Implementing Automated Testing is not so Automatic...

ESSI Process Improvement Experiment

23690 - MAGICIAN

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Magic Software Enterprises Ltd.

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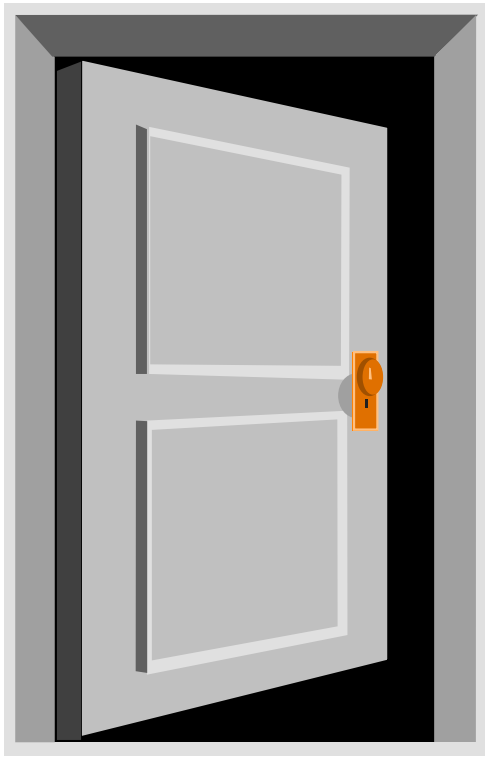
Introduction



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Introducing Magic

- *Application Development tool*
- *Rapid Application Development & Deployment (RADD)*
- *Wide range of platforms, operating systems, architectures, data base management systems*
- *Sold over 40 countries worldwide*

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The PIE project

- Target: Magic V8 - Enterprise Edition
- Enhanced Web connectivity, N-tier architecture, version control system,...
- PIE focus: data base gateways part
- Baseline: traditional Manual Testing
- PIE: implementing Automated Testing

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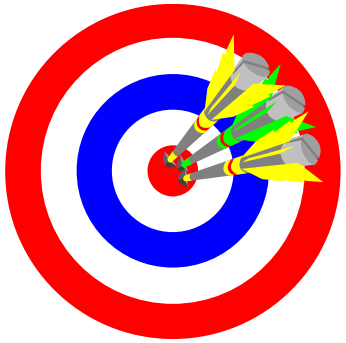
Involved companies

- *Magic Software Enterprises Ltd. - develop, publish, market & support Magic V8 - Enterprise Edition*
- *KPA Ltd. - a leading Israeli management consulting firm*
- *Testing tool vendor - Mercury Interactive Corp. - WinRunner*

Objectives

- Increase testing coverage by 25%
- Improve version stability by 25%
- Reduce QA cycle time by 15%
- Be able to predict version quality
- Improve version reliability by 20%



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Work packages

- Project Management (WP01)
- Tool selection (WP02)
- Training (WP03)
- Setting up metrics (WP04)
- Integration of tools (WP05)
- Automated tests creation (WP06)
- Execution of tests (WP07)
- Analysis and reports (WP08-WP09)
- Presentation (WP10)

