

# Integrated Product Support (IPS) Services

Your integrated product support advantage powered by Pennant's IPS services



## If these challenges sound familiar, it's time to explore how our services can help.

- Are your IPS managers trying to develop, integrate or manage a complex support solution with multiple stakeholders and providers?
- Are your ISS providers trying to monitor and improve the performance of an ageing system?
- Are your product support analysts striving to deliver and document your analyses?
- Are your configuration managers holding, controlling and exchanging IPS data?
- Are your program costs increasing at an alarming rate?
- Are your KPIs a little too hard to meet consistently?
- Do you have a baseline product data set you want to export for a customer across the globe using a different standard?

## Pennant's IPS service offering:

- Using international standards and specifications
- IPS through life (cradle to grave)
- Specialist consultancy
- Strategic support planning
- Product Support Analysis (PSA) services
- Support modelling and analysis
- Support solution assurance
- In-service support health checks

## We help our customers:



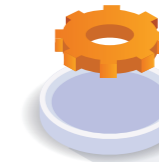
**Meet stated requirements and contract obligations**



**Reduce preventive maintenance workloads**



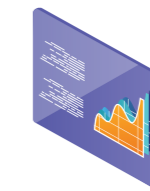
**Improve operational readiness and mission success**



**Optimise ongoing support of ageing systems**



**Realise cost savings, in one case producing recommendations to a maintenance concept which reduced initial spares costs by over 25%**



**Define requirements for ITTs**



**Assess the validity and value demonstrated in ITT responses**

## Pennant's services add value to your business and help you succeed

Our global team of highly skilled IPS consultants supports industry organisations and customer teams, including defence departments, across a broad spectrum of IPS activities.

Our experience helps clients design and deliver effective support solutions throughout the entire lifecycle of their equipment portfolios. This enables them to ensure sustained performance and readiness for their end user.

## Building and sustaining a detailed and effective support solution can be highly cost-effective

IPS or Integrated Logistics/Lifecycle Support (ILS) is all about the creation, maintenance and improvement of the support solution for complex systems and assets.

As operating and support costs account for up to FOUR FIFTHS of the equipment-related costs, it is vital that we ensure an effective and efficient support solution is created and maintained throughout the full life cycle of the equipment.

Optimum readiness and cost effectiveness can be obtained by IPS implementation from initial concepts/options analysis – through acquisition, transition, in-service support (ISS), and into retirement of the equipment and its support.



**SUPPORT SOLUTION CONTRACTS AND ARRANGEMENTS**

**Achieved** by an IPS (ILS) program of work  
**Enabled** by supportability engineering  
**Delivered** jointly by Defence Departments and Industry/Allies  
**Based** on a defined division of responsibility

**A Defence System includes the MISSION EQUIPMENT and its SUPPORT**

The Support Solution needs to include:

- An equipment that beyond being capable, also needs to be as reliable and maintainable as possible to minimize downtime and support demands
- Efficient delivery of wide-ranging support services, including equipment fleet management, engineering, maintenance, supply, training, information management services, delivered jointly by an evolving set of customer and industry support providers across the life cycle
- An assortment of enabling resources used to deliver these support services, such as publications, training packages/aids, personnel, spare parts, tools/test equipment, facilities and information systems, etc.

A support solution requires an integrated engineering and support chain effort that coordinates with a wide range of support providers. Establishing the appropriate contracts and internal support arrangements ensures that the product and support remain optimized and cost-effective for decades.

## IPS uses international and government frameworks

IPS is planned and executed within a range of internationally recognised standards and specifications (including ISO, IEC, ASD/AIA, SAE and NATO), complemented by guidance provided by governments on applying such standards to the lifecycles of their systems (including the equipment and its support).

### PENNANT CONSULTANTS:

Participate in the development of international standards/specifications, including ISO 10303 STEP AP239 PLCS, ASD/AIA S-series specifications, SAE LCLS standards, and NATO ALP-10 ILS Guidance

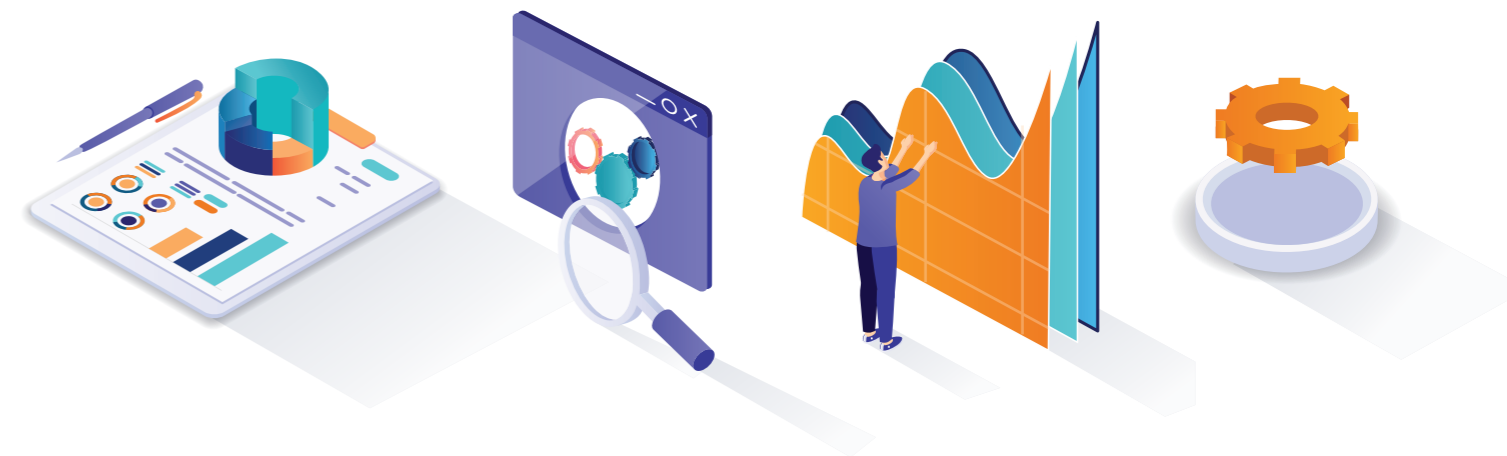
Assist in the development of top-level defence department IPS/ILS policies and associated guidance documents

