Timetable and Agenda

International PolyWorks User Meeting 2005

Day One - Thursday, June 16

8h00-8h10

Words of welcome.

8h10 – 8h55

Marc Soucy, President, InnovMetric Software: Overview of the new features of PolyWorks V9

9h00 – 9h25

Angelo Beraldin – Research Officer – National Research Council Canada: Understanding 3D laser scanners: opportunities and challenges

This presentation looks at the spatial sampling and range measurement uncertainty limits of different 3D laser scanner technologies. The short theoretical presentation is supported by selected results obtained on a number of laser scanners for close range applications (< 10m). This presentation underpins the importance of knowing the measurement limits and understanding the intended application. A section of the talk addresses the use of the 3D data from the point of view of a practitioner where the traditional description of the steps involved in the 3D modeling processing pipeline is abandoned to concentrate instead on concerns resulting from typical applications. Cultural heritage projects demonstrate some of the work presented here.

9h30 – 9h55

Talion Edwards, Reverse Engineering Development, The Boeing Company: Rapid Reverse Engineering of Legacy Aircraft to support extended product life cycles

Designing upgrades to military and commercial aircraft defined by 2D drawings is challenging for engineers working in a 3D model based environment. Commercially available metrology tools provide a solution, but the scale of aerospace products falls between the typical needs of automotive and survey customers. By using a multi-metrology approach and leveraging the power of PolyWorks, Boeing is able to apply a patented process for generating 3D CAD models of as built aircraft systems.

10h00-11h00

60-min coffee break and visit of the 3D digitizing fair

11h00-11h25

Giles Gaskell, Director of Business Development - Nvision Inc.: Inspection of Car Seats at Qualtec Seating Systems

The presentation explains the way in which PolyWorks/Inspector has been used in a real live day to day inspection environment. Working in conjunction with 3D Scanners' ModelMaker scanner, Qualtec Seating Systems in London, Canada, a division of Interior systems giant Intier uses PolyWorks Inspector in a real life, day to day environment to ensure consistent quality control and rapid response to production quality issues.

11h30-11h55

David Hannon – Vice-President - MF Inspect: Inspecting the geometry of pipes using soft-gages in PolyWorks

12h00-13h20

Lunch, at "La Galerie" restaurant at Loews Le Concorde.

13h30-13h55

Ryutaro Harada - Prototype Fabrication Department - HONDA R&D Co. Ltd in Tochigi Japan: Case study with PolyWorks/Inspector for quality improvement of drive line components.

PolyWorks has been used for inspection of various kinds of prototype materials and parts since its introduction to our department in 2002. In this presentation, as an expert department for manufacturing, we introduce how we are utilizing PolyWorks and non-contact digitizer to improve quality of mainly drive line components. Also our success

story to enhance processes and about what kind of advantages are there will be presented.

14h00-14h25

Gerry Veenstra, CMM/Laser Scanner Operator - Research In Motion Limited: Inspection of Plastic Housings for BlackBerry® Devices

The presentation explains how the inspection of thin-walled plastic parts for BlackBerry devices at RIM is performed using PolyWorks in combination with a Shapegrabber scanner. Mr. Gerry Veenstra will demonstrate how PolyWorks tools such as: best-fit and datum-based alignment, comparison to CAD (color maps, cross-sections), and GD&T techniques are being used to determine if the parts have been bent or twisted during the molding process.

14h30-14h55

Pierre Aubrey – VP Sales and Marketing – ShapeGrabber Inc: Using PolyWorks to Control and Optimize a plastic injection molding process

3D Scanning and the processing of the resulting point cloud have found multiple manufacturing applications over the years. Initially, it was reverse engineering, followed by dimension inspection for quality control. What allowed the transition to inspection were the improvements in speed and ease of use. The next frontier is process control and optimization, where speed and ease of use requirements are even greater. We will present an example of the use of PolyWorks® and ShapeGrabber® for process control and optimization of a plastic injection molding process.

15h00-16h00

60-min coffee break and visit of the 3D digitizing fair

16h00-16h25

Gerry Stevenson – Principal Metrologist, Digital Measurement Group - QMC: Inspection of legacy aircraft forgings, a combined methods approach (w/o CAD)

16h30- End of presentations

18h30-19h30

Cocktail in the lobby of the Suzor Côté ballroom.

19h30-22h00

Reception, Suzor Côté Ballroom.

Day Two – Friday, June 17

8h00- 8h25

Marc Soucy, President, InnovMetric Software: Future development for PolyWorks V10

8h30-8h55

Eric Liberty - Laser Imaging Division – Optech: Multiple Field 3D Data Integration from a Modular High Dynamic Range System and PolyWorks.

Terrestrial Laser Scanning and the practices associated with data collection have demanded an evolvement of systems that enable users to collect detailed information of areas that may have been plagued by the common challenges of using more conventional means for data collection. The combination of the right laser scanner with a robust, versatile post-processing software solution ensures that the end user can generate results with unprecedented speed and accuracy. This presentation will introduce Optech's newest laser scanner, the ILRIS-3_6D, and outline several projects that have been accomplished with PolyWorks V9.

