

## Welcome to the **AEGIS** SPRING NEWSLETTER



**T**his latest issue of our newsletter comes out at an extraordinary time in the world, with everything turned on its head – from the world economy to each of our businesses' operations to the daily lives of every one of us. It is the first time in the lives of almost everyone that something has fundamentally altered the way we live and work.

We believe that this is a time for all of us to double down on our core values and take strength from them. After all, they are what makes us "us". At AEGIS, perhaps the most important of our values is "we care". We care about the health, wellbeing and livelihoods of our staff and associates and their families and indeed all those we interact with in business. We care about the continued success of our clients and their projects. We care about the communities in which we live and work. As demonstrated by our NHS and key workers now, more than ever, is the time for us to care for each other.

We find ourselves in uncertain times – but some things remain the same. We remain

open for business in this brave new world. I have asked the AEGIS Team to step up and deliver on another of our core values "Excellence". And in true AEGIS fashion they responded by making March the best performing month in the 23 year history of AEGIS, delivering time after time for our clients. I am truly humbled, though not surprised, by their resilience, professionalism and positivity. So, we will do whatever we can to help our clients continue to have success in their projects and objectives. We will do the right thing to support our staff and we will remain positive. AEGIS confronts this situation with a strong and healthy business; we will adapt, innovate and give our best and we will all come out of this together, stronger and ready to embrace a bright new future.

I hope you find the newsletter interesting and informative.

Keep safe and stay positive

**Mark McCool**

### Some Current Highlights

#### Training Courses

The extent of the engineering expertise of our team in technical subjects across the rail environment means AEGIS is perfectly placed to offer a wide range of training courses to the rail industry. Previous and existing clients for these services have included TOCs, ROSCOs, OEMs amongst others. Our training offering covers subjects such as:

- EMC Awareness Training
- An Introduction to EN50126 EN50128 EN50129 and legal framework
- Safety Engineering Awareness
- Traction and Auxiliary Systems Awareness
- An Introduction to the CSM-RA regulation
- Engineering Change and Safety Engineering, CSM-RA and RIS-2700-RST
- Braking Systems Awareness
- Fault Tree Analysis (FTA) Advanced
- An Introduction to Infrastructure Work Systems
- LX - Suitable and Sufficient Risk Assessment
- Performance Level & IFA SISTEMA
- An Introduction to PAB Approvals and On Track Plant Technology
- An Introduction to the New EN50126 Standard
- An Introduction to the New EN 50129:2018 Standard

We are continually developing new courses and can offer bespoke courses if required.

Please get in touch if you would like more information.

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## SPECIAL PROJECTS

**M**ors Smitt has designed a TPWS (Train Protection and Warning System) that can be configured to meet various customer requirements by interchanging previously designed hardware components / modules. The configurability of the system requires that a flexible generic approach was taken to the safety case in order to reduce cost and duplicated effort for the current and future configurations of the TPWS. The TPWS is designed for use on Non-ETCS and also ETCS fitted systems.

AEGIS has undertaken associated safety work with the generic TPWS in order to demonstrate that the TPWS meets the overall safety targets and requirements in line with EN50126, EN50128 and EN50129. This work started with the creation of a Safety Plan which defined the safety targets and the method for demonstration of compliance. Safety requirements were then defined from the Functional Failure Analysis and HAZOP & SHARD analysis that was carried out on the TPWS. A FMECA was used to analyse all component failures for each of the component parts of the TPWS. Fault Tree Analysis was carried out to determine the failure rates of the TPWS overall and to demonstrate that the results met the original safety targets that had been set.

AEGIS provided a safety case report for the generic TPWS. Configuration changes were dealt with by providing a Specific Safety Case report for each of the configurations required. This approach has produced a much more efficient process for the TPWS safety case and has already been used on six TPWS configurations.



# Human Resources and Health & Safety

**F**ormed in 2011, Magenta Iris is an HR Consultancy specialising in the provision of HR solutions into small to medium enterprises. Offering an ad hoc or retained service means that clients can tailor the provision to fit their needs and budget. The Directors Claire Nicklin is passionate about progressive thinking HR solutions.

