

InSIGHTS

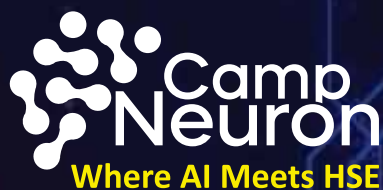
On Electrochemistry & Asset Integrity



A SAIT GROUP COMPANY

THE OFFICIAL NEWS LETTER OF BSS TECHNOLOGIES

VOLUME 11 | ISSUE 2025-2026



HypoKlor
Empowering
Water Treatment
For a Healthier Future

CP EYE
Intelligent Remote
Monitoring System



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Insights Vol.10

Editorial Team

Sajid Haroon
Arif Muhammed
Mohamed Rihsab

BSS Technologies

Email: bsstech@bsstechnologies.com

Printed at

Pen Printing Press, Ajman

Tel: +971 6 743 9250 | Mob : +971 50 986 0448
Email: info@metropenprinting.com

Content source : In-house, principles, general public media



برنامج المحتوى الوطني



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CHAIRMAN'S SAY

Travelling all the way since 1998, all our decisions which were mostly based on human intelligence – till date are right.

Knowing the advantages and need of Artificial Intelligence (AI) mainly being, increased productivity and efficiency through task automation, more accurate and data-driven decision making and reduced operational cost – AI also facilitates innovation, accelerates complex data analysis, and ensures 24/7 operational availability. Understanding the importance of AI in the areas of health, safety and environment, we not only have implemented or seek AI's direct and indirect support in automating, engineered documents or calculations, modeling and in production floor, but also to meet our continued HSE targets.

Kudos to our people who play an important role in giving a human touch to the AI driven outputs.

Sincerely,

Faris Sari Al Mazrouei
Chairman BSS Technologies

Bridges are made to Drive: DP World and BSS Tech welcome Belgian Dignitary



DP World representative **Mr. Ahmed Al Khouri** and BSS Tech Chairman **Mr. Faris Sari Al Mazrouei** along with BSS Tech CEO **Mr. Nadeem J Sait**, jointly welcomed the delegation from Belgium, led by **H.E. Antoine Delcourte, Ambassador of Belgium to the UAE**, at our Dubai offices. The visit marked a significant milestone in our journey of global expansion and cross-continental collaboration.

Thanks to the great leaders of both the countries, UAE and Belgium who opened the doors with harmonized relationship in trade and culture.

His Excellency was accompanied and valued by an esteemed group of officials, including **Ms. Yoke Wagemans** – Head of Post at Flanders Investment & Trade in Dubai; **Ms. Chloé Rousselet** – Intern at the Belgian Embassy in the UAE. Where by Mr. Ahmed Al Khouri, Senior Manager Customer Service – DP World was accompanied by Ms Aisha Juma the Senior Executive of Public Affairs, DP World highlighting the strong local partnerships that foster international dialogue.

The visit provided a vital platform to showcase BSS Technologies' deep expertise and cutting-edge solutions in the fields of Electrochemistry, Cathodic Protection, Corrosion Engineering, and innovative Energy Storage Systems. The discussions centered on creating powerful synergies between the industrial and technological landscapes of Belgium and the United Arab Emirates, exploring how our specialized knowledge can support mutual growth.

Special thanks to BSS Technologies – Europe Region head **Mr. Karl Aerts** for the presence and in investigating and understanding the possibilities of such a partnership between two region in a mutually beneficial manner, upholding the ethnic and cultural values of two great countries.

This high-level engagement is particularly momentous following our strategic expansion into Belgium last year, with our firm commitment in driving industrial innovation and championing sustainability across both regions. By establishing a strong presence in Europe, BSS Technologies aims to build a robust corridor for technology transfer, sharing UAE-developed expertise while embracing new opportunities for collaboration abroad.

We extend our sincere appreciation to Mr. Ahmed Al Khouri and Ambassador H. E Antonie Delcourte and the entire delegation for their valuable time and insightful discussions. This visit has strengthened the bond between our nations, and look forward with great anticipation the future collaborations that will emerge from this prosperous partnership.



From the Emirates to the Europa's with a stopover in Belgium

We been doing business with European customers serving the industry, it was high time that our physical presence was inevitable. **BSS Technologies Europe NV – headed by Mr. Karl Aerts**, will be our Europe face mirrored from Belgium.

The new office, based in Brecht, Belgium, is more than just a new location on the map; it represents a dedicated commitment in serving the European market with greater proximity and tailored solutions.

Leadership with a Global Vision

Mr. Karl Aerts, Regional Manager for Europe, brings in his 20+ years of entrepreneurial experience and a passion for building global connections. Karl, brings a unique blend of leadership and curiosity to the role, knowing the values and principles that BSS Tech holds. We are sure, his long-standing relationship with BSS Technologies, over the decades will prove a successful footstep in the industry "With BSS Technologies Europe, I'm on a mission to expand the company across the continent, ensuring its growth in a competitive market," Karl noted!

A One-Stop Solution for European Asset Integrity

BSS Technologies Europe NV will serve as a full-service partner for asset integrity management. The office will offer our core, world-class services, including:

- **Engineering and Design:** Providing expert design and consultancy for Cathodic Protection systems in line with international and client-specific standards.
- **Surveys and Inspection:** Conducting specialized site surveys such as Close Interval Potential Surveys (CIPS), Direct Current Voltage Gradient (DCVG) surveys, and soil resistivity studies to assess and ensure system performance.
- **Products and Materials:** Supplying a complete range of high-quality cathodic protection equipment, from transformer rectifiers and remote monitoring systems to a wide variety of sacrificial and impressed current anodes.

This new venture is a testament to our evolution from a specialized UAE-based company to a responsive global organization. By combining our proven engineering excellence with strong local knowledge in Europe, we are poised to deliver the same commitment to quality and customer delight that has been the hallmark of the BSS Technologies and SAIT Group name for over 27 years. We look forward to building lasting partnerships and contributing to the integrity of Europe's critical infrastructure.



The Challenge

Concrete may appear solid, but it is naturally porous and absorbs contaminants such as water, oxygen, and chlorides. When these reach the steel reinforcement, corrosion begins, leading to cracks, spalling, and structural deterioration.

The Solution

Cathodic Protection (CP) is a proven method to stop or prevent corrosion of steel in concrete. Since its first application in 1973, CP has been installed across millions of square meters worldwide, with significant adoption in the Middle East.

How It Works

- Existing Structures: CP is applied to stop active corrosion. Anode systems (such as ribbon mesh) are installed into saw-cut slots or overlaid into concrete to halt reinforcement damage.
- New Structures: CP is integrated during construction. Titanium MMO ribbon mesh is fixed to the reinforcement cage with non-metallic spacers, ensuring corrosion never begins.



Benefits

- Extends service life of assets
- Prevents costly repairs
- Ensures structural safety
- Supports sustainable construction practices

Applications



At BSS Technologies, we deliver reliable concrete CP systems tailored to both new and aging structures. By combining technical know-how with decades of field experience, we ensure durability, safety, and long-term performance for critical infrastructure.

Concrete Cathodic Protection is more than a repair solution, it is a strategy for building structures that last for generations.



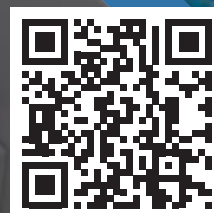
Recently completed Concrete Cathodic Protection for Box culvert in Saudi Arabia

INDUSTRIAL EQUIPMENT

for valve maintenance and calibration workshop

- Heavy duty valve test benches with range of DN from ½" up to 56" and clamping force up to 4000 tonnes
- Portable valve test and repair systems
- Mobile workshops efficiently operated in the harsh onshore climatic conditions and on the deep-water offshore installations
- Advanced product line of grinding / lapping units
- Stationary CNC and conventional type boring machines
- Welding overlaying and hard-facing automation

The company's management system is certified in accordance with ISO 9001:2015 by the Certification Body «Intercertifika»



Virtual 3d tour of the workshop

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Advanced AI based solutions

Harnessing the Power of Artificial Intelligence, IoT, and Advanced Data Science to Predict, Protect, and Perfect Your Operations.

In today's complex industrial environments, staying ahead means leveraging technology that doesn't just respond but anticipates. At TechnoDX, we deliver a comprehensive suite of digital platforms and services that streamline management, drive compliance, and foster a proactive, data-driven culture across your entire organization. We are specialists in emerging technologies like AI, IoT, and Data Science, with a core strength in developing full-stack, microservices-based applications that solve real-world challenges.

CampNeuron™ : Where AI Meets HSE

CampNeuron™ is our revolutionary, 360-degree AI-powered Health, Safety, and Environmental (HSE) platform designed to save lives. It moves beyond simple compliance, offering predictive safety intelligence that provides an eagle's eye view of your facility on a centralized dashboard with real-time alerts and live video feeds.

With CampNeuron™, Our Clients Achieve Remarkable Results:

- 35% Reduction in workplace incidents within the first year.
- 65% Faster emergency response times thanks to real-time alerts on missing personnel and health anomalies.
- 50% Less Time spent on administrative safety tasks and documentation.



Intelligent Solutions for a Demanding World

Our state-of-the-art Edge AI platform brings intelligent analysis directly to your worksite, ensuring faster processing and keeping your proprietary data secure. We turn data into decisive action.

