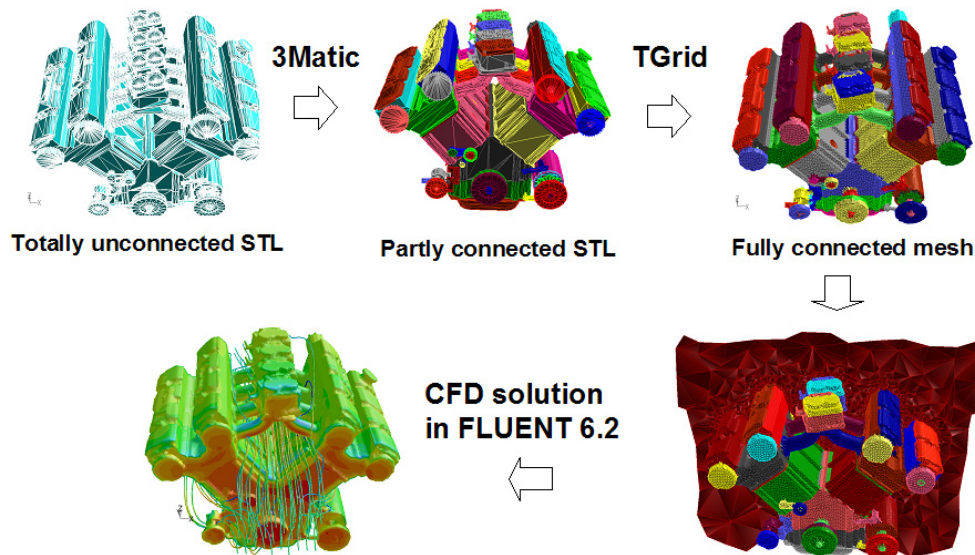


## Fluent Previews 3Matic-for-FLUENT and TGrid 4.0 Wrapping Solution for Automotive Underhood Thermal Management CFD

June 29, 2005, Frankfurt, Germany.....Fluent Inc., the world leader in computational fluid dynamics (CFD) software and services, and Materialise, the world leader in software development for rapid prototyping and industrial design applications, preview a new preprocessing solution for Automotive Underhood Thermal Management (UTM) today, to delegates at the bi-annual European Automotive CFD Conference (EACC) in Frankfurt. The solution combines a batch geometry preconditioning module, 3Matic-for-FLUENT, custom developed by Materialise, and the new TGrid 4.0 wrapper technology from Fluent Inc. Scheduled for release in late 2005, with final prototypes to be demonstrated at all European and Asian Fluent User Group events throughout 2005, the product is aimed at improving the CFD process of geometry to meshed model for a wide range of applications including UTM.



Schematic picture of a typical Underhood Geometry – Mesh – CFD Simulation process using 3Matic, TGrid 4.0 and FLUENT

"The 3Matic-for-FLUENT batch module provides a fully automatic mechanism to convert hundreds of files from mixed geometry sources into a consistent, clean and optimal format for TGrid 4.0's wrapping technology" said Koen Engelborghs, Materialise R&D Manager, adding that, "An essential part of 3Matic-for-FLUENT is a batch file conversion module that allows you to start with any number of geometry files in native or standard CAD file format (like CATIA, UG, Pro/E, STEP, IGES) or faceted formats (like STL, WRML). Each file is then sequentially loaded and imported into the batch reader, and automatically cleaned and exported into the FLUENT mesh format. The cleanup process ensures that each CAD part is fully connected, of minimal size but with sufficient resolution of details."

Materialise's triangular meshing technology provides powerful geometry conditioning tools that have been used in Rapid Prototyping (RP) successfully for years. The combined Materialise-Fluent solution enables TGrid 4.0 users to work more efficiently in the pre-wrapping process of semi-automatic gap and hole filling using a range of new tools, like Cartesian grid panning, face tracing and plane face creation. The advanced TGrid 4.0 Wrapper technology is equipped with zone, proximity or curvature based size functions to get the optimal mesh distribution at the first wrapping attempt. The fully connected wrapper surface can be redistributed to capture selective, or all, external features in the model. An

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automatic post-wrapping tool scans the raw wrapped mesh and resolves any unwanted configuration and drastically improves the surface mesh quality. Finally, all of the parts defined in the initial CAD model are recovered into boundary zones with a single click of a button.

“We are dedicated to providing not only the best wrapper approach, but a full UTM preprocessing tool kit built around TGrid 4.0” says Erling Eklund, TGrid Product Manager at Fluent Inc., “The 3Matic-for-FLUENT preconditioning tool will reduce manual engineer geometry clean-up time by 2 to 5 fold and also reduce file size by up to 5 times. When coupled with the advanced wrapping and industry proven stable hybrid meshing tools in Tgrid 4.0, I believe that this combined solution is an excellent step forward in addressing automotive meshing bottlenecks.”

In addition to the new wrapping technology, TGrid 4.0 is also equipped with a long list of new tools, including extensive boundary intersection capabilities, size function based re-meshing tools, and extended boundary and mesh modify enhancements. Prism layer technology has been improved significantly with automatic proximity/collision detection, sharp corner and dangling wall handling.

#### **About Materialise**

Materialise, with headquarters in Belgium, started in 1990 in the sector of rapid prototyping. Since that time, the company has experienced an exponential growth. Today, its software division develops innovative, industry-leading applications enabling advanced use of rapid prototyping, tooling and manufacturing techniques. Materialise is a trusted software partner worldwide for the leading companies of the automotive, aerospace and consumer electronics industries. Materialise has offices all over the world and the largest software development team in the RP sector. 3Matic is the latest innovative product of Materialise. It implements so-called 'digital' CAD, a short-hand for CAD-operations working directly on triangle files. 3Matic thus allows direct transformation of scanned data into a file ready for FEA/CFD or rapid prototyping/manufacturing. Likewise, it allows for realizing design (changes) and remeshing directly on mesh files.

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#### **About Fluent**

Fluent is the world's largest provider of computational fluid dynamics (CFD) software and technical services. Fluent's software is used for simulation, visualization, and analysis of fluid flow, heat and mass transfer, and chemical reactions. It is a vital part of the computer-aided engineering (CAE) process for companies around the world and is deployed in nearly every manufacturing industry. FLUENT is used extensively in the Motor Racing industry worldwide by the vast majority of race teams. Using Fluent's software, engineers build virtual prototypes and simulate the performance of proposed and existing designs, allowing them to improve design quality while reducing cost and speeding time to market. Fluent's corporate headquarters are located in Lebanon, New Hampshire, USA, with offices in Belgium, England, France, Germany, India, Italy, Japan, China and Sweden. Its CFD software is also available around the world through joint ventures, partnerships, and distributors in Korea, Australia, Brazil, China, Taiwan, the Czech Republic, Middle East, and most European countries.

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