Pennant

World-class products and services which train and assist operators and maintainers

aviation® SKILLS PARTNERSHIP · OmegaPS · Track Access

OVERVIEW

Pennant International Group is a leading, worldwide provider of technology-based training solutions, ILS software and services to the Defence, Aerospace, and safety critical industries. The Group exports its range of products and services (electrical and mechanical trainers, E-learning, Virtual Reality, Emulation, Interactive Technical Documentation, Media Services, Educational Pathways) around the world to train current and future generations of engineers and technicians in the defence and regulated civilian sectors.

Over the last 60 years The Group has grown through a combination of organic growth (product and customer development) and acquisitions including recently Aviation Skills Partnership (ASP) and Track Access Services (TAS). In addition to our operational centres worldwide, the Group has collaborative arrangements with a strategic range of partners and agents in many countries and can truly claim a global presence. Defence forces and defence contractors form the majority of the current business customer base, but new markets are being developed in civil operations including information technology and telecommunications.

Pennant has a proven capability in the Design, Development, Manufacture, Delivery and Support of technical training solutions and services including:

- ▼ Alignment with training regulations such as EASA/EMAR PT 66, FAA, City & Guilds & CASA MEA

- ▼ Translating and developing a training requirement into a deliverable product

- ▼ Providing subject matter expertise in specialist and technical areas

- ▼ Operator and maintainer training within an engineering or related environment

- ▼ Hardware and software capabilities

- ▼ Through Life Support & Services (Integrated Logistics Support)

In the training space, Pennant equipment offers modern blended solutions. These enabling learners to benefit from a suite of modern, generic and bespoke training aids offering operation and maintenance savings and improved safety outcomes. These training aids complement training on real equipment and include basic hand skills devices, virtual reality trainers and maintenance emulators for regulated sectors.

> " I'm proud to be part of a company with such a rich heritage and one which has very much moved with the times. Looking to the future, I believe the business is well placed to deliver further growth and innovation, continuing to develop new technical training solutions and services as we enter the next phase in Pennant's long and distinguished history. "

Philip Walker, Group CEO

HISTORY

Pennant International Limited was established over 60 years ago.

Since 1996 the Group has been listed on the London Stock Exchange's AIM market and operates worldwide, with offices in Europe, North America and Australasia. The Group exports its range of technical training solutions around the world to train the next generation of operators and maintainers in defence and regulated civilian sectors.

The company has evolved over the past six decades, from modest beginnings into a market-leading, technology-led business with a truly global customer base. From animated displays using patented light systems to today's sophisticated software training systems, early projects included working with Sir Christopher Cockerell to produce prototype designs of the world's first Hovercraft. In 1965 Pennant took the decision to embrace emerging technologies which opened up new markets in education and training.

These developments resulted in substantial growth for Pennant, with demand for procedural and maintenance trainers for civil and military equipment. The company won progressively larger contracts producing ever more sophisticated software solutions including emulations and the Omega PS LSAR software.

