Worcester County IEEE
Newsletter

Worcester Section - Computer Society
Capability Maturity Model*
Understanding and Improving the
Software Development Process
Jim Perry, Integrated System Diagnostics
Monday, September 15, 1997 at 7:00 PM, Pencil Pushers, Burlington

An overview of the Capability Maturity Model, a framework that software organizations can use to examine their ability to acquire, develop, and maintain software.

Worcester County - Power Engineering Society
Plant Tour - State Of The Art High Voltage CGIT Bus
Tuesday, October 7,1997 at 7:15 PM
ABB Power T&D Company, Inc., Westborough

A plant tour and technical up date on both Gas insulated high voltage bus (CGIT) and Isolated phase bus (IBP).

Worcester Section - Computer Society
SmartDebugging for Component-based Software Environments
NuMega Technologies, Inc.
Monday, October 20, 1997 at 7:00 PM, Pencil Pushers, Burlington

An overview of SmartDebugging technology and demonstration of the latest version of BoundsChecker, Delphi Edition.

Worcester Section and ISD
1 Day Course
Overview of the Capability Maturity Model* for Software
Saturday November 1, 1997, 8:00 AM, Westborough Marriott

Fundamental concepts about the SW-CMM*, which is a framework that software organizations can use to examine their ability to acquire, develop, and maintain software. It is also a model for fostering organizational improvement.

*CMM and Capability Maturity Model are service marks of Carnegie Mellon University

Understanding and Improving the Software Development Process
Jim Perry, Integrated System Diagnostics

This months meeting will present an overview of the Capability Maturity Model,* a framework that software organizations can use to examine their ability to acquire, develop, and maintain software. The CMM describes the ability of organizations to develop and maintain software. It is a model of organizational improvement, based on the work of Deming, Juran and Crosby applied to software organizations. The CMM is used to appraise, define, measure, and improve processes. The presentation will describe process from a systems point of view, introduce software process improvement, and the application of the CMM. Value of the CMM, its architecture, interpretation, tailoring, cases, and changes in version 2 of the model will be addressed.

The presentation will be made by Jim Perry, who has worked extensively in supporting companies with software process improvement training, appraisals, and programs. He is an

Science Olympiads and Science Fairs

Whether its called science olympiad or science fair, this exciting event for students from middle school to high school enhances their appreciation of science and engineering.

On March 8,1997, a regional science olympiad took place at the Massachusetts Institute of Technology assisted by numerous volunteers among whom were many engineers. The Worcester County Section of the IEEE was a part of this event through the mentoring programs in which we participate.

Among the most popular projects were:

A trajectory event, in which a projectile was propelled by compressed air to strike a distant target. The pressure and distance were predefined and there were many clever devices.

An egg drop, in which students created a protective container for the egg with specific materials which was then dropped from a specified height at a target below.

The middle school students worked on these projects for many weeks prior to the olympiad and were mentored by volunteers, many of whom were engineers.

Another program initiated at one middle school by the Worcester County Section of the IEEE and has now grown to three schools, is the Solar Sprint. Students work in small teams to construct model electric cars powered by a solar panel. These are then raced in competition with other schools in the region. The regional race this year will take place on June 14 at Beverly High School.

Anyone interested in volunteering and helping to develop such programs at schools in their communities, call Stan Tanenholtz at 508-485-7185.

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authorized instructor for the SEI course, the Introduction to the CMM, and a Lead Appraiser (Assessor and Evaluator). He is on the technical staff of ISD (Integrated System Diagnostics), a leading software service company, specializing in commercializing Software Capability Evaluations, providing software process improvement training, appraisals, and process related research and development for government and industry.

This months presentation is a condensation of the IEEE and ISD one day course entitled, Overview of the CMM, being offered November 1, 1997 at the Westborough Marriott at the intersection of Routes 495 and 9. This one day course will provide the opportunity to cover in detail the topics introduced in the September meeting. ISD is a transition partner of the Software Engineering Institute (SEI) and licensed by the SEI to teach the three day, Introduction to the SW-CMM* course. This one day course, an Overview of the CMM, is a tailored version of that course. For additional information call Jim Perry at ISD at 508-756-0171 or email jmperry@isdinc.com

This meeting of the Worcester Section Computer Society, held in conjunction with the Delphi Developers Group of Greater Boston, will be held on Monday, September 15th, from 7:00 to 9:00 at Pencil Pushers Tax Software, 10 New England Executive Park, Burlington, MA. From north or south on Route 128 take the Middlesex Turnpike exit heading north. Go past the Burlington Mall. At the intersection with the Mall Road turn right. Go approximately one mile until you reach the entrance to the New England Executive Park. Turn right at the light. After a short distance turn left at the sign for building 10. Pencil Pushers is the first building on your right.

For additional information about this months presentation and on the course, call Jim Perry at 508-756-0171 or Al Reinhart at DisCom Systems at 508-869-6417.

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Overview of the Capability Maturity Model* for Software

In this 1-day course, you will learn fundamental concepts about the SW-CMM SM, which is a framework that software organizations can use to examine their ability to acquire, develop, and maintain software. It is also a model for fostering organizational improvement.

This training is being offered by Integrated System Diagnostics (ISD) as a service to the IEEE. ISD is a transition partner of the Software Engineering Institute (SEI) and licensed by the SEI to teach the Introduction to the SW-CMM SM course, which is a three day course. This course, an Overview of the CMM, is a tailored version of that course.

