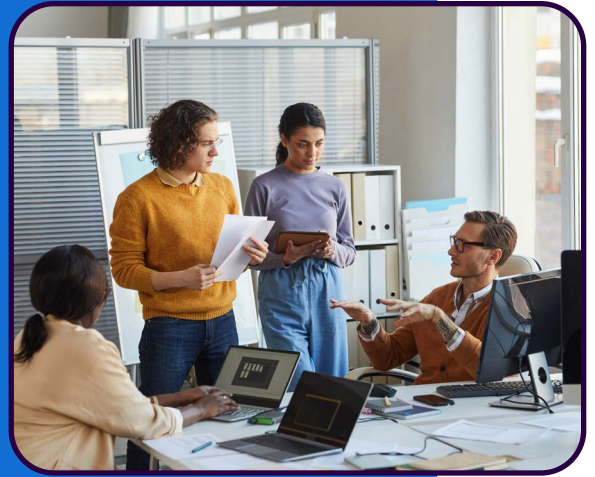


## Code quality and security are mission-critical for BAE Systems



**BAE Systems** is an international defense, aerospace, and security company providing advanced, technology-led defense, aerospace, and security solutions. Its major business lines include electronic warfare, sensing and communications equipment, armored vehicles, artillery systems, naval guns and naval ship repair, and cybersecurity and intelligence services.

### The challenge

For an international defense, aerospace, and security company like BAE Systems, the stakes for software quality and security are exceptionally high. Their operations, which span electronic warfare, armored vehicles, and highly sensitive operating systems, rely entirely on safe, secure, and reliable embedded software. With large and complex codebases, meeting the highest standards without a single defect is a constant challenge.

As a major contractor to the U.S. Department of Defense and the largest defense contractor in Europe, BAE Systems must maintain uncompromising reliability and security levels. This imperative is compounded by strict government compliance requirements.

To address these challenges, BAE Systems launched an organization-wide initiative to establish enterprise standards for code quality and security that would meet the strict regulations across their entire codebase.

#### Company

BAE Systems

#### Company size

Large enterprise

#### Industry

Aerospace & defense

#### Key Results

- Over 15 hours/week in time saved per developer
- 100% code compliance
- New code focus vs. technical debt
- Organization-wide code quality standardization
- Enforceable best practices

## The solution

BAE Systems selected SonarQube Server as their preferred solution for enterprise-wide code quality and security verification. They chose SonarQube Server because it outperformed other vendors in several critical areas:

- **Fast speed of analysis:** Delivering rapid and efficient code assessment.
- **Depth of issue detection:** Broad and deep detection of bugs, vulnerabilities, and security hotspots.
- **Broad support:** Comprehensive support for 35+ languages, frameworks, and infrastructure technologies.
- **Easy administration:** Simple, centralized administration of coding standards using Quality Gates.
- **Integrated guidance:** Providing developers with in-context guidance within their workflow to quickly fix issues.

### Strategic benefit for leaders

By defining and enforcing their coding standards using SonarQube Server's Quality Gates and automated analysis, BAE Systems gained an efficient path to realizing its code quality and security goals. This provided leadership with the necessary independent verification to ensure all code adheres to the defense industry's strict compliance requirements.

### Practical benefits for developers

The development teams at BAE Systems found several capabilities particularly valuable in maintaining secure, high-quality code:

- **Automated pull request analysis:** Using branch analysis and pull request decoration to get immediate feedback on new code.
- **Reducing technical debt:** Applying a methodology that focuses review efforts on new or changed code helps reduce future burden without losing forward momentum on new development.
- **In-context learning:** Providing in-context guidance and best practices that quickly educate and empower developers.
- **Governance and visibility:** Utilizing portfolios and executive reporting along with comprehensive security reports for clear organizational oversight.

## The results: Increased efficiency and maintainable code

Since implementing SonarQube Server into its development workflow, BAE Systems has achieved significant measurable improvements in efficiency and code health. The organization saves more than 15 hours per week previously spent on addressing low-quality code.

This efficiency gain allows development teams to focus their efforts on ensuring that new code is high-quality and compliant, freeing up critical time and resources previously dedicated to fighting technical debt. Furthermore, BAE Systems was able to standardize code quality and security expectations across the entire organization, reinforcing coding best practices to support a more maintainable codebase. This process ensures all code consistently adheres to the strict compliance requirements of the defense industry.