



tt magazine

www.tratosgroup.com

April 2021

Carbon footprint

A Great Company should also be a Good Company





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Tratos Technology "TT" Magazine is the brainchild of Tratos' international sales department. The goal is simple, to share knowledge and promote awareness of new and emerging technology in the cable industry. Literally to inform, educate and maybe even entertain.

Our contributors are a cross-section of Tratos staff from across the world from England, Germany, China, Italy, Spain; combining their expertise and wealth of experience from a company with over 50 years of outstanding research, development and investment in cable making technology. TT Magazine is where Tratos will announce our latest developments in order to share our research with the world and offer the benefits of our cutting edge technology. We feel that the sharing of knowledge is vital to the ethical and responsible development of society. For over forty years Tratos have been developing the latest generations of hi-tech cables whilst never compromising on either our responsibility to the environment or our respect for the ethics and ideals of humanity.

It is with this in mind that TT Magazine is setting out to acknowledge the creation and development of new technology and how it can benefit people worldwide, to be one of the guiding lights en route to a brighter future.

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**THE QUEEN'S AWARDS
FOR ENTERPRISE:
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The United Nations 17 goals

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.

The SDGs build on decades of work by countries and the UN, including the UN Department of Economic and Social Affairs

- In June 1992, at the Earth Summit in Rio de Janeiro, Brazil, more than 178 countries adopted Agenda 21, a comprehensive plan of action to build a global partnership for sustainable development to improve human lives and protect the environment.
- Member States unanimously adopted the Millennium Declaration at the Millennium Summit in September 2000 at UN Headquarters in New York. The Summit led to the elaboration of eight Millennium Development Goals (MDGs) to reduce extreme poverty by 2015.
- The Johannesburg Declaration on Sustainable Development and the Plan of Implementation, adopted at the World Summit on Sustainable Development in South Africa in 2002, reaffirmed the global community's commitments to poverty eradication and the environment, and built on Agenda 21 and the Millennium Declaration by including more emphasis on multilateral partnerships.
- At the United Nations Conference on Sustainable Development (Rio+20) in Rio de Janeiro, Brazil, in June 2012, Member States adopted the outcome document "The Future We Want" in which they decided, inter alia, to launch a process to develop a set of SDGs to build upon the MDGs and to establish the UN High-level Political Forum on Sustainable Development. The Rio +20 outcome also contained other meas-

ures for implementing sustainable development, including mandates for future programmes of work in development financing, small island developing states and more.

- In 2013, the General Assembly set up a 30-member Open Working Group to develop a proposal on the SDGs.
- In January 2015, the General Assembly began the negotiation process on the post-2015 development agenda. The process culminated in the subsequent adoption of the 2030 Agenda for Sustainable Development, with 17 SDGs at its core, at the UN Sustainable Development Summit in September 2015.
- 2015 was a landmark year for multilateralism and international policy shaping, with the adoption of several major agreements:
 - Sendai Framework for Disaster Risk Reduction (March 2015)
 - Addis Ababa Action Agenda on Financing for Development (July 2015)
 - Transforming our world: the 2030 Agenda for Sustainable Development with its 17 SDGs was adopted at the UN Sustainable Development Summit in New York in September 2015.
 - Paris Agreement on Climate Change (December 2015)
- Now, the annual High-level Political Forum on Sustainable Development serves as the central UN platform for the follow-up and review of the SDGs.

Today, the Division for Sustainable Development Goals (DSDG) in the United Nations Department of Economic and Social Affairs (UNDESA) provides substantive support and capacity-building for the SDGs and their related thematic issues, including water, energy, climate, oceans, urbanization, transport, science and technology, the Global Sustainable Development Report (GSDR), partnerships and Small Island Developing States. DSDG plays a key role in the evaluation of UN systemwide implementation of the 2030 Agenda and on advocacy and outreach activities relating to the SDGs. In order to make the 2030 Agenda a reality, broad ownership of the SDGs must translate into a strong commitment by all stakeholders to implement the global goals. DSDG aims to help facilitate this engagement. [UN](#)

**SUSTAINABLE
DEVELOPMENT
GOALS**



End **poverty** in all its forms everywhere



sustainable agriculture

End **hunger**, achieve food security and improved nutrition and promote



Ensure **healthy** lives and promote **well-being** for all at all ages



opportunities for all

Ensure inclusive and equitable **quality education** and promote lifelong learning



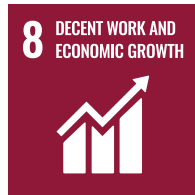
Achieve **gender equality** and empower all women and girls



Ensure availability and sustainable management of **water and sanitation** for all



Ensure access to **affordable**, reliable, **sustainable** and modern **energy** for all



productive employment and **decent work** for all

Promote sustained, inclusive and sustainable **economic growth**, full and



Build resilient **infrastructure**, promote inclusive and **sustainable industrialization** and foster **innovation**



Reduce inequality within and among countries



Make **cities** and human settlements inclusive, safe, resilient and **sustainable**



Ensure **sustainable consumption** and production patterns



Take urgent action to **combat climate change** and its impacts



Conserve and sustainably use the **oceans, seas** and **marine resources** for sustainable development



manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Protect, restore and promote **sustainable use of terrestrial ecosystems**, sustainably



to justice for all and build effective, accountable and inclusive institutions at all levels

Promote **peaceful and inclusive societies** for sustainable development, provide access



Strengthen the means of implementation and revitalize the **global partnership** for sustainable development

INVESTMENTS

It is Tratos' considered investment that has resulted in the company's exponential growth internationally. Both its Italian and UK manufacturing bases have benefited from recent funding of new infrastructure, machinery and jobs. Its facility in Pieve, Tuscany received an additional £6 million while the company's Knowsley operation, in Merseyside, received a further £10 million, creating 40 new jobs. It is this investment which is helping to speed up and increase capacity at Tratos - one of Europe's largest independent cable manufacturers.



Italian investment delivers better solutions

A multi-million Euro investment by Tratos has extended the cable company's capability in the manufacture of long length cable for offshore and Oil & Gas industries. The **€21 million** investment in **5,000 sqm** of new machinery at its Pieve factory in Santo Stefano, Italy, was completed in the summer and will enable Tratos to produce longer length umbilical and submarine cables.

The investment in Italy includes the purchase of a planetary layout machine, a new cable strander which will enable lengths **up to 20 km** (can we have a figure here) to be produced, primarily for use in the offshore wind farm industries

Ennio Bragagni Capaccini, Vice President of Tratos Group said: "We live and work in a small village in Tuscany but we export our products all around the world. This year we made a large

investment in new plant, in new stranding machinery, putting all of our knowledge and technology into stranding cables".

According to European Wind Energy Association, offshore wind farms have moved further from shore and into deeper waters. At the end of 2015, the average water depth of grid-connected wind farms was 27.1 m and the average distance to shore was 43.3 km. Tratos' Offshore and submarine cables are longer, stronger and flexible - resisting mud, fire, extreme temperatures, water and impact.

Tratos continues to invest and expand its UK and Italian manufacturing facilities and in doing so the company has seen significant growth in its resource and capability and the opening up of new market sectors for the company's advanced cable. [T](#)



Tratos' global network



Fibre optic cables, medium and high voltage cables, telephone cables, petrochemical cables, signalling cables and superconductors – In Pieve Santo Stefano, engineer Albano Bragagni builds the filaments of a spider's web that shrinks and connects the world.

Green, red, yellow, blue, orange, they are rolled up like streamers on light-coloured wooden reels. They form modern bales from a few centimetres high to the size of an elephant, making the company's forecourt look like an extra-large Montessori playground. This is Tratos, nestled in the green and cool mountains of Pieve Santo Stefano. Albano Bragagni, the owner, knows the characteristics of each of his products. He has conceived, studied, developed and tested them before laying them across sea, land and air, offering surprising and innovative connection opportunities. Fibre optic, medium and high voltage cables, telephone cables, petrochemical, signalling and superconductor cables. They are used in a wide variety of sectors, including automotive, shipbuilding, railway, defence, port facilities and telecommunications.

In Pieve Santo Stefano, every day, the world shrinks a little more and connections grow.

It was 1966 when Egidio Capaccini, together with other partners, founded the copper wire drawing company that would later become a manufacturer of telephone cables for general use and simple technologies. He had the intuition to invest in a traditional sector. He saw that rushing innovation would have upset not only the way of seeing – but also the way of imagining – the future. Only eight years later, when the company was growing and achieving significant results, Egidio died suddenly, leaving 51% of the company's shares to his wife Elba.

Speaking of Egidio, Albano says: "My father-in-law had vision, far-sightedness and stubbornness." When he passed away, I was only 23 years old and had been married to his daughter Marta for about a year. It was not an easy time for the family and the company. The company had potential but we couldn't exploit it even though we had a majority holding. So I decided to move with a leveraged buyout, a structured finance operation used to acquire a company by exploiting its debt capacity. A challenging and risky step for a guy in his early twenties. With the unconditional help of the Cassa di Risparmio di Città di Castello I bought the remaining 49%. I had no money, I was offering bills of exchange as collateral. There were so many fears, so many uncertainties but, finally, we had the company. All that remained was to make it fly".

With Albano Bragagni at the helm, Tratos Cavi took off quickly. Gradually, it became a dynamic, cutting-edge multinational company, capable of adapting to the market and providing state-of-the-art solutions. In 1978, the company began produc-

ing instrumentation and telephone cables, specialising in thermoplastic, elastomeric and expanded polyethylene insulation, as well as flame retardant compounds with low smoke and toxic gas emissions. In 1989, optical cables were produced, while medium voltage cables were added in 1992 and high voltage cables in 2015.

Pieve Santo Stefano was no longer enough. Before that, in 1988, a plant was opened in Sicily, near Catania. In 2008, Tratos Cavi planted its flag across the border, inaugurating a branch in England, near Liverpool. Today more than 350 employees (250 of whom are based in Pieve Santo Stefano) contribute to a turnover of almost 130 million euro per year.

Fifty percent of production is exported: China, Brazil, Cuba, Russia, the United States and European countries such as England, Spain, Germany, Iceland and Finland are the main markets. In Italy, Tratos produces fibre optic cables for Telecom Italia, Poste Italiane and Telecomunicazioni and works with Enel, Ansaldo Energia, Wind, Ferrovie dello Stato and many others. "We have highly accredited and equipped laboratories, where a group of technicians work in accordance with design requirements to



achieve quality assurance. We have a constant dialogue and a constructive exchange of ideas with our customers. They explain the difficulty or objective and we work to find the most effective solution. Lately we have solved the problem of cable theft on the railways by replacing copper with steel and aluminium."

The company has designed and produces the world's smallest microcable for broadband connectivity, which can withstand the most extreme weather and climate conditions. It has designed superconductor elements for the Fusion 4 Energy ITER project, which aims to reproduce the power of the sun: obtaining clean energy through fusion. Last year Tratos won the Queen's Award for Enterprise: Innovation, the highest accolade for technological innovation conferred by the Queen of England. For the first time in the history of the award, an Italian-born company like Tratos was honoured.

"We have offices around the world but somehow we remain a family business. My two children work alongside me, albeit with different roles that reflect their experience and character. Ennio, who is also the vice-president, is in charge of purchasing and organisation, while Elisabetta manages the commercial side and sales. They have competence and enthusiasm. My brother Germano helps me a lot in the company and is the manager of the Catania plant. My other brother, Marcellino, makes the wooden reels used to wind the cables. My nephew Maurizio runs the UK. My nephew Fabio produces optical fibres and cousin Daniele works in administration".

The Tratos brand is now recognised everywhere as a guarantee of quality and efficiency. But, although it has feet on the ground in hundreds of countries around the globe, the heart of the company remains in a small town in the province of Arezzo.

"I've never thought of moving. Pieve Santo Stefano is not in a bad position geographically or in terms of communication, thanks to its central Italy location and the many connecting roads. But the truth is that I wouldn't have moved in any case. Here I feel the irreplaceable warmth and the sweet smell of home. I met my wife in the eighth grade and we have been together since high school. Our story has germinated and grown in this land. We should all be aware of the beauty that surrounds us. And be grateful for it. For more than 12 years,

every Sunday morning at 7 a.m, I get together with a group of friends and we go for a walk along the paths in our mountains.

Over four to five hours to breathe, savour nature, let yourself be guided by freedom and splendour. I know these places like the back of my hand and they never cease to surprise and excite me.

Albano Bragagni is appreciated in the area not only for the achievements and prestige of his company, but also because for 29 years he served as mayor of Pieve Santo Stefano with commitment and passion.

"I was first citizen for almost thirty years and I am currently president of the State Archives. I believe that a municipality should be run just like a business, and Pieve Santo Stefano is now a healthy business. When I was in office, I strongly

supported the methanisation of the area: even today the Municipality manages the gas in the area and has a better electricity service than many areas of Arezzo. The organisation has always run an RSA with over 40 guests, open 7 days a week, and a community hospital and intermediate care in support of the long-term hospitalisation offered by the Asl. A Caritas organisation carries out numerous social initiatives and the Fratres blood donor group has more than 200 members. As far as schools are concerned, we have made provision for full-time education in all institutes and since 2003 election polling has been organised outside the school buildings so as not to interrupt lessons. In addition the municipality owns a small bus company that manages the schools' transport service.

Meticulous, a perfectionist, tireless. Albano Bragagni likes to be there to assess, listen and decide. That's why he travels extensively (an average of 200 hours a year) to visit each customer and see how the company works. At 46, he graduated in mechanical engineering in Rome.

"You have to set goals and always believe in them. Look for solutions and, if there are none, create new ones. Understand that it is never too late for anything. We have to chase our luck; we have to conquer it. If we decide not to go to the station, we can't complain that we didn't catch the train."

But doing business in Italy is not easy. "Ours is a complicated country. In 46 years as a business owner, I could list the government's measures in favour of entrepreneurship on one hand. But it is also the most beautiful country. And things won't change if we don't all commit to designing a better future."

The Queen's Award

This is the highest award for technological innovation and is conferred by the Queen of England. For the first time in the history of the award, an Italian-born company has been honoured. Tratos was awarded the "Queen's Award for Enterprise: Innovation" for 2019, selected from 100s of companies throughout the country. The merit recognised Tratos' design and production

of its special high-tech cable JBA (Jasmine Bragagni Albano), designed for the oil and gas market and equipped with special technical specifications.

The cable has extraordinary resistance to mud, fire and extreme temperatures, and bears the name of the company's president, engineer Albano Bragagni. Thanks to the award, the Queen's Award for Enterprise insignia can now be displayed in all Tratos offices and factories. This is recognition at the highest level for the constant research and important results from the company which, over the years, has invested millions of euros both in Italy and in the United Kingdom for the construction of advanced-technology production plants. 



**THE QUEEN'S AWARDS
FOR ENTERPRISE:
INNOVATION
2019**

ENVIRONMENT

Working to help deliver the **UN's 17 Sustainable Development Goals**

Tratos does more than simply 'support' the UN's 17 Sustainable Development Goals, it is working to deliver them every day.

It has adopted the UN's goals as its own values within a framework for the company's growth across product development, working practices, CSR and corporate focus.

Tratos aims to be greener and cleaner, stay people-focused and innovate across every element of its business to deliver the promise. It aims to offer better choices for its customers, to make it easier for them to deliver them too.

Here are the United Nation's 17 Sustainable Development Goals – and Tratos' response:



Since 1966 Tratos' mission has been 'to create jobs in deprived areas' to reduce poverty, and bring hope and prosperity. Tratos puts people and health first.

Tratos operates The Tratos Academy and supports Esharelife Foundation which exists to fund education and vocational learning for children and young people in some of the most disadvantaged communities.



Half of Tratos' Holding Board are women, half Tratos' shareholders are women. In common with most family businesses, Tratos has gender equality. The majority of Tratos' shareholders are women. The company actively promotes women to senior management roles and operates a pro-gender bias.



Since 1966, Tratos makes innovative, advanced cables that connect people worldwide. The company works to bring

greener, cleaner and accessible solutions to every industry sector it manufactures for, from ports and marine to mass transit and communications. It also recycles.

It is also active in **reducing its own carbon footprint** and operates a large-scale tree-planting programme to off-set impacts. It has partnered **Aenor** The Spanish Association for Standardization and Certification to develop technology to help companies measure – and so manage – their carbon footprint.