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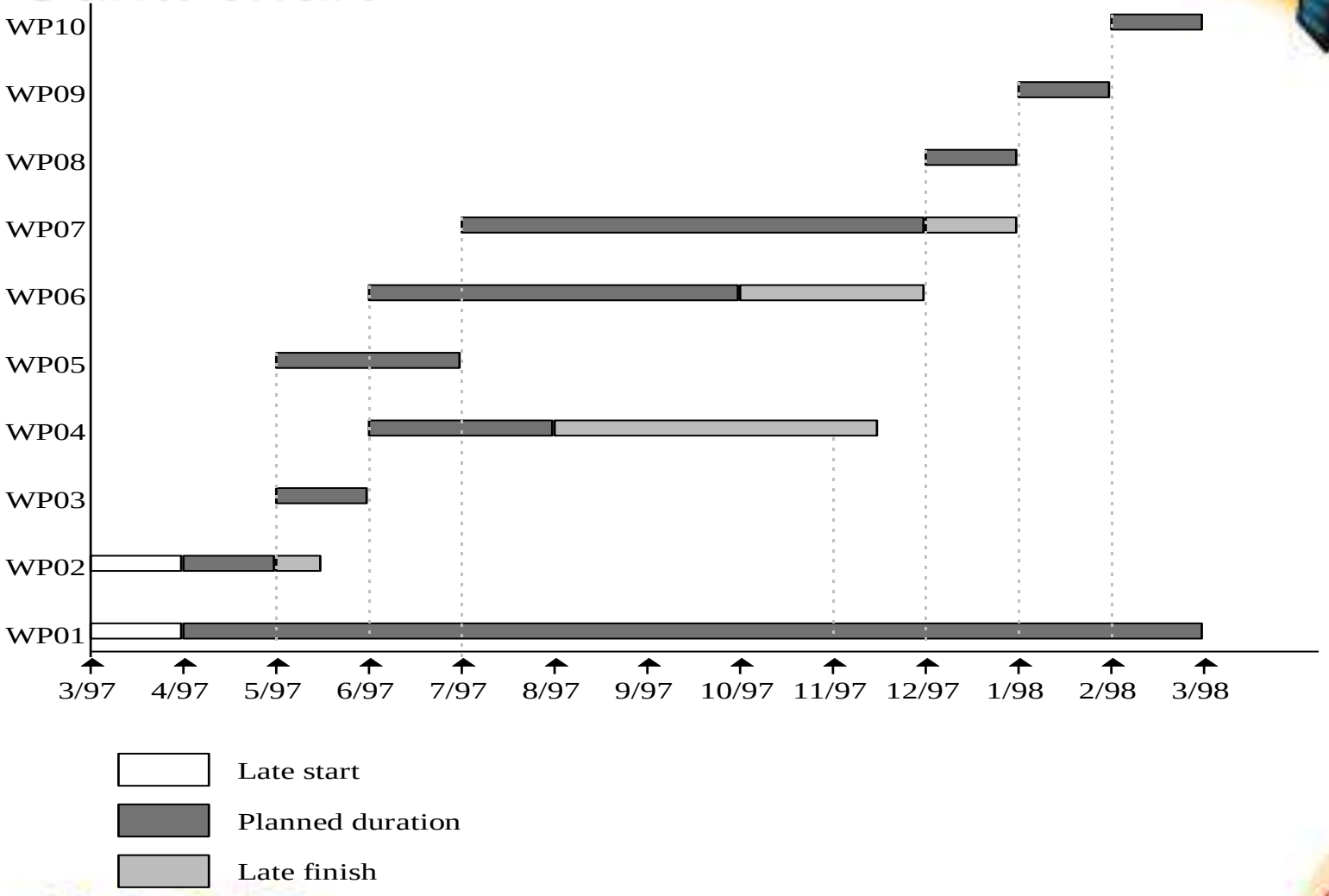
Gantt chart



