

NEWSLETTER I

25th October 2021

CFAA MEMBERS

MAIN PARTNERS: University of the Basque Country, Basque Government, Provincial Council of Biscay, Companies Partnership

MEMBERS A (OEMS): ITP Aero, Danobat group

MEMBERS B : Ibarmia-Innovatek, Ona Electroerosión, Renishaw Ibérica, Metrologia Sariki, GMTK multi-process machining, Trimek, Ekin e Intermaher-Mazak.

MEMBERS C : Wallair Engine Components, Metalúrgica Marina, Eibar Precision Casting, Mesima Bilbao, Nippon gases, Fresmak, Wolco, Fagor automation, Izar cutting tools, Ceratizit, Kendu, Metal Estalki, NGK/NTK y Mikron Tool.

MEMBERS D : Quaker Houghton, Laip, Sikulan, Neurtek, Talleres de Guernica, Soc-e, Haimer, Jaz Zubiarte, Walter Tools, Zoller Ibérica, Bruker Alicona, Emuge-franken, Mersen Ibérica, Mitsubishi Materials España, Green Leaf Europe, Bolueta, Gistek, Iscar, Komek, Oerlikon, Sandvik, Tebis, Widia, Mufer, Pro-micron, Hre Hydraulic, Dc Swiss, Nh Corte, Kyocera, Imcar, Vargus, Canela, Cutting Tools, Delfin Componentes, Kennametal, Industrias Galindo, Savvy, Gühring, Mizar Additive, Lupeon, Openmind, Seco Tools, Sisteplant, BCB, Egamaster, Tecnocim, Cohersa, Ibermach/Erlo, Ungria Patentes, Aotech, Vixion, Kaytek, Wimbitek, Goerna, Xebec, Innocut, Pferd, Trigo, Maditmetal, Schunk, Lukas, MiPU y Mek&Bot.

COLLABORATORS: AFM cluster, Hegan-Basque aerospace cluster, IMH-Instituto de la Máquina Herramienta, Siemens, Interempresas, Mitutoyo, BEC – Bilbao Exhibition Centre y Accenture.

CFAA AT A GLANCE

| | |
|--|---------|
| TRL 4-7 projects in 2021 | 112 |
| TRL 4-7 projects since CFAA start (2016) | 550 |
| Partners: | |
| Type A | 02 |
| Type B | 08 |
| Type C | 14 |
| Type D | 62 |
| Collaborators | 08 |
| Estimated Budget 2021 [k€] | |
| From companies | 855 |
| From competitive Calls | 490 |
| Number of technicians | |
| Technicians / Researchers | 08 / 25 |
| PhD students | 12 |
| Other people in training | 09 |

CFAA FRAMEWORK PROJECTS

FAKTORIA (Hazitek 20): New technologies and processes of Basque Manufacturing supply ...

ABIO II (Hazitek 20): Development of machine and systems for competitive Manufacturing ...

KAIA (Hazitek 21): Definition and performance of laboratory tests in a representative environment ...

AIAM (Hazitek 21): Artificial Intelligence (AI) and 5G based technologies to develop solutions ...

TASTE (Retos 20): Aerodynamic technologies for next generation of geared turbofans ...

INTERQ (H2020): Interlinked process, product, & data quality framework for zero defect ...

ADAM^2 (FET H2020): Analysis, design, and manufacturing using microstructures ...

2021: 9 new big proposals.

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ARTIFICIAL INTELLIGENT MANUFACTURING FOR SUSTAINABILITY (AIMS)



Floor_0 at CFAA facilities

*Consolidating the CFAA working place and to host the new Unit **AIMS**, Artificial Intelligent Manufacturing for Sustainability.*

AIMS is a 3-year agreement of CFAA and University of the Basque Country, the research centre Ideko, the Advance formation centre IMH and the Basque Research Centre of Applied Mathematics BCAM, to promote and to collaborate in new projects in digitalization and artificial intelligence. Thus, CFAA is a pilot factory of new machines, all connected to advance networks. So, data at there for the taking!, multidisciplinary work is required, and many new technologies would be accelerated. All of us trust that common ideas and intense work will allow to achieve the best results about these hot topics.

