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Company News

Aaron Wagner Joins U.S. CAD's Professional Services Team

23 December 2014

U.S. CAD announces today the addition of Aaron Wagner to the company's Professional Services team. Mr. Wagner brings more than 15 years of building industry experience to his role as a Senior Technical Specialist for U.S. CAD. In his prior roles as BIM Manager and Design Director for SHADE Group and Architects Hawaii Ltd, Mr. Wagner developed work processes for all project production, was responsible for the Revit project setups and debugging, and conducted in-house training programs. Mr. Wagner will be located in [U.S. CAD's Hawaii location](#) and will provide counsel and strategy to regionally-based clients in the building, engineering, and construction industries.

"We are thrilled to welcome Aaron to U.S. CAD as he represents a key addition to our Hawaii-based team. His experience is the perfect match to help us meet the evolving needs of our clients," states Lonnie Cumpston, Senior Director of Professional Services at U.S. CAD. "We are confident that Aaron will bring to our clients strategic thinking, strong relationships, and an informed perspective stemming from his involvement with the region's BIM community and projects."

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GRAPHISOFT Partners with buildingSMART Korea to Foster National BIM Standards

18 December 2014

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GRAPHISOFT® has announced that it has signed a Memorandum of Understanding with buildingSMART Korea, to assist in the development of the “Open BIM-based Building Design Standard and IT-Infrastructure Construction” efforts in Korea.

The agreement between the parties covers areas including technical collaboration, collaboration on developing and disseminating the Korean BIM standard, and technical support for ArchiCAD users in Korea. As part of the agreement, GRAPHISOFT and buildingSMART Korea will discuss and exchange technical information and advice relevant to the development of ArchiCAD library objects for Korea.

Korea’s interest in introducing BIM to both the public and private sectors dates back several years and the country is now in a good position to establish new, fundamental standards for BIM information integration.

“Working together with buildingSMART Korea will ensure that BIM knowledge continues to grow throughout the country,” said Bence Kovacs, Vice President, GRAPHISOFT Asia. “We look forward to a relationship based on a mutual understanding of and respect for what BIM can do for the AEC industry,” he continued.

Pilhoon Lee, buildingSMART Korea’s chairman, said “We are proud to be working with GRAPHISOFT, the company that invented BIM with its Virtual Building concept back in 1994. We are also committed to ensuring that the standards are firmly rooted in OPEN BIM.”

Currently, buildingSMART Korea is leading a government R&D project regarding the development of the Korea BIM Standard (KBIMS). During the first phase of this project, which should last three years, there will be approximately 3,000 common prototypical library elements developed. The library objects, integrated into a federated BIM model, will include content regarding material, unit cost, standardized details, etc. to facilitate the processing of the information contained therein for multiple purposes, with the overall aim of improving productivity and competitiveness in the Architectural, Engineering & Construction industry in Korea.

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Materialise Officially Opens New Office in China with 3D Printing Software and R&D Focus

19 December 2014

On December 18th, Materialise NV celebrated officially establishing Materialise Shanghai Co. Ltd. and opening its new office in Shanghai’s Baoshan District. Materialise has been active in China since 2005 and, by officially registering as a company, it is now entirely dedicated to the Chinese market with a 3D printing software and R&D.

When discussing the importance of this event, Materialise Vice President Bart Van der Schueren said, “As one of the leading 3D printing software providers, Materialise works with the Chinese government and businesses in developing the 3D printing industry in the country, one of the focuses in the current five-year plan. By deepening our relationship in China with an official company that not only provides state-of-the-art software but also focuses on R&D, Materialise China can now further support the emerging Chinese 3D printing market.”

The opening event on December 18th saw approximately 80 attendees, including Baoshan government leaders, Materialise Vice President Bart Van der Schueren, and representatives from the Belgian

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consulate, academia and both medical and industrial fields. Influential speakers included Dean Pei Guoxian of Xijing Hospital, Altair China Vice President Liu Yuan, Founder and Chief Design Officer of Xuberance Steven Ma, General Manager of AKEC Li Zhijiang, Regulatory Specialist Dr. Lin Shangzhi, and Metal AM Researcher Prof. Xue Lei.