Today, Pennant has become a firmly established world leading supplier of training products and services, supported by a creative, innovative and highly trained team.
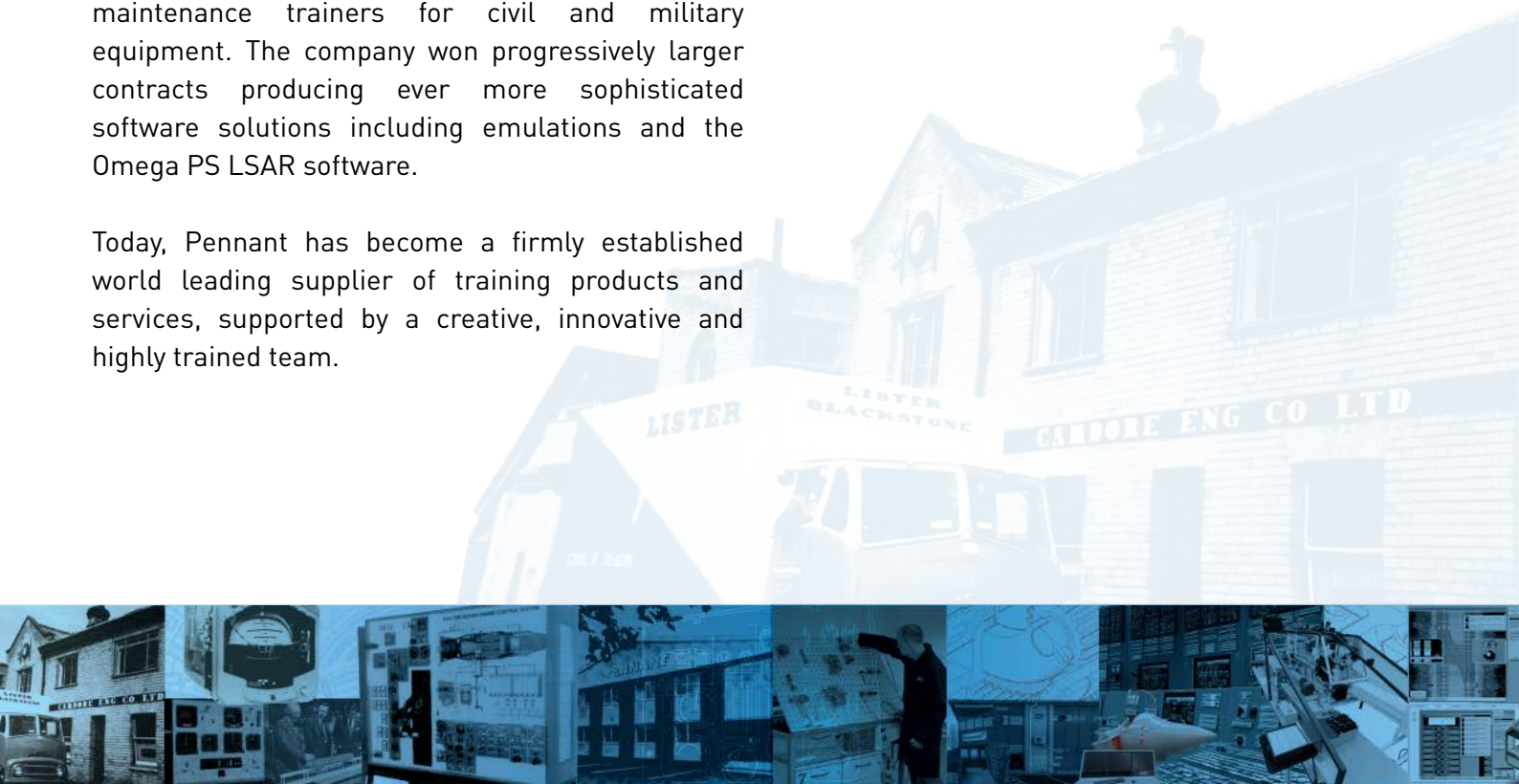
OUR VISION

To be the provider of choice for world-class products and services which train and assist operators and maintainers in both the defence and regulated civilian sectors.