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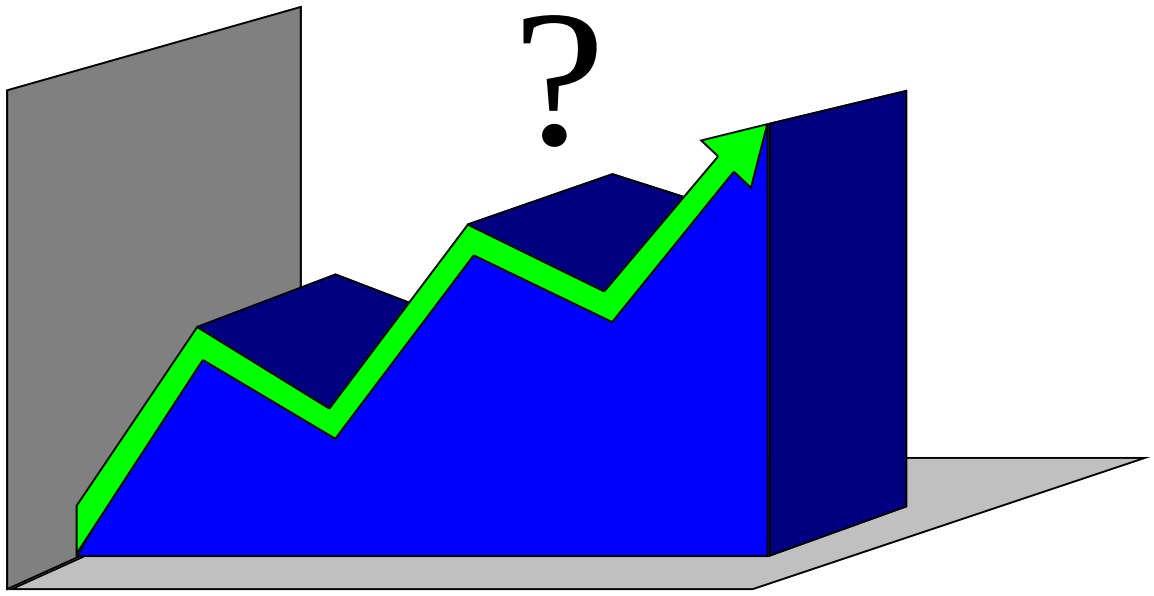
Work performed

- *Setting metrics (WP04) - the most difficult to perform*
- *Integration of tools (WP05) - surprisingly on-time*
- *Automated tests creation (WP06) - the most time consuming process*
- *Subcontractors & EC Project Officer assistance - critical to project success*

Results of the experiment



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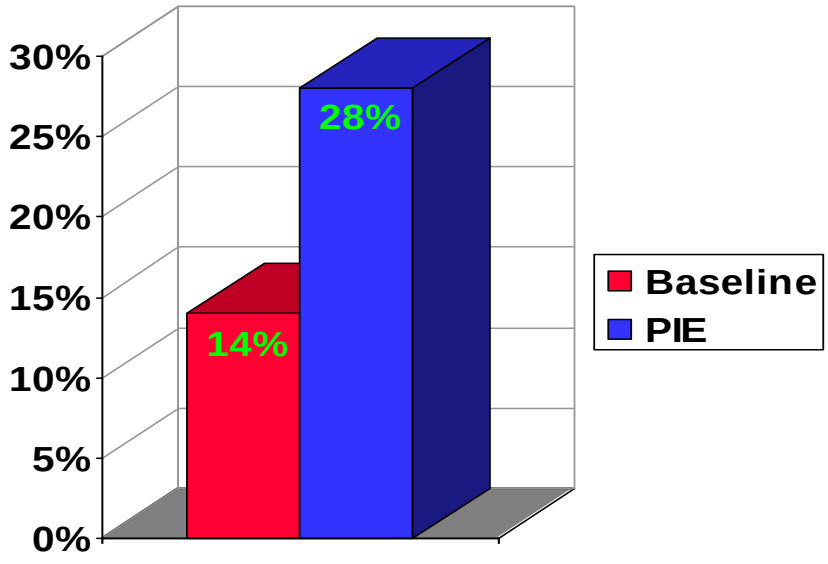
Testing coverage