Claire Nicklin works with AEGIS and sees a company which genuinely values their employees and is keen to explore new advances in management thinking to provide the best working environment for their teams. She feels it is “exceptionally refreshing” to work with such a forward-thinking organisation who genuinely care about their employees.

It has been an exciting time of growth at AEGIS lately, through this period AEGIS has always focussed on its people and its core values. Part of this focus had led to us to improve our Human Resources provision. Magenta Iris started to work in partnership with AEGIS back in 2017 to advise and support and more recently to start to implement the changes required to ensure that AEGIS is equipped with a progressive HR solution that fits with the future growth plans.

Over the course of the last year, Claire has worked on a number of policies and procedures, from Maternity to Ill Health Capability to ensure that AEGIS has the backbone required for effective Human Resources management. We have also partnered on more strategic HR projects such as Health and Wellbeing and Employee Engagement. Most recently, AEGIS have tapped into Claire’s railway health and safety experience to assist the formulation of on-site working Risk Assessments and Processes.

## What is the future of Human Resources at AEGIS?

Well, the plan is to continue to build a progressive HR function that upholds the Core Values and promotes AEGIS as an employer of choice, this will involve our Development Director Chris Hoare and Claire to work on

more strategic projects now that the basic foundations are fully in place.

## Health & Safety

Working with our office manager, Bethany Henson, Claire has been working on ensuring that AEGIS has comprehensive H&S processes in place. Claire brings her experience of H&S within the rail and manufacturing sectors to support this process.

Beth and Claire have worked recently on ensuring that AEGIS has comprehensive on-site Risk Assessments in place for when AEGIS employees visit client sites, as well as a robust process to underpin these risk assessments and a link to the Competency Matrix to ensure that employees are competent to conduct such site visits. Also utilising the expertise within the Health and Safety Working Group, they have been able to ensure that this part of the H&S provision fits well with business processes and provides a safe and protective working environment for our teams.



# The Certification (Rolling Stock) Team

**F**ollowing previous articles on AEGIS’s Core Services, Rolling Stock and Infrastructure teams, this issue of AEGIS News focuses on our growing Rolling Stock Certification Services team.

Complementing AEGIS’s rolling stock, plant and infrastructure expertise, our independent certification business, AEGIS Certification Services (ACS), provides Assessment Body, Notified Body and Designated Body services across all TSI sub-system and engineering discipline areas. Our rolling stock certification team’s capabilities cover the following services.

**Notified Body: NoBo** Rolling Stock (passenger and freight)  
Wagons  
CCS (on-board)  
PRM (Persons of Reduced Mobility).

**Designated Body: DeBo** All NNTRs/NTRs for the GB rail network.

**Verification Body (RIS-2700-RST):** First party independence  
Second party independence  
Third party independence.

**ICP:** Rolling Stock (passenger and freight)  
Wagons.

Kathryn Kelly is the Head of Certification (Rolling Stock), Kathryn joined AEGIS Certification Services Ltd (ACS) over two years ago, helping to successfully set up our first Plant Assessment Body (PAB) team and assisting with the delivery of multiple OTP projects and our first On-track Machine (OTM) project.

The rolling stock certification team has a great mix of experience and is currently supporting a diverse range of certification and assurance projects, including new wagons for the UK market, bio fuel innovation for the Class 73, OTM locomotives being manufactured in France, support of local rolling stock manufacturers for new build approvals, modifications and upgrades.

The team has grown considerably in recent years, with newer team members adding to the breadth and depth of certification experience across all disciplines of rolling stock. The team is made up of rail experts who have spent a large part of their careers in the design, manufacturing, maintenance and operation of rolling stock. They bring a wealth of industry experience, gained around the world, that they apply to the certification and approvals of rolling stock manufactured globally for the UK market.

