

# *We are* UMBRA GROUP



The point of the President

**Business culture helps  
to build a better future**

**Sustainable innovation**

**Focusing on the future  
of Aerospace**

**Coming soon: the new  
sandstorm simulator**

“

Perfection is achieved, not when there is nothing more to add, but when there is nothing left to take away.

Antoine de Saint Exupery

Editorial Concept

Sara Bordoni

Translations

Itaca Servizi Linguistici s.n.c.

Graphic Design and Layout

You-n | Agenzia di Comunicazione

Printing

Tipografia Folignate

Photo Credits

Giovanni Galardini

Google

Getty Images

Written Content

Antonio Baldaccini

Antonello Marcucci

Matteo Adolfo Notarangelo

Luca Bossi & Giuseppe Biagetti

Beatrice Baldaccini

Sara Bordoni

Paul Johnson

Daniele Frillici

Nick Schmidt

Marylynn McPhail

Bastian Willenbücher

Barbara Bianconi

Antonio Alvino

Moreno D'Andrea

Rita Morettini

Gian Pietro Bordoni

Gabriele Pampanelli

Amanda Young

Luca Bossi

Il Direttivo CRAL

# Contents

04	THE VOICE OF THE CEO Finding the Opportunity within Change	22	Highlights from Saginaw
06	THE POINT OF THE PRESIDENT Business culture helps to build a better future	24	New addition to the Team
08	Focusing on the future of Aerospace	26	Renewal for growth
10	A window onto the industrial unit	28	Coming soon: the new sandstorm simulator
12	Sustainable innovation	30	Research projects: the challenges completed and the new Clean Aviation
14	Customer Focus and Brand Reputation	32	Quality: a common industrial and A&D line
16	MRO Europe is back!	34	UMBRAGROUP 4 wellness
18	Focus on 2022		CONGRATULATIONS
20	New business goal	36	New hires, just married and births

# Finding the Opportunity within *Change*



Dott. ANTONIO BALDACCINI  
CEO & President UMBRA GROUP

After eight intense, wonderful years as UMBRA GROUP's CEO, I have decided, as I have informed the shareholders and the Board of Directors, to embark on a new chapter in my life. The objectives with which I was entrusted at the start of my mandate have been achieved, and so the time has come for me to "pass the baton" so UMBRA GROUP can begin a new management process that is appropriate for the great social and market changes taking place. I have wonderful memories of this incredible journey that will remain impressed forever in my mind and heart.

I am certain that I have made my contribution to the Group's positive trend with the support of everyone, always keeping in mind the values transmitted and pursued by my father Valter, the acknowledged founder of UMBRA GROUP. We have demonstrated that together we can go beyond the usual, established habits, and interpret the needs of the present. Every day in

UMBRA GROUP, we are all given the opportunity to realize our dreams and those of our families. Each and every employee will have the responsibility to cultivate and protect everything good that has been created in these past eight years. The strategic orientation for the future has already been shared with the Board of Directors and future CEO, Matteo Notarangelo.

Through sound relationships with our customers, constructive relations among employees who work as a close-knit team, improvement of the processes, and high-quality products, we have generated the value necessary for the well-being of everyone, the community, and obviously our industrial group.

Thanks to the UPS (Umbra Group Production System), today all the plants of the Group are working together using a single, shared language, and this in itself produces evident results in terms of simplification, efficiency, effectiveness, and



“

*Improve yourselves every day.  
Be leaders and not just doers.  
Always push beyond your  
expectations and limits.*

”

control. This integration will be a condition that will facilitate the consolidation of a team dedicated to high-level performance, ready to expand in the global market.

I would like to share with you a thought that has always guided me all these years: "Improve yourselves every day. Be leaders and not just doers. Always push beyond your expectations and limits." I am convinced that constant adaptation and a firm belief in one's potentials, with the awareness of being supported by a strong and consolidated value system such as that which distinguishes UMBRA GROUP, will lead step by step to the success of our company.

I want to thank each and every one of you for this fantastic professional and life experience! I wish you all a very Merry Christmas and happy, prosperous New Year.



# *Business* culture helps to build a better *future*



**ANTONELLO MARCUCCI**  
President of the Board of Directors UMBRAGROUP



After two years, we're still in the midst of a crisis marked by the painful and dramatic repercussions of the COVID-19 pandemic. During these times, we've seen all our social and economic weaknesses come to the fore, shortcomings caused by pursuing growth without care for the great issues of the common good, such as health and the environment – despite knowing that we cannot stay healthy in an unhealthy environment [to quote Pope Francis]. To all this we must add social inequalities and educational and cultural divides.

Over the last decade we have lived under the illusion of an unstoppable progress of globalization with positive effects for all. Now is the time for a radical paradigm shift for a fairer, more sustainable economy, one that is circular and inclusive – in short, a more “human” economy. As drivers of positive change, businesses must also be responsible for this transformation within a broader strategy, one that connects culture to production processes and increases productivity with positive effects on salaries, so that a better balance is achieved. This is fundamental not just for economic growth, but also for better civic life. We're confident that, as in many other situations, we'll overcome this long period of hardship thanks to the high quality of our products and our flexibility. What's clear is that our companies' histories are an invaluable repository of this ability to adapt and be resilient. And this is even truer today, on the frontiers of robotics, artificial intelligence, mechanics, and digitization.

We're living in the time of the “knowledge economy”, in which managerial culture and long-term training are crucial assets for balanced growth. In times of such profound change, we need to build new

cultural dimensions that put human beings at their center, in keeping with the best paradigms of sustainable environmental and social development. Therefore, our efforts to give concrete shape to a new industrial and digital humanism, to values that must inspire the economy, society, and politics, are worthwhile efforts.

*And these values must lead us towards a complete humanism, in which the balance between work and quality of life, philosophy and technology, algorithms and knowledge leads us to build a better form of business and thus of companies.*

In conclusion, in response to the revolution that's colliding with the essential dilemmas of human existence, we need to make a creative effort and re-imagine the presence of human beings in this world.



# Focusing on the future of *Aerospace*

**Matteo Adolfo Notarangelo**

Group Executive VP Strategy Development & Sales UMBRAGROUP  
Chief Operating Officer OEM UMBRAGROUP S.p.A.

In 2021 the decrease in aeronautical volumes in the civil aviation sector caused huge difficulties for the sector's companies. Among these, UMBRAGROUP, too, had to deal with a fall in volumes which, for several major customers, totaled over 60%.

*Nevertheless, the Aerospace Team took this challenge as an opportunity for looking into new segments, products, and technologies. The Commercial, Engineering, and Operations Teams worked together to speed up new opportunity acquisition, development, qualification, and industrialization times.*

Toward year end, we decided to share some of the successes and milestones reached during the year. In certain ways they represent the seed of what the growth path will become in the coming years.

From a Commercial standpoint, thanks to the work of the whole global sales team, agreements were reached for long-term contract renewals with Safran, for the B787 brake screws for five years [2022-26], with Boeing, for projects with Umbra Cuscinetti Inc. for 2023-27, with Parker also for 5 years, mainly for the Linear Motion projects, and lastly with Moog at the global level and for 5 years for all the UMBRAGROUP sites. The total value amounts to over 300 million dollars.

From the Business Development standpoint, we received our first orders with a new customer, GE AVIO AERO, for an electric/hybrid propulsion system for helicopters, but with potential future applications also on fixed-wing aircraft. With the same customer, we are evaluating the development of new potential helicopter applications. Also, with MOOG we developed the first prototypes of screws for applications on future platforms in the defense sector.

In terms of new customers and opportunities, we reached the last stage in the selection process of the new supplier of electromechanical actuators for



Airbus Defense [aircraft for in-flight refueling] and Skyryse [helicopter applications]. We are also in the finalization phase of an order for electric motors for the new customer, MBDA.