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NIP-Informatica Licenses Geometric Kernel from C3D Labs

18 December 2014

C3D Labs is pleased to announce that Saint Petersburg-based NIP-Informatica has licensed the C3D geometric kernel. The kernel is being used to power Techtran, their software for designing CNC machine control programs. With C3D components built directly into the CAM system, users will now be able to import 3D models in various formats, view them, prepare blanks for turning CNCs from 3D models of future parts, and retrieve geometric data from 3D models.

Among developers of CAM systems, NIP-Informatics is now the third licensee of C3D. They join LO CNITI of Russia and Solar Tech of South Korea.

“Some time ago we began to notice that Techtran customers wanted to directly access 3D models created by other designers,” said Yuri Romanchenko, lead engineer at NIP-Informatica. “We thoroughly analyzed and considered many different modeling software packages on the market that were capable of importing data in popular 3D formats, and finally decided on the Russian system called C3D. Among its many powerful features, we especially have praise for its affordable price, time-proven quality, and direct support from the developers.”

“Collaboration between C3D Labs and NIP-Informatics dates back to 2013,” said Oleg Zykov, CEO of C3D Labs. “Now that the first version of the C3D-powered Techtran is almost ready, we can say for certain that this collaboration was a success. NIP-Informatica’s developers managed to familiarize themselves quickly with the API of our geometric kernel and then dramatically expanded the capabilities of their CAM system. We hope that the new Techtran release will meet customers' expectations fully and so be successful in the market.”

The new versions of Techtran for turning CNCs and milling CNCs are planned for release in early 2015.

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Siemens Automation and MathWorks Collaborating in Simulation and Model-Based Design

18 December 2014

MathWorks announced an expanded relationship with Siemens Automation Systems to make it easier for customers to take advantage of Model-Based Design for developing and implementing complex control algorithms. Control engineers can now generate code from Simulink and deploy it to Siemens SIMATIC S7 modular PLC controllers and SIMATIC WinAC RTX software controllers. As a result, advanced control strategies can be designed and tested using simulation to prove out concepts before

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further validation is performed on PLC hardware. To support this integration, Siemens Automation Systems has also joined the MathWorks [Connections Program](#).

Model-Based Design enables the verification of critical and complex control functions using simulation. Conceptual errors are detected early and can be corrected before the control algorithms are implemented on machine hardware. By doing this, development time is reduced and production start-ups become more efficient – reducing costs throughout the project. MathWorks [Simulink PLC Coder](#) generates IEC61131-3 compliant SCL (Structured Control Language) code and can send it to the STEP 7 V5.5 engineering system for SIMATIC S7-300 and S7-400 and STEP 7 integrated into the TIA Portal engineering framework for the latest generation of the SIMATIC S7-1200 and S7-1500 controllers.

For more computationally intensive algorithms, MathWorks [Embedded Coder](#) generates ANSI/ISO C code that can be implemented on WinAC RTX using Siemens WinAC Target, a free add-on from Siemens for Simulink. WinAC Target automatically generates all the required files and program modules to run the Simulink algorithm on WinAC RTX, enabling process engineers without a deep knowledge of the Simulink language to receive and implement Simulink models on Siemens controllers.

"An increasing number of control engineers in the machinery and automation industries use simulation and automatic code generation to supplement programming industrial controllers, helping them to move faster from ideas to implementation and to expand their lead in innovation," said Philipp Wallner, Industry Manager, Industrial Automation & Machinery at MathWorks.

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The ExOne Company Announces Appointment of Hans J. Sack as New Director

18 December 2014

The ExOne Company announced that it has appointed Hans J. Sack to serve on the Board of Directors.

The Board of Directors increased the number of directors on its board to eight and appointed Hans J. Sack to fill the newly-created vacancy. Mr. Sack is "independent" under the NASDAQ rules.