AI-Powered Video Analytics in Action:

- **Automated HSE Compliance:** Our systems use AI-driven video analytics to detect if workers are wearing the required Hard Hats and Safety Vests, flagging non-compliance instantly to the HSE supervisor.
- **Predictive Maintenance:** We leverage machine learning to monitor pipelines for faults, corrosion, and vibrations, automating shutdowns or alerting teams for inspection before a failure occurs.
- **Automated Threat Detection:** Smart cameras proactively identify fire and smoke in remote environments, enabling a rapid and effective response.
- **Emissions Monitoring:** We help you reduce workplace hazards by collecting and analyzing sensor and video data to identify harmful gas emissions like Methane in real-time.
- **Driver Safety:** Our platform can detect driver fatigue and drowsiness through video analytics, generating smart alerts to prevent accidents before they happen.



BSS Technologies India, since its inception, has been dedicated to advancing Cathodic Protection and Corrosion Control solutions tailored to the needs of India's rapidly expanding oil & gas, refining, and petrochemical sectors. Over the years, the India office has established itself as a trusted partner for major public sector undertakings and private operators by offering end-to-end capabilities, from design and engineering to supply, installation, commissioning, and life-cycle support.

Key Project Achievements

In the past year, BSS Technologies India has proudly delivered two prestigious projects:



BSS Technologies has successfully completed Cathodic Protection System for Underground Vessels DCU WITH UNSATURATED LPG TREATING UNIT, Diesel Hydro Treating Unit (DHDT) & Hydrogen Generation Unit (HGU) & VGO Project at HPCL RAJASTHN REFINERY LIMITED.

◆ HPCL Rajasthan Refinery Limited (HRRL)

We successfully completed the Cathodic Protection System for Underground Vessels associated with the Delayed Coker Unit (DCU), Unsaturated LPG Treating Unit, Diesel Hydro Treating Unit (DHDT), Hydrogen Generation Unit (HGU), and the VGO Project. This project is a vital part of the HRRL complex, which represents one of India's most advanced refinery developments.

◆ IOCL Gujarat Refinery, Dumad Complex

Our team also completed the CP system for LPG Mounded Bullets at the Acrylic / Oxo Alcohol Project. The scope of work encompassed detailed engineering, equipment supply, on-site installation, commissioning, and interference testing-showcasing our ability to deliver projects with precision and reliability.



BSS Technologies Successfully completed CP system for LPG Mounded Bullets at ACRYLIC / OXO ALCOHOL PROJECT AT GUJARAT REFINERY, DUMAD COMPLEX. The job included Detailed Design, Supply, installation, commissioning & interference.

Growing Footprint in India

These projects underline BSS Technologies' expanding presence and technical leadership in the Indian market. By combining global expertise with local execution, we are helping some of the nation's largest refineries achieve long-term asset integrity, safety, and sustainability.

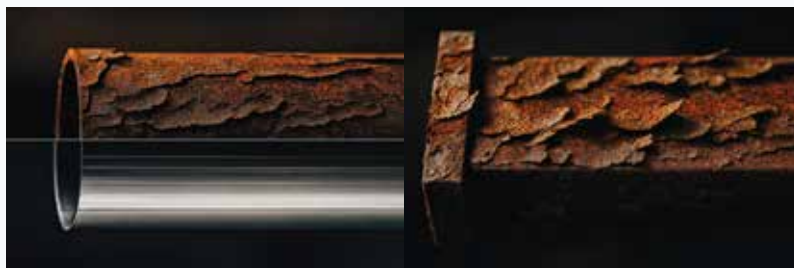
With a strong in-house team and a proven track record, BSS Technologies continues to play a pivotal role in ensuring the protection of critical infrastructure against corrosion, safeguarding investments, and enabling uninterrupted operations across India's energy sector.

As we look ahead, our focus remains on strengthening partnerships within India, expanding our service capabilities, and contributing to the country's vision of self-reliance and industrial growth.



The Unseen Battle: Fascinating Facts About Corrosion

Every second of every day, a silent, relentless force is at work, degrading the very foundations of our modern world. It's not a dramatic force of nature like an earthquake or a storm, but a slow, creeping chemical reaction: corrosion. This unseen battle costs economies trillions of dollars and poses a constant threat to the safety and integrity of the infrastructure we depend on. Here are some fascinating facts about this ever-present phenomenon.



The Staggering Global Cost of Decay

Corrosion is far more than just a cosmetic issue of rust; it is one of the single largest expenses in the global economy.

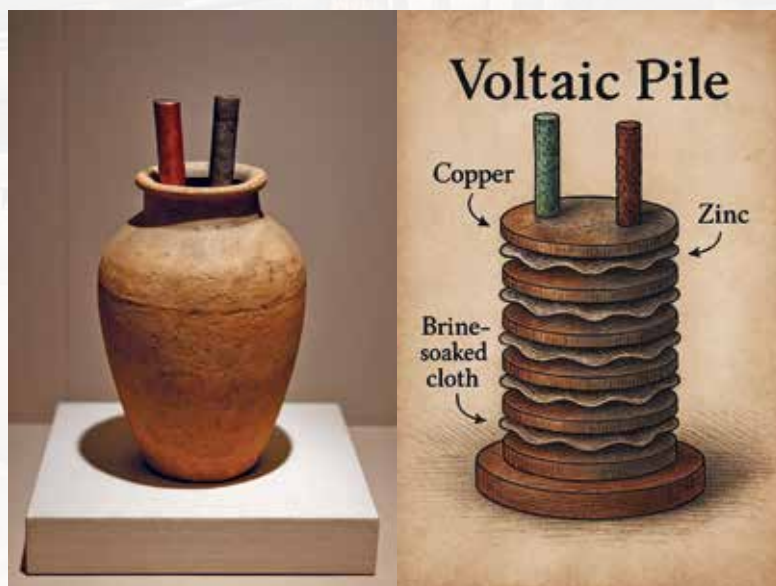
- **A Trillion-Dollar Problem:** The worldwide cost of corrosion is estimated to be over US\$2.5 trillion annually, representing more than 3% of the global GDP. This figure doesn't just include the cost of replacing corroded parts but also the immense expense of preventative measures, maintenance, and lost production during downtime.
- **A Constant Threat to Industry:** In the oil and gas industry alone, corrosion is a primary cause of pipeline leaks and equipment failure. A significant portion of any major energy company's maintenance budget is dedicated solely to corrosion monitoring, prevention, and repair.



Corrosion's Role in Shaping History

From ancient artifacts to modern marvels, corrosion has played a surprising role in shaping our world and has driven key innovations.

- **The Ancient Battery Mystery:** Long before official records, ancient civilizations may have harnessed electrochemical power. The "Baghdad Battery," a 2,000-year-old clay pot containing a copper cylinder and an iron rod, discovered near Baghdad, is believed by some to be an early form of a galvanic cell, possibly used for electroplating gold onto silver.
- **The Invention of the Battery:** The modern battery was officially born from a debate between Luigi Galvani and Alessandro Volta in the late 18th century. Galvani believed frog legs twitched due to "animal electricity," but Volta proved it was the contact between two different metals in a moist environment that created the current. In 1800, Volta's "voltaic pile"—a stack of zinc and copper discs—became the first reliable source of continuous electric current, paving the way for modern electrochemistry.



- **The Statue of Liberty's Protective Shield:** The iconic green hue of the Statue of Liberty is not paint, but a natural patina formed by the corrosion of its copper skin. This layer, known as copper sulfate, actually acts as a protective barrier, shielding the underlying metal from further, more destructive, degradation.

- **The Downfall of a Naval Fleet:** In the Age of Sail, the hulls of wooden ships were clad in copper to prevent biofouling. However, when shipbuilders used iron nails to fasten the copper plates, they unwittingly created a powerful electrochemical cell. The iron (anode) corroded at an accelerated rate in the presence of the copper (cathode) and saltwater, causing the nails to fail and the ships to fall apart.



Nature's Own Chemistry and Beyond

Corrosion is a natural process, and even occurs in the most unexpected places.

- **Corrosion in Space:** The low-Earth orbit environment is surprisingly corrosive. Atomic oxygen, which is highly abundant at this altitude, is extremely reactive and can degrade the surfaces of satellites and the International Space Station. Special coatings and materials are required to protect spacecraft from this unique form of high-altitude "rust."

- **Nature's Own Cathodic Protection:** Some microorganisms can create their own form of corrosion protection. Certain bacteria form biofilms on metal surfaces that can alter the local electrochemical environment, sometimes slowing down or even preventing corrosion in a process known as "biopassivation."

- **When Living Organisms Attack:** Conversely, other types of bacteria can cause what is known as Microbiologically Influenced Corrosion (MIC). These microbes can "eat" metal by accelerating the corrosion process, leading to rapid and severe damage to pipelines, storage tanks, and marine structures.



Winning the Battle with Science

Fortunately, for every form of corrosion, science has developed a defense. The most effective of these is cathodic protection—the very principle that BSS Technologies was built upon. By intelligently managing electrochemical currents, we can halt corrosion in its tracks, extending the lifespan of critical assets like pipelines, bridges, and marine terminals from years to decades, ensuring safety and preserving value in this constant, unseen battle.





RYSCO WIRELESS ER LOGGER

The **Rysco Wireless ER Logger** is designed to provide accurate electrical resistance measurements of corrosion probes. In our design, we have eliminated the use of unreliable cable connections by implementing our revolutionary wireless interface. Our tablet is easily programmable and seamlessly interfaces with the Rysco logger to ensure data continuity. After a given period of time, the data can be safely downloaded without compromising the hazardous area rating. Simply stand within 50 feet of the logger with the tablet, hit connect, then download, and view data. The Rysco utility software is easy to install and rarely requires administration access. Rysco's proprietary software calculates all resistance measurements into physical metal loss values. Our dedicated team members then work closely with all our clients to correlate these metal loss values to corrosion related values.