As for the development of New Technologies, 2021 was an eventful year, with numerous projects reaching the final stage of prototype production and qualification.

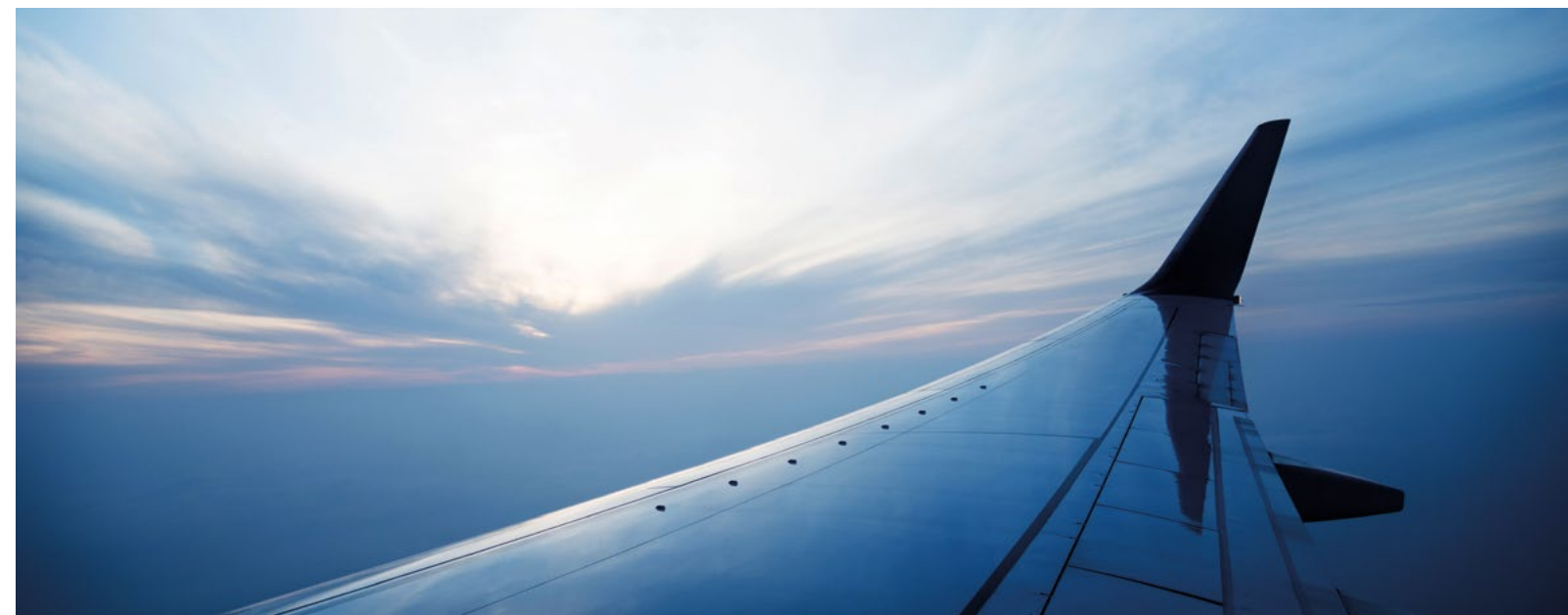
The actuators for the Reprise, EMA4Flight, Astib Landing gear, Winglet/Wingtip, and Lubforlife projects have all been assembled and have reached the testing phase.

The rotary actuator for the Racer helicopter project has undergone and passed the Critical Design Review and the detailed design and industrialization phase has begun.

As far as the new projects [NPI, New Product Introduction] already being developed are concerned, several important milestones were reached during the year.

The EMA [electromechanical actuator] for the Collins Ejection Seat application completed its mechanical, structural, and environmental tests. The OCSO EMA for Boeing B777X completed the structural, electromagnetic interference [EMI], and environmental tests. The first two production units were shipped to the customer this past September. The EMA for the Airbus Helicopters H160 obtained their DDP [Design Declaration of Performance] in July. The Fatigue Test and Endurance Test were also 18% completed [Actuator qualified for 1 TBO].

Lastly, the screws for Dassault F6X successfully completed the Limit & Ultimate Load tests. While it is true that for the existing platforms we are waiting for the end of the Covid emergency to be able to recover the volumes and growth trend bound to the macroeconomic factors of the resumption of air transport, we firmly believe that the new opportunities have established the premise for a future growth based increasingly more on new customers, segments, products, and technologies.



# A window onto the *Industrial unit*

**Luca Bossi**

Quality Manager Industrial UMBRAGROUP S.p.A.

**Giuseppe Biagetti**

Manager Design, Development & Manufacturing Engineering  
Industrial UMBRAGROUP S.p.A.

The second half of 2021 was characterized by a mature and increasingly aware use of the approaches and methods established with the Umbra Production System [UPS].

All the key performance indicators [KPIs] are easily usable at all production sites from the Power-BI platform, and every day they are used by the various management groups for process control, using a language that is commonly used all over the world. Through the participation in recursive UPS meetings, the Management of the parent company in Foligno maintains constant control over the processes of all the production sites, something that has never existed before in the history of the Group.

All the plants share common KPI targets, and the results of all the subsidiaries are aligned with the budget.

The personnel of the industrial line have been directly involved in a process of centralization of the German subsidiaries, now coordinated by UMBRAGROUP SpA at both the managerial and operational levels. The parent company has actively supported both Präzisionskugeln Eltmann and, especially, Kuhn.

Priority has been given to the implementation of safety measures for the plants, and work packages have been organized to determine the integration of the main company functions, such as:

- » quality;
- » technical service;
- » planning;
- » purchases;
- » commercial;
- » maintenance;
- » Total Productive Maintenance [TPM].

Speaking of the TPM, which aims to prevent the machine failures that may jeopardize production, we want to highlight the first pilot project concerning the grinding of the Kuhn nut threads, featured in the implementation of the maintenance calendar, determined using a Visual Basic program with SQL database and data always available on Power-BI.

Meetings have been arranged in Germany to organize the work, and now we have personnel from Foligno who are working directly for Kuhn, by means of remote daily support meetings and with a perfect overlapping of the tools used.



The second half of the year was particularly satisfactory also with regard to the development of new products.

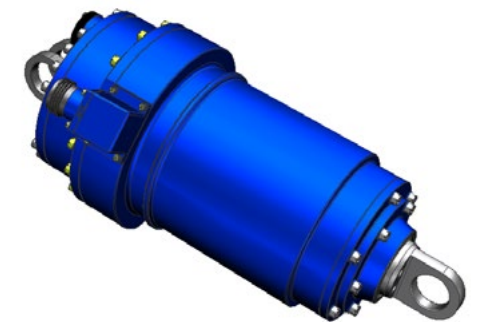
In the recirculating ball screw segment, longstanding customers have involved us in new orders, new price quotes, and new developments. Worthy of note is the rebound of several important sectors for UMBRAGROUP, which during the COVID period had suffered significant slowdowns, such as entertainment, waterjet cutting, and food homogenization.

With regard to actuators, electrospindles, and spindles, a series of technical-commercial proposals presented during the first half of the year took shape, with their translation into prototypes in the machine tool, sheet metal working, and energy generation sectors.

The supply of 80 more actuators for early 2022 was arranged with Trumpf, and negotiations have begun to rewrite the rules of the future relationship. Within the bearings sector, the dialogue with the longstanding customer Schaeffler was intensified with a view to supporting it in new activities. In addition, our new bearings e-commerce activity was created, making it possible for customers to consult the catalog, purchase, and customize the bearings we have in stock. With our online shop we want to give greater visibility to the quality of UMBRAGROUP bearings on the world market, also offering customers a customization of the product when expressly requested.

Lastly, in anticipation of the end of the year, sales volume is surpassing the budget expectations. The final figure will stand at around €55M [+21% over the budget], mainly thanks to the bearings, where during this recent period the daily production rate has been touching values never reached before.

