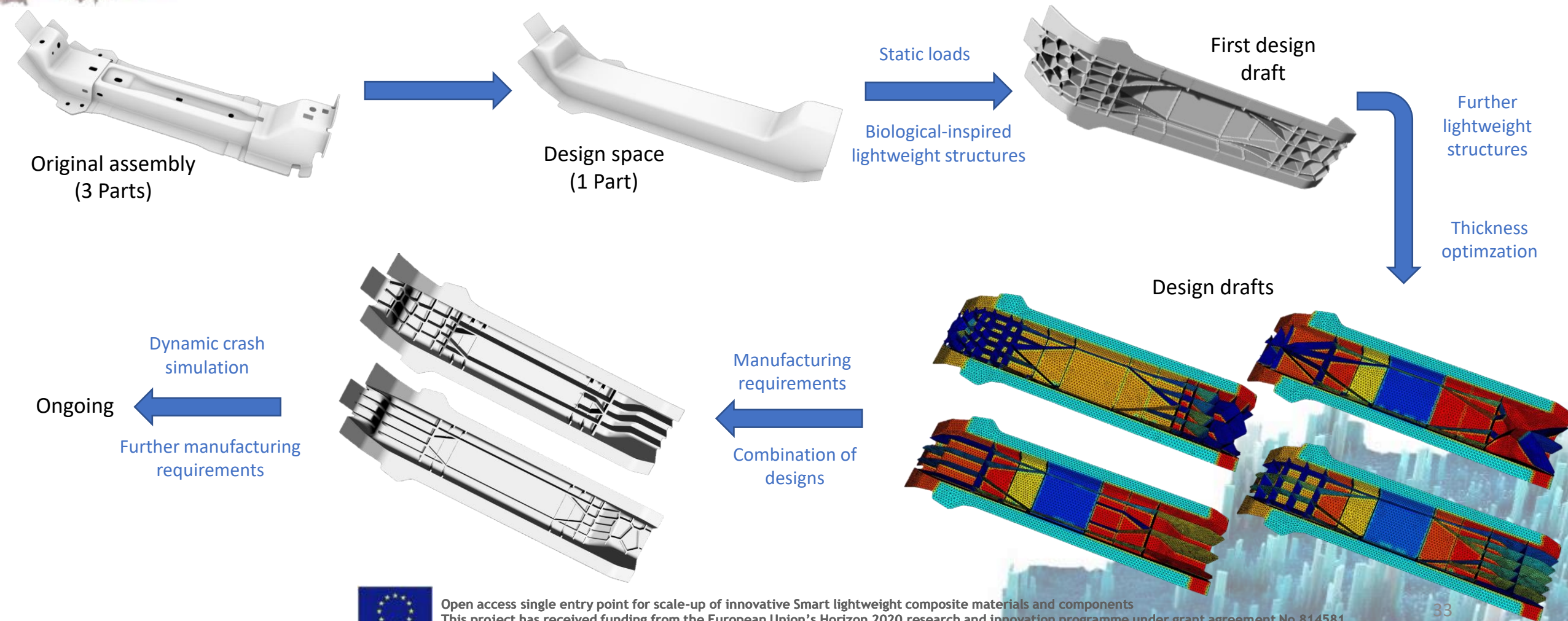
- **Optimized part designs:** Part light weight can be achieved with new designs that have to fulfil the castability conditions imposed by the HPDC process.
 - This designing process usually is very laborious, and the results often are not as good as expected.

SOLUTION: Bionic inspired design. New complex structural designing and modelling solution based on a bionic data base.

