

ADVANCED CODE ANALYSIS



ENSURES CODE QUALITY: BEYOND BUG CATCHING Whether your application is safety critical or mission critical—or you simply want to produce the highest integrity code possible—QAC++ quickly ensures code quality while enhancing productivity in your development process. It delivers much more than a simplistic bug catching approach—although QAC++ can catch bugs better than anything out there. It equips you with the tools you need to inject best practices into your development process to prevent problems—so you’re not wasting resources fixing them later. Market leader QAC++ is fast, non-disruptive, easy-to-use, and adds value to any size development environment.

AUTOMATICALLY ENFORCES CODING STANDARDS Coding standards serve as repositories of best practices. They’re the collaborative efforts of the best minds out there—filled with insight and widely recognized as an integral step toward building high-integrity, quality software. QAC++ provides a robust, fully automated environment to efficiently introduce and enforce your custom coding standards, those mandated by your industry, and those required by your customers. Its flexibility is unmatched as it seamlessly integrates into your development environment. Then, QAC++ documents and proves your compliance—a growing customer requirement especially for contract developers and offshore development firms.

DELIVERS ADVANCED TECHNOLOGY: DEEP FLOW STATIC ANALYSER QAC++ is powered by an advanced language parsing engine that quickly analyses your code then delivers accurate results regardless of project size. It detects problems like language implementation errors, inconsistencies, deprecated features, and coding standard violations—early, quickly, and efficiently—preventing delays at later stages in your development cycle when problems are *always* more costly to fix.

COMMUNICATES MEANINGFUL INFORMATION QAC++ combines many industry-standard code metrics including CYCLOMATIC COMPLEXITY and ESTIMATED STATIC PATH COUNT with easy-to-understand, flexible, reporting. QAC++ automatically generates reports, graphs, diagrams, and customizable HTML output—information to keep your projects on the right track. QAC++ exports its results in an open format so you can further analyse, share, and present your information in applications like Microsoft Office®, StarOffice™, and others. And, its configurable PDF REPORTS quickly generates project details useful for code reviews and audits—so everyone’s on the same page.

INCLUDES AN EXPERT KNOWLEDGE BASE QAC++ serves as a valuable learning tool for even the most seasoned developer. Its powerful MESSAGE BROWSER delivers a contextual drill-down environment linked to a deep knowledge base. QAC++ explains *why* problems it discovers need to be corrected and then provides detailed examples of *how* to fix them. Working with QAC++ means a virtual mentor with years of language implementation and standards expertise is simply a click away. Watch your development team become more skilled and more productive—even your best coders will quickly get better—and you get meaningful reporting to prove it.

PROVIDES IMMEDIATE & FUTURE SAVINGS QAC++ identifies software defects and non-compliance issues early in your development cycle and prevents them from entering your production code—thwarting potentially huge problems in your deployed products. QAC++ provides the ability to limit complexity so you can develop code that’s truly testable and easier to maintain. Wouldn’t it be nice to know you’re not wasting time and money fixing preventable problems?

S N A P S H O T

QAC++ is the market leader—bar none. It’s consistently recognised worldwide as the most powerful, most robust, and most technically advanced solution available today for analysing source code and automatically enforcing coding standards.

QAC++ transcends the simplistic bug catching approaches of the past—it offers a modern technique that fosters best practices which focus on prevention rather than correction.

QAC++ warns about issues that are simply not reported by compilers or other tools. Then, it explains *why* they’re problems and shows you *how* to fix them.

QAC++ identifies problems in C++ source code caused by language usage that’s dangerous, overly complex, non-portable, difficult to maintain, or simply diverges from coding standards—you get comprehensive coverage.