- ◤ **INNOVATION -** Make World Class Products

- ◤ **CUSTOMER FOCUS -** Provide Excellent Services

- ◤ **DIVERSIFICATION -** Grow Civil

- ◤ **CORPORATE DEVELOPMENT -** New Markets, New Ventures

OUR STRATEGY OBJECTIVES & ACTION

1 Continuously review and enhance the Group's product range

2 To grow and improve our service offering

3 Accelerate the Group's presence in civilian training & regulated engineering markets

4 Expand the Group's business in innovative ways

Acquisition of Aviation Skills Partnership

New Virtual Loadmaster Training System launched and sold to US customer

GenSkills Mk 2 - enhanced capability

Continued investment in additional production capacity

New Basic Helicopter Maintenance Trainer launched

New OmegaPS Rail product developed
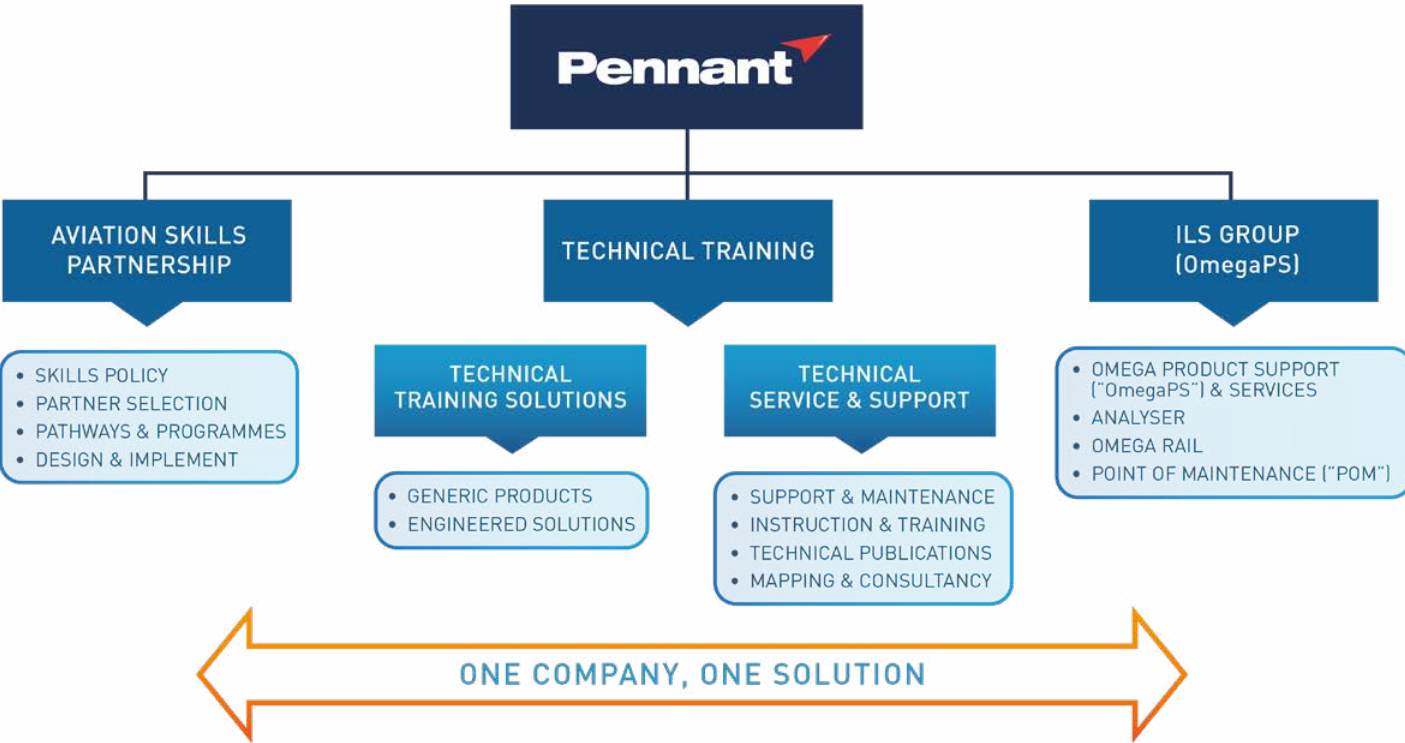

New Generic Stores Load Trainer launched

BAE systems - Middle East strategic partnership

OUR CAPABILITIES

Pennant

AVIATION SKILLS PARTNERSHIP
- SKILLS POLICY
- PARTNER SELECTION
- PATHWAYS & PROGRAMMES
- DESIGN & IMPLEMENT

TECHNICAL TRAINING

TECHNICAL TRAINING SOLUTIONS
- GENERIC PRODUCTS
- ENGINEERED SOLUTIONS

TECHNICAL SERVICE & SUPPORT
- SUPPORT & MAINTENANCE
- INSTRUCTION & TRAINING
- TECHNICAL PUBLICATIONS
- MAPPING & CONSULTANCY

ILS GROUP (OmegaPS)
- OMEGA PRODUCT SUPPORT ("OmegaPS") & SERVICES
- ANALYSER
- OMEGA RAIL
- POINT OF MAINTENANCE ("POM")

ONE COMPANY, ONE SOLUTION

GROUP STRUCTURE

PENNANT INTERNATIONAL GROUP PLC
(AIM LISTED)

Pennant International (HQ)
Cheltenham, Manchester, Fareham

Pennant Australasia
Melbourne, Wagga

Pennant Canada
Ottawa

Pennant Inc
US

Aviation Skills Holding

Aviation Skills Partnership
Norwich

Pennant Singapore
(branch)

Pennant Middle East

OUR FACILITIES

Pennant has over 200 staff working across sites in the United Kingdom, North America, Middle East and Australasia. Our facilities contain over 60,000 sq.ft of production capacity, which has quadrupled since 2005.

