

Post processing and reporting from FEA simulations

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Marketing Manager
Ceetron AS

Presentation outline

- About Ceetron AS
 - Company history and relationship with NST
- Ceetron technology
 - Technology overview
 - Live demonstration of GLview Inova and GLview Report Builder
- On-going development
 - Visualization in the cloud
 - Live demo on iPhone/iPad
 - GLview Components
 - Live demo of NST component

ABOUT CEETRON AS

Ceetron History

2010, July: OpenGL 4.1

2007: Ceetron GmbH
Established

2001, GLview Inova
Released

2000, July: Ceetron AS
Founded

1998, June: NST
Distributor

1996, Jan:
ViewTech AS Founded

1992, Jan:
OpenGL 1.0

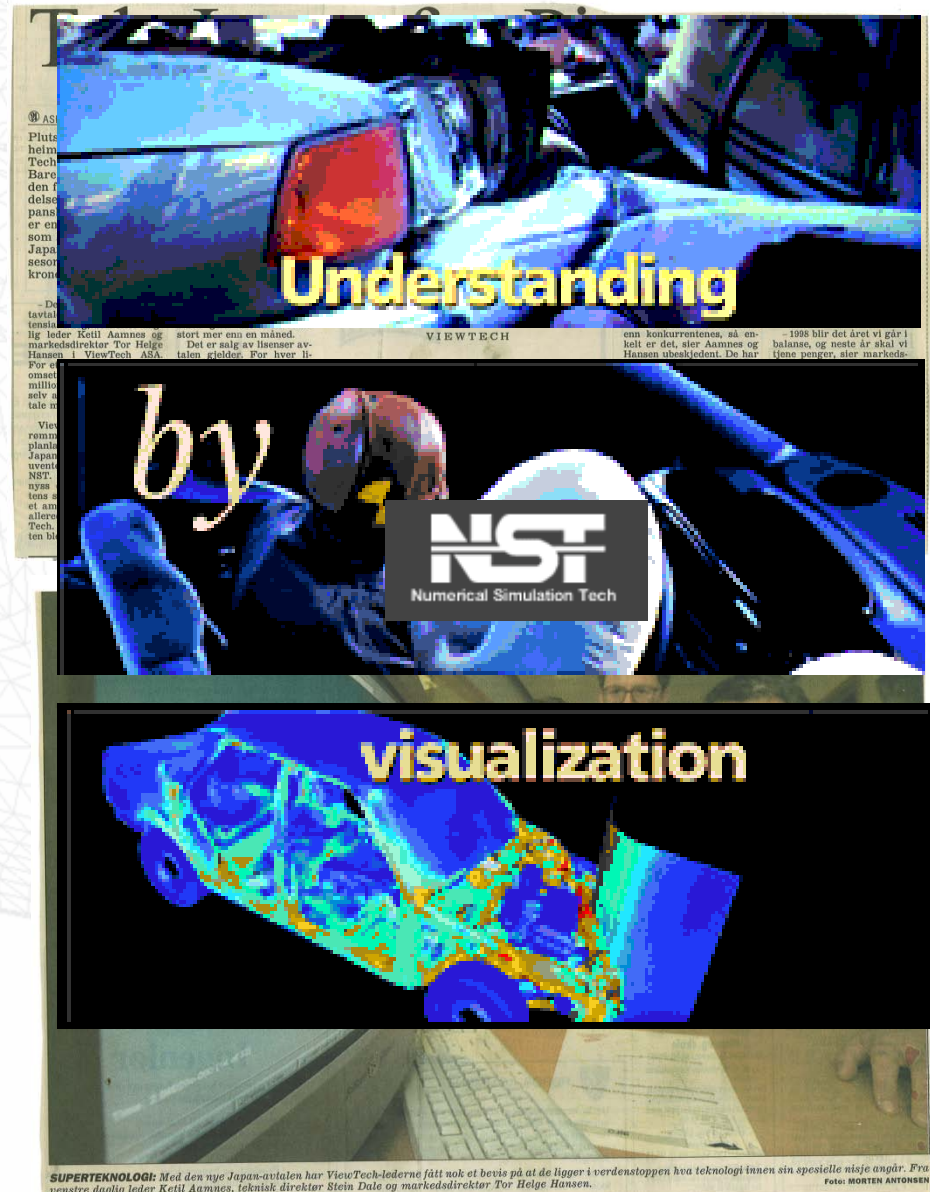
2010, August: NST OEM
Partner

2009, Oct: GLview Report
Builder Available

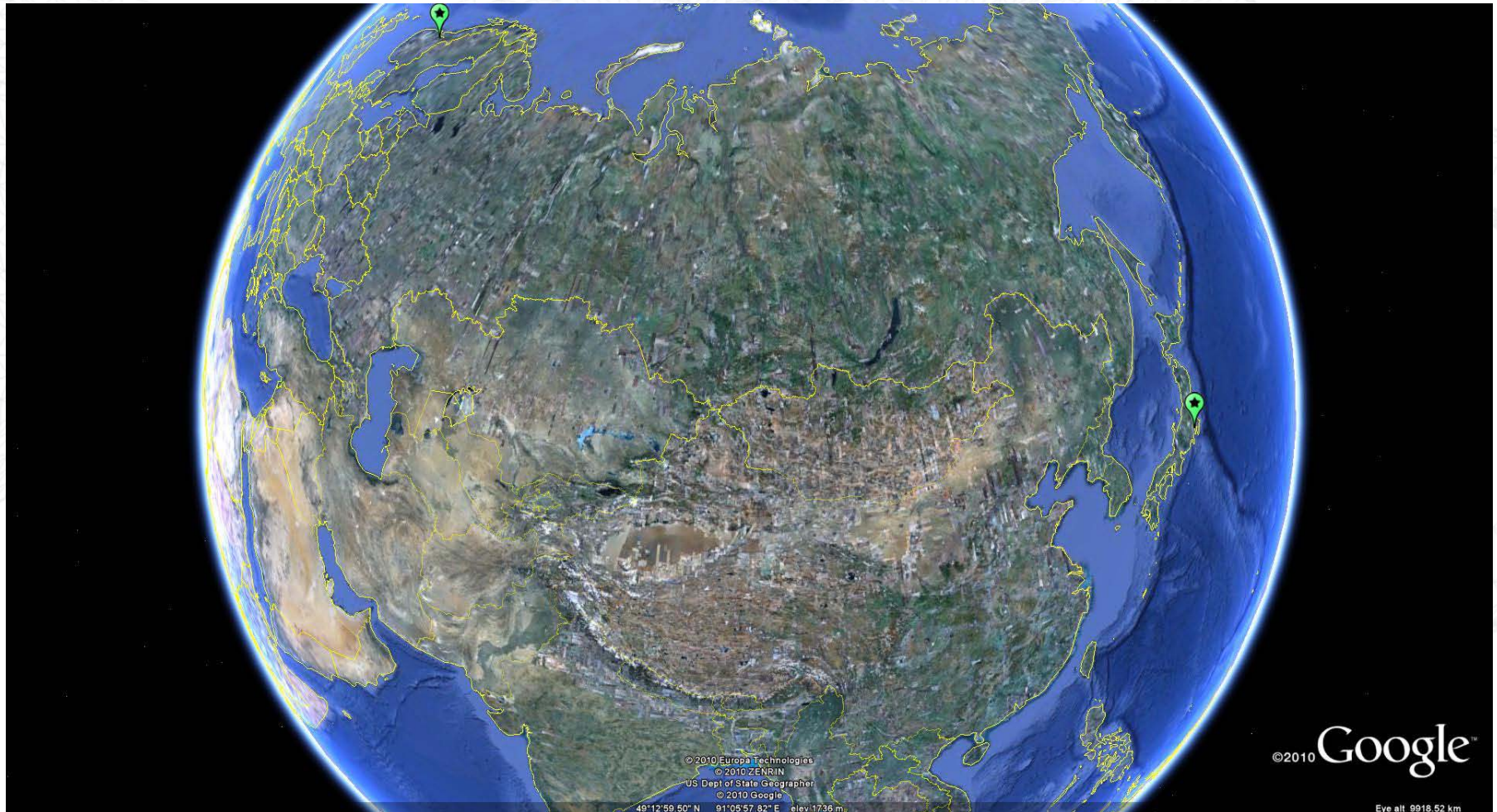
2001: GLview Express &
GLview 3D Plugin

2001: GLview 3D
Visualization API Available

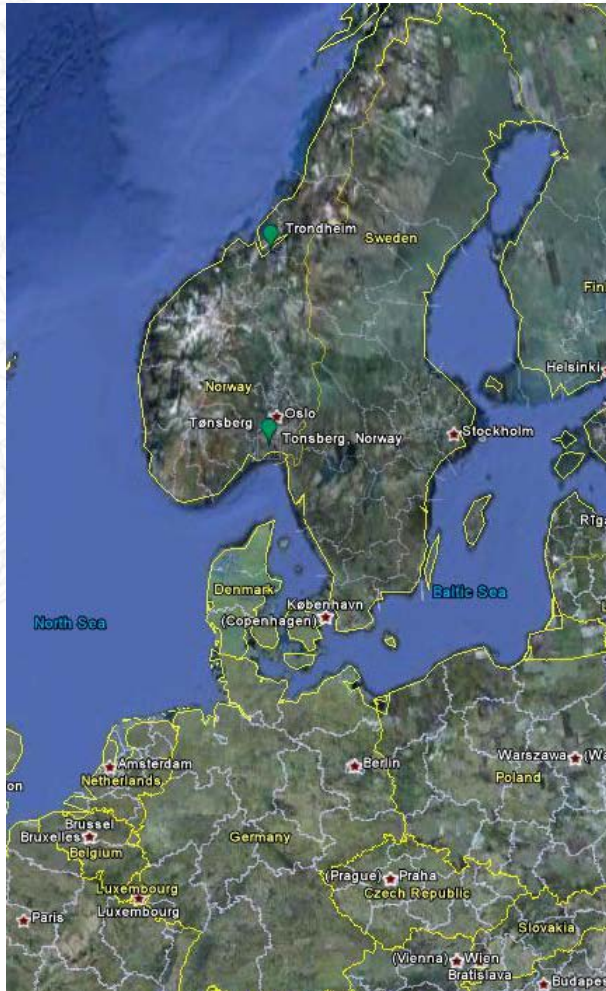
1996, Jan:
GLview Pro 1.0 Available



Tokyo and Trondheim on the globe ...



