

## Welcome to the **AEGIS** AUTUMN/WINTER NEWSLETTER



**25** years ago, this September AEGIS was formed, as myself and a few like-minded engineers got together with an ambition to grow something that was greater than the sum of our individual offerings. It was 1997, Tony Blair came to power, the nation mourned the death of Lady Diana, the music charts were a battleground for Oasis and The Spice Girls interspersed with classics such as Aqua's Barbie Girl and The Teletubbies say "Eh-oh!" and just to age myself that little bit more Marcus Rashford was born. Fast-forward 25 years and we find ourselves again with a new PM, mourning the loss of Queen Elizabeth II, Marcus Rashford has received an MBE for his food poverty campaigning and this year's chart (I had to Google this) includes the uplifting song titles ABCDEFU, B O T A (Baddest Of Them All) and Unholy, but on the positive side Kate Bush is still running up that hill!

This issue of the Newsletter gives you a potted history of AEGIS over the last 25 years, from those ambitious beginnings to now being part of the Ikos Group, a global leader in railway consultancy.

When recently asked to share our recipe for success I jokingly suggested the proportions were a tablespoon of hard work, a teaspoon of entrepreneurship and a ladleful of good luck.

With more reflection I could cite the importance of values and developing a strong cultural identity, or the need for a laser-like focus on your vision, or the relentless systemisation of business processes, or a forensic control of your cash position – but ultimately it all boils down to the PEOPLE.

The best advice I have ever received was to surround myself with great people and at AEGIS I am honoured to work with some of the best railway engineers in the business as well as excellent and committed support staff. I have been fortunate enough to have been advised and mentored by some of the champions of our industry (you know who you are) and to share the company vision with a talented and dedicated senior leadership team.

Please enjoy the newsletter, enjoy learning about some of the exciting projects that the great people of AEGIS and Ikos are working on and if you want to join us as part of the next 25 years then please don't hesitate to get in touch.

**Mark McCool**

## Some Current Highlights

### Ikos Group – Extended Global Framework Agreement signed with ALSTOM

Ikos first entered into a Global Framework Agreement with Alstom back in 2014. During Innotrans this year, Serge Chelly – the CEO of Ikos – signed an extended agreement with Eelco Bleeker (Indirect Commodity Director) and Andreas Picker (Indirect Domain Director) at Alstom.

The extended agreement came into force on 1st October 2022 and lasts for an additional 3 years.

Ikos have been selected for all the segments and for all the countries they applied for including several new technical segments that are listed below, in addition to the segments already covered under the original Framework:

- General Studies
- Design Styling & Prototyping
- Certification & Testing
- ILS
- Planning and Project Management
- Quality Control
- ISA
- Cybersecurity
- Digital and IoT

As members of the Ikos Group, we at AEGIS are delighted to be part of this Extended Agreement and we look forward to continuing and growing our already well-established relationship with many parts of Alstom.

### Newly formed Rolling Stock Design Team

Rob Harris joined AEGIS in May as Head of Rolling Stock Design, a newly formed service area within AEGIS Engineering Systems. Rob has been joined by Nathan Reid and Richard Allen and most recently Luke Reitzer as an Electrical Design Apprentice.

Luke is our first Technical Apprentice here at AEGIS.

He is studying a four-year Engineering Technician Apprenticeship course at Derby Roundhouse College and will attend college one day per week.

Luke will also be rotating around other areas of AEGIS to experience the other aspects of the business and their effect on designs in the future.

During his time in the Design Team, he will be using our Solid Edge CAD and new Teamcenter system.

Teamcenter is a Data Management system which allows us to control design and engineering data, models, drawings and documents in a fully auditable manner.

Look out for more about our new Design service offering and how we use the Teamcenter system in our next issue and on LinkedIn.

## Class 717 – AsBo/ISA Project

Govia Thameslink Railway (GTR) currently operates a passenger commuter services on the Northern and City Line (NCL) between Drayton Park and Moorgate.

