

API RBI Software Overview
Version 5.0.018 Release
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Presentation Overview

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Version 5.0.018 Overview

- Version 5.0.018 developed to optimize database implementation with a powerful analysis engine
- Version 5.0.018 is a three-tier application
 - Graphical User Interface (GUI) on a client
 - Database engine on a dedicated server
 - Analysis engine on a dedicated server
- For a PC installation, the client, database server, and analysis engine server reside on the PC

Version 5.0.018 Overview

- Version 5.0.018 contains all capabilities provided in Version 4.0 except the Case Structure
- Version 5.0.018 installation procedure greatly simplified
 - Does not require any system modifications
 - Does not require MS Personnel Web Server
- Version 5.0.018 default database is MySQL
- MS Access can be used to view and manipulation MySQL database via ODBC

Version 5.0.018 Overview

- Administration Tool Added:
 - Set database to be used
 - Set user protection
 - Provides import capability from Version 4.0 data files

5.0.018 Software Architecture

- Three-Tier Application consisting of
 - GUI
 - Database
 - Analysis Engine
- GUI – written in Java
 - state-of-the-art language for applications that utilize database engines
 - Does not require use of MS Windows Application Programming Interface (API)

5.0.018 Software Architecture

- Databases Supported
 - MySQL – default database, excellent capabilities, unlimited size, no cost to users
 - MS SQL Server
 - Oracle
 - MS Access – can be used but not recommended, useful for viewing MySQL database via a ODBC link
 - Database access can be configured through administration tool

5.0.018 Software Architecture

- Analysis Engine
 - Developed Using ANSI FORTRAN 95 Standard
 - Utilize state-of-the-art proven calculation procedures in E²G's VCESage Program
 - Extremely fast calculator, will permit advanced engineering calculations (i.e. FAD assessment, Plume Analysis, etc.) without user intervention

5.0.018 Software Architecture

- New software architecture utilizes ANSI programming languages and Open Source applications
 - avoids issues with MS systems bugs and updates problems
 - Facilities installation issues
 - Can be ported to UNIX
 - Less expensive platform
 - Faster run-time

5.0.018 Analysis Capabilities

- GUI compatible with MS Windows
- J-Tree showing component hierarchy implemented
- Screen calculations including what-if analysis can be performed
- Version 5.0.018 Analysis Engine based on calculation Procedures in API 581, Second Edition, October 2000

5.0.018 Analysis Capabilities

- Batch calculations can be performed at the following levels:
 - Unit
 - Equipment
 - Component

5.0.018 Analysis Capabilities

- All analysis results including graphics are stored in the database
- Default reports provided, new reports can be easily added based on user requests
- Export tool provided to transfer report tables to MS Excel
- Extensive error messages provided including error reporting capabilities for batch analyses

5.0.018 Analysis Capabilities

- All calculation performed at the component level, separate input file generated for each component, can be emailed to E²G to facilitate de-bugging
- Diagnostics showing all intermediate and final calculation results can be selected by the user, diagnostic files provide method to facilitate bug resolution

Database Conversion & Import

- Version 5.0.018 reads data files from the mining tool database directly
- Databases associated with Version 3.3.3 must first be converted by the E²G Mining Tool

2004 Future Releases & Capabilities

- Scheduled for March 1, 2004 Release
 - GUI
 - Enhance database refresh and save functionality to simplify user input
 - Implement drag-drop move and copy feature on the component J-tree
 - Implement sort capabilities in table views
 - Implement user security based on input from user-group (user assignment can be set in administration tool, assignment of permissible user actions needs to be implemented)

2004 Future Releases & Capabilities

- Scheduled for March 1, 2004 Release
 - Database
 - Implement Case structure
 - Introduce Equipment filter capability
 - Provide report to produce Risk Matrix plots and Pareto Chart
 - Develop export/import capability
 - Develop database synchronize capability

2004 Future Releases & Capabilities

- Scheduled for March 1, 2004 Release
 - Calculations
 - Add calculations for underground corrosion, cooling water corrosion, CO₂ corrosion and acid sour water corrosion
 - Add “threading” capability to speed up batch calculations

2004 Future Releases & Capabilities

- Scheduled for August 1, 2004 Release
 - Complete development of the following equipment modules pending documentation and ballot resolution:
 - HE Bundle
 - Tank
 - Implementation of new consequence modeler
 - Implementation of PRV's (must be done with new consequence modeler)
 - Addition of Cost Benefit module
 - Addition of Damage Mechanism Screening Tool
 - Implement System, Area and possibly Circuit structure

2004 Future Releases & Capabilities

- Scheduled for December 31, 2004 Release
 - HTHA improvement for C-1/2 Mo curve
 - Addition of Fired Heater Module
 - Thermal Fatigue/Mechanical Fatigue damage module
 - Addition of Boiler Module
 - RSF Approach
 - Improved inspection planning module

2004 User Group Training

- Suggested Dates:
 - February 16th or 23rd, Houston
 - June 7th or 14th, Philadelphia
 - October, California
 - September/October, Manchester, UK
 - November 2nd-3rd, New Orleans
- Training Costs
 - Houston UG training allows 2 participants/company at no charge (additional personnel fee)
 - Other training courses pay fee per participant
 - Option: Offer 2 participants/company in 2004, all additional pay fee
- Suggest increasing training course to 3 days, allows for upgrade workshop and additional case study work