SPECIFICATIONS

- ▶ 4.5 year battery lifespan with 50,000 data point memory capacity
*Dependent on environmental and sample rate conditions
- ▶ Hazard Area Certifications:
 - ▶ UL and CSA certified for use in Class I, Groups A,B,C, and D
 - ▶ UL and CSA certified for use in Class II, Groups E,F, and G and Class III
 - ▶ UL and CSA certified for Class I, Zone 1, AEx db IIC
 - ▶ DEMKO 01 ATEX 015742U
 - ▶ 2813 II2 G D
 - ▶ Ex db IIC Gb
 - ▶ Ex to IIIC Db IP66
 - ▶ IECEx UL 14.0071U
 - ▶ Ex db IIC Gb
 - ▶ Ex tb IIIC Db IP66
- ▶ Battery has visible LED status indicators for OK, WARNING and ERROR
- ▶ Compatible with all manufacturers ER probes
- ▶ Supplied with Rysco mounting bracket



Model	Rysco Wireless ER Logger	
RYS	Data Logger Model	
DLBT	Logger Type	
	ER	Electrical Resistance - Provides precise resistance measurements of electrical resistance corrosion/erosion probes at set intervals. These resistance measurements are stored within the logger body and later downloaded and calculated into metal loss through proprietary software
		Cable Length
	10	10 ft. Cable Length
	20	20 ft Cable Length
	CUS	Custom - Reach out to Rysco to Discuss Capabilities
		Pin Connection Type
	STD	Standard 6 in connection
	CUS	Custom - Reach out to Rysco to Discuss Capabilities
		Tablet
	RDLBT-TABLET	Rysco Wireless ER Data Logger Tablet
		Wireless ER Data Logger Order Code

RYSCO
CORROSION SERVICES INC.
www.ryscocorrosion.com





In the dynamic landscape of Al Jubail, Saudi Arabia, **Al Shaikh Cathodic Protection Co. (AI Shaikh CP)** operates as the critical manufacturing and engineering force of BSS Technologies. Embodying a commitment to excellence, this ISO certified company is a leader in delivering advanced cathodic protection solutions, safeguarding vital infrastructure across the Kingdom.

The strength of AI Shaikh CP is rooted in its manufacturing and warehouse facility located within the Al Jubail Industrial City. This plant is the hub of innovation and production, managed by a dedicated team of experienced engineers and technicians who oversee the process till final execution. The facility is equipped with advanced machinery, including melting furnaces and precision fabrication tools, enabling the production of a full spectrum of cathodic protection materials.

"Our mission is to lead with innovation and quality. From our base in Al Jubail, we leverage the global expertise of BSS Technologies to provide localized, world-class corrosion protection solutions."

AI Shaikh CP is rigorously committed to quality. The facility features dedicated areas for product reliability testing and quality control, ensuring every component meets the highest standards of performance and durability. This guarantees that all materials conform to precise specifications before they leave the factory.

As an integral part of BSS Technologies' global network, AI Shaikh CP not only strengthens the group's presence in the Middle East but also serves as a testament to its strategy of combining international expertise with local manufacturing power.



Hypoklor Electro-Chlorination Systems

BSS Technologies' HypoKlor® systems represent the next generation of on-site electrochlorination technology, engineered to produce sodium hypochlorite safely, efficiently, and sustainably from seawater or brine. Designed for operational simplicity and long-term reliability, HypoKlor® delivers consistent, high-quality disinfection without the hazards or logistics of bulk chemical handling.

On-Site Sodium Hypochlorite Generation

HypoKlor® eliminates the need for chlorine gas or transported chemicals by enabling on-site production of sodium hypochlorite. Systems are available in a wide range of capacities, from 2 kg/h to 900 kg/h of available chlorine, offering scalability for:

- Desalination Facilities
- Power Generation Plants
- Cooling Towers and Marine Ballast Water Systems
- Municipal and Industrial Wastewater Treatment
- Aqua Parks and Pool Disinfection Systems

Safe, Effective, and Eco-Friendly

Sodium hypochlorite is one of the world's most trusted disinfectants. It provides strong bactericidal and deodorizing action, long-lasting residual protection, and exceptional handling safety. Its low toxicity and easy storage make it ideal for both municipal and industrial water treatment applications.

Engineered for Performance and Longevity

Every HypoKlor® unit is a fully integrated package comprising electrolyzers, rectifiers, dosing pumps and intelligent control systems. The robust, corrosion-resistant design ensures continuous operation even in harsh marine environments, while low energy consumption and minimal maintenance deliver outstanding cost efficiency.

Custom-engineered configurations are available to suit site-specific requirements, ensuring operational flexibility for both new and retrofit installations.

Empowering Sustainable Water Management

By replacing traditional chlorine logistics with on-site generation, HypoKlor® helps industries and municipalities achieve safer, cleaner, and more sustainable water management. It's not just a chlorination system, it's a commitment to environmental responsibility and operational excellence.

Applications



Fresh Water Generation



Marine Growth Prevention



Power Plant



LNG Terminal



Desalination Plant



Aqua Park



Technical Consultancy and Training Programs

We offer expert technical consultancy to assist end-users in their in-house engineering work, whether establishing new EC Systems or refurbishing existing ones. We conduct client-oriented training workshops, showcasing the unique advantages of easy-to-implement technologies available worldwide.

HypoKlor®

HypoKlor®

Empowering Water Treatment for a Healthier Future

In-house Development

Wide Range of Ratings Available

Manufacturing on Client Specification

Refurbishing Existing Electrochlorination Systems



Fabrication, Skid Packages and Surface Protection

Sait Specialized Engineering & Contracting L.L.C (SSEC), an organization based in the United Arab Emirates, is a multi-discipline engineering and contracting company serving the Oil & Gas, Petrochemical, Water & Power Industries with their expertise in Turnkey / EPC projects in sectors including Pipeline, Civil, Mechanical, Electrical and Instrumentation works.

Having maintained a strong presence in this field and recognizing a gap in the availability of high-quality Blasting, Coating, Fabrication, and Skid Manufacturing facilities in Abu Dhabi, SSEC has established Sait Specialized Metal Industries (SSMI), a state-of-the-art, environmentally friendly facility located in Musaffah ICAD 1. This initiative is aimed at serving a broad range of industries with integrated solutions for Design, Engineering, Instrumentation, Fabrication, Blasting and Painting of Metering Skids and various kind of Steel Structures.

Metering Skids

SSMI specializes in the design and fabrication of complete metering skid packages, including mechanical, piping, and E&I works. Each skid is engineered to international standards, ensuring reliability and accuracy in critical operations.



Fabrication Works

SSMI provides a comprehensive range of structural and pipe fabrication services using modern equipment and skilled fabrication team. We handle all types of fabrication, including structural steel assemblies, pipe supports, spools, platforms, tanks, and custom components

Blasting & Painting

Our surface preparation and coating division offers in-house and onsite services for long-term corrosion protection and durability, using environmentally friendly abrasives and advanced painting systems.



Our extensive experience with major entities across the UAE, combined with our deep understanding of international quality standards, allows us to deliver high-quality, timely, and reliable solutions. This gives our clients a decisive edge in durability and performance.



A SAIT GROUP COMPANY



Belgian
Offshore
DAYS 2025



Direct Assessment (DA) – Non-Intrusive and Non-Invasive method for Pipeline Inspection

AE has inspected 1,500+ pipeline globally by:

- External Corrosion Direct Assessment (ECDA)
- Internal Corrosion Direct Assessment (ICDA)
- Stress Corrosion Cracking Direct Assessment (SCCDA)

AE have been industry leaders in performing several successful ECDA, SCCDA, ICDA (dry gas, liquid petroleum, multiphase products, and water lines) for our global clients in India, Middle East, Europe, and North America.

Benefits of AE'S Direct Assessment Program:

- Proactive – Predict where corrosion may occur in the future
- Non-Intrusive – No product flow interruption
- Mitigation plan for corrosion = How to manage it?
- Determines Remaining Life and Safest Pressure of asset
- 'What-if' scenarios to optimize production with existing threats
- Prioritize remedial integrity activities and repair strategies
- Complimentary to ILI and Hydrotesting for integrity validation

All-In-One Integrated CP & Coating Surveys (9-In-One)

SPECTRUM XLI (eXternal Line Inspection)

Spectrum XLI is a proprietary system for above-ground pipeline inspection, Allied Engineers has already performed XLI surveys in excess of 5,000+ Kms. The XLI equipment collects encrypted data with raw waveform similar to ILI or a hydrotest assessment, Performing XLI with simultaneous, continuous, and encrypted "All in One" surveys, XLI collects up to nine (9) data sets by walking ONLY ONCE over the complete pipeline right of way. Those nine surveys with their recording frequencies are:

- DGPS/GIS (1 time per second)
- CIPS – DC (35 times per second)
- CIPS – AC (35 times per second)
- DCVG (35 times per second)
- ACVG (35 times per second)
- ACCA/CAT (7 times per second)
- Continuous Depth of Cover
- Gas Leak Detection (Up to 1 ppm)
- Continuous Soil Resistivity (Optional)

Why XLI?

(1) High-resolution data (2) Require less time to conduct multiple CP Survey (3) Maximum Insight with minimal disruption.