Dramatically Increased

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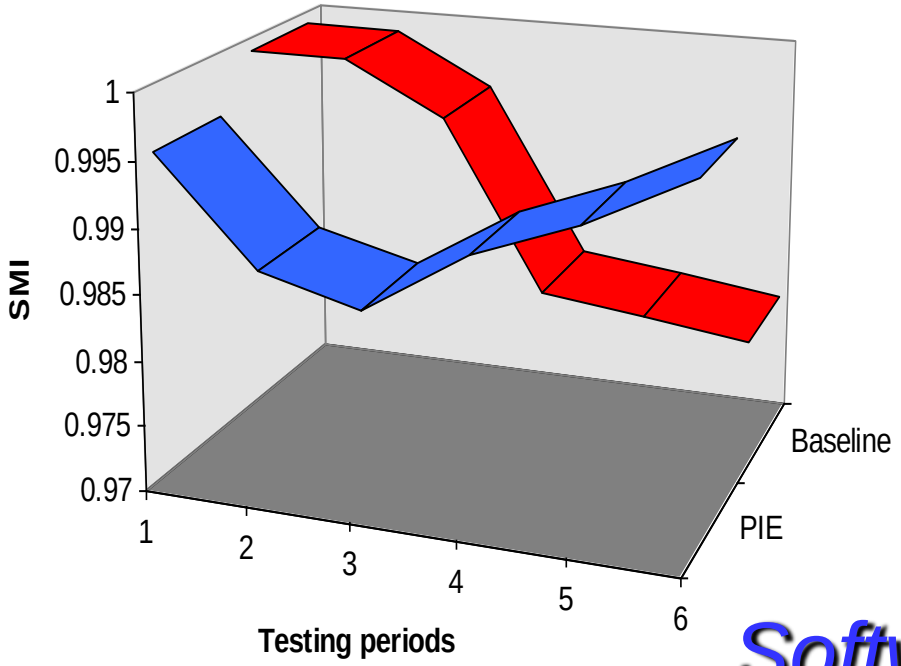
Version stability



Software Maturity Index (SMI) of the PIE is better

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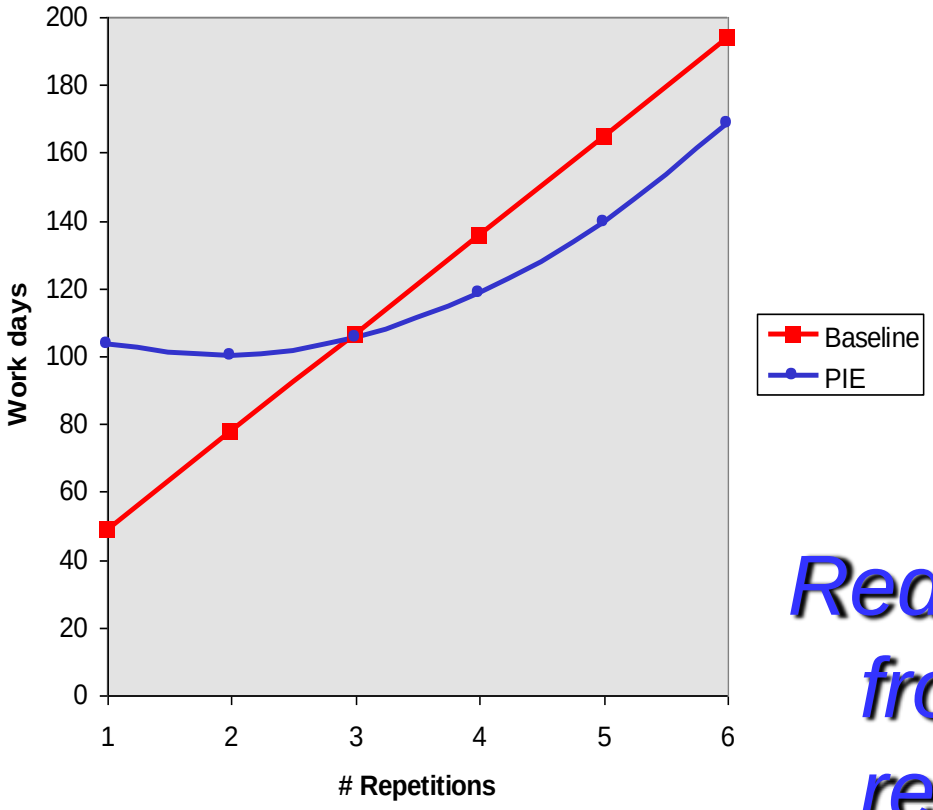
QA cycle time