For 2022 a sales volume in line with the current one is expected, and thanks to the constant commercial activity a portfolio for over half of the budget has already been filled.





# Sustainable innovation

**Beatrice Baldaccini**  
Executive Vice President UMBAGROUP



We all wonder what the world of tomorrow will be like.

We work to create a better future, a sustainable future.

The concept of sustainability is gaining an impact on the political agenda and behaviors of families, businesses, and institutions. For a business, being sustainable means introducing practices and processes which can reconcile growth and performance with social and environmental sustainability.

To create a truly sustainable and fair organization, this concept must permeate the entire structure, taking root in the values, becoming a true culture focusing on environmental protection, which can generate value for all the stakeholders.

Environment, Health, and Safety are a creed for UMBAGROUP. In addition to guaranteeing the safeguard of the surrounding territory, the company strives to ensure that its employees work in healthy environments. Several different factors

come into play to define sustainability; these are described and monitored using measurable indicators known as ESG (Environmental, Social, Governance). An initial focus is, without a doubt, on the environment: through certifications, such as the ISO 14001, we work to improve and implement our Quality Control System over the long term.

In addition, we strive to optimize the life cycle of our products by means of overhaul processes, a precise selection of materials, and attention to scrap and waste. There is also a meticulous waste management and process water recovery plan aiming to reduce dependence on aquifers. Lastly, we employ solutions that ensure considerable energy savings, from simple LED lightbulbs to the use of high-efficiency electric motors, and we are planning to resort to renewable energy solutions, such as, for example, photovoltaic panels.

We have drafted a detailed internal intervention plan which envisages, among other measures, the total elimination of cyanides in our Galvanization department by the end of 2023. The company is also a promoter of forms of sustainable mobility: in addition to working from home, car sharing and carpooling with the use of electric company vehicles are actions that are encouraged, as they help reduce the emission of CO2.

At another level, the building of a more sustainable world goes hand in hand with the attention paid to the individual. With our ISO 45001 certification, we adopt a policy of continuing improvement of the safety of all workers in all workplaces, in addition to continuing education, risk assessment, investigations into accidents and work-related diseases, and industrial medicine services. Among the projects focusing on workers' wellness, we make available to them the services of a nutritionist and a personal trainer, professionals that can recommend a healthy diet and proper posture while working.

One last aspect to be considered is Governance: the transparency, ethical management, and adoption of a company welfare system are among the actions implemented for the application of an ethical, responsible business model that can

generate value for all stakeholders. Social development is an integral part of UMBAGROUP's values.

The Valter Baldaccini Foundation organizes projects aiming to foster educational and cultural growth, promoting the improvement of the social fabric at the local, national, and international level.

Being a sustainable business thus means making sustainability a component of an enterprise's DNA. The challenges to be tackled to evolve and innovate are numerous and complex, with increasingly fast intervention times.

*UMBAGROUP is aware that it is actions that demonstrate who truly wants to generate change. We want to be counted. We want to be the promoters of an idea of a sustainable and innovative company, capable of improving people's quality of life and protecting the most precious asset we have: The Earth.*



# Customer *Focus* e Brand *Reputation*

**Sara Bordoni**  
Marketing & Communication Coordinator UMBRAGROUP



Our primary focus has been on our brand and our values throughout this second semester, in which the first fairs and events slowly began to appear, and we were recognized with an important award. In June we put together our success stories, which we then brought to our industry market, showcasing UMBRAGROUP's primary innovations. We offered a glimpse into two worlds – space and industry – that shed light on our best practices and our most important innovations. Among our solutions is a new actuator capable of monitoring the setup on new-generation satellites and giving them greater agility. Among our industrial innovations is UMBRAGROUP's work in helping its

partner to achieve new standards in the robotics sector through a groundbreaking feat of engineering on SCARA robots.

In parallel, we carried out a major project regarding our brand which sought to understand people's perceptions and expectations of UMBRAGROUP. As a result, we were able to identify areas for improvement that could better attune us to our clients and all those who work in Umbragroup, the two targets of our research. The project took three years and aimed to give greater value to our brand, measure the effectiveness of our actions, and develop new business strategies. The survey was conducted by the RepTrak Company, a leader in the

sector of corporate reputation research.

Lastly, at the end of September we launched the new e-commerce site for bearings: a genuine online catalog of available bearings with all the reliability and technology of Italian-made products. We've made our know-how accessible by current and potential clients as an agile partner offering high-tech solutions that can be ordered directly online. The site also enables products to be personalized with the client's brand.

This is a completely new development for UMBRAGROUP, demonstrating that we have continued to explore our markets, offer new solutions, and stand beside our clients, creating greater value for them and for our group. The award that we received at the Università LUISS on 25 November is quite prestigious: the 2021 Industria Felix Prize honoring competitive Italian businesses. We're among the 160 top-performing companies in terms of management, financial reliability, and sustainability, of those based in Italy in 2021. Riccardo Forni, Corporate Chief Financial Officer of UMBRAGROUP, accepted the High Honor for Budgetary Performance.

The event, moderated by the journalist Maria Soave, was attended by several authorities from the political and business world, including the undersecretary of the Prime Minister's Office, Assuntela Messina; the vice-president of



Confindustria, Vito Grassi; and the professor of Industrial Economics at LUISS and coordinator of Industria Felix's review board, Cesare Pozzi.

On the same day, Beatrice Baldaccini, Corporate Marketing & Communications Director for UMBRAGROUP, took part in the presentation of the book by Monsignor Sorrentino, Bishop of Foligno, *Economia umana: la lezione e la profezia di Giuseppe Toniolo* [Human Economy: The Lesson and Prophecy of Giuseppe Toniolo], where she offered her perspective as an entrepreneur.

"The economy cannot be anything but human," Beatrice Baldaccini maintains, "because it has to do with people. We cannot ignore the ethical aspects of relationships, as they're a crucial part of creating a sustainable future." In closing, we'd like to join our readers in remembering our founder, Valter Baldaccini. We've always dedicated the September events series "A Goal for Valter" – the football championship for under-15s, and the conference "Sports and Spirituality" – organized along with the ASD Cannara football team and the Valter Baldaccini Foundation.

The event series seeks to pass down the values and healthy principles of sports and mutual respect, which Valter Baldaccini championed, to today's young people.



# MRO Europe is back!

**Paul Johnson**  
Regional Manager Aftermarket UMBRAGROUP



After a 2-year break MRO [Maintenance, Repair, Overhaul] Europe is finally back, the show was held at the RAI Exhibition Centre in Amsterdam on 20th and 21st October this year, representing UMBRAGROUP was Nicola Bacelli, *Group Vice President Sales Aerospace OEM & MRO*, Mirko Canfarini, *Manager Group Marketing, Business Development & Sales MRO*, Sara Bordoni, *Corporate Marketing & Communication Coordinator* and myself.

UMBAGROUP was among 170 plus exhibitors attending and providing a unique insight into the services that are provided to the MRO [Maintenance, Repair and Overhaul] and OEM [Original Equipment Manufacturer] market which included major airlines, maintenance providers and parts distributors. It was clear on day one of the overwhelming positive feeling from everyone to be finally able to meet face to face after such a long time away.

On both days, the show was very well attended and news from customers and suppliers was very

positive all round regarding the industry recovery. With passenger numbers increasing worldwide and usage of wide and narrow body aircraft increasing plus more and more aircraft being brought out of storage [currently 50% less aircraft in storage compared to 2020], with this trend continuing into 2022 and beyond. The same is forecasted for new aircraft deliveries with narrow body aircraft [Airbus 320, Boeing 737 etc] leading the upturn, all of which is very encouraging news for the market recovery.

