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EMEAC 2022

by AS București, Andrea Curatolo



"The expectations were already high, but nobody would have imagined that the congress would be such a success."

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Looking back at the Belgian who brought us closer to space

by AS Oostende

"He came up with the idea of using a monocoque, namely having the fuel and oxidizer tanks acting as a structure."



PAG. 27

Interview with Paolo Tortora

by AS Forlì-Bologna



"LICIACube will testimony the success of the impact of DART with Dimorphos. The images that it will capture will allow the study of the cloud of debris raised by the impact, its structure and evolution are a direct consequence of the composition of the surface material of the asteroid."

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THE EUROAVIA MAGAZINE

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From the editor

2022 has marked a turning point for EUROAVIA. This business year made history, as it boasts developments and achievements never reached before.

Female participation inside EUROAVIA has never been stronger. Ranging from Working Group coordinators to the International Board itself, EUROAVIANS will one day remember the first IB ever composed of only female officers.

No less important is the return of physical International Events, which represent the heart of the association. Cultural exchange and international collaboration have always been among the values that EUROAVIA promotes and is based upon. After two long years of resilience, we were finally able to meet around Europe and share the EUROAVIA spirit again. Moreover, projects like the Future & Beyond might have been to their first edition, but have already had big repercussions within the aerospace industry, and they will continue to have resonance in the future.

The stories in this sixth issue of the EUROAVIA Magazine enclose all the excitement and enthusiasm of this year. Hopes and dreams, and the commitment of all of us from the beginning of the pandemic until this exact moment: the simple but utter happiness of greeting a long-lost friend.

I would like to express my deepest gratitude to Andrea, for his essential work of refining and verification of the magazine's content; Pedro, for his relentless work on the spectacular design of this edition; and Vicky, for her constant support and absolute dedication towards EUROAVIA.

And after this wonderful year, we look ahead once more, knowing that our commitment will always be worthy - because we are building the wings of our future together.

Best regards,

Elena Tonucci

Communication Working Group Coordinator

Letter from the IB

It has been a very challenging period for EUROAVIA. After one year and a half of pandemic, we started our journey as International Board uncertain about how the situation would develop.

Despite that, we were full of energy and had high hopes for the upcoming year, which, together with the commitment of so many people working in the association, has allowed us obtaining great results. It is our wish to show you during the following lines what we, all together, have accomplished during this incredible Business Year.

THE INTERNATIONAL EVENTS COME-BACK

If there is a milestone worth mentioning, it is the come-back of the International Events in EUROAVIA. Starting with the EMEAC (Electoral Meeting of the EUROAVIA Congress) in Bucharest, Romania, we managed to hold a total of seven International Events during just the second half of the Business Year. The International Events are the essence of our association, bringing the EUROAVIA spirit to you. We could not be prouder of this achievement, and we hope for its good continuity in the upcoming years.

OUR PROJECTS

The Airbus Sloshing Rocket Workshop (ASRW)

EUROAVIA has co-organised, together with Airbus, the fourth edition of the Airbus Sloshing Rocket Workshop. It is a challenge organised since 2019, in which teams are tasked to design, build, and fly a low-cost reusable rocket that is destabilised by the movement of water stored within an unpressurised tank. This year, the final took place in Terrassa, Spain, between the 17th and the 23rd of July 2022, where three teams went to build, test, and launch their prototypes. We would especially like to congratulate the winning team, Beoavia, and thank EUROAVIA Terrassa for hosting the event!

Air Cargo Challenge (ACC)

The Air Cargo Challenge (ACC) is the biggest project in which EUROAVIA collaborates, with more than 300 participants from all over the world. This year's edition took place in Munich, Germany, resulting on a winning team from Aachen, where the next edition will be held.

AS Roundtables

This initiative consists of a one-day event that aims at approaching EUROAVIA International to members from diverse Local Groups. During this event, some International Board and Working Group members present what EUROAVIA and share their experience in the association.

Future and Beyond

Future and Beyond is a 3-day online networking event where aerospace related companies and students have the opportunity of gathering and discuss about the current situation and the future of the aerospace sector. It has been organised for the first time this year between the 13th and the 15th of September.

The first day was dedicated to soft skills trainings offered to the students. Its purpose was leading them to have a more successful job interview and improve their CV, among others. They were delivered by the EUROAVIA Training System and external trainers from ITAérea and Rolls-Royce.

The second day was focused on a series of roundtables where every company presented their current lines of work and the opportunities foreseen. Debates about current issues of the aerospace sector were conveyed as well.

Finally, on the third day Business to Business and Business to Students meetings were held. There, both companies' representatives and students could benefit from a networking experience and learn from the recruitment process.

Diverse companies sponsored and participated in the event, such as ALTER Technology, Fokker Engineering, Rolls-Royce and DEIMOS.

The outcome of this project was above our expectations. We are very happy with the results, and we would like to especially thank all the people that were involved in the organisation of this event, without whom it would have been impossible. We hope for this event being repeated and improved in the future!

The Mentoring Programme

Being one of our newest projects, we implemented for the first time in the history of EUROAVIA a mentoring programme in collaboration with the EUROAVIA Alumni. It consists of a series of meetings where mentors who have volunteered from the Alumni Association of EUROAVIA and students gather and discuss about different topics at their choice. During those meetings, students will benefit from an experimented vision of the work-life in their sector of interest, as well as get some advice for their future careers.

In this first edition being held this year a total of 38 mentees and 18 mentors have participated. We intend to improve this programme for the future years after considering some feedback received from all people implicated in the project.

Spanish University Rocketry Teams Annual Meeting (SURTAM)

The aim of the First Edition of the SURTAM was to make eight different rocketry teams of Spanish Universities get to know each other, stimulating the collaboration between universities. The event took place between the 23rd and the 25th of September 2022, at the University of Zaragoza, Spain.

UPCOMING PROJECTS

Aircraft Design Challenge

The Aircraft Design Challenge is EUROAVIA's most recent project. Starting in November, it will consist of a competition where teams between two and four members will do the preliminary design of an entire aircraft from scratch. It is being organised in collaboration with PACE, who will be the main sponsor of the event.

The end of the project is planned to be in May 2023, in an event called "PACE Days 2023" where people from the industry, such as Boeing, will be present. During this event, the finalists will present their work and discuss with the companies present.

We are very excited for this new project!

Ideathon 2023

The Ideathon 2023 is an engineering competition that will happen between the 22nd and 26th of March 2023, simultaneously in four different cities in Europe: Terrassa (Spain), Munich (Germany), Zagreb (Croatia) and Stockholm (Sweden).

During this event, participants from different European universities will have 24 hours to propose a solution to the challenge chosen and proposed by the companies collaborating within the competition. The solution achieved will be evaluated by taking into consideration several criteria, such as its business and technological feasibility among others. This project is being held in collaboration with Knowledge Innovation Market (KIM) Barcelona after a first online edition that proved to be successful.

The European Grants – EUROAVIA Summer Camp

The correct development of EUROAVIA lays, among other things, on a good financial situation. For this reason, EUROAVIA has been and still is focused on the European Grants application.

During this year, we have applied for an EU Grant called “European Youth Together” that aims to promote collaboration and partnership among different organisations that aim to help youth having a voice in Europe.

For this application, a new project was developed: the EUROAVIA Summer Camp. This is a two-year project whose purpose is to develop a full new EUROAVIA IE to be held every summer, consisting of a series of webinars and workshops to design and develop a technical solution to a problem.

INTERNATIONAL BOARD FINAL STATEMENT

This year’s accomplishments would not have been possible without the work done by all the EUROAVIA Working Groups. Their help has been crucial for us, the International Board, in this short but intense journey. We are also very excited for the events and the team coming after us, that will, for sure, outdo our work.

Thank you for trusting in us and giving us the opportunity of doing our best for EUROAVIA. We wish for the best for the future of the association, which will always be in our hearts.

ABOUT THE IB:

The **International Board of EUROAVIA** is the body that represents EUROAVIA at an international level. This Business Year, it has been composed by Francesca, Alejandra and Victoria, being the secretary, treasurer and president, respectively.

Francesca, from Italy, is currently pursuing the bachelors’ degree in aerospace engineering at the University of Naples and is a big airplanes enthusiast!

Alejandra - or Ale as everybody knows her - comes from Canary Islands. She is studying aerospace engineering at the University of Seville and dreams of spending her whole life travelling!

Victoria - Vicky for friends - is about to complete a double masters’ degree in aeronautical engineering at the University of Seville and ISAE-ENSMA. She loves experimental aerodynamics, which will soon be the topic of her Ph.D project!



Letter from the DIB

The past two years have been difficult times for all of us, and EUROAVIA has been strongly affected by the pandemic and the unfavourable global economic situation. However, just like the rest of the aerospace industry, our Association is also recovering. Indeed, the EUROAVIA activities have resumed and have continued fast-forward during the second half of the past Business Year. For this, we would like to thank all the members that, with great commitment and passionate effort, made this restart possible.

For the upcoming BY, we intend to continue the organisation of ongoing projects and start new ones, carrying forward the goals and ideas of previous boards and members, while also including our own objectives in order to improve the environment and the community that is EUROAVIA.

We believe that EUROAVIA is an opportunity for all its members, and as IB we will assist them in maximizing this chance of growth and making our Association a space dedicated to their self-development. We will pay particular attention to properly training our members in the international Working Groups and provide them with adequate opportunities to develop their skills. By doing this, we will try to create a stronger bridge between the international and local levels of EUROAVIA.

Lastly, we think of this Association as a way of closing the gap between young engineers and companies. Thus, we will work thoroughly to reach out to new prospective sponsors and partners to make the EUROAVIA experience a true training ground for students' professional lives.

We are looking forward to working together with all the EUROAVIAns to build the wings of their future.

With our best wishes,

The DIB of EUROAVIA 2022-2023

Chiara Pennuti and Irina Stoican

ABOUT THE DIB:

Chiara is a Master's degree student in Aerospace Engineering at the University of Bologna. She's currently working on her internship and thesis at Empa, the Swiss Federal Laboratories for Material Science and Technology.

Irina finished her Bachelor's studies in Aerospace Engineering in Romania, and from September she will start her Master's degree in Rome. She is very passionate about space exploration and non-formal education.



Upcoming International Events

OCTOBER '22

MO	TU	WE	TH	FR	SA	SU
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

1 - 8 OCTOBER '22

ExMEAC & AMEAC
AS NAPOLI

23 - 27 OCTOBER '22

CIVIL AVIATION WORKSHOP
AS RZESZOW

NOVEMBER '22

MO	TU	WE	TH	FR	SA	SU
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7 - 12 NOVEMBER '22

**THE ELECTRONICS AND
CONTROL SYSTEMS
SYMPOSIUM**
AS PATRAS

DECEMBER '22

MO	TU	WE	TH	FR	SA	SU
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

5 - 10 DECEMBER '22

FoWo
AS CLUJ-NAPOCA

INTERNATIONAL EVENTS REPORTS

International events are the real strength of EUROAVIA. What is better than travelling in Europe, meeting new (and old) friends and discovering universities and companies in the aerospace field? Not by chance when you greet a EUROAVIA friend you say “see you around Europe” because you already know that you will see your friend again. Unfortunately, during the global pandemic international events were not feasible but EUROAVIANS did not lose their hope and eventually the EMEAC has been the first of many international events that took place in the first half of 2021. You can discover all of them in this section. What will be your next destination?

TRAIN NEW TRAINERS 2022

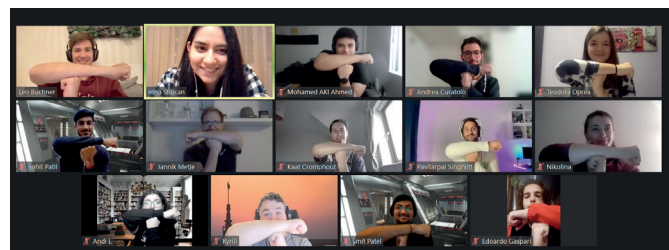
ETS WG | 7th - 11th Nov 2021

The EUROAVIA Training System WG was created a few years ago, starting from the desire of our members to complement their technical studies with valuable soft skills formation. The current work environment demands not only knowledge and technical skills, but also interpersonal skills such as communication, critical thinking, creativity, and leadership, just to name a few. And as today's world gets into a busy rhythm, one should take the chance to get to know themselves and spend time perfecting those skills that define one.

“The current work environment demands not only knowledge and technical skills, but also interpersonal skills such as communication, critical thinking, creativity, and leadership, just to name a few.”

In the past decades, student organisations started creating teams specialised in delivering soft skills training for their members. The need for such a team was present in our Association as well, and so the first event focused on creating prepared EUROAVIA trainers was created under the name of Leadership Workshop in 2016 in Napoli. The successful event was internali-

sed as a project in the back then Innovation & Development WG and subsequently the ETS WG was founded.



Secret pose from the ETS WG

The ETS WG's purpose is to deliver soft skills formation to all members of EUROAVIA in the many events we have. But to ensure the continuity of any group, a proper knowledge transfer is needed, and this is where Train New Trainers comes in. A one-of-a-kind event, it is the only opportunity for EUROAVIANS to become members of the ETS WG. The Train-New-Trainers event seeks to educate a new generation of EUROAVIANS with the skills necessary to design training sessions that produce long-lasting learning. Participants learn how to develop specific abilities in others to achieve this. The next generation of trainers is anticipated to conduct training sessions across EUROAVIA and even outside of it after graduating from a TNT event.

However, how can we ensure a proper learning process if the only environment we can work in is the online one? The pandemic affected all of us, and the ETS WG was not an exception. The TNT that was supposed to be in Munich was cancelled and after some time, our Association's trainers managed to transfer most trainings into the virtual space.

The time came for a new generation of trainers to be born, and so the TNT 2021 was organized online. The trainers' team was made of capable and active trainers from the first and third generations, and external trainers specialised in psychology and adult learning. Their involvement put the base of a high-quality foundation for the new generation.