Reduced - starting from the 3rd repetition

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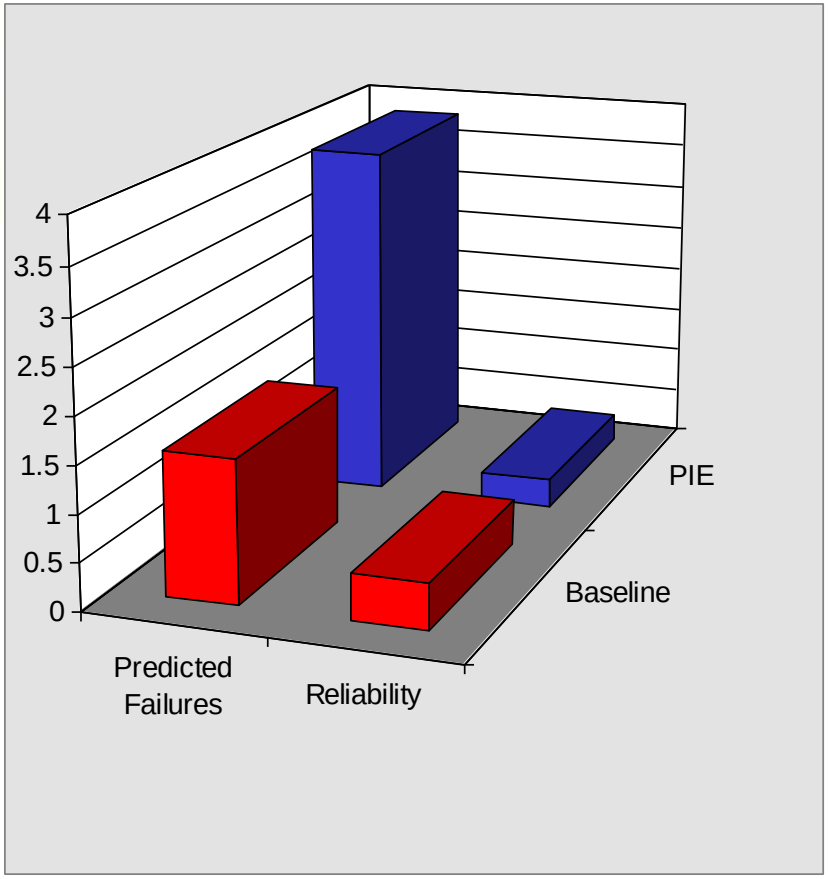
Prediction of version quality level



Both methods are measurable

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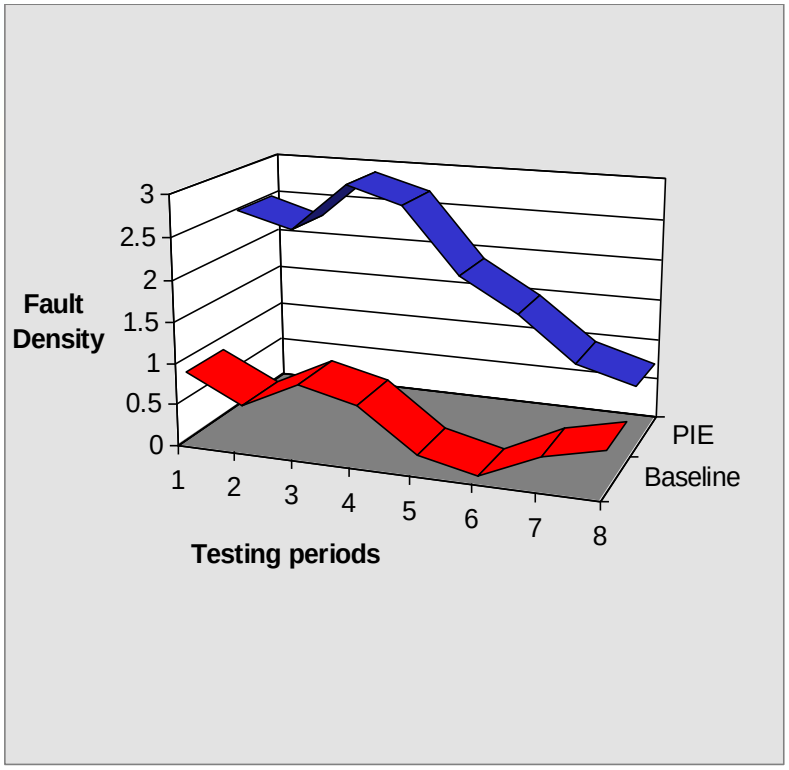
Version reliability