Ceetron locations



Locations



Pircenteret (main office)



Trondheim (main office)

Ceetron Company Profile

Mission Statement

Understanding by Visualization

Business Idea

Ceetron is a software company offering advanced 3D visualization products and solutions for customers within energy, marine and automotive industries.

Key application areas

Integrated simulation environments

Pre/Post processing and result interpretation

Presentation, communication and data sharing

Company Values

Leading edge technology and know-how

Customer satisfaction and after sales support

Responsible and dedicated professionals

1500+ Companies using Ceetron Technology

Ferrari

WS Atkins

Rolls-Royce

VOLVO

vectayn



FONDA



KVÆRNER™

BG



ROLEX



ThyssenKrupp

DERA



GOODRICH



UNISYS



Rockwell
Science Center



Distributors

Analysis Design Productivity Ltd. (UK)

ANSYS Inc (China)

Apic (Taiwan)

Applied Computing & Engineering Ltd. (UK)

CAESoft Consulting (Spain & South America)

Dynagraph AB (Sweden)

EMAX (China)

Engineering Research Nordic AB (Sweden)

Enphiniti Engineering Solutions (India)

FE-Design GmbH (Germany)

Hankook Applied Acoustics and Consulting (South Korea)

HITEX (France)

Ingeciber S.A (Spain)

ITB GmbH (Germany)

MAYA Heat Transfer Technologies Ltd (Canada)

Numerical Simulation Technology Corp. (Japan)

Preeti Enterprises (India)

Smart-CAE (Italy)

TEAM Engineering Ltd. (UK)

Transwoods (Japan)

www.adpltd.uk.com

www.ansys.com.cn

www.apic.com.tw

www.acel.co.uk

www.caesoft.es

www.dynagraph.se

www.erab.se

www.enphiniti.com

www.fe-design.com

www.hitex-international.com

www.ingeciber.com

www.itb-fem.de

www.mayahtt.com

www.cae-nst.com

www.smartcae.com

www.team-eng.com

www.transwoods.com



OEM Partners

AMARCON BV (NL)

Blue Ridge Numerics Inc. (US)

Complex Flow Design AS (NOR)

DNV Software (NOR)

FE Design GmbH (DE)

Fedem Technology AS (NOR)

Fraunhofer SCAI (DE)

JSOL Corporation (JP)

LINK ftr (NOR)

MARINTEK (NOR)

Migris AS (NOR)

Numerical Simulation Technology Corp. (Japan)

SINTEF Petroleum Research (NOR)

T-Systems GmbH (DE)

Transvalor S.A. (FR)

Virtual Motion (KR)

WindSim AS (NOR)