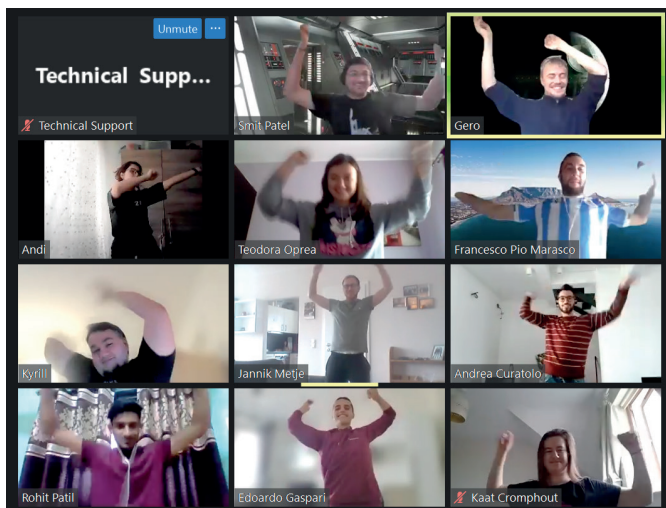
Given the complexity of the event, the training sessions were delivered over three weeks, covering topics such as trainers' ethics, feedback, facilitation, learning and training design. The 10 participants from 8 different local groups took part in different sessions that helped internalise the knowledge through theoretical parts, fun activities, and different perspectives.

The event has been really useful for the participants to understand how a soft skill training is structured, how to deal with unexpected events and, most importantly how to improve after each session. Obviously, in order to gain a certificate, the new generation must prepare and deliver a first training session that could assess if they successfully integrated the knowledge from the event. Following the closing ceremony, the 4th generation of EUROAVIA trainers was born! We are looking forward to seeing them deliver in the events of our Association!

but also for trainers as well. The only way to become a trainer for the ETS is by attending the TNT event. With this comes a large amount of thoughtful training that is structured, rich in content, diverse and exciting. As a former participant and now trainer who attended the TNT in 2021, I can say it was an enriching experience. It increased my communication and organisation skills, my understanding of those, and my awareness of others and myself and I don't want to miss those skills. My technical studies do not offer the opportunity to learn and develop these skills specifically, another important reason for attending a TNT. In my mind the TNT provided me with a variety of knowledge and skills that will become essential in my future and the best part of it: I can help others more professional to develop their soft skills, while continuing to improve.



TNT participants fighting AIVAORUE



"Shaky shaky" energizer

Here is the experience of Jannik Metje, a participant of the TNT 2021 and new coordinator of the ETS WG:

The Training System that EUROAVIA offers is a unique opportunity, not just for participants

ABOUT THE AUTHOR: ETS WG



The EUROAVIA Training System Working Group delivers soft skills formation to EUROAVIA members and forms newly certified trainers. Their aim is to enable students to also develop themselves on a non-technical level, which is pivotal for their academic and personal success.

AIRBUS SLOSHING ROCKET WORKSHOP '22

AS TERRASSA | Jan - Jul 2022

From the 17th to the 23rd of July, AS Terrassa had the opportunity to host the AIRBUS Sloshing Rocket Workshop, where 3 different teams from AS Beograd, AS Forlì-Bologna and AS Zagreb reached the final phase of the competition. As hosts, we were very excited to organise this event in presence after these rough years for EUROAVIA's International Events.

On Sunday the 17th, all the participants arrived and checked in at a very nice shelter in Terrassa. The competition officially started on Monday morning when they had the presentation of the event at our university. We explained the schedule for the five days of the competition and showed them the different spaces where they were going to work, all of which were rooms at our university and two workshops to work with more specialized tools.

The three different groups were distributed among the students that were volunteering during the event to help the organisation and be with the participants to solve all their doubts and needs. Once everything was explained, they went to the rooms and started working on their rockets. Every team had their own room so they could work separately from the others.



Teams working on their prototypes in the lab

On Tuesday morning, the teams returned to the venue to keep working on their rockets. After having dinner, the afternoon was distributed to three different spots where each group had the opportunity to go to an aeronautic club in Terrassa to launch their rocket. This club has a great amount of flat land with runways designed for aeromodelling use. To get to the launch site each volunteer guided their team through the bus system of Terrassa. They also were able to do some testing at the university area.



Prototype testing at the university area

The next day, Wednesday the 20th, the participants had breakfast and then went to visit different places around Terrassa. They started with a visit to Masia Freixa, a building from 1905 built by the famous Catalan architect Lluís Muncunill I Parellada. After, they went to see the mNACTEC, an old textile industry building designed by the same architect which has since been turned into the Catalan National Museum of Science and Technique. During this tour, they were able to see the industry of the early twentieth century as well as the different architectonic Catalan designs.

After an entertaining morning, it was time to work, so once the participants returned from the shelter having had lunch, they kept working on their rockets. During the afternoon they also had the chance to launch their rockets so they could see if they were doing a good job. However, all the afternoon wasn't about work, and after hours of hard work and once they had dinner, all the participants went to see the Terrassa Minyons training, which is a cultural Ca-

talan tradition where the people climb through each other to make a human tower. In Catalunya, it is known as “castellers”.

Thursday was all about testing and preparing the final design for the rockets, as only one day was left for the final competition! During the day the different teams launched their rockets to make the last tests. Not only did they have to test that everything was okay, but also had to make a presentation to explain to the judges the design of their rocket and why they decided to make it that way. After a day of really hard work, they went to the shelter to get some rest and prepare for the big day.

Once Friday started, they went to the university and made their presentation to the three judges. All the three groups made amazing presentations and showed everybody all the hard work they had done during all the days of the competition.

Once the presentations were made, the teams had done half of the work. They went to the shelter to get lunch and prepare everything they needed to go to the aeronautic club and launch their rockets. During this period the judges also had time to discuss and talk about the three presentations they had seen during the morning.



*AIRBUS Sloshing Rocket
Workshop teams group picture*

After lunch, all the participants, the volunteers and the judges went to the aeronautic club where the final competition took place. All the participants were nervous and excited to get to the final, as in just a few hours they would know who was the winner of the competition

that started months ago. After the three teams launched their rockets, the competition arrived to an end. Following a break to discuss, the judges arrived to a final winner. The winner of the ASRW was the Serbian team, Beoavia!

After all the stressful but fulfilling days, everyone went to the shelter to get ready for the final dinner, where all the participants had the opportunity to share different stories and opinions about the event. A delicious Catalan dinner was served and a lot of funny moments were shared.

We would like to thank all participants to share this marvellous event with us and hope to see you all around Europe!

We also want to thank to all the supporters who made this event possible.

- **Ajuntament de Terrassa** for organizing the visit to the Masia Freixa, mNACTEC and the Minyon's training.

- **Transports municipals d'Egara** for giving us the tickets for the transport.

- **Institut d'Estudis Espacials de Catalunya** for the financial support.

- **Federació Aèria and Club Aeronàutic EGA-RA** for the launching site of the rockets.

- **Universitat Politècnica de Catalunya** for the facilities.

ABOUT THE AS: AS TERRASSA



AS Terrassa was founded in 2006 and is based in Spain. They organised the Rocket Workshop of 2017, and they like to organise trips to visit other AS in their free time.

EMEAC 2022

AS BUCUREȘTI | 27th Mar - 2nd Apr 2022

Dear EUROAVIAns,

we are really thrilled to announce that EMEAC 2022 has been a success! It has been an amazing week along with the greatest people!

EMEAC 2022 is the electoral congress of EUROAVIA, formed of representatives of EUROAVIA affiliated societies all over the world that represents a vital element for the well-functioning of the society. This year it took place in Bucharest, and we had an amazing time getting to know each other. The conclusion of the congress days was this: this year the congress voted for Irina Stoican and Chiara Pennuti as Designated International Board Officer. Congratulations!

Many thanks to our sponsors, without whose help we could not have completed this event: GMV Company, Grand Papa and RedBull Romania, and also Universitatea POLITEHNICA of Bucharest, where we could make memories together and invest in our knowledge.

We also had the opportunity to host our first Science Talk of this year, which took place on February 15th. Together with Alexandra Adiaconitei, a graduate of the Faculty of Aerospace Engineering from Bucharest, the event could be completed with great success. Today, she is a YGT in the Spaceship Team.

During the event, a lot of precious pieces of information were presented to us from ESA, such as the Spaceship Initiative, space resources and many other things which made our participants very interested in this project. Thus, we would like to thank our members for the organization and attendance and, of course, we thank a lot to Alexandra Adiaconitei for her involvement in this project and would also like to collaborate together at future events!

It is always a pleasure to meet our colleagues with whom we share such a great passion. We are looking forward to meeting again with you space enthusiasts!

by AS București



*International Board 2021/22
(from left to right, Francesca D'Aversa,
Victoria Prieto and Alejandra González)*

The 2022 edition of the Electoral Meeting of the EUROAVIA Congress held in Bucharest ended on the 2nd of April but its effect will persist for a long time in the future. Being the first live International Event after two years of online activities, the EMEAC 2022 is a turning point in the history of EUROAVIA. The expectations were already high, but nobody would have imagined that the congress would be such a success. This achievement has been possible thanks to the dedication and hard work of AS Bucharest and of the International Board. What happened during the Congress and why was it such a special event? Discover it with us through this little diary of the EMEAC 2022.

"The expectations were already high, but nobody would have imagined that the congress would be such a success."

March 28 2022, the first day of Congress

The EMEAC started on the 28th of March at the POLITEHNICA University of Bucharest campus. The traditional ceremony in which the representatives approve the EMEAC agenda and rules of procedure are explained paves the way for a day full of activities. In the morning, two local groups gained the status of Prospected Affiliated Society and Prospected Adjunct Member. PAS Gaziantep is a LG from the homonymous city in Turkey in which the engineering faculty is located. PAM Zewail City is not new to EA, after a period of inactivity now they are back with a lot of new energy and



Congress group picture after GMV presentation

ideas. The presentation of different Working Groups followed during the day. The day also included voting on some bylaws proposals and the Parallel Sessions. In the Parallel Session, the AS are divided into three groups and they have the opportunity to present the work done inside the LG in the 6 months before the congress. This is a great occasion for AS to know better each other's activities and propose new ideas.

March 29 2022, the Second day of Congress

If the first day was full of activities, the second day was no less committing. After the last call for DIB candidates, the Business and the Financial Midterm Reports have been approved by the Congress. These are two very important documents that contain the work of the International Board during the first half of the Business Year and the strategy for its second half. On the second day of the EMEAC, another two LGs from Turkey have been accepted as PAS: PAS Izmir and PAS Kayseri. The rest of the day has seen the presentation of the Board of Presidents' reports and the Open Space sessions. During the Open Space session, people discuss in groups ideas on how to improve EUROAVIA. The topics were: expansion of EA, physical events and attraction of new sponsors.

March 30 2022, sponsor presentation and city tour

Between the second and the third day of Congress, we had the opportunity to know who are the people that made this event possible. We are talking about the sponsors of the EMEAC 2022. The POLITEHNICA University of Bu-

charest made available the space of its campus and supported the event, and GMV Innovating Solutions sponsored the event. Other sponsors were RedBull, Fokker, GKN Aerospace, and Grand Papa. During the afternoon we explored the city of Bucharest and participated in a very fun treasure hunt.



Treasure hunt in București

March 31 2022, the third day of Congress

We don't exaggerate if we say that the third day of EMEAC has been crucial for the future of the association. On that day indeed, the candidate for the Designated International Board presented themselves and their ideas to the Congress. Chiara Pennuti and Irina Stoican have been elected as members of the Designated International Board. Is it needless to say that we had no doubt that they would have been elected, since they are both very motivated and competent people. Chiara has a long experience





inside EUROAVIA. She has been the President and Secretary of the AS Forlì-Bologna LB. During her mandate, she helped organise the Aerodynamic Symposium in Forlì. Now she is the coordinator of the Design WG and a member of the Human Resources and International Board WGs. Also Irina has a long experience inside EUROAVIA. She is a long memory member of the EUROAVIA Training System WG that she coordinates right now. She has been a member of AS Bucharest, where she was in the organisation team of the AEROCONSULT 2019 and of the Rocket Workshop in 2021. She is now a member of AS Napoli and a member of the Human Resources WG. We wish them the best of luck with their work inside the DIB, we could not be surer that the future of EUROAVIA is in safe hands!

April 1 2022, the fourth and last day of Congress



Designated International Board 2021/22 during their presentation (from left to right, Irina Stoican and Chiara Pennuti)

The final day of the congress has seen the presentation of the Local Report from PAS Kyiv. Despite the dramatic situation that Ukraine is living in right now, the LG from Kyiv managed to connect to the EMEAC. Their presentation was followed by long applause and the Congress decided to extend the deadline for them to host an International Event and allowed them to do it online. This is the minimum EA can do to express its sympathy to Kyiv in this difficult moment. The day continued with the PAS Stockholm and PAS Castelldefels Local Reports and the motion to accept Zewail City as AM. Thanks to the work of the Design WG,

the Congress voted for the approval of 15 Logos! In the afternoon, the results of the already mentioned Open Space Sessions and the Hikkeli Mikkeli were presented. AS Napoli was the protagonist of the last part of the Business Meeting, first by being the AS with more points in the EA Quiz that took place at the Congress and then by announcing that they will host the ExMEAC and AMEAC 2022 in their city! They will take place in Napoli from the 1st to the 8th of October 2022.

The Final Statements of the International Board closed the EMEAC 2022 but not the activities of the participants that gathered together in the Final Dinner.

The future of EUROAVIA has never been so bright, see you around Europe!

by Andrea Curatolo

ABOUT THE AS: AS BUCUREȘTI



AS București was founded in 1991 and is based at the University POLITEHNICA of Bucharest, Romania. In the past years, they hosted the TNT 2018, a rocket workshop, and the AEROCONSULT.

ABOUT THE AUTHOR: ANDREA CURATOLO



Andrea Curatolo is a Ph.D student in Aerospace Science and Technology at the University of Bologna. He is a member of EUROAVIA since 2019 and a member of the Communication WG since 2021. His passions are sport, productivity books and space exploration. He won't refuse a night spent dancing and drinking with friends.

FLY-IN DRESDEN

AS DRESDEN | 8th - 12th May 2022



As part of the Fly-In Dresden 2022, we had the opportunity to welcome 15 students from the EUROAVIA network for a week with us. We wanted to explore the beauty of Dresden together, listen to interesting lectures, visit exciting companies, and make new friends. We were particularly excited to visit companies since under normal circumstances it is difficult to get in.

On Sunday, May 8th all participants arrived and check-in throughout the day at our hostel in a trendy district of Dresden. During the first day there was plenty of time to explore the city and, during the evening relax at the local park. Thanks to the various cafes, bars and restaurants in the Neustadt, a wide variety of food was provided.