Mr. Sack has been a Managing Director of HEADWATERS | SC, a private consulting firm, since 2013. In that position, Mr. Sack works on client engagements on matters relating to business growth strategy development and implementation, operational improvement initiatives, and acquisition and consolidation strategies and related due diligence. Prior to joining Headwaters, from 2010 to 2012, Mr. Sack served as President and CEO of Berg Steel Pipe Corp., the US subsidiary of Europipe GmbH, a global leader in large diameter pipe for oil and gas pipelines. Mr. Sack served as President & CEO of Latrobe Specialty Steel Company, a producer of aerospace metals and tool steels owned by private equity firms, from 2006 to 2009. From 1990 to 2006, Mr. Sack worked for The Timken Company's steel business, which is now known as TimkenSteel Corporation, beginning in 1990 as a senior steel business specialist, serving in subsequent positions in the Steel Group as manager–small bar mill, project manager–parts strategy, general manager–precision steel components, and vice president–manufacturing–steel and becoming President & CEO of Timken Latrobe Steel in 1996 and becoming an officer of The Timken Company in 1998. Mr. Sack received a master's degree in mechanical engineering from RWTH Aachen, Germany, and a master's degree in business administration from the

Harvard University Graduate School of Business Administration. Mr. Sack is a member of the Board of Directors of Saint Vincent College and its McKenna School of Business, Economics and Government.

Mr. Sack brings considerable leadership experience in steel operations and steel mill equipment, as well as automotive component and equipment manufacturing and will bring a strong base of experience and knowledge on operational, commercial, geographic and strategic matters to the Board.

Mr. Sack will also serve as the Chairman of the Company's newly created Strategic Oversight Committee.

ExOne Chairman and CEO, S. Kent Rockwell, commented, "The addition of Hans Sack to our Board will continue to strengthen and enhance our Board. Hans brings a wealth of operational and strategic experience, leadership and judgment to our Board and Company."

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Implementation Investments

DCNS Opts for a Digital Chain for its Production Workshop

22 December 2014

For the production of its extremely complex assemblies, the manufacturer has opted for integrated TopSolid solutions, Missler Software's CAD/CAM solution and NCSIMUL Machine from SPRING Technologies for machining simulation.

Very much a town in its own right, the DCNS nuclear submarine production facility in Cherbourg, France, must permanently reach the highest standards of industrial excellence. A topical challenge, as the nuclear-powered ballistic submarines make way for a new generation of attack vessels. The first of four models of these smaller and faster Barracuda attack submarines ordered by the French navy is currently under construction in the dockyard in Cherbourg. The Barracuda features numerous leading-edge innovations, such as enhanced underwater detection, an optronic mast that replaces the conventional optical periscopes, software to guide electronic navigation, a weapon-carrying capacity that has been doubled compared with the Rubris-type vessels and a CMS (Combat Management System) that includes the full range of surface and underwater surveillance functions. "The Barracuda submarines will replace the Améthyste versions of the Rubris-type vessels, which are currently in active service, between 2017 and 2017", explains Hubert Amiot, who is in charge of Mechanical Engineering and Machining in the DCNS Submarines Division in Cherbourg.

A mission that involves manufacturing a highly complex industrial assembly, because submarines are far more sophisticated than aircraft or cars. More than 12,000 non-standard components must be designed, manufactured and assembled as economically and as quickly as possible. And whilst meeting the most demanding quality specifications. To do this, the DCNS needs the very best CAD/CAM (computer-aided design and computer-aided manufacturing) tools available. "We cut our teeth with these tools when we implemented Strim 100 from Cisigraph and Euclid from Matra Datavision in the 1990s", explains Hubert Amiot. Our teams completed numerous 2D and 3D design studies and machining operations on numerically controlled machines. "The challenges of designing and building a submarine required us to completely rethink our existing solutions and processes", reveals the DCNS expert. One important observation: the time for integration had come. "We needed a solution capable of

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meeting the imperatives to cut costs, lead times and to meet the standards of quality that are inherent in this type of program." This was even more the case since, in a quest to make better use of its know-how and its exceptional human and material resources, the DCNS took the decision a few years ago to diversify its activities, by branching out into sectors such as renewable energy and civil nuclear power. Not to mention its export activity to countries such as Pakistan, India, Chile, Malaysia or Brazil, which are interested in some of its submarines.