Pennant's head office is based in **Cheltenham UK**; featuring units, production space, demo suite and modern offices. In the United Kingdom, Pennant also has offices in **Manchester** and **Fareham**. In **Ottawa,** Canada, Pennant has an office specialising in LSAR Software and services and, in Australia Pennant has two locations - an office in **Melbourne** and an engineering site in **Wagga, Wagga**.

In 2019 Pennant completed the acquisition of Aviation Skills Partnership (ASP) with facilities based in **Norwich, UK** and Track Access Services (TAS) based in **Hertfordshire, UK**. Pennant will be opening up a **Middle East** office in the near future.

200+
EMPLOYEES

60,000
SQ FT IN UK
FACILITES

Ottawa, Canada

Pennant Australia - Wagga, Wagga

Pennant Australia - Melbourne

Manchester, UK

Norwich, UK

Hertfordshire, UK

Fareham, UK

Head Office – Cheltenham, UK

TECHNICAL TRAINING SOLUTIONS

Pennant specialise in generic and engineered (platform Specific) solutions based on real or simulated military equipment interfaced with simulation computers and instructor control facilities.

GENERIC TRAINERS

Pennant's range of generic training equipment offers a blended solution enabling ab-initio students to benefit from a suite of modern, generic training aids which provide operation and maintenance savings and improved safety issues. These training aids include: basic hand skills devices, virtual reality solutions, desktop emulators and mechanical systems for practicing maintenance and fault finding activities.
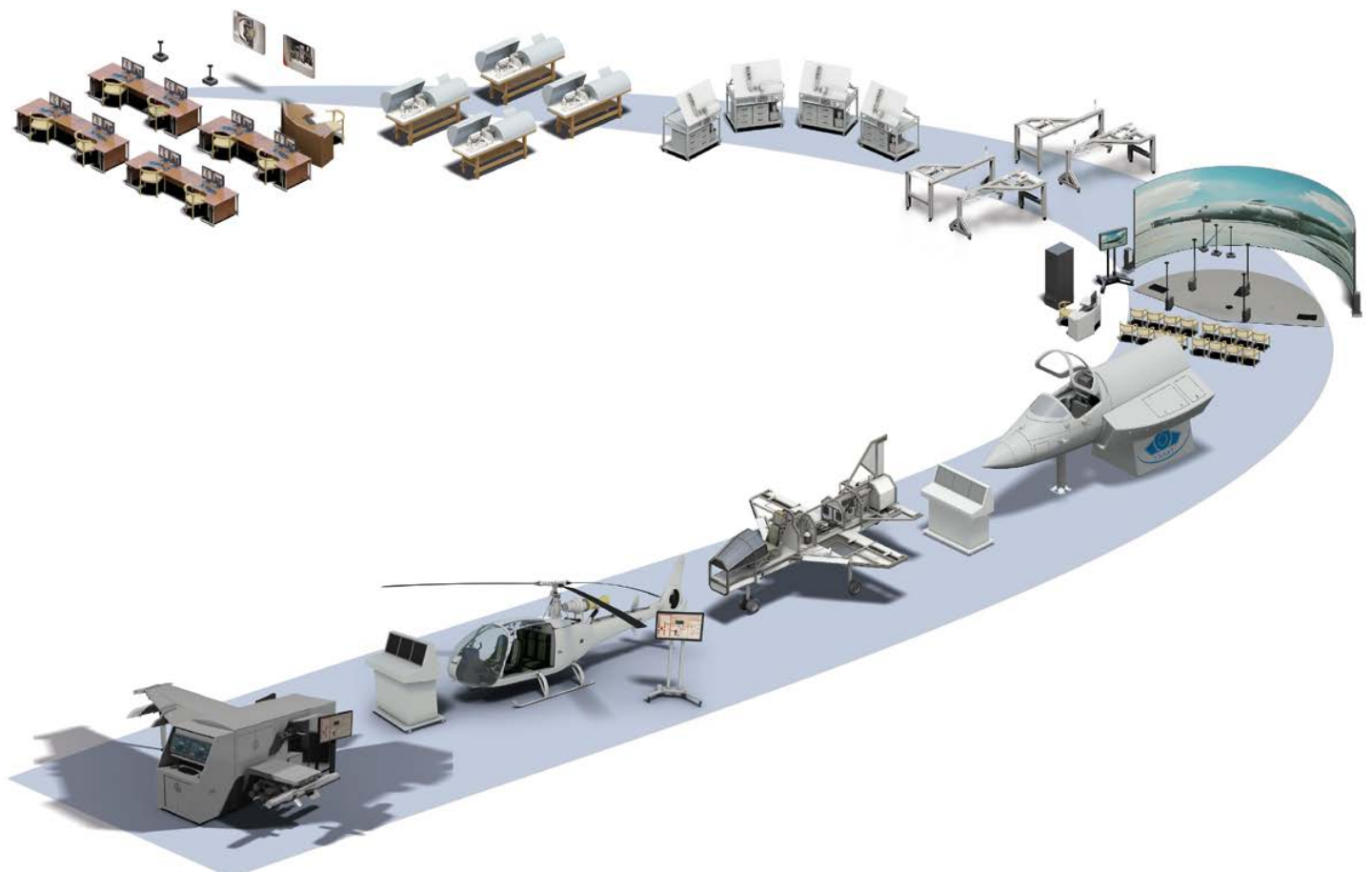
ENGINEERED SOLUTIONS