Both new and existing customers attending the event visited the Umbra booth during the show, meeting existing customers face to face is an essential part to maintain and develop further our relationship with them which is especially vital during recent times, with these meetings we were able to discuss our current working relationship and work together identifying ways of improving our service to them, we also had a chance to make an unscheduled visit to an Airline based in the Netherlands to discuss future projects with them as well.

Meeting new customers and forging new relationships is also a key part of the show as well with our business promoting the UMBRAGROUP brand, values, technologies and the service we can provide them which in turn promotes the UMBRAGROUP excellence and expand our footprint in the marketplace.

With these shows now returning in full force across the world the chance to further promote the UMBRAGROUP unique approach and brand to our customers, promoting our values which in turn elevates UMBRAGROUP above our competitors is vital, plus with our values it will no doubt strengthen our recovery in the industry and UMBRAGROUP's presence in the market.







The past three months have also marked an unprecedented surge in the costs of raw materials and components, as well as a limited availability. This is having a considerable impact on our major customer production chains, in all the applications covered by the line. The resulting paradox, especially in Europe, is the concurrence of a good order volumes taken by the end customers, who find themselves dealing every day with the specter of possibly shutting down production because of the lack of parts: sometimes of cables, connectors, or in any case of parts of minimal value.

Given the uncertainties, UMBAGROUP is putting the growth accrued in recent years to good use. Also, precisely monitoring indicators with the UPS (Umbra Production System) guarantees that our service is consistently above our customers' satisfaction threshold. On the other hand, many competitors who supply recirculating ball screws and bearings, today find themselves forced to increase their lead time and prices significantly.

UMBAGROUP's stability and reliability is reopening doors that have been closed for a long time; the next step is to share this acquired maturity with our German subsidiaries. The sharing project with Kuhn and Praezisionskugeln Eltmann is producing

excellent feedback from the customers who have a positive perception of the Group's new form. A major sales effort in terms of territorial coverage has been planned which focuses on consolidating our presence in the DACH (Deutschland, Austria, Confoederatio Helvetica) region, strengthening relations with existing customers and seeking new business opportunities.

The goals for 2022 are ambitious, the Commercial structure must focus its attention on the future, interpreting the signals arriving from the various market segments to avoid and prevent risks and be ready to fully seize every opportunity.

# Focus on 2022

**Daniele Frillici**  
Sales Manager Industrial UMBAGROUP S.p.A.

The Industrial Sales Team can now consider the year 2021 ended. During these twelve months, we achieved results well beyond the expectations predicted at the end of 2020, when the uncertainties governing the market were pointing to a future that was not very bright. The year's final numbers will be consolidated during the coming weeks, but the Commercial structure is already projecting a future with cautious optimism, at least for the first quarter and part of the second. Consider, we surpassed the entire 2020 sales volume in just ten months

of 2021 and, as of today, today the portfolio of the first four months of 2022 can be considered covered; furthermore, if we extend the horizon to the end of next year, 50% of the budget is already covered.

We have to keep our feet firmly planted on the ground. The uncertainties caused by Covid and the unstable world market mean that we must not engage in flights of fancy.





# New *business* goal

**Nick Schmidt**  
Director of Sales Umbra Cuscinetti Inc.

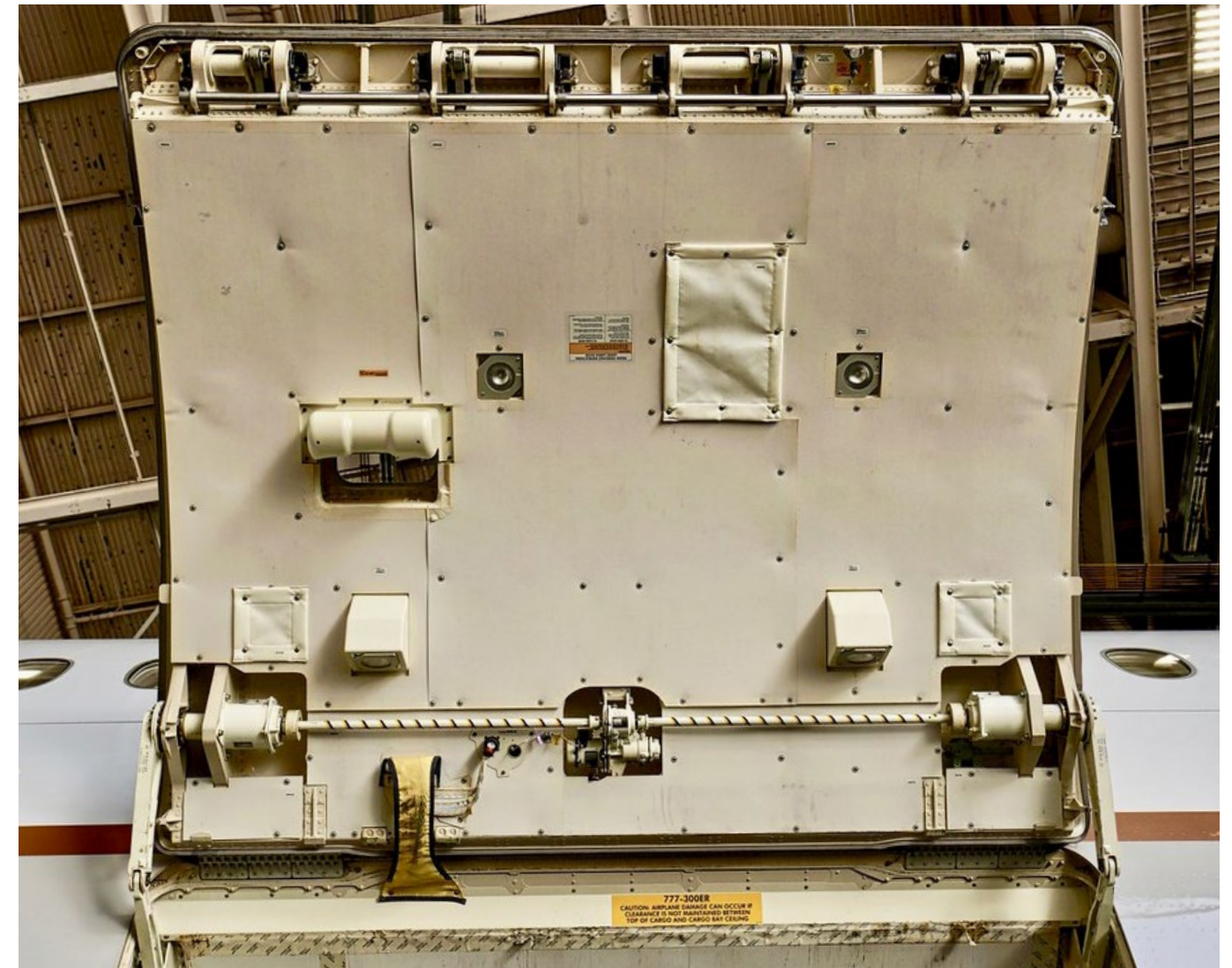


At UMBRAGROUP we are constantly seeking new opportunities that will enable us to deal with the challenges of the future, seize further growth prospects, and identify new development possibilities. We are working to explore and enter new markets, and to maximize our production capacity, continuing to be a point of reference for our customers, and aiming to create value for our stakeholders.

whether the customer's requests can be met by our production capacity.

As is always the case when we have a potential new project, to offer an optimal solution to every one of our customers, we make sure that within our organization there are all the conditions necessary to proceed, checking with the supply chain and the Quality, Operations, Production, and Finance departments, with the aim of transforming an opportunity into a new sustainable project.

In this context, at Umbra Cuscinetti Inc. we have been able to identify new opportunities with our current customer Kawasaki Heavy Industries [KHI], working closely with Engineering to evaluate



The numerous successes we achieved in 2021 led to the production of eight new parts for supporting the Boeing 777, 777X, and 767 cargo door operation. This success was made possible using our well-established production of torque couplings and tubes. The result was a significant growth during the year.