So how did they find THE CAD/CAM solution capable of taking up the industrial challenges of the 21st century?

The DCNS proceeded in several steps, all leading to a single goal: to install a complete digital chain in which CAD, CAM and machining simulation communicate with one another. "First, we drafted the specifications and put three CAD/CAM solutions, from Dassault Systèmes, PTC and Missler Software, to the test", explains Hubert Amiot. "And in the end, TopSolid was the solution that best met our needs." It was a huge program, because it was necessary to improve the machining programs of complex and high value-added parts, such as the sections of the hull and other components made by the unit in Cherbourg. If possible, machining test parts whenever the reliability of the program needed to be checked had to be avoided, the fine-tuning of the post-processors had to be improved and the successive changes to the program needed to be kept under control. "The solution on offer from Missler Software, which combines CAD/CAM and machining simulation by integrating TopSolid with SPRING Technologies' NCISIMUL, solves all of these problems", claims Fabien Pourpour, the manager of the CAM pool at the DCNS. This specialist in machining, who was in charge of the project, was given a free hand to completely review the organization of the programming department. A fact that highlights the essential role that people played in this project. "We decided to give a clearly defined status to the team of five programmers, who were previously part of the production department", he explains. "And to avoid the permanent misunderstandings... Whenever there was a glitch with machining, it was always the programmers fault, while every success story was thanks to production." Another prerequisite of a successful deployment was to seek help from an external service provider, who was capable of taking an objective look at the work in hand and the obstacles. C2MIS, which specializes in CAM and has a strong command of Missler Software's tools, supported the team at the DCNS with the implementation of the solution and the development of the post-processors that were necessary to control the machining equipment. Some exceptional resources were necessary, like the Bost vertical turning lathe with a 5-axis head that is capable of handling parts that weigh 350 tons, are 5 m high and have a diameter of 10 m. Or the Schiess-Berthiez vertical lathe, currently being upgraded (it will be equipped with a Siemens Sinumerik 840D controller, among other improvements), which features a plateau measuring 14 m in diameter.

The implementation of virtual machining also radically changed the working relations between the programmers and the production team. "Machining simulation is a comprehensive solution that can be applied to all parts, and it gave us a sense of peace of mind", observes Fabien Pourpour. "The relations between the teams are more harmonious. Now, they only talk about technical issues."

Everyone has adopted the same methodology, and the programmers have become multi-disciplined. Manufacturing work is better prepared and the technical files are much clearer, thanks to the extremely realistic 3D images. Reactivity has increased and savings have been multiplied. The time required to finalize the programs in the workshops has been drastically shortened. And significant gains have been made in terms of productivity. "At the start of 2014, we had a backlog of 250 work orders. Today, we have divided that number by 25", concludes Fabien Pourpour.

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Delcam's PowerMILL CAM used for Bloodhound Tail-Fin Shear Plate

22 December 2014

Delcam's PowerMILL CAM software was used by Manufax Engineering to create a highly efficient NC program to machine the tail-fin shear plate for the Bloodhound SuperSonic Car (SSC). A complex, freeform aluminium component, the shear plate will form the interface between the tail-fin structure and the body of the vehicle for its attempt at the world land-speed record.

Based in Stockport, UK, Manufax is a major supplier to the aerospace, automotive, nuclear and agricultural industries, as well as supporting general precision-engineering businesses. With several decades of experience, the company provides specialist tooling design and manufacture across all disciplines, including jigs and fixtures for airframe assembly, mould tools, automotive tooling and components for nuclear power generation. Manufacturing is Manufax's core business and the company has an excellent reputation for supplying its customers with a quality precision-engineering service.