Assist in the development of IPS/ILS process models

Develop and tailor our Auxilium IPS software suite to align with these frameworks

## IPS in acquisition stages

During the acquisition stages of the system life cycle, IPS practitioners need to work with the design engineers to define, refine and optimise both the desired system and the accompanying support strategy – and then design and deliver it.



## Defining the support solution

The defining stages span the period from first identification of needs for a new or replacement defence system through concepts and development of system requirements to contracting processes to select support providers.

### PENNANT CONSULTANTS:

Develop IPS/ILS contract Statements of Work and associated DIDs for defence departments

Prepare and utilise defence department guidance, supporting requirement decisions, support responsibilities and contract content through sustainment business case analysis

Assist in the creation of customer IPS RFP packages, in development of industry responses to them, and in evaluation of bidders' responses, including using Analyzer for rated bid evaluation of life cycle support costs

## Designing the support solution

The design stages of the life cycle include IPS efforts to influence design of the equipment from a support perspective to meet stated requirements and contract obligations. This design influence includes efforts to design for support and design of the support.

### PENNANT CONSULTANTS:

Assist industry in the conduct of Product Support Analyses (PSA) including but not limited to FMECA, RCMA, LORA and MTA

Support industry and customer IPS teams in design reviews

Analyze data and concepts using our Auxilium suite, in one case recommending changes to a maintenance concept which reduced initial spares costs by over 25% (~ CAD 7M savings)

## Delivering the support solution

The delivery stages see the build and delivery of the equipment and its associated support solution and resources.

### PENNANT CONSULTANTS:

Assisted industry in design trade-offs

Assist both industry and customer IPS teams in preparing for modelling and completing initial provisioning and material identification work packages

Assist both industry and customers in creating and reviewing technical publications and IPS/ILS data sets

Assist in the validation of support solutions against support requirements through support trials and evaluation exercises

## Transitioning the support solution

A challenging stage of the system lifecycle is the transition of the system from acquisition to in-service support providers, including the equipment, its support and associated technical data. The equipment – including its reliability and maintainability characteristics – needs to be verified/validated (V&V) and distributed to new in-service support (ISS) stakeholders. Support arrangements with ISS providers need to be in place and support resources distributed. Data must be transferred and transformed into information that will be used in the ISS information systems to inform knowledge-based decision making throughout the support period.

The transition stage may also include coordination with the retirement stage of any replaced systems.

### PENNANT CONSULTANTS:

Aid industry and defence department teams in review/ V&V of deliverables including equipment supportability characteristics, technical publications, spares distributions, and technical data for support

Assist defence departments and ISS providers in more efficiently transforming delivered technical data into master data used to execute/ report support within ISS ERPs and MMIS

Assist defence department teams in cost-effectively winding down inventories and support for replaced defence systems

## Executing and improving the support solution

During the often decades-long ISS stage, IPS practitioners can support the execution of support service delivery, monitor the performance of the equipment and its support, analyze variances to identify options to improve support, and re-work acquisition IPS for engineering changes to the equipment and its support.

### PENNANT CONSULTANTS:

Assist industry and customer IPS teams in managing support data baselines

Assist in performance monitoring of the support solution, including use of Analyzer for impact analyses leading to root cause analyses and corrective action recommendations

Create guidance for an ISS maintenance effectiveness review process, and conduct such reviews, in some cases reducing preventive maintenance workloads by over 50%



## Retiring the support solution

As a defence system reaches end-of-life, IPS teams can help optimize the ongoing support of reducing equipment fleets, using the data captured whilst the fleet was in service to inform future design and support capability requirements. Effective IPS implementation facilitates the optimum retirement of existing equipment and support solution services and resources whilst simultaneously shaping future capability needs.

### PENNANT CONSULTANTS:

Model anticipated spare part needs across a decade-long replacement of a system, providing guidance on re-stocking and repair/overhaul adjustments as the numbers of supported equipment reduce

Mine data on retired systems to develop indicative Analyzer models for use in early-stage definition and concept studies for similar new systems

## Let's start the conversation

The Pennant team is ready to listen, simplify and help you address your specific needs in a way that suits you. Contact us:

[www.pennantplc.com](http://www.pennantplc.com) [sales@pennantplc.com](mailto:sales@pennantplc.com)