Tratos supplies superconducting wire for the **world ITER reactor**. It is a partner within an international Fusion4Power team recreating the power of the sun to generate green energy and is active within the wind energy sector. It is the only cable maker to power its production lines (in Italy) using its own Hydro Power Station. Tratos has developed a range of environmentally-friendly products and operates a series of measures to promote affordable and clean energy.

Tratos is a member of the **ICAS Consortium**. ICAS' involvement in global sustainability networks and forums ensure that it and its members are as effective and influential as possible, and connected with the right stakeholder organisations. The Committee works with, or exchanges view with these organisations to share ideas, information, research and other resources in order to develop the area of environmental sustainability in business.

Tratos: Cables for a Moving World





A Great Company should also be a Good Company

Committing to be a good company has a lot of benefits across a lot of areas, but real commitment to wholesale environmental goals comes at a cost.

Some mega-companies may claim spotless environmental credentials, but scratch a little under the surface and you may find them putting price before principle – even if it is one-removed down the supply chain. The truth is, if every company truly committed to deliver environmental change for good – it would simply start to happen. But like any relationship – it’s complicated.

Tratos is one of the truly committed. Every one of its systems and processes is answerable to regular, independent inspection to ensure it stays on the side of good. And it’s a regimen that is welcomed. Because the cable innovator is BASEC IS4001 accredited it stepped into the environmental spotlight and has no intention of moving. Its independently audited commitment runs from waste management and factory practices to substances disposal, recycling and more.

So serious is Tratos about keeping its environmental credentials green and clean, it chases down the same values and practices through its supply chain. While it costs money to always act responsibly, there are clients who are aligned with the thinking and the delivery – but imagine how much faster the end goal

would be reached if everyone was pulling in the same direction. Tratos Director Neil Ancell has had his hand on the company’s environment rudder for some years. He says Tratos is one of those striving to meet and exceed standards every single day. As Brexit makes ready to land, Mr Ancell considered the environmental consequences of a new and separate identity for the UK.

“The UK is heavily regulated. That has underpinned UK plc and with it the knowledge that the United Kingdom’s products are high quality, safe and reliable. The problem is, not all of the rest of the world operates in the same way – or has the same values. And in some ways, given cost is king for some companies, it’s easy to see why developing countries proceed as they do. Staying environmentally compliant costs in both money and manpower. “As far as Europe is concerned, British products had to comply with the market’s domestic environmental standards, and of course UK businesses have done.”

“But those opportunities for the big companies to continue to source the cheapest labour or imported materials with poor environmental practices will continue to be a concern. Clearly, a lot of the big players are waiting to find out how a deal or no deal will go – and the impact of tariffs – before awarding tenders to contractors. Some British companies buy huge levels of component parts for their business from countries



with the least protected and policed practices. I call these Deep Sea Imports, long haul items that are brought in with huge environmental costs that could be avoided and some with human costs – from child labour to employees sleeping under machines at night – that should never even be considered.

“Bigger European companies are going to want a deal. It’s in their interests to stay competitive in the UK and import tariffs would finish their ambitions for a very lucrative market.

“That we don’t compromise is something to be proud of. While cost is king, children will be working in factories and workforces sleeping in hazardous environments. How do we make a level playing field? We dethrone cost as king. Instead, we agree that there is a cost to us looking after people, the planet and business. Once everyone changes their mindset to see quality, performance and safety as the over-riding goal, then there is a level playing field for great companies to become good and for hard-pressed businesses to re-think their operations – because they’re not having to scratch for wafer-thin margins.”

“Tratos recognises we have to keep pushing. We want other businesses to do the same. This matters. We take clean water and sanitation for granted. We work and then we leave at the end of our shift. This will remain an uphill battle, we have to play by the rules but we also have to lead by example.”

“Tratos has a massive social conscience. It wants to build the right legacy for the environment, for employees, for the communities they call home and help the businesses it supplies to get closer to shared goals.”


Tratos’ EMS (Environmental Management System) procedures determine the company’s manufacturing sites at Knowsley in the UK and Pieve Santo Stefano and Catania in Italy.

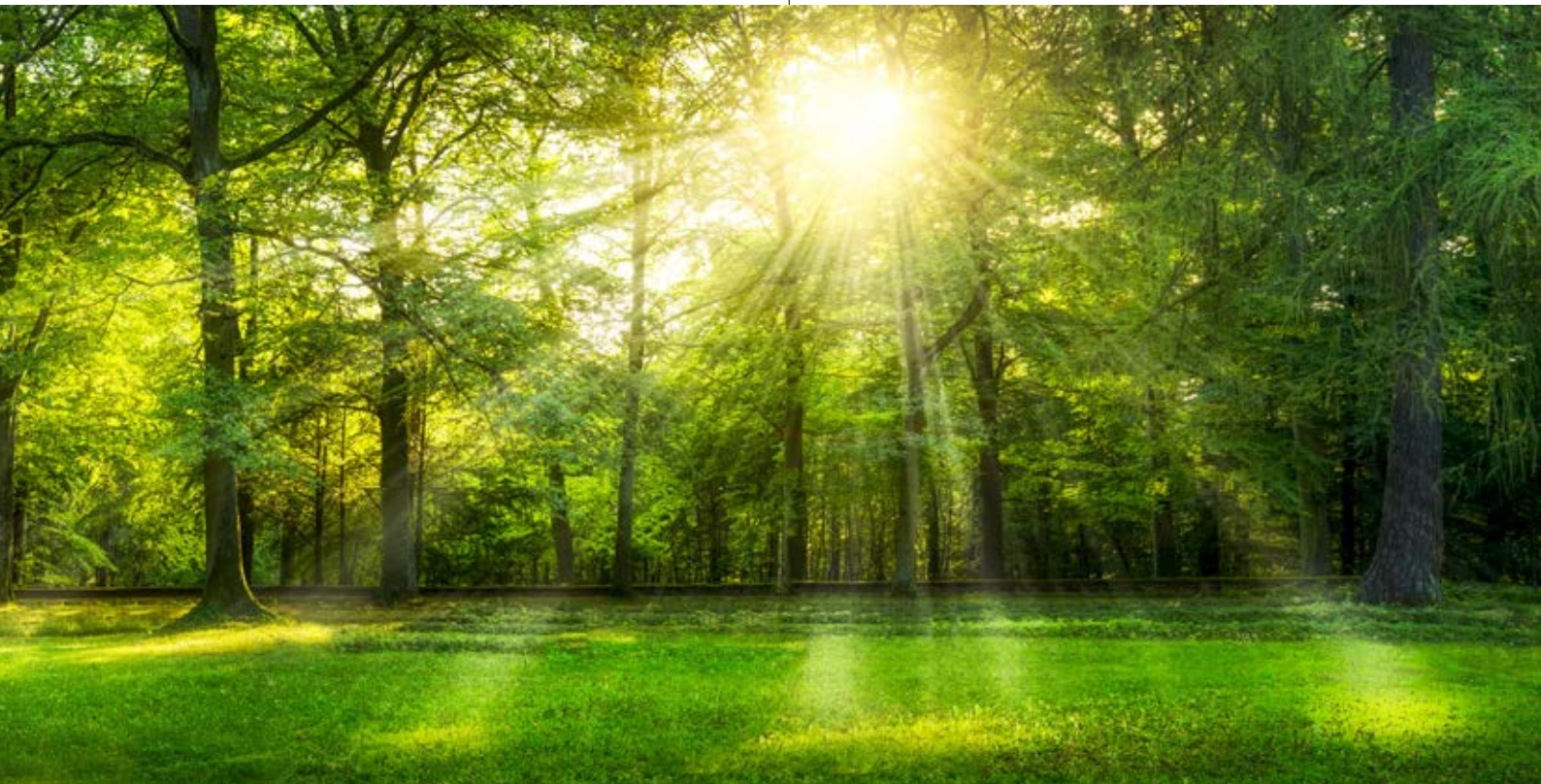
Environmental aspects were identified and evaluated as part of the SCEEMAS’ funded EMS development as early as 1997 and 1998. Tratos’ environmental management system is

audited, approved and regularly inspected by independent, international authorities: **BASEC (UK)** and **AENOR-IQNET (E)**, in accordance with **ISO 14001** across production, raw materials purchasing, design and final test.

The company’s **Environmental Policy**, based on its Environmental Review, commits to legislative compliance and continuous improvement in environmental performance fulfilled through an Environmental Programme. Tratos aims to work closely with customers to find better, more environmentally friendly solutions to their challenges.

Tratos believes ethical business conduct is a condition of a company’s success. With a strong environmental policy in place it continues to move toward greener cable solutions, such as its cables without halogens and Tratos-Green – made using purely hydroelectric energy. Tratos Cavi has been using clean renewable energy from its own hydroelectric plant since 1980. All Tratos’ manufacturing facilities have been awarded ISO 14001 certification for their Environmental Management Systems. Tratos is fully committed to provide protection both for people working with its cables, – and for the environment.

TRATOS is accredited to BS EN ISO 9001. 





Tratos partners **AENOR** to develop carbon footprint detector

Tratos this week announced it is to play a pivotal part in the development of new technology to measure, and help companies manage, their carbon footprint.

A ground-breaker in the development of new and **greener cable solutions** for a range of industries from ports and marine to rail and mass transit, Tratos will partner Spanish Association for Standardisation and Certification, Aenor.

Aenor is an independent not-for-profit organisation dedicated to improving technology production and, together with Tratos, it will work to develop a cable to facilitate the detection elements needed to measure companies' carbon footprint.

A member of the International Organization for Standardization (ISO); the International Electrotechnical Commission (IEC), the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC), Aenor, together with Tratos, aims to launch its first detection product to coincide with the 26th session of the Conference of the Parties (COP26) to the UNFCCC which is expected to take place from 9-19 November 2020, in Glasgow, UK. Tratos CEO, **Dr Maurizio Bragagni**, a member of the International Electrotechnical Commission's **Market Strategy Board**,

will be personally involved in the development of the new carbon calibrating technology. He described the partnership with Aenor as 'a huge step forward' in identifying levels of carbon impact and determining the right steps to allow companies to tread more lightly.

He added that he fully supported the **United Nations' 17 Sustainable Development Goals (SDGs)**, and that the Tratos-Aenor collaboration was a significant advance in delivering them. Tratos is an independent global cable innovator. It won a **Queen's Award for Enterprise: Innovation** last year (2019).

The United Nations' SDGs are at the core of its blueprint for building a better world by **2030**. The SDGs serve as a universal plan for all countries to end poverty, stimulate economic growth, preserve the environment and ensure prosperity for all. These goals set the global development agenda until 2030 with clear objectives and measurable targets to determine progress for each goal. In setting out the goals the UN was pragmatic about the link between economic development, social inclusion and environmental sustainability – and acknowledged that delivery of the right outcomes would require global cooperation. [T](#)





Tratos wins ISO-14067 carbon neutral accreditation

Independent advanced cable technology manufacturer Tratos has secured ISO – 14067 accreditation for reducing its carbon footprint, the company's president announced this week.


Albano Bragagni said he was delighted to report formal recognition for the company's latest sustainability gains from the **International Standards Organisation** and revealed that the company had plenty more to offer in terms of other measures to make its own and customers' businesses greener and cleaner. President Bragagni went on to stress the importance with which securing sustainability is now held, adding that he was gladdened to see customers, consumers, shareholders, business, nations and communities starting to pull together as never before. He said that increasing concerns around environmental impacts had to be welcomed wholesale – and solutions delivered – and he was proud that Tratos was one of the technology companies leading the fight to switch to cleaner energy and more sustainable practices.

Tratos now holds the standard for products' carbon footprint, **ISO 14067**, but ahead of the announcement the company had already partnered with Spanish standards agency **AENOR**

to develop and build technology to measure, and so manage, companies' own individual carbon footprints.

President Bragagni said the world was presented with a unique opportunity and companies such as his own, with advanced engineering skills, were well placed to help turn the tide on environment-damaging emissions. Tratos' carbon footprint verification allows the company to demonstrate its environmental responsibility, stand out from the competition and show existing and potential customers proof of its commitment to sustainability.

Tratos CEO Dr Maurizio Bragagni added his welcome for the new accreditation which follows the company's decision to fully adopt – and help deliver – the **UN's 17 sustainable development goals**.

The new standard builds on the existing ISO standards for life cycle assessments (ISO 14040/44) and environmental labels and declarations (ISO 14025). 





Tratos CEO joins “The Best Thinkers on Energy” for EU-China Workshop

Tratos CEO joined ‘the best thinkers on energy’ to explore energy technology needs in China and measures to ease market entry later this month.

Dr Maurizio Bragagni, who is also one of a small number of handpicked business leaders who make up the Department for International Trade’s Advisory Groups – his is an ‘industry’ portfolio – will join other inspiring commerce and academic figures at the workshop event to discuss barriers and strategies for ‘leveling the playing field’ in the sessions hosted by energypost.eu in association with the EU-China Energy Co-operation Platform, or ECECP.

The workshop, which will run across November 17 and 18, has a central innovation focus. The online event, where Dr Bragagni is an invited panellist, will tackle innovative solutions that will benefit the energy transition in China, building on climate

commitments and European business experience. It also aims to provide a steer for European businesses looking to enter the Chinese market.

Panellists will offer their insights around what innovative techniques and business models are needed in China, how developers and owners of required tech can introduce their solutions into the Chinese sector to benefit all and support global climate ambitions.

Tratos is an independent global cable technology innovator. CEO Dr Bragagni led the company to success in winning a Queen’s Award for Enterprise: Innovation last year. [\[A\]](#)



A DATE WITH CHINA

“CHINA: Carbon Neutral by 2060”

the business opportunities for EU energy solutions providers

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www.tratosgroup.com



More than 10 years on: a review of iter **Fusion4energy** progress

The shipment of the first completed components for the ITER Fusion4Energy project began in 2014 and will continue into the 2020s.

Machine assembly will begin as soon as the giant **Tokamak Complex** is ready for occupation. First Plasma is planned for December 2025. ITER is one of the most complex scientific and engineering projects in the world today.

Tratos has been involved in the ITER (International Thermonuclear Experimental Reactor) fusion for energy project since its inception.

Together with other members of the 26-strong international industrial partner community the company was specifically identified and qualified by **ENEA** for joint participation in a contract and world-stage controlled thermonuclear fusion experiment. The project, at Cadarache in France, was set up to demonstrate the scientific and technological feasibility of energy production by controlled **thermonuclear fusion** with leading global manufacturer of electric cables and optical fibre, with Tratos, supplying key components of the ITER experiment.

Tratos is responsible for the production of Cable-In-Conduit (CIC) superconducting wire. The wire was destined for the worldwide construction of magnets for the ITER reactor and also the Japanese **JT60SA**. **F4E** (Fusion4Energy) awarded Tratos the contract for cabling and jacketing of approximately 20 km of ITER Toroidal Field (TF) conductors and in the region of 28 km of JT-60SA TF conductors, plus the jacketing of around 22 km of Poloidal Field (PF) conductors.

ICAS (Italian Consortium for Applied Superconductivity) performs all cabling activities at the **TRATOS Cavi S.p.A.** factory at Pieve Santo Stefano (AR – Italy).

Two production lines were set up. One dedicated to the manufacturing of **Low Temperature superconducting cables** (based on Nb3Sn and NbTi strands): it is currently involved in the ITER and JT-60SA productions.

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ICAS (Innovation and Consulting on Applied Superconductivity) was founded in September 2010, with the original scope of supplying the European portion of the superconducting conductors for the ITER and the JT-60SA nuclear reactors, in France and Japan. It provides services and products serving Superconductivity and High Tech power applications.

In the last three – four years the project has seen landmark progress:

- March 2016 The first Toroidal Field coil for the JT-60SA tokamak reactor, wound with conductors produced by ICAS, has been successfully tested at **CEA-Saclay, France**.
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- 5 May, 2016 A large-size rectangular Nb3Sn Cable-in-Conduit Conductor for the European DEMO Toroidal Field Coil, designed by ENEA and manufactured by ICAS partners, has been successfully tested at the EDIPO facility of the SPC (Switzerland), establishing new record performance
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a contract for the qualification and development of the ITER In-Vessel Coils Conductors.