Another aspect of AIMS is to promote new courses and seminars about manufacturing, in coordination with Aeroacademy, the Basque aeronautics cluster Hegan initiative for training.

On the other hand, there will be good opportunities:

- We expect to receive 2-3 post-doc researchers under the new Maria Zambrano programme, by the Ministry of Universities. Expected in February 2022.

- In January the new call of European Program MSCA, H2020 COFUND programme "ADvanced Manufacturing Research Fellowship Programme in the Basque – New Aquitaine Region (Adagio)", will be open for post-doc researchers of all around the world. CFAA proposed several research lines about manufacturing and artificial intelligence. Some CFAA members also proposed to receive these researchers in secondment stays (3-6 months). Expected, September 2022.

We really think that AIMS and the new Floor 0 working place is a "mission", so a badge is designed for it. Four are the astronauts here, but you can enroll in it! The mission is ready and moving on; you will be invited to the launching !!



600 m2 working place
Networking areas
Meeting & training rooms
PhD Students and senior researchers
Your companies experts are welcome !!

see video



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PARTNERS OPINIONS

There are many CFAA friends and partners, we will collect all of your ideas and experiences in future newsletters, but in the last months our colleagues were visiting us, so we took the chance to ask their opinions.



Jaime Fernandez Castañeda

ITP Aero, Manager of the Companies partnership

CFAA is a leading project for us, ITP Aero, a central one. Our company has suffered greatly during the pandemic crisis, but now the horizons are blue again. The agenda for new forms of sustainable production and new concepts for short and medium-haul aircraft is accelerating. Manufacturing is a key activity for us and the main initial ideas that led us to drive CFAA are the same and even augmented with additional activities involving many manufacturing engineers. Our investment in this centre, both in financing, involving people and in projects, is close to three times that expected. Now is the time to consolidate ideas and make things even more fruitful.

Nerea Aranguren

Danobat Group, President of the Companies partnership

The concept of making TRL 4-7 projects was and still is a good idea. In straight words, no many manufacturing processes or machines can be really adapted to the customer necessities without a long testing campaign. Where a company can do that? In their own facilities is rather complicate. A share place with real machines, with the open door of modifications to incorporate options, edge computing devices, and other gadgets is also interesting. In addition, for Danobat Group to have early information of future aeroengine and aircraft projects can be a cornerstone for our own development. CFAA is also in full collaboration with Ideko, our researchers are sharing many projects and ideas. The good relation with academia is also important for us, the competition for talent is day by day more intense.



José María Ramos

ONA, Director of Technology & Innovation

ONA has been involved in aerospace EDM projects for more than 20 years but for a long time this activity was within a limited scope representing less than 5% of annual sales. Seven years ago the company detected an increasing potential for new EDM applications in turbine components. The whole strategy for the sector was re-focused and the R&D activities were oriented to the development of state of the art digital generators and Smart CNC technology in order to achieve an unprecedented EDM process control and supervision. As a privileged relevant environment for advanced manufacturing in aerospace, the CFAA has been an integral part of this R&D roadmap. In this context, critical integrity analysis, feasibility studies and specific EDM technologies have been developed. Now, aerospace sales represent 25% of total annual turnover with outlook for a significant increase. For the near future we envision new improvements in EDM performance coming from AI-based solutions that are currently on research in the CFAA. And ideally, the new ONA Fast Hole technology will be integrated in our R&D project development strategy for the CFAA.



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Pedro Pablo Rodriguez

EIPC, Research and Innovation Manager

EIPC is a leading company in the world of special castings for engines and other aircraft components. We have identified new opportunities in additive manufacturing and secondary processes for both additive manufacturing and casting, and the projects we are developing in cooperation with CFAA are providing us with sound information in both fields. There are many opportunities arising in our sector and the possibility to collaborate with a group of companies with a common agenda helps to identify the most relevant ones. After the global crisis we suffered in the aeronautic sector in 2020, now we must take advantage of the recovering of the industry, and CFAA will be a key actor to help us in this purpose.