Of major importance in the acquisition of these new projects was the cooperation among the various Group Teams, including the Italian parent company UMBRAGROUP S.p.A., which was fundamental in helping us develop further processes to meet customers' needs.

The path from development to production is one that is always best to travel together, to provide the best possible support to both the customer and our team.

Thus, we gained a new business and, together with the Supply Chain, Operations, and Production departments, we will go forward with the development and the delivery, continuing in our journey and in creating value for both the customer and UMBRAGROUP.





# Highlights from *Saginaw*

**Marylynn McPhail**  
Executive Assistant Linear Motion LLC.

The second half of 2021 presented both challenges and opportunities for the Linear Motion LLC. Team in Saginaw. While the average number of positive daily COVID-19 cases in the community began to increase sharply starting in July, Linear Motion LLC. successfully prevented the lateral transfer of the virus inside the company. This was only made possible due to a sustainable response plan and the diligent efforts of our employees.

Despite the continued COVID-19 impact on the global economy, overall customer demand in Saginaw remained strong. We secured key contracts with customers such as Moog, the United States Air Force and Woodward, as well as delivering remaining development program units to Raytheon. In addition, through collaboration with our customer Triumph, we had the privilege of hosting a visit from the United States Naval Air Systems Command (NAVAIR) Joint Program Office, the end user of the V-22 aircraft, one of the most significant programs supported by Linear Motion LLC.

Important renovations continued in Saginaw, including the Metallurgy Lab and the completion of new employee locker rooms and cafeteria. The new cafeteria was also equipped with upgraded vending services and is designed to host all-employee meetings.

Linear Motion LLC. sponsored the Saginaw Career

Complex's first annual golf outing, an event to raise money for the purchase of equipment and technology to improve and innovate the curriculum of this Career and Technical Education Center. The school offers 19 programs that help high school students prepare for college, technical work, or skilled entry-level work. We are now working closely with the school to develop a program where students can learn more about our company by working as a co-op during their studies. Kyle Smith, Linear Motion's General Manager, sits on the school's Engineering & Advanced Manufacturing Advisory Committee.

The company and the local union partnered in big ways. Working with the United Way of Michigan, employees donated school supplies used to fill backpacks for local charities that were then delivered to multiple school children in need. Funds were raised for the Amyotrophic Lateral Sclerosis (ALS) Association through our long-running annual golf outing named after Jim Rivett, a Linear Motion LLC. employee who passed away from the disease. We continue to look toward the future with a great desire for improvement and confidence.

We want to thank everyone on our Team for their continuing day-to-day commitment, especially during this extremely complex period. From Saginaw, we wish all UMBRAGROUP employees and all readers a Merry Christmas and happy holiday season!





# New addition to the *Team*

**Bastian Willenbücher**  
Managing Director & CFO  
KUHNS Präzisionsspindeln und Gewindetechnik GmbH  
Präzisionskugeln Eltmann GmbH



We interviewed Bastian Willenbücher, the new Managing Director & CFO for Kuhn and Präzisionskugeln Eltmann, expressing enthusiasm and determination for his role within the Group.

## How did you come to UMBLAGROUP? Why did you choose UMBLAGROUP?

I would say UMBLAGROUP came to me. I did not know UmbraGroup before and usually I do not look at jobs posted on social media. However, one day I got my usual news feed on LinkedIn and there was this job post from UMBLAGROUP. At first honestly, I wasn't that interested in the position but still decided to look at the company. And what I found was a company that reflected my beliefs and values of how to run a successful business.

So, I decided to apply. Our interview and meetings confirmed my first impression and I am very happy to be part of the UMBLAGROUP Team.

## What are your past experiences?

Most of my career I worked in multinational companies in Finance and Business Leadership roles with regional and global responsibilities. During that time, I spent 3 years in Japan and 10 years in China leading businesses in Automotive and Electrical Power components markets across

whole Asia. In my last assignment I oversaw a global business within a family-owned, German company majorly serving the electric vehicle market. I strongly believe that the combination of my finance background with strong curiosity and affinity for technology is a key success for my professional career.

## What are the differences between the Asian and German way of working / mentality regarding your professional activities?

Of course, there are cultural differences. That's why I always try to answer the question in pointing out what I found is the universal one thing which makes teams and organizations successful. This is about how people are motivated and engaged in the everyday work activities and giving their best for the company. Key is here a culture of trust, appreciation/respect and transparency. Therefore, my primary goal is always to create and promote this culture and I strongly believe teams and businesses will be sustainably successful.

## What do you like to do in your free time?

These days I'm reading everything from novels to technical articles about new technologies etc. I also engage in lots of sports: I cycle, practice Yoga, swim, etc. I also enjoy working in our garden and I really like watching football, but I'm not a fan of a football club although I live close to Munich.



# Renewal for growth

**Barbara Bianconi**

Customer Service KUHN Präzisionsspindeln  
und Gewindetechnik GmbH

Ever since this past June, in Kuhn, we have been experiencing a major change brought about by UMBRAGROUP Italy. We discussed it with our new Operations Manager, Vasco Loreti.

**Vasco, what is your view on this phase Kuhn is going through, and what does it mean for you?**

"For some time now UMBRAGROUP S.p.A. has started to export its approaches and methods, not just from the production standpoint, and is working to ensure that they are followed by the Group's German sites. In the past two years, but most evidently since June, in Kuhn, too, there has been a full adoption of the principles of the UPS (Umbra Production System), with the continuing support of their colleagues from the parent company. What does this change mean for me? Well, it was an honor to receive directly from Top Management the possibility to take on a role I've always aspired to and to deal with really stimulating challenges."



**You've been with UMBRAGROUP for a few years now, but how did this opportunity come about?**

"After receiving my Master's Degree in Business Management, in 2017 I did a post-graduate internship at the parent company, UMBRAGROUP S.p.A, in Foligno, where I was able to gain hands-on experience in the Logistics and Personnel Training departments. At the end of the internship, I was offered the possibility to start working in Kuhn, where they were to be hiring a number of people during that period. Here I was able to experience the "job rotation" concept, by then consolidated in the Group: during my first three years of experience with the company, I covered practically all the roles connected with the passive cycle, working in Logistics, Administration [supporting the Control department], and Procurement, also contributing to the implementation of the D365 management system for those functions, consistent with the company's needs. These experiences enabled me to gain in-depth knowledge of the company processes and to interact with various departments and, thanks to the period working in Procurement, I came to realize I wanted to grow further within the Operations Team. That said, I don't believe in coincidences, and I want to prove I deserve this role, counting on my great desire to learn and on the support of our collaborators and colleagues in Foligno."

**Have there been changes to the organization in Kuhn? Could you tell us about them?**

"In addition to a reorganization of the Operations Team, still underway, in October a new General Manager, Bastian Willenbücher, arrived. In addition, we're working to improve the safety level of the plant, aiming to achieve the standards of UMBRAGROUP S.p.A. Lastly, in July we internalized Maintenance and launched the TPM [Total Productive Maintenance] project, which aims to improve production efficiency through constant preventive maintenance, thus lessening the probability of machine downtimes. The goal by the end of the year consists of transforming the maintenance into predictive maintenance for at least 20% of the machines in the company, to reduce servicing costs and guarantee continuity of the production capacity, in keeping with the UMBRAGROUP standardization model."



# Coming soon: the new *sandstorm simulator*

**Antonio Alvino**  
Technical Director SERMS S.r.l.

There are parts that simply must be reliable, especially in extreme environmental conditions. In these cases, vigorous laboratory testing is crucial to ensure their resistance. That's precisely what SERMS has been doing for about twenty years. Sandstorms are one of the environmental conditions that really put the functionality of electromechanical devices to the test.