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- 8 November, 2017 After six years of intense work, the production of 100 km of superconducting cables for the magnets of the experimental ITER and JT-60SA fusion reactors has been successfully completed. The ICAS Consortium has celebrated this milestone with the event held on November 8th, at **Criotec Impianti**.
- 20 December, 2017 Chinese company **ASIPP** has successfully wound the first Double Pancake of the ITER PF6 coil using superconducting cable produced by ICAS.
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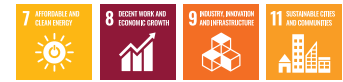
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Tratos is one of three charter members of ICAS (ENEA, TRATOS and CRIOTEC) behind the design and manufacture of a rectangular **Nb3Sn Cable-in-Conduit Conductor (CICC)** with distributed pressure relief channels, that have reached the record performances of 81.7 kA in a magnetic field of 13 T up to about 7 K.

- ENA is Italy's national agency for new technologies, energy and sustainable economic development.
- CRIOTEC is an Italian technology company which specialises in cryogenic and high vacuum technologies.

Tratos has manufacturing bases in Italy and the UK and offices in more than 50 countries. [📍](#)





Powerful innovation in action at **Tratos**



Italian Alps Pass

The rapidly growing demand for electrical energy, due to massive population growth, has led those responsible for electrical transmission systems to search for new technical innovations. But the criteria is tough. Such innovations need to work hard; not only increasing the amount of power transmitted, with improved efficiency, but also work within tight budgetary constraints.

Simply increasing the current carrying capacity of a traditional conductor will lead to an increase in the operational temperature - damaging the conductor and increasing sag. While two obvious solutions exist - the construction of completely new lines, along existing routes or the replacement of existing conductors with new, more efficient ones - they bring with them their own set of problems.

As a responsible future-focused company Tratos has placed a considerable amount of research and effort into finding a reliable, green solution, which saves time and money. The result is a hybrid conductor that reduces costs, eases installation and its increased power is set to advance the overhead cable sector.

Yet it was in considering replacing only the conductors in an

existing line that Tratos arrived at the development of this completely new, more efficient, hybrid load carrying conductor for overhead lines and, further, to explore new routes to enhanced performance systems.

Hybrid conductors

The new hybrid conductors feature a high load carrying carbon fibre core and two compact, space-saving segmental thermal resistant aluminium alloy (AT1) wire layers, in accordance with IEC 62004, which are applied helically around.

Tratos' prototype used a hybrid high strength composite material core, based on a special carbon fibre and extruded aluminium sheath. The company wanted to develop the best hybrid metallic material possible as a constituent part of a conductor operating at high temperatures.

This advanced overhead conductor features a central core of pure carbon fibres, an outer layer of high modulus glass yarn and a seamless aluminium sheath - extruded over the nucleus as a plastic material (high pressure, low temperature). Impregnation is achieved using a specially developed non-migrating, high temperature resistant compound.

Perfect Elastic Material

A study to evaluate the elastic behaviour of this hybrid core proved that the new cabling is completely free of hysteresis, behaving as a perfect elastic material.

Aluminium Zirconium (Al-Zr) has been used for high strength and conductivity. The alloy has a maximum tensile strength comparable to pure aluminium and retains the integrity of this strength, even at high temperatures. Using this alloy Tratos was able to build a conductor with high thermal limits, working at temperatures beyond those of traditional conductors.

Four kinds of Al-Zr alloys have been developed, with the percentage of zirconium determining their thermal resistance. Of these four, the two most widely used are AT1, called TAL (Thermal resistant Aluminium alloy) and AT3, ZTAL (Zirconium ultra-Thermal resistant Aluminium alloy). With a continuous operation life of more than 40 years at 150°C (TAL) and 210°C (ZTAL) these materials are included in BS EN 62004.

New Conductor design

Tratos' new conductors were designed using a spatial distribution optimisation technique.


This technique - making maximum use of the conductive section - is achieved by removing the free space between the wires. To do this Tratos used sector-shaped wires.

This new breed of conductors are characterised by an electric resistance lower than that of conventional compacted conductors of the same overall diameter. When compared with traditional conductors, Tratos' higher-performance alternative increases the current-carrying capacity by up to twice that of an equivalent-sized traditional design.

Importantly existing pylons and installation techniques can be used, thanks to reduced weight and strain. The new conductors' greater tensile strength will withstand snow, ice and wind loadings, reduce sag and increase ground clearance at maximum current rating. It is fully compatible with existing ACSR and AAAC networks.

Testing

Tratos' prototypes for high load-carrying and low sag conductors were designed, built and rigorously tested at its laboratories and at the institute of RSE. This was followed by a trial installation, in the Alps, which resulted in positive results which were fully in line with expectations. The conductor was installed in the Alps, on a 132 KV overhead line - the installation being comparable with those of a traditional conductor of a similar size.

A report prepared by an engineer for the project states: *"The installation of the line at high altitude (2000 meters above sea level) is a severe test for the conductor: in fact, at low temperatures the mechanical load is transferred from the carbon core to aluminum alloy coats, determining a state of high stress for the latter."* 





Tratos cables contribute to the performance improvement of the LHC accelerator at **CERN**

The Large Hadron Collider (LHC) is the largest particle accelerator worldwide, developed and operational at the laboratories of the research organization **CERN** (*Conseil Européen pour la Recherche Nucléaire* – European Council for Nuclear Research), in Geneva.

The LHC, the most powerful microscope for the investigation of the matter and elementary particle physics, is hosted inside a tunnel of 27 km circumference, at about 100 m underground, across the territories of France and Switzerland. Beams of high-energy protons circulate in the accelerator ring and collide at an energy of 13 TeV (in high-energy physics, the electronvolt (eV) is used as the measurement unit of energy. 1 eV corresponds to the energy of an electron accelerated in vacuum by a 1 Volt potential difference; 1 TeV corresponds to 1000 billions of eV). The observation of the reactions caused by the collision of two particle beams, allows to explore the deep constituents of sub-atomic matter and to reveal the important blocks of the

elementary particle physics puzzle.

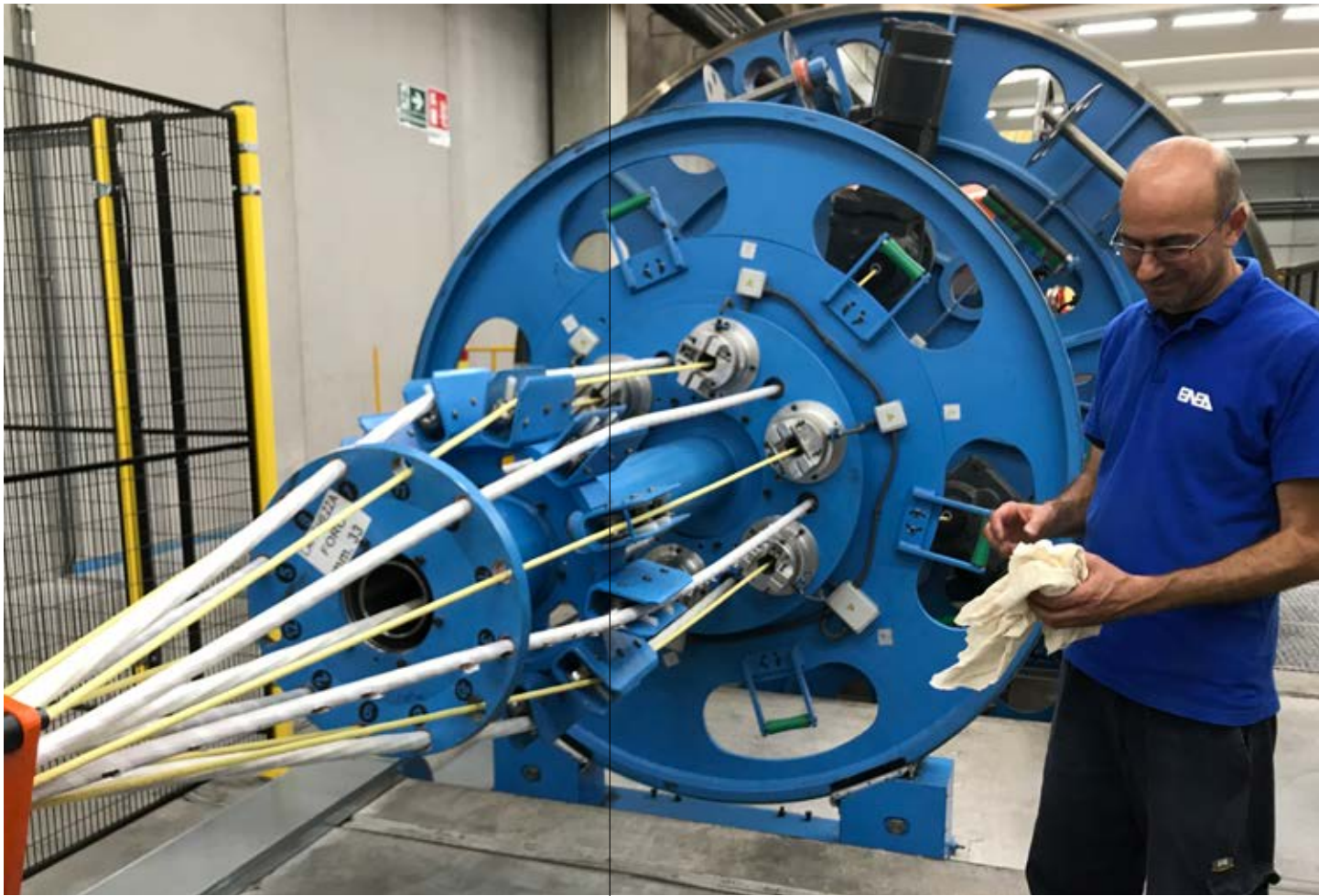
As a matter of fact, the researches carried out at CERN's LHC, allowed for the first time to confirm experimentally the existence of what has been colorfully defined "God's particle" (the Higgs boson, for the physicists!). The Higgs boson, considered the responsible for building the mass of any particle, was the missing link for the completion of the very important theory that describes the interaction between all elementary particles, named "Standard Model".

Thanks to this experimental observation, in 2013 the Nobel prize in Physics was awarded to **Peter Higgs** and **François Englert**, who had proposed this mechanism about 50 years before.

This result has been the outcome of an immense work of thousands of researchers and engineers from every part of the world, who have designed, built, and brought to success an unprecedented scientific and technological endeavor. Beside the great steps ahead allowed by LHC toward the



Tratos team collaborating with CERN



comprehension of the universe and the physics of elementary particles, its development has also produced numerous industrial and technological spin-offs. The most remarkable and renowned example is the invention of the World Wide Web, born in response to the necessity to exchange large amounts of information and data among scientists spread over many countries around the globe.

In the effort to push further the advancement of science and technology, CERN researchers have now planned the new **High Luminosity LHC (HL-LHC)** project, that aims to increase the power of the LHC accelerator starting from 2027, thus allowing to carry out more accurate measurements of particle physics interactions, or to observe completely new phenomena.

Also concerning this last aspect, CERN is pursuing its mission, to push beyond the limits of existing technologies, and proposed the use of the magnesium di-boride (MgB₂) material, never used before in such large scale and power applications. Each of the 10 Superconducting Links cables, about 100 m long, is made of an assembly of different electrically insulated sub-cables, supplying different electrical power circuits, and operates inside a flexible cryostat for the circulation of the cooling helium. Such cable should be able to carry an overall current of about 100.000 Ampere, operating at a temperature of up to 25 K, thus appreciably higher than the 1.9 K (about -270 °C) of the superfluid helium bath cooling the magnet system.

To achieve this challenging target, CERN has been working since some time to the development of new technologies, among which new superconducting magnets for particle beams

bending, new optical devices and radio-frequency cavities for their focusing, and innovative superconducting cables for power transmission to the accelerator magnets from their power supplies.

TRATOS Cavi has taken up the big challenge of developing these innovative superconducting power transmission lines and has invested in the design and manufacture of cabling lines dedicated to the specific and particularly delicate handling of MgB₂ wires, produced by another Italian company, **Columbus Superconductors**.

In fact, the high sensitivity of the performance of this material to mechanical tensile and bending stresses prevented from the use of any standard cabling machine.

After more than 2 and half years of development **in collaboration with CERN**, prototyping, design optimization and verification test on each of the numerous cable sub-components, TRATOS Cavi and the **ICAS Consortium** have successfully completed the manufacture of the first entirely superconducting *Links* cable length.

The full functional test of the cable recently carried out at CERN, confirmed the expected performance and validated the **MgB₂superconducting cable design**. This fundamental milestone toward the success of the entire project will provide a certain push toward the application of this technology for power transmission. [↗](#)



Tratos Cable at heart of ITER Fusion4Energy

Tratos has been part of the International Thermonuclear Experimental Reactor's (ITER) Fusion4Energy project for more than a decade.

The company purpose-built cable creates some of the biggest and most challenging superconducting electromagnets ever produced in the history of mankind.

These gigantic magnets are 60m long, 9m wide and weigh 300 tonnes; the equivalent of a Boeing 747.

The magnets require 750m of conductor bound in a double spiral trajectory to form a series of seven precision-engineered D-shaped double 'pancakes' which are then stacked, bonded, wrapped, bound, laser-welded by robots and cured at high temperatures.

The Toroidal Field (TF) coils will be operated with an electrical current of 68 000 amps in order to produce the magnetic field which confines and holds the plasma in place in the ITER tokamak.

The conductor cable is composed of about 1000 superconducting and copper wires inside a 2 mm-thick round stainless steel jacket, 43.7 mm in diameter.

Tratos' cable was delivered on-spool in a single 760m length, weighing seven tonnes. It was initially unspooled and straightened, after which the cable was cleaned and sandblasted, before being used and shaped into a 12m (l) x 9m (w) double pancake.

The shipment of the first completed components for the ITER Fusion4Energy project began in 2014 and will continue through the 2020s.

The first Plasma is planned for December 2025. ITER is one of the most complex scientific and engineering projects in the world today.

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March 2020

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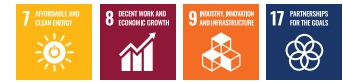


**FUSION
FOR
ENERGY**

TRATOS SUPERCONDUCTOR CABLE FUSION FOR ENERGY

Tratos Italy is currently in the process of producing a contract worth €49 million for the supply of a superconductive cable, encapsulated in a flexible conduit tube, for the world ITER reactor project and the Japanese JT60SA reactor. ITER is an International lead project for the design and build of an experimental fusion reactor which will be capable of demonstrating the feasibility of energy generation via controlled thermonuclear fusion.

Learn more at
www.iter.org



Tratos Queen's Award Celebration

Tratos celebrated its receipt of a Queen's Award this month when the company invited friends, colleagues and special guests to join its senior team at its state-of-the-art factory in Knowsley, Merseyside.

The advanced technology cable company won one of the most coveted of all business awards, a Queen's Award for Enterprise: Innovation for its new high-performance cable sheathing compound, Tratos JBA®.

Liverpool's Lord Lieutenant joined MPs, the Mayor of Knowsley and other dignitaries to tour the factory, meet key employees and, after a presentation from the world-wide cable innovator, be seated for lunch next to Tratos' world-class Faraday Cage*.


The Tratos factory closed for the day for the celebration which gave guests the chance to find out more about the level of innovation at the heart of the business.

The specialist sheathing that won the award for Tratos is tough enough to shrug off the most corrosive elements and protect cable function in the harshest of environments.

Tratos CEO and Chair Dr Maurizio Bragagni was a guest at Buckingham Palace earlier this year to meet other Queen's Award for Enterprise winners at an event to celebrate some of the best and most forward-thinking businesses in Britain. Dr Bragagni met HRH Prince Charles and spoke with fellow recipients of the country's most prestigious award for business. Tratos has worked hard to create a culture of innovation and

has a reputation as the go-to company for developing solutions where none currently exist.

Dr Maurizio Bragagni said: "We were confident of the quality of our Tratos JBA® innovation and the advances it brings, but we were absolutely thrilled to learn it had been recognised with a Queen's Award. Now we want to showcase Tratos innovation at our own celebration of the award."

Tratos continues to develop new products and systems to advance its customers' ambitions for improved performance, added benefits and reliable, consistent and safe operations. 



Tratos UK Manager Alan Harrison; Tratos UK SHEQ Manager, Mr Gianfanco Lutri; Tratos Vice President, Dr Ennio Bragagni-Capaccini



Her Majesty's Lord-Lieutenant of Merseyside, Mr. Mark FW Blundell



Ms. Lesley Martin-Wright, Deputy Lieutenant



Dr. Maurizio Bragagni MBA, CEO of Tratos UK Ltd.