www.amarcon.com

www.cfdesign.com

www.cfd.no

www.dnvsoftware.com

www.fe-design.com

www.fedem.com

www.scai.fraunhofer.de

www.jsol.co.jp

www.marintek.no

www.migris.no

www.cae-nst.com

www.iku.sintef.no

www.t-systems.com

www.transvalor.com

www.virtual-motion.co.kr

www.windsim.com






MARINTEK






CEETRON TECHNOLOGY

Ceetron Productline

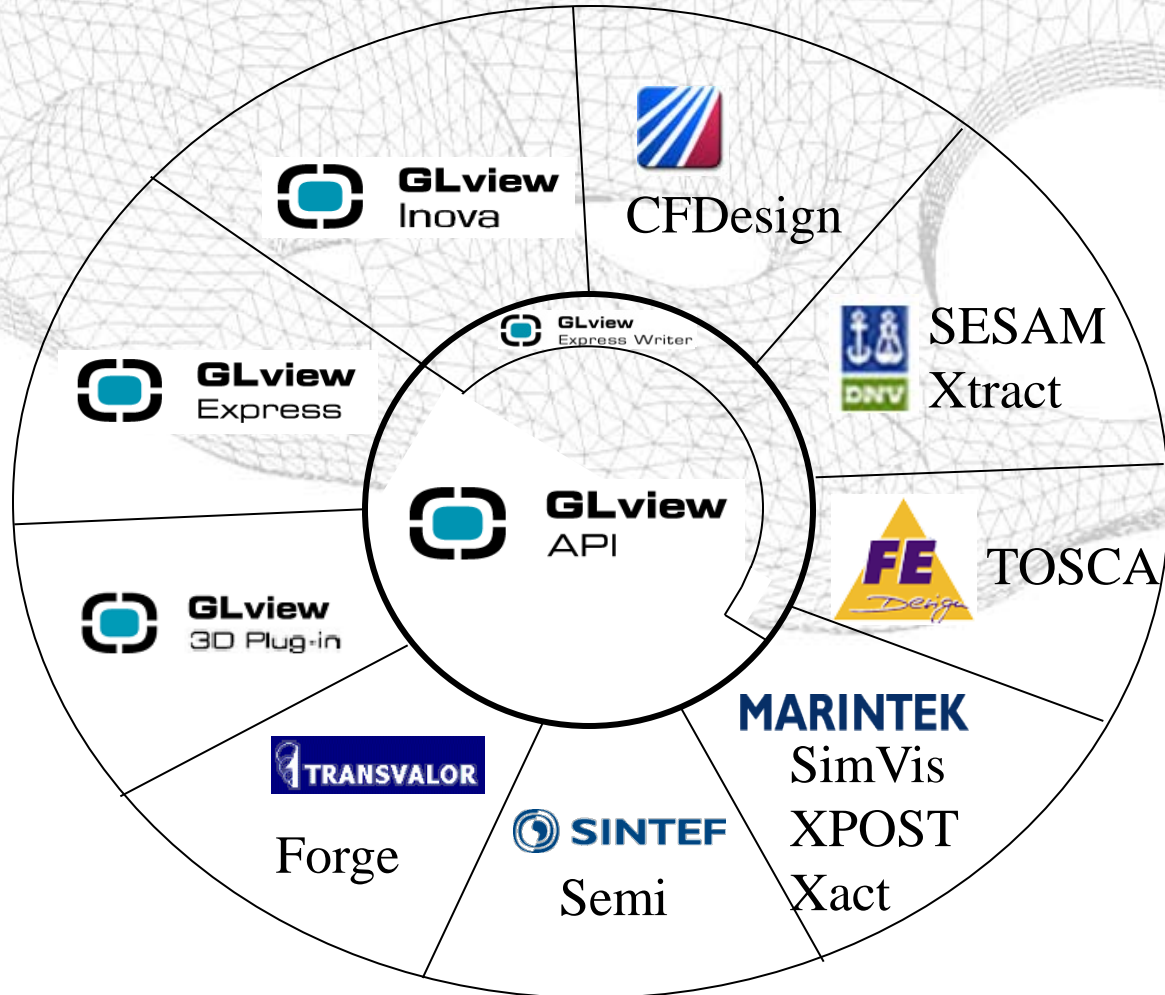
SOFTWARE DEVELOPER PRODUCTS

 GLview API	Object-oriented C++ class library. For development of full post-processors and visualization solutions. Ideal for OEM solutions and third-party developers.
 GLview Express Writer	C++/FORTRAN class library for producing portable VTFx files from within a FEA code. VTFx files are supported by the GLview end-user products.
 GLview Reporter	C++ class library and application for collecting situations from CAE pre- and post-processors and producing reports in industry standard document formats.

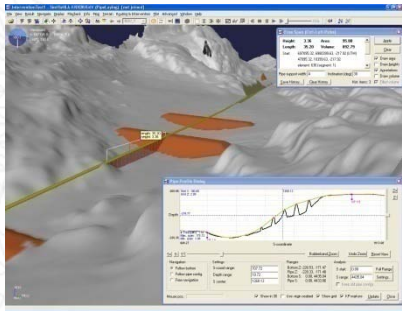
END USER PRODUCTS

 GLview Express	Viewer (standalone). Analogous to Adobe Acrobat Reader. Presentation and distribution of 3D models and results generated by GLview Express Writer.
 GLview 3D Plug-in	Viewer (plug-in) Plug-in for integration with MS Office, Open Office and browsers. 3D interactivity and animation capabilities similar to GLview Express.
 GLview Inova	Fully featured post-processor for result interpretation of structural CSM and CFD codes.