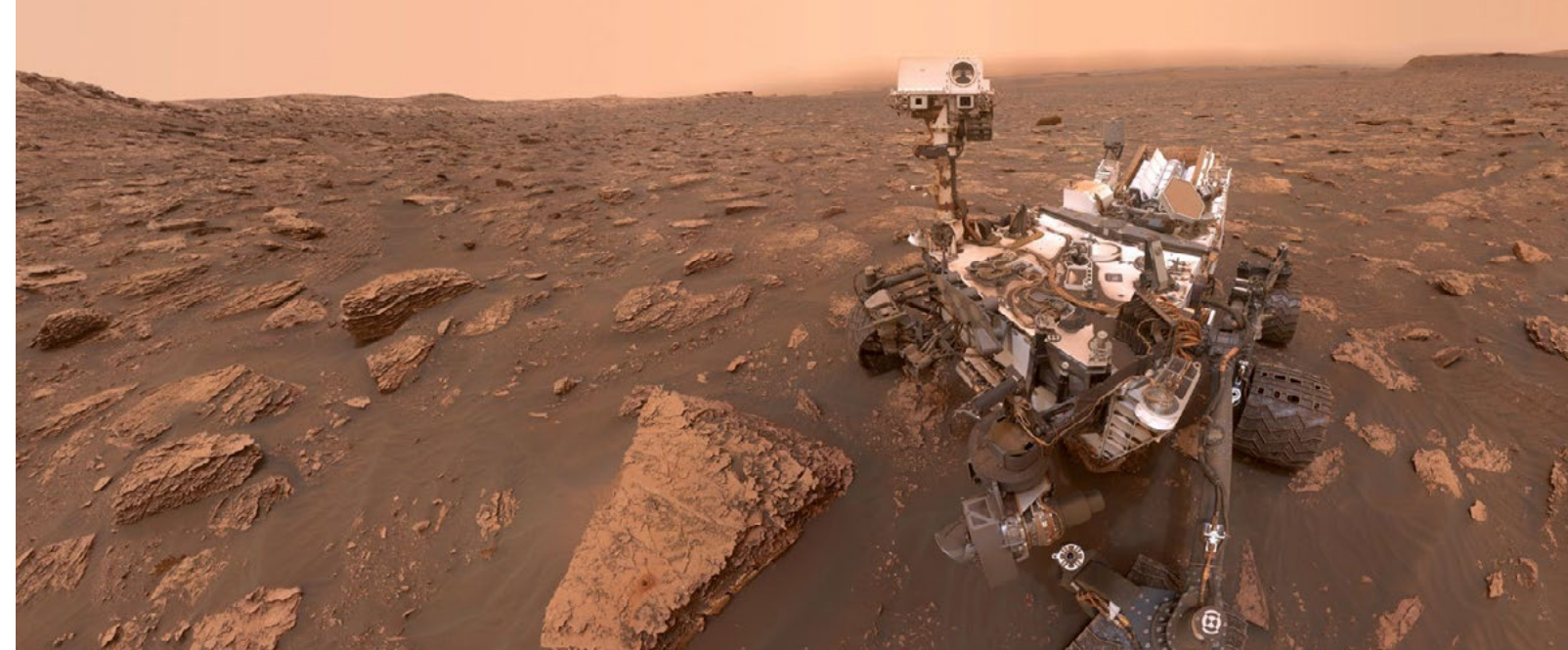
Sand can cause damage to both electrics and mechanical elements. For example, it can cause a jam in kinematic mechanisms, surface abrasion, or deterioration of optic surfaces; it can contaminate lubricants, obstruct filters and ventilation outlets, and alter contact resistance. In the Defense and Aviation sectors, these kinds of tests are regulated by international standards [MIL-STD 810 and RTCA-DO 160] to produce a quantitative assessment of the device's resistance when exposed to dry winds loaded with sand, typically found in arid geographical areas or desert zones.

Ordinarily, these certifying tests are performed in specially designed rooms in which a suitable ventilation and acceleration circuit system simulates a wind characterized by very particular speeds [ranging between 1.5 and 29 m/s], concentrations of sand [particles between 150 and

850  $\mu\text{m}$  in diameter] or dust [particles less than 150  $\mu\text{m}$  in diameter], humidity [less than 30%] and temperature [generally between 23°C and 65°C].

Even harsher storms take place on Mars. They're especially common in the southern hemisphere during the spring and summer, when the planet is closer to the sun. In these conditions, the increase in atmospheric temperatures fuels winds that whip up dust particles the size of grains of talcum powder. At the same time, the carbon dioxide that has evaporated from the polar icecaps makes the atmosphere denser and helps keep the dust suspended [to as much as 60 km in height].

The main difference between Martian sandstorms and those that take place in desert regions on Earth, such as North Africa and the Middle East, is that on our planet they cannot spread out over the globe due to our stronger gravitational attraction and denser atmosphere. These elements enable the dust to settle and collect. Another factor is the vegetation covering our planet, which binds the terrain to its roots, helping to stop dust from being moved by wind and rain. In short, the low gravity on Mars leads to stronger winds where gusts can arrive at 40 m/sec.



Rover Curiosity on Martian soil

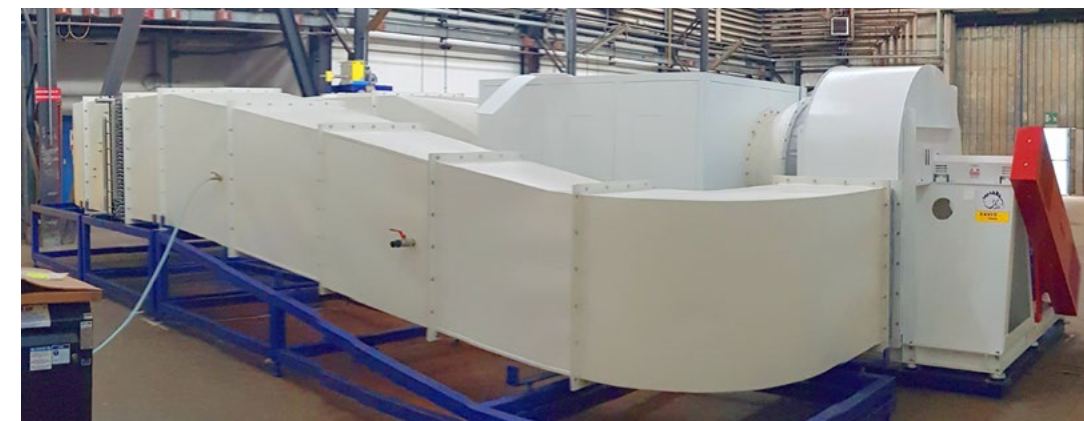
Google image - Creative Commons license/ Keywords: sand and dust martian storms NASA Curiosity Rover on Mars

At present, there are no international standards concerning tests that stimulate these storms. The exploration of Mars is a topic of great interest in the space research sector. SERMS, along with its well-established network of suppliers, has designed and built the largest facility in Italy not only for performing ordinary "Sand & Dust" tests for storms typical of Earth, but also for simulating those on Mars. Doing this took a great deal of enthusiasm and a considerable effort in terms of designing and resizing components to extend the technological capacity and operational range of traditional machines.

The facility, which has been built thanks in part to a contribution from the Regional Authority of Umbria and housed on the premises of the Italeaf Group [Nera Montoro industrial estate], has successfully passed initial testing and is preparing to test its first aerospace parts in the coming weeks.



Sandstorm simulator





# Research projects: the challenges completed and the new *Clean Aviation*

**Moreno D'Andrea**

Research Centre Manager UMBAGROUP S.p.A.

During the second half of 2021, two research projects devoted to electromechanical actuation systems for controlling primary flight surfaces were concluded for two different categories of aircraft: business and regional. Both projects tackled complex matters involving more electric aircraft, with the main goal of improving the duration and safety of the electromechanical actuation, with great attention concentrated on CO2 emissions.