Comm. Dr. Albano Bragagni OMRI, President of Tratos Group





Innovating the cable industry

Innovation is at the core of Tratos business. It has proven to be of paramount success in fostering Tratos competitive advantage as a leading British-Italian cable maker and has allowed it to build in a sustainable way better products and services for its customers.

Tratos is proud of its culture of innovation.

Its focus on finding solutions where none currently exist, on developing intelligent, added-value, sustainable and environment-positive products to help its clients achieve results the right way for the planet defines the company's ambition.

Tratos set up its Academy to educate and stimulate staff and next-generation engineers. The Academy opens a window on Tratos' innovation-led strategy to inspire those who will step up into senior roles over time – and play their own part in changing the world for the better.

In 2019 the company won a Queen's Award for Enterprise: **Innovation**.

Innovation is driven by more than just need; it is driven by 'better'. In Tratos' culture 'better' covers every step of a cable's journey. From setting desired outcomes for improved performance, reliability and quality to the sustainability of production, materials, delivery and installation.

It is difficult to point to a 21st century technology that isn't pow-

ered or enabled with cable. Cable keeps the world moving: Tratos is manufacturing cable for a moving world, but it is innovating to make the world better, too.

The company signed up to the *UN's 17 Sustainable development goals*. Every day it innovates to help deliver them.

Superconductivity – ICAS

Tratos is an active member of Innovation and Consulting on Applied Superconductivity (ICAS). This highly specialised company has been founded in September 2010 with the original

scope of supplying the European portion of the superconducting conductors for the ITER and the JT-60SA nuclear reactors, currently under construction in France and in Japan.

In its name (Innovation and Consulting on Applied Superconductivity) it has been summarized the main activity of the company: providing ser-

ices and product supplies linked to Superconductivity and High-Tech power applica-

tions. Our offer includes the design and production of Low Tc and HTS conductors and coils, along with the cryogenic testing of superconducting devices and the design and production of SMEs, current leads, high current Mineral Insulated conductors and much more.



Italian Consortium for Applied Superconductivity



As an active member of Innovation and Consulting on Applied Superconductivity, at the TRATOS Cavi S.p.A. factory site of Pieve Santo Stefano (AR – Italy), the following activities, among other dedicated projects, are being performed:

- manufacturing of Low-Temperature superconducting cables (based mainly on Nb3Sn and NbTi strands) and it has been mainly used for the ITER and the JT-60SA productions.
- production of High-Temperature superconducting cables, based mainly on YBCO tapes twisted into an Aluminium slotted core: these cables are currently being used for the development of power distribution/transmission lines and for high-field magnets application.
- a new cabling line is currently devoted to the manufacturing of the complex cables for the Superconducting links of the Hi-Lumi project at CERN, based on MgB2 wires.
- another line has been set up in order to apply a very thin insulating coating to favour the adhesion of resin during impregnation processes. Additionally, TRATOS is equipped with several extrusion lines for cable insulation. The newest line is currently devoted to the Non-Destructive tests (Eddy current + Ultrasonic) of long and thick copper tubes, to be used for the manufacturing of the mineral insulated conductors for the In-Vessel Coils of ITER.
- a small-to-medium size coil winding line, complete of de-spooler, sandblaster, washing machine, wrapping machine and active winder, ovens for heat treatment and chambers for VP impregnation is available as well for a complete magnet production.
- Fusion for Energy (F4E)
- ICAS (Innovation and Consulting on Applied Superconductivity, Società a Responsabilità Limitata)

Overhead Conductor Research

In electrical engineering, a conductor (or electrical conductor) is defined as an object or type of material that allows the flow of charge in one or more directions. It is an important component of overhead and underground electrical transmission and distribution systems. The choice of conductor depends on the cost and efficiency. An ideal conductor has the following features.

1. It has maximum electrical conductivity.

2. It has high tensile strength so that it can withstand mechanical stresses.
3. It has the least specific gravity i.e. weight/unit volume.
4. It has the least cost without sacrificing other factors.

Tratos has now developed, tested and successfully installed a completely new hybrid design of conductor for use in overhead lines based upon a high load-carrying carbon fibre core with two compact, space-saving, segmental thermal resistant aluminium alloy (AT1) wire layers, helically applied around in accordance with IEC 62004.


The new hybrid conductor replaces completely the use of traditional design conductors, where any increase in transmitted power resulted directly in either an increase in size and hence the weight of the conductor, or an increase in the operating temperature above the recommended maximum operating temperature.

Fiberness

World-leaders from the telecommunications industry gathered at the Tiber Valley in Pieve Santo Stefano for a landmark event, hosted by Tratos.

One of the most important events in the industry, with focus on the development of ultra speed broadband and delivering the ambitious goals of the European Digital Agenda.

The venue every year is Tratos' birthplace in one of the most beautiful parts of Italy. This year's conference, titled "Cabling metro and FTTH networks", divided into two parts: a strategic view, where leading members of the National Telecommunication Operators presented their insights in the field of broadband networks and ultra, and a second that had a technical focus and included analysis of field-proven solutions.

Tratos demonstrated its commitment to retaining its place as a European leader in the production of cables and fibre optics, research and the continuous development of new technical solutions. The company has grown to more than 400 employees, fostering trade relations with 52 countries around the world and developing manufacturing sites in Italy and the United Kingdom. 



Elisabetta Bragagni Capaccini, Member of the Board of ICAS - Italian Consortium for Applied Superconductivity



Research & Development

Tratos is unlike other cable companies. It specialises in design without compromise to overcome customers' complex challenges. It welcomes challenge. A drive for technical innovation focused on enhanced performance has led Tratos to develop cable that has gone further – moving industries forward. Its bespoke cable design team specialises in creating cable to work in new and more challenging environments and deliver broader and better functionality.

It's this high level of skill, responsiveness and collaborative working with customers that has seen Tratos' research and development team designing for a range of challenging applications. From developing cables for submarine missiles to superconductivity cables for nuclear fusion, Tratos' R&D expertise is sought by some of the most ground-breaking and sensitive projects. Fifty years of building better cable has been achieved by investing in its own rigorous testing methods which ensure the cable it produces is the best it can be.

Tratos R&D has developed innovative products for:

Fusion for energy

Tratos is a world leader in superconducting cables for Controlled Thermonuclear Fusion, developing products for this ground-breaking engineering mega-project. Nuclear fusion is deemed one of the options useful to ensure a large-scale, safe, environmentally-friendly and virtually inexhaustible source of energy. Tratos is one of the international partners of the winning consortium now working on the project at the superconductivity laboratory.

New generation overhead conductors (significant cost gains, an innovative approach to countering sag and power loss and delivering faster, easier installation).

Telecommunication – Fibre Optics cables

Telecoms/data – dual fire barrier fibre optical cables with advanced fire resistant capabilities – designed specifically for underground and metro systems; signalling, power, control and telecommunications cables for the railway sector. Tratos innovation goes further. Tratos' clever theft-prevention measures include reduced copper content to make cable theft less rewarding, improved traceability, identity threads and even alarmed cable. Fire resistant cables – for public buildings, schools, hospitals, underground and

over ground railway stations, department stores, cinemas, hotels, theatres and computer centres as well as offshore vessels and hazardous environments such as Oil & Gas platforms. The company can supply a complete range of fire resistant cables to comply with the latest Standards and Codes of Practice covering fire detection, alarm systems, emergency lighting or other vital power supplies. Tratos is a long established and experienced manufacturer of fire resistant cables for major projects such as Wimbledon's Centre Court, Caerphilly Hospital and London Underground's Kings Cross and St. Pancras Stations.

Innovative compounds


JBA – Cable that has to deliver power, control, signalling and communication; Tratos' composites can handle any or every element. Its submarine and highly specialised umbilical cables are designed to multiple international standards to cope with cross-country installations. In the toughest of environments Tratos' cables resist mud, fire, extreme temperatures, water and impact.

Twickenham International Rugby Ground – Tratos facilitated power for the Rugby World Cup at Twickenham, applying its subsea cabling technology to combat the challenges of the stadium's high water table. Cable had to maintain its integrity despite constant immersion; and time was critical. The Rugby World Cup was imminent and the stadium couldn't afford the risk of a world-stage power outage. Within an eight-week turnaround, and working around restricted access, the company progressed with cable designed for installation and continuous operation in waterlogged underground ducts for a life of 20+ years.

The company is dedicated to producing higher-functioning, long-lasting, quality cable that is lighter, stronger, more compact, easier to install and has cost and environmental benefits.

Tratos' programmes of research & development run across all of its product areas.

Meaningful developments on cables for overhead power lines with high thermal limits and reduced deformations at high loads have the potential to facilitate significant advances for the energy industry. Advances in the field of insulated, self-supporting cables for medium and high voltage; for composite special cables for transport of signalling and for power in difficult conditions (earth moving equipment and mobile port equipment for moving loads) and optical fibre cables (for military use) are all helping change industries and the way we

live. 



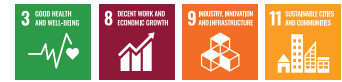
Our Sustainability Strategy



In 2019, Tratos launched its first integrated sustainability strategy following on from years of sustainability and environmental advances. In 2021 the company pledged to strengthen its Sustainability Strategy and drive even more advances. This strategy commits Tratos to adopting and maintaining high standards, often going beyond legal requirements. It champions sustainability issues material to Tratos' business, employees, communities and customers. It's a big goal. It pushes Tratos to achieve consistent, high-quality social and environmental performance across all operations and increase stakeholders' knowledge of how the company works through meaningful disclosures and transparency. Tratos has committed to better understand, engage and partner with key stakeholders to create sustained mutual value. Tratos supports the 2030 development agenda and contributes is signed up to, and working to deliver the UN's Sustainable Development Goals. Tratos produces cable – cable for connecting and powering the

world. Its products are fully recyclable and made with respect for environmental standards. The company's ability to positively influence the sustainability credentials of projects and help its customers is an important part of this sustainability strategy. Tratos is one of the main and critical pillars for the transition to a low-carbon economy. Tratos is part of the ITER alternative energy project, Fusion4Energy, part of the ICAS consortium. The ICAS (Innovation and Consulting on Applied Superconductivity) company was founded in September 2010, to supply the European portion of the superconducting conductors for the ITER and the JT-60SA nuclear reactors, currently under construction in France and in Japan. Tratos' involvement includes the design and production of Low Tc and HTS conductors and coils, along with the cryogenic testing of superconducting devices and the design and production of SMEs, current leads, high current mineral insulated conductors and much more. [T](#)





Financial Director **Kevin Martin** Talks Tratos Europe Compliance



Tratos Finance Director Kevin Martin is part of the senior team responsible for successfully steering one of the UK's most innovative independent manufacturers through the measures needed to keep it serving global markets smoothly beyond Brexit's December 31st 2020 transition deadline.

Mr Martin led the 100% compliance push to ensure the British cable-maker and Northern Powerhouse stakeholder could guarantee no business disruption as the deadline approached. While the EU is the UK's single biggest export market, accounting for 46% (or roughly £289 billion) of its exports, Tratos supplies some of the biggest infrastructure projects worldwide. However, it was clear that, for international clients, one of the biggest advantages of working with Tratos would be uninterrupted product supplies.

UK businesses will see the landscape for EU exports change immediately post Brexit negotiations cut-off point with tariffs on many UK exports. The cable maker's Brexit strategy was focused on ticking all the right boxes for importing materials into the UK and for exporting to the EU.

Mr Martin said: "There isn't a business that hasn't had to respond to changes and challenges in 2020. Britain has had more than its fair share of economic tremors to contend with as it navigated an exceptional year, but two things stood out for me; the first was the support from our financial partners HSBC.

Our bank has a good understanding of the business and was very helpful as we planned our way through surviving and succeeding in a time of Covid 19 – and ensuring we were Brexit-ready before the end of the year. The second was colleagues' response to the measures we imposed for their safety and for business continuity – it is an indictment of their commitment to the business and the strength of the Tratos culture. It was the first priority for us to keep our people safe, and we kept communicating, benefitting from incredible support from our clients in the transport, telecoms, ports and power sectors in particular – and our long-standing suppliers.

"Tratos UK continued to trade throughout the first wave of Covid-19 restrictions as an essential manufacturer providing components to critical infrastructure businesses such as transport, power and telecommunications. We achieved it by going for the **most stringent Covid measures** available to us from day one. The factory, office, canteen and warehousing facilities all had well demarked social distancing measures in place including people working from single offices and with Perspex





George Howarth visits Knowsley

screens. Cleaning was increased and canteen visits scheduled. "The economy has been shaken, Covid hasn't finished with us yet and Brexit has not quite declared its colours yet. I can see that the first quarter of 2021 will continue to be challenging but believe we will see some recovery as we move into spring." Boris Johnson said as negotiations continued that the outlines of a deal had been drawn up and that a deal was there to be done, but still would not rule out Britain's departure from the EU bloc without one. If there is no agreement as negotiations close, UK-EU trade will default to the **World Trade Organization** (WTO) rules. That default setting brings with it tariffs on many imports and exports, which could push up costs for firms and consumers. If Britain's exit lacks a deal, the combination of tariffs, customs procedures, and regulatory change will be onerous.

Like any forward-looking business Tratos looked to put plans in place for a smooth transition into 2021, although, says Mr Martin, the shape of those plans will likely be tailored by and for each individual business. The best businesses, he says, will leave rooms within the planning to accommodate shifts in strategy to process and respond to potentially unanticipated Brexit fall-out.

Understanding your own businesses reliance on European imports and exports has never been more important, he added, and board directors who were quick to prepare and grasp the impacts of change would lead the companies that would be fastest to recover and prosper.

"Not everything can be fully planned for where you're entering

a place of wholesale change," said Mr Martin. "A change in one procedure or process somewhere down the line, whether at customs or within your own supply chain, has the potential to offer gains or losses depending on how those changes' ripples go. So it is important to stay alert and remain agile so that incoming change is spotted early and managed effectively." The other key focuses for Tratos remain its dedication to innovation and sustainability – both of which are likely to be needed as never before.

For the UK Tratos secured:

- GB EORI
- UK VAT Reg
- Full Declarations vs Delayed Declarations
- DDA
- Guarantee
- PIVA
- Incoterms
- Regulatory
- Instrastat

For exporting to the EU Tratos secured:

- EU EORI
- EU VAT Reg
- Direct v Indirect Representation
- DDA
- Guarantee
- Import VAT
- Fiscal Representation
- Regulatory
- VAT Reporting





Tratos China office strengthens its presence

Today Tratos welcomes Mr Jeff Fan as the new Managing Director of Tratos China. Mr Fan's primary focus will be to support and grow Tratos business in China from their local office based in Shanghai. Accompanied by Ms Winnie Yu in her capacity as Key Account Manager, Mr Jeff Fan brings additional local support to the Chinese operation of the Tratos Group. In addition, Mr Fan complements the groups experience with his long-standing background and knowledge in the Chinese market of heavy industries and Ports & Maritime, where he has held several senior key positions during the last years. Mr Fan graduated in Mechanical engineering from Shanghai University and started his career in the Chinese crane manufacturer SPMP (later to become ZPMC). After a 7 year break from the Ports & Maritime industry, where he took different positions in sales & marketing on the Oil & Gas market (Caltex and Total Oil), Mr Fan joined Cavotec group in 2002. Appointed as Vice General Manager of Cavotec China, and deeply involved in daily operations, he acquired more than 20 years of experience in the Ports & Maritime, market and mining, and tunnelling industries. In 2017 Mr Fan was appointed as Regional Sales Director of Cavotec, Ports & Maritime division, responsible for the Far East Region.