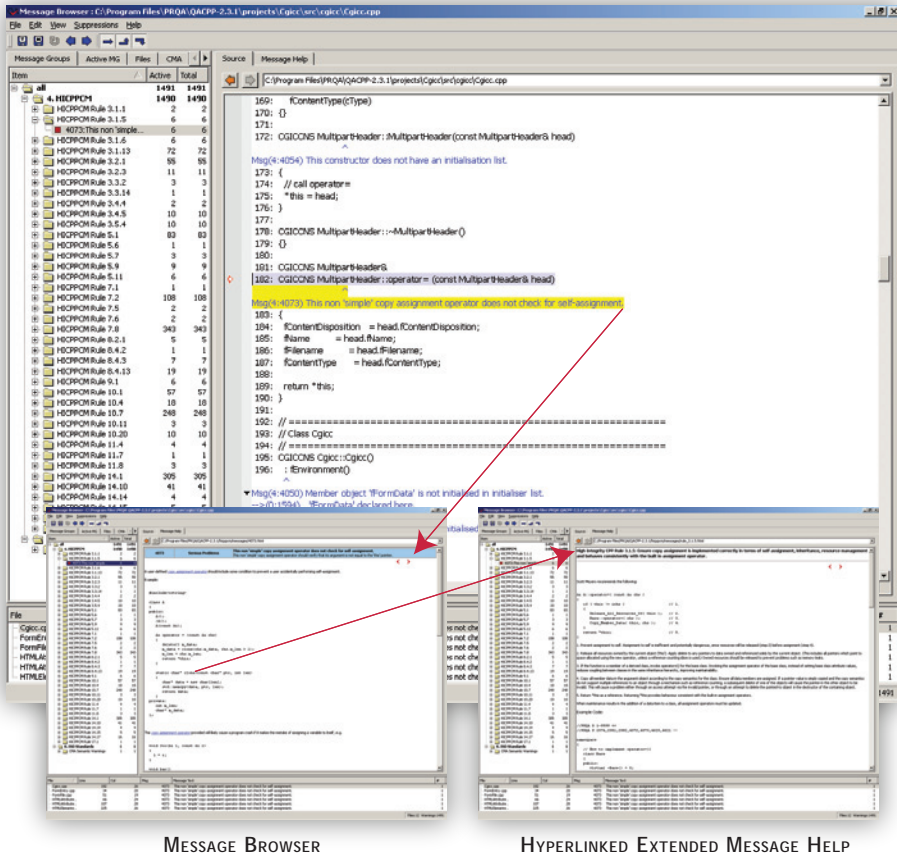
QAC++ triages your high-priority issues with pinpoint accuracy. It incorporates advanced message suppression tools and techniques so you can choose to focus on what’s most relevant to your situation—you’re in control.

QAC++ is a commercially-hardened solution from a respected thought leader who has focused—for more than twenty years—on delivering software quality improvement solutions to savvy developers worldwide.

PRODUCT BENEFITS

- ✓ Improves time-to-market while reducing costs
- ✓ Identifies coding problems early in the development cycle
- ✓ Accelerates the code review process—improves teamwork
- ✓ Ensures quality code and coding standard compliance
- ✓ Educates and raises programmer awareness—fosters best practices
- ✓ Reduces the risk of program failure
- ✓ Documents quality mechanisms are employed should problems occur
- ✓ Enhances reliability, portability, and maintainability
- ✓ Lowers software development costs—increases productivity
- ✓ Allows instant and repeatable code audits and reviews
- ✓ Delivers unmatched technology and strong ROI

ANNOTATED SOURCE CODE **QAC++** identifies *what* the problem is, explains *why* it's a problem, and shows *how* to fix it.



MESSAGE BROWSER

HYPERLINKED EXTENDED MESSAGE HELP

GENERAL FEATURES

SOURCE CODE COMPREHENSION TOOLS

- ✓ RELATIONSHIPS BROWSER
- ✓ FUNCTION STRUCTURE DIAGRAMS
- ✓ DEMOGRAPHICS
- ✓ METRICS BROWSER

COMMAND LINE INTERFACE (CLI)

INTERACTIVE MESSAGE BROWSER

ONLINE HELP & KNOWLEDGE BASE

- ✓ USAGE & IMPLEMENTATION
- ✓ CONTEXTUAL MESSAGE
- ✓ C++ LANGUAGE
- ✓ CODING STANDARD SPECIFIC

SUMMARY & DETAILED REPORTS

STANDALONE Qt®-BASED GUI

IDE INTEGRATIONS

MESSAGE OUTPUT CONTROL

- COMMENT BASED SUPPRESSION
- CONFIGURATION BASED SUPPRESSION
- SUPPRESSION TRACKING
- BASELINING

METRICS

- CLASS BASED: 8
- FILE BASED: 10
- FUNCTION BASED: 8
- USER DEFINABLE METRICS
- GRAPHICAL METRIC ANALYSIS
- KIVIAT DIAGRAMS
- WARNINGS ON METRICS THRESHOLDS
- METRIC VALUES EXPORTABLE (CSV FORMAT)