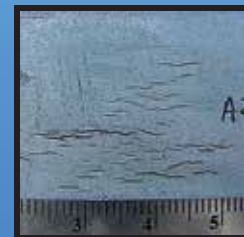
Now you can conduct extremely high-resolution multiple "auto-integrated" above ground CP and Coating Surveys in **ONE SINGLE PASS** of the pipeline!



ECDA
515 Pipelines
4,810 km



ICDA
335 Pipelines
3,010 km



SCCDA
253 Pipelines
10,560 km



Strategic Contract Signing at ADIPEC 2024

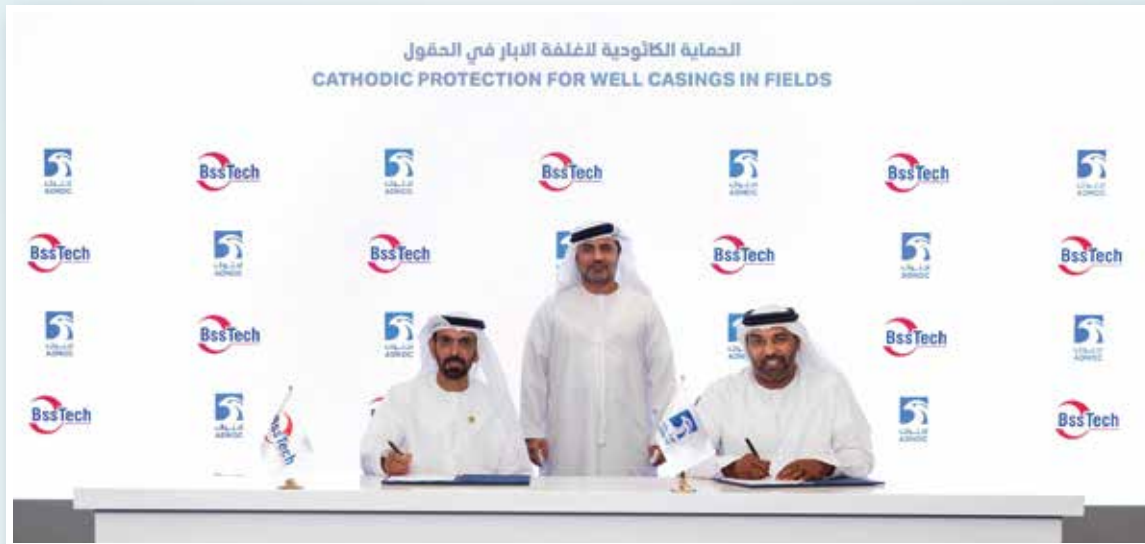
BSS Technologies (Bin Sari Specialized Technologies) proudly signed a key contract with ADNOC Group during the prestigious ADIPEC Exhibition & Conference 2024.

This milestone marks another step forward in our collaboration with ADNOC, aligning with the UAE's industrial vision and commitment to sustainable growth.

Client Statement – ADNOC

“Abu Dhabi National Oil Company (ADNOC) has announced the awarding of contracts totaling AED 720 million (\$196.2 million) for the local production of a diverse array of products throughout its value chain.”

This announcement was made during ADNOC's Business Partnership Forum at ADIPEC 2024.



Recognition from ADNOC Onshore - NEB

We are proud to share that the ADNOC Group Onshore NEB team congratulated BSS Technologies for our outstanding support in both projects and administration.

This recognition reflects the dedication, teamwork, and excellence consistently shown by our professionals. From technical execution to administrative coordination, our team continues to uphold the highest standards of performance.

A big thank you to ADNOC Onshore for this valued appreciation, and congratulations to every member of our team, this success belongs to you!



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Global Customers

24

Countries

90%

Customer Retention Rate

250+

Employees

Integrating Diverse Specializations for Value Delivery

- ⚡ Grid Code Compliance Studies
- ⚡ Power System Studies
- ⚡ Switching and Transient Studies
- ⚡ EMI/EMC Studies
- ⚡ Earthing / Grounding Studies
- ⚡ Lightning Protection Studies
- ⚡ Power Quality & Root Cause Analysis
- ⚡ Insulation Coordination Studies
- ⚡ IECEx Compliance Audit
- ⚡ Design and Detailed Engineering
- ⚡ Instrumentation Earthing Studies
- ⚡ Harmonics Measurement and Studies

Software and Study Tools

www.jeftechno.com

Strategically located in Birkat Al Awamer Logistics Park, Doha, BSS Technologies Qatar leverages a dedicated local team of engineers and site personnel to advance the nation's energy and infrastructure landscape. Our on-the-ground presence ensures responsive service and seamless project execution from start to finish. We deliver pioneering solutions in renewable energy, cathodic protection, and asset integrity management, reflecting the vision of Qatar and the trust of our clients.

Solar – Driving Sustainability Forward

“Harnessing the Sun to Power Critical Operations”

In 2025, BSS Technologies Qatar successfully deployed 130 off-grid solar power units for QatarEnergy across Dukhan, Umm Bab, and Kathiya.

Project Highlights:

- 100 units – 500W capacity
- 30 units – 550W capacity
- Total installed capacity: 832 kW
- Each unit powers 6.4 kW of solar energy

Impact on Operations:

These solar systems supply reliable, clean energy to:

- Remote Telemetry Units
- Fire / Gas Units
- Cathodic Protection systems in remote areas

Sustainability Milestones:

- 1.46 GWh renewable energy generated annually
- 1,200+ metric tons CO₂ reduction per year
- Equivalent to offsetting emissions from 260 passenger cars



“This project is a testament to QatarEnergy’s sustainability vision and BSS Technologies’ expertise in renewable energy deployment.”

Sales – Expanding Our Global Clientele

BSS Technologies Qatar is delighted to announce a prestigious award from Qatar Fertilizer Company Q.P.S.C (QAFCO) for Design, Engineering, Procurement, Supply, and Installation of Cathodic Protection Panels for Qafco-3 Drum Screens, August 2025.

Significance:

- Strengthens BSS Tech’s presence in the Fertilizer sector
- Adds a new global leader to our portfolio
- Demonstrates our commitment to excellence and technical expertise

“Every new project reinforces our vision of being a trusted partner in critical infrastructure and energy solutions.”

HSE – Safety at the Core

“Safety is our culture, not just a priority.”

BSS Tech Qatar continues to uphold strict safety and environmental standards across all operations.

“Our HSE practices reflect our commitment to a safer, smarter, and more sustainable future.”



Swarm® – Real-Time Corrosion & Erosion Monitoring

What It Is

Swarm® is a non-intrusive ultrasonic monitoring system for Oil & Gas, Petrochemicals, Utilities, Processing, and Mining. It delivers high-accuracy wall thickness measurements in real time, strengthening pipeline and asset integrity management.



Key Benefits

- Cost-efficient, maintenance-free installation (strap-on, no downtime).
- High accuracy – resolution better than 2.5 µm (0.1 mil).
- Flexible power: battery, solar, DC, AC
- Flexible comms: wired/wireless (Modbus, Bluetooth, ISA100, LoRaWAN).
- Ex approved for Zone 1 & 2.
- Autonomous system with onboard processing & data storage.
- Reduces OPEX – optimizes inhibitor programs, cuts inspection & pigging costs.
- Retrofit & relocatable, usable under insulation.

Applications

- Corrosion monitoring – real-time detection on pipes, welds, elbows, T-pieces, buried lines.
- Erosion monitoring – critical bends in oil & gas production.
- Heat-affected zone & selective weld corrosion monitoring.
- High-temp operations – sensors for up to 500 °C (932 °F).

Data & Software

- Swarm® Server – organizes data into dashboards, trends, and alarms.
- Provides metal loss rates, wall thickness trends, heat maps.
- Seamless integration with client control systems.

Why Sensorlink

- Proven expertise in corrosion/erosion monitoring.
- Reliable hardware + advanced algorithms.
- Customizable solutions tailored to client needs.



 **Sensorlink**
www.sensorlink.no

For Enquiries: associates@bsstechnologies.com | +971 4 886 7015

ReKorr® Linear Polarization Resistance (LPR) Meter

A Portable Solution for Corrosion Monitoring

The Hand held Corrosion Monitoring unit allows the user to monitor the corrosion rate of the Steel Reinforced Concrete Structures using BSST-E4 corrosion monitoring probe which are designed for pre-installation in concrete structures.

Reinforcement Corrosion Monitoring

Exposure of the reinforced concrete to Chloride ions is the main cause of corrosion of reinforcements in concrete. Steel corrosion causes changes in the reinforcing bars mechanical properties, cracks, spalling of the concrete cover and a reduction of contact area between reinforcement and surrounding concrete. Reinforced structures must be tested regularly to detect early and prevent corrosion.

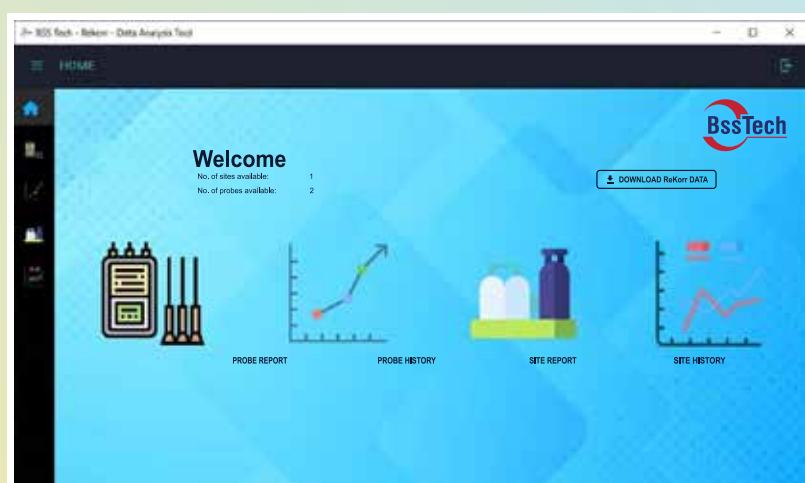
Early indication to predict corrosion risk in reinforced concrete will be a proactive measure by embedding appropriate sensors in the concrete.