In addition to the suite of generic training products, Pennant has an experienced team of hardware and software engineers that analyse, design and manufacture bespoke engineering solutions to satisfy training needs. This equipment can be platform specific or custom-built, and can include simulators, part-task trainers and procedural trainers for both defence and civil customers.


COMPUTER BASED TRAINING

Pennant has been at the forefront of distributed learning in the form of web and server-based e-learning, with Computer Based Training (CBT) and Computer Aided Intruction (CAI) applications providing consultancy and developing new strategies, practices and technology in collaboration with government departments and industry across the world.

VIRTUAL REALITY TRAINING

Increasingly, training establishments are relying on virtual reality to transition between theoretical and practical exercises in procedural training. With a suite of impressive solutions, Pennant delivers innovative, effective and high-quality training which allows multiple users to inject real-time faults, practice emergency solutions, record responses and review activity easily and safely.
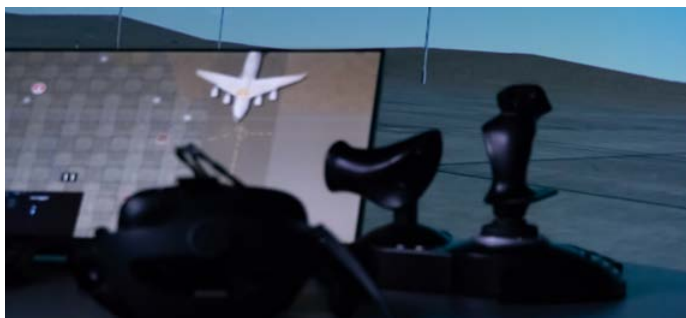
TECHNICAL SERVICES & SUPPORT

CAPABILITIES

Our capabilities include:

- Training Needs Analysis (TNA)
- Courseware Development
- Technical Publications, IETMS, S1000D etc.
- Facilities Planning
- Competency Mapping to EASA, EMAR, City of Guilds etc.
- In Service Support, Preventative and Corrective Maintenance
- Instruction and Training
- Consultancy
- Spares and Obsolescence Management
- Dismantling and Disposal