On Monday morning started with a guided walking tour of the city where there were plenty of opportunities for photo sessions. We had the opportunity to see some of the most important landmarks of the city, such as the Frauenkirche, the Brühl Terrace and the Semper Opera House. After the city tour, we went to TU Dresden's cafeteria to get some energy before the first presentations.

The German Aerospace Center (DLR) Dresden presented their research on the digitalization and sustainability of air traffic. Simulations of turbulence on aircraft components, such as the landing gear were particularly exciting and illustrative. We were very pleased to meet Gregorio Gerardo Spinelli. A former member of the International Board of EUROAVIA who is now working for the DLR.

After a short coffee break, MTU Aero Engines presented its plans for the usage of the water produced during kerosene combustion. With the help of the Water Enhanced Turbonfan, it is expected to fly more efficiently and in a more climate-friendly manner in the future. Also on display, there were job opportunities at MTU for internships and professional positions.



Rolls-Royce seminar

At the end of the stimulating presentations, all participants went back to the hostel before the 90-minute drive to nearby Leipzig airport where the visit to the Leipzig/Halle freight hub began. A guided tour allowed the participants to have an exciting insight into the cargo handling processes that happen at the hub every night. The participants didn't leave empty-handed, since they were given some souvenirs (including aeroplane models!). What an eventful day.

After an overnight drive from Leipzig, Tuesday had a slow start, thankfully there was coffee during breakfast! The day started with Rolls-Royce and their University Technology Centre, the Institute for Lightweight Structures and Materials and Robust Design (ILK) presentation. Over several small presentations from both Rolls-Royce and the ILK research projects were explained, opportunities for internships were discussed, and later job offers were promised. A particular highlight of the presentations was the topic of "Advanced Experimental Methods for Lightweight Structure Certification," which involves research into which certification processes that can either be carried out digitally or can also be recreated in the laboratory using exciting simulation setups. Between the different lectures, there were also small coffee breaks,

where all the concepts were processed, and the participants could have discussions with the lecturers.

After the presentations, the participants had a balanced meal at the cafeteria to get ready for one of the most memorable experiences of the event, the visit to the flight simulator of the Faculty of Transport Sciences. In their flight laboratory there is a cockpit of an Airbus A320 that has been reproduced in great detail, here everyone was allowed to be captain and first officer for once. Even though the route from Innsbruck to Munich is flown by default, it did not stop our participants from taking off and landing in Hawaii and many other places as well.

After dinner, we went back to the university premises for the Cultural Night. Each nation presented a local delicacy and shared it with everyone. We fondly remember the many new tastes and traditions we were able to experience.

“Even though the route from Innsbruck to Munich is flown by default, it did not stop our participants from taking off and landing in Hawaii and many other places as well.”

Wednesday had a late start to let the participants have some sleep after so many events. Nevertheless, the third day of the Fly-In still offered a great experience, the visit of the Elbe Flugzeugwerke (EFW). They specialize in converting aircraft that are at the end of their life cycle as passenger aircraft and giving them a second life as freighters. The guided tour focused on the Airbus A330, which was available for inspection. All participants followed the presentation with great interest and curious questions were asked. This tour was also an experience that will be remembered for a long time, not only by the participants but also by the organizers who were able to come along.

After the tour, we went back to the city and to the hostel. There we had free time and the possibility to get dressed up for the upcoming



Airbus A320 simulator

final dinner. Punctually at 6:00 p.m., everyone met at the Coselpalais in formal attire to have a good-looking dinner. A three-course menu was served for all participants, with soup as a starter, a typical German speciality as the main course and an apple strudel with ice cream as a dessert. General satisfaction with the German cuisine could be read in everyone's faces. Gregorio, Former IB, also attended the final dinner and shared many experiences from his time in EUROAVIA. Of course, pictures were also taken in the chic premises of the Coselpalais at the end. Not only because everyone was dressed up, but also because so many friendships had been made over the past three and a half days that simply had to be captured.

We would like to thank all participants who have visited our beautiful City. We hope you have arrived well back in your AS and spread the EUROAVIA spirit around Europe. We also hope that this is the start of many more International Events and we are looking forward to participating in them.

Special thanks to all our supporters from industry and research, who supported us not only financially but also significantly in terms of content. With lectures, presentations, job offers and coffee talks. We thank especially:

Rolls-Royce Electrical and Mr. Paul Holzinger for the lecture as well as Mrs. Bergmoser for the organization.

The Institute for Lightweight Structures and Materials and Robust Design (ILK) and Mr. Albert Langkamp, Mr. Tino Wollmann, Mr. Jonas Kluger for the presentations as well as Ms.

Tomeckova for the organization.

MTU Aero Engines and Mr. Peter Müller for the lecture as well as Ms. Kopetzky for the organization.

The German Aerospace Center (DLR) and Mr. Frank Dressel for the presentation and Ms. Dietz for the organization.

Diamond Aircraft Industries and Mrs. Lentsch for the support.

Elbe Flugzeugwerke (EFW) and Mrs. Lemke for organizing the tour.

In conclusion, we can only thank and say to all involved:

See you around Europe!

Your AS Dresden

ABOUT THE AS: AS DRESDEN



AS Dresden was founded in 1990 and it's based at the Dresden University of Technology, in Germany

HOT WINGS SYMPOSIUM - 2

AS KOCAELI | 22nd - 26th May 2022



City tour

We had the pleasure of hosting 13 students from the EUROAVIA network for a week as part of the Hot Wings Symposium 2. We enjoyed spending time together seeing the beauty of Kocaeli, participating in lectures, visiting great companies, and making new friends.

On Sunday, May 22nd all participants arrived, and they were welcomed by us at the airport throughout the day. Our guests checked in at Tuzla Town Hotel and we took a short walk on the beach in front of the hotel. Afterwards, we went to our campus and had the opportunity to meet each other and drink Turkish tea in the garden. Later the welcome dinner at our school, we went to the pub and ended the day in a fun way. We started the second day by having breakfast at the hotel and heading to school for the first symposium. We attended the symposium on Aerodynamics presented by Prof. İlyas Kandemir. After the lunch and coffee break, the second symposium was Space Mining presented by Nazlı Can. Then we played a treasure hunt with 3 duties on campus, Pavi, one of the participants, organized a soft-skill workshop for us. For dinner, we had a barbecue with hot wings, which gave our event its name and afterwards, we got away from the exhaustion of the day by dancing to the fun songs of each other's culture in a pub in Tuzla.

The first stop of the third day was the General Electric Aviation technical tour, which got us

very excited. They welcomed us with plenty of treats and coffee. GE Aviation engineers gave us very instructive information about their work. They talked about LEAP Engines and efficiency change in short distance and long distance. In the workshop, they showed us the metal 3D printers and explained the working principle. Afterwards, a pleasant lunch was prepared for us at GE Aviation, we set off for the school for the symposium. The third symposium was Gas Turbines presented by Erinc Erdem who works at TEI-TUSAŞ Engine Industries as a principal engineer.

"Parachutes were made, eggs were seated in the parachutes, parachutes were placed on the drones, and the parachutes were released from a height of 60 meters."

After a coffee break where we chatted in our campus garden, we went to our committee's lab for a fun assignment. One of our members Yahya and the secretary of AS Kocaeli, Dilara, organized a training about parachutes for us. After that, the chicken drop began! In this difficult challenge, participated by 5 teams, parachutes were made, eggs were seated in the parachutes, parachutes were placed on the drones, and the parachutes were released from a height of 60 meters. Rest in peace broken eggs! Then, an egg-free dinner awaited us in the campus cafeteria because we were out of stock.



Attendees during the parachutes training

Afterwards, we went to the hotel to prepare for the spirits night event. Guests brought and introduced drinks and snacks from their home countries, played games and challenged each other. We fondly remember the many new tastes and traditions we were able to experience.

We started our last day with breakfast at the hotel. What beautiful weather for a city tour! To reach the first stop of our city tour, we first took a short train ride. Then we took a short walk in Üsküdar Square.



*Space Mining symposium
presented by Nazli Can*

We took a ferry from Üsküdar to Eminönü with a magnificent Bosphorus view. We saw the Maiden's Tower during the ferry trip and our guide told us the legendary story of the Maiden's Tower. After a short walk in Eminönü square, we reached the Spice Bazaar. In this bazaar, where thousands of spices, soaps, sweets and Turkish delights greeted us, many different colours, smells and flavours fascinated us!

After filling up with plenty of sweets, we went to our next stop, Hagia Sophia. Thanks to our guide, we reached the importance, history and information about this structure, which was built as Megala Ekklesia. This structure, which has stood for about 1500 years, fascinated us with its magnificence.

Afterwards, we had the opportunity to explore Sultanahmet Square and have some rest and lunch. Ice cream was delightful after that! When we went to buy some ice cream, the ice cream shop gave us a funny show with the traditional ice cream joke, where we tried to catch the ice cream.

After the beautiful city tour, we returned to the hotel for final dinner preparations. We all looked pretty stylish in our formal attire. Our dinner in Ataşehir had very important elements from Turkish cuisine. Kebab, stuffed meatballs, raw meatballs, appetizers, rice pudding and more than these... We said goodbye to each other and took lots of pictures, remembering our good memories with each other.

We would like to thank all participants who have visited our city. We hope you have arrived well back in your AS and spread the EUROAVIA spirit around Europe.

Special thanks to all our supporters:

- Thanks to GE Aviation and Ms İlke for opening their doors to us.
- Thanks to Aktif Naser Electronic and Ms Çise for their support of our event.
- Thanks to Promax Machinery and Mr Mustafa for their support of our event.
- Thanks to Fly Bvlos Technology and Ms Emine for their support of our barbecue party.

In conclusion, we can only thank and say to all involved:

See you around Europe!

AS Kocaeli

ABOUT THE AS:
AS KOCAELI

AS Kocaeli was founded in 2019 and is based at Gebze Technical University, in Turkey.



FLY-IN CASTELLDEFELS: SPACE, TECHNOLOGY AND FUN

PAS CASTELLDEFELS | 13th - 17th Jul 2022

During the Fly-In Castelldefels 2022, we welcomed 12 students from the EUROAVIA network. We explored some of the most important Barcelona monuments, listened to some different lectures, exercised, sailed in a kayak and made some new friends.

On Wednesday 13th July all participants arrived at Castelldefels and checked in on the campus students' house. During the evening, the participants could visit some beauties of Barcelona guided by a part of the staff of the PAS Castelldefels. We visited the most important landmarks, such as Casa Batllò, Las Ramblas, La Boqueria, the Gothic Quarter, Arc de Triomf and the huge Sagrada Familia. We ended our first day having a special dinner at one of the most famous taverns in the city called "Ovella Negra" translated to "The Black Sheep".



Sightseeing in Barcelona

On Thursday morning we started our day with a warm welcome by the university's vice principal of external relationships, Jordi Berenguer. He explained to us about the school, its methodology and philosophy and the projects carried by EETAC and the ones that will take place in the future. Later the attendees could learn about Drones and be part of a little demonstration of how ICARUS RESEARCH GROUP works and

their participation in the SESAR Joint Undertaking. They demonstrate to us how drones can be coded to work in certain airspace and let some of the participants fly them.

After having lunch, the participants were able to access ENAIRE's Eastern Region Airspace Control Center which is located at Gava. They could visit where the controllers were and how they work to provide surveillance and safety. The main room had around fifty people controlling and guiding multiple planes at the same time. Once we finished our visit, we took a photo at the front door of the building, as we could not take it inside as it is a restricted area.

"The main room had around fifty people controlling and guiding multiple planes at the same time."

After this visit, we had a tour around Castelldefels historic city centre. We had a beautiful time visiting the local museum and walking up the hill until reaching the castle. The local guide explained why this city had so many towers and why they were constructed... PIRATES! These towers were used to protect their houses and be safe from pirates.

On Friday June 15th, the morning started with a lecture at ICFO's research centre where the attendees could learn about photonics and how they are being developed in projects related to communications between terrestrial and space environments. They were able to enter some of their laboratories and see some experimental demonstrations of their devices.



Lectures at ICFO's research centre

After having lunch, water activities were booked at the Olympic Channel in Castelldefels. The participants have a great time kayaking along the channel and, after it, they could race against some of the staff members in a Paddle surf race. Spoiler: They all ended up really wet ;)!



Water activities at the Olympic Channel in Castelldefels

After eating some pizza together we had our Cultural Night, where participants brought some of their nation's sweets or delights and they shared them with everyone. It was a beautiful night remembered by so many new tastes and traditional songs. The next day had a late start as they needed to recover after so many activities in the past days. Nevertheless, the fourth day of the event was dedicated to free time and they experienced an incredible day at the beach. They had dinner at the beach and free time after it. At dinner, we had a special meal, Paella. Paella is one of the most famous meals from Spanish cuisine.



Final dinner

We would like to thank all participants who have decided to come to our first Fly-In. We hope you have had a great time with us and hope to see you all again.

We also hope that this is the start of many more International Events and we are looking forward to participating in them.



Fly-in Castelldefels group picture

Special thanks to all our supporters, who supported us in terms of content. With lectures and visits. We also want to thank our University and Castelldefels town hall –for having supported us financially.

ABOUT THE PAS: PAS CASTELLDEFELS



PAS Castelldefels was created in 2020 and has been accepted as PAS during an online congress in 2021. They are based at the Telecommunication and Aerospace Engineering School of Castelldefels (EETAC).

AS CONTRIBUTIONS

Affiliated Societies are the engines and actual members of EUROAVIA, without them, the association would not exist. The AS are the ones that organise unique events for their members and that give them the unique opportunity to be a part of the EUROAVIA family. They also bring new ideas for events and put all their effort and their passion into hosting international events. In this section of the newsletter, you will find the report from the AS, by reading them maybe you will find ideas for events in your local group or you could even find yourself in some pictures. We hope that you enjoy the reading.