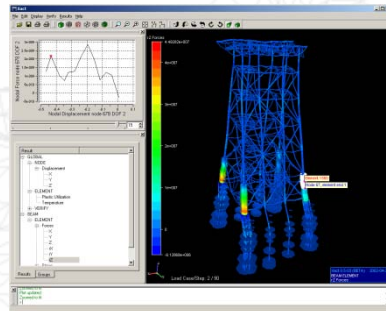
Product Strategy



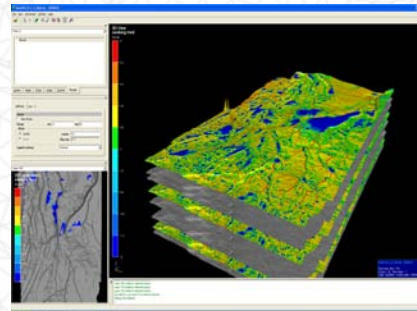
Customized visualization applications



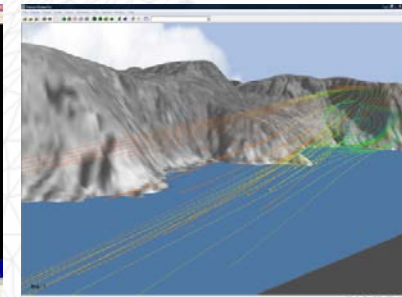
SimVis



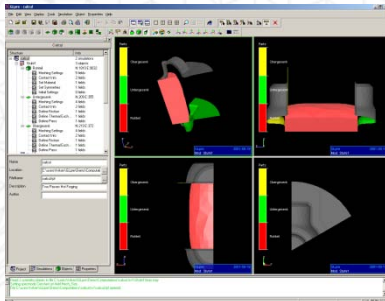
USFOS



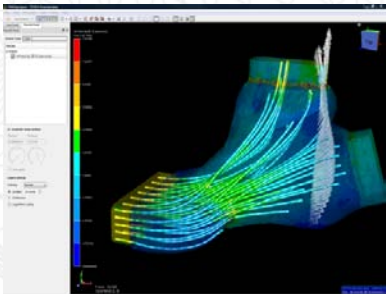
SemiViz



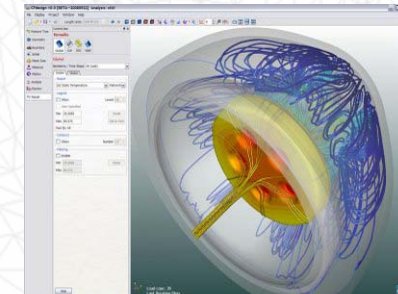
WindSim



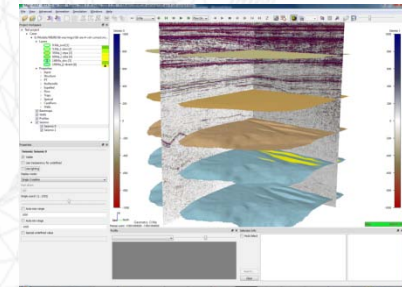
GLPre



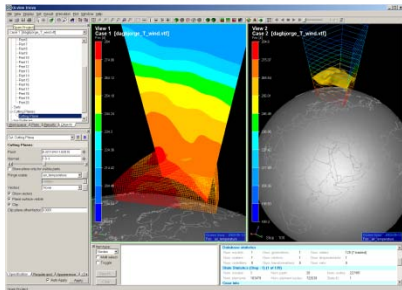
Tosca.View



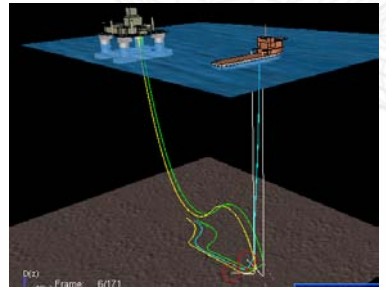
CFDesign



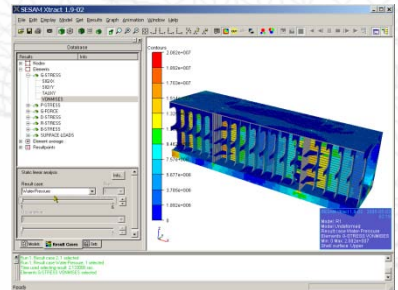
Migr



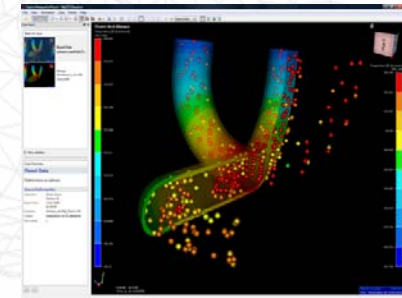
GLview Meteorology



MopSim



SESAM Xtract



MpCCI Visualizer

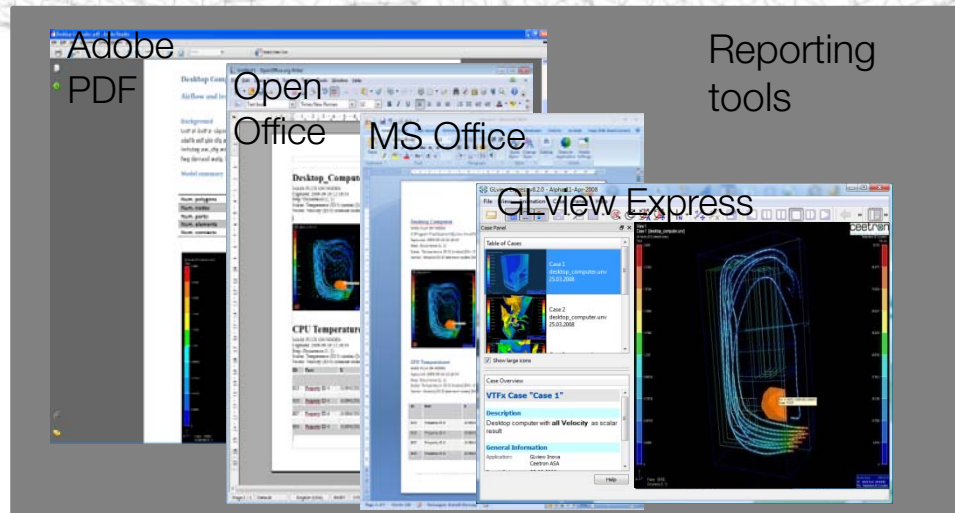