The first project, REPRISE [Reliable Electromechanical actuator for PRImary Surface], concluded during the month of June, consisted of the development of an innovative actuation system which incorporates a dual-redundancy operation of all its subsystem levels: mechanical, electrical, and electronic.



REPRISE

This innovative architecture has made it possible to guarantee functionality even in the event of a failure.

In parallel, together with the innovative architecture, activities focusing on monitoring the health of the various parts of the system took place during the 60 months of the project. During the first phase of the project, the system was characterized by means of a failure emulation through which it was later possible, during a second phase, to develop predictive mathematical algorithms suitable for monitoring the life of the assembly.

The second project, which ended in October, is *LubForLife*. Its focus was the study of lifelong lubrication of a system, conceived to restore the current hydraulic system of the aileron surfaces of medium-range aircraft. In this case, also, there was a strand entirely devoted to the failure prediction. Unlike the REPRISE project, in the *LubForLife* project the predictive phase was also carried out by means of a digital twin, developed in parallel with the design phase, therefore upstream of the production and use of the product.

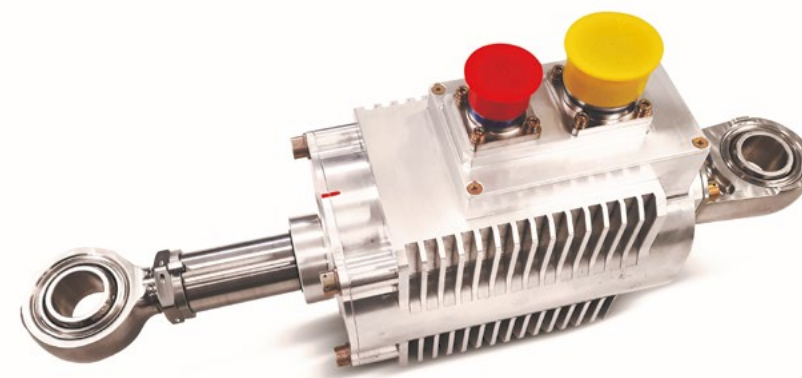
With the digital twin model, it could be possible in the future to make a preliminary verification of the length of the actuator life, at the design level, thus without having to wait for the engineering tests to be conducted and receipt of the results.

In addition, with the same model it's possible to monitor the system during the experimental phase,

for confirmation of the prediction made with the simulated model during the design phase. Through the two experiences concluded during this half of the year, it has been possible to acquire a greater awareness of the health monitoring, in both the product design and use phases. In addition, factors useful for increasing the intrinsic safety of the electromechanical system produced by UMBAGROUP were dealt with and implemented. These include, for example, lifelong lubrication and a failure-tolerant system, capable of meeting the increasingly exacting demands coming from the major players of the aeronautics market.

In 2022 we will be involved in winding up the research projects currently underway and in the detailed analysis of new opportunities. We are concentrating on the Clean Aviation program which will continue, in the wake of its *Clean Sky* predecessors, to explore solutions focusing on environmental protection with the ambitious aim of achieving, in 2050, energy neutrality in aviation, to drastically reduce the environmental impact of air transport.

Thanks to the new European research program, UMBAGROUP has an important opportunity to make a significant contribution to the definition of future platforms for civil aviation and to deal directly with the main players of the European market, and thus be able to have a strategic view of the possible future scenarios. And this is an opportunity not to be lost.



LubForLife



# Quality a common industrial and A&D line

**Amanda Young**  
Director of Quality and Optimization Umbra Cuscinetti Inc.

## Aerospace, defense, and space line.

UMBLAGROUP launched an initiative to align the organization's key departments across the group through collaboration and one of the departments that has undergone significant change in 2021 is the quality organization.

The quality organization at Umbra Cuscinetti Inc. has endured a major overhaul and has become a benchmark for the best practices that have been implemented at the facility. These improvements lead the Team through eleven successful external audits in 2021.

With a refocus on the root cause corrective action program (RCCA), we are attacking systemic nonconformances by launching annual training, a new dashboard for tracking metrics and a visualization board to review open actions. Accountability has been established with twice weekly stand-ups to review the RCCA statistics, track our open actions and aid to close actions in a timely manner. Our goal with the root cause corrective action process is to improve the culture of quality throughout the entire organization by

bringing awareness and responsibility to all Team members.

Together with UMBLAGROUP S.p.A, three root cause corrective actions have been completed and the team has successfully addressed the nonconformances yielding positive results without repeat issues.

Aligning with the Umbra Production System, a dashboard was created to monitor the health of the quality system. This tool allows the Team to deep dive and analyze data to determine areas of focus for not only the RCCA program but for a new program called Project Zero, where our focus will be eliminating nonconformances and enhancing continuous improvement.

The quality dashboard also allows the Team to monitor supplier nonconformances and quickly react with communication back to the supplier to decrease repeated mistakes and issue RCCA's when repeated discrepancies are identified. The quality team has partnered with supply chain to improve our supplier selection, surveillance, and quality processes. This project is being implemented through collaboration with other UMBLAGROUP sites to establish best practices across the group.



**Luca Bossi**  
Quality Manager Industrial UMBLAGROUP S.p.A.

## Industrial Line

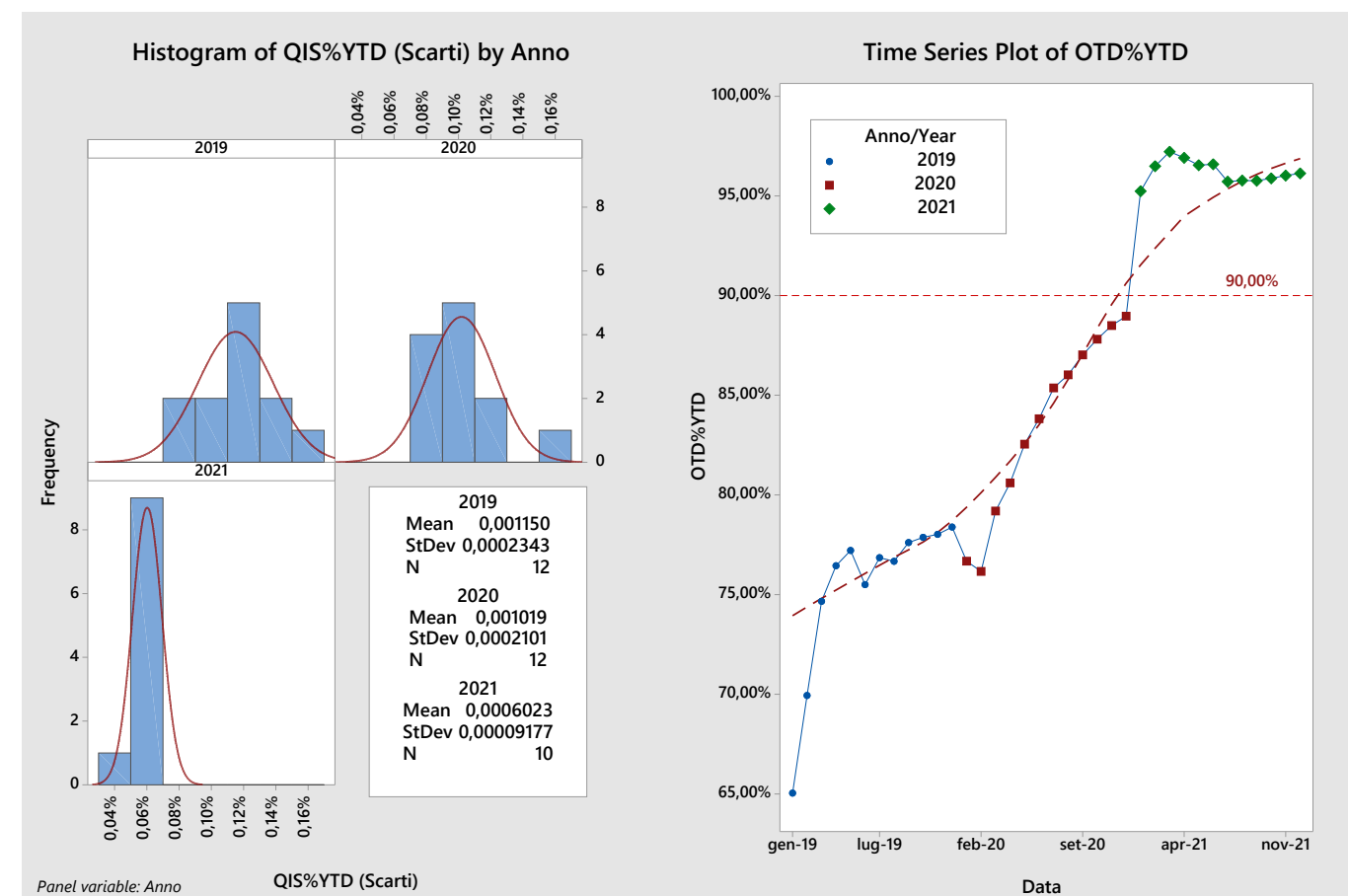
The second half of 2021 was characterized by a growing integration of Quality between the German subsidiaries and the team of the parent company in Foligno. The latter provided constant support to Kuhn, after the reorganization carried out at the end of the first half, thanks to the involvement of the Quality Team of Praezisionskugeln Eltmann for the SGQ [ISO 9001] and of dedicated resources from Foligno for Operational Quality [KPIs]. After an initial assessment, which involved the various on-site teams, an action plan was drafted which made it possible to ensure remote management continuity.