Last year, in Shanghai, Tratos celebrated 20 years of continuous cable supply and 10 years of corporate presence in Asia since the opening of their Shanghai office. At the ceremony, which was joined by several key customers and delegations from the UK, the Italian Chamber of Commerce, and representatives from bodies such as BSI Group and the IEC, Tratos CEO Dr Maurizio Bragagni made an overview and short presentation of the last decade and growth of Tratos in China. This has seen the company forging stable and strong relationships with companies like ZPMC, SANY and Wuxi Gongli. The group consolidated itself as referential on mining and automation projects for ports, recently supplying its goods for Qingdao, Rizhao or Taicang new terminals just to name some of the most relevant. The appointment of Mr Fan comes at a significant time, in the middle of the Covid-19 pandemic showing the commitment of Tratos to its Chinese customers, and aspiration to continue growing regardless of this difficult period. Tratos has continued supplying without interruption its goods to the Asian ports and users during the pandemic and is now in a position to offer better service and presence to the region. [📄](#)







Tratos at the IEC Annual General Meeting

Dr Maurizio Bragagni, was in Shanghai this month where senior team members joined around 4,000 delegates from 173 countries for the 83rd annual general meeting of the IEC (International Electrotechnical Commission). Company CEO and Chair Dr Maurizio Bragagni met with other industry leaders, technology experts, regulators, academics and a range of stakeholders to explore future goals and take stock of IEC standardization and conformity assessment work. Dr Bragagni was also invited to contribute, for the first time, to the IEC's Marketing Strategy Board, just a few days after receiving a commendation from the Institute of Directors in the UK. The IEC, the world's leading organization publishing international standards for electronics-related technologies, also listed Tratos' Queens Award for Enterprise: Innovation celebration event as part of the event's itinerary. Tratos Ltd, part of the Tratos Group, which won the UK's most prestigious award for ahead-of-its-time cable compound innovation, organised the event to celebrate with global customers and partners.

Dr Bragagni was at the IEC to champion continuous professional development and learning linked to technology. He met a series of senior influencers including IEC Market Strategy Board Secretary Peter Lanctot, David Bell from National Standards Body BSI, Dominic Lyons from the British Consulate General, Shanghai and Weifeng Ma from the China British Council. A world event, the organisation behind it, the IEC is more than a purely technical organisation. It is dedicated to promoting international benefits from the advancement of technology. This year's meeting theme was *"Better Quality Better Life - Reliability, Safety, Efficiency"*, with sustainability a major theme. The conference included an IEC Advisory Committee on environmental aspects (ACEA) workshop on the circular economy. The ACEA provides guidance to the Standardization Management Board (SMB) on issues related to the environment. [L](#)



C A B L E S F O R A M O V I N G W O R L D

TRATOS MTO®

Based on AS/NZS, VDE, BS, UL, CSA, MSHA, OSHA

Specifically customised for the mining market; TRATOS MTO® is designed to **resist sunlight, water, extreme temperature, chemical, oil and abrasion**, while also performing **consistently** in tough mining environments. The voltage range for TRATOS MTO® is between **600V** and **35KV**.

Case study: **TAKRAF** (Kosovo)

Tratos MTO® ES3 - 30 kV cable of flexible and reelable rubber hose cable with a diameter of 70 mm and a length of 2100 m. The reel has an inner diameter of 3 m. Speed: 9m/min

www.tratosgroup.com



Tratos laboratories win new accreditation



Test laboratories at the Italian headquarters of global cable innovator Tratos have been accredited by the country's Dipartimento Laboratori di Prova.

The accreditation certifies the technical competence of the Tratos Cavi Spa laboratory at Pieve Santo Stefano AR in line with the principles of ISO 9001.

This accreditation is for CPR. Accredia is the equivalent of UKAs.

Vice President of Tratos Group, Ennio Bragagni, said: *"We are proud to have achieved recognition for the quality and consistency of the valuable work undertaken at our laboratories in Italy. Tratos has long campaigned to raise standards and has been an early supporter of initiatives aimed at monitoring cable quality to keep people and buildings safe. Our technicians have done an outstanding job."*

The President of Tratos Group Ing. Albano Bragagni added: *"This is very welcome, something that sits well with our growing reputation for innovation and recent recognition for it with a Queen's Award for Enterprise. Here in the UK, we have pushed for more stringent measures for assessing cable quality and performance through our Safer Structures Campaign and we pledged to ensure that the cable we produce exceeds minimum standards. That work is ongoing and the news that our Italian laboratories have won this accreditation is another big step forward."* 

The biggest Faraday Cage in Europe

Tratos is home to the largest Faraday cage test site in Europe at the company's Headquarters in Pieve Santo Stefano, Italy. Measuring 24m x 16m and standing at 14m high, the Faraday cage enables Tratos to effectively carry out AC resonant tests on site, allowing testing of up to 220 kV of nominal voltage cables, of up to 20 km in length. The cage enables vital AC resonant tests to be carried out in a controlled environment. The facility incorporates an innovative locking system to ensure perfect shielding from external interference. Inside the cage there are state-of-the-art instrumentation and equipment for testing along with an adjustable high voltage reactor which, together with the exciter and the regulator, create the heart of the system.

This allows incredibly precise measurements to be recorded, ensuring that the cables meet the exacting test parameters as specified in IEC 60228, 60840 and 60811.

Tratos HV cables are recognised for their advanced technology and construction. Their construction makes them flexible, light, strong and low maintenance and the HV cables range is supported by a range of simple accessories. All Tratos quality systems and procedures are BASEC approved to ISO 9001 and ISO 14001 standards.

Investment in the Faraday Cage, has enabled Tratos to produce cable, tested at its own facilities, that meets the exacting standards demanded by industry [🔗](#)



Tratos Faraday Cage



Tratos invests in in-house **CPR** testing



Ennio Bragagni-Capaccini

Tratos experts joined representatives from VDE Offenbach for a facility visit at Taurus instruments in Germany and to see a demonstration of a new fire testing machine designed for the upcoming Construction Products Regulation (CPR).

The company's Ennio Bragagni-Capaccini, Vincenzo Bellini and Rainer Pollmann partnered Detlef Stämmeler from VDE Offenbach during the visit to meet Taurus Instruments' CEO, Stephan Heise.

VDE in Offenbach is Germany's only BauPVO test facility. Among a wider-range of testing it tests single-cable to EN60332 and carries out bunched-cable fire testing to EN 50399.

Tratos' strategic aim was to buy the same Taurus Instruments machines used at VDE Offenbach to ensure its products are ready-tested for CPR compliance. VDE Offenbach hosted Tratos and Taurus later the same day where a more detailed explanation of the testing equipment's operation was provided.

Choosing this test machine will allow Tratos to respond faster to CPR requirements. The company's cables can be tested in its own laboratories to give greater customer confidence and quicker response to orders covered by the new requirements [T](#)





Construction Products Regulation is now law.

Tratos is compliant

*Find out more visiting our website:
www.tratosgroup.com/quality/cpr*





ACI highlights issue of golden samples

Approved Cables Initiative (ACI) believes the practice of testing golden samples and ignoring the value of third party approval and independent testing risks flooding the market with substandard cable.

The ACI understands that not only are some manufacturers producing golden samples* to meet specifications and standards and in some instances to obtain a third party test report, but this summer, a cable manufacturer secured an order by supplying golden samples from another legitimate cable producer.

Once these trade samples were accepted, the manufacturer then supplied its own sub-standard cable to complete the order. None of the substandard cable was sold or installed, as the importer carried out its own in-house cable checks once delivery was received to ensure they were of the same quality as the original samples.

All cables supplied as part of the final order failed due to high resistance and in some cases sticking cores because of uncured rubber insulation. The original trade samples were clearly golden samples supplied with the intention to deceive.

“As with the recent VW emissions deception, it is clear that there are those who are prepared to bend the rules by producing isolated samples to deceive the unwary; they will also pass off other manufacturers’ products as their own in order to gain a sale, said Peter

Smeeth of the Approved Cables Initiative.

“This case, which has been reported to Health & Safety Executive and Trading Standards, demonstrates the lengths some fraudulent manufacturers and suppliers are prepared to go to and it should be a wake-up call to those purchasing cable and importing into the UK.

“Without rigorous third party approval, where not just the cable but the cable manufacturer themselves have been regularly audited more frequently than annually, including completely unannounced visits, and products periodically re-tested several times each year, importers and distributors are leaving themselves wide open to the dangers of deception”, continued Peter Smeeth.

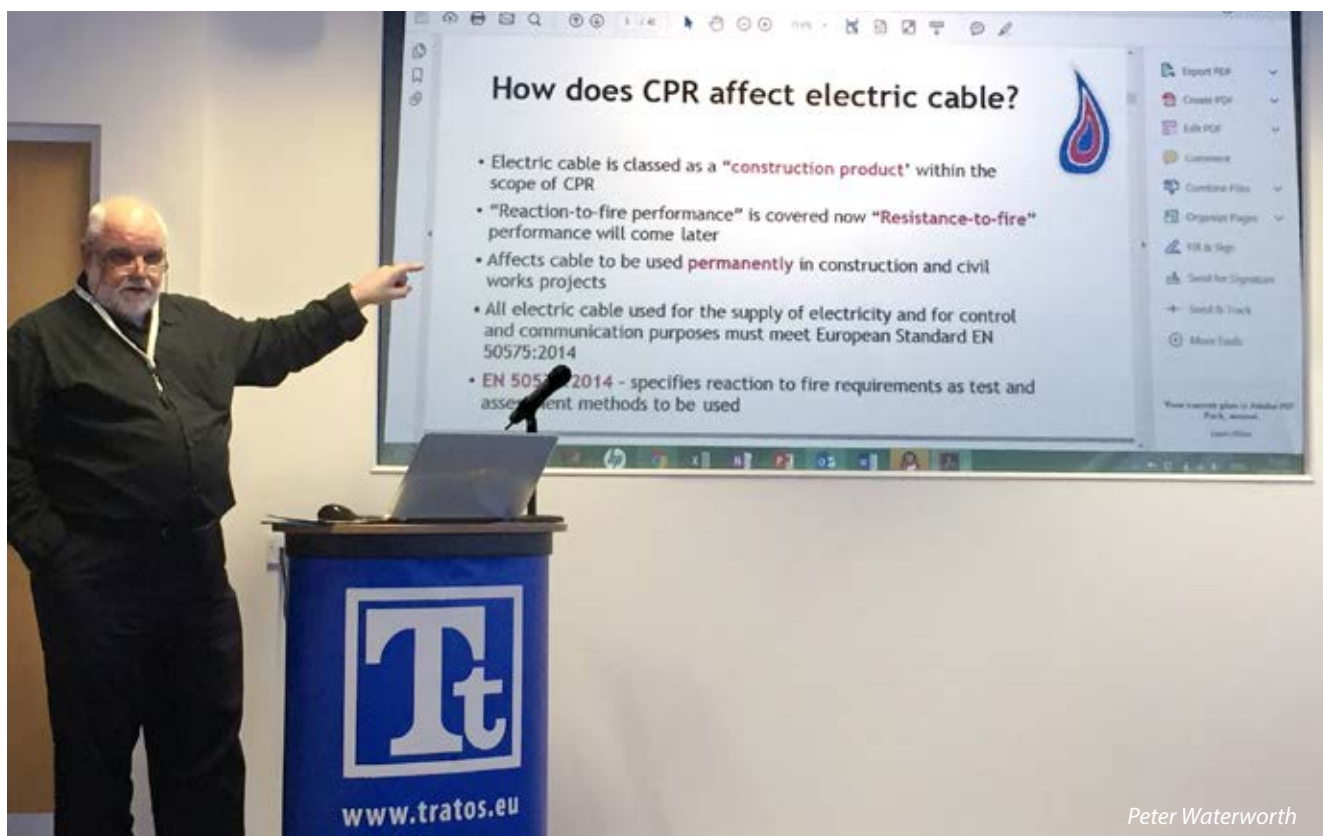
Regulators within the car industry are now seeking to tighten up on vehicle assessment systems and the transport secretary has said that the priority is to protect the public and give them full confidence in diesel tests, with the focus on laboratory and real world testing.

The ACI would also urge Government to accept that there are other industry sectors that are feeling the full force of the golden sample deception and need a much tighter approach.

*a random cable sample taken from a manufacturer’s normal production run that is produced to standard and selected by the third party for independent testing [↗](#)



CPR Workshops prove a successful formula



Peter Waterworth

Earlier this year, Tratos hosted to a number of Construction Products Regulation (CPR) workshops in London and Merseyside for those wanting to understand better the details of CPR and how it may affect them.

The Construction Products Regulation assesses the performance of construction products throughout the EU enabling their comparison from different manufacturers in different countries. It deals with the way a product is placed on the market, how its performance is declared and the conformance system of assessment.

The half day workshops were designed to be informative industry events and aimed to help attendees prepare for the 1st July deadline.

Delivered by Tratos' Technical and Development Director Peter

Waterworth, the workshops were extremely well attended with many positive responses from the audiences on the detail of the content and relevance to their specific business.

Peter Waterworth said: "The workshop programme was one of a number of communication tools that Tratos employed as part of its CPR campaign, but ultimately probably one of the most valuable. We have felt for many months that there was a lot of confusion surrounding CPR. The workshops enabled us to tailor content to suit the audience, highlighting their responsibilities to ensure they are CPR compliant.

"The audience was encouraged to raise and discuss issues and concerns in an open forum and I believe attendees appreciated the valuable content, going away more confident in what they needed to know and where gaps existed in their own CPR preparations," continued Peter

TRATOS ACADEMY



The **Tratos Academy** in action

“Skilled, motivated and engaged people are essential to achieving our growth ambition”

The Tratos Academy is driven by commitment to people development. Investment in people is the foremost way to deliver success for business in a rapidly changing market. Tratos has made a significant investment in establishing the Academy.

The Academy provides clear direction, training and support to Tratos people and opens its doors to next-generation engineers (undergraduates). Its approach to learning supports the company’s broader sustainability strategy.

Visiting experts and senior executive team members play a key part in the Academy’s course development and delivery.

What is it aiming to achieve?

The Academy works to:
Educate new employees – and inspire them to go on to learn more.

Further develop existing staff.

Enhance performance in key areas.

Provide access to learning materials for self-study as a contributor to continuing education/professional development. Inspire engagement and new thinking around innovation and sustainability.

The Academy brings people together – from experienced technical experts to apprentices – to provide theoretical and ‘taught from experience’ mentoring and learning. Working in peer groups offers opportunities to share experiences.

Professional Development Programme

Tratos works with a range of highly respected UK and international universities alongside its own experts to develop its Academy’s coursework. [T](#)



Electrical Engineer Students learn from **Tratos Academy**

Some of the country's top electrical engineering students swapped the classroom for the factory floor to expand their knowledge at Tratos' UK multi-million-pound manufacturing facilities in Merseyside last week (Thursday 12th July).

The Electrical Engineer Students from The University of Manchester, who are studying for an MSc in Electrical Power Systems Engineering, visited Tratos manufacturing facilities to understand more about cable design and manufacturing. This trip was coordinated by Academia and Industry to further facilitate the training of young engineers.

Tratos' facilities in Knowsley now benefit from a large specialist drum twister to lay up large cores – capable of twisting cores up to 400sqmm; a further extrusion line for outer sheaths and an insulation line. The new equipment was installed, commissioned and commenced operation at the end of 2016 and additional equipment is still being installed.

The British factory is also home to the company's UK quality and technical facilities comprising routine, in process, tests such as dimensions and spark test, as well as more complex in-depth testing in their laboratories. Laboratory testing involves detailed dimensional checks, measurement of electrical parameters as well as a suite of tests to assess physical properties such as tensile strength, elongation at break, heat shock, shrink back and vertical flame tests.

The Knowsley factory has recently commissioned a new, state

of the art, Faraday cage used to ensure the long term electrical integrity of the cables they produce.

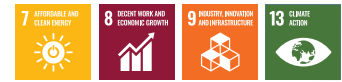
Dr Kostas Kopsidas, director of MSc in Electrical Power Systems Engineering at The University of Manchester said: "We have been aware of Tratos and its working in overhead conductors for a while. When invited to visit their manufacturing facilities it seemed a natural fit with the course and my research in overhead lines and power systems. It has not disappointed; and the students will take away a great deal from this visit today".

Peter Waterworth, technical and development director at Tratos said: "We place a high value on learning and training, which is why we invested in our own teaching Academy at Knowsley four years ago. By linking with educational establishments, we bring theoretical learning to life and hope these Electrical Engineer Students will return to complete their course and dissertations with a more enlightened view of cable manufacturing".

Tratos, which began structural expansion work at the plant in 2015, has extended the factory four-fold, bringing an additional 150,000 sq ft of new industrial and office space into use. The investment resulted in 40 new jobs.