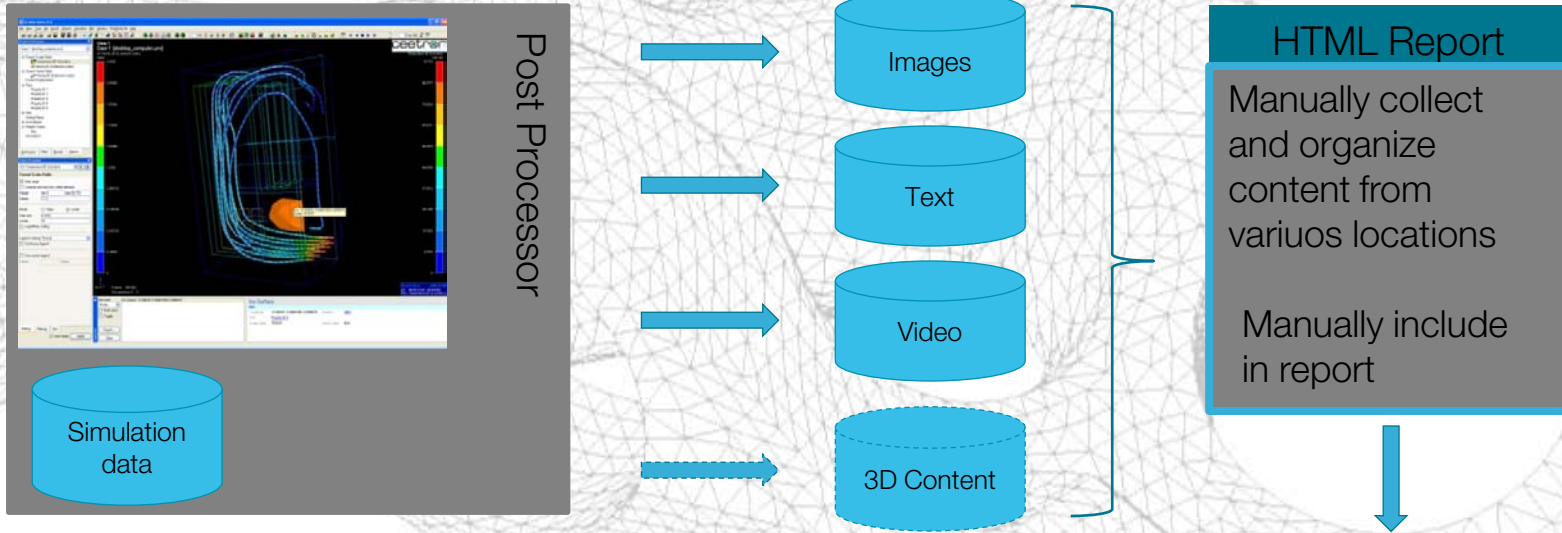
Short introduction to

GLVIEW REPORT BUILDER

Background

- Simulation engineers spend a substantial amount of time writing & rewriting reports
 - Some reports are “one-of-a-kind”, but
 - a lot of reports are repetitive
- Most existing CAE tools have limited support for creating reports
 - Fragmented output
 - Content exported to multiple folders and files/formats
 - HTML output
 - Cumbersome to extend and reformat
 - Static content and layout
 - Limited support for templates
- Most engineering companies use MS Office for documentation and report generation
 - OpenOffice is emerging as a viable alternative
 - Existing CAE tools have limited integration to MS Office and Open Office