All the main indicators [KPIs] at the two German sites are perfectly in line with the target, a tangible sign of the effectiveness of the actions carried out and of the strengthening of the approaches and methods of the Umbra Production System [UPS]. Training the operators is top priority. In fact, courses are planned for all direct personnel, in addition to a strengthening of the process/product control phases.

All the industrial Quality indicators [KPIs] at Foligno are in line with the targets. An evaluation of the results since 2019 shows that, with the introduction of the UPS, the values have definitely improved and have reached the goals, validating the effectiveness of the OpEx and Lean 6-Sigma principles. Of particular significance were the reduction in the cases of internal non-compliance and the increase in precision and punctuality toward the customer [OTD].

In addition, the Skill Mapping project, which we told you about in the last issue, was brought to a close. The project involved the Industrial Quality Team for the objective evaluation of the degree of knowledge on various Quality-related topics. The evaluation was made through both an objective analysis and a gap assessment.

The result is an identification of the Team's training needs (by means of a Pareto analysis) and the preparation of a training plan for 2022, which will be implemented with practical courses based on Lean and 6-Sigma concepts, within the framework of the UMBLAGROUP Lean Academy.



# UMBRA GROUP

## 4 *wellness*

**Gian Pietro Bordini**

HSE & Energy Manager UMBRAGROUP S.p.A.

**Gabriele Pampanelli**

Personal Trainer



In these pandemic years, perhaps more than ever, we have come to understand how important it is to take care of ourselves and our health.

We often take it for granted, forgetting that good health, in addition to being a right, is also a person's duty.

For this reason UMBRAGROUP will focus on the health of its employees, both within and outside of the company, through a series of activities striving for mental and physical fitness, or "wellness". Thanks to the renewed multi-year collaboration with Personal Trainer Gabriele Pampanelli, training activities will continue for anyone who wishes to embark on a path targeting specific personal needs (weight loss, backache, postural gymnastics, muscle building, etc.).

Among the many novelties that will be introduced or confirmed in 2022 are:

- » the possibility to work out not only in the UMBRAGROUP gym, but also at home with the remote assistance of the Personal Trainer;
- » on-site analysis of the workspaces used for working from home, to prevent bad posture caused by non-ergonomic arrangements;
- » postural analysis made by the Personal Trainer via in-the-field assistance during working hours, for both production areas and offices;
- » publication of the new "Pillole di Benessere" ["Wellness Tips"] handbook, providing advice on such topics as working out, posture, diet, and relaxing. QR codes in the handbook will provide links to numerous tutorial videos on equipment-free workouts. The aim is to provide everyone with the knowledge necessary to keep in shape wherever and whenever they want: at home, at the gym, or on vacation.

The true secret for keeping healthy lies in managing to change our habits for the best, in a manner that is sustainable for our personal lifestyle.

Below are a few simple, practical suggestions you can apply immediately, taken directly from the new handbook by *Personal Trainer* Gabriele Pampanelli.

### **Diet**

With a low-calorie diet, quantity is one of the basic factors, although even in a normal calorie diet it's a parameter that should be kept under control. If we don't need to lose a significant amount of weight, it's possible in any case to ensure our diet has the proper quantities and variety, simply by adopting the "single plate" rule: using a single plate to hold everything we will be eating during the meal.

### **Workout**

Postural exercises serve to teach us how to actively use our muscles for a proper alignment and fitness of the various parts of the body, with special attention to the spinal column, the "pillar" that supports our entire muscle and skeletal system.

### **Relaxation**

Sleep and electronic devices: It's not so much that the use of the smartphone, tablet, or computer themselves is the problem, but rather the bright light those devices emit. Our body follows a natural cycle that enables us to remain awake and alert during the day and rest at night.



Scan the QR code to access the "Wellness Tips" handbook

When we stare at one of these screens before going to sleep, our brain is discombobulated, reducing the production of melatonin, the sleep-inducing hormone. It becomes more and more difficult to fall asleep and, over time, it can turn into chronic insomnia. For this reason, it would be advisable to not use these devices when we're about to go to bed.

*Good health to all!*





# Congratulations

## New hires

### UMBAGROUP S.p.A.

D'Angelo Cecilia  
Nucatola Marco  
Rossi Luigi

### LINEAR MOTION LLC.

Albers Tim  
Aldrich Charlene  
Binder Nathaniel  
Boysen Vincent  
Curtis Nicholas  
Everts William  
German David  
Knoll Nichole  
Lawler Rachel  
Lutenske Thomas  
Noriega Elias  
Soulliere Douglas  
Van Deusen John  
Vasquez Robert

### Präzisionskugeln Eltmann GmbH

Ankenbrand Daniel  
Canta Ilir  
Clow Daniel  
Hippler Alexander  
Klehr Noah

### KUHN GmbH

Mercuri Davide  
Korucu Gamze  
Willenbücher Bastian

## Just Married

### UMBAGROUP S.p.A.

Cecconi Daniele e Ortolani Sara  
Colurciello Bryan e Pompei Serena  
Giovannini Luca e Alessandri Michela  
Iavarone Stefano e Giorgi Daniela  
Merendoni Daniele e Tiburzi Martina

### Präzisionskugeln Eltmann GmbH

Aumüller Ralf & Maria

## Births

### UMBAGROUP S.p.A.

Bianchi Giorgio  
D'Amato Chiaraluce  
Canfarini Enea Maria  
Curri Bianca Denise  
Donati Edoardo  
Figlioli Palmmini Matilde  
Frapiccini Davide  
Modesti Gaia  
Narcisi Matilde  
Petrucchioli Leonardo  
Polticchia Benedetta  
Placidi Arturo  
Rutili Ginevra  
Zaroli Bianca

### KUHN GmbH

Sacco Andreas  
Yalcin Leila

### AMCo S.r.l.

Diotallevi Sandro  
Reale Enrico

### Präzisionskugeln Eltmann GmbH

Naveed Zunisha Fatima  
Quicker Luise





**UMBRA**GROUP

n.33 | december 2021

[www.umbragroup.com](http://www.umbragroup.com)

