

**TASKING®**

# TASKING TRICORE INSPECTOR

AUTOMATED SOFTWARE QUALITY ANALYSIS TOOL

ISO 26262  
COMPLIANT

processing

```
/* main.c */  
  
#define CORE_mfr(CORE_ID)  
  
volatile int a = 1;  
volatile int b = 2;  
volatile int c = 3;  
  
void main(void)  
{  
    switch (CORE)  
    {  
    case 0:  
        for (;;)   
        {  
            a += 1;  
            a += 2;  
            // no break */  
        }  
    case 1:  
        for (;;)   
        {  
            b += 3;  
            b += 4;  
            // no break */  
        }  
    case 2:  
        for (;;)   
        {  
            // no break */  
        }  
    }  
}
```

verified

Tricore  
MURIX

# TASKING TRICORE INSPECTOR

## AUTOMATED SOFTWARE QUALITY ANALYSIS TOOL

### TASKING'S EMBEDDED SOFTWARE SAFETY ECO-SYSTEM

The TASKING® TriCore Inspector provides software architects, embedded system developers and system integrators an automated method for identifying TASKING® related toolset issues (SIL- 2/3/4) in their compiled output code.

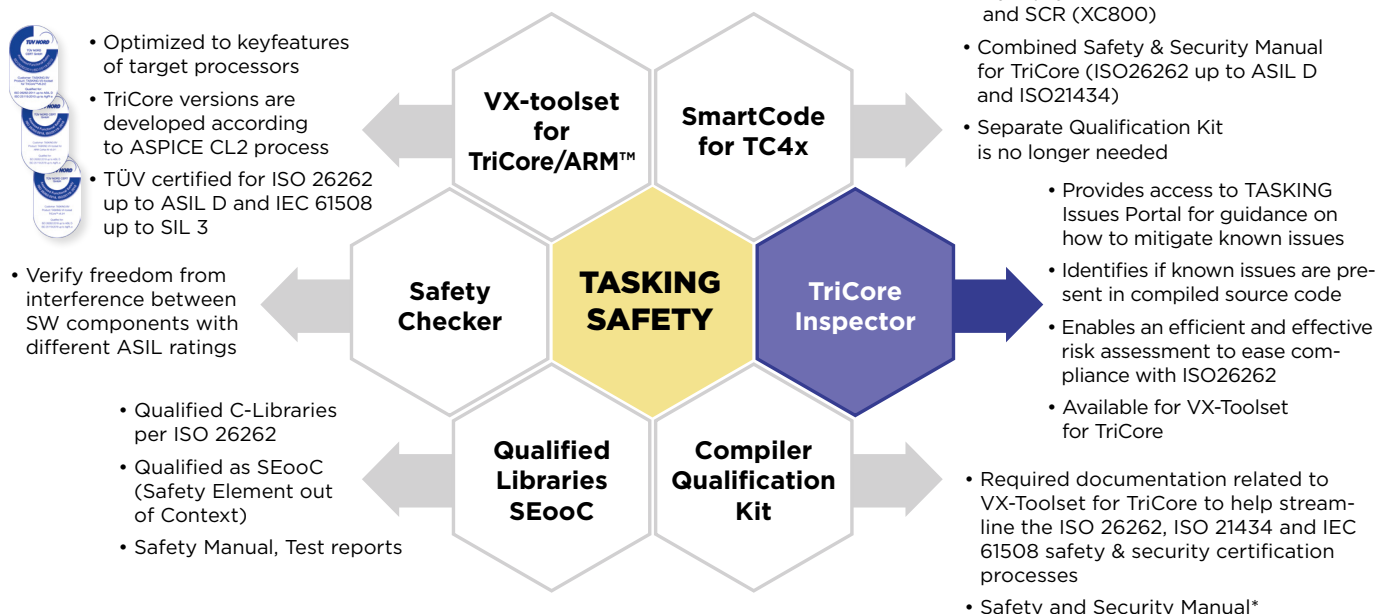
TASKING® prides itself on offering a high quality, functionally safe embedded software development environment for the AURIX™ microcontroller family. The TASKING® TriCore Inspector is one part of a safety eco-system which includes the TriCore VX-toolset which is TÜV Nord Safety Certified for the development of ASIL-D safety critical software covering up to Tool Confidence Level 3 (TCL3).