What is Linear Polarization Resistance (LPR) Measurement?

The linear polarization resistance method consists of applying a step of very small voltage variations ($\pm 20\text{mV}$) above and below the corrosion potential of the metal element under test. The polarization resistance (R_p), defined as the slope of this current-potential curve is inversely proportional to the corrosion rate.



- IP 65 Rating
- High Quality ABS
- Alphanumeric Keypad
- User Friendly HMI
- Graphical OLED Display
- Rechargeable Battery
- USB Interface
- PC Software



Software

ReKorr®

A Portable Solution for Corrosion Monitoring

For Enquiries: bsstech@bsstechnologies.com | +971 4 886 7015

CP EYE™ Intelligent Remote Monitoring for Cathodic Protection

CP EYE™ is an advanced Remote Monitoring and Control System (RMCS) that unifies your entire cathodic protection infrastructure. By integrating transformer rectifiers, test posts, reference electrodes, and coupons into a single, smart ecosystem, CP EYE™ delivers real-time data, remote control, and predictive analytics for both onshore and offshore assets. Manage your corrosion prevention systems with unparalleled efficiency and insight, from anywhere in the world.

Key Features

- Comprehensive Remote Monitoring: Live tracking of all critical parameters, including AC/DC voltage, current, reference electrode potentials, and coupon data.
- Advanced Diagnostics & Control: Execute remote tests on-demand, such as Instant-Off, depolarization, and GPS-synchronized interruptions for precise surveys.
- Intelligent Data & Alarming: Automated data logging, performance trending, and instant SMS/email notifications for any system fault or abnormal event.
- Universal Connectivity & Integration: Seamlessly connect assets using LoRaWAN, 4G/5G, Satellite, or Fiber Optics. Natively integrates with any SCADA, DCS, or IoT platform via Modbus TCP-IP.
- Intuitive, User-Focused Platform: Access all data and controls through a secure, user-friendly web dashboard with role-based access for administrators, engineers, and technicians.
- Rapid Deployment: The system is designed for fast commissioning, allowing monitoring units to be fully operational in less than a day per site.



Engineered for Any Environment

Application	Primary Connectivity
Remote Pipelines	LoRaWAN low-power long-range networks
Industrial Plants & Refineries	Direct SCADA/DCS integration via Modbus TCP-IP / Fiber Optics
Urban Networks	4G/5G wireless with static IP SIMs
Offshore Platforms	Satellite connectivity





Pipeline Construction Management Solution

Empowering Pipeline Projects with Digital Precision

PCMS™

Pipeline Construction Management System

JPAC Technologies Pvt. Ltd., with 31 years of expertise, is a trusted leader in Web, GIS, and Mobility-based Project Management Solutions for the Oil & Gas and utility sectors. Our flagship PCMS™ and SmartSafeNet™ empower pipeline operators with Traceability Verifiability, Completeness from Planning, Execution, Operations, Integrity and Risk Assessment. For City Gas Distribution, SmartGasNet™ delivers an end-to-end solution for execution, maintenance, incident reporting and CRM—driving efficiency, reliability. Solutions offered are AI enabled with Live GIS Digital Twin.

A future where every pipeline project is executed with speed, accuracy and transparency. PCMS is designed to deliver:

1. Standardization of project data, documents & reports
2. End-to-end digital project management
3. Real-time monitoring of progress, cost & resources
4. Integrated GIS & Document Management
5. Efficiency, accuracy, and reduced human intervention



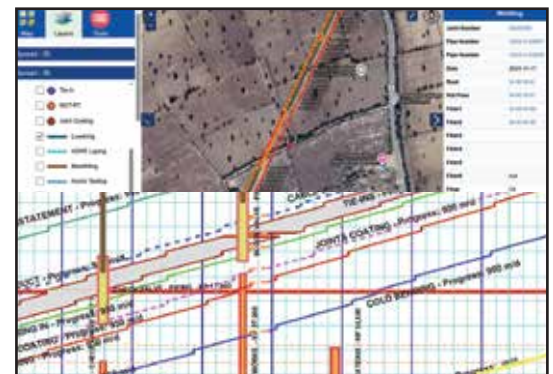
Core Capabilities

1. **Plan & Benchmark your Projects** Manage detailed schedules for pipeline and pipe track activities.
2. **Who Own's that parcel?** Real-time work front and compensation progress insights.
3. **Where are Your Pipes?** Efficiently manage & track pipe attributes and stock data automatically.
4. **Where & How are you Crossing?** Mobile/web-based data entry for HDD and cased crossings.
5. **Are pipes Joining right?** Field data entry via mobile apps of all Construction Activities.
6. **Marching High** Analytical Graphs Like Corridor Viewer, Alignment Sheet, S-Curve, Gantt Chart.
7. **Mobile Applications:** Mobile tools for tracking, reporting, and navigation.
8. **Station Construction & Piping:** Daily progress, piping history, and station dashboards.
9. **Document Management System (DMS):** Assign, upload, approve documents digitally.

OTHER SOLUTIONS

SmartSafeNet™
Pipeline Integrity Management Solution

SmartGasNet™
Solution for City Gas Distribution Network



jpac
www.jpactech.com



A Journey Beyond Boundaries

Travel and adventure have always been part of the human spirit. They remind us that the world is vast, full of stories waiting to be discovered, and experiences that shape who we are. Whether it's setting out to explore distant lands, riding the waves on a water scooter, freefalling from the sky, or gliding through quiet rivers in a kayak, each moment of adventure carries lessons that stay with us long after the journey ends.

Adventure pushes us to break free from routine, teaching us resilience, adaptability, and courage. Travel, meanwhile, opens doors to new cultures, ideas, and friendships. Together, they enrich our lives with perspectives that no book or meeting room can fully capture.



Just as work teaches discipline, focus, and determination, travel and adventure teach us creativity, empathy, and the value of living in the moment. Balancing both worlds creates a harmony where professional growth meets personal discovery. Each new destination or daring activity becomes a reminder that life is not only about reaching milestones but also about enjoying the paths we take to get there.

In today's interconnected world, our journeys—whether across continents or within our own backyards—are more than escapes. They are opportunities to return to work with renewed energy, sharper insight, and stories that inspire those around us. Travel and adventure do not compete with work; they complement it, adding color and vitality to everything we do.

So, the next time you step on a plane, dive into the sea, or try something entirely new, remember—it is not just an adventure. It is part of your story, shaping both your journey through the world and your journey through life.



Setting New Standards in Cathodic Protection-Transformer Rectifier Units

Transformer Rectifiers (TRs) remain the heart of every cathodic protection system, supplying regulated DC power to protect pipelines, storage tanks, and offshore structures. At BSS Technologies, we have advanced this proven technology with IECEx and ATEX certified solutions, engineered for Zone 2 hazardous areas, ensuring safety, reliability, and international compliance.

Our TR units are designed to exceed customer expectations by combining robust power delivery with digital intelligence, enabling operators to manage CP systems with confidence.

Advantages of BSS Tech TR Units

- IECEx, ATEX, trusted in global oil & gas projects.
- Engineered to perform in extreme conditions – deserts, offshore platforms, and refineries.
- Advanced regulation of DC output with tap-changer, variable transformer, and microprocessor-based adjustment.
- Multiple ratings available, from compact units for test stations to large-scale CP plants.
- Wide range of enclosure options – IP66, IP65, IP55; air-cooled and oil-cooled designs.
- Seamless connectivity with CP-EYE Remote Monitoring features.
- Our global service team provides support in all countries of operation, ensuring uninterrupted service.

Complete Range of TR Solutions

BSS Tech provides the widest spectrum of cathodic protection power supplies, designed to match every project requirement and budget:

- Simple Variac Units – cost-effective manual control for small systems and test posts.
- Tap-Controlled TRs – robust and reliable, ideal for standard CP applications.
- Thyristor-Controlled TRs – precise regulation with smooth DC output.
- Auto-Potential TRs – self-regulating systems that maintain pipeline potential automatically.
- Fully Remote-Controlled Intelligent TRs – integrated with CP-EYE RMCS, enabling remote monitoring, interruption, and complete CP system management.
- Concrete Power Supply TR Units – Customised solutions for field installations, with up to 64 monitoring channels and coupon control and current measuring facilities.
- Rigid, Customized Solutions – engineered to meet specific client specifications and demanding project requirements.
- Technology Spectrum: From traditional Variac-based TRs to modern SMPS-mode digital units, and from single-channel TRs to multi-channel high-performance CP plants.

Types of Rectifiers:

- | | | |
|---|----------------------------|--|
| • Cathodic Protection Rectifiers | • Pulse Rectifiers | • Polarity Reversible Rectifier |
| • Remote Monitoring and Control system for CP rectifier | • IGBT Rectifiers | • ED Coat Rectifiers |
| • DC-DC converter | • Hydrogenation Rectifier | • Rectifier for furnace and other applications |
| • GPS Current interrupter Timer | • Chlorination Rectifier | |
| | • Electroplating Rectifier | |

Specialities:



Advanced Silicon Technology for Pure Rectification.