Content
- SW-CMM SM overview
- Value of the SW-CMM SM case studies of software process improvement
- Maturity levels, key process areas, and key practices of the SW-CMM SM
- Linking the key process areas (KPAs) together
- Interpreting the SW-CMM SM
- Exercises

Who Will Benefit

Members of SEPGs (software engineering process groups) and other software practitioners involved in process improvement. Members of appraisal teams.

Materials

Participants receive a notebook and copies of presentation materials. The IEEE provides a certificate of completion. We will send articles to you prior to the course. As an option, you will also receive a copy of the current version of the SW-CMM SM. See costs below.

Course Format

We will use lectures and class exercise in this 1-day training. Class size is limited to ensure quality interactions among students and the instructor. We will ask you to complete some homework prior to the course.

Location

The training location is the Westborough Marriott at the intersection of Route 495 and Route 9.

Date and Time

Training date is Saturday November 1 from 8AM to 4:30.

Experience Requirements

Participants must have a background in software engineering, management, and technical support areas such as software quality assurance (SQA), software configuration management (SCM), and basic quality management principles.

Cost*

IEEE members - $250.
Student members - $100.
Non-members - $300.

Option, add $50 for The Capability Maturity Model textbook.

*Register by October 1 and receive a $50 early registation discount. Coffee and danish are provided in the morning; refreshments in the afternoon.

Information

For information call ISD at 508-756-0171 or email jmperry@isd-inc.com

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Plant Tour - State Of The Art High Voltage CGIT Bus

Where:

ABB Power T&D Company, Inc.
High Voltage Systems
CGIT/IBP Division
25 Bridle Lane
Westborough, Mass.

Time: October 7,1997-7:15 PM

All IEEE members and their guest are invited to participate in a plant tour proceeded by a technical up date of the most modern state of the art factory. The plant is dedicated to the manufacture of both Gas insulated high voltage bus (CGIT) and Isolated phase bus (IBP). Increasing cost and environmental awareness of SF6 makes mixtures of low quantities of SF6 with nitrogen an attractive alternative to pure SF6 for electrical insulation and these developments will be discussed in detail in the technical presentation.

Directions: Route 495 to route 9 West Westborough. Follow route 9 to Woodman street. Turn right on Woodman street to Oak street. Take a left on Oak street then a right on Bridle lane. The factory is at the end of Bridle lane. If coming from Worcester take route 9 to route 135 . Turn right onto Oak street and proceed to Bridle lane. Left on Bridle lane to the end where you are then at the factory.

Please contact Power Society chair Mr. Richard E. Kane at 508-393-3619 if you plan to attend or if you have any questions.

SmartDebugging for Component-based Software Environments
NuMega Technologies, Inc.

Unlike other aspects of information technology, which have advanced dramatically in recent years, software debugging technology has lagged behind in many development environments. The majority of developers today use essentially the same debugging methods as those of 20 years ago, despite important changes in the ways applications are built and intense pressures for higher application quality and faster turnaround.

A key to correcting this situation is the use of automated solutions that can not only replace manual debugging but enhance the development process at every stage. Within the broad category of Automated Software Quality (ASQ) tools, products designed for Error Detection and Debugging (EDD) have emerged as critical components of ongoing efforts to improve software development productivity. NuMega Technologies, founded in 1987, has grown into a significant industry force through a pioneering EDD product offering incorporating the most advanced SmartDebugging technology available for today's most popular platforms.

Trends in Software Development

In the late 1980s and early 1990s, software development experienced a paradigm shift as programming languages and Microsoft Windows brought the event-driven programming model into the mainstream. The result was an order-of-magnitude increase in the complexity of software debugging. NuMega BoundsChecker, released in 1989, revolutionized the process of debugging Windows applications by automating and accelerating EDD functions and insulating the developer from the complexity of the underlying system.

Today developers face another dramatic shift as the Internet and the World Wide Web present a range of possibilities for expanding enterprise client/server computing beyond its previous limits. The component-based model of software development has become the cornerstone of this latest breed of applications. Using software components as building blocks has become the only practical way to deliver such applications within a reasonable time frame. Yet component-based applications raise runtime system complexity exponentially, further raising the stakes in error detection and debugging.

Current development trends and related business factors are combining to drive a new set of requirements for development and debugging tools. These forces include:

• The move to component-based applications running in an assortment of networked environments ranging from traditional client/server to intranets and extranets.

• The use of multiple programming languages by individual developers building component-based applications. For each component to perform well, developers need the flexibility to select the language best suited to the task to be performed or the problem to be solved.

• The explosive growth in development technologies that allows the creation of sophisticated GUI-connected applications by less skilled developers, and the related decline in average skill levels across expanding developer populations. The widespread use of wizards and other graphical tools, while increasing

productivity among these less skilled developers, has made it much more difficult to find and correct defects arising from underlying interfaces or relationships between application layers.

• The constantly increasing pressure on total time-to-market mandates for software delivery. Development projects formerly expected to be completed in 18-24 months are now commonly held to 6-9 month schedules.

At this months meeting NuMega Technologies will present an overview of SmartDebugging technology and demonstrate the latest version of BoundsChecker, Delphi Edition. BoundsChecker Delphi Edition is the only automatic error detection (AED) tool built specifically for Delphi. It speeds development by automating the debugging process right inside the Delphi IDE - without changing the way you work. It detects and diagnoses errors in static, stack and heap memory, as well as memory and resource leaks. BoundsChecker also validates over 5000 APIs at run-time, including the latest Windows APIs, ODBC, ActiveX, DirectX, COM, and Internet APIs. Come and see how this product can save you lots of debugging time. NuMega will also distribute FREE 30-day licenses to attendees.

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For additional information contact Al Reinhart at DisCom Systems at 508-869-6417 or reinhart@DisCom.com