Assurance is at the heart of AEGIS’s core business, with our services including safety management and engineering (CSM RA), safety and interoperability approvals guidance and training, RAM (reliability, availability and maintainability) and design support, plus specialist services from other teams including EMC, human factors, software assurance and cyber-security. In line with our company values, our approach is to provide a responsive and all-encompassing service. We have established an enviable track record in supporting clients such as Network Rail, Amey, Siemens, Unipart Rail and Eurotunnel and ElecLink, and continually seek to maintain and develop new long-term relationships with our customers as we expand. As a UK based certification body, we provide the industry with a wealth of certification expertise that spans rolling stock, plant, infrastructure and operations.

## Kathryn Kelly - Head of Certification (Rolling Stock)



Kathryn is a Mechanical Engineer and has been working in the rail industry for over 18 years, during which time she has worked in a myriad of departments ranging from Recruitment to Engineering Compliance. Kathryn has spent 10 years heading up various maintenance departments for construction and rail plant companies. This involved project management of modifications, upgrades and LU approvals and the procurement of new OTP assets. In addition to being a qualified Lead Auditor (ISO 9001:2015), Kathryn’s areas of experience include project management, railway approvals processes, OTP fleet maintenance management, OTP procurement, maintenance plans – implementation, OTP upgrades/modifications review and LU plant approvals (OTP).

In June 2019, Kathryn was promoted to Head of Certification (Rolling Stock) and tasked with building a team to deliver Notified Body (NoBo), Designated Body (DeBo), Engineering Change (RIS-2700-RST) and Independent Competent Person (ICP) Rolling Stock and OTM product certification. She undertakes project management duties and technical reviews of a myriad of projects, ranging from minor/major modifications to new build vehicles and wagons.



**Phil Court**

Phil is our Certification Director; he is a Chartered Electrical Engineer with over 39 years’ experience in the railway Industry. Phil started his career at GEC in Manchester, then worked as lead Electrical Engineer on several new-build passenger rolling stock projects at BREL/ABB (Now Bombardier) then Alstom Birmingham, before moving into Certification 20 years ago with Correl Rail.

Phil has been with AEGIS for 8 years, initially managing the design assurance activities for Class 317 dc to ac traction conversion, Loram C44 Grinder trains and supporting other assurance projects.

Phil was instrumental in AEGIS gaining UKAS accreditation as a Notified Body/Designated body. Phil is a Signatory for rolling stock projects, and Professional Head for AEGIS Certification Services.

**Andrew Alston**

Andrew is our Engineering Projects Manager. He is an experienced rolling stock engineer with 39 years’ international experience gained in the UK, Canada and Australia. He is a Chartered Engineer and Fellow of the Institution of Mechanical Engineers. Andrew previously worked for SNC-Lavalin where he spent 5 years in the UK following 2 years in Canada, he managed the Notified Body (NoBo) and Designated Body (DeBo) assessment for a European rolling stock manufacturer entering the UK market. He has held senior engineering management roles in rolling stock design, engineering and operations. Since joining AEGIS in 2019 he has worked on variety of projects that include the Class 73 Dual Fuel locomotive, where AEGIS have been selected by G-Volution for the certification and approvals of a Class 73 locomotive which is to be converted to run on Diesel and Bio LPG fuel and the certification of new freight wagons for the UK market. He has also been appointed to the role of project manager for the independent competent body assessment services for new shunting locomotives for the Channel Tunnel Group Ltd and to the role of project manager for the Socofer Spray train UK approvals.



As project manager for these projects he is responsible for the customer interface requirements, budget, resource and on time delivery.

Since joining AEGIS Andrew has contributed to the development of proposals where AEGIS have been successful with several new opportunities.