Remote Monitoring And Control System



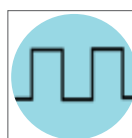
Advanced Surge Protection



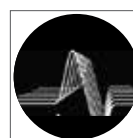
Low Maintenance



Over Voltage Protection & over Current Protection for both input side & output side.



Individual ON/OFF mechanism.



Reduced Ripple for better CP healthiness



Isolated Input using high efficient step down transformers. (Double wound Isolation)



IECEx Certified



ATEX Certified

Transformer Rectifier



In-House Development
Wide Range of Ratings Available
Manufacturing on Client Specification
IECEX & ATEX Certified



Proven Protection
and Sustainability.
Worldwide.

SEALID® All-in-1



Whether new construction or rehabilitation: **SEALID® All-in-1** sets worldwide standards for sustainable corrosion protection. Just one step: no primer, only one wrap, no additional mechanical protection required. Patented safety fulfilling ISO 21809-3 and EN 12068. [sealid.com](https://www.sealid.com)

SEALID® All-in-1 Wrap once. All done.



www.dekotec.com





Precision-Engineered Electrical Heat Tracing Systems by Thermopads

Precision-Engineered Electrical Heat Tracing Systems by Thermopads. In the Middle East's demanding environment—where scorching days meet cool desert nights—Thermopads' Electrical Heat Tracers ensure smooth, uninterrupted operations in oil & gas, petrochemicals, water treatment and manufacturing segments.

Why Heat Tracing Matters in the Middle East:

Even in a hot climate, heat tracing is essential for:

1. Offshore platforms.
2. To Maintain viscosity of fluids in Refineries and Petrochemical Plants.
- 3 Long-distance Crude Oil pipeline heat tracing

With presence in 60+ countries, Thermopads delivers innovative thermal solutions for Refineries, Power Plants, Railways, Renewables, and Chemical Industries across the globe—with a strong focus on the Middle East.

Why Choose Thermopads in the Middle East:

- ✓ **Built for Harsh Climates**
Withstands temperature swings, sandstorms, and marine exposure
- ✓ **Trusted by Middle East Industries**
Proven performance across UAE, Saudi Arabia, Oman & Qatar.
- ✓ **Strong Local Presence**
Backed by BSS for fast, expert support & compliance
- ✓ **Certified & Efficient**
ATEX/IECEx approved, self-regulating, and energy-saving systems
- ✓ **Turnkey Solutions**
From design to commissioning—complete project support



Thermopads

www.thermopads.com

For Enquiries: thermopads@bsstechnologies.com | +971 4 886 7015

BSS Technologies delivers bespoke solar solutions engineered for reliability, resilience, and a sustainable future through our specialized divisions, Envoera™ and Smart Enersol, we offer a unified approach to renewable energy, turning your most complex challenges into powerful, practical assets. We provide everything from advanced solar modules and charge controllers to custom-built power supplies.

Engineered for the Most Demanding Environments

We provide uninterrupted power for your critical and remote operations. Our expertise includes:

- Powering Cathodic Protection systems to safeguard your infrastructure.
- Energizing telemetry units (RTU), SCADA systems, and instrument loads at wellheads and unmanned locations.
- Delivering standalone power for site offices, laboratories, and temporary structures.
- Detailed engineering, FEED services, and the development of customized controllers tailored to your unique application.
- Comprehensive energy audits, feasibility studies, and complete revamps or upgrades of existing solar facilities.
- Full operation and maintenance services to ensure the longevity and peak performance of your solar power systems.



ENVOERA™
ENERGY FOR THE NEW ERA



Solutions for a Sustainable Globe

Made in UAE



For Enquiries: envoera@bsstechnologies.com | +971 4 886 7015

Monolithic Insulation Joints

In modern pipeline systems, electrical isolation is essential to ensure the effectiveness of cathodic protection and prevent corrosion caused by stray currents. Monolithic Insulation Joints (MIJs) are advanced, factory-assembled fittings designed to provide permanent electrical isolation between pipeline sections, while maintaining full mechanical strength and pressure integrity.

Unlike conventional flange insulating kits that require multiple components and field assembly, an MIJ is a single, fully welded unit that guarantees long-term reliability.

Design and Features

Each IGP-manufactured MIJ consists of:

- High-strength steel hubs welded to a central insulated section.
- Dielectric insulation materials such as glass-reinforced epoxy, ensuring zero metal-to-metal contact.
- Elastomeric sealing elements for leak-proof performance.
- High-grade epoxy coatings inside and outside for corrosion resistance.

IGP's MIJs are designed to withstand internal pressures, bending moments, and torsional stresses, meeting ASME, NACE, and Shell specifications. The joints are suitable for underground and above-ground installations across oil & gas, petrochemical, and water pipeline networks.

Advantage

With over two decades of expertise in sealing technology, IGP Engineers Pvt. Ltd. integrates advanced materials, precision manufacturing, and comprehensive testing to deliver MIJs that are durable, dependable, and compliant with global standards.

IGP's Monolithic Insulation Joints stand as a testament to engineering excellence — ensuring safety, reliability, and corrosion protection for critical pipeline infrastructure.



**IGP
GROUP**
www.igp-group.com



CORCON
AMPP/NACE - INDIA

GGG designs High Accuracy LNG sampling system

GGG Oil & Gas Systems is a fully independent system integration company / solution supplier. Specialist in design, production and implementation of complete integrated flow metering solutions for custody transfer gas and LNG (terminal and offshore) projects, worldwide. GGS can also be your partner in gas filtration, pressure reduction, flow control or gas treatment installations.

Gas and LNG metering systems

As part of the package GGS Oil & Gas Systems can provide turnkey flow metering systems including:

- Fully integrated gas and LNG metering skids
 - Flowmeters (Ultrasonic, turbine, etc)
 - Valves and piping
 - Instrumentation (Temperature, pressure, etc)
- Metering houses with
 - Sampling systems
 - Analyser systems
 - Gas composition via gas chromatograph
- Supervisory and flow computer systems including flow computers, control panels and customer interfaces
- On site commissioning, validation, etc...



From upstream to downstream

GGG Oil & Gas Systems delivers flow metering systems for offshore and onshore locations, from platforms to (off-)loading facilities FSRU & FNLG, for pipeline operations, and refineries. We work closely with our customers to provide the most cost-effective, highest quality solutions. Every solution we deliver is a tailor made job; designed, engineered and built based on the customer's specifications and requirements, as well as international industry standards and best practices.

ISO 8943 Intermittent LNG sampling systems

GGG designs and fabricates high accuracy sampling systems for LNG sampling for on-shore & off-shore projects.

Complete with:

- Combined LNG probe with vaporizer
- NG sample line
- Control system + fully integrated customized reporting system
- Suitable for any LNG pressure. Even at extreme low pressures from 0,5 barg
- Fully automatic, from initial flush to operation
- Control can be combined with a metering system
- Class approval like DNV, BV, ABS, etc
- Start-up and commissioning



www.ggsoilandgassystems.com

Building Skills Building Futures

At BSS Technologies, training is more than a process, it is a commitment to growth, innovation, and empowerment. By investing in people today, we create the foundation for tomorrow's success, not just for us but for the wider community.

We hold strong emphasis on developing young local talents, equipping them with the skills and knowledge needed to contribute to the UAE's long-term vision of a knowledge driven economy. From engineering and project management to specialized technical fields, young professionals are supported with structured learning opportunities, mentoring, and real project exposure.

In house training programs help employees strengthen their technical expertise and soft skills under the guidance of experienced mentors. Complementing this, onsite training immerses employees in live projects, enabling them to apply theoretical knowledge directly in the field while developing problem solving and decision making abilities.

Specialized Cathodic Protection (CP) training remains a cornerstone of our technical development efforts. Covering system design, installation, monitoring, and maintenance, these sessions ensure that our teams remain at the forefront of corrosion engineering practices while also passing valuable knowledge to the next generation of engineers and technicians.

Beyond technical skills, training at BSS Technologies fosters responsibility, adaptability, and teamwork qualities that are essential for sustainable growth. By combining structured learning, field experience, and continuous mentoring, we empower our workforce to excel and prepare for the evolving demands of the industry.



Digitized PinBrazing for Cathodic Protection

Connect CP Cables fast and safe!

Safetrack patented digitized PinBrazing system is an extremely efficient, low temperature arc brazing method used for attaching electrical connectors to steel structures within Cathodic Protection systems such as pipelines, vessels, reinforcement bars, wind power, grounding, etc, without the need for welding. No need for different carbon moulds for different wires. Safetrack application methods always use materials of the highest quality to ensure the best electrical conductivity, corrosion resistance and strength.