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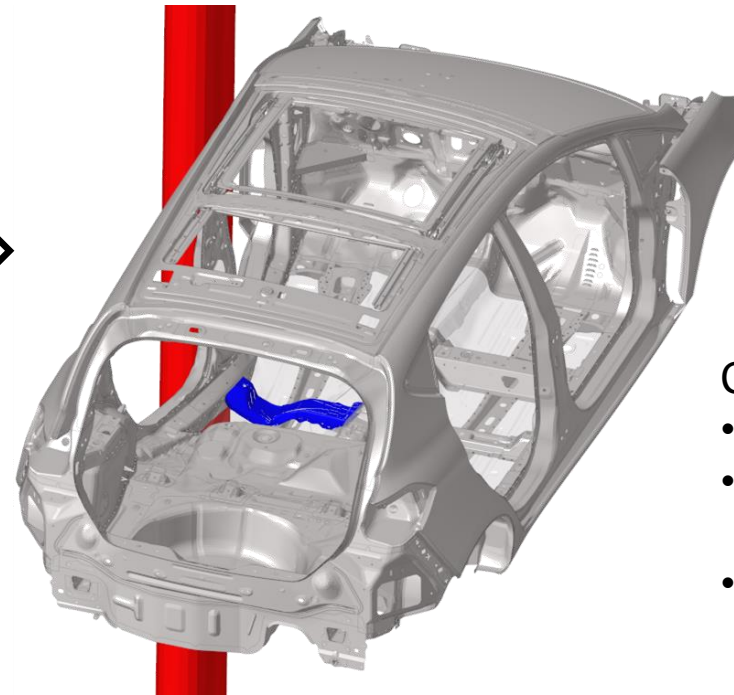
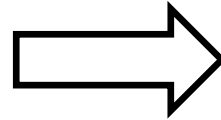


Development History – Generic Design

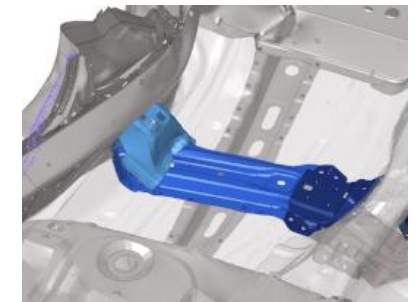


Development History – Generic Design Verification

- Side impact pole with $v_0 = 33$ kph



X-member to be optimized to meet crash criteria:

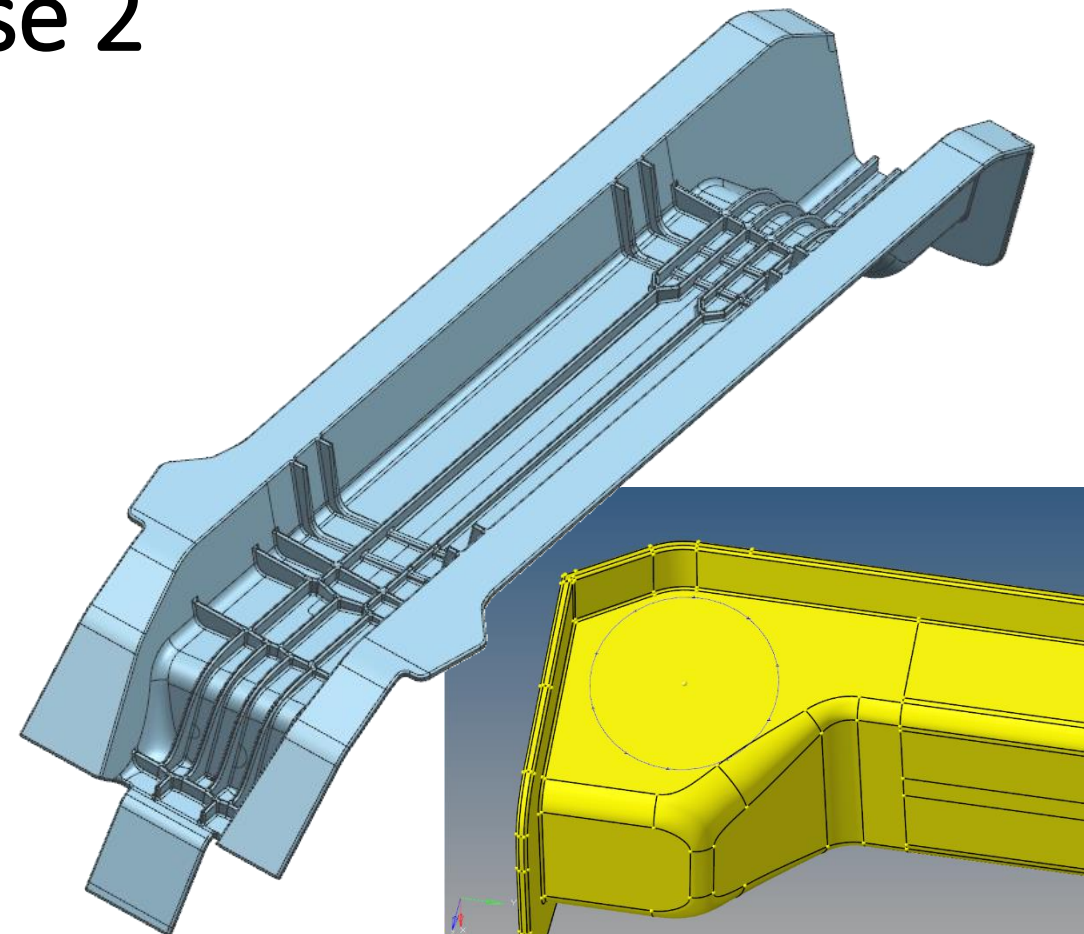
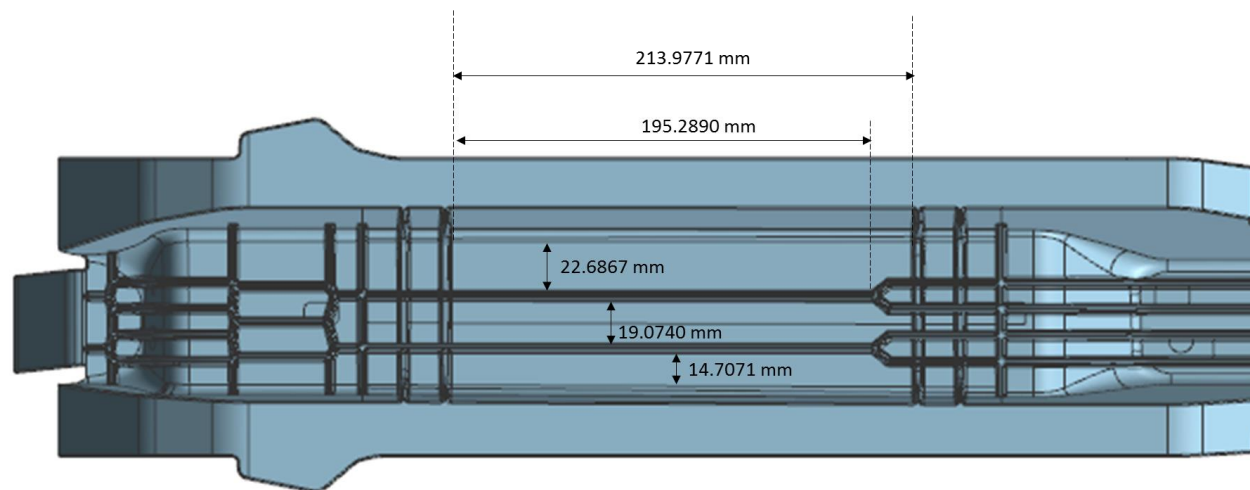


Consideration of:

- Cast ability
- Sample extraction for mech. evaluation
- Single component evaluation

Showcase 2

ModelOASIS_5th iteration > final ready to produce tool



Timeline

- Additional webmeetings to introduce the other **five Showcases** in **September** and **November 2020**



Nano-enabled pultrusion for lightweight construction

responsible partner: ACCIONA



Structural Nanoreinforced Al castings

responsible partner: Ford-Werke



Multifunctional RTM composite panels for roofs and sidewalls of e-buses

responsible partner: VDL Fibertech Industries



Smart battery casing in nanocomposite for aeronautic applications

responsible partner: Thales



Multifunctional nanobased layer for aeronautical structure

responsible partner: AIRBUS Operations



Energy Storage in prefabricated walls

responsible partner: Pleione Energy



Timeline

- Additional webmeetings to introduce the other **five Showcases** in **September** and **November 2020**
- Application Deadline:
 - 1st batch: 31 January 2021 (5pm CET)
 - 2nd batch: 31 July 2021 (5pm CET)
- Start of Democase development:
 - 1st batch: May 2021
 - 2nd batch: November 2021



Thank you!