RESULTS OUTPUT

CONFIGURABLE PDF REPORTS

- ✓ QUALITY · COMPLIANCE
- ✓ CODE REVIEW · SUPPRESSION

ANNOTATED SOURCE (TEXT & HTML)

CONFIGURABLE OUTPUT

OPERATING ENVIRONMENTS

MICROSOFT WINDOWS™ (32-bit & 64-bit)

SOLARIS™

HP-UX™

LINUX™

COMPILERS

EXTENSIVE COMPILER SUPPORT

CUSTOMIZABLE CONFIGURATIONS

AUTO COMPILER CONFIGURATION

INTEGRATIONS

MICROSOFT VISUAL STUDIO™

ECLIPSE™ CDT

WINDRIVER TORNADO™ & WORKBENCH™

VectorCAST™

MAKEFILE INTEGRATION

CUSTOM INTEGRATIONS (INCLUDING TO VCS)

LICENSING OPTIONS

NO LIMITS ON PROJECT SIZE OR SLOC

FLEXIm™ LICENSE MANAGEMENT

FLEXId™ DONGLES

CUSTOM LICENSING OPTIONS

CODE ANALYSIS FEATURES

1,000+ SELECTABLE MESSAGES

C++ LANGUAGE-SPECIFIC PARSING ENGINE

PARSES CODE OF ANY SIZE & COMPLEXITY

TEMPLATES: FULL PARSING & SEMANTIC ANALYSIS

HANDLES COMMON LANGUAGE EXTENSIONS

CROSS MODULE ANALYSIS (LINK TIME CHECKING)

SEMANTIC ERROR DETECTION

DATAFLOW ERROR DETECTION

CLOSE NAME ANALYSIS

CODING STANDARD ENFORCEMENT

USER CONFIGURABLE CODING STANDARDS

HIGH-INTEGRITY C++ (ADD-ON MODULE AVAILABLE)

JSF++ (ADD-ON MODULE AVAILABLE)

ISO C++ STANDARD SUPPORT

BEST SUBSETS FOR LEGACY CODE (CRITICAL.PS)

RULE PRACTICE ISSUES

NAMING CONVENTION & LAYOUT CHECKER

DEFENSIVE PROGRAMMING—DEFECT AVOIDANCE

EXTENSIBLE RULE BASE

CUSTOMIZABLE MESSAGE TEXT

DEVIATION SUPPORT

ISO C++ STANDARD SUPPORT

FULL CHECKING OF ISO C++ CONSTRAINTS

- ✓ UNDEFINED BEHAVIOUR
- ✓ UNSPECIFIED BEHAVIOUR
- ✓ IMPLEMENTATION DEFINED BEHAVIOUR

C++ LIBRARY PARSING

- ✓ Boost · ACE™ · SystemC™ · ATL · MFC · Others

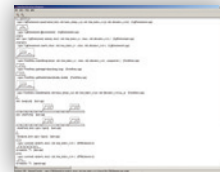
INTEGRATED C++ LANGUAGE KNOWLEDGE BASE



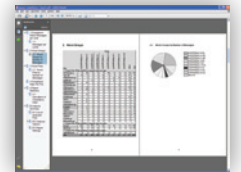
RELATIONSHIP INHERITANCE



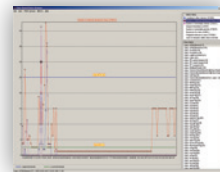
VISUAL STUDIO INTEGRATION



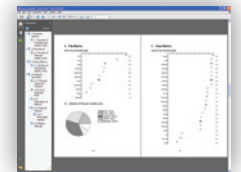
FUNCTION STRUCTURE



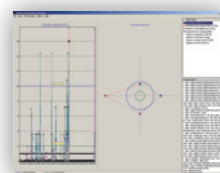
COMPLIANCE REPORT



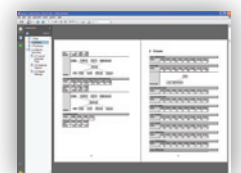
METRICS BROWSER



QUALITY REPORT



KIVIAT DIAGRAM



CODE REVIEW REPORT