The quality of the Tratos development and its manufacturing capability was recognised by the Knowsley Business and Regeneration Awards in November 2017 where the company received the award for Manufacturer of the Year. [\[F\]](#)





Tratos technology enables next step in world's biggest nuclear fusion project



26 October 2020

ACKNOWLEDGEMENT

This is to acknowledge the successful completion of the contract between ITER Organisation and Mis. Tratos Cavi SPA for supply of 132 kV single core, copper conductor, XLPE insulated, double screened, FRZH sheathed power cable vide ITER PO reference 4100008xxx dated 18.09.2019. [...]

The world's biggest ever magnetic confinement plasma physics experiment took a step closer to its ultimate goal last month (October 2020) with the arrival of its first mineral-insulated conductors from independent cable innovator, Tratos.

Tratos supplied special HV cable, delivering of 132 kV single core, copper conductor, XLPE insulated, double screened, FRZH sheathed power cable for this phase.

In a letter acknowledging Tratos' contribution, ITER High Voltage Electrical Engineer (Neutral Beam Section), Mr A.S., outlined the importance of the ITER experiment, designed to harness fusion power for limitless carbon-free energy, and the role of Tratos' special HV cable in the development of a beam accelerator. Mr A.S. concluded his letter with praise for Tratos' CEO saying: 'Gifted are those who have a chance to adopt such principles from Tratos Academy and have a chance to work with such a leader.'

Almost ten years ago 35 ITER members entered into the 35-year collaboration to build and operate the ITER device. A two-decade research programme was planned which would share experimental results and intellectual property with international stakeholders including China, the European Union, India, Japan, Korea, Russia and the United States. F4E (**Fusion4Energy**), managing Europe's contribution, is responsible for manufacturing nearly half of the components, all buildings and infrastructure on-site.

The project's ultimate goal is unlimited energy. It was set up to explore the possibilities of fusion, the nuclear reaction that powers the Sun and the stars, as a source of safe, carbon neutral and potentially limitless energy.

ITER, designed as the key experimental step between today's fusion research and tomorrow's fusion power plants, is a

massive undertaking involving around a million components and ten million parts. The ITER Tokamak, designed to produce 500 MW of fusion power for 50 MW of input heating power (a power amplification ratio of 10), will be the largest and most powerful fusion device in the world and earn a place in history as the first fusion device to create net energy.

In acknowledging Mr A.S. comments Tratos President, Dr Albano Bragagni, said: "I am delighted to receive Mr A.S.'s letter and we continue to be incredibly excited and honoured to be involved in this incredible experiment. All of the Tratos team working on designing and producing cable for the project are doing ground-breaking work and are rightly proud of their contribution. They merit the praise for this excellent result." Tratos' President Albano Bragagni added his congratulations to the senior engineers and production team at the company for a monumental achievement that would help bring the project closer to its ambition of unlimited, carbon-neutral energy.

Check out Tratos **Case Study on ITER** for more information about the project. [↗](#)

CABLES FOR A MOVING WORLD

TRATOS HV[®]

based on IEC 60228, 60840 and 60811

*Tratos is an international manufacturer and supplier of **High & Extra High** Voltage cables up to **245 kV**. Tratos HV[®] cables are distinguished by an **advanced technology** and construction, which provides **flexibility, lightness** and **strength**, low maintenance and simpler accessories to the request of high voltage cables.*



*Case study: **Emirates Steel Industries***

Tratos signed a contract with Italy's Danieli Corporation for the expansion of the Emirates Steel Industries (ESI) steel manufacturing factory located at Abu Dhabi's prestigious industrial city ICAD. Several kilometers of HV 72 kV cable have been supplied for this project.



www.tratos.eu

Tratos Cavi S.p.A - via Stadio, 2 - 52036 - Pieve Santo Stefano - Italy - tel. 0039 0575 794 329 - fax 0039 0575 794 246 - e-mail export@tratos.it

Tratos is fully compliant with the Restriction of Hazardous Substances (RoHS) regulations, WEEE Directive and REACH. Product Certification includes requirements for Environmental issues directly relating (Iso 14001) to the Product and Manufacturing processes (Iso 9001) as well as limited Health & Safety issues directly (BS OHSAS 18001) relating to the Product and Manufacturing processes.

Railways & Mass Transit

Working with some of the largest rail sector companies in Europe, Tratos specialises in the production of digital-ready signalling, power, control and telecommunications cables - bringing technological innovation and innovative cable design to all its products.





Tratos UK Ltd wins Network Rail cables approval

Advanced technology cable maker Tratos has gained Network Rail cables approval for its family of enhanced unarmoured signalling power products.

The independent British manufacturer won a Network Rail Certificate of Acceptance (Network Rail product approval no: PA05/07165) for cable designed for signalling power distribution systems in accordance with NR/L2/SIGELP/27408. The cables feature glass fibre weave (FGT) and water blocking (WB). The range comprises both Copper and Aluminium conductors with either PVC or LSOH sheathing. Copper conductors are stranded and can be either circular or sectoral shape dependant on CSA. The formal acceptance by Network Rail Acceptance Panel (NRAP) authorises Tratos' Railways' product to be used on projects for which Network Rail is Infrastructure Manager under the ROGS (Railways & Others Guided Transport Systems) regulations.

Chris Harris, UK Sales Manager, Mass Transit, for Tratos said: "This is a significant milestone for Tratos. Rail is a core sector for

NetworkRail

us. The Tratos sales & technical team is delighted to offer Network Rail PADS approved Enhanced Signalling Power Cable. We are focused on innovation and quality and have a particular strength, as well as a proven track record, in the rail sector, so this latest acceptance is very welcome."

The Network Rail product acceptance process applies to products intended for use on or about rail infrastructure and ensures they are safe, reliable, fit for purpose, compatible and do not export unacceptable risks to the infrastructure.

Tratos was one of a small number of British companies to win a **Queen's Award for Enterprise: Innovation** last year, taking the award for its enhanced-performance JBA® cable compound. The new cable technology brings big advances for Railways, Mass Transit and other industries.

Tratos CEO Dr Maurizio Bragagni said:



“The complete range of cables will be manufactured at the Tratos Knowsley Merseyside, factory. We are unusual in this industry – in what we do and in the way our company is ‘built’. We are an independent British SME. I would like to commend the particularly enlightened thinking by Network Rail in opening the door to a smaller and more agile innovation-led company like ours.”

Construction or maintenance work on the UK rail infrastructure is safety-critical. Network Rail is dedicated to ensuring that only products that have passed its own very thorough performance and safety tests are approved for use on its sites. Network Rail and its appointed contractors can now purchase and install Tratos’ enhanced signalling power cable product range (below) across all Network Rail regions.

Product Range: NR/L2/SIGELP/27408

- 2, 3 and 4 Core CU/XLPE/WB/FGT/LSOH
- 2, 3 and 4 Core CU/XLPE/WB/FGT/PVC
- 2, 3 and 4 Core FAC /XLPE/WB/FGT/LSOH
- 2, 3 and 4 Core FAC /XLPE/WB/FGT/PVC
- 2, 3 and 4 Core SAC /XLPE/WB/FGT/LSOH
- 2, 3 and 4 Core SAC /XLPE/WB/FGT/PVC

On top of Network Rail cables approval, Tratos develops and manufactures advanced technology cable for applications including defence; aviation; ports and maritime; highways; rail and mass transit; construction; oil and gas; green energy, wind power and nuclear fusion; power transmission and communications. [f](#)



Cable theft rail delays could be avoided

January saw UK railway cable thieves in action again, costing time and money and causing chaos, this time in Wales.

Following the theft of signalling cables between Cardiff Central and Llantwit Major train services were cancelled and others delayed by up to an hour, with disruption throughout the day.

One of the most high-impact and all-reaching economy disruptors is railway cable theft. It leaves commuters angry, frustrated and in the wrong place – and trains displaced which lengthens delays.

But the chaos goes further than just being late for work or missing meetings. Last year, according to the latest figures, Great Britain rail delay times because of cable thefts has reached a five-year high.

A BBC investigation earlier in 2019 found there were nearly 950 hours of delays across more than 7,000 journeys in England, Wales and Scotland last year. Other figures, from British Transport Police, revealed an 85% increase in live cable thefts last year while Network Rail said thefts cost the taxpayer millions of pounds each year. But the cost the country's businesses is considerably higher as freight – as well as human resources – fail to reach their destinations.

Britain's rail network is designed to fail safely. If a cable is cut trains stop while the issue is located and resolved. Thieves, however, risk injury and death.

Independent UK cable innovator Tratos, part of the Tratos Group, asks why Britain is continuing to put up with these disruptions when there is a full-proof and cost-effective solution already in

place which, adopted wholesale, would thwart thieves.

CEO and Chairman of Tratos, Dr Maurizio Bragagni, said: "My company brought its technical solution to the market in 2010. I believe the reason it hasn't been taken on board wholesale is that the technology was just too far ahead of its time.

"Tratos developed a range of options to make cable theft less profitable for thieves and traceability easier for the police almost a decade ago. Its cable has the added bonus of deterring metal merchants from receiving stolen goods and, because copper either doesn't feature or its levels are negligible, it is commercially unviable for thieves.

"We use aluminium rather than copper as a conductor. Aluminium has a lower scrap value (stealing 1000 metres of cable is about 75% less profitable than copper). Alternatively, aluminium clad steel conductors – very difficult to separate for scrap and hence very low value – can be used."

To doubly secure cable, the company's cable improves traceability through marking with cable owners' ID.

Dr Bragagni added: "For even greater security we can incorporate an identity thread or strand registered to a specific manufacturer. We place the thread amongst the strands. The strand option allows for a 2mm or larger strand to be placed in smaller sized cables and make the rest up to the required resistance/conductor size with smaller wires. Even if the cable was burned or stripped down to the metal, identification is still possible.

"And we can alarm it too. Tratos can manufacture cable with a single fibre running through it which will activate an alarm when cut and even identify the location of the cut. This would help the police with response time to the location and help to make a repair also to the affected length to lessen the downtime."

Theft and damage to railway cables cost UK rail infrastructure organisations £millions in compensation to train operators too. He went on: "We have what rail operators need and encourage them to look to cable manufacturers – we have the right solution and this cable is less expensive too.

"Tratos also works closely with contractors to ensure cable drums arrive at set times to coincide with installation so it is not left lying around."

Delays doubled from 2016-17, when 400 hours were recorded across 3,000 train journeys, according to Network Rail, and most of the trains affected were in or around London – an economic bullseye.

Global copper price rises are a compelling incentive for thieves who operate in organised gangs, stripping cable for its copper and making lucrative scrap sales.

As the thefts are driven by the price of the metal, and the ease of harvesting it, perhaps it is time rail operators looked to technology and clever-thinking to outsmart the rail cable raiders. [T](#)





Defence: Protecting those who Defend us

In the aftermath of disasters involving high numbers of fatalities, the authorities rake through the ashes to find causes and, in some cases, blame. Part of the process invariably involves a promise to learn lessons to make sure we never see a repeat. And yet – the repeats happen. The circumstances of each aren't always an exact match, but these learnings, if effectively shared and properly enforced, have the potential to be a workable front-line defence – and the difference between life and death.

Forty years ago, in the early 1980s, Britain was at war. Then the fighting was with Argentina – over the sovereignty of the **Falkland Islands**. The British claim to sovereignty dates from 1690, and the United Kingdom has exercised de facto sovereignty over the archipelago almost continuously since 1833. The sinking of the battleship HMS Sheffield – the result of a direct hit by an **EXOCET missile** – in May 1982, her loss broadcast on TV, had as big an impact on the British as the attack on the twin towers (and The Pentagon) did on the American people. So the Government's plans to move forward with a strategic defence review would do well to consider the real impact of defence spending cuts before reaching concrete decisions. Cutting

costs has a cost, and when the cost is in human life, it is too expensive to contemplate.

Tratos has always been about **quality** and innovation. Performance and protection are by-words for every new cable it develops. Tratos manufactures **defence** and **marine** cables, including fibre-optic cables and components. It delivers power, control and signalling functions for a range of international applications and has been involved in the development of numerous modern military cable constructions. It remains at the forefront in the development of the material technologies used and holds Italian and European defence approvals for both its copper and fibre ranges. It has **NATO** approval for many of its products and remains a market leader in field-deployable fibre-optic cables, copper cable, and high-performance defence cable. But, within each and every one of its cables, cables designed to protect those who defend us, throughout a range of applications used by defence forces, one element of the process remains unchanged – building performance and protection into every single product.

So, back in Spring of 1982, a missile struck the Sheffield at 2 Deck starboard between the Galley and the Forward Auxiliary





Machinery Room and Forward Engine Room. A second missile missed and ditched close by as an Argentinian launch aircraft flew down the ship's head, potentially reviewing the scene. What the aircraft's pilot would have seen was a 15 x 4-foot hole in the ship's side, although the warhead did not detonate. Large fires broke out immediately and acrid black smoke spread through the centre of the ship and rose up towards the Bridge. The smoke forced evacuation and a report of the catastrophic event proposes that missile propellant and burning diesel were its main source which also served to completely disable the ship's fighting capacity. There began a heroic battle to curtail the spread of onboard fires made more difficult by some of the mistakes and oversights that added thick, choking smoke – cutting off visibility and breathing – to the mix. Did the men on board that ship have everything they needed to fight for their lives and save Sheffield? Has the ship's spec been carefully examined to make sure that every safety element that could buy time and save lives has been considered and implemented? On the day smoke clearing efforts produced little effect. The ship's Fireman had been breached on impact resulting in an immediate loss of pressure and compromised fire pumps. The primary means of tackling the fire was effectively gone, leaving portable pumps, men and buckets against fires raging inside the severely damaged ship. Those attempting to fight the fires on board were driven back by heat and smoke while sister battleships rounded on the Sheffield, spraying gallons of water onto the stricken vessel. Twenty officers and ratings died. Some were killed on impact, others were asphyxiated. Twenty-six were injured. The ship was abandoned as fires continued to blaze on, belching toxic smoke for a further two days. Throughout the ship remained afloat and upright. Deteriorating weather finished the vessel as she began to ship water through her breached infrastructure and, despite efforts to tow her to safety, eventually rolled over to starboard and finally sank in about 1,000 fathoms.


Tratos' cables for Missiles; Equipment Wires/Limited Fire Hazard; Airframe Wires/Humidity Resistant/PTFE Composite; Radio

Frequency/Low Fire Hazard; ESM/ECM systems; Fire guidance control; Weapon Systems; Engine compartments; Reactor compartments; Fire survival systems; Communications; Surface ships and submarines; Towed arrays and Mine detection continue to uphold the highest levels of safety and performance. The latest generation of Defence cables combine tried and tested manufacturing techniques with state-of-the-art technology to create cables of phenomenal strength and flexibility. Tratos is proud to partner our forces and play a part in keeping them safe. While they are defending the UK, Tratos is protecting them. Safety is a tiny proportion of the defence budget. Now is not the time, and defence equipment is not the place to buy cheap products. For cable to be the real deal for the armed forces, it needs to work as hard to protect them as it does to enable them. Sheffield's story is a graphic reminder that cutting budgets in the wrong place has consequences. Ask the families of those lost or injured on HMS Sheffield.

An investigation at the time showed smoke to be the biggest contributor to loss of life and eventual loss of the ship herself as attempts to control fires were defeated thanks to the effects of smoke. Other contributing factors highlighted included forward escape manholes too small for passage by men wearing breath apparatus, insufficient breathing apparatus, failings within the fire-fighting armoury, lack of particular areas of training and no escape hatch from naval stores. Among 14 recommendations from the report was that efforts be made to reduce the flammability and toxicity of furnishings and other materials on board. This is not how Britain should treat heroes. Britain should be there to allow them to be the best they can be, and keep them safe as they do the same for us.

For additional information about Tratos **Defence and Marine** cables you can:

Call: +44 20 3409 3097

Email: sales@tratosgroup.com 

Case Studies

TRATOS AND SEAKING GROUP COOPERATION

Tratos was approached to design, manufacture and supply cable for the MOD Royal Navy HMS Dauntless, a Type 45 Frigate. This cable was required for the Power Improvement Project (PIP).

The project was commissioned by SeaKing Group, located at the Cammell Laird shipyard in Birkenhead, Merseyside. This followed Tratos receiving certification from the approval body for Defence Standard 02-526 (previously NES526) LFH insulated and sheathed cable product range.

The Power Improvement Project (PIP), a first of class conversion, will enhance the resilience of the Type 45 class by installing additional power generation sources in each ship. Delivered as a major conversion project, the PIP will replace the two existing generators with three larger units capable of delivering the ship's propulsion.