Pennant takes a "Through Life Support" approach to Technical Services and Support for both Pennant and third party training systems in the regulated sectors. From TNA Development to final disposal, Pennant can plan, implement and manage every stage of your support life cycle.
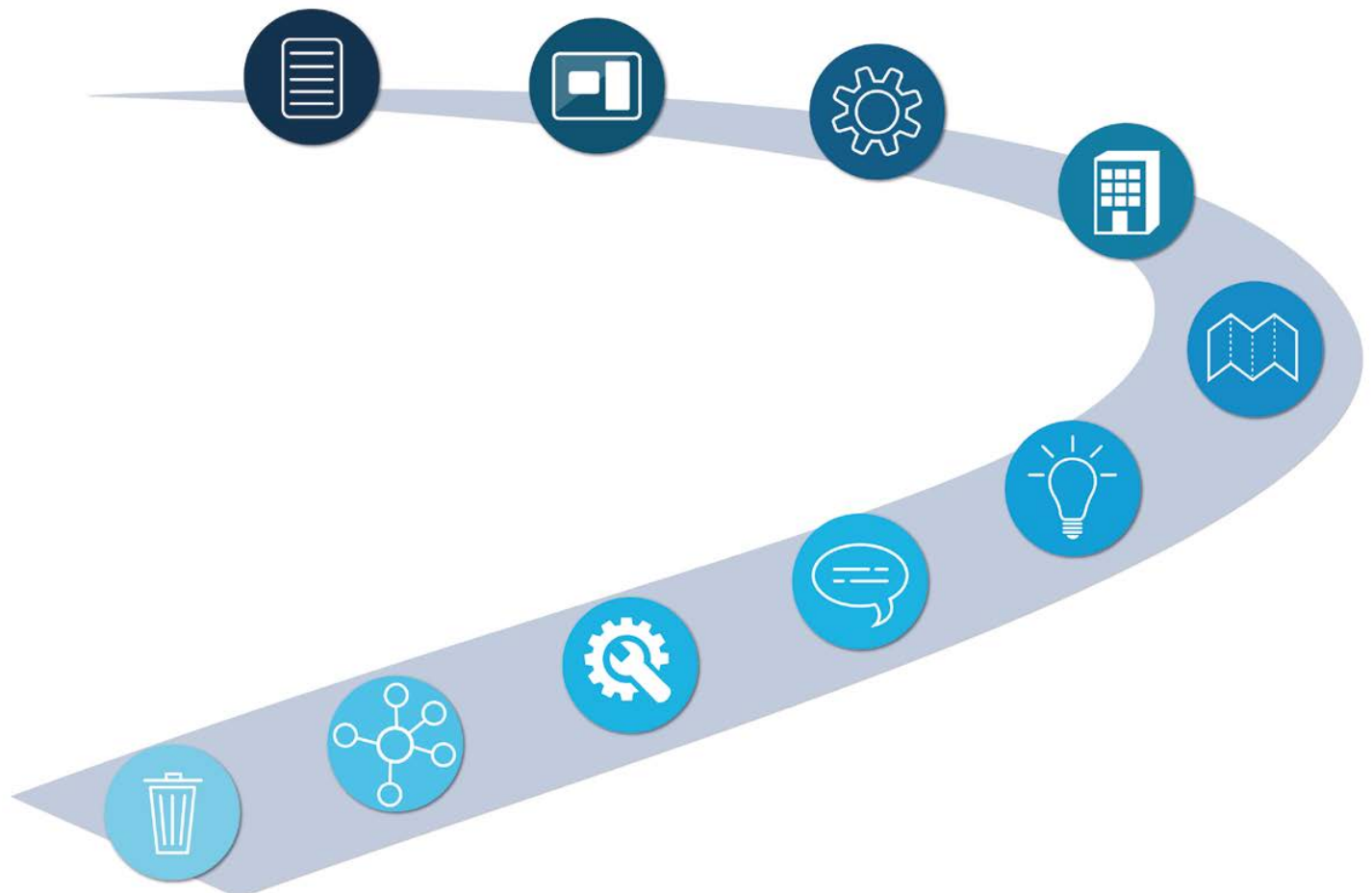
CASE STUDY - DEFENCE AEROSKILLS TRAINING ACADEMY (RAAF BASE WAGGA)

2012
- Embedded with Customer to develop TNA

2013
- Contract Award (Rolling Annual Contract)

- Refurbished existing Training Aids

- HazMat Remediation - Disposed of obsolete equipment

- Delivered modern training aids, Pennant and third party

- Created instructor and student resource (Media)