AS Pisa visit to SITAEL

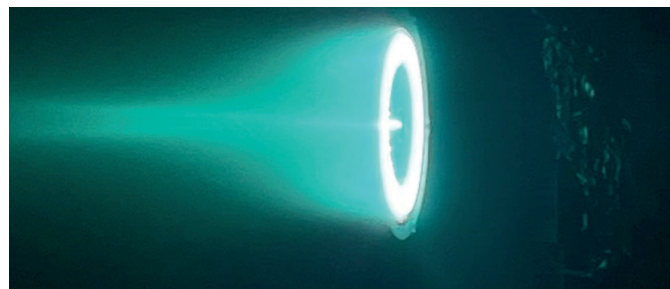
by AS Pisa



In May 2022 we had the great opportunity to visit SITAEL, a leading company in the space sector. Present in several Italian cities, it produces small satellites, avionics for space probes, satellite telecommunication elements and electric thrusters. The division specialized in electric propulsion for space applications is located in Pisa. Here, technicians, engineers and designers work on a wide range of thrusters varying from 100 W to 20 kW. These thrusters are often powered by Xenon, but other gases are also used during some tests such as nitrogen and oxygen.

During the visit, we were first given an introduction to what their business is all about and for what kind of space missions their products are aimed at. Afterwards, we were given a tour of the assembly workshops and the large test rooms. In these test rooms, there are huge vacuum chambers where the engines are tested for thousands of hours.

For all the participants, this event was an amazing opportunity to discover how a space company works, which challenges they face every day and how the relationship with their clients is.



At the end of the tour, they also added that the company is open to collaborating with students that want to do their thesis on electric propulsion. This is a great example of the kind of opportunities EUROAVIA might give to their members.

ABOUT THE AS: AS PISA



AS Pisa was founded in 1959, being one of the founding associations of EUROAVIA. They are based at the University of Pisa, in Italy. The last International Event they hosted was the Space-Up 2018.

Looking back at the Belgian who brought us closer to space

by AS Oostende

Recently the files on Karel Jan Bossart became declassified which resulted in his life's and professional story becoming open to the public. This resulted in some Belgian writers delving deeper into Karel's story.

The main reason and source for this ode to Karel Bossart is the book "Voorbij De Maan by Cyndrik De Decker". In his book, he tells the story of a young Karel Bossart who gradually became the man he was destined to be.

Karel Bossart was born in Antwerp in 1904. Due to his parents both being teachers, they had quite an early influence on his development related to reading, writing and mathematics. He started learning these subjects very fast (he could already read and do basic calculations at the age of 4) he didn't fit the conventional way of teaching that was given at local schools. For this reason, his parents decided to teach him by themselves through homeschooling.

Eventually, he graduated as a mining engineer at the Université Libre de Bruxelles (ULB).

Shortly after his graduation, Karel went to America thanks to the Belgian American Education Foundation (BAEF). Through the BAEF indeed, he was able to study Aeronautical Engineering at the Massachusetts Institute of Technology (MIT). He would end up working for some well-known companies, going from the *Sikorsky Aircraft Corporation* to a train manufacturer and later during the second world war at *Vultee/Convair* where he would help design a supersonic aircraft better known as the *Convair XF-92A*.

After the war he was assigned as the chief structural engineer in the company, having to manage quite some projects and check the structures of various aircraft. Although he liked his current job, he had heard about the work done by Wernher von Braun on the V2 rocket. Slowly but steadily his interest in rocketry started to

grow. When he finally heard that Convair acquired a project for an Intercontinental Ballistic Missiles (ICBM) that should be able to cross a distance of 8200 km, Karel, or Charlie as he was called in the US, was eager to get his hands on the project. Unfortunately, the company wanted Karel to keep his current function, next to that being responsible for the ICBM project was lower ranked than his current function. Being as determined as he was, he asked for degradation so that he could start working on the ICBM project, being given the codename "MX-774".



Karel Bossart with a sketch of the Atlas rocket

Credits: Gazet van Antwerpen

Karel analysed the design of the V2 and one of the main problems he saw was that the rocket's structure was way too heavy. It is quite logical, that the lighter the rocket, the further it should be able to travel. He came up with the idea of using a monocoque, namely having the fuel and oxidizer tanks acting as a structure. It can be described as a paper cylinder, if the paper cylinder is empty, it can be deformed quite easily. If one would fill the cylinder with sand, then it was possible to exert quite a load on the column. This would become the basic idea for the 'Bossart monocoque'. During the flight, the fuel would reinforce the structure, and during transport, it would be gas pressurized.

Next to that, he is also credited for the gimbaling of the entire rocket engine, in contrast to the control fins that the V2 used to deflect the exhaust gasses.

Eventually, the MX-774 project would see some ups and downs, resulting in the ATLAS Programme. The name Atlas, referring to the figure from Greek mythology was proposed by Karel himself. Initially being meant as a ICBM, it would launch the first four American astronauts into orbit.

“He came up with the idea of using a monocoque, namely having the fuel and oxidizer tanks acting as a structure.”

Thus far the short history of Karel Bossart. Although he has been in the shadows for quite some time, we couldn't imagine our current space industry without his contributions. It should be noted that he is being referred to as the grandfather of modern rocketry. Especially in America, his name can be found next to those of Wernher von Braun and Sergei Koroljov.



Karel in the assembly hall of the Atlas rocket

ABOUT THE AS: AS OOSTENDE

AS Oostende was founded in 2009 and is based at the Katholieke Hogeschool Vives Belgium. Their college is located at the International Airport of Oostende.



Flight Simulator

by AS València



At EUROAVIA Valencia we love to organise activities so that our members can feel like real aviation experts, even though we are in the process of training. This is why we have been organising the famous FLIGHT SIMULATORS for two consecutive years.

It is an activity that emerged as a response to the many limitations put in place by the Spanish Government during the time of the pandemic. Since all group activities were banned during the 2020/2021 academic year, our Events Working Group came up with the idea of organising individual and paired sessions in flight simulators. In this way, the Marketing Working Group found and established relations with the company “Flysim-ng”, located in the Manises industrial estate, very close to our city's airport.



Boeing 737 simulator

Flysim-ng is a flight simulator centre, dedicated to the training and education of future commercial pilots and cabin crew. For EUROAVIA València, Flysim-ng prepared sessions in pairs so that we could live the experience of flying a real aircraft. Each session consisted of an instructional course in which we were taught the necessary commands to be able to start our flight. Here, we were able to ask Jaime and his team all our questions, who answered them with the enthusiasm and eagerness of those who enjoy their work.

“The experience was unforgettable for everyone. We learned a lot about flying a plane and aerospace technology.”

After the initial explanation, and after seeing the real cockpits that they have installed in their centre, we were ready to start our flight. We could choose between flying an A320, a B737 or a Piper G1000, and taking a tour of the airport or an ALC-PMI or VLC-MAD flight. The experience was unforgettable for everyone. We learned a lot about flying a plane and aerospace technology, and we were able to see a lot of our theoretical knowledge acquired in the classroom applied in the cockpit of the plane.

Such was the success of the activity that we decided to repeat it during this course so that our members could continue to learn more about flying aircraft and so that new members could also live this experience.

ABOUT THE AS: AS VALÈNCIA

AS València was founded in 2014 and is based at the Universitat Politècnica de València, in Spain.



The first Andalusian Space Conference

by AS Sevilla



On May 19th 2022, in Seville, the first Andalusian Space Conference was held. The conference was organized by the Junta de Andalucía, Aerospace Cluster and the JRC of the European Commission. The event represented a big opportunity for companies, research groups and university students to make bonds as well as to gain visibility. A student association such as EUROAVIA Sevilla couldn't miss the opportunity to participate!

Companies like SolarMems, Alter Technology, GMV, and even the division of the Spanish navy in charge of the Real Instituto y Observatorio Astronómico (which broadcast the official time in Spain), participated in the conference.

This conference was planned for about 20 years, and it reinforced the candidature of Seville as host city for the International Astronautical Congress (IAC) in 2024 (which will be finally held in Milan), and as the city to host the physical headquarters of the future Spanish Space Agency.

Seville and Andalusia have shown that they have a growing space sector, but at the moment its total value is still lower than the aeronautical sector (25% vs. 5%). For that reason, all the participants were eligible to give an elevator speech, providing a general idea of which field they were pioneers, and which type of collaboration agreements they were searching for to strengthen the space sector in the region.

“All the participants were eligible to give an elevator speech, providing a general idea of which field they were pioneers.”

Javier Benítez, current President of EUROAVIA Sevilla, attended this big event as the representative of EUROAVIA Sevilla. He had the opportunity to give an elevator speech, which gave the association the chance to gain more visibility in the Spanish Space Sector, and to establish contact with prospective new partners or sponsors!



Javier Benitez presenting AS Sevilla

As a farewell, this could be a pretty well summary: The sky is just the beginning!

ABOUT THE AS: AS SEVILLA

AS Sevilla was founded in 2008 and is based at the Escuela Técnica Superior de Ingeniería, Spain.



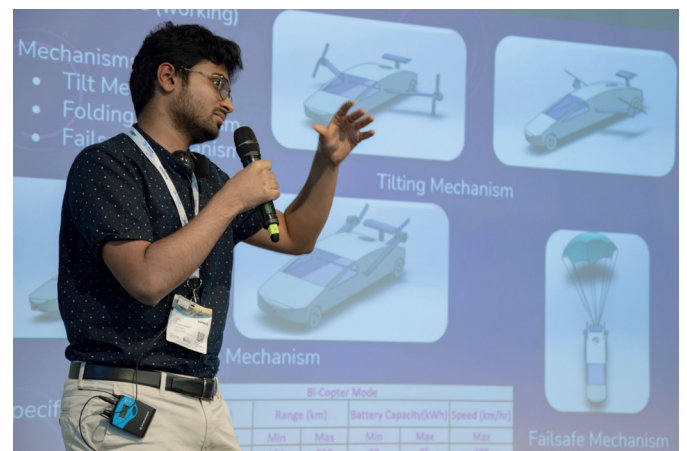
Rothorton 2021

by AS Aachen

ROTORTHON - inspired by the known and popular format of the HACKATHON, it aims at rapidly developing concepts which tackle some of the most pressing contemporary issues.

Our industry partners and patrons of the challenges identify core problems (like the raging wildfires in the south of Europe for last year's online challenge) and formulate a challenge which takes into account several dimensions (like regulatory frameworks, emerging technologies, etc.).

After a diligent selection process, this challenge is presented to three teams, who subsequently are given a predetermined amount of time (three days for the live challenge and five for the online challenge) to develop a concept satisfying all the aspects encompassed in the challenge and present a novel and promising approach for a solution.



Teams presenting their projects

Subsequently, the jury (once again made up of our partners) carefully evaluates the concepts, weighing their pros and cons, and trying to identify caveats and points of contention which require further elaboration. To address these issues the teams each have the opportunity to defend their work during a short colloquium.

Lastly, the jury ranks the concepts and crowns a winner

Last year's ROTORTHON

As industry partners and patrons Airbus, EREA and EASA have emerged, who proposed last year's challenges and judged the teams. The online challenge of ROTORTHON 2021 consisted of developing a concept study including (freehand) sketches based on VTOL Vehicles as a first step to developing highly efficient Disaster Control for extreme Situations considering all aspects of the support/rescue chain. Due to the fact, that for the award ceremony it would be ideal to arrive in person at the fair, two of the online teams from Milano arrived. Unfortunately, the team from Forlì-Bologna was not able to arrive beforehand but due to exceptional help from our industry partners, this team could be flown out to Cologne for the award ceremony.



Participants of the live challenge of the Rotorthon

The live challenge consisted of combining two and three-dimensional vehicle operations, optimising door-to-door travel concepts of the future and creating a proposal of aircraft architecture that consider the above challenges and integrates into a mid-size European city and its airport. The live challenge teams emerged from different student groups of Aachen and student associations.

The winner of the online challenge was the team "Hover Lovers" from Forlì-Bologna, for the live challenge it was "ADDI- airceleration" from Aachen.

Short interview with Andrea Curatolo from the "Hoover Lovers"- team:

"Needless to say, the next day we were already on a flight to Cologne. We arrived in a sunny Cologne on Wednesday morning, Jan and Nataša welcomed us and guided us to the European Rotors conference. The fair included more than 150 exhibitors and presented the latest

advancement in Vertical Take-Off and Landing technology. We were already happy for the unique opportunity of being there, but we did not know that the day after we would have had a bigger surprise. Indeed, on Thursday, at the closing ceremony of the EUROAVIA Rotorthon competition, they announced that our team, the Hover Lovers, won the 1st prize!

We did not expect it at all, but our team work together with our ideas gave us first place on the podium.

"We were already happy for the unique opportunity of being there, but we did not know that the day after we would have had a bigger surprise."

ROTORTHON 2022?

Yes, also for this year a ROTORTHON is planned. You will have a chance to apply from the 15th of August. This year's industry partners and patrons are Airbus and DLR. The format will stay the same with an online and a live challenge.

We will be waiting for your application!

ABOUT THE AS: AS AACHEN



AS Aachen was founded in 1959 and it's based at RTWH Aachen University. They are among the founders of EUROAVIA, and they hosted many Congresses and the last Lustrum.

PAS Gaziantep presentation

by PAS Gaziantep

Who We Are

We, as Gaziantep university Aerospace engineering students, wanted to come together and open a student society where we could do something about aviation and space technologies. And that's why we did it. We want to spend time together to have fun and gain career experience while working on our goals, and we are very excited about this. In addition to this, we will organize the first international event and we look forward to spending time with you. After this event we organized, we are almost sure that it will be a very entertaining and educational event for all EUROAVIA members.

Our Local Board

From left to right and top to bottom on the image below, we have our local board:

President; Doğukan Kızıldağ Vice President; Eylül Çalı, International Communication Manager; Ecemnur Omak, Secretary; Esin Behide Başeğmez.



PAS Gaziantep Local Board

Gaziantep

The city of Gaziantep, also known as "Antep" among the people is one of the important cities of Turkey, located at the intersection of the Mediterranean and Southeastern Anatolia Region; ranks first in terms of industry and development. It is a city of education, commerce, and industry. It is one of the oldest cities still inhabited. In addition to these, Gaziantep has a very important place in Turkey's industry and trade. Among the reasons for this are Gaziantep's location between Anatolia and the Middle East and its proximity to port cities. Gaziantep has the largest organized industrial area in Turkey and holds the first position in exports and imports. Gaziantep is also one of the leading producers of machined carpets in the world. Some people address Gaziantep as "Paris of the east" because it is a captivating and developed city in our country. The city has a rich cultural heritage because the area was continuously inhabited starting from the Paleolithic age and witnessed the domination of such powers as the Assyrians, Persians, Romans, the Byzantines, Abbasid, and the Seljuk Turks. The times of ascending for the Ottoman Empire meant the same for the city. There are many mosques, inns, baths, and dresses built during this time.