The PIP project covers the design and integration of the technical solution, supply of equipment and physical installation into all six Type 45 frigates.

The contract forms part of Project Napier which was established in 2014 and builds on the work carried out in the first strand of the project, known as the Equipment Improvement Plan which addresses the reliability of existing equipment.

Tratos supplied **Def Stan 02-526 Rubber Insulated Limited Fire Hazard (LFH)** sheathed cables, a specialised product for power, lighting, control & communication, and instrumentation circuits in Surface Ships and Submarines (formerly NES 526). These

cables present a limited fire hazard with fire performance characteristics, producing limited levels of noxious fumes, smoke and corrosive products when burnt, a fundamental requirement for cables installed in the confined spaces of military vessels.

SEAKING GROUP

The SeaKing Group offers specialist electrical engineering services to the marine, industrial, commercial, military and offshore sectors.

Recognised for their expertise in marine electrical work, the SeaKing Group undertakes all types of electrical projects from breakdowns to major refits on all types of vessels, anywhere in the world. Their best in class engineers can design full electrical systems for all kinds of marine vessel.

In addition to supporting all the major shipyards in the United Kingdom, the Seaking group also carries out turnkey projects for the marine, industrial, commercial, military and offshore sectors. Our breadth of experience means that the Seaking group has the ability to undertake all types of project from new build, refit or conversion anywhere in the world.

The Seaking group's enviable reputation has been built on impeccable industrial relations, an exemplary safety record and first class standards of workmanship.

The commercial division of the SeaKing Group, offers a One stop shop for Electrical design, new build, office development, shop fitting and on call electrical maintenance. [T](#)



Royal Navy HMS Dauntless Type 45

By your side... every step of the way

Engineering, Procurement & Construction

Tratos can carry out the detailed engineering design of a project, procure all the equipment and materials necessary, and then construct the installation to finally deliver a functioning asset to clients. We also supply a full after-sales support service following completion.




Ports & Maritime

Tratos is an international manufacturer and supplier of Special Cables for mobile applications. Its Tratosflex range includes cables for mono-spiral and multi-spiral reeling; coiling in baskets, festoon systems and spreaders. Our cables can be used to supply power, control and signalling functions including fibre-optic cables and cranes operating on high speed applications up to 300 mt/min.

With many years of experience, the company has several case studies in the industry.



TRATOS AT DUSS TERMINALS GERMANY


DUSS Terminals Germany is one of the biggest Inter-modal terminal organizations in Germany. TRATOS, as a main supplier of reeling cables for almost ten years, has just renewed the long-term frame agreement. Tratos- Duss Terminals long-term relationship is strengthened by supplying individual reeling cables products for new and existing intermodal cranes including several related services. From Hamburg to Basel DUSS terminals provide their services in strong cooperation with Deutsche Bahn. 

LONG BEACH AUTOMATIC TERMINAL LBCT USA

Long Beach Container Terminal (LBCT) is the first fully-automated container terminal in the US and the cleanest and most environmentally-friendly terminal in the world.

The terminal features a model zero-emission yard, replacing gear run by diesel with gear powered by electricity and low-emission fuels.

LBCT is completely remotely operated with electric gantry cranes and also features adjacent rail lines that will eliminate thousands of truck trips from the ports on through the warehouse network of the metropolitan area and region of Southern California and beyond.

Navis N4 serves as the brains of the automated operations at LBCT, controlling when the container is supposed to move, which piece of equipment is going to move it and where it's going to be moved. 


GENOA PORT PSA VOLTRI ITALY

PSA Voltri in Genoa, Italy, is a state-of-the-art facility located in the heart of the Mediterranean sea, flagship of the PSA group in the region since 1998. Operating more than 2.000.000 TEU annually, in 2015 the terminal started a process to renew and upgrade its Port Machinery in the search of the most technologically advanced and environmentally friendly solutions, and the capacity to operate Ultra Large Container Vessels (ULCV) of 20.000 TEU plus.

PSA Genova Pra', located in the Port area of Pra', is the largest terminal reality in the Port of Genoa and in the upper Tyrrhenian Sea, alone it handles 60% of the containerised traffic of the entire Port of Genoa.

Like the Venice VECON terminal, the Genova Pra' terminal has the PSA International group, based in Singapore and Antwerp, as its largest shareholder, which in a process of continuous evolution and expansion, consists of over 30 container terminals in 19 countries around the world.

PSA International group is a leading Global Port Operator whose portfolio comprises 60 rail and inland terminals, many of them equipped with the most advanced port machinery. TRATOS proudly supplies various of these facilities delivering and servicing cables for this port operator across the globe, in their most demanding and advanced applications.

The port of Pra' is a point of reference in the context of international maritime routes and, thanks to an extensive rail and motorway network, it is a hub of primary importance for Italian as well as central and southern European markets. 




Case studies Reeling

QINGDAO QIANWAN CONTAINER TERMINAL

Operating 24 Hours a day, 7 days a week, 356 days a year, the Qingdao Qianwan Container Terminal (QQCT) is located in the Qingdao Economic & Technology Development Zone next to the customs bonded area and only 68 km away from Qingdao city, connected by the Jiaozhou Bay Expressway. This is a natural silt-free, deep-water terminal that doesn't freeze. QQCT is connected globally by more than 170 container marine lines.

QQCT has outstanding road access with the Jinan-Qingdao Highway, Yantai-Qingdao Highway and 308 National Highway providing access to the burgeoning industrial and agricultural regions of the Shandong Province.

The Tongsan Highway running North-South along the coast, the Qinglan Highway running east to the west and Jiaozhou-Huangdao Railway inside the terminal altogether, QQCT has excellent connections with the hinterland. Furthermore, Jiaozhou Bay Cross-sea Bridge and Jiaozhou Bay Subsea Tunnel have greatly shortened the distance between QQCT and Qingdao downtown. 

HPH BEST TERMINAL BARCELONA

Officially inaugurated in Sept. 2012 and named after BEST (Barcelona Europe South Terminal), this project was one of the most relevant ports ever built by the referential HPH (Hutchinson Port Holding) group. Currently, it has 11 STS and 54 ASC, in 27 automated blocks. Handling more than 2.300.000 TEU per year, this state-of-the-art terminal performs some of the best productivity rates in Europe and across the Mediterranean.


In December 2005 the Port Authority of Barcelona launched a public tender for the construction and operation of the new Muelle Prat container terminal, located in the new phase of the Port de Barcelona, being the culmination of a stage of development that the Port de Barcelona initiated with its Director Plan in 1990. Hutchison Port Holdings Group and Grupo Mestre submitted a joint bid, combining the Group's experience and Grupo Mestre's local tradition in port operations at the Port de Barcelona.

In May 2006, the Port Authority of Barcelona awarded the concession contract to the bid submitted jointly by Hutchison Port Holdings and Grupo Mestre. In November 2006, the Muelle Prat concession was granted and the developing phase of the terminal was initiated by Hutchison Port Holdings, since 2011 the only remaining investor.

The construction and development of the terminal is a combination of experience and implementation of modern technology resulting in a great qualitative and quantitative leap in the design of container terminals.

In mid-2012 the new semi-automated terminal was named Barcelona Europe South Terminal (BEST) and entered a new phase of testing. BEST was officially inaugurated on September 27th, 2012.


Since the launch of the terminal operations have far exceeded expectations and standards on which its design was based, making BEST a worldwide reference terminal. Hence, Hutchison Port Holdings decided to implement the semi-automated system to other terminals among the group.

With BEST's effective and successful operations and the recognition received among its customers and users, Hutchison Port Holdings decided to continue developing BEST with a new phase of expansion to the terminal. 

PEEL PORTS LIVERPOOL2 CONTAINER TERMINAL

Peel Ports Group is a unique network of strategically situated ports, hubs, terminals, shipping lines and state of the art services. They operate 7 ports in the UK.

They understand the unique needs of the supply chain, providing tailored, end to end logistics solutions designed to help individual businesses engage and optimise their own performance.


Infrastructure is at the heart of everything they do, they listen, adapt, build and create solutions with their partners in mind. 

JEBEL ALI FREE ZONE

Jebel Ali Port operated by DP World, UAE Region, is the largest in the Middle East and the flagship facility of DP World's portfolio of over 80 marine and inland terminals across six continents. It is a deep port located in Jebel Ali Dubai, United Arab Emirates.

Jebel Ali Port, the world's largest man-made harbour, is a gateway hub that enables trade across the region and beyond. It is a vital link in the global trade network, connecting eastern and western markets with North Africa, the Middle East, and South Asia. As DP World's flagship, it is the largest seaport in the Middle East and ranks among the top 10 container ports of the world.

The port's container handling capacity has grown from 18 million TEU (twenty-foot equivalent units) to 22.4 million TEU.

Jebel Ali Port has been voted "Best Seaport – Middle East" for 24 consecutive years. As an integrated multi-modal hub offering sea, air and land connectivity, complemented by extensive logistics facilities, the Port plays a vital role in the UAE economy. It is a premier gateway for over 80 weekly shipping services, connecting more than 150 ports worldwide. 

Let's take another turn

Our cables have been continually working for many years with high speed applications all around the world.

Virginia (USA)

Throughput: 1.745.228 teu

Speed 300 m/m

Tratos cables have been working since 9th March 2010

Rotterdam (Holland)

Throughput: 9.743.290 teu

Speed 270 m/m

Tratos cables have been working since 3rd March 2008

TratosFlex ESDB

Fibre Optics

Tratos believes Britain's broadband is in danger of developing into a block on the country's economy as alternative routes to high speed connectivity and huge gains in download pace – available now – are ignored.

As a global player in fibre optic cable, Tratos wants to be part of the UK's solution. It is one of a number of smaller, more agile and innovation-focused companies that could be instrumental in making the change. With more than 20 years' experience in the UK and Europe, Tratos has the 'smart' fibre cables that shoot down some of BT's arguments on installation expense/disruption as copper gives way to fibre.



Tratos shares 5G clarifications in relation to Covid-19

Of all the things to point the finger at during the **current pandemic**, **5G** has to be the most unlikely candidate for a **conspiracy theory**, especially one that condemns communications technology as the spreader of an organic virus.

So first, let's get the science straight. **5G technology** is more likely to be one of our saviours in this world-scale challenge. We have to stay connected; intelligence and communication is everything. As different nations we cannot work in silos – we have to work together to give ourselves as neighbours, brothers and sisters and friends – the best chance to defeat **COVID-19**.

For the record, an organic virus needs an organic host-body to live. 5G offers it absolutely nothing. Nowhere to live, nothing to sustain itself. 5G is the next generation of mobile broadband that will eventually replace, or at least augment our 4G LTE connection. With 5G, we'll see the exponentially faster download and upload speeds. Latency, or the time it takes devices to communicate with wireless networks, will also drastically decrease. It uses a system of cell sites that divide their territory into sectors and send encoded data through radio waves. None of this is organic. None of this offers a real-world virus hope or

opportunity. Italy, as we know, has been one of the hardest hit by Coronavirus. **Italy has no 5G**.

So 5G is one of the heroes. Sharing information, working together: these are the things that will save us. Faster broadband speeds, platforms like 5G – these are the channels that will help us all.

- Three recent mobile phone mast fires around the UK are being investigated as possible arson, amid concerns that people are attacking telecoms infrastructure because of a conspiracy theory linking 5G technology to the spread of coronavirus.

The media regulator, Ofcom, moved to discredit the **conspiracy theory** with cabinet secretary Michael Gove adding the theories were “dangerous nonsense”. Professor Steve Powis, national medical director of NHS England, condemned them as “the worst kind of fake news”. [\[1\]](#)





Tratos wins 20m euro fibre optic cable order for Tim

Tratos has announced a new 20 million€ fibre cable order from Italian telecoms company TIM. The company has supplied Telecom Italia since 1984 and provides 26% of the Italian market with fibre cable.

Tratos' latest contract for the telecoms giant will see it supplying the order for TIM's FiberCorp. The order is the continuation of a relationship that has remained strong for more than 30 years. It has been a significant contributor to Tratos' rapidly increasing share in the global telecoms market and is recognition of the independent manufacturer as an innovative producer of the highest quality advanced technology cable for the sector.

Tratos President Albano Bragagni said: "Tratos continues to win favour with telecoms companies thanks to the quality of the technology and the levels of service we offer. What the telecoms industry needs, as the appetite for quick and reliable connectivity increases, is high-quality fibre optics that offer consistent high performance. In other words, the quality cable is the smart investment – because choosing the best allows networks to stay competitive."

TIM's own statement confirmed its commitment to supporting Italy and the country's economic growth by contributing to the development of a strategic infrastructure for digitisation – a vision that demands top performance and efficiency.

FiberCorp by TIM, owned by American investment fund KKR and telecoms company **Fastweb Italy**, is moving towards the creation of an ultra-broadband network with fibre optic cable at its heart. FiberCorp is TIM's fixed access business which includes its own FTTx (where FTTx stands for "FTTCab or FTTE") operations and its FlashFiber joint venture with rival Fastweb. This summer TIM agreed to sell a 37.5% stake in the unit to private equity firm KKR for €1.8 billion and has also signed a deal with Tiscali, where Tiscali will invest in and use the network too. The partnerships and deals proceed to the creation of a single access network for Italy. Core stakeholders are FiberCorp, merging with Open Fiber, the state-owned infrastructure company created by utility **Enel** and investment bank and TIM shareholder, **Cassa Depositi e Prestiti (CDP)**. TIM will control more than 50% of the new body "AccessCo", but will share governance.

FiberCorp is TIM's new company and sees its secondary network (from the street cabinet to the customers' homes) and the fibre network developed by FlashFiber (a TIM and Fastweb company) converge. **FiberCorp** has already taken the first steps to build its own network, closing and assigning the first of the two tenders for the supply of fibre optic cables to support FiberCorp's FTTH (**Fibre to the Home**) cabling plan. [T](#)



Copper is still conducting UK demise

Fibre optic cable is pivotal to the success of the fourth industrial revolution. Yet if the ‘powers that be’ don’t wake up to the fact that the UK is being left behind and ditch copper for fast fibre, the country will be counting the cost for decades.

UK global cable innovator **Tratos** has revisited and updated its **White Paper** examining the status of **Britain’s Fibre to the Home broadband** aspiration two years after **Ofcom** declared swingeing changes.

The regulator proclaimed its commitment to **up-rating download speeds and increasing accessibility** for those in broadband blackspots back in 2016. **Tratos’ Britain’s Broken Broadband paper** looks at the gains, what is still left to do and the prospects for a Britain where change is on the way – but it isn’t rushing.

Ofcom insisted BT and Openreach split – the right move – but outcomes promised as a result of the split have been slow. There is talk of a wait of up to another two years to start to approach delivering speeds commensurate with a world economic power.

In the meantime the UK has again slipped down the fast-fibre league table, trailing some developing countries’ network performances and suffering the consequences.

Some vision is evident, in particular opening BT’s network infrastructure to other, more nimble, operators. An agreement may be in place, but again there has been little evidence of movement so far.

Only **3 per cent of UK homes** have access to an **FTTH (fibre to the property)** connection compared with **79 per cent in Spain**, for example¹.

A report from **Ofcom** (published May 2018) has all the hallmarks of a potential game-changer if what it sets out in its paper is followed through.

Tratos CEO Dr Maurizio Bragagni said: *“The paper examines al-*

ternatives. If barriers are slow to move, then going round, over or under them should be explored. Gas, water, electricity are into-the-home routes explored and exploited in other countries and with all utilities investing now in a smart grid to monitor resources flowing into homes, fibre optic rather than copper could be adopted – and broadband can effectively piggyback. Change could get faster with the right level of commitment. And it is economically dangerous to wait.

“Even investment two years ago, when our original paper was published, would still see Britain left lagging by up to seven years as it struggles to catch up. How much longer must we wait?”

This latest stance from Ofcom acknowledges copper as the pinch point.

Openreach, BT’s infrastructure division, will have to repair faulty infrastructure and provide a ‘digital map’ of its duct and poles network, so that other providers can plan where to lay fibre.

Britain’s broadband continues to stifle the country’s economy as alternative routes to high speed connectivity and huge gains in download pace – available now – are ignored.

Tratos Ltd, a global player in **fibre optic cable**, points to some of the advanced technological solutions that are smart enough to bypass current network gatekeepers – and are available to **UK.com** today.