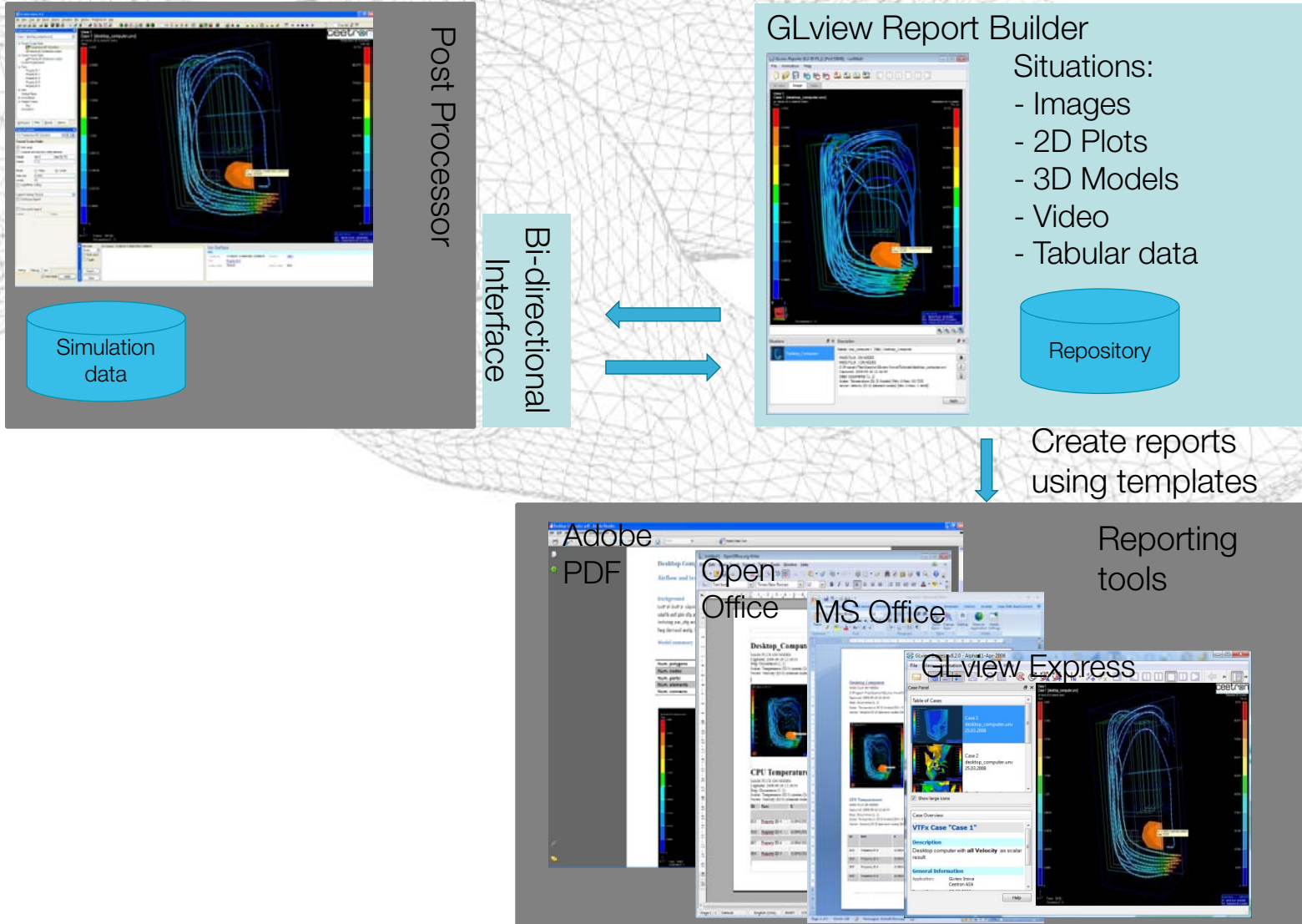
Reporting support in existing Post-processors



Why GLview Report Builder™?

- **Interactive reporting**
 - Make it easy for the engineer to capture data the first time he/she finds it
 - Directly from his/her favorite post-processor
 - Collect and organize all data for the report in one place
 - Create reports in multiple formats from the same source
 - E.g. Make both the report and the presentation to go with it
- **Automated reporting**
 - Automatically repeat all steps to create a report or report content
 - By utilizing Repository templates or scripting language
 - Simply replace the model file to create a new report from a new or changed analysis
- **In compliance with industry standards**
 - Use company document templates for layout and formatting of reports
 - E.g. Existing MS Word or MS PowerPoint templates
 - Output to the native file format of the software tool used to write/finalize reports
 - E.g. *.docx, *.pptx, *.odf, *.html, *.txt
 - Convert to pdf
- Use your favorite document editing tool all the way

GLview Report Builder™ overview



GLview Inova and GLview Report Builder

LIVE DEMONSTRATION

ON-GOING DEVELOPMENT

Ceetron technology development projects

- **GLview Report Builder**
 - Ongoing internal project
 - with external partners
 - Specific plans until end 2011
- **Visualization in the cloud**
 - Ongoing research project
 - Two post-doc's for 3 years
- **GLview Components**
 - Ongoing internal project
 - NST first external partner