The automated process gives a better degree of confidence

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Qualitative results (Top 5)

- Complementary method
- Better degree of confidence
- Test a well-function software
- Analysis of results - time consuming
- Need of more professional and experienced employees

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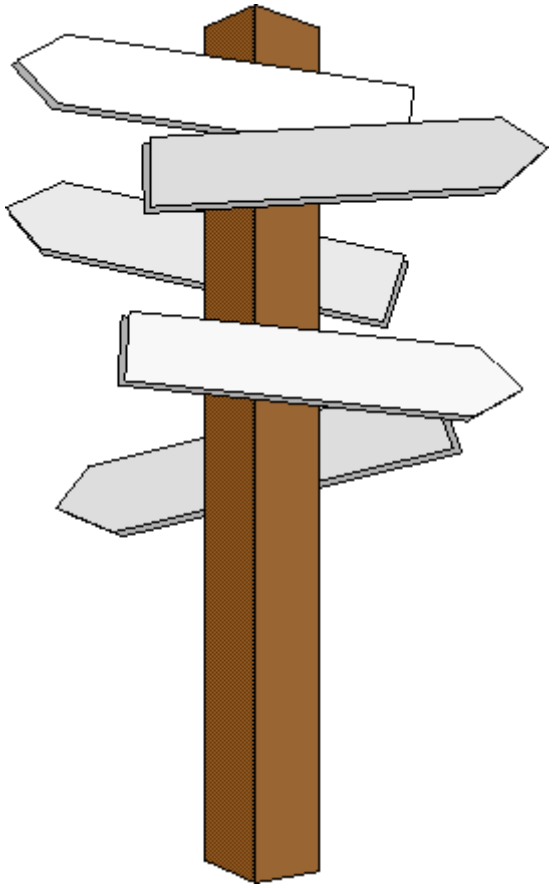
Recommendations



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Recommendations (Top 5)

- Adopt new method as a standard
- Break the QA process into two levels
- Establish automated testing team in the Indian extension
- Improve the level of integration
- Define standards for automated testing of Magic applications

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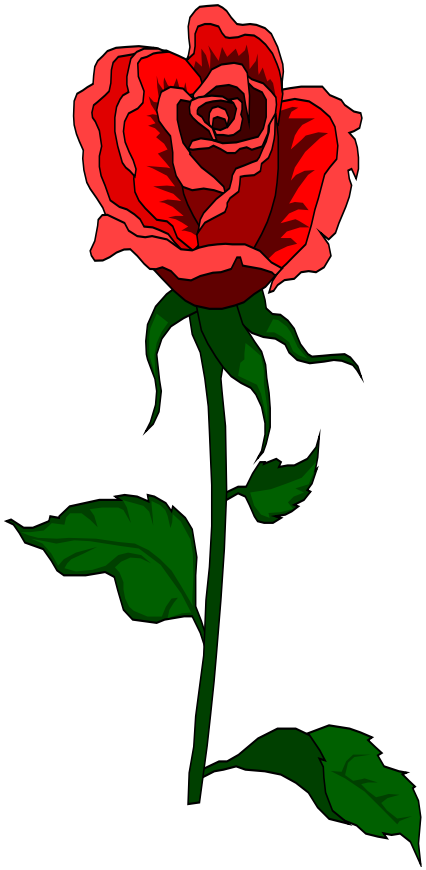
Acknowledgments



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Acknowledgments

Our deep appreciation to.....

- The European commission
- Our Project Officer (Dr. Rohen)
- KPA consultants
- Mercury engineers
- Magic Quality Control dept. employees

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Thank you !