ECONECT PinBrazing Unit - Lightweight, automated equipment

- **High capacity**
60 connections per charge
- **Battery powered**
Nano Li-Ion, long life
- **Automated Gun**
Self adjusting (patent)
- **Digitized**
Same perfect result everytime (patent)
- **Lightweight**
Only 9,8kg (21,6 lb)



Advantages

- No special training needed
- No waste of consumables
- Automated Gun
- Low temperature
- Low noise
- Fast & safe



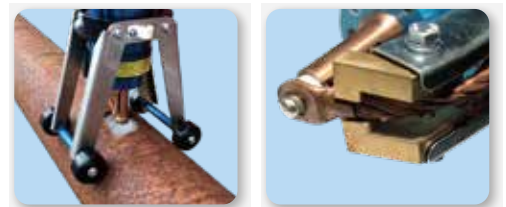
Extended PinBrazing Gun SL-88 Deep underground cable connections

- Up to 8 meter (26 ft) deep connections
- Patented automated technology
- Made of lightweight anodized Aluminium
- Includes a video cam for simple operation

SL-88 is used for connecting cathodic protection cables by PinBrazing technique in drilled holes or holes made with vacuum excavation (Hydrovac). In holes as small as 10" / 250 mm diameter and 8 meters below ground. Connect SL-88 to your Econect PinBrazing unit (or SL-87 for S30 X/C).

SL-88 uses our patented Brazing Gun technology which ensure correct lift level and best brazing result.

"The most cost efficient way of making retrofit connections to buried pipelines. No need for major excavations!"



ISO 9001 & 14001 Certified
www.safetrack.se



3E Greenstack Series OPzV Batteries:

A Reliable and Versatile Solution for Mission Critical Backups

3E believe that lead-acid batteries are vital to a sustainable future for our planet. Lead-acid batteries are the only 100% recyclable energy storage solution that meets the sustainability challenge.

Lead-acid OPzV batteries, are high-end products, specially developed for applications that require frequent deep cycling.

They generally have a cell voltage of 2 volts and are connected in series to produce higher voltages. These types of batteries have valve regulated vents and are used in stationary applications like; solar, wind and backup energy storage. They contain a Gel electrolyte which is generally composed of diluted sulfuric acid, gellified with fumed silica dust.

OPzV batteries also feature High Capacity, Long lifetime, Low Self-Discharging, Maintenance free, Appropriate dimensions and weight etc.

3E designs Greenstack series OPzVs with an optimized tubular plate, which by far exceeds the DIN standards in vogue.

The advantages of the optimized plate are, they offer excellent cycling capabilities and long service life under float conditions. This is an energy-saving solution for energy storage. Even in remote installations that require long-term discharge and excellent charging performance, it can provide significant advantages in terms of single-cycle cost, the highest level of reliability and performance.

The Technology behind OPzV Batteries

The acronym "OPzV" originates from the German term "Ortsfest, Panzerplatten, Verschlussen," which roughly translates to "stationary, armored plates, sealed." This nomenclature highlights the battery's construction, featuring tubular positive plates and gelled electrolyte within a sealed housing made of reinforced plastic. The design ensures a leak-proof and maintenance-free operation throughout its service life.

Sealed and Maintenance-Free Design

OPzV batteries are classified as sealed batteries, eliminating the need for regular maintenance or water additions during their lifespan. This characteristic makes them an ideal choice for applications where routine maintenance is challenging or impractical. Moreover, their sealed construction allows for operation in any orientation without the risk of acid leakage.

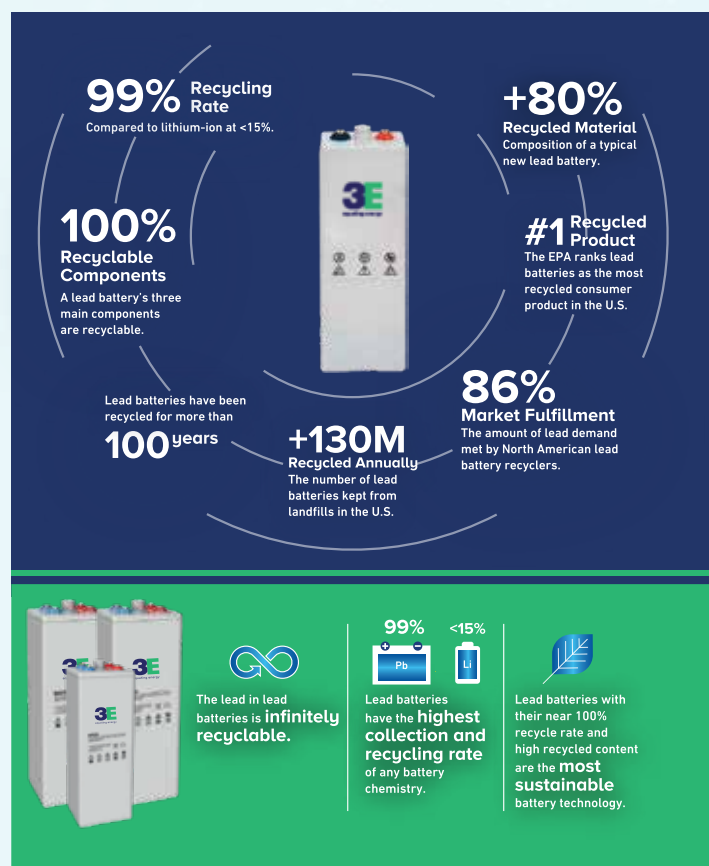
High Energy Density and Long Service Life

An outstanding feature of OPzV batteries is their high energy density, enabling them to deliver a substantial amount of power per unit of weight or volume. This makes them particularly advantageous for applications where space and weight considerations are critical. Furthermore, their extended service life, reaching up to 20 years, makes them a cost-effective solution for long-term applications.

Deep Discharge Cycle Capability

OPzV batteries excel in their deep discharge cycle capability, allowing them to be discharged to a much greater extent than other lead-acid batteries without damage or reduced service life. This characteristic makes them particularly suitable for scenarios where frequent power outages occur or where backup power is needed for extended periods.

OPzV batteries stand as a reliable, long-lasting, and high-performance option, well-suited for diverse applications. Their sealed design, maintenance-free operation, and ability to endure deep discharge cycles make them ideal choices for backup power systems, renewable energy installations, telecommunication systems, and many more applications. With their exceptional features and versatility, OPzV batteries continue to be a preferred solution for powering critical systems across various industries



ENERTECH ENERGY EQUATIONS FZ-LLC
www.3e-enertech.com

OPzV Batteries



The lead in lead batteries is infinitely recyclable.

Lead batteries have the highest collection and recycling rate of any battery chemistry.

Lead batteries with their near 100% recycle rate and high recycled content are the most sustainable battery technology.

SARL BSS Protection Cathodique Algérie

As part of our continued commitment to expand globally, SARL BSS Protection Cathodique Algérie stands as a cornerstone of BSS Technologies' operations in North Africa. Based in Algeria, the subsidiary is dedicated in delivering advanced cathodic protection and corrosion engineering solutions, tailored to the needs of the oil, gas, utility and infrastructure sectors of the region.

In Algeria and across the North African region, our team regularly conduct specialized client training programs. These sessions are designed to enhance operator knowledge in areas such as:

- Cathodic protection principles and system design
- Field surveys and monitoring techniques
- Operation, maintenance, and troubleshooting of CP systems

Through a mix of in-house training and on-site workshops, we ensure that clients gain the technical confidence to manage and maintain corrosion protection systems effectively.

Across the North African Region

Our presence extends beyond Algeria, with strategic coverage across North Africa enabling us to support large-scale energy and infrastructure projects throughout the region. This regional footprint allows us to act as a bridge between our Middle East, European and Asian facilities, combining global expertise with localized client support. Whether through onshore pipeline surveys, offshore asset protection, or renewable energy support systems, our teams in North Africa play a vital role in extending the service life of critical infrastructure.

Commitment to Local Development

Beyond technology, our strategy in North Africa emphasizes capacity building and local workforce training. By investing in knowledge transfer and nurturing engineering talent, we contribute to the region's long-term industrial growth. We continue to partner with clients, contractors, and government entities to promote best practices in corrosion prevention and sustainable asset management.





Safety For Sustainability

Along with health, safety and the wellbeing of our people the protection of our environment is required for the generations to come. Focused campaigns and community initiatives helps us continue to build awareness, encourage preventive practices, and strengthen a culture of responsibility not just within our family but others too. These showcases our collective efforts toward creating a safer workplace and a greener tomorrow.

Earth Day & World Environment Day 2025

We have marked two global occasions in the year 2025, with impactful initiatives - Earth Day (April 22) and World Environment Day (June 3).

Earth Day – Our Power, Our Planet

To reinforce our shared responsibility to protect natural resources and the ecological footprint, all in BSS Tech with no exception, came together for tree plantation drive, awareness sessions, and a housekeeping campaign focused on climate action, clean energy, and sustainable practices.

World Environment Day – Combating Plastic Pollution

In association with M/s ADNOC, our teams led activities including the Plant for the Planet Drive, Plastics & the Planet awareness session, cleanup campaign, and the Green Office initiative introducing indoor plants and biodegradable wooden pens. Each step was a move toward reducing plastic use and fostering a greener workplace. We learned – “Litter Never Glitter”



Beat the Heat Awareness Campaign

Beat the Heat campaign, conducted on May 17, 2025, addressed the risks of working under extreme summer temperatures. Discussions and awareness sessions were conducted, educated workers on recognizing early signs of heat stress, dehydration and exhaustion, while supervisors scheduled midday breaks, proper hydration, and acclimatization routines. Practical demonstrations on medical preparedness and emergency response further strengthened our workforce resilience, ensuring that employees remain safe and productive in challenging conditions.



