



Newsletter



Number 6 November 2014

Solving complex networks of interdependency in aerospace and defence

Plexus Planning ramps up expansion based on accelerating success

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Welcome to the latest edition of the Plexus Newsletter as we approach the end of a very exciting year, during which: we have released enhanced software versions; increased staff, and started new projects with both new and existing clients.

This year we have accelerated our investment in research and development to further enhance our solution to address the growing requirements of our current and future clients. At this time I would like to take the opportunity to announce new pricing for our suite of Plexus products which will come into effect on 1st January 2015.

This is a great opportunity for those who wish to take advantage now, of 2014 prices, to contact Plexus Planning without delay before the new pricing comes into effect.

We will be working hard during the next few weeks to help our clients acquire the software and services they need to implement their plans for 2015 and beyond, but in the meantime I would like to thank all of our customers for your continuing support throughout the year.

To all of our customers, future customers, partners and friends, I would like to be one of *the* first to wish you all a very Happy Christmas and successful New Year.

Alasdair Pettigrew – Chief Executive

Chari Kinney joins as VP Sales - North America

As part of our strategic expansion in the North American market, we have recently opened a US Office and appointed Chari Kinney as VP Sales for North America.

Based in Seattle, the office provides a local resource with a market leading consultative approach, which will enable aerospace and defence companies in North America, more easily to identify significant opportunities for improving

engineering, supply chains and managing risk, resulting in improved deliveries and reduced costs.

Chari has more than 15 years of experience in working with major enterprises to help them align their strategic directives with the most appropriate technology solutions; in order to increase business intelligence, customer relationships, productivity and profitability.

Chari has worked in both high



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technology and aerospace industries, in areas such as supply chain planning, development and risk, including enterprise-wide and mission critical applications.

As a former project manager for 6 years, she has an extensive understanding of the issues and challenges of large projects.

Chari is skilled in developing executive relationships and business alliances and has achieved substantial success in helping clients deliver quantifiable results using value-driven methodologies.

Alasdair Pettigrew, Chief Executive of Plexus Planning, said: "Chari will be driving our expansion in North America, helping our existing clients justify new projects and introducing Plexus as the solution for a wider range of large & complex projects in aerospace and defense in North America.

This is a major step in our expansion and will allow many more enterprises to achieve the substantial benefits that can be gained in complex supply chains and systems engineering through reduced lead-times, decreased costs, reduced risk, and better products."

"As a former project manager for 6 years, she has an extensive understanding of the issues and challenges of large projects"

CASE STUDY: Automated identification of 'Change Dependencies' for new 'Integrated Aircraft'

This case study shows how Plexus Planning users are able to address the issues of engineering change for software systems in the latest generation of Integrated Aircraft.

The increasing use of Integrated Modular Avionics (IMA) software modules has led to an increase in complexity, making it much more difficult to understand the implications of a change in one software module and the interdependencies of that change on other modules within an integrated design.

The challenges of Engineering Change for 'IMA Aircraft' designs

Right up until the last generation of aircraft (A330, B777, etc.) if you wanted to make an engineering change it was a fairly well understood and straightforward process.

Let's imagine, completely hypothetically, that it is decided that a global positioning system needs to be changed to meet a new aircraft tracking requirement, perhaps in the event of an

unexplained disaster.

Previously that engineering change would involve an engineer specifying a new positioning system.

They will check that the system would physically fit, make any changes necessary, and upgrade the wiring and electrical system to modify the power.

The engineering would be done in the various Computer Aided Design and Product Data Management systems and a pack

would be presented to a change board, chaired by the Chief Engineer.

This change would then be signed off and at a given point in production all future aircraft rolling off the production line would have the new positioning system and the existing fleet of aircraft would be subject to a retro-fit modification at an appropriate time to suit the owning airline.

The problem with the new generation of integrated aircraft (B787, A350, etc.) is that the positioning system is now controlled by software.

"Plexus Planning users are able to address the issues of engineering change for software systems in the latest generation of Integrated Aircraft."



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CASE STUDY: Automated identification of 'Change Dependencies' for new 'Integrated Aircraft'

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So when the engineer comes to change this system, he/she then needs to make a change to a software module. That is when the nightmare of change cascade kicks in.

Today's IMA systems comprise a distributed architecture where avionics functions are divided into: a large number of centrally computed software application(s) and the remotely located end systems, connected by a high-bandwidth network backbone.

While there are many advantages to this design approach, it does add complexity.

It allows avionics/aircraft systems engineering tasks to be more easily distributed among several different departments, design groups or subcontractors each developing software modules for a shared, third-party airborne computer system.

It is this increasing separation of function that makes it more difficult to understand how it all works together.

Of course within each design group, whether internal or external, there will be people who know the dependencies of their particular part of the software, and will have a spreadsheet or database containing this data, but there is almost certainly nobody with the complete overall picture.

The big challenge for the OEMs is quickly and efficiently to get to a clear picture of the full impact of a software change.

How Plexus Planning solves the problem of change dependencies

This is a tailor made problem for Plexus

Planning.

We showed with a major OEM that all of this data already exists in the business, it is just locked away in impossible-to-use databases and spreadsheets in the OEM and at key suppliers.

What is needed is to import these data into Plexus Planning, which can then clearly visualise the dependencies.

A major benefit of the Plexus Planning solution is ease of use, with a simple boxes & arrows visual display and an ability to delve down into the detail when required.

It is a very simple matter to quickly filter to the impacted software modules and then automatically generate a list comprising all affected modules that must be investigated; to see if the change is going to propagate further and require additional modifications.

Working the problem the other way, if a fault is reported, then it is very easy using Plexus Planning to filter on the path of that fault to diagnose its root cause.

In this way Plexus Planning is also being used by OEMs for Root Cause Analysis.

The future development of the aerospace and defence industry is clear, and that is to ever greater integration of systems, and therefore ever more interdependence of systems.

There is no other solution that can solve this problem the way Plexus Planning can.

Increased business efficiency & reduced costs

The results that are provided by the Plexus Planning solution, lead to increased efficiency - through reduced time and man-hours.

There is a huge reduction in man-hours to resolve issues such as propagation of change across systems, and in root cause analysis and failure mode effect analysis.



Boeing 787 cockpit



Airbus A350 XWB cockpit

"It is a very simple matter to quickly filter to the impacted software modules and then automatically generate a list comprising all affected modules that must be investigated; to see if the change is going to propagate further and require additional modifications. "

Plexus Planning has exciting debut at Farnborough Air Show

Plexus Planning would like to thank all the people who visited us during Farnborough this year.

This was a fantastic debut appearance, which kept us very busy and allowed many organisations who were new to us, to see first-hand how Plexus Planning could help their business.

In addition to discussing new projects with

several major commercial aircraft

manufacturers there was a wide range of interest across other areas of both aerospace and defence, from sub-contractors and precision components & materials to specialised consultancy and MRO.

As a result we expect to help a growing community of Plexus Planning users to solve their ISM challenges.



Governor of the Bank of England visits Plexus



Earlier this year we were delighted to welcome the Governor of the Bank of England, Mark Carney, to our offices in Bristol. The picture shows our chairman, David Mushin, in conversation with Mark Carney (right).

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Feedback

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