Q. Are you Struggling with Intelligent Asset Management?
A. SCO + GR-AWARE

Do you struggle with the impact on system unavailability through poor asset visibility and management?

STOP struggling!

Support Chain Optimization **provides virtually real time intervention advice to restore optimum system performance by utilizing** *GR-AWARE (Edgeware)* **technology to provide accurate and timely data capture to deliver**

intelligent asset management

Strategic (planning) analysis using any other analytical spares optimization tool than TFD's **TEMPO** assumes life is steady state, which of course it isn't. But even where you know in advance about changes in operations, fleet size and mix, environment, support performance targets etc, there are still many ways that things can turn out different to the plan.

When the plan was cast, assumptions were made on many elements – parts prices, repair costs and turnaround times, reliabilities, maintenance periodicities – and even after allowances for variance suppliers won't always perform to standard, equipment will be more or less reliable and so on. Also, and especially in today's world of expeditionary activity, operating environments (including climate), pace, supply line strain and other influences will not stay long as per the basis of the plan. Consequently, the support solution will no longer be optimal, the system availability performance will fall and this will expose stakeholders to risk – to the supplier his revenue stream and to the customer his operational capability.

Even the sexiest dashboard is little more than a rear-view mirror. By the time a dial or a bar goes red it's usually too late to action a remedy. Lag indicators, especially those extrapolated into lead ones by trend algorithms, are at worst dangerous and at best of value only in retrospect. What is needed is a tactical lead indicator regime that anticipates the impact on system performance of a perturbation in the support chain and derives and presents actionable interventions that will ensure that the support chain will deliver the best return, in terms of performance, for the cost of executing them.

TFD's **SCO** does exactly that and, for the entirety of the systems within its boundary:

- Calculates 'what is where now', and 'what will be where' if scheduled supply events happen as declared
- From the 'what will be where' data, calculates the impact on system availability of supply shortfalls
- From any predicted drop in availability calculates the potential financial exposure due to the contractual reward/penalty mechanism
- Also calculates from pricing information the cost of executing each remedial intervention
- Presents to the Support Chain Manager a remedial action list ranked in order of exposure

In addition, because of the build up of transactional data, **SCO** can present a rich performance picture of the support chain, the systems and the parts in it such as no ERP or asset management system normally does.
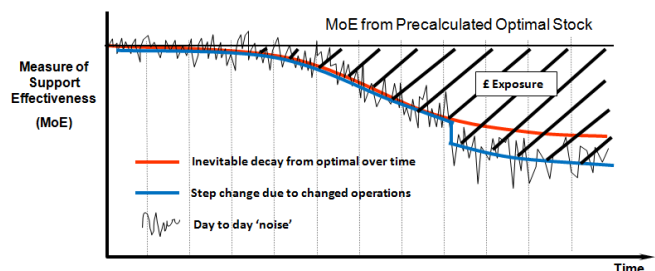
SCO is ideal for:

- Capability service providers contracted under Performance Based Logistics terms
- Spares range managers who want immediate responses to unexpected operating and support events
- Support managers who must balance exposure risk with the cost of recovering performance
- Support engineers who need business cases for recommending system modification and upgrade

GlobeRanger

GlobeRanger, a Fujitsu company, is a leading technology provider of enterprise sensor, IoT and Edge Computing software, and offers robust end-to-end solutions and professional services. The company's mission is to provide the most reliable, scalable, and flexible enterprise edge software infrastructure and solutions at the lowest total cost of ownership (TCO).

GlobeRanger has developed a suite of tools that enable businesses to exploit enterprise data by incorporating it in their management processes.

GR-AWARE from GlobeRanger (RFID-enabled asset management)

GR-AWARE provides a single, scalable platform to enable you to easily track and manage your business assets. These assets may include employees, IT equipment, furniture or other types of item that have been RFID-tagged.

GR-AWARE can easily incorporate asset management information into your existing legacy systems and business operations. It allows you to easily create business processing rules, trigger notifications and alerts, manage exceptions and generate a wide range of real-time reports.

Asset management solutions for industry

Whether you are managing assets in a manufacturing, office, healthcare or logistics environment, *GR-AWARE* provides a highly effective management system that really does pay for itself.

Within most large-scale industries, asset management has been proven to aid in the reduction of business costs. GR-AWARE has been proven in numerous industries including:

Benefits of GR-AWARE asset management

GR-AWARE can bring immediate benefit to your company, it can provide you with the ability to:

- Reduce the total cost of your asset ownership by improving control, availability and maintenance costs.
- Improve both your productivity and operational efficiency, by making a reduction in the time and resources lost searching for assets.
- Enhance the return on your capital through improved asset utilization.
- Automatically identify, monitor and track your assets.
- Increase the visibility of assets across your customer locations to allow undisputed retention charging.
- Maintain optimal asset stocks across your logistics operation through improving end to end visibility.

Linking SCO and GR-AWARE

TFD and Fujitsu/GlobeRanger have teamed to develop a concept demonstrator that was displayed at DSEI 2015. The innovative concept is to reap the potential of the tools by an end-to-end (E2E) merging of the technologies. Doing this provides a quantum leap in accuracy of data to feed the analytical engine that calculates the consequences of even the smallest perturbation of anticipated support events. In turn this significantly enhances the accuracy of those forecasts and what is more, being presented in virtually real time any incipient risk will be identified before its full impact is realized.

TFD's *SCO* harnesses the Total Asset Visibility provided by the Edgeware solution enabling assessment of the future risk of shortages and tactical remedial action necessary to overcome them. *GR-AWARE / SCO*, a powerful combination in effective E2E management.

Merging the technologies results in the automatic integration of the following data:

- Raw asset condition and performance data that is provided by GR-AWARE from sources such as live sensors
- Logistical support chain 'what is where' data derived from both historic and live feed of transactional and location data
- and the business rules that define the relationship between system performance and a revenue/penalty regime

Followed by automatically calculated forecasts of support chain interventions, which

- if implemented in full would deliver the best possible performance for the least cost
- where tactical budget constraints exist would provide the support manager with the option to trade partial funding of remedial measures for a lesser performance restoration
- could be used to balance investment against the reputational risk from under performance

As an example of how this works, imagine a complex and costly major LRU, which is critical to the availability of its parent system and costly to acquire and hold as a spare, is in the repair loop. Suppose it is a light training aircraft fuselage assembly. To identify mishandling in transit among the sensors it has attached to it is one that senses g-force. In transit the container is mishandled at the dockside and the g-limit is exceeded. The support manager will immediately learn of that out of limits event, which renders the LRU unserviceable subject to an inspection.

Capture, Analyze and Decide

Defense organizations are implementing Joint Support Chains to reduce the cost of equipment support through contracting arrangements with industry. These support chains have many stakeholders: OEMs, sub-contractors, Defense support organizations and operational units to name a few. Each stakeholder will have a clear view of the distribution and status of assets within their own IS domain. However, obtaining a single version of the truth across all of these information silos remains

elusive and prohibitively expensive. These multiple views create confusion and uncertainty, leading to increase risk and cost. It also undermines the quality of decision making, hinders continuous improvement and diverts attention from managing the business to managing the contract.

Critical to successful joint support chain management is accurate and timely data capture coupled with analytical tools that provide decision support.

Fujitsu's Edgeware (**GR-AWARE**) and TFD's **SCO** software together provide this Capture, Analyze and Decide capability to provide an End-to-End Support Chain Visibility that can be implemented incrementally and without changing legacy infrastructure.

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