

VALUE PROPOSITION

Our VTIS product range can help you save money, increase your competitiveness, and make the ramp a safer environment. Our value proposition is:

- Increase your operational efficiency, availability and productivity
- Optimise your fleet size — avoid capital expenditure
- Optimise equipment usage
- Increase maintenance efficiency
- Reduce Total Cost of Ownership
- Generate revenue outside the traditional Service Level Agreement — for example, equipment pooling
- Reduce equipment damages
- Reduce fuel use
- Monitor de-icing operations and generate more accurate billing
- Improve your environmental/emissions footprint
- Improve invoicing accuracy
- Enhance ramp security
- Improve ramp safety
- Improve your competitiveness
- Extend asset life and warranty
- Improve response times to asset-related issues
- Independent audit trail for billing and incident reporting
- Demonstrate compliance with environmental and health and safety policies and regulations
- Demonstrate compliance with Service Level Agreements
- Improve management of driver training and licensing

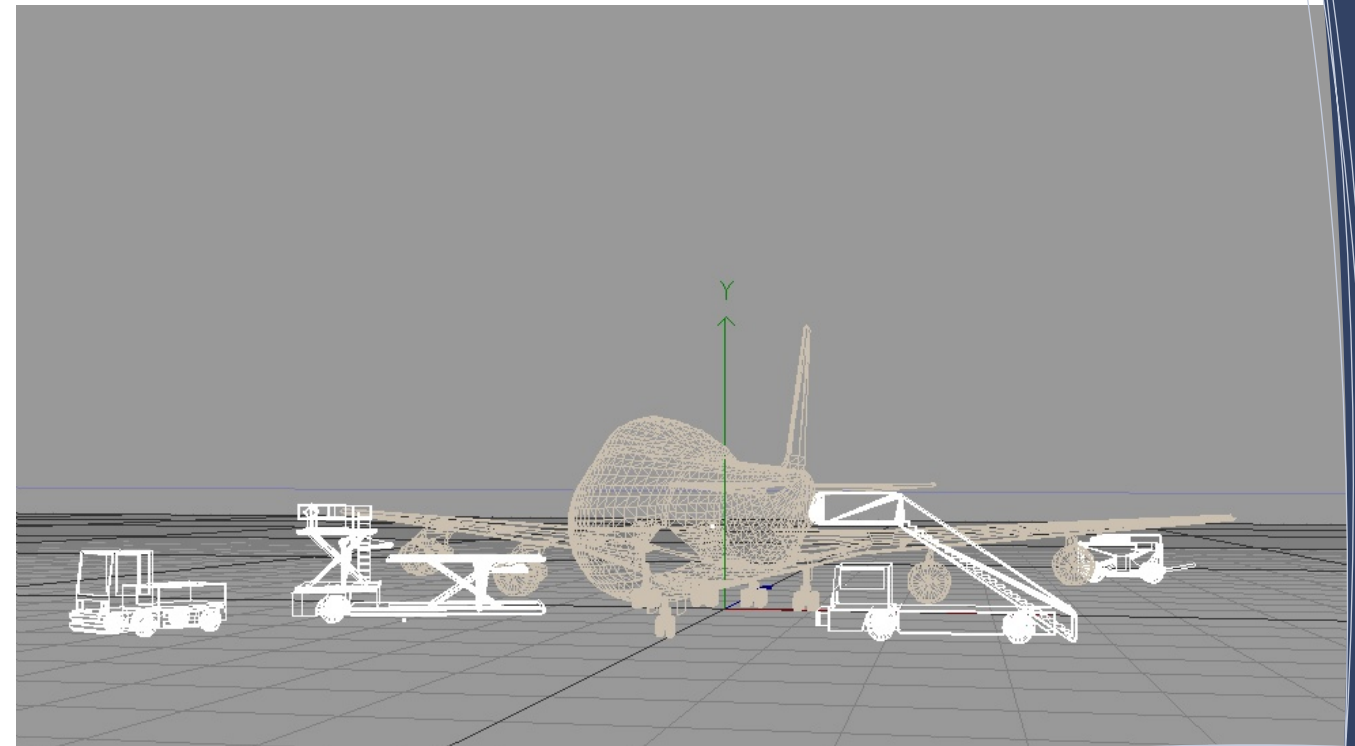
VTIS provides a cost-effective way to track, monitor and manage powered and non-powered assets on the ramp. It uses a scalable, modular infrastructure that can grow with your business, and is equally of benefit for small or large fleets. Customers can opt to start with a single service and simply add further services over time to build up a powerful GSE management capability.

VTIS has been designed specifically for the ground handling environment — and our people understand the issues, problems and challenges you face, so we can help ensure that you get a fast return on your investment with us.



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v-HUB 1.1



VTIS v-HUB

Telematics System for Motorised
Ground Support Equipment

value
quality
support
innovation



ADD-ON MODULES

v-HUB PROVIDES ENGINE HOURS, UTILISATION & LOCATION DATA IN ITS RAW FORM. THIS DATA CAN BE SENT DIRECTLY TO YOU, OR YOU CAN SELECT ONE OF OUR DATA VIEWING SYSTEMS:

- ⇒ **v-TRACK** GSE MAPPING SYSTEM
- ⇒ **v-DASH** BUSINESS INTELLIGENCE SYSTEM
- ⇒ **v-MAIL** DATA REPORTING SERVICE
- ⇒ **v-VIEW** DATA REPORTING SYSTEM

YOU CAN ALSO ADD OTHER FUNCTIONS:

- ⇒ **v-AWARE** COLLISION AWARENESS
- ⇒ **v-SPEED** OVERSPEED DETECTION
- ⇒ **v-LOCK** ACCESS CONTROL
- ⇒ **v-MODE** IDLE/ACTIVE STATUS MONITORING
- ⇒ **v-BUS** CAN BUS/PLC MONITORING
- ⇒ **v-CELL** BATTERY VOLTAGE MONITORING
- ⇒ **v-ALARM** VEHICLE HEALTH MONITORING
- ⇒ **v-CHARGE** BATTERY MONITORING MODULE
- ⇒ **v-FENCE** GEOFENCING
- ⇒ **v-FUEL** FUEL LEVEL REPORTING
- ⇒ **v-FREEZE** DE-ICING MONITORING
- ⇒ **v-LOG** DRIVER LOG KEYPAD

VTIS v-HUB

VISIONARY TECHNOLOGY FOR GSE ASSET MANAGEMENT

Pinnacle specialise in providing Ground Support Equipment Owners, Maintainers and Fleet Managers with a range of information from their motorised and non-motorised fleet.

VTIS v-HUB is our powerful, expandable Vehicle Telematics Information System for motorised vehicles — giving you key performance data from your GSE to help you to manage your assets more effectively, improve operational efficiency, increase safety and reduce costs.

GSE data is recorded by **v-HUB** and then transmitted wirelessly over the local GSM/GPRS network, or alternatively via WiFi or TETRA radio systems.

saving you money day after day

v-HUB is based on our robust, reliable MN4 hardware platform. With enough inputs and outputs (including a CAN bus interface) to cope with most requirements, the MN4 contains a GSM/GPRS wireless module for data transfer, and on-board GPS for location. If more functions are required, extra inputs can be specified.



Other wireless networks, such as WiFi or Tetra, can also be used.

The MN4 is installed on more than 10,000 vehicles worldwide, and can operate on any motorised equipment, including electric vehicles with 80V power supplies. It has low current consumption, so there is no danger of battery drainage. It is also available in an IP65-rated housing, making it suitable for virtually all GSE.

In addition to the MN4 tracking device, we also fit all necessary vehicle wiring, antennas and relays. All installations are performed to the highest possible standards to ensure that no equipment performance or warranties are affected.

v-HUB can be tailored to meet your exact requirements via an ever-expanding range of add-on modules, providing functions such as access control, collision awareness and vehicle alarms. Choose as many or as few modules as you want to get the data you need from your fleet — you can add new modules at any time.

Information from **v-HUB** can be viewed in a variety of ways, for example through web reporting systems such as **v-DASH** or **v-VIEW**, e-mail reports (**v-MAIL**) or via our web-based airport mapping system (**v-TRACK**), which can also alert you to any problems with your equipment in real-time.

KNOW WHERE YOUR GSE IS, WHO IS USING IT, AND HOW PRODUCTIVE IT IS

Without any add-on modules, **v-HUB** provides the following information:

LOCATION

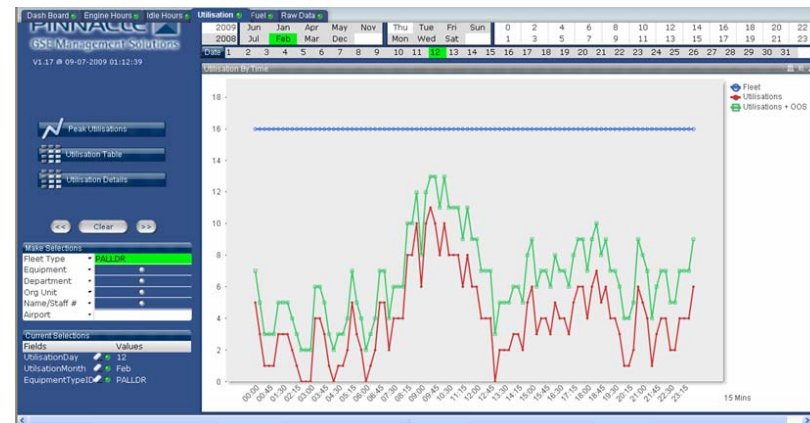
Know where your GSE is at engine-on and engine-off times, and also in-between.

ENGINE USAGE

Monitoring engine-on and engine-off times provides GSE Operators, Maintainers and Fleet Managers with an accurate picture of how much each vehicle engine is used on a second-by-second basis. With this information, our customers are able to operate their maintenance regime based on engine hours rather than calendar months without the need to physically visit each vehicle to capture the data.

FLEET UTILISATION

By tracking engine-on and engine-off times, and being able to see concurrent and peak usage by GSE type across the whole fleet, GSE Operators and Fleet managers can optimise fleet size, improve planning of technical reserves, re-assess their future equipment investments and improve maintenance planning and costs.



FLEXIBLE PLATFORM

VTIS v-HUB is a flexible hardware platform that can grow with your fleet and your business needs. With an ever-expanding range of add-on functional modules, VTIS v-HUB gives you the ability to move systems from one vehicle to another, or add (or remove) features as required by your operation.



WEB-BASED REPORTING

We offer a choice of web-based reporting systems, such as v-VIEW, v-DASH or v-TRACK, to view your fleet data. Each system is secure and password-protected, and can be accessed from any computer anywhere in the world with a live internet connection. There's no need to install any special software.



IMPLEMENTATION & SUPPORT

We understand that most GSE is unique — rarely do you find two pieces of equipment that are identical. When we start a project, the first thing we do is carry out a comprehensive survey of your GSE to ensure that our installations are of the best quality. We carry this "quality first" approach across the whole project to ensure that the planning, deployment and lifetime support of v-HUB meets the exacting standards of the Ground Handling Industry.