Thrive & Strive – Employees Health & Wellbeing Campaign

On the same day, the Thrive & Strive campaign placed special emphasis on overall wellbeing. Organized in collaboration with the New National Medical Centre, the program featured health awareness sessions on nutrition, hydration, and mental wellness. Employees received first aid training on handling common injuries and emergencies, along with CPR demonstrations. Comprehensive health screenings for blood pressure, BMI, and sugar levels provided personalized feedback, while free dental vouchers encouraged better oral care. This initiative enhanced awareness, boosted preventive health practices, and empowered employees to take proactive steps toward healthier lifestyles.



Blood Donation Campaign

Complementing workplace health efforts, a Blood Donation Campaign was organized at the Abu Dhabi camp. Employees participated enthusiastically, donating blood to support hospitals and patients in need. The initiative reflected our workforce's spirit of solidarity and highlighted that wellbeing extends beyond individual health to serving the wider community. By fostering a culture of volunteerism, the campaign reinforced our responsibility to society as well as to one another.



Commitment to the Future

Together, these initiatives underline BSS Technologies' dedication to health, safety, and social responsibility. By focusing on awareness, preventive care, and community engagement, we continue to nurture a culture where every employee is supported to stay safe, healthy, and empowered-both at work and beyond.

“Protect today to preserve tomorrow.”

Tailored leak detection: Atmos Eclipse's multiple configurations

Pipelines are diverse, and each one poses unique operational challenges. Atmos Eclipse was designed with this in mind, offering a versatile set of configurations that adapt to meet every operator's specific leak detection needs.

Atmos Eclipse provides essential instrumentation as part of a leak detection system in one non-intrusive ATEX package that's easy to install and designed for rapid deployment. One or all of the below configurations are available for Atmos Eclipse:



Atmos Eclipse deployed on a pipeline

Non-intrusive pressure

Providing a straightforward measurement, the non-intrusive pressure sensor can measure pressure change down to 0.2 psi and removes the need to connect to existing tapping points or create new ones, which means no need to drill, weld or cut the pipeline.

On one of our UK customers' pipelines, two Atmos Eclipse units deployed at both ends of a pipeline section recently detected and raised alarms for two leaks during a trial.

Non-intrusive flow

Atmos Eclipse can acquire bidirectional flow data with an available channel for an additional sensor. This capability ensures accurate leak detection in pipelines with complex flow patterns, giving operators confidence in system reliability. Atmos Eclipse can communicate flow measurements through wired Ethernet, cellular, radio and standard RS485.

Data collection

Connecting to two external sensors such as pressure meters or flow meters, the Atmos Eclipse device can be used to transmit the data to the leak detection server. With data collection capabilities, Atmos Eclipse ensures seamless integration with existing infrastructure, delivering actionable insights straight to the leak detection server.

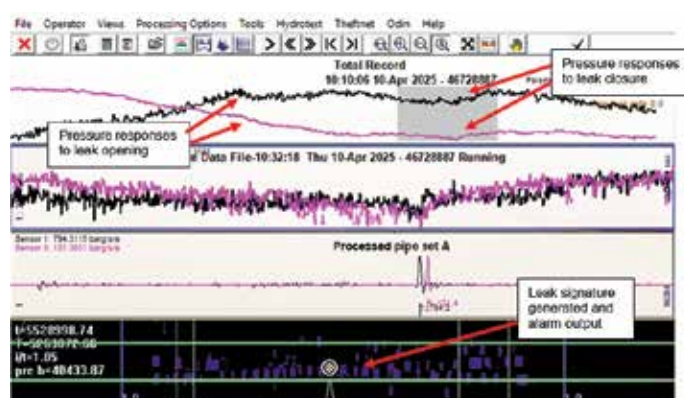
Water and rising sewer mains

Capable of supporting multiple industries, Atmos Eclipse has recently been deployed with supporting hardware in the UK wastewater sector to provide single ended leak detection on rising sewer mains.

Atmos Eclipse can provide flow and pressure data to support transient monitoring, giving operators valuable insight into pipeline performance and integrity.

Configurations tailored to the needs of every pipeline operator

Atmos Eclipse is providing leak and theft detection coverage for thousands of kilometres of pipelines globally. To find out more about this valuable non-intrusive instrumentation, visit our website.



Our Success: Happy Minds and Healthy Hearts

Success is not to be measured on how much is delivered and how high have we reached. It is measured on what is delivered and is that what was supposed to be delivered and is that delivered at the required time.

This can only be achieved by healthy hearts, that beats to the melody of happy minds.

At BSS Tech – each and every individual heart makes sure, the fellow heart is healthy and the fellow minds are also happy. This can only be achieved by the spirit of team, understanding the value of WE and knowing the fact that I and YOU makes WE.

This gives us many of the times a feel of exception than a state of satisfaction.

Together we try to build legacy not just an institution.

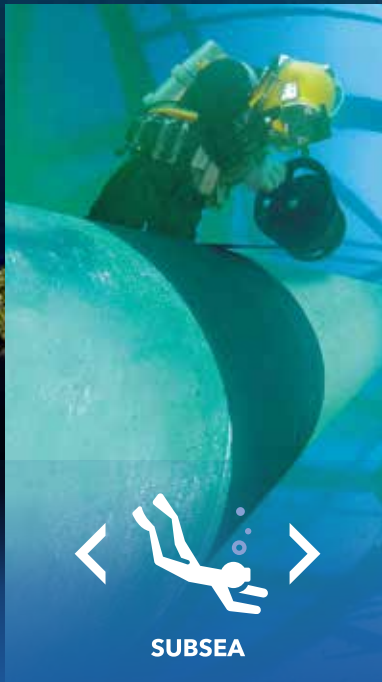


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Voices from Our Team



Hebin Cherian - Projects Manager

Since joining BSS Technologies in 2012 working with the team has been a rewarding experience. It has not only expanded my technical expertise but also provided a platform to grow within a culture that values engineering excellence, teamwork, and client satisfaction.

As a Project Manager, I've had the privilege of collaborating with a talented team of engineers and project professionals, continuously striving for innovation, quality, and reliability in every design solution we deliver. I look forward to continuing this journey of learning and contributing to the ongoing success of BSS Tech in the years ahead.

Sakkeer PV - QA/QC Engineer, SSML

I have been a part of this company for the past seven years, and it has been an incredible journey. I began my career here as a QC Inspector, and today, I am proud to be working as a QC Engineer and SSML Lead. This growth wouldn't have been possible without the continuous support and encouragement from my manager and the amazing team around me. I am truly grateful for the opportunities I have had to learn, grow, and take on new challenges along the way. The group has provided a strong platform for developing new skills and applying my knowledge in meaningful ways. I look forward to continuing this journey and contributing even more in the future.



Robin. M. Antony - Technical Manager, India

When I started at BSS Technologies India Pvt Ltd 7 years before, I was looking for a place to learn and grow in my career. What I've found is so much more than that. Have found a workplace culture that truly values collaboration, creativity, and innovation. From day one, I've felt supported and empowered to bring my best ideas to the table and work with my colleagues to make them a reality. I feel heard, respected, and valued for my unique perspectives. This supportive environment has helped me bring my best self to work every day I'm proud to be a part of such a dynamic and inclusive team.



Dr. Fahd JLASSI - Regional Manager, North Africa

I am proud to be member of BSS Family, and I have the pleasure to contribute with an huge added value to expand company's activities on North Africa Region and Maghreb Market. Basis on Management guidelines and team work collaboration, I am investing 17 years' experience and solid background to manage daily challenges existing in the market and doing all necessary efforts to succeed our projects and perform our company reputation with our clients and key accounts with only one goal : To be key player in CP in North Africa region. I admire our challenges in BSS and always saying "One Team One Dream", and I love sharing energy and efforts with all team from different regions and HQ in order to optimize our company presence and to reach more success and achievements.



Rasheen AR - Engineering Team Lead, India

BSS Technologies excels not just through technical excellence but through its commitment to employee welfare and a culture of continuous learning. My thirteen years here have provided invaluable opportunities for professional growth, innovation, and making substantive contributions, all while the company prioritizes a healthy work-life balance. Reflecting on my journey, I am filled with immense pride and gratitude. I am certain BSS Technologies will continue to achieve new heights, setting new standards in corrosion technologies worldwide. It is a true privilege to be part of this vibrant organization's growth, and I eagerly anticipate contributing to our collective success and future milestones.



Rudra Mahadev Nakka - Projects Manager, Kuwait

As a Projects Manager at BSS Technologies, I've had the privilege of working with cross-functional teams that aim to bring passion and precision to every project. It's incredibly rewarding to lead initiatives where collaboration and commitment drive real results for our clients. This past year has brought some of the most complex yet the most fulfilling projects I've managed. Thanks to the incredible teamwork and support across departments. We've met tight deadlines and exceeded client expectations through cooperation and collaboration. That's the kind of work culture BSS Technologies cultivates. At BSS Technologies, every project is a story of innovation, teamwork and execution.



Zill Rafi - Projects Manager, SSEC

My journey with SSEC began in 2018 as a Project Engineer, and today I proudly serve as a Project Manager a growth story made possible by the trust, support, and opportunities this company has given me. SSEC has always been more than just a workplace; it's truly felt like a family where I've learned, evolved, and built my career. Every project, challenge, and success here has shaped me into the professional I am today. Over the years, I've had the privilege of working with inspiring mentors and dedicated teams who constantly pushed me to learn, lead, and deliver. The company's culture of teamwork, integrity, and continuous growth has helped me build not just technical skills but also leadership and confidence. I'm deeply grateful to be part of this incredible journey and excited to continue growing with SSEC and the SAIT group family.



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InSIGHTS Magazine volume 11
Totally in-house publication

Content source : In-house, principles, general public media