**Martin Elliott**

Martin was sponsored through university by Rolls-Royce, but after completing their graduate training programme he moved into the railway industry and he now has 31 years’ railway experience mainly, but not exclusively, focussed on rolling stock related projects. His broad knowledge covers design, manufacture and testing through to service introduction of a range of rolling stock from wagons through to passenger coaches, multiple units, on-track machines and even shunting locomotives. More recently, Martin worked as Rolling Stock Professional Head at Ricardo, where he developed the manuals and procedures used for Rolling Stock Approvals, which encompassed Assessment Party, Plant Acceptance Body and Steam Loco Approvals, and undertook a range of assessment work such as design changes (modifications) and maintenance and overhaul extensions. He is fully conversant with CSM-RA and its application to Rolling Stock Projects and is also a lead AsBo assessor.

Martin is a Fellow of the IMechE, is an IMechE Mentor, an active STEM Ambassador and he is on the committee of the IMechE Railway Division.

## Dolraj Subedi

Dolraj is a Senior Engineer and has over 5 years of railway engineering experience, building on experience of certification in other industries. He has a sound working knowledge of RIS-2700-RST and various TSIs for life extension of existing rolling stock and the introduction of new rolling stock. His extensive experience from other industry sectors such as LVD certification, fire testing and EMC offers clients a diverse skill set that facilitates a proactive approach to certification. The combination of his multi-disciplinary experience and certification background enables him to deliver projects that demonstrate both engineering rigour and innovation with a pragmatic approach.



Since joining AEGIS, Dolraj has worked on various certification projects such as Class 442, Class 350, Class 153 and Class 769 refurbishment. He is also involved and currently managing various Notified Body (NoBo) and Designated Body (DeBo) assessment projects for a European rolling stock manufacturer entering the UK market.

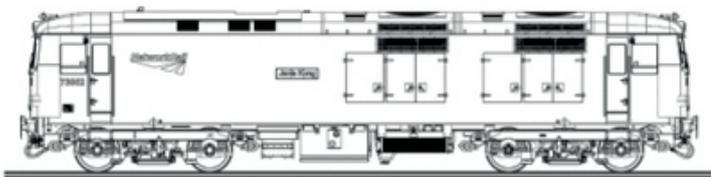
## Suhail Ermus



Suhail relocated from Madrid in 2019 to join us as Principal Assurance Engineer. He is a Telecommunications, Electronics and Software Engineer with ten years' experience in the rail industry. He has worked on railway projects as assessor, surveyor, auditor and project manager mainly focusing on safety and software. Suhail has experience with NoBo, DeBo, AsBo and ISA projects and has a good understanding of railway signalling systems and standards compliance (i.e. EN61508, CENELEC EN50126, EN50128, EN50129 and EN50159). He hails originally from Cuba and is fluent in English, French and Italian.

Since joining AEGIS, Suhail has been working as Signalling Safety Engineer for the Crossrail project developing and reviewing safety documents to support the implementation of Class 345 on-board integrated signalling systems (ERTMS-CBTC and TPWS/AWS) ensuring the onboard safety requirements are met, verified and deviations are clearly documented in a series of safety compliance reports.

AEGIS Certification Services Ltd have been selected by G-Volution for the

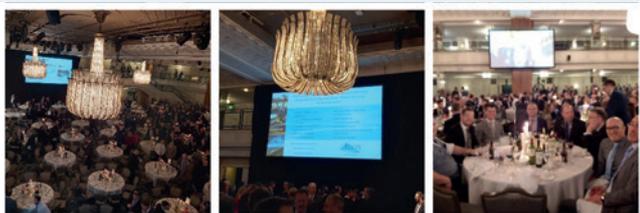


certification and approvals of a Class 73 locomotive which is to be converted to run on Diesel and Bio LPG fuel.

## IMechE Railway Division Luncheon

Once again, AEGIS were proud to sponsor of the IMechE Annual Railway Division Luncheon at The Grosvenor House Hotel in London.

Guests joined us from Angel Trains, Vivarail, Fitzgerald Plant, Unipart Rail, TransPennine Express, Mors Smitt, CrossCountry Trains, On-Train and Bombardier. A delicious meal, great company and an excellent opportunity for networking was enjoyed by all!



## Women in Rail

We took part in this Challenge for the first time in 2019 and although we didn't trouble the top spots of the leader board, we had a great time so we're taking part again on 9th September at the Newark Showground. We are keen supporters of the WiR events: currently, 30% of our employees are women and our aim is to see that percentage rise in the future as AEGIS grows. Look out for "AEGIS Shield" if you are taking part too!

## RSN 2020

Not only are we gold sponsors and exhibitors at RSN 2020 on the revised date of Thursday 3rd September we are also hosting a separate "Rail Market Approvals – Demystified" event alongside the exhibition too! We will be giving a series of seminars, delivered by our in-house experts that will explain the key approvals requirements, the route to satisfying those requirements and our own approach to providing the services that progress Railway Approvals to a successful conclusion.

Due to the expected high demand for these sessions pre-registration is required via the AEGIS page on the RSN 2020 website <https://www.rsnevents.co.uk/rail-market-approvals-demystified/>.

We look forward to seeing you there!





**ROLLING STOCK NETWORKING**

Derby Arena

Thursday 3rd September 2020

9:30am to 3:30pm

EXHIBITOR

BRINGING THE RAILWAY ROLLING STOCK INDUSTRY TOGETHER

## AEGIS Peaky Climbers



As mentioned in the January issue, AEGIS have entered a team into the Porterbrook Three Peaks Challenge by Rail. Due to the current virus outbreak, this event has now been postponed and will take place in September. The team "AEGIS Peaky Climbers" consisting of Chris Beales, Luke Wood, Ed Brundle and Andrew Allen, together with everyone at AEGIS, have pledged to raise £3500 for the Railway Children charity. At time of printing we have raised 46% of our target, so have a way to go yet! To sponsor the team please visit <https://uk.virginmoneygiving.com/Team/AEGISPeakyClimbers>.

All donations gratefully received.

## New Starters



### Matthew Topley

Matthew joins AEGIS as Senior Electrical Engineer, bringing his 9 years of experience in the rail industry having previously worked at SNC-Lavalin, Bombardier & Faiveley Transport. Matthew has detailed knowledge of UK rolling stock, including train borne electrical and electronic systems, modification design and installation management, commissioning of new rail vehicles and the application of rail standards for assurance. He also has significant experience in standalone and rail vehicle testing, fault finding and the repair of the associated electronic and electrical systems. Matthew is managing our train functional test work stream.



### Dr Shamal Crowther

Shamal has joined as a Senior Engineer. She completed a doctoral project in Systems Engineering at the University of Nottingham before joining the rail industry as a Signalling Systems Engineer. She has previously worked for Alstom Transport and, most recently, Ricardo Rail in their Command, Control and Signalling team. Shamal will be working on infrastructure and safety engineering projects to continue her interest in traditional and digital signalling.



### Martin Elliott

Martin Elliott, a Chartered Mechanical Engineer and Fellow of the IMechE with over 30 years' railway experience joins AEGIS as a Principal Engineer. Martin previously worked at Ricardo Rail where he was Rolling Stock Professional Head, before which he spent time working at Interfleet and Network Rail. He has vast experience of Railway Vehicle Design, Project Engineering, Project Management and Certification. Martin will be working across the full range of Rolling Stock and OTM certification projects here at AEGIS.



### Brian McKendrick

Brian has joined as a Principal Engineer to support the continued growth of our Infrastructure services. Brian has been responsible for complex multidisciplinary projects within the rail sector at management and executive management level for over 25 years. He previously held senior technical and management roles with Ricardo and Lloyd's Register where he was the Professional Head of Signalling and has in depth knowledge of safety engineering, system assurance and asset management practice within the rail environment.



### Abigail Carson

Abigail joins AEGIS as a Project Engineer within the Infrastructure team. She previously worked for Ricardo Rail, in the Projects and Engineering team after completing their graduate scheme. During her time in the rail industry she has gained experience in project engineering, rolling stock asset management, modifications and the engineering change process, with a common theme of maintenance regime changes and condition-based maintenance.

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We would like to welcome **Matthew, Martin, Shamal, Brian and Abigail** to the team!