*View of Gaziantep
Credits: Natalie Sayin*

Gaziantep is a gourmet outing organized in a city. It represents our country about gastronomy on UNESCO's creative city network. In 2013, Gaziantep baklava became the first Turkish product with a European protected designation of origin and geographical indication. Antep is the centre of pistachio cultivation in Turkey and lends its name to the Turkish word

for pistachio, Antep fıstığı, meaning “Antep nut”. Some of the flavors are lahmacun, baklava, patlıcan kebab, ava kebab, antelope nesting, and stuffed meatballs.

The city is considered a worthy veteran title by Mustafa Kemal Atatürk since the liberation struggle finished with success. Antep, which promises many places to visit for the traveller has Bakırcılar Bazaar, Antelope Castle, Zeugma Mosaic Museum, and Historical House.



Gaziantep castle

Credits: Klaus-Peter Simon

Gaziantep University

Gaziantep University has 10 faculties, containing a total of 22 academic departments, with a strong emphasis on scientific and technological research.

Our Faculty, which was established in 2012, consists of Aeronautics and Aerospace Engineering, Aviation Management, and Pilotage departments. The language of instruction in our undergraduate and graduate programs is English. The students of our faculty start their education after 1 year of the Preparatory Program. There are 4-year undergraduate education and graduate education (Master and Doctorate) programs in Aerospace Engineering, on the other hand, was authorized by the General Directorate of Civil Aviation as GAUN Flight Training Academy Flight School and has been providing PPL (A), FI (A), NR (A), PIC training since 2017.

First Projects & Objectives in EUROAVIA

As GAUN Aerospace Society we plan to make our first seminar in the spring. We want every EUROAVIA member all over the world to be our witness to our first seminar. In our society, we have a diversity of people from various faculties who is curious and yearn for learning

new knowledge about space, aviation, and aircraft. So we want to share our knowledge and learn together with the help of our professors and experts in aviation and space. We will continue to make seminars, meetings, and workshops with professionals, and experts who are working in aviation and space for years. We want to represent our country and our university to international guests as we host seminars, meetings, workshops, etc.

“We have a diversity of people from various faculties who is curious and yearn for learning new knowledge about space, aviation, and aircraft.”

Motivation to join EUROAVIA

Our motivation to join EUROAVIA is, to reach more people and organize more professional and more comprehensive organizations as we organized before for future periods.

ABOUT THE PAS:
PAS GAZIANTEP



PAS Gaziantep is based at Gaziantep University, in Turkey. They have been accepted as PAS at the last EMEAC, in Bucharest.



PAS Izmir presentation

by PAS Izmir

We are Izmir University of Economics Aerospace Engineering students. At our university, we established the Space and Aviation Technologies Student Club. While studying in our field, we want to spend time having fun with our connection with you and gain experience in the career field. We look forward to meeting you at the first international event we will organise. We are sure that all our members and EUROAVIAns that will attend such event will learn while having fun!



*Izmir University of Economics
Aerospace Engineering*

Credits: Izmir University of Economics

Izmir is located in the Aegean region of Turkey. Izmir has a gulf and a peninsula. It is the third most populous city in the country. Its population is about four and a half million. Izmir has unique features with its historical, geographical and cultural texture. It is one of the most ancient cities with a history of approximately four thousand years. As a port city that has hosted many civilizations, Izmir has important historical sites. Known as the “Pearl of Turkey”, its transportation, trade, health and education services provide important contributions to the country’s economy. International fairs are held here every year. Where maritime has developed significantly, shipping also keeps the city on the agenda with its commercial dimensions. There are important religious, historical and geographical areas in Izmir as well as domestic

and foreign tourists who come here for cultural tourism such as sea tourism.

Among the traditions of Izmir, there are indispensable morning breakfasts. Foods like “Boyoz, crispy” are among the most famous ones. People love to go hiking and fishing by the beach. Especially in the summer months, coastal and maritime operators are in a high level of relaxation. The local and foreign tourists we host in our city love to swim in the sea and meet our local food and drinks.



Izmir coastline

Credits: Hakan Tahmaz

The Izmir University of Economics was established as 2 faculties, 5 colleges and 2 institutes on April 14, 2001. The Department of Aerospace Engineering was opened in 2016. It has been operating in many social and technical fields since its establishment. Technical visits have been organised to companies such as NASA, Turkish Technic, Kale-Pratt & Whitney, Pegasus, Turkish Aviation, Havelsan, Roketsan, Tübitak/Tübitak Space, and Baykar Defense. The academic staff of our department consists of well-known and successful names in their fields.

“We are planning to organise a summit where we aim to bring together EUROAVIA members and all other aviation enthusiasts.”

As part of the Izmir International Aviation and Space Congress, which we plan to organise every year during spring, we are planning to organise a summit where we aim to bring together EUROAVIA members and all other aviation enthusiasts. We are planning to organise training events with the participation of our academic staff who are experts in their fields and Aerospace Engineers operating both in our country and in different countries, and we will reward the participating students with internationally valid certificates. Apart from Tübitak, which is an important company in the field of Defense Technologies, we will also organise technical trips and training with Turkish Aerospace Industries in our country like Kale-Pratt & Whitney, one of the Aerospace Technology companies operating in the Aegean Free Zone in Izmir. In particular in the Ciğli Second Main Jet Base, Izmir Adnan Menderes Airport thanks to the communication we have made with companies and institutions such as the Turkish Aeronautical Association Flight School.

It will be a great source of happiness for us to host EUROAVIA members from different cultures and experiences as guests in our city and at our university to enable them to participate in our events and to meet at events where we will have fun moments.

ABOUT THE PAS: PAS IZMIR



PAS Izmir is based at the University of Economics Aerospace Engineering, in Turkey. They have been accepted as PAS at the last EMEAC, in Bucharest.



INTERVIEWS

Innovation, discoveries, technological development. These ideals and values towards which we all aspire, but they cannot be achieved without hard work and dedication. In this section, you will discover the journey of experts in the aerospace and scientific sector. We thank them once more for their time and we hope that their dedication will also inspire you to pursue your dreams, as they did for us.

Interview with Paolo Tortora

by Andrea Curatolo, AS Forlì-Bologna

ABOUT THE INTERVIEWEE:
PAOLO TORTORA



Paolo Tortora is a Full Professor at the University of Bologna since 2017, carrying out his research in the field of Space Systems. His interests include small satellites and innovative spacecraft subsystems including the ground segment, and planetary exploration focusing on radio science experiments with deep space missions. Since October 2021, he is a Visiting Researcher at the NASA Jet Propulsion Laboratory, working on the LICIACube CubeSat within the NASA mission DART.

AS Forlì-Bologna (FBO): Professor, what is the goal of the LiciaCube Mission?

Paolo Tortora (P.T.): LICIACube (Light Italian Cubesat for Imaging of Asteroids) is a mission of the Italian Space Agency (ASI) and it is part of the NASA Mission DART (Double Asteroid Redirection Test), developed by Johns Hopkins University. Its objective is the realisation of the first full-scale test of the kinematic impact technique in the frame of planetary defence. The goal of the DART spacecraft, indeed, is a sensible modification of Dimorphos orbit, the natural satellite of the Didymos asteroid. The variation of the Dimorphos revolution period around Didymos will be measured from Earth

and will provide a direct measure of the impact efficiency.

DART has been launched on the 24th of November 2021 and the LICIACube CubeSat is hosted as a secondary payload during the whole interplanetary travel duration. It will be deployed about 10 days before the impact of DART on Dimorphos and will continue autonomously along its trajectory to be a direct witness, through the acquisition of images, of the impact.

LICIACube has been developed by Turin Argotec company and has two instruments onboard: LEIA (LICIACube Explorer Imaging for Asteroid) and LUKE (LICIACube Unit Key Explorer). LEIA is a narrow field of view panchromatic camera that will capture images from a long distance and with a high spatial definition, while LUKE is a wide field of view RGB camera for a multichromatic analysis of the environment close to the asteroid.



*Artist's illustration of DART and LICIACube at the Didymos system.
Credits: Steve Gribben, NASA JHUAPL*

FBO: How will the mission be carried out and why is it so important?

P.T: The mission will start with the deployment of LICIACube from its mothership DART, a few days before its impact with Dimorphos. The Didymos binary system has been chosen for its relatively close distance from the Earth ("only" 11 million km). It is made up of a primary 780 meters wide asteroid and a secondary 160 meters wide asteroid that orbits at a distance of about 1.2 km from the main one. In general, the mission is important for mainly four reasons. First of all, LICIACube will testify the success of the impact of DART with Dimorphos. Second, the images that it will capture will allow the study of the cloud of debris raised by the impact, its structure and evolution are a direct consequence of the composition of the surface material of the asteroid. The images will allow the characterisation of the site of the impact on Dimorphos's surface, obtaining measures of the dimensions and the morphology of the crater. Eventually, LICIACube will be able to observe the hemisphere of the asteroid opposite to the impact and contribute to the measurements of its dimensions and volume.

"LICIACube will testify the success of the impact of DART with Dimorphos. The images that it will capture will allow the study of the cloud of debris raised by the impact, its structure and evolution are a direct consequence of the composition of the surface material of the asteroid."

FBO: What will the role of the Radio Science and Planetary Exploration laboratory be in this mission?

P.T: A full Italian team composed of Argotec engineers and researchers from the Italian National Institute of Astrophysics, the Polytechnic University of Milan, the University of Napoli,

the IFAC-CNR of Florence and the University of Bologna will lead the LICIACube operations. In particular, the activity of the University of Bologna, carried out by the Radio Science and Planetary Exploration Laboratory host in Forlì Tecnopolo through CIRI Aerospaziale, regards the determination of LICIACube's trajectory starting from the tracking data obtained by the ground stations of the NASA Deep Space Network. The LICIACube challenge is quite complex, as it requires extreme precision and advanced skills: at a distance of 11 million km from Earth, travelling at more than 6 km per second, three minutes after the impact, the satellite will modify its trajectory and use its propulsive system to do a fly-by of Dimorphos at only 50 km of distance from it.



*DART inside the payload fairing.
Credits: Ed Whitman, NASA JHUAPL*

FBO: At the moment, is LICIACube attached to the DART mothership?

P.T: That is correct. This won't change until October, when it will be released to begin its real autonomous mission, some days before the impact of DART with Dimorphos. Some days after the launch, when the spacecraft was already distant from Earth around 2 million km, Argotec collected important telemetry data

that indicate the health status of the satellite. The battery charge was confirmed to be on its nominal value and all temperature values were aligned with those obtained by the CubeSat development team.



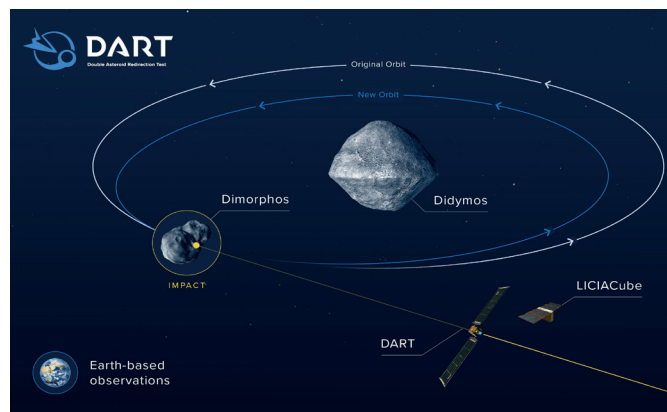
LICIACube CubeSat

Credits: Ed Whitman, NASA JHUAPL

FBO: In the next years, you will get back in the game with the HERA launch. What is it about?

P.T: Indeed, our involvement does not stop with DART and LICIACube but we are heavily involved in HERA too, a new spacecraft that will be launched by the European Space Agency (ESA) in October 2024. After reaching the Didymos binary system in December 2026, HERA will perform the complete characterisation of the asteroid, analysing, in particular, the crater generated by the DART impact. Two small CubeSats will travel onboard with HERA and, once released, they will fly over the asteroid's surface. Within this mission, I hold the Instrument Lead role of the Radio Science experiment that will measure the mass, the gravity field and the dynamics of the Didymos binary system. HERA experiments use not only the radio link between the mothership and the ESA ground station antennas, but also, for the first time ever, an innovative transceiver system between the mothership and the CubeSats. The extraordinary accuracy of the measurements of the relative velocity between the different satellites (about 50 microns per second over a minute time scale) will permit the estimation of the mass and gravity field of Didymos and Dimorphos with very high precision.

FBO: How was your passion for aerospace research born?



Infographic showing the effect of DART's impact on the orbit of Didymos B
Credits: Steve Gribben, NASA JHUAPL

P.T: During high school, I developed the idea of enrolling to a scientific faculty and I was passionate about space. I was not completely sure if I was interested more in the scientific aspects or in the technological ones, so both astrophysics and engineering were viable solutions. Then, a little bit by chance as often happens, I chose the engineering faculty since some friends from school chose that too. I studied aeronautical engineering at Sapienza University in Rome and, during my university years, I came closer to the study and exploration of space. I then completed a PhD in Aerospace Engineering, focusing on the frontier of deep space mini/micro-satellites, now under development. Today, after 20 years of service in the technological hub of Forlì, I am sure I have done the right choice.

ABOUT THE AUTHOR:
AS FORLÌ-BOLOGNA



AS Forlì-Bologna was founded in 2019 and is based at the University of Bologna on the campus of Forlì, in Italy. They organised the Aerodynamics Symposium in 2019.

Interview with Malcolm Fridlund

by Elena Tonucci

ABOUT THE INTERVIEWEE:
MALCOLM FRIDLUND



Malcolm Carl Wilhelm Fridlund, born 1952, is a Swedish astronomer. He wrote his doctoral thesis 1987 in Astronomy at Stockholm University and worked since 1988 on ESA in Noordwijk in the Netherlands as scientific project manager. Since 1996, Malcolm Fridlund has been the scientific manager of the Darwin project. At the moment, he is a professor of Astrobiology and Astronomy at the Faculty of Science of Leiden University (NL).

Elena Tonucci (E.T.): When and why did you decide to pursue a career in the field of astronomy?