Visualization on mobile devices – usage areas

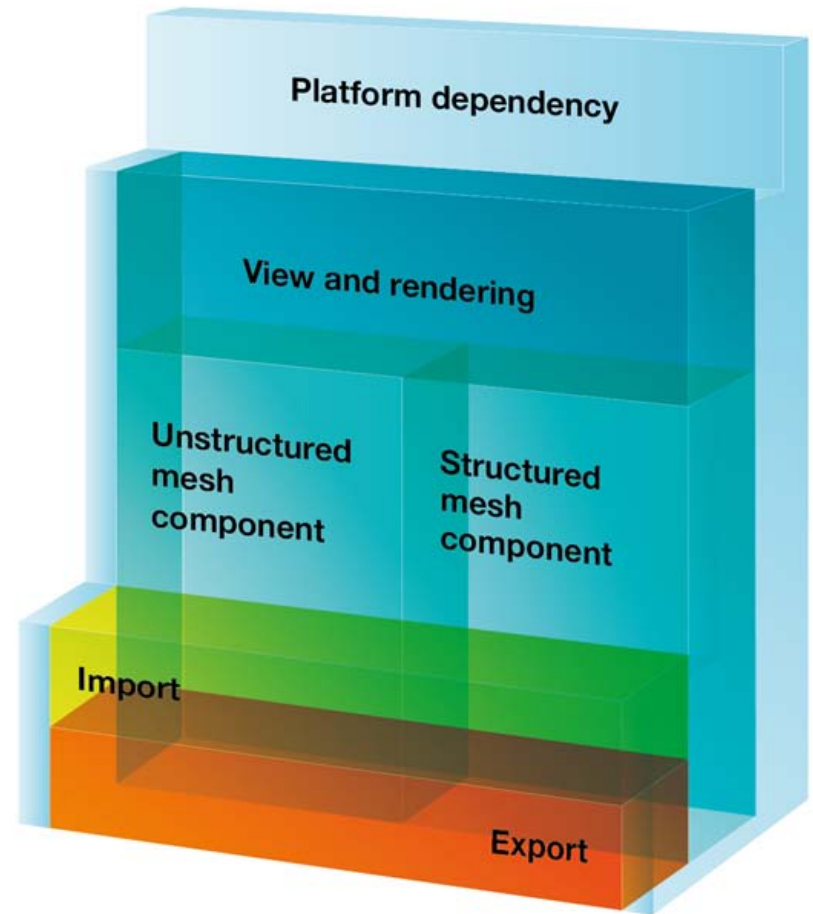
- Monitoring of running simulations
 - Out-of-office monitoring of time-consuming simulations
 - Get preliminary results
- Sharing of simulation results
 - In meetings with suppliers, clients, managers, etc.
 - With operators on the factory floor
 - In ad-hoc meetings e.g. On conferences etc.

iCee - GLview Visualization on iOS

LIVE DEMONSTRATION

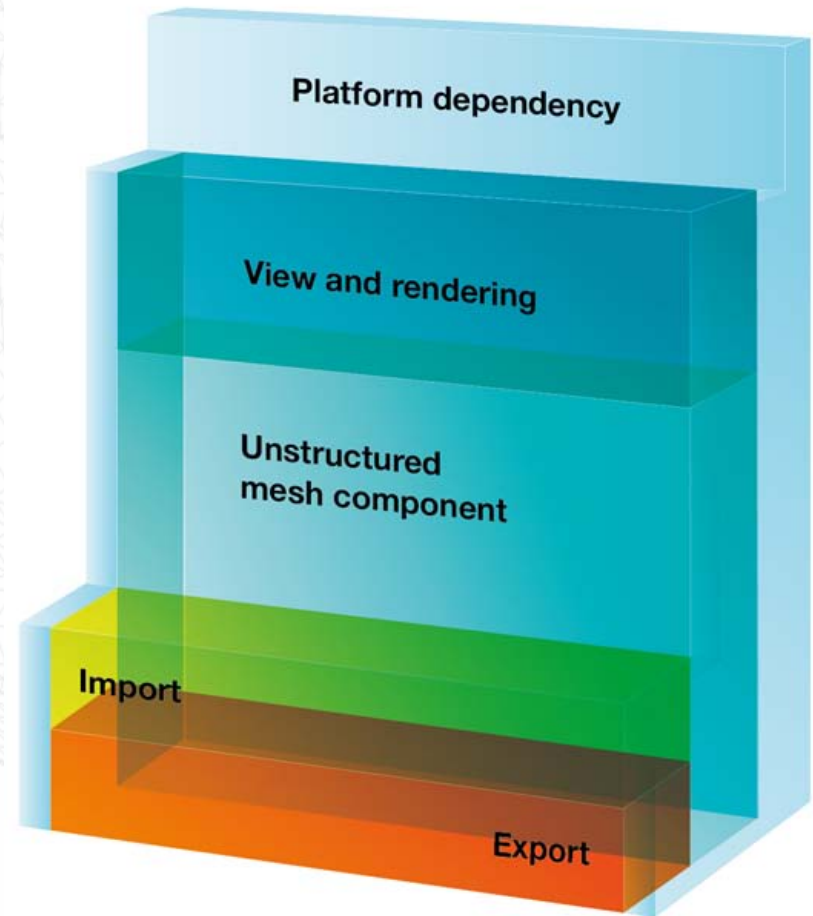
GLview Components

- The best pieces of technology from 14 years of development
 - High performance
 - Well tested
- Component interfaces to allow interoperability
 - Easy to use
- Growable architecture
 - Add components as needs arise
- Platform binding layers
 - .Net/C#, and
 - Eclipse/Java



GLview Components for NST

- Features to build fully featured, customized post-processing applications
 - Optimized for unstructured mesh data representation
- Direct file interfaces to common CAE systems
 - Including FEMAP
- .Net data binding
- First prototype delivered September 18th



GLview .NET Component for NST

LIVE DEMONSTRATION

THANK YOU!