David Bernar

Wolco Group, CEO

As a medium-small company the CFAA is our strategic partner for R&D development. We are working hard to offer to the market tools and solutions for special operations. Tools are usually forgotten in the rapid evolution of machining, however tools are one of the key factor for success in machining, moreover tools are the only device that are in contact between an expensive machine and the workpiece. Digitalization is key, but please do not miss the fact that the cutting edge preparation, geometry, carbide grades, and a good manufacturing process, along with a well-deposited coating, are some keys for the daily life production improvement. We are working on several projects along the CFAA. We see some of our rivals in the market also working at CFAA, but we see these guys respect confidential issues, and day by day they and us know more about this old business of the art of working metals!



Ramiro Bengochea

Ceratizit Group, Managing Director

Ceratizit is a big company with a strong R&D agenda. We have our testing facilities in Austria but we also work with outstanding centers similar to CFAA. A working place where one can meet companies and people of high-added value markets is of the most interest for us. Cutting tools, new carbide grades, each machining difficult case, this is not a problem for us. A real opportunity for our technicians and our company! Machining is in evolution, customers, providers, technology and research are factors in the equation of success.

Ixaka Egurbide

Director of IMH Advanced and Digital Manufacturing Campus

In the very end, people are the core of technology and development. New skills demanded by companies are increasing day by day. For instance, additive manufacturing, digital technologies, etc. We IMH like to be open to new emerging ideas, research usually detects them in advance. We are CFAA partners promote both training and research, and the challenge to grow in the field of digital technologies, sustainability, and even in intelligent manufacturing is on our near agenda. The challenge is global, so to share projects and be part of the team, a way to help our companies and our people.



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MAIN EVENTS 2021

- JAN: Training course on machine learning for advanced manufacturing.
- JAN: Successful mid-term report in FAKTORIA (ITP Aero, Danobat, M. Marina, EIPC, Ekin, Wolco, Fresmak, Mesima, Sariki).
- FEB: Showcase presenting M3MH software for integral part measurement in machining centers (Trimek - Innovalia).
- FEB: New cycles in Ibarria THR for gear skiving.
- MAR: Becold® cryogenic system and toolholder testing (Laip, HRE, Nippon Gases, Tecnalia).
- MAR: New concept for turbine blades hybrid manufacturing (Mufer, Intermaher, Kendu, Metal Estalki), in SPRI-Konexio call.
- APR: An algorithm for optimal operations in twin head ONA machines (JANO Project).
- MAY: CFAA Steering committee meeting.
- MAY: Advanced milling tools for hardened steels improving cutting edges design (Izar).
- MAY: Upgrade of CMM by Sariki with the Renishaw REVO 5-axis measuring system.
- JUN: Technology demonstration workshop of the new Komflex System (Cerazitiz).
- JUL: New 5G connection of Ekin broaching bench. Starting steps.
- AUG: A new way of maintaining oil emulsions is developed (patent pending). Kill all the microorganisms !
- AUG: Development of robust broaching process on a 5-axis milling machine (Mikron Tool).
- SEPT: New Renishaw machine RenAM 500 for additive manufacturing, now at CFAA.
- SEPT: Low-cost canister for Astroloy casings, machined in GMTK (ITP Aero, Met. Marina).
- OCT: One work in the Top 1 journal about additive and machining, the new hybrid view.

5G IS TURNING ON

Project 5GEuskadi will present results next November, with a brief act at the CFAA facilities. The broaching bench by Ekin will be the first in 5G. Connectivity is key, is the key for a rapid interchange of information and a near-to-real-time response. Our colleagues from Prof. Jacob ICTs department at the Faculty of Engineering are working hard with us.



OTHERS

The world after Covid is moving on, all of us hope to leave it behind !

New ideas, opportunities and projects are at the view. It will depend on us not to waste the vast opportunities of both technologies and funding schemes. We are not too many, the challenge is really great, but the words of Henry V are in our spirit "We few, we happy few...", because we are around 25th October, San Crispin day !!

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A new website is being designed, more modern and useful. We will activate it soon. www.cfaa.eus

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