Malcolm Fridlund (M.F.): Well, at one level I can give you a definitive date, 5th or 6th of October, 1957, when I was 5 years old. That was the evening when my father and maternal grandfather took me out in the evening (we lived on the outskirts of Stockholm which had a dark sky in those days) to look at the sky. They showed me some constellations and then they said “Now you are going to see something that no man has seen before” and up over the horizon came a moving star. This was Sputnik 1, the first manmade satellite to reach orbit and launched from the Soviet Union on the 4th of October. Actually, it turns out that it was not the satellite but the third stage of the launcher that also had reached orbit but that I did not learn until decades later.

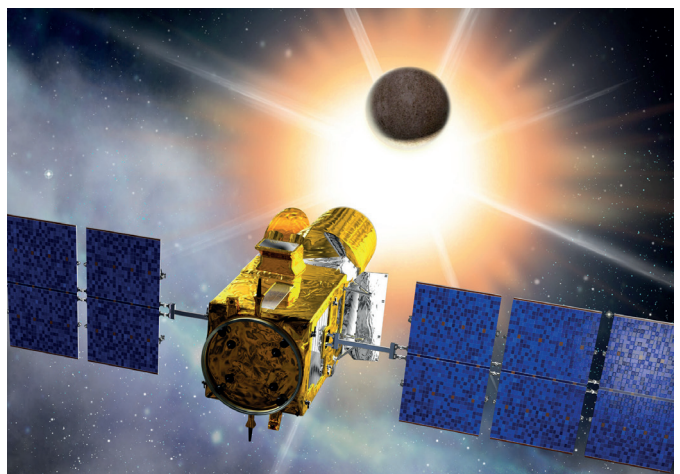
This event changed my interests. I became interested in astronomy and space and wanted first books of astronomy and space flight, then eventually equipment. I got a 6 cm refractor for Christmas when I was 9 and started out by observing Jupiter and Saturn. After that there was no turning back. At one point I was the youngest member of the Swedish Astronomical Society (10 years old) and when I was 13, I worked

for one week (Swedish schools had a program where pupils worked for 1 week in the fall semester and another week in the spring semester at “normal working places”) at the Stockholm Observatory.

I eventually ended up studying mathematics, physics and astronomy at the University of Stockholm, working for two years at the SRON in Groningen, NL between my bachelors and Ph.D studies (1979-1981) on a balloon-borne infrared telescope called BIRAP (I participated in 6 successful flights in those years). I did my Ph.D (again in Stockholm) in the field of star formation 1982–1987.

E.T: How did you start to work at ESA?

M.F: After I got my Ph.D in Stockholm in 1987, I applied for postdocs positions and the one I started in that fall was at Queen Mary College in London, UK. I had only been there six weeks when I got a message to come for an interview at ESTEC. That was like a visit to the promised land. They offered me a 2+1 year postdoc position so I abandoned my position in London (I had no qualms in doing so, since when I arrived in London I came across a sign on my supervisors’ door stating he was in Japan for half a year and if I could please look after his students!).

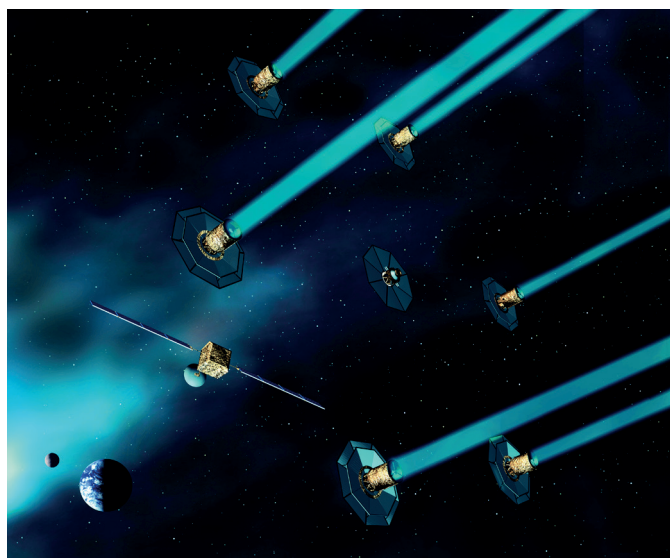


CoRoT telescope
Credits: European Space Agency

I began my position at ESTEC on the 1st of February 1988, and by November I was given an interview for a staff position (4 year+10 year+permanent contract) and I never looked back. I stayed until one year beyond mandatory retirement (at 60 years of age) and left ESA on the 1st of July 2013 after 25 years of almost 100% satisfaction.

E.T: You were the scientific and project manager of the Darwin and CoRoT projects. What was the aim of these missions and what was your contribution?

M.F: Together with the Lunar study (at the beginning of my tenure at ESA) and the PLATO study (at the end of my tenure there) these two projects were the most important work I did at the agency. During the period between 1990 and 1995 I was the study scientist of two missions aimed at astero-seismology. The second one, "STARS", acquired in the beginning of 1995 an exoplanetary element, very similar to the current CHEOPS mission, i.e. the detection of the dip in the photometric light curve of a single star (being primarily studied for astero-seismological reasons) as a potential planet would be passing in front of it. This was seen as a simple add-on to the mission until late October 1995, when Mayor & Queloz (Nobel prize in physics, 2019) reported the first discovery (through radial velocity observations) of an exoplanet orbiting the solar-type star 51 Pegasi.



*Darwin concept
Credits: European Space Agency*

Literally overnight, the "add-on" took on the role as a full partner of the mission. STARS was, however, in competition with what became the PLANCK Cosmic Microwave background mission and in April 1996 the Agency selected the latter mission as M2 of the Horizon 2000 program. Nevertheless, the exoplanets had entered the stage, and in late 1996 I was asked if I wanted to take on a preliminary feasibility study of a proposal for a mission called "Darwin".

Darwin was aimed at finding an Earth and searching for life on it which of course was seen as a mega project. Darwin built on a technology that had been proposed more than 10 years previously as the more or less only method through which it would be possible to discover the Earth orbiting the Sun at a distance of 10pc or more. Darwin outgrew itself. As late as 2004 we were convinced that Darwin would fly (after the Gaia mission) in 2014. But by 2006 it was clear that the costs and complexities had outrun what was available. Also NASA had put it on the backburner until JWST was launched.

I was then considering leaving ESA and applied for a job at ESO (which I also got) but at that time the project scientist for CoRoT was leaving for an administrative job at ESA HQ in Paris and he had recommended me to take over. CoRoT was slated for a launch less than one year in the future and I accepted at once. CoRoT launched at the end of 2006 and operated until 2013. It was a total success, and it discovered the first exoplanets from space, as well as introduced astero-seismology into the field for real.

E.T: What is the biggest challenge you faced in the development of these projects?

M.F: With Darwin, basically everything put completely new requirements on both technology and science. For instance, scientifically, we had no known exoplanets when the STARS mission was designed. When I got the job of starting the Darwin feasibility study there were a total number of two! One of the first issues was very clear: What are we going to look for? The technology that we needed to develop and implement would have depended on how exoplanetary systems look in terms of structure, size and type of planets, how common they are, etc. Essentially every expert we asked made the fo-

llowing statement: “All planetary systems will look like our own and all planets at the right distance from its star and with the same size as the Earth will be habitable and a lot of them will actually have life – otherwise we wouldn’t be here!” So we designed an instrument to look for another planet like Earth. It turned out that after discovering more than 4500 solar systems none of them look exactly like our system. We still haven’t found an analogue of our Earth.

“With Darwin, basically everything put completely new requirements on both technology and science. For instance, scientifically, we had no known exoplanets when the STARS mission was designed. When I got the job of starting the Darwin feasibility study there were a total number of two!”

Technologically, optical interferometry in space at IR wavelengths was the biggest challenge. Flying multiple spacecraft with cm precision as well as carrying out achromatic phase control of light beams at submicron precision in space was tough but doable as proven by the LISA pathfinder mission.

With CoRoT the biggest challenge was the realization that one needed a strong accompanying ground-based program to support the unique photometric observations carried out in space. It was thought before the launch that all variations detected in the photometric light curves would be due to either transiting planets or intrinsic stellar pulsations. Stellar activity would not be a problem. This was because the Sun was considered to be an average star and one used the solar activity as the “standard” for variations. CoRoT and Kepler found that the Sun is among the least active percent of stars and that essentially everything out there varies. So we had to build a ground-based support program using the top level available instruments from scratch. So actually, the problem was mainly organizing these parallel programs.

E.T: And what is the thing you are most proud of having accomplished?

M.F: Definitely being part of the development of exoplanetology from its beginning. When I got involved it did not exist at all, and I have played continuously a leading role for most of my career.

E.T: What will the hot topics in space exploration be in the next decades?

M.F: Life in the Universe, the fundamental physical laws (understanding dark matter and dark energy), and the ‘proper’ exploration of the Solar System with (manned) in situ missions/exploration. This is what I expect to happen.

E.T: Lastly, what advice would you give to young engineering students who aspire to work in the space sector?

M.F: Apart from studying aerospace engineering, I would suggest taking courses in the scientific aspects of space. And this could be anything from biology via Earth observation to all the different aspects of Solar System physics and astrophysics.

E.T: Thank you for your time.

M.F: It was my pleasure, thank you for having me.

ABOUT THE AUTHOR:
ELENA TONUCCI



Elena Tonucci is the Coordinator of the Communication Working Group. After joining AS Forlì-Bologna, she started to be active at the international level as a member of CM in November 2020. She was promoted to coordinator of the Press Unit in February 2021, and coordinator of the whole WG in April 2022.

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AIRBUS is the main sponsors of the Airbus Slosing Rocket Workshop co-organised with EUROAVIA every year.

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PACE Aerospace & IT provides trailblazing software solutions and digital strategies for dealing with the aviation industry's biggest challenges. The continuing success of the Pace-lab off-the-shelf software products is based on a strong commitment to innovation and product quality that meets and exceeds the needs of its clients. PACE turns transformative technologies into cutting-edge software products that help aerospace and aviation companies overcome their digital challenges, enabling them to do a better job every day. Its portfolio of solutions focuses on key areas that are shaping the future of aviation. Its software is designed to make key tasks in aerospace and aviation simpler, smarter, and greener. For more than two decades, PACE has worked hand-in-hand with industry leaders and aerospace research organizations.

PACE is the main sponsor of the newest challenge of EUROAVIA: the PACE Contest, an Aircraft Design Challenge whose first edition will take place during the BY 2022-2023.

Website: <https://pace.txtgroup.com/>

SimScale



SimScale, is a computer-aided engineering software based on cloud computing. It allows its users to run Computational Fluid Dynamics, Finite Element Analysis and Thermal simulations.

EUROAVIA agreed on disseminating Simscale opportunities among the members, while Simscale agreed on providing licenses for the members of EUROAVIA. These licences consist of 5000 core hours and the ability to run simulations in 32 cores and have private projects.

EDUopinions



EDUopinions helps students find their ideal studies and make informed decisions. It is a unique platform with verified student reviews where they find the best programmes and matches the right students with the right institutions based on their needs.

Aerospace Engineering degrees: How do students rate them?

by  **EDUOPINIONS**
Real Student Reviews

An aerospace engineering degree is a perfect choice if you are keen on maths, physics, and technology. Graduates of aerospace engineering degrees often work in vital sectors like aerospace, manufacturing, and data analysis, and grads are also promised high salaries. But what is studying for an aerospace engineering degree actually like? To find out, EDUopinions collaborated with EUROAVIA, the European Association of Aerospace Students, to gather student ratings on some of the top European aerospace engineering degrees. Our research shows exactly what students think about their degrees, evaluating things like course facilities, professors, and student life. But first, what exactly is an aerospace engineering degree?

What is Aerospace Engineering?

Aerospace engineering is a field of engineering focused on air and space travel. In simple terms, as an aerospace engineer, you will be responsible for building aircraft and spacecraft. You could get a job in the design department or be responsible for the actual manufacturing process. This means that during an aerospace engineering degree, you will spend some of your time in lectures, building an advanced knowledge of maths and physics, and the rest of your time in labs and workshops. You will take part in hands-on projects, including internships, and complete written exams throughout your course. Because of the high level of maths and physics required in aerospace engineering, these degrees are competitive. For many of the top European aerospace engineering degrees, only students with the top school and college exam results will be accepted.

What Students Think About Aerospace Engineering Degrees

To find out what students think about their aerospace engineering degrees, we gathered information from EDUopinions's verified student reviews. Students who write a review on EDUopinions are required to rate their course and university on six different factors. In general, we can see that students find their professors and university accommodation some of the best aspects of their course. However, they generally score their degrees lower for student life and facilities. This may be because aerospace engineering is an intensive course, with up to forty hours of in-class and independent study time per week. Good facilities are also vital for a technical degree such as this, meaning students will often be more critical of underused or below-average facilities at universities.

The Best Aerospace Engineering Degrees in Europe

The best aerospace engineering degree in Europe can be found at the University of Cambridge, UK. This exists as a specialisation on their four-year MEng course. You will begin to specialise in years 3 and 4 of your degree, and by your final year, you will be participating in a major individual project in aerospace engineering.

The rest of the top 10 best aerospace engineering programmes in Europe is as follows:

- Delft University of Technology, the Netherlands
- ETH Zurich, Switzerland
- Imperial College London, UK
- University of Oxford, UK
- Politecnico di Milano, Italy
- EPFL, Switzerland
- RWTH Aachen University, Germany
- Technical University of Munich, Germany
- The University of Manchester, UK

What Can I Do with My Degree?

We have already mentioned that graduates of aerospace engineering degrees can work in a wide variety of technology sectors. For many graduates, this will mean a job directly in aircraft or spacecraft development, but others pursue a career in another area of engineering. On average, just under 50% of aerospace engineering graduates find a career in engineering. The remaining number may work in business, IT, or other technical sectors. Popular employers of aerospace engineering students include aerospace agencies like NASA, automotive companies like Formula 1 and Rolls-Royce, and aircraft companies like Airbus, Boeing, and British Airways. Aerospace engineering is classed as a STEM subject, meaning graduates of these degrees are highly employable. For example, STEM subjects scored highly in EDUopinions's own list of the best degrees for job prospects. Data from the UK shows that two-thirds of graduates find a full-time job within six months of graduating, earning an average of £26,000.

Conclusion

Aerospace engineering is a valuable subject that can lead to plenty of career opportunities. Additionally, it is clear that students with these degrees have a high opinion of their courses, especially when it comes to their classes and professors. When it comes to choosing an aerospace engineering degree, you should carefully weigh up the value of both student reviews and academic rankings. The best decision you can make should take into account both of these measurements, as well as other independent research you have completed.