9h00-9h25

Calvin Johnson - Survey Technician – Woolpert: Climbing the Stairs of the Colorado State Capitol Building

This presentation looks at a scanning project that was performed at the Colorado State Capitol Building to provide a 3D linework model for an existing staircase columns to allow architects to develop construction plans and staircase details for the installation of pre-fabricated staircases. PolyWorks IMAlign module was utilized in conjunction with an innovative conventional control survey to align the point clouds, producing a high order of accuracy. The 3D linework models for the individual staircases were developed in AutoCAD using a combination of cross-section extraction and triangulated mesh within PolyWorks IMInspect module.

9h30-9h55

Greg Hoeft, Vice President, Industrial Systems, Bio Imaging Research: Principles of Metrology using Computerized Tomography and a unique application of PolyWorks.

The use of Computerized Tomography (CT) imaging in metrology applications is relatively new. The light metal automotive casting industry has pioneered the acceptance of CT measurement technology in an effort to reduce the cost of inspecting samples and reducing the time of first article acceptance. Unlike coordinate measuring or LASER measurement systems, an x-ray CT scanner produces a 3D stack of images detailing the exterior and interior structures of a sample casting without cutting or damaging the part. These images are then further processed to produce a Point Cloud or STL data file of the interior and exterior surfaces. The resulting STL file can then compared to the CAD design or measured with PolyWorks in various ways. Recently BIR has partnered with our customer at the BMW Group, Landshut, Germany to explore the first steps in automating and simplifying the inspection and measurement process.

10h00-11h00

60-min coffee break and visit of the 3D digitizing fair.

11h00-12h00

Panels of discussion : PolyWorks users give their feedback!

12h00-13h20

Lunch, at “La Galerie” restaurant at Loews Le Concorde

13h30-13h55

Hans-Peter Duwe, President - Duwe-3D AG: Integration of macro-programming for automated inspection in PolyWorks

The presentation will demonstrate how PolyWorks’ powerful macro scripting capabilities can be used to program complete inspection tasks, from first alignment to final report. Through real-life case studies of PolyWorks users in the automotive industry in Germany, Mr. Duwe will explain the benefits of using these automated tools to ensure the quality of parts and tools.

14h00-14h25

Bob Squier – President - 3D Scan IT: Automating PolyWorks, utilizing macros and multiple data input devices.

PolyWorks macros can be used to automate many processes including bringing together data from various sources into one user-friendly interface and report. By integrating external software applications, macros can notify the appropriate personnel of job status by posting data to a FTP or website and sending email. Macro can minimize the user influence on data processing and ensure repeatability of a process.

14h30-15h00

Workshops – Writing Macro Scripts in PolyWorks (Part#1)

15h00-16h00

60-min coffee break and visit of the 3D digitizing fair

16h00-16h30

Workshops – Writing Macro Scripts in PolyWorks (Part#2)

16h30 Concluding words.

"Doctor's Office" Meetings with InnovMetric's Application Engineers

There will be on-going "doctor's office" sessions in parallel of the PolyWorks User Meeting, in a room adjacent to the main presentation hall. This is your opportunity to meet in private with InnovMetric's application engineers and ask about:

- ✓ Solutions for problems and issues you encounter in your process
- ✓ New PolyWorks V9 tools that can improve your process
- ✓ Tips and tricks on how to use specific tools

So prepare your questions, and make sure to stop by the "doctor's office" during a presentation that is of less interest for you, or during one of the 60-min coffee breaks.

Doctor's office schedule:

Thursday: 9h00-17h00
Friday: 8h30-16h30

June 16/17 2005 International PolyWorks® User Meeting

InnovMETRIC Software

Agenda for users in the surveying industry

Day One - Thursday, June 16

8h00-10h00 Presentations in the main hall

10h00-11h00 60-min coffee break and visit of the 3D digitizing fair

11h00-12h00 Workshop #1 on the new features of PolyWorks V9 for surveying applications (Fortin hall)

12h00-13h20 Lunch, at “La Galerie” restaurant at Loews Le Concorde.

13h30-15h00 Workshop #2 on the new features of PolyWorks V9 for surveying applications (Fortin hall)

15h00-16h00 60-min coffee break and visit of the 3D digitizing fair

15h45-16h45 Workshop #3 on the new features of PolyWorks V9 for surveying applications (Fortin hall)

18h30-19h30 Cocktail in the lobby of the Suzor Côté ballroom.

19h30-22h00 Reception, Suzor Côté Ballroom.

Day Two – Friday, June 17

8h00-10h00 Presentations in the main hall

10h00-11h00 60-min coffee break and visit of the 3D digitizing fair

11h00-12h00 Discussion on future survey applications (Fortin hall)

12h00-13h20 Lunch, at “La Galerie” restaurant at Loews Le Concorde

13h30-15h00 Presentations and workshop in the main hall

15h00-16h00 60-min coffee break and visit of the 3D digitizing fair

16h00-16h30 Workshop in the main hall

16h30 Concluding words.