The innovation-led independent cable manufacturer presents a UK, European and global view of Britain’s position in its report and calls again for urgent action to protect the country’s position as a leading economic power. [\[i\]](#)

¹ <https://www.thetimes.co.uk/article/bt-to-speed-up-expansion-of-its-openreach-fibre-broadband-network-to-3m-homes-8fkmc3vrb>

² https://www.ofcom.org.uk/__data/assets/pdf_file/0017/113543/Connected-Nations-update-Spring-2018.pdf





What are submarine cables used for?

What began in the English Channel in 1850, with the first submarine cable in the world laid by the steam tug Goliath, sparked the birth of a global market like no other.

According to Grand View Research, in 2019 the submarine-cables market was worth \$21.3 billion and was expected to grow at around 7.1% from 2020 to 2027. As late as August of 2020 Technavio's subsea cable market report (fibre) predicted a \$4.34 billion growth (2020-2024), despite the impact of Covid. Even with the changes that hit the world economy, as late as November 2020 industry analysts were still predicting a 48% growth for the Europe-based submarine fibre cable market.

A voracious appetite for broadband speed is the main reason the ocean-floor market has remained so buoyant. So too is the spiralling volume of internet users. They are driving new submarine fibre cable products and infrastructure upgrades.

When the steam tug Goliath set out to sea, just short of 200 years ago, it was a revolutionary communications event, but no one imagined how the vessel's voyage would change the way the world worked. Now oceans were no barrier to something approaching real-time communication. Then the exciting new method of communication was the telegraph. Just 16 years later the first commercially successful transatlantic submarine cable was laid between Valentia, Ireland, and Heart's Content, Newfoundland. Submarine cable networks had made their

mark on the world and the momentum would only increase.

Tratos has been manufacturing subsea cables since 1966 and is at the forefront of innovation-led subsea fibre cable technology in a market that remains dynamic and challenging. By supplying its high-quality subsea cables to the ports around the world, Tratos continuously is supporting the global endeavors of port authorities in any part of the world in upgrading and improving their operational capabilities, which further contributes to the sustainable development of ports and achieving the 17 UN Global Goals.

Tratos is following in the footsteps of some of history's giants of innovation. It is ensuring the capacity to extend world-connectedness continues. It is advancing fibre technology – for the benefit of international trade relations – and faster ways to tackle world problems together.

From very early on this new and exciting industry was lively and vibrant, with companies merging and acquisitions abounding as stakeholders fought for the biggest share of the market.

The telephone was invented in 1876, driving a seismic communication change. Just over a decade later and the world's first telephone submarine cable traversed the English Channel. Transatlantic radio followed.

The scale of the opportunities presented by this new and smaller world were immense. So were the challenges. Mechanical and performance challenges as well as logistics' challenges.



For cable it was challenges of pressure, one of the harshest and most corrosive of environments and, of course, the challenges of installing the cable itself.

TRATOS' FIBRE SUBMARINE CABLES TODAY

In the time that has elapsed since the sea-bed was first explored as a conduit for global communication cable networks, the world's most agile innovators, like Tratos, have adapted and developed submarine cable solutions for a range of other important jobs.

Carrying power for offshore wind fields for example. Submarine cables carry the highest voltages as well as the greatest number of secure telecommunication links between islands, countries and continents. Tratos manufactures power cables as well as communication cables for submarine applications, including combined power and communication cables, and of course it uses fibre-optic cables and components.

Submarine cables now carry power and links to the outside world for isolated or widely spread communities.

The manufacture, installation and operation of Submarine Cables are very different to those of land cables.

Tratos' submarine cables are the result of the skill and expertise of seasoned engineers, most of whom have more than twenty years' experience. The company invests constantly in the latest technology, materials and human resources needed to meet the highest performance requirements in the field. The latest generation of cables combines tried and tested manufacturing techniques with state-of-the-art technology to create cables of phenomenal strength, resilience, and flexibility.

Tratos Submarine cables are tested extensively in in-house and independent laboratory trials as well as in real-life installations. They have proven themselves exceptionally reliable.

Working with customers, Tratos can tailor-make cables to meet the demands of any application. The innovation work goes on.

Tratos' subsea cables offer:

- **HYBRID** – Energy & communication, power & fibre – in one cable. Two services, one installation means cost savings and reduced operative exposure to harsh environments.
- **STRENGTH** – Integrity to rely on. Strength, reliability and consistency, Tratos' cables are built to withstand the tension and torsional forces applied to them during installation and operation..
- **FLEXIBILITY** – When installation environments are at their harshest, a flexible, high quality, reliable, 'right first time' cable is the answer.

The newest hot spot for submarine cable networks is Latin America.

New projects have bloomed as data consumption, cloud, streaming, connectivity demands and digital media consumption has ramped up. In part this can be attributed to the Covid effect, as businesses have scrambled to reinvent how they do business and where they do it from.

The digital economy is not shackled by its relationship with the traditional economy. Consequently,

it is well positioned to grow as its traditional forefather cools down. Good digital health is considered essential for business growth and that, in turn, has pushed demand for bandwidth expansion.

Latin America is expected to be the world's fastest-growing region in interconnection bandwidth capacity in the next few years according to an equinix report.

Content and digital media rely heavily on international cabling, and Latin America is pushing at boundaries. So much so it is tipped to become a world capital for the highest growth rates in this, the first true digital era.

WHERE NEXT?

Since the 1990s, the submarine fibre market has been seen rapid development in optical technology, bringing efficiencies and bigger capacities. It is a sector that has had to create its own language. It is unlikely that those behind the early subsea cable-laying voyages would be able to process capacity in Megabits, let alone Terabits if they were to take a look at where what they started is now.

Cable systems can send multiple optical wavelengths over a single fibre pair. That means using less cable, and reductions in cost.

Increasing investments in offshore wind farms, more data traffic, and a rising tide of other demands are keeping submarine power cables to the fore. Today they are used for power transmission to oil rigs, carry power generated from offshore wind farms to power stations, and create inter-country and island connections.

Submarine communication cables carry around 90% of the world's cross-continent data traffic. They are the most valued cables for some of the world's mega companies, from Amazon to Google.

And innovation goes on. Japan's floating wind farm, 12 miles out to sea, is likely to see 140 floating wind turbines. Manufacturers have to not only respond to needs but anticipate them and design and produce accordingly. The Europe India Gateway (EIG) submarine cable system was upgraded in early 2020 to assure connectivity for Europe, Middle East, and India's business communities. Tratos is honoured to be able to join the global forces toward achieving #Envision2030 Goal 14: Life Below Water's targets:

- By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.
- Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels. [T](#)





The **future** coming from **the past**

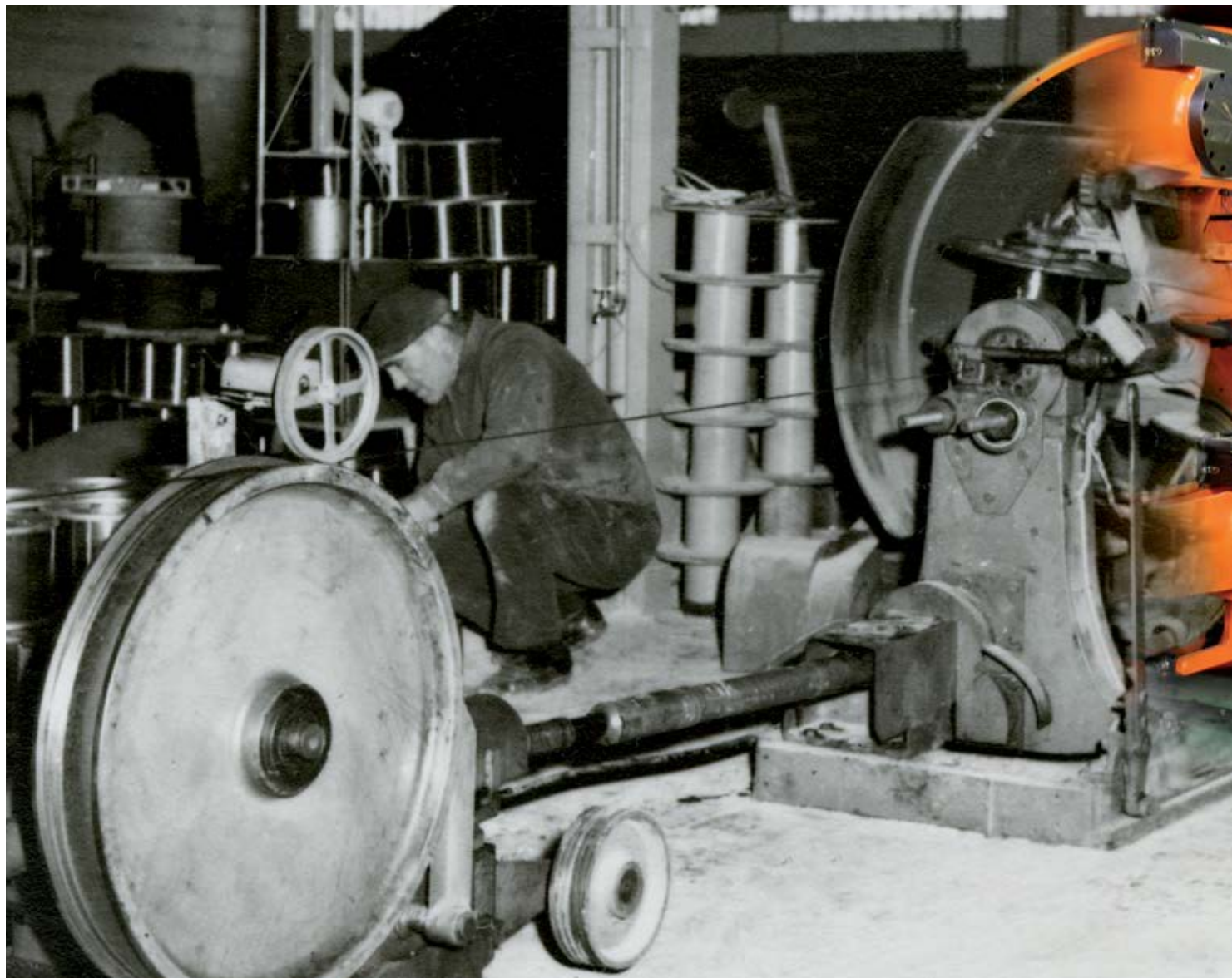
By Dr Maurizio Bragagni

Tratos is a traditional family-owned company that is very successful in exporting its products to 36 countries, (more than 80% of the production is export-dedicated). The company has a strong executive team, mostly family members, who make it their business to listen to senior team members so that decision-making is well informed and better-placed to drive implementation.

Tratos had to break with traditional marketplaces and products to grow - by building unique business modules, forging direct

stakeholder relationships (customers, suppliers) and refusing to deal with distributors or agents. In short it has survived and flourished for 50 years thanks to a focus on innovation.

As CEO, I lead a business that is part of one of the fastest-moving commercial environments; a sector that is driven by innovation and repeatedly defined by the art of the possible. The business is cable manufacturing, but at Tratos, we do it differently. Innovation is one of the pillars around which the business has grown. There's still much to do - to find out more about



innovation in business, and how a culture of innovation can be nurtured. The best way to do this was to look at best practice and apply the thinking to Tratos to establish how deep innovation was ingrained and what more could be done to encourage it. In addition, we talk to our customers: we deal with them directly.

That means we can establish, first-hand, their technical needs. This direct line to customers' technical people creates the opportunity to produce radical technological solutions alongside our clients. As a result, Tratos stopped selling a cable product and began selling innovation-led solutions (#TratosInnovation).

By identifying the hot spots for innovation within Tratos earlier, and facilitating an easier route to possible change, how might that accelerate the business? The company survey results "How

Innovative Is Your Company's Culture?" carried out earlier this year, provided a clear path to better innovation. The employees, who took the survey, gave the company high marks on external success.

They recognised that customers perceived Tratos as an innovative organisation and, as a consequence, Tratos' performance is much better than other firms in the industry, and in particular positive financial results are driven by the Tratos innovation efforts.

Tratos treats change as a long-term strategy, steering a comprehensive and disciplined approach to innovation, developing new capabilities.

Employees ranked the company's individual component of success poorly. Individuals felt a lack of participation in the innovation initiatives. We are working on the solutions.

To survive and flourish, in the most challenging of environments, Tratos has focused on niche markets and on that all-important innovation. In the 1900s it developed optical fibre products (#TratosOpticalFibres), in the 2000s, it produced cables for mobile applications, such as reeling cables for port cranes, and specialised in high-speed products (#TratosFlex). In the 2010s, Tratos won an innovation award for supplying the Superconductor cables for the world-stage Energy Fusion project (#TratosFusion).


Innovation around the way we choose to run our business as well as the cable technology we deliver has been pivotal to the company's success.

Cables are made from raw materials and compounds managed and controlled by large organisations, so the bargaining power of the suppliers is significant.

To control its own raw materials' supplies Tratos invested in its own compounds to achieve additional competitiveness. This fuelled diversification and dominance in niches by investing heavily in alternative products.

Tratos' decision to engage on a differentiation platform included introducing radical technology to previously uneconomical markets. Due to years of competition on price, several markets had become innovation wastelands. Companies were losing money, and the markets were in decline. Tratos turned this to advantage, revitalising the most depressed markets with carbon fibre innovation for overhead conductors (#TratosOHC), overtaking existing players.

Based on the previous analysis and my experience of the industry, I can identify two principal ways to achieve success in the cable manufacturing industry: large economies of scale or innovation.

Add to this, access to a highly-skilled workforce and real insight into your business and you have something powerful to bring change and step up to even greater innovation. 





Where does the Tratos story start?

A family tradition & a great history

So where does the Tratos story start? Who better to tell us than Dr Ennio Bragagni Capaccini, Vice President, who remembers the story of his late Grandfather, Egidio Capaccini, and how he came to be the founder of Tratos Cavi spa.

"It is said that every end marks a new beginning. For my Grandfather, Egidio Capaccini, that time came at the culmination of the Second World War. His home town in Southern Tuscany had been almost completely destroyed by the Germans and, with little or no work available, he packed his bags and travelled to Argentina to find employment. After taking work in a new company as a

General Worker for a year, fate stepped in and Egidio was offered a job in a factory making cables. With his passion and natural aptitude for business, he swiftly rose up the ranks to become the General Manager, as well as a shareholder in the company.

In 1961, Egidio returned to Italy to recuperate after suffering a heart attack. However, rest was not the only thing on his mind. Egidio had bigger dreams - dreams of setting up his own company. When he was back to full strength, he began working as a consultant, which gave him the chance to earn money and travel the world, meeting many different people and learning



more about the cable industry. Five years later, with enough funds and a great deal more experience under his belt, he returned to Italy and finally fulfilled his dream by establishing Tratos Cavi Spa. He found employees from the remnants of the textile industry that had once flourished in Southern Tuscany, whose experience proved useful when it came to covering the cables with textile, as was the practice at that time. The business expanded over the years and Tratos cables quickly gained a reputation for being exceptionally well-made and at the forefront of innovation.


“Egidio enjoyed running the business for more than 13 years until his health began to decline and, sadly, he passed away in 1974 after suffering another heart attack. His daughter, Marta Capaccini and her husband, Albano Bragagni, subsequently took on the business and Tratos has continued to expand whilst remaining a family-owned business.”

The company is now an international cable manufacturer of repute, selling an extensive range of cables to 52 countries worldwide with manufacturing facilities in Italy and the UK. Strong ties also remain with IMSA, the factory in Argentina where it all started.

Much of the company’s success since 1974 can be attributed to the master plan of Albano Bragagni, the current President. With his commitment to developing innovative new products and responding intelligently to opportunities in growing markets, Albano has expanded the business exponentially.

Thanks to his passion in driving the business forward, Tratos now has a worldwide reputation as a leading specialist cable manufacturer within a large number of industries and, as renowned experts in the development of bespoke cables to suit exact specifications, have formed a strong reputation as a reliable consultative source, offering unrivalled expertise.

Ennio is proud to be a part of the Tratos story. He adds, “My Grandfather was a man of vision, dedication and commitment and these are qualities that have become synonymous with the Tratos name.

Along with Albano Bragagni and my sister Elisabetta, I am pleased and excited to carry on building Egidio Capaccini’s dream of making Tratos a world renowned, expert cable manufacturer, a dream which began over fifty years ago in a small village in Tuscany.” 





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