A dedicated and multi-disciplined workforce has been trained to adapt to the unique and challenging projects undertaken at Manufax. Both these criteria can certainly be applied to Bloodhound SSC, a jet- and rocket-powered car designed to go at 1,000 mph. Manufax is no stranger to the Bloodhound SSC project, having produced the mounting frame for the HTP (High Test Peroxide) fuel tank, and an assembly jig that is being used to assemble and align the lower chassis, side rails and upper chassis.

The company's Correa FP50 five-axis gantry-type machining centre was selected to produce the component in aircraft-grade aluminium. CAD/CAM Projects Engineer, Mark Brittain, used PowerMILL to produce the five-axis NC program to machine the shear plate, with its very demanding geometric forms, from a single billet of aluminium.

At the suggestion of Tony Theaker, Area Manager for SGS Carbide Tool (UK), Mr. Brittain used the Vortex area-clearance strategy in PowerMILL and an SGS S-CARB APR three-flute roughing end-mill to rough the part in one operation. Like Delcam, SGS is a partner in the Bloodhound project.

The combination of the Vortex strategy and the SGS tooling resulted in significant cycle time savings of over 40 per cent. "We were a little sceptical at first, as the cutting data being suggested for the S-CARB APR cutting tool was providing phenomenal results within PowerMILL," Mr Brittain recalled. "We could not afford to scrap the raw material so we set up a trial cut with a sample of the same grade of aluminium on the machining centre, and applied the speeds, feeds and depths of cut suggested by SGS."

"The trial proved our trust in PowerMILL's NC code and the cutting tool was well founded, continued Mark Brittain. "They performed remarkably well together. As well as giving the predicted time savings, the toolpath and the cutting action reduced any deflection of the thin walls of the rough machined part."

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Product News

Merry Mechanization Introduces their New Improved Interactive Nesting

21 December 2014

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Merry Mechanization (Merry Mech.) has recently improved their [Interactive Nesting](#) in the company's 2D & 3D SMP/IS software which helps operators save time while increasing their control over the nesting process. Combined with the company's CAD/CAM sheet metal fabrication software, Interactive Nesting lets operators arrange individual parts in a nest and then treat the nest as a single unit for further processing. According to a spokesperson for SMP/IS, "By using Interactive Nesting to automatically perform nesting functions, you will save valuable time and materials without sacrificing control." The Interactive Nesting routine within SMP/IS now offers optimum flexibility for operators to create nests with specific parts while allowing automatic processing for previously created nests.

To create a nest, an operator has complete freedom to choose the most appropriate parts. He can place any number of parts on a blank and choose identical parts, specific part groupings or all the parts of a particular assembly. This flexibility allows the operator to choose the parts that will result in the most efficient sheet metal fabrication, in accordance with production goals.

Once the operator has decided on the best approach, he can specify an approximate size for the blank and choose the necessary parts from a part list. When he has entered the first part number, the part shape attaches to his cursor. Using the new Interactive Nesting routine, he can now move the part, rotate it, flip it and place it on the blank. After he has placed the first part, he can proceed with another part, repeatedly arranging and placing new parts until all the required parts are nested.

Additional features help arrange the parts in specific ways. While creating the nest, the operator can duplicate or delete parts already placed. The reorient option lets the operator align the edges of two parts and specify the distance between them. Together with the concatenate option, he can eliminate duplicate, unnecessary or overlapping hits. To fabricate large numbers of parts, the operator can program a grid of particular nests or sub-assemblies. When cross-posting to another machine, Interactive Nesting automatically adjusts the tooling and notes incompatibilities. The operator at all times has these new automatic features available to save time while retaining the ability to intervene and adjust nests where required.

Merry Mech. offers Interactive Nesting as part of its complete suite of SMP/IS CAD/CAM software to help customers minimize material waste and reach their productivity goals. While providing the operator with total control over part placement, Interactive Nesting includes automatic features that save time and make the process more efficient. The software represents one aspect of Merry Mech.'s commitment to deliver the latest in advanced sheet metal fabrication software with high levels of customer service, training and support.