PARTNERS & COLLABORATORS

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Ansys is an American company that develops and provides engineering simulation software, applicable in many fields and useful for product design, testing and operations.

For more than 50 years, Ansys engineering simulation software has enabled innovators across industries to push boundaries using the predictive power of simulation. The next great leaps in human advancement will be powered by Ansys.

The collaboration between Ansys and EUROAVIA aims to make their software accessible to students, by its application during a series of online workshops and by staying tuned with all the activities which might be interesting for the participation of both parties such as International Events.

Website: <https://www.ansys.com/>

Aviation for All (AviAll)



Aviation for All

Aviation for All is an association that promotes and strengthens the contribution of its members in all aviation and aerospace career fields and interests by connecting, engaging and inspiring. They provide educational outreach programs, mentoring programs, scholarships, annual Aviation for All recognition awards, an annual Aviation for All conference, and networking events. Their members include Pilots, Maintenance Technicians, Air Traffic Engineers, Air Traffic Controllers, Business owners, Air Force personnel, Journalists, Flight attendants, Dispatchers, Security Agencies, Students, Aeromedical officers, Airport managers, and many others.

There is current collaboration between AviAll and EUROAVIA of mutual benefit, consisting mainly in attending events of interest organised by either of the associations.

Website: <https://aviation4all.org/>

CEAS



The Council of European Aerospace Societies (CEAS) is an International Non-Profit Association, with the aim to develop a framework within which the major Aerospace Societies in Europe can work together. It presently comprises twelve Trustee Member Societies with a combined roughly 35.000 individual members: 3AF (France), AAAR (Romania), AIAE (Spain), AIDAA (Italy), CzAeS (Czech Republic), DGLR (Germany), FTF (Sweden), NVvL (Netherlands), PSAA (Poland), RAeS (United Kingdom), SVFW (Switzerland), TsAGI (Russia), and four Corporate Members: EASA (European Aviation Safety Agency), ESA (European Space Agency), EUROAVIA and EUROCONTROL (Belgium).

Thanks to CEAS, EUROAVIA members can have access to this information also through "The Quarterly Bulletin of the CEAS", promoting international aerospace upcoming events, sciences, aerospace & defence security topics, technical presentations, workshops, conferences, and news from the aerospace sector.

Website: [Website: https://ceas.org/](https://ceas.org/)

DELL



Dell is a world-leading technology company, compromised with the development of quality and affordable technologies for everyone.

Collaboration: The basis of the collaboration between Dell and EUROAVIA is framed in the 'Dell Advantage Programme, an initiative that provides students with discounts on Dell products and out of which we can receive some profit as well.

Website: <https://www.dell.com/>

GMC



Global Management Challenge (GMC) is a strategic management competition for managers and university students. The competition is held in different rounds divided by country, where teams between three and five members compete in order to get the best result.

They have been developing the best business simulation in the world since 1980 to make the most participants' time. They have managed to sum up the overall operation of a company in just 77 numerical decisions, which allows them to have a simple and clear training tool in which the time spent is used in making decisions, not in entering data.

EUROAVIA has been collaborating with them since 2019, and, more specifically with GMC Spain.

Website: <https://www.gmcspain.com/funcionamiento-global-management-challenge/>



EASA



The European Aviation Safety Agency EASA is an Agency of the European Union. Its mission is to promote the highest common standards of safety and environmental protection in civil aviation. It monitors the implementation of standards through inspections in its Member States and provides the necessary technical expertise, training and research.

The main tasks of the Agency include, but are not limited to:

- Rulemaking: drafting aviation safety legislation and providing technical advice to the European Commission and to the Member States; Inspections, training, and standardisation programmes to ensure uniform implementation of European aviation safety legislation in all Member States;
- Safety and environmental type certification of aircraft, engines and mechanical parts;
- Approval of aircraft design organisations worldwide as and of production and maintenance organisations outside the EU;
- Data collection, analysis and research to improve aviation safety.

They are a strong collaborator for the association bringing multiple opportunities and contacts from other companies and organisations that may be of interest to EUROAVIA.

Do you want to be the part of the future of aviation? It starts here!

Careers | EASA (europa.eu)

Make sure to subscribe to EASA to follow some exciting news on what we are doing:

Facebook and LinkedIn: EASA - European Union Aviation Safety Agency

Twitter: @EASA

EIIL



The EIIL - European Institute for Industrial Leadership helps industrial companies to attract, retain and develop their next-generation leaders. Together with its global network of members, partners and individuals, the EIIL researches issues these leaders will face in their workplace in the future. Knowledge is generated by research consortia and shared within an active network through conferences and developmental workshops.

The agreement consists of mutual support for activities held by both sides, furthermore EIIL reserves places for students of EUROAVIA in their main events, such as Ent-Ex workshops and EIIL Conferences.

Website: <https://eiil.net/>

ITAérea



ITAérea is a business school specialising in Airports and Aeronautics management. They count on professionals of the sector as professors and have partnerships with UNITAR (ONU) and CIFAL.

The agreement reached consists of the mutual compromise of inviting each other to events or activities organised by the other party. ITAérea also offers some webinars on various topics to the EUROAVIA members.

Website: <https://www.itaerea.com/>

ISU



The International Space University (ISU) develops the future leaders of the world space community by providing interdisciplinary educational programs to students and space professionals in an international, intercultural environment. ISU has been since 1987 the sole university worldwide devoted entirely to space education. Today, ISU is made up of a unique network around the world with a Central Campus in Strasbourg, hubs in the USA and the Asia Pacific region, and partnerships with leading space organizations worldwide. ISU is a 35-year success story with 5400 alumni shaping the international space ecosystem in 110 countries, including astronauts and entrepreneurs along with current and former space industry and government leaders. ISU is a private non-profit institution.

This agreement allows EUROAVIA members to take advantage of discounts of over 50% for ISU courses as well as enables the organisation of joint events, the invitation to events and the promotion of the activities organised by both associations.

Website: <https://www.isunet.edu/>

MathWorks



MathWorks is an American corporation specialising in mathematical computing software. Its major products include MATLAB and Simulink, which support data analysis and simulation.

There is a current established collaboration between EUROAVIA and MathWorks in order to deliver a series of webinars for diverse challenges, such as the ASRW.

Website: <https://fr.mathworks.com/>

ISC



The International Space Convention (ISC) is an international gathering of high profile representatives from international space agencies, companies, and institutions. The last edition of the ISC took place in Bursa, Turkey, between the 9th and the 11th of September 2022, but online participation was also enabled. ISC 2022 included several dozens of world-renowned speakers from top space agency officials and representatives, astronauts, scientists and engineers, and around 50,000 attendees from around the world in-person and online.

EUROAVIA established a collaboration with the ISC during this Business Year to get more visibility for the Association and to provide 150 free places for our members.

Website: <https://www.altaireenterprises.store/>

NEREUS



NEREUS serves as an advocate for matters related to regional space uses, highlighting the regional dimension of European space policy and programs. NEREUS' core mission is to spread the use and understanding of space technologies for the benefit of regions and their citizens. While supporting local and regional authorities (LRAs), their stakeholders, and companies to better exploit the potential of European space programmes, NEREUS aims at increasing the understanding and awareness of space on earth, as well as spreading its applications.

This year EUROAVIA has recovered contact with NEREUS thanks to an old member of the IB. The partnership consists of a mutual exchange of visibility, with the possibility of the members of both parties to join specific events.

Website: <https://www.nereus-regions.eu/>



ICAS



The International Council of the Aeronautical Sciences is a non-political and non-profit organisation whose aim is to provide regularly scheduled events and publications that enable a better understanding of engineering science and practice and an improved level of cooperation among aeronautical professionals from around the world.

Among the activities they organise, it is worth highlighting the biennial congress of ICAS, that took place this year in Stockholm, Sweden, between the 4th and the 9th of September 2022. The next edition of this congress will be held in Florence, Italy, between the 9th and the 13th of September 2024.

Partnership: This agreement consists of mutual support for the activities held by both sides as well as an invitation for EUROAVIA's selected members to their congresses. Additionally, EUROAVIA has been given two free-of-charge places for the ICAS 2022 Congress celebrated in Stockholm in September 2022 (for International Board and Business Relations WG representatives).

Website: <http://icas.org/>

JEE

Junior Enterprises Europe is the umbrella organisation that represents, integrates, and supports the European



Network of Junior Enterprises. The 371 member organisations with over 33.000 students in Europe delivered 5100 projects to clients in 2021. The aim of Junior Enterprises Europe is to empower students to be capable and committed to generating a relevant impact through the Junior Enterprise concept.

Junior Enterprises are non-profit student organisations that provide services for companies. Junior Entrepreneurs combine theoretical university degrees with the practical experience from running an organisation and delivering a project to clients in the business world. Students from Junior Enterprises are uniquely prepared to enter the labour market.

Both EUROAVIA and JEE agreed on providing mutual help and advice, collaborating in joined events, and mutual exchange of visibility.

Website: <https://junioenterprises.eu/>

ODIN Drones

ODIN Drones is a start-up that offers services and operational solutions with the usage of drones to a variety of sectors that might require them: security, agriculture, marketing, social events, etc. They also offer drone-pilot formation according to the European Regulations. Right now, they are based in Spain, but they wish to extend themselves to Europe.



The services of ODIN Drones are offered in our approaching speeches to companies of mutual interest, so that if at the end of the year a profit is perceived by them, EUROAVIA would receive a part of that profit. In this case, they would be upgraded to the Sponsors category.

Website: <https://odindrone.es/>

KIMbcn

KIMbcn was founded in 2007 with the aim of stimulating the knowledge economy and promoting Open Innovation in Catalonia. KIMbcn's main purpose is, therefore, to align industry expectations and research and technological developments through the exploration of Open Innovation opportunities. Following this purpose, KIMbcn has, in the last few years, invested its efforts in promoting such advances in the field of space technologies, building an important portfolio of activities and services.

The agreement between both parties consists of the invitation and support of events organised by EUROAVIA and KIMbcn, including the co-organisation of the Ideathon.

Website: <https://kinglobal.com/en/>



Knowledge
innovation
marketbcn

Pegasus



The Partnership of a European Group of Aeronautics and Space Universities is a network of aeronautical universities in Europe created to facilitate student exchanges and collaborative research between universities.

This year, EUROAVIA has recovered the collaboration with the PEGASUS Student Conference, by being given three places for members of the Association to send their research papers and participate in the conference.

Website: <https://www.pegasus-europe.org/network/>

Portugal Air Summit



Portugal Air Summit is one of the biggest aerospace events of its kind in Europe and the biggest in the Iberian Peninsula. Recognized in 2019 by ICAO as an international case study for its key role in enabling regional resources in aerospace, the event has come to mark the international agenda of the sector, fostering close ties with stakeholders such as ICAO, IATA, and the PGS together with NASA and ESA. Under the central theme “flying for a world of opportunities”, this year will focus on the recovery of the sector following the COVID pandemic.

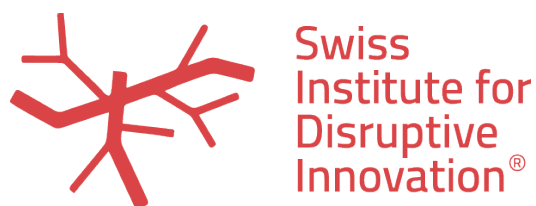
A space of excellence that offers B2B networking, a physical and virtual exhibition space, a high-quality conference programme, the annual IATA Global Training Conference, and product demonstrations throughout October 12th-15th, via live-streaming to 32.000+ remote participants from over 60 countries and physical attendees. The event will feature workshops, airshows, and the Portugal Air Fashion Show.

The event will deepen stakeholder ties with defence institutions and ministries, airlines, aircraft manufacturers, and MRO service providers. An intensive internationalization effort is also in place, ensuring representation from various delegations around the world to provide networking opportunities in the United Kingdom, United States, Israel, Italy, and other countries.

Thanks to this partnership, EUROAVIA has a free-of-charge place during the 2022 edition (normal price around EUR 1000), to represent and bring visibility to the association. In exchange, EUROAVIA promotes the event among its members and partners. In addition to this, EUROAVIA will perceive between 10% and 15% of the funds gathered from the sponsors whose contact was shared through this partnership.

Website: <https://portugalairsummit.pt/en/>

SIDI



The Swiss Institute for Disruptive Innovation challenges itself by benchmarking with state-of-the-art technology and update constantly its activities to the latest innovations and R&D results. The institute aims to turn future threats into opportunities by analysing emerging trends and technologies with the potential to disrupt existing processes and produce meaningful change in economic and social systems. It believes in a future defined by the convergence of technologies but governed by humanity. SIDI has been in business for years developing multiple projects in space economy, healthcare, VR/AR/XR, and artificial intelligence to create a positive impact on the social system through the cross-contamination of expertise. One of its most important projects is the e-learning School of Disruption. It aims to translate complex know-how into easy-to-understand content, always accessible and updated, to allow everyone to acquire the skills they need to seize the next future's emerging opportunities. Thanks to the partnership with the International Space University, we also provide Space-related courses, held by renowned instructors in their fields. Courses go from Space Architecture & Design to Space Biotechnology. We have also developed courses dedicated to Quantum Computing and 3D Printing of Buildings. Additionally, the LinkedIn private group aims to create a community of people that collaborate in building the future. At the end of the course, a certificate of participation is awarded which can be shared via social media and in the CV.

A new partnership was established in March 2022. The agreement describes the mutual exchange of visibility between EUROAVIA and SIDI.

Website: <https://www.disruption.school/>

Space Economy Academy



The Space Economy Academy was awarded the Best Educational Institution in the Space Sector by Galileo Masters in 2021. With multiple partners, like the European Space Agency with the BIC program and EUROAVIA, and listed in the European Commission register, it embraces the modern model of education, which is delivered 100% online, enhancing space education's accessibility to anyone in the world, with the objective of empowering the Space Leaders of tomorrow. Based on a new innovative method, the Space Economy Academy method improves the traditional education approach, with the introduction of top Lecturers directly from the Space Industry and Forbes list makers. The lectures bring direct experience into the classes: the case method is much more impactful, and it brings an enormous added value to the education of the students.

