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# Software Quality Audit

Towards high quality project results  
and improvement of customer satisfaction

*Software product quality is an increasingly important driver for the manufacturing of software-intensive systems. Increasing software product quality will thus yield a high return on investment. Many quality attributes are directly related to business goals, and should therefore be monitored and guaranteed in the development process.*

*Although many factors influence the final product quality, several vital quality attributes can be measured by inspection and monitoring of the source code.*

*The 'Software Quality Audit' is a scan of your existing software product, using modern code analysis techniques and tooling. The result of this tailor-made assessment is a concise overview of the quality level of selected product features.*

## **What is the surplus value of the audit?**

The Software Quality Audit will be beneficial when you are confronted with the impact of lacking software product quality, such as high frequency of problem reports, legacy issues, low reliability and stability of systems in the field, unacceptable decrease of innovation speed, etc.

The audit will produce an 'X-ray' picture of the source code, detecting latent bugs, violations and faulty constructs, which subsequently can be corrected or eliminated efficiently.

If desired, you will be able to repeat the audit at regular time intervals to identify complex and potentially problematic areas of code at the earliest stage during development, allowing for timely corrective actions.

## **What is the goal of the audit?**

The focus of the audit is to give your software development team the opportunity to tackle software quality head-on, using sophisticated and highly customizable code analysis tooling.



Based on the results of the audit, you will be able to produce software that meets required coding standards and quality demands – according to your own standards, your customer's standards and industry standards.

The audit will allow for the tailor-made setup of a source code quality improvement program, that will function as the point of departure for ongoing optimization of expensive development resources to deliver on-time, on-budget and to specification.

## **How is the audit organized?**

The complete audit usually takes 1-2 days, and is preferably performed on site to allow for elucidation by your software developers if needed. Members from your quality assurance and test team are even invited to participate in the setup and fine-tuning of the audit!

However, when sufficient information about the source code can be provided off-line, the audit can also be performed without any disturbance of your engineers, or even remotely at the premises of **ImprovementT**.

## How is the software quality measured?

The basis for the measurement of software quality is the ISO/IEC 9126 quality standard. This model comprises a collection of software quality attributes, metrics, quality criteria and measurement protocols.



Selected quality attributes as defined by the ISO 9126 model can be assessed by applying dedicated metrics, especially to measure testability, analysability, changeability and stability of the software.

The application of these intricate metrics requires the use of advanced tooling. The audit is performed using the Software Quality Assurance (QA) tool 'Rational Logiscope', from the portfolio of IBM corporation.



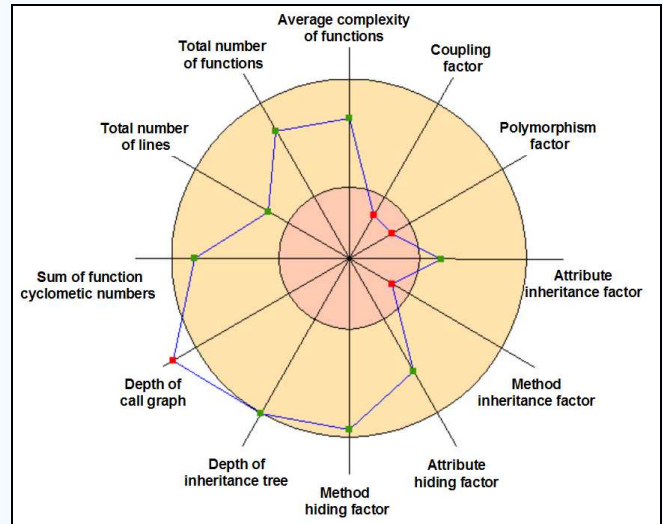
Rational Logiscope supports implementations in Ada, C, C++ and Java. For larger software systems (> 1MLOC), a representative subset will be selected for the audit.

Of course **ImprovementT** will adhere to a non-disclosure agreement with respect to the source code provided by clients.

## How is the audit performed?

After you have provided a short explanation of the high-level structure of the source code, the tooling will be configured and fine-tuned to meet the specific demands of the customer and peculiarities of the source code under scrutiny. Subsequently the static code analysis is performed, and the results of application of the metrics are collected, processed and compiled into a report.

According to the selected metrics and criteria, this report will show the software quality levels on different levels of abstraction: application, module, class and function level.



example of a 'Kiviati Diagram'

## What is the investment?

The cost of a Software Quality Audit is € 1450,- excluding VAT, including intake, configuration and tool set-up, analysis, presentation of results, reporting, and advice for follow-up activities.

**ImprovementT** offers the *Software Quality Workshop* as a preceding service, aiming at the determination of the most important quality attributes of the software system at hand.

The combination of workshop and audit will yield a concise software product quality assessment. This package is offered for the reduced price of € 3750,-, excluding VAT.

When the results of the audit justify the integration of Rational Logiscope in your development environment for continuous monitoring and trend analysis of your software products, IBM will provide you with a tailored offer for a licence for Rational Logiscope.

## Are you interested?

Please contact **ImprovementT** for more information, or make an appointment for an introductory and exploratory conversation.

At your service,  
Erik Philippus

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