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ModuleWorks Release 2014.12 CAD/CAM Components

17 December 2014

December sees the release of the latest version of the ModuleWorks components, 2014.12, the third major update of 2014. As always, they have added a broad range of new features across the product range and this latest update includes new and enhanced features for 3-Axis, 5-Axis, Port Machining and

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Simulation. ModuleWorks is at the forefront of 5-Axis machining and Simulation technology, providing the toolpath and simulation technology that powers many of the leading CAM systems available around the world today. Highlights of the new release are shown below:

5-Axis Machining

5-Axis SWARF sees a number of improvements to improve efficiency and flexibility.

The aim of “Tool guide curve for SWARF machining” is that the tool can be guided either on the upper or the lower curve. The selection is depending on the SWARF surface shape, walls with varying heights or abrupt jumps can be handled better. The tool should be guided to that curve that has the least curvature. Laser or waterjet applications benefit the most, but also for milling more complex or cut out parts.

The porting module has two important enhancements. Firstly the automatic spine detection has been enhanced to support even more complex port geometry. This allows larger tools to be uses on narrower ports, minimizing cycle time. Secondly, the toolpath can now be extended automatically to include a rollover on each end of the port. This makes programming easier and can provide an improved surface finish. 5-Axis toolpaths now offer the option to specify the clearance distance incremental to the toolpath. This provides short retract moves while keeping the tool at a safe distance allowing overall cycle time to be reduced.

3-Axis Machining

There are many detail improvements across the range of 3-Axis STL mesh and 2.5D wire frame toolpaths. These are focused on toolpath efficiency, flexibility and performance. The Z Level cycle now allows the for the intermediate slice cuts to programmed at a different feed rate. Because the tool load on the intermediate cuts is often lower than the primary cuts, a high feed rate can be used which reduces the overall cycle time.

The linking in their 3-Axis roughing toolpath has been overhauled such that safe linking moves are now created much closer to part. Air cutting is minimized and the cycle time is reduced as a result.

Simulation

Simulation has major improvements to provide a higher resolution finish of the cut part. A background process automatically refines the stock model to a higher quality finish with no user interaction.

Wire EDM simulation has been enhance to check if machining has separated out a part of the model and see if that part can deformed and removed. This new feature will check for multiple parts and look at the model from different directions. The process is shown in simulation and the user will be notified if the part cannot be removed.

The 2014.12 release is now available to all partners from the customer download area at www.ModuleWorks.com

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ZWCAD Mechanical 2015 Official Release: Better Specification of Your Design Task

23 December 2014

[ZWCAD Design](#) today officially released its latest product, ZWCAD Mechanical 2015. As a specific and comprehensive CAD program, this new version features enhancements like Graphic Style Configuration, 229+ new ISO and DIN standard parts, new ribbon icons and many more to improve productivity and practicality.

Graphic Style Configuration

Defining shape is very important when it comes to mechanical design. Designers usually change related xml file and its code structure. The re-designed Style Configuration in ZWCAD Mechanical provides a graphic interface that enables users to customize drafting standard without knowing how to define related xml files and code structure. Designers can easily and efficiently customize the standard style for layers, title block, symbol and many more. This significantly improves design efficiency and makes changes and modifications more visible.

229+ New ISO and DIN Standard Parts

Dealing with tons of mechanical parts is one of the specialties of mechanical design, however, countries vary in standard. If there is no related solution for this, many engineers would feel frustrated especially when globalization is the trend. To solve this problem, 229+ new ISO and DIN standard parts are integrated. ISO and DIN are the most common and frequently-used standard around the world, so both the quantity and practicality are sufficient enough to enable engineers to explore more possibilities in the given field.

Newly Designed Ribbon Icons

Visual intervention caused by unnecessary clutter can be a pain to designers, However in ZWCAD Mechanical users are exempt from this. This version has newly designed icons for ribbon menu. It perfectly matches the style of ZWCAD+ 2015. The whole new user interface comes more neat, flat, and intuitive, fending off long-time design fatigue and visual interruption and leaving you free to your work longer.

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