2014
- Support of 4,000+ items of training equipment from hand tools to ground run aircraft

2016
- Created over 100 instructional videos, from hand skills to aircraft movements

2017
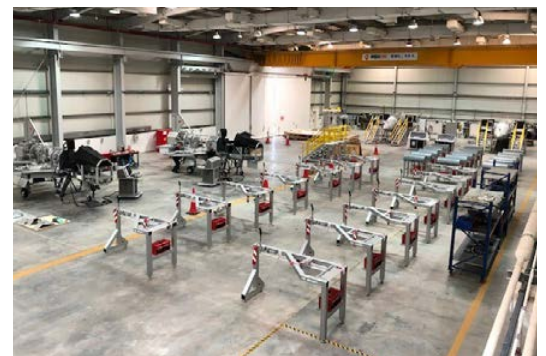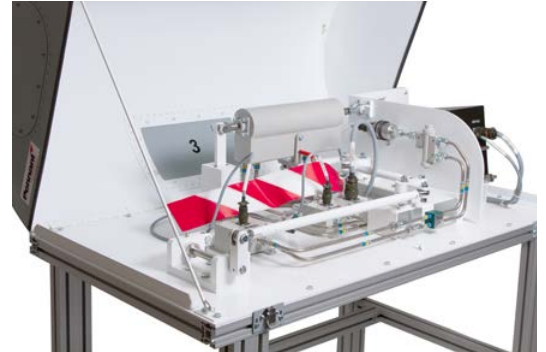- Provided Instructor and Developer resource

2018
- Mapping to MEA training requirements and development of type training

2019
- Supporting the introduction of new airframes

2020
- Undertaking deep maintenance and product refresh

INTEGRATED LOGISTICS SUPPORT (ILS)

Pennant is proud to produce innovative Integrated Logistics Support (ILS) software solutions that are incorporated within our OmegaPS Suite. Our software is sold world wide, and offers industry and government users a suite of applications to efficiently manage logistic support data, and to conduct leading edge supportability analyses that enable optimized equipment support decisions over the entire product life cycle. With a focus on client requirements, Pennant has a proven track record and can help save organizations time and resources managing their equipment product support information sets. Our consultants can assist users in effective management of product support enabled by our software.

OMEGAPS SOFTWARE

OmegaPS is an integrated database that efficiently organizes logistics data as it is defined and managed throughout the equipment life-cycle. It contains all the logistic product support information – both vendor and client data - that describes the equipment your organization manages, including how it is maintained, and how to fix it should it fail. Other features include:

- ▼ Manages Logistics Support Analysis (LSA) data in accordance with SAE-GEIASTD 0007, Mil Std 1388-2B, Def Stan 0060 and Def Aust 5692. It is also compatible with S3000L Standards

- ▼ Maintain detailed configuration of complex equipment

- ▼ Identifies how to fix or prevent failures (planned maintenance tasks)

- ▼ Reliability Centered Maintenance (RCM) with multiple user defined logic trees embedded (e.g. MSG 3, RCM2, etc) for engineers to analyse & optimise preventative maintenance

- ▼ Identifies how often each maintenance action will occur

- ▼ Interfaces with ERP Systems

- ▼ Compatible with S1000D publishing standard

OMEGAPS ANALYZER

OmegaPS Analyzer is a Windows based product that provides the power of an intuitive GUI and the sophistication of embedded and proven Canadian Department of National Defence algorithms. The primary functions include Life Cycle Cost (LCC) Optimization, Level of Repair Analysis (LORA), Spares Optimization, and Availability Modelling. Key features include:

- Make support decisions based upon proven data algorithms

- Support operational availability design review assessments

- Simulate availability impacts across multiple mission scenarios

- Optimize spare part inventory holdings

- Determine the most cost-efficient in-service support approach

- Conduct sensitivity analysis to support risk assessment

- Attribution of costs to customized cost breakdown structures
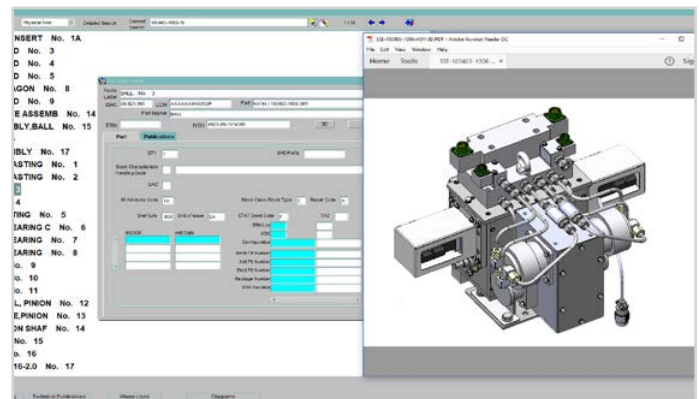
CURRENT OMEGAPS USERS:

TECHNICAL PUBLICATIONS

To Pennant the term 'technical publications' means anything from a concise owner's handbook, printed on paper and presented in a ring binder to an interactive electronic technical manual (IETM), including intelligent 3D graphics, compliant with S1000D, accessible over the internet on a range of mobile devices.

Regardless of the requirement, the core skill of our experienced team of technical illustrators and authors is the ability to convert complex source technical data into User Handbooks, Operation & Maintenance Manuals, Parts Catalogues and training courseware.

We have more than 50 years' experience and progressive technical development in the field and we are confident that our offer is comprehensive, professional and competitive.

We are proud of our hard-won reputation across a wide range of industry, government and commercial sectors, both in the UK and worldwide, including Defence, Aerospace, Rail, Automotive, IT and Communications, Power Generation, Utilities, Nuclear, Petro Chem & Gas, and many more.

We have adopted the OneStrand ADG R4i product for the development of S1000D compliant XML data modules. Along with a CSDB, these form the building blocks of interactive electronic technical publications (IETPs).

WE HAVE WORKED WITH:

Ministry of Defence · ALSTOM · British Gas · BAE SYSTEMS · BNFL

EDF · FUJITSU · AIRBUS · POWERGEN · T··Systems·

CAF · NetworkRail · SIEMENS · Virgin media · STADLER

AVIATION SKILLS PARTNERSHIP (ASP)

In February 2019, Pennant International Group PLC completed the acquisition of ASP. ASP is a not for profit organisation dedicated to transforming and improving the methods used to train individuals with the necessary skills for future aviation careers and workforces in the UK. This is being achieved through the Charter launch, academies, pathways and programmes.

In the UK, the aviation industry faces strong growth both in a civil and defence capacity. Whilst the industry enjoys high levels of engagement and enthusiasm there is often a missed opportunity as this enthusiasm is not channelled into an aviation career. In an increasingly growing and complex industry, ASP identify and guide individuals through the pathways, training programmes and degree courses, working towards matching youth with their ideal career. ASP provide all the support, advice, connections, and resources by delivering through four primary steps:

- Inspire people to achieve their goals
- Connect them to the right pathways and organisations
- Ensure that they train the right way and with the right organisations
- Help people to achieve their goals in their chosen profession and enable them to develop throughout their career

ASP identified a need to ensure that pathways to the industry become clearly identifiable from a young age. ASP deliver the manifesto across for main audiences and regions:

- Aviation employers / industry
- Pupils / Parents
- Educators / Trainers
- Government / Regulators

TRACK ACCESS SERVICES (TAS)

Track Access Services (TAS) was established in 2002 and began by producing cab-ride videos to show the driver's eye view of the railway throughout the UK. This quickly became recognised as a valuable tool for Network Rail and the Train and Freight Operating Companies to improve driver route knowledge and safety on the railways, a focus TAS maintains to this day. In July 2019 Pennant were pleased to announce the acquisition of TAS.

TAS developed the first PC program for delivery of Driver Route Leaning material with their Route Player application, which synchronises driver's eye video to its location on an interactive map. TAS have recently developed an online version of the application, TrackAccessPortal.com, to deliver the material to any platform, PC, MAC, tablet or mobile via the web browser. Other capabilities include:

- ◄ Realistic Simulation Modelling used to visualise enhancements and renewals of railway infrastructure

- ◄ Provide operational briefing to drivers prior to commissioning

- ◄ Possession planning and signal sighting work to be carried out from desktop environments