With respect to other institutions, the Space Economy Academy operates with very small classes, ideal to facilitate interaction between Lecturers and students, allowing the possibility to address individual questions and tailor the education to specific needs. Students are exposed to a competitive edge in today's fast-paced business world. They join an international community of lecturers and peers, with the possibility of establishing an important network of connections, potential Business partners, and friendships that will enrich one's life personally and professionally.

The agreement has been renewed with new and updated points to be considered, such as a 25% discount on the master's degree in Space Economy and Short Courses to EUROAVIA's members among others.

Website: <https://seac-space.com/>

FUTURE AND BEYOND SPONSORS

Antigravity



ANTIGRAVITY

Antigravity S.L. is a Spanish company whose main activities include R&D in the aeronautical and aerospace sector.

ALTER Technology



ALTER TECHNOLOGY dominates the market of micro and optoelectronics services in engineering, procurement, assembly, and test in space and harsh environment sectors.

Moreover, it offers innovative solutions covering front-end engineering tests, wafer and dice probing and final tests, as well as wafer sawing, packaging, and assembly. Their services also extend to equipment and systems testing and certification in fields like small satellites, drones, security, transport, and nuclear.

ITAérea

Our partner ITAérea also sponsored the first edition of the Future & Beyond event.



Ansys



Our collaborator Ansys also sponsored the first edition of the Future & Beyond event.

DEIMOS



Deimos Space SRL (DMR) is a Romanian company that develops software and hardware solutions for the aerospace industry. DMR was founded in October 2013 and it is part of the Deimos Space group, which comprises five companies located in several European countries.

DMR has a wide experience in the European space industry, mastering diverse areas such as atmospheric flight mission analysis, end-of-life re-entry analysis, guidance, navigation & control, onboard software, and ground segment as a result of the involvement in multiple ESA activities in the field of earth observation, space transportation, generic technologies and techniques, space safety and exploration.

Website: <https://elecpor-deimos.com/es/>

EUROCONTROL



Make your first professional experience unforgettable & support European aviation at EUROCONTROL in one of the various Air Traffic Management & Technological domains. Our expertise spans research, development, environmental sustainability, operations, and performance monitoring related to Air Traffic Management (ATM) services, operations and systems.

Established in 1960 and headquartered in Brussels, EUROCONTROL is an intergovernmental organisation with 41 Member States and 2

Special Agreement States. As a technical organisation supporting European aviation, we are committed to building, together with our partners, a Single European Sky and the associated systems and services to deliver the air traffic management (ATM) performance required for the twenty-first century and beyond.

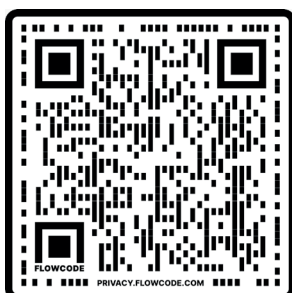
Our staff is made up of over 1,800 professionals, spread over four sites (Brussels, Maastricht, Brétigny and Luxembourg), deploying their expertise to optimise the network's Air Traffic Management and tackle the associated technological and environmental challenges.

We are always on the lookout for dynamic and enthusiastic trainees in:

Air Traffic Management domains: Aeronautical Engineering, Air Transport Research and Innovation, Air Traffic Flow Management Operations, Airspace Design, Airports Management, Aviation Sustainability, Air Traffic Control, Air Traffic Management Project Management, Aeronautical Data Management, etc.

Technological domains: Business Analysis, Cloud, Cyber Security, Data Modelling, Data Sciences, Computer Sciences, Enterprise Architecture, IA, Information Technology, Release Management, Security Architecture, Software Development, Systems Testing and Validation, etc.

Administrative domains: Business Administration and Management Assistance; Finance, Economics and Accounting; Law; Communication and Marketing, etc.



Discover their careers with this QR code!

Website: <https://www.eurocontrol.int/>

Flying Basket



FlyingBasket is a drone manufacturer specializing in heavy-payload cargo drones. Over the last seven years of activity, from prototyping to production, the matured expertise converges into the FB3 cargo drone. Developed according to safety and regulation compliance this heavy-lift drone is at the top of its category in terms of quality and capability. With 8 rotors and a 100kg payload capability, it's used to lift and transport goods, materials, and equipment in different applications and environments. Designed to replace helicopters or cranes for lifting and transportation the FB3 drone is operated exclusively by our experienced pilot to provide our customers with drone services that are efficient, sustainable, and safe.

Website: <https://flyingbasket.com>

GNK Fokker Engineering



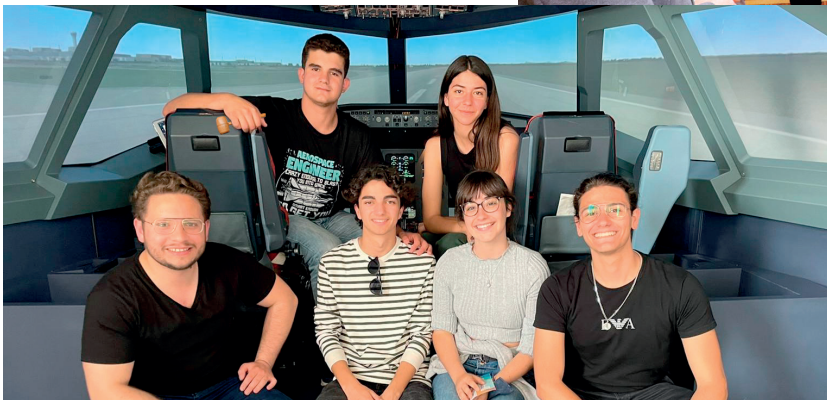
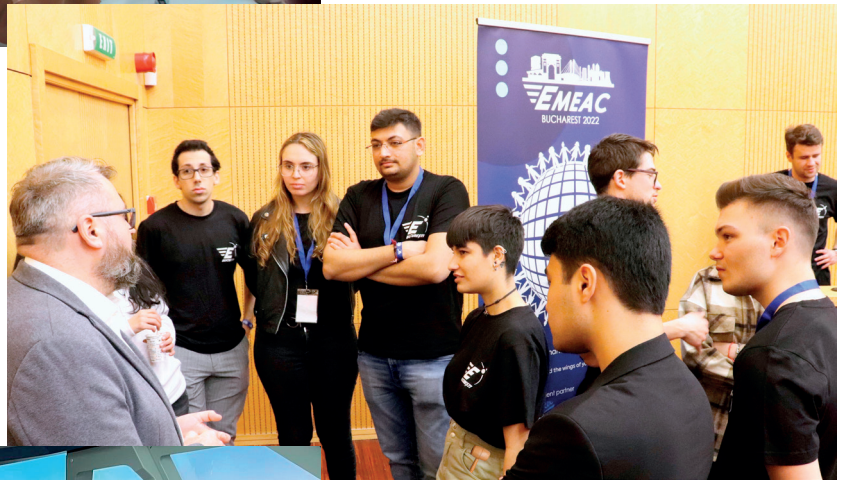
GKN Fokker Engineering was founded in 2004 and is based in Bucharest. They are a GKN hub that supports the business with all aerospace engineering tasks needed. They serve the complete aircraft design & development lifecycle from proposal to concept, from production assistance to in-flight support.

Passionate about their work, they succeed in all aerospace engineering tasks, and serve the complete Aircraft Design & Development Life Cycle from proposal to concept, and from production assistance to in-flight support.

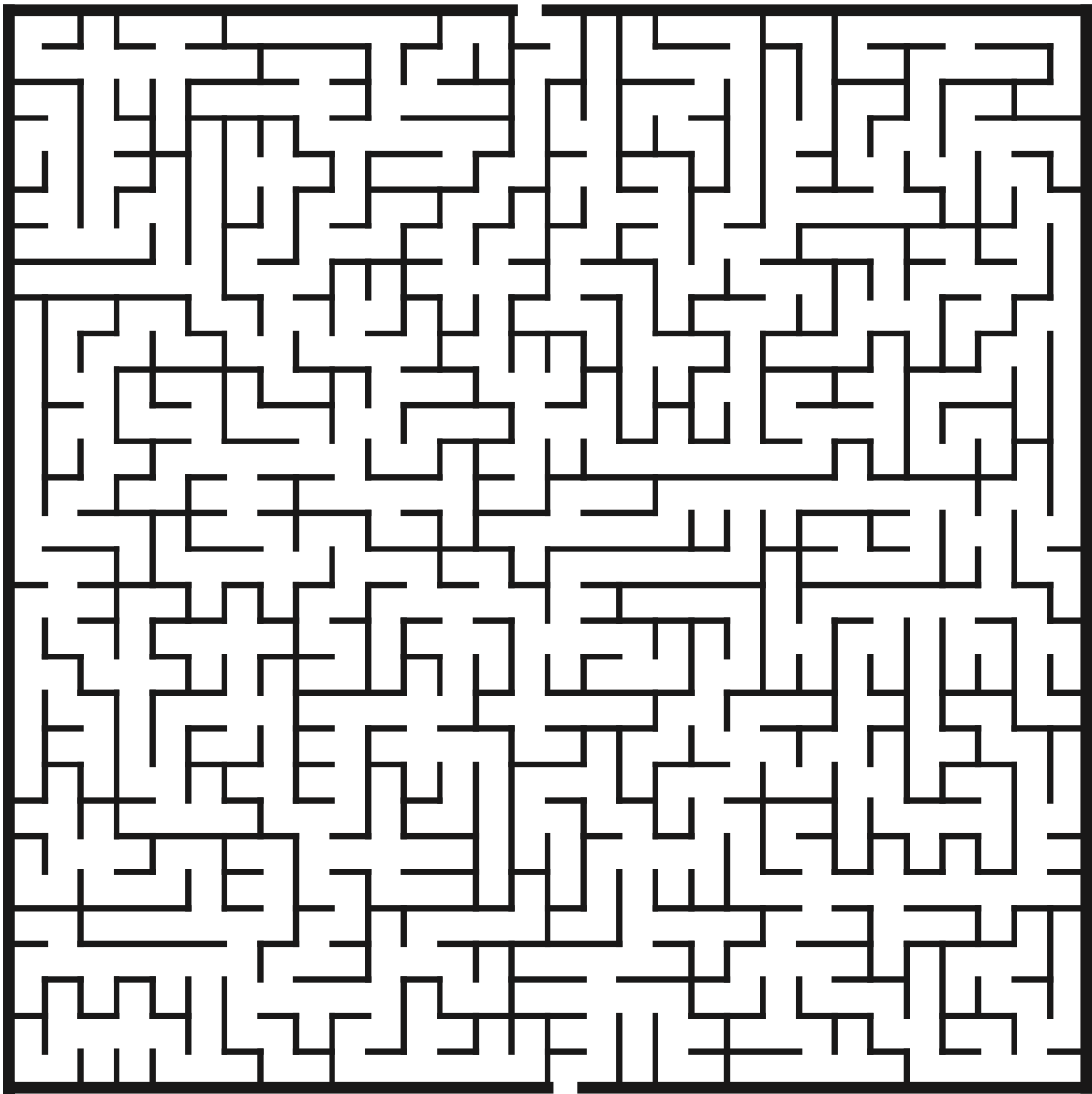
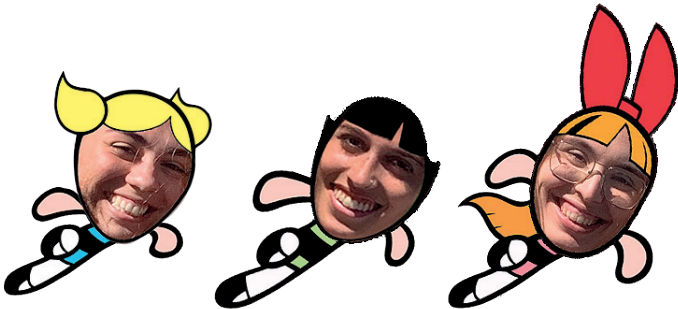
Website: <https://www.gknaerospace.com/>

GAMES

Where's Hamm-y? The EUROAVIA Hammer and its stamp have been travelling all around Europe this year thanks to the comeback of physical events. Will you be able to find it in these pictures?



FIND THE HAMMER: OH NO! The hammer got lost... again. As you may know, the IB can't proceed with the congress unless they find it. Will you help our Powerpuff Girls get it back? We're sure you don't want Francesca to get angry...



LIST OF (P)AS/(P)AM

- AS AACHEN	- AS FORLÌ-BOLOGNA	- AS PARIS
- AS ANKARA	- PAS GAZIANTEP	- AS PATRAS
- AS ATHENS	- AS ISTAMBUL	- AS PISA
- AS BEOGRAD	- PAS IZMIR	- AS RZESZOW
- AS BORDEAUX	- PAS KAYSERI	- AS SEVILLA
- AS BREMEN	- AS KOCAELI	- PAS STOCKHOLM
- AS BRAUNSCHWEIG	- PAS KYIV	- AS STUTTGART
- AS BUCUREȘTI	- AS LEUVEN	- AS TERRASSA
- PAS CASTELLDEFELS	- AS LISBOA	- AS TAMPERE
- AS CÁDIZ	- AM JALANDHAR	- AS TOULOUSE
- AS CLUJ-NAPOCA	- AS MADRID	- AS VALENCIA
- AS COVILHÃ	- AS MÜNCHEN	- AS ZAGREB
- AS DELFT	- AS NAPOLI	- AM ZEWAIL CITY
- AS DRESDEN	- AS OOSTENDE	

LIST OF ACRONYMS

ACC	Air Cargo Challenge
AM	Adjunct Member
AMEAC	Annual Meeting of the EUROAVIA Congress
AS	Affiliated Society
AS WG	Affiliated Societies Working Group
ASRW	Airbus Sloshing Rocket Workshop
BR WG	Business Relations Working Group
CM WG	Communication Working Group
DIB	Designated International Board
DN WG	Design Working Group
EMEAC	Electoral Meeting of the EUROAVIA Congress
ExMEAC	Extra Electoral Meeting of the EUROAVIA Congress
ETS WG	EUROAVIA Training System Working Group
FoWo	Formation Workshop
HR WG	Human Resources Working Group
IB	International Board
IE	International Event
IE WG	International Events Working Group
IT WG	Information Technology Working Group
PAM	Prospective Adjunct Member
PAS	Prospective Affiliated Society
REC WG	Regulations and European Connections Working Group
TNT	Train New Trainers



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PEGASUS





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