The TriCore Inspector is compiler version dependent and provides access to the TASKING® Issues Portal which is updated regularly and contains all the known defects (internal and customer reported issues) of the compiler tool chain version in use.

### Product Features

- Eliminates the need to manually review compiled source code (or write complex search scripts) for the erroneous inclusion of safety relevant compiler issues
- Can be easily integrated into the user's build process (i.e. Continuous Integration environment) for an automated, customer specific workflow to reduce manual code inspection
- Command option exists to provide the assembler of an identified potential issue. This assembler can be reviewed to determine if a patch is needed
- Significantly minimizes workload, reduces time to market and provides a competitive advantage
- Can prevent the re-qualification of software that is inadvertently released containing safety relevant compiler issues
- Produces diagnostic detection messages for compiler, assembler and linker&locator issues published in the TASKING issues portal
- ISO 26262 compliance achieved via ASPICE level 2 tool development process

Figure 1: TASKING Safety Eco-system



\* TriCore v6.2r2 -> Safety Manual Only // TriCore v6.3r1 -> Combined Safety and Security Manual

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The tool is command line driven and works similar to the TASKING® compiler tool chain. One difference is the TriCore Inspector does not generate executable code but instead generates warnings if the compiler output is impacted by SIL-2/3/4 issues published on the Issues Portal (Compiler, Assembler, Linker and Locator defects). These warnings contain the TASKING® defect number and whether the compiled source code is either: 'definitely' or 'potentially' impacted by the issue. Once an issue is detected, the tool provides a mechanism for reviewing the generated assembler code to determine if a patch is needed.

The TriCore Inspector is very easy to use and requires minimal integration effort by the user. The tool can be operated within a makefile, automated build script or on an individual source file from the command line.

### ENSURE PRODUCTION RELEASED SOFTWARE IS NOT COMPROMISED

Automotive OEM's and Tier 1 system integrators must meet a stringent set of safety standards and requirements prior to releasing their products being released for purchase. Failure to comply to these requirements can result in large monetary fines, expensive product recalls and negative media coverage which can result in tarnished brand reputation especially if the recalls are tied to numerous injuries and/or deaths.

For these reasons, automotive software developers try to deliver systems that are free of any defects that might result in injuries or deaths due to zero-kilometer defects. The TASKING® TriCore Inspector provides enough information to allow system safety experts to perform a risk assessment on the quality of compiled source code to ensure that high SIL related compiler issues are not present in their production released software. The TriCore Inspector does this without the inefficiencies and shortcomings associated with manual code inspection.

### PRODUCT AVAILABILITY

The TASKING® TriCore Inspector is version specific. Each version of the TASKING® toolchain has its own TriCore Inspector version as shown below:

Product Name	Availability	Host Platform
TriCore v6.2r2 Inspector v1.0r1	Released	Microsoft Windows 64-bit
TriCore v6.2r2 Inspector v1.0r2	Released	Microsoft Windows 64-bit
TriCore v6.3r1 Inspector v1.0r1	Released	Microsoft Windows 64-bit
TriCore v6.3r1 Inspector v1.0r2	Released	Microsoft Windows 64-bit

Future TriCore Inspector release updates can be found on [www.tasking.com/support/tasking-tricore-inspector](http://www.tasking.com/support/tasking-tricore-inspector)

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### SUMMARY

Pushing the 'approved' button on a software build intended for production release, doesn't have to be a stressful experience. The typical Automotive ASIL D SW Build can consist of 1000's of source files and millions of lines of code. How can you be sure that no tool chain issues have been erroneously added to your compiled C source code (C or assembler)? Where do the resources come from for a tedious manual inspection of millions of lines of assembler code? No fear, The TASKING® TriCore Inspector Tool is here.

The TASKING® TriCore Inspector Tool can be easily integrated into the build environment and will automatically generate warnings if your compiler output is impacted by SIL-2/3/4 issues published on the TASKING® Issues Portal (Compiler, Assembler, Linker and Locator defects). Once an issue is detected, you can review the generated assembler from the affected source code to determine if a patch is required or if the published mitigation is sufficient.

### EVALUATION LICENSE & ADDITIONAL INFORMATION

For additional information on the TASKING® TriCore Inspector including Evaluation Licenses, Product Pricing, Supported License Models, Product Demonstrations and/or Product Usage please contact us at [www.tasking.com/contact](http://www.tasking.com/contact) or visit our support page at [www.tasking.com/support](http://www.tasking.com/support).