Network Rail, on its side, is progressing a scheme to progressively implement the European Rail Traffic Management System (ERTMS) on the East Coast Main Line (ECML), including NCL.

This scheme has started with the replacement of the NCL's current colour signalling with a Level 2 European Train Control System (ETCS).

Replacement of existing tripcock train protection with Train Protection Warning System (TPWS) was the first milestone for this project.

GTR has assessed this change to its operation as significant, and therefore is required to retain the services of an independent Assessment Body (AsBo) to provide assurance that the Common Safety Method for Risk Assessment (CSM-RA) has been suitably applied to the management of the change.

AEGIS Certification Services, in the role of Assessment Body is undertaking an independent assessment of the suitability of both the application of the risk management process as set out in Annex I of the CSM-RA and of its results in accordance with CSM-RA Article 6.

GTR currently operates commuter services between Stevenage, Hertford, Letchworth and Moorgate.

The line, before the change, operated with tripcock train protection, a train protection device based in two basic components. One is the trip arm mechanism, mounted on the ground adjacent to the rail, which essentially consists of a spring-loaded arm connected to an electric motor (or pneumatic cylinder in electro-pneumatic systems). The other is the train-mounted trip cock, which is connected either directly or electrically to the train's braking system.

The trip arm is raised automatically whenever a train should be brought to a halt. If a train attempts to pass the signal with the trip arm in the raised position, the trip arm makes mechanical contact with the trip cock on the train, causing the train's brakes to be automatically applied, thereby bringing the train to a halt.

Tripcock train protection is about to be decommissioned and replaced with Train Protection Warning System (TPWS). On top of the TPWS, the ETCS Level 2 is going to be implemented.

ETCS Level 2, in comparison, is a more modern signalling system. It involves continuous supervision of train movement with constant communication via GSM-R between the train and trackside.

ETCS Level 2 displays signalling and movement authorities in the cab. The train is continuously sending data to the Radio Block Centre (RBC) to report its exact position and direction. Eurobalises are used as passive positioning beacons. Trains refine their position with additional sensors such as accelerometers, odometers or radar.

AEGIS supported GTR by providing its services as AsBo throughout the whole project. The activities being undertaken in each stage of the project were:

### 1. Project Initiation

AEGIS supported the iterative review of these documents for compliance with the requirements of the CSM-RA.

### 2. Hazard Identification

AEGIS attended a sample of the hazard identification workshops to provide assurance that they are being completed in a manner suitable to elicit all hazards.

### 3. Hazard Closure Planning

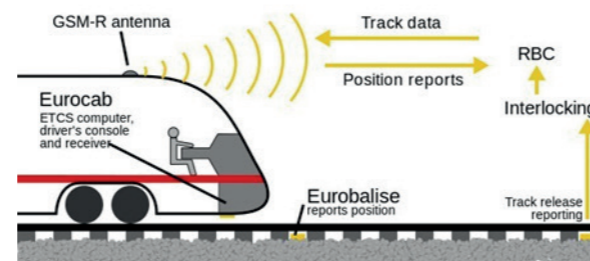
AEGIS reviewed the proposed closure measures and provided guidance as to the likely acceptability and success of them.

### 4. Interim Safety Assessment Reports

We delivered the findings from the review and assessed the suitability and completeness of the applied risk management process.

Our strong relationship with GTR and system expertise allows us to effectively manage the assessment project.

The joint work with GTR has led to the issue of the interim Safety Assessment Report for the introduction of TPWS which is an important stage on the way to the Final Assessment Report which will be required to put ERTMS Level 2 Operations into passenger service.



## Supporting ROG with the Introduction of the Stadler Tri-Mode Class 93s

Rail Operations Group UK (ROG) will be introducing a fleet of new Stadler manufactured tri-mode locomotives. Operating on certain routes on the UK main line network in 2023.

ROG is an established provider of rolling stock services including testing and commissioning, maintenance and rolling stock movements.

Class 93s are classified as new design locomotives. The design is based on some elements of the Class 68 and Class 88 design, with improved performance and some unique design features. For example Class 93s will have an increased maximum speed of 110mph, upgraded engine, traction battery pack and a revised locomotive front.

These vehicles will operate as multipurpose locomotives across freight and passenger services and will be capable of operating under 25kV ac overhead lines, on Caterpillar C32 diesel engines or on Lithium Titanate Oxide (LTO) traction battery packs. This provides flexibility for operation on specified routes within the UK Rail Infrastructure and has potential to reduce noise and emissions in built up areas.



The Common Safety Method for Risk Evaluation and Assessment (CSM-RA) was introduced to standardise the quality of risk assessments produced by railway companies when making changes to the mainline railway that could have a potential impact on operational safety. (The change can be to any railway technical system such as Rolling Stock, Signaling (Control and Command), Energy, Infrastructure as well as operational and organisational changes.)

The introduction of the Class 93's is a change that has been deemed 'Significant' within the scope of CSM-RA.

Where a change is deemed "significant", it is a legislative requirement that a Risk Management Process (RMP) compliant with CSM-RA Regulation is implemented. As part of the CSM-RA, an independent Assessment Body (AsBo) must check that the RMP and its results comply with the regulation.

ROG requested that AEGIS Certification Services provide the independent assessment in the role of the AsBo for the operational change associated with the introduction of these vehicles.

AEGIS are reviewing CSM-RA specified documentation and processes followed to identify and manage the operational risk.

Our experienced AsBo team have been reviewing the ROG's System Definition, Risk Management Plan and have witnessed a two-day hazard identification workshop.

Our friendly and professional AsBo team have a positive working relationship with ROG and have been providing constructive prioritised feedback whilst maintaining independence. The team is working flexibly with ROG to meet project expectations and milestones.

Our methodical and strategic approach to undertaking AsBo activities maximises delivery efficiency and minimises project risk associated with achieving safety approvals and authorisations. For example, we provide clear structured feedback as early as possible in the project lifecycle, enabling subsequent work to be compliant with the regulations and avoid rework.

The next step for us will be to assess the compliance of ROG's Class 93 Hazard Record with the CSM-RA regulations.

In summary, our aim as an AsBo is to support the success of this project and add value instead of adding barriers.

In September this year we celebrated our 25th birthday with a party for staff and associates and their families. The weather was more than kind, the food, the drink and the conversation flowed, the children and the music played.

We were entertained by local upcoming talent Joey Greener – check him and his band The Public Eye out at <https://open.spotify.com/artist/6e9SSxr2JLtmWJ5eZTiTuk>

It was a chance to thank those that have helped AEGIS become what it is and will shape its future. It's also a moment to reflect on our path so far and where we're going.

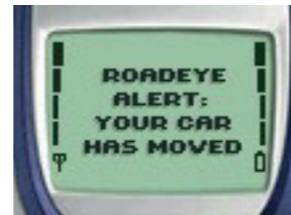


AEGIS Shield

That path started in 1997 when a group of like-minded contracting engineers got together to try to build something that would be greater than the sum of their individual parts. There were engineers of many disciplines at that table - safety experts, reliability gurus, compatibility specialists, structural analysts – but also a geographer with interests in asset management. They settled on the name AEGIS after much debate, picking up on the Advanced nature of their Engineering skills and also that person's interest in Geographical Information Systems. Importantly, the chosen name also reflected the central interest in safety, being also the name of the Greek god Zeus' shield. Thankfully, they didn't also adopt the traditional designs on that shield, though I'm not sure of the origin of the triangle and the swish – if anyone can enlighten me, please feel free.

In the early years, the focus came increasingly onto railway engineering, except for a side in the early 2000's to develop a vehicle tracking system that we called Roadeye. Technologically of its time, it was deployed to cars and numerous fleets of buses and trucks and kept tabs activity and position.

It also helped one director find his car in the expanse of car parks at the NEC after the Railtex event!



"That dates it!"

The story of the company took a big turn in 2012, we decided to move it to Derby to place ourselves at the heart of the UK rail engineering community. At that time, we had 5 employees and our business was largely centred on safety and reliability work for rolling stock, mostly passenger and mostly for the big manufacturers. So, we set up shop in Pride Park and went about starting to build.



The first thing we did was hook up with a business coach. We knew a lot about engineering, but not so much about how to grow a business so we started to have regular coaching sessions with local Scaling Up® coach, Neale Lewis. We turned up, keen to get stuck into business plans and marketing and selling and recruiting, but Neale said – no: first you have to work out what your purpose is, your unique selling point, brand promise and most of all, your values and your vision. Anyone who has spent any time with AEGIS people will know how much focus we still have on values and vision. Our values are on the wall and (figuratively but meaningfully) on the sleeve: We Care, Passionate, Respect, Excellence and Do The Right Thing. And our vision brought in the notion of a positive choice – our desire that the decision to work with or for AEGIS would be taken in an affirmative mind set and for the best reasons.

From that time on, our growth journey began. Each year since 2012 the company has expanded in people, skills, markets and revenues. In 2019 this growth was recognised by the rail industry by winning the inaugural Railway Industry Association RISE Award for Growth.

By that time, we had diversified from rolling stock into infrastructure, we had established an independent certification body and had opened a second office. We were above 50 people and had (in the Scaling Up parlance) 10x'd the business.

2020 was the same for AEGIS as it was for the rest of the country – the biggest upset, challenge and crisis that anyone had seen for generations. When faced with such uncertain times, we prepared for it by falling back on our values which helped us know what the right thing was to do. In the end, it turned out OK – we did not have to furlough anyone, far less make redundancies, and in fact we continued the growth journey, growing by some 15% and recruiting 16 people.

2021 was another very significant year. In March of that year, we became part of the Ikos Group – a specialist railway engineering group headquartered in Paris and with interests across Europe, North America and now in Morocco. Ikos were interested in broadening its presence in the UK.

Founded by two men with one telephone in Paris in 2005, Ikos now employs nearly 1,400 people, with the addition of AEGIS the only exception to purely organic growth. Probably it was that growth mindset and also the fact that Ikos' core values of Passion, Respect, Team Spirit and Excellence so closely align with ours that drew Ikos and AEGIS together. Certainly, it is a complementary relationship that allows one to grow from the strengths of the other.

As we move towards the back end of 2022, we are seeing our rolling stock design function flourish with new people and systems, while our infrastructure team makes further inroads into new markets in things without wheels and our certification business, established now in Madrid as well as Derby, look to build on its UK position and establish itself in new territories around the globe.

So this allows us, on the occasion of passing the milestone of 25 years, to look happily into the future with confidence and to toast the next generation of AEGIS people and their service to our clients.



INDUSTRY EVENTS

InnoTrans 2022

After a 4-year break, InnoTrans took place between 20-23rd September in Berlin.

AEGIS attended over the three days as part of the IKOS Group who exhibited in hall 11.2

Pictured below: Martin Elliott & Suhail Ermus – AEGIS, Anne Eustache – IKOS, Dan Moore Director, Rail Strategy and Analysis at Department for Transport (DfT) and Darren Caplan, Chief Executive at Rail Industry Association.



# AEGIS - RECRUITMENT

We have been busy recruiting and increasing our expertise over the last few months. Meet the new members of the AEGIS team.

We continue to seek the right people to join our expanding team, have a look at the careers page on our website:

[www.aegisengineering.co.uk/home/careers](http://www.aegisengineering.co.uk/home/careers)

if you are interested in joining our team, please get in touch by emailing your CV and covering letter to:

[katygrace@aegisengineering.co.uk](mailto:katygrace